

# Enbridge 2016 CSR & Sustainability Report

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April 12, 2017

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## FORWARD-LOOKING INFORMATION

Forward-looking information, or forward-looking statements, have been included in Enbridge's 2016 CSR & Sustainability Report to provide information about the company and its subsidiaries and affiliates, including management's assessment of Enbridge and its subsidiaries' future plans and operations. This information may not be appropriate for other purposes. Forward-looking statements are typically identified by words such as "anticipate", "expect", "project", "estimate", "forecast", "plan", "intend", "target", "believe", "likely" and similar words suggesting future outcomes or statements regarding an outlook. Forward-looking information or statements included in this document include, but are not limited to, statements with respect to the following: expected EBIT or expected adjusted EBIT; expected earnings/(loss) or adjusted earnings/(loss); expected earnings/(loss) or adjusted earnings/(loss) per share; expected ACFFO; expected future cash flows; financial strength and flexibility; expected costs related to announced projects and projects under construction; expected in-service dates for announced projects and projects under construction; expected capital expenditures; expected equity funding requirements for the company's commercially secured growth program; expected future growth and expansion opportunities; expectations about the company's joint venture partners' ability to complete and finance projects under construction; expected closing of acquisitions and dispositions; estimated future dividends; expected future actions of regulators; expected costs related to leak remediation and potential insurance recoveries; expectations regarding commodity prices; supply forecasts; expectations regarding the impact of the Merger Transaction including the combined company's scale, financial flexibility, growth program, future business prospects and performance; dividend payout policy; dividend growth and dividend payout expectation; expectations on impact of hedging program; strategic alternatives currently being evaluated in connection with the U.S. sponsored vehicles strategy; the expected impact and cost of complying with current and proposed new environmental regulations, including GHG emissions regulations; future power consumption by the company and its subsidiaries; expectations regarding safety and operational reliability; expectations regarding environmental impact of Enbridge's projects and operations; expectations regarding Enbridge's investment in pipeline and emerging technologies; expectations regarding Enbridge's CSR and sustainability performance and reporting; and expectations regarding Enbridge's engagement activities, including Indigenous engagement.

Although Enbridge believes these forward-looking statements are reasonable based on the information available on the date such statements are made and processes used to prepare the information, such statements are not guarantees of future performance and readers are cautioned against placing undue reliance on forward-looking statements. By their nature, these statements involve a variety of assumptions, known and unknown risks and uncertainties and other factors, which may cause actual results, levels of activity and achievements to differ materially from those expressed or implied by such statements. Material assumptions include assumptions about the following: the expected supply of and demand for crude oil, natural gas, NGL and renewable energy; prices of crude oil, natural gas, NGL and renewable energy; exchange rates; inflation; interest rates; availability and price of labor and construction materials; operational reliability; customer and regulatory approvals; maintenance of support and regulatory approvals for the company's projects; anticipated in-service dates; weather; the realization of anticipated benefits and synergies of the Merger Transaction; governmental legislation; acquisitions and the timing thereof; the success of integration plans; cost of complying with the settlement Consent Decree related to Line 6B and Line 6A; impact of the dividend policy on the company's future cash flows; credit ratings; capital project funding; expected EBIT or expected adjusted EBIT; expected earnings/(loss) or adjusted earnings/(loss); expected earnings/(loss) or adjusted earnings/(loss) per share; expected future cash flows and expected future ACFFO; and estimated future dividends. Assumptions regarding the expected supply of and demand for crude oil, natural gas, NGL and renewable energy, and the prices of these commodities, are material to and underlie all forward-looking statements. These factors are relevant to all forward-looking statements as they may impact current and future levels of demand for the company's services. Similarly, exchange rates, inflation and interest rates impact the economies and business environments in which the company operates and may impact levels of demand for the company's services and cost of inputs, and are therefore inherent in all forward-looking statements. Due to the interdependencies and correlation of these macroeconomic factors, the impact of any one assumption on a forward-looking statement cannot be determined with certainty, particularly with respect to the impact of the Merger Transaction on the company, expected EBIT, adjusted EBIT, earnings/(loss), adjusted earnings/(loss) and associated per share amounts, ACFFO or estimated future dividends. The most relevant assumptions associated with forward-looking statements on announced projects and projects under construction, including estimated completion dates and expected capital expenditures, include the following: the availability and price of labor and construction materials; the effects of inflation and foreign exchange rates on labor and material costs; the effects of interest rates on borrowing costs; the impact of weather and customer, government and regulatory approvals on construction and in-service schedules and cost recovery regimes.

*Enbridge's forward-looking statements are subject to risks and uncertainties pertaining to the impact of the Merger Transaction, operating performance, regulatory parameters, including those related to GHG emissions, dividend policy, project approval and support, renewals of rights of way, weather, economic and competitive conditions, public opinion, changes in tax laws and tax rates, exchange rates, interest rates, commodity prices, political decisions, supply of and demand for commodities and the settlement Consent Decree related to Line 6B and Line 6A, including but not limited to those risks and uncertainties discussed in this 2016 CSR & Sustainability Report and in the company's filings with Canadian and U.S. securities regulators. The impact of any one risk, uncertainty or factor on a particular forward-looking statement is not determinable with certainty as these are interdependent and Enbridge's future course of action depends on management's assessment of all information available at the relevant time. Except to the extent required by applicable law, Enbridge assumes no obligation to publicly update or revise any forward-looking statements made in this 2016 CSR & Sustainability Report or otherwise, whether as a result of new information, future events or otherwise. All subsequent forward-looking statements, whether written or oral, attributable to Enbridge or persons acting on the company's behalf, are expressly qualified in their entirety by these cautionary statements.*

## MESSAGE FROM AL MONACO, PRESIDENT & CHIEF EXECUTIVE OFFICER

Dear Reader,

The past year has been one of change for the energy industry and for Enbridge. Having completed our combination with Spectra Energy in early 2017, Enbridge is now the largest energy infrastructure company in North America, transporting, distributing and generating energy across the continent. It's a leadership role and responsibility we take seriously, particularly when it comes to our approach to sustainable development.

As Enbridge evolves and grows, we remain deeply committed to our CSR and sustainability priorities and continue our focus on three foundational areas: safety & environmental protection; stakeholder & Indigenous inclusion; and climate & energy solutions. How well we engage on issues related to these priorities, and how good we are at integrating them into our business strategy and operations, will define our ability to achieve our vision of being a leading energy company.

Our annual CSR & Sustainability Reports enable us to reflect on our progress and to hold ourselves accountable to our stakeholders for our performance. Importantly, it also helps us understand what we need to do to get better.

### **Safety & Environmental Protection**

We are acutely aware that public support for our business depends on our ability to safely, reliably and affordably deliver the energy people need and want while protecting the environment. Delivering on these core societal expectations is not negotiable.

That's why, over the last six years, we have mounted what we believe to be one of the most comprehensive approaches in our industry to deploying new management systems and technologies for reducing risk and protecting the safety of our employees and contractors, as well as the communities and environments in which we operate. At the heart of our approach is a commitment to maintaining the fitness and reliability of our systems, and our programs for leak prevention and emergency response. As we discuss in this report, our performance in these areas is our top corporate priority.

### **Stakeholder & Indigenous Engagement**

We also know that we can't meet our safety and environmental goals without engaging local stakeholders and Indigenous communities. Be it an oil or natural gas pipeline or a wind farm, energy infrastructure can attract public debate and concern from a variety of perspectives. In order to meet the changing expectations and requirements of local stakeholders and Indigenous communities, businesses such as ours must demonstrate their commitment to including local communities in how we are managing the environmental, social and economic risks and benefits of our investment.

Because of the long-lived and linear nature of much of our infrastructure, our management frameworks and systems for engagement are evolving to take a life-cycle view of our assets. We engage early and regularly with local communities on our projects and operations to obtain and respond to their input. Because of the strength of their connection with the land and water, our ability to establish long-term, mutually beneficial relationships with Indigenous communities is a key priority.

### **Climate & Energy Solutions**

In 2016, our business segments continued to develop long term plans for increasing their energy efficiency and decreasing their direct and indirect GHG emissions. As we discuss in this report, we believe our current and planned approach to managing climate risks is aligned with recent recommendations from the Task Force on Climate-related

Financial Disclosures. We support the adoption of climate policies at the provincial and federal level in Canada that can advance the transition to a lower-carbon future. We encourage collaborative efforts by industry and environmental organizations to reduce emissions across the Canadian oil and gas value chain. And we're an active participant in North American and global conversations on policy mechanisms that can ensure that new carbon and climate goals support the need to maintain business competitiveness and energy security.

I believe Enbridge is uniquely positioned to help bring new lower-carbon solutions to scale in both Canada and the U.S. while continuing to meet the demand for safe, reliable and affordable energy. Our recent combination with Spectra Energy has given us a much stronger presence in lower-carbon natural gas businesses in North America as well as greater opportunities to capture emerging synergies between our utilities and our expanding renewable energy business.

We remain committed to being transparent in discussing our progress and challenges related to our performance on CSR and sustainability issues. This report, which we endeavor to improve each year, is a testament to the dedication of all of our people to delivering on that commitment. I thank them for their efforts and welcome your comments on our work.

Sincerely,

A handwritten signature in black ink, appearing to read 'Al Monaco'.

Al Monaco  
President & Chief Executive Officer

April 2017



## MESSAGE FROM LINDA COADY, CHIEF SUSTAINABILITY OFFICER

Dear Reader,

Welcome to Enbridge's *2016 CSR & Sustainability Report*.

2016 was the year we announced our intention to combine with Spectra Energy to create the largest energy infrastructure company in North America, and further diversifying our asset mix for transporting, transmitting and distributing oil and natural gas, and for generating power and renewable energy.

As our combination with Spectra did not complete until the first quarter of 2017, we will be issuing two separate CSR & Sustainability Reports for 2016: this report, which pertains to the environmental, social and governance performance of legacy Enbridge assets; and another, which we will issue later in the second quarter of 2017, which will pertain to the performance of legacy Spectra assets.

Both reports will be available online in PDF formats. Due to the combination, neither will reflect the current structure, size and scope of our company. However, taken together, they provide the foundation required to begin building a combined report. Our *2017 CSR & Sustainability Report*, which we will release in 2018, will report on the combined company.

In the meantime, this *2016 CSR & Sustainability Report* on legacy Enbridge assets includes the following new features that will also be part of our combined reporting moving forward:

- prioritization of our material sustainability-related topics into two categories: 1) Priority Areas; and 2) Areas that Enable Continuous Improvement (please see the chart below);
- more information on our Performance Objectives related to each topic;
- three-year summaries of the Key Performance Indicators relevant to each topic; and
- more detailed descriptions of our CSR and sustainability accountabilities at the governance and management levels.

As always, we have included a frank discussion of our significant sustainability challenges and opportunities.

We have expanded discussion of our policies, strategies and management systems that support the inclusion of local stakeholders and Indigenous communities in our projects and operations. And we have expanded discussion of how we are integrating climate and energy considerations into our capital allocation and business strategy, and into our engagement with local communities.

Readers of our CSR & Sustainability Reports in previous years will know that we have been working to improve our systems for data management to support third-party assurance of our performance data on safety, spills and releases, and GHG emissions. They will also know that we have been working to establish second-generation targets for GHG emissions reduction and energy efficiency across all of our business segments and functions.

Our combination with Spectra requires that we take a careful look at how the data systems, controls, and performance metrics across the Spectra legacy assets align with or complement the systems we have established at Enbridge. Completing this process will enable us to establish objectives that reflect our combined company and ensure the integrity of our safety and environmental data that our business and stakeholders expect.

We prepared this report using the Global Reporting Initiative (GRI) G4 sustainability reporting guidelines. In planning for our future reporting, we will also be taking other reporting frameworks into consideration. These include the Sustainability Accounting Standards Board (SASB) industry standards, the United Nations Sustainable Development Goals (SDGs), and recent recommendations from the G20 Financial Stability Board's Task Force on Climate-related



Financial Disclosures (TCFD). As you will see, many of our current CSR and sustainability priorities speak to priorities associated with the SDGs and the TCFD. We are reviewing them to ensure continued alignment moving forward.

I welcome your input on our sustainability reporting efforts. And I thank the many people at Enbridge who work for our company because they believe in the environmental, social and economic value that can be created when we do our jobs well. The time and talent they contribute to making this report better every year is making a difference.

Sincerely,

Linda Coady

April 2017

Enbridge's Sustainability-Related Topics of Importance		Performance Objectives	
PRIORITY AREAS			
1.0 Safety & Environmental Protection			
1.1	Occupational Health & Safety	1.1a	Ensure safe workplaces and experience zero health or safety incidents
1.2	Maintaining the Fitness of Enbridge's Systems & Detecting Leaks	1.2a	Prevent all liquids spills and leaks
		1.2b	Prevent all natural gas releases and leaks
		1.2c	Verify and maintain the integrity of all of our pipelines and facilities
		1.2d	Improve leak detection and monitoring of all of our pipelines and facilities
		1.2e	Improve operational reliability and maintain a reliability target for our liquids pipelines
		1.2f	Continue to invest in system fitness and leak detection
1.3	Emergency Preparedness & Response	1.3a	Regularly review our emergency response plans to ensure they are current
		1.3b	Maintain and strengthen our Enbridge Enterprise Emergency Response Team
		1.3c	Train our emergency response teams
		1.3d	Regularly exercise our emergency response teams
		1.3e	Work with key industry and emergency response associations
2.0 Stakeholder & Indigenous Inclusion			
2.1	Stakeholder Engagement	2.1a	Strengthen our performance, and build trust with local and regional stakeholders by demonstrating accountability and responsiveness to their input and concerns through initiatives undertaken in our Major Project Engagement Plans and Regional Engagement Plans
		2.1b	Through our Public Awareness Programs, build trust with our local and regional stakeholders by ensuring that they are aware of our operations, and how to live and work safely near them
		2.1c	Extend local benefits from our infrastructure and activities by investing in community-based projects or initiatives in areas of shared interest and priority identified through our project and regionally-based engagement plans
2.2	Indigenous Engagement	2.2a	Review and strengthen our corporate policies and systems for engagement with Indigenous peoples
		2.2b	Work with Indigenous communities near our projects and operations to create opportunities for engagement through socio-economic participation, environmental stewardship and community investments that can extend across the life cycle of our projects and operations

3.0 Climate & Energy Solutions			
3.1	Climate Change, Emissions Reduction & Energy Efficiency	3.1a	Reduce our GHG emissions
		3.1b	Improve our energy efficiency
		3.1c	Help our utilities customers improve their energy efficiency
		3.1d	Manage our air emissions
		3.1e	Integrate climate considerations into key business systems
3.2	Renewable & Alternative Energy Investments	3.2a	Continue to expand our investments in green energy and double our renewable energy generation capacity by 2019 (based on our 2015 baseline)
		3.2b	Transition to operational self-performance
		3.2c	Improve the availability of our wind farms to the power grid
		3.2d	Transition to greenfield development
AREAS THAT ENABLE CONTINUOUS IMPROVEMENT			
4.0	Employee Relations	4a	Responsibly and respectfully manage our workforce
		4b	Strengthen and enrich employees through professional development, training, & engagement Protect employee rights and freedoms
		4c	Protect employee rights and freedoms
		4d	Promote diversity, equality and inclusion in our workforce
		4e	Provide fair and competitive compensation and eliminate gender discrimination on the basis of salary
5.0	Environmental Management Systems	5a	Ensure that environmental management is an integral element in all of our key our management frameworks and systems at the Enbridge-wide and business-segment levels
		5b	Responsibly manage our consumption and disposal of the water we use for testing the safety of our pipelines
		5c	Responsibly manage our electronic waste, the waste we generate at our buildings, and the waste we generate through our construction and operations
		5d	Invest in organizations that help us responsibly manage our impact on land and species
6.0	Supply Chain Management System	6a	Procure goods and services that meet our standards for safety, environmental stewardship, social responsibility and ethical practice
		6b	Further expand opportunities for Indigenous socio-economic participation in our supply chains
7.0	Customer Relations	7a	Provide consistent and reliable service to all of our customers
		7b	Continue to safeguard customer privacy and data
8.0	Research, Development & Innovation	8a	Continue investing in R&D and innovation that improves our systems for integrity, leak detection, and damage prevention
		8b	Continue investing in R&D and innovation related to emerging technology and power operations, with a view to growing, complementing and diversifying our business
		8c	Continue to demonstrate industry leadership in research, development and innovation
9.0	Community Investment	9a	Invest our approved 2016 budget for corporate community investments in alignment with the needs of the communities in which we operate and in accordance with all applicable corporate policies
10.0	Economic Performance & Benefits	6a	Maintain our capacity for strong economic performance by delivering superior long-term value to our shareholders
		6b	Continue to generate and distribute economic value to employees, suppliers, governments, communities and providers of capital

# ABOUT ENBRIDGE

## THE COMPANY

We provide a full description of our business in our 2016 Annual Information Form, which is available on Enbridge.com. Below is a summary of Enbridge as at December 31, 2016.

Enbridge, which is a Canadian company, is a North American leader in delivering energy. As a transporter of energy, we operate, in Canada and the U.S., the world's longest crude oil and liquids transportation system. We also have significant and growing involvement in natural gas gathering, transmission and midstream businesses. As a distributor of energy, we own and operate Canada's largest natural gas distribution company and provide distribution services in Ontario, Quebec, New Brunswick and the State of New York. As a generator of energy, we have interests in approximately 3,500 megawatts (MW) (2,500 MW net) of renewable and alternative energy generating capacity that is operating, secured or under construction (including our February 2017 acquisition of a 50 percent interest in the Hohe See wind project off the coast of Germany), and we continue to expand our interests in wind, solar and geothermal power. As at December 31, 2016, we employed approximately 9,200 people (including full- and part-time permanent employees and contract employees), primarily in Canada and the U.S.

In 2016, we announced our intention to merge with Spectra Energy and the merger was completed in early 2017. The newly combined company is the largest energy infrastructure company in North America with roughly \$166 billion (US\$126 billion) in enterprise value, as calculated on February 22, 2017.

Our vision is to be the leading energy delivery company in North America and a global energy infrastructure leader. We transport, distribute and generate a significant portion of the energy that enables the economic well-being and quality of life in North America. Our primary purpose is to deliver the energy people need and want in the most reliable and efficient way possible while protecting the safety of the communities and environments in which we operate.

For us, leadership means leading on value creation for shareholders but, equally importantly, it means leading on worker and public safety and environmental protection, as well as in customer service, community investment and employee satisfaction. Driven by this vision, we deliver value for shareholders from a proven and unique value proposition, which combines visible growth, a low-risk reliable business model and a dependable and growing income stream.

Our initiatives centre around the following areas of strategic emphasis in four key focus areas. The strategies associated with these four key focus areas are reviewed at least annually with direction from our Board of Directors.

COMMITMENT TO SAFETY AND OPERATIONAL RELIABILITY	
EXECUTE	SECURE THE LONGER-TERM FUTURE
<i>Focus on project management</i>	<i>Strengthen core businesses</i>
<i>Preserve financing strength and flexibility</i>	<i>Enhance strategic growth platforms</i>
MAINTAIN THE FOUNDATION	
<i>Uphold Enbridge values</i>	
<i>Maintain the Company's social license to operate</i>	
<i>Attract, retain and develop highly capable people</i>	

As at December 31, 2016, we carried out our activities through five main business segments: Liquids Pipelines; Gas Distribution; Gas Pipelines & Processing; Green Power & Transmission; and Energy Services. These descriptions do not take into account changes that resulted from our 2017 combination with Spectra Energy. We provide a full

description of each in our 2016 Annual Information Form, which is available on Enbridge.com. Below is a summary.

### **Liquids Pipelines**

Our Liquids Pipelines business segment (LP) consists of common carrier and contract crude oil, natural gas liquids (NGL) and refined products pipelines and terminals in Canada and the U.S., including the Canadian Mainline, Lakehead Pipeline System (Lakehead System), Regional Oil Sands System, Mid-Continent and Gulf Coast System, Southern Lights Pipeline, Bakken System and other feeder pipelines.

Our mainline system comprises our Canadian Mainline and our Lakehead System. Our Canadian Mainline is a common carrier pipeline system that transports various grades of oil and other liquid hydrocarbons within western Canada and from western Canada to the Canada/U.S. border near Gretna, Manitoba, and Neche, North Dakota, and from the U.S./Canada border near Port Huron, Michigan, and Sarnia, Ontario, to eastern Canada and the northeastern U.S.

Our Lakehead System consists of the U.S. portion of the mainline system that we manage through our subsidiaries, Enbridge Energy partners, L.P. (EEP) and Enbridge Energy, Limited Partnership (EELP).

### **Gas Distribution**

Our Gas Distribution business segment (GD) consists of our natural gas utility operations, the core of which is Enbridge Gas Distribution Inc. (EGD), which serves residential, commercial and industrial customers, primarily in central and eastern Ontario, as well as in northern New York State (through St. Lawrence Gas). GD also includes natural gas distribution activities in Quebec (through Gazifère) and New Brunswick (through Enbridge Gas New Brunswick) and in our investment in Noverco Inc.

### **Gas Pipelines & Processing**

Our Gas Pipelines and Processing business segment (GPP) consists of our investments in natural gas pipelines and gathering and processing facilities.

Our investments in natural gas pipelines include our interests in Alliance Pipeline, Vector Pipeline and transmission and gathering pipelines in the Gulf of Mexico. Our investments in natural gas processing include our interest in Aux Sable, a natural gas extraction and fractionation business located near the terminus of the Alliance Pipeline, Canadian Midstream assets located in northeast British Columbia and northwest Alberta, and U.S. Midstream assets located primarily in Texas and Oklahoma.

### **Green Power & Transmission**

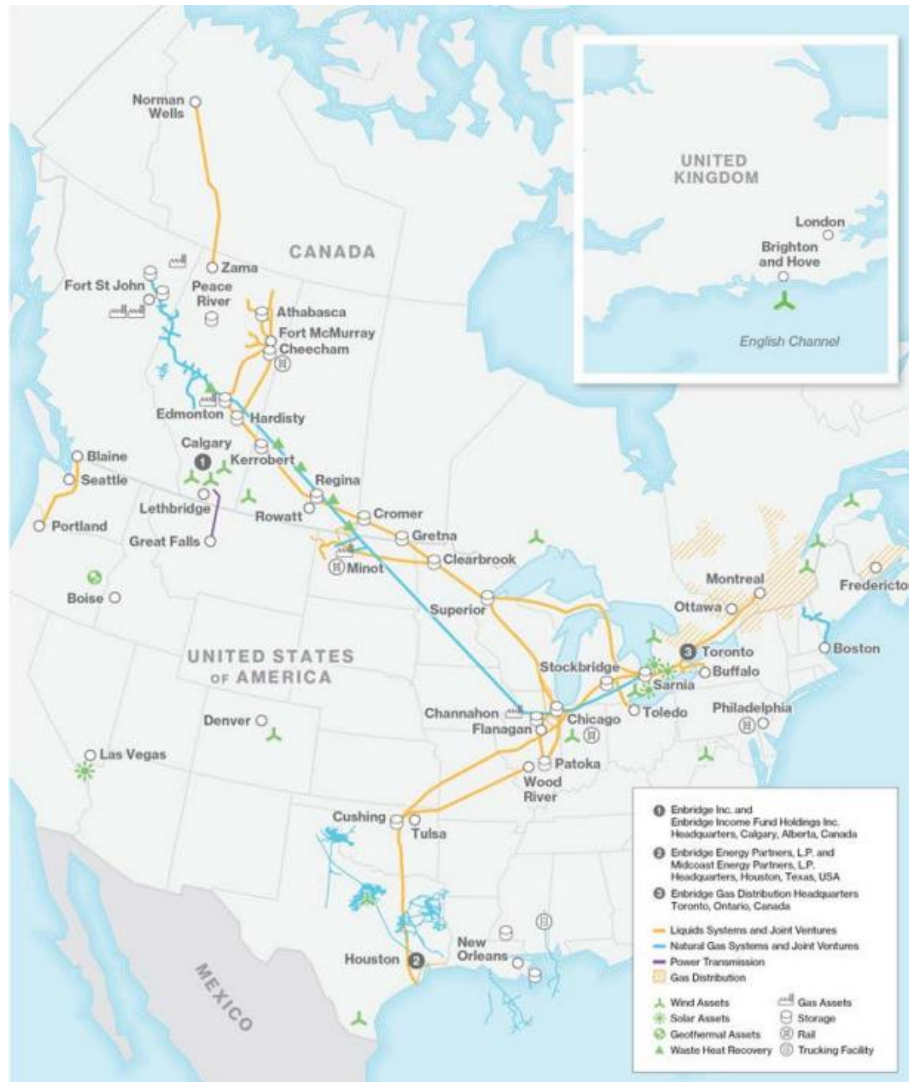
Our Green Power & Transmission business unit (GPT) consists of our investments in renewable energy assets and transmission facilities. Renewable energy assets consist of wind, solar, geothermal and waste heat recovery facilities, and are located in Canada, primarily in Alberta, Ontario and Quebec, and in the U.S., primarily in Colorado, Texas, Indiana and West Virginia. We also have assets under development in Europe. *For more information, please see the Renewable & Alternative Energy Investments section of this report.*

### **Energy Services**

Our Energy Services businesses in Canada and the U.S. undertake physical commodity marketing activity and logistical services, oversee refinery supply services and manage our volume commitments on various pipeline systems. Energy Services provides energy supply and marketing services to North American refiners, producers and other customers.

Crude oil and NGL marketing services are provided by Tidal Energy Marketing Inc., which transacts at many North American market hubs and provides its customers with various services, including transportation, storage, supply management, hedging programs and product exchanges. Tidal Energy Marketing Inc. is primarily a physical barrel marketing company focused on capturing value from quality, time and location differentials when opportunities arise.

The map below shows Enbridge's assets as at December 31, 2016, including the headquarters for Enbridge, EEP and EGD, as well as joint ventures in liquids and natural gas pipelines.



## Governance

We provide full details on our governance structure and practices in our 2017 Management Information Circular, which is available on [Enbridge.com](http://Enbridge.com).



## CSR & SUSTAINABILITY AT ENBRIDGE

### DEFINITION & SCOPE OF CSR & SUSTAINABILITY AT ENBRIDGE

We use the terms “Corporate Social Responsibility” (CSR) and “sustainability” interchangeably in this report.

Our CSR Policy, which has governed CSR and sustainability at Enbridge since 2004, covers business ethics and transparency; environment, health and safety; stakeholder, Aboriginal and Native American engagement; employee relations; human rights; and community investment. This policy applies to the activities we undertake anywhere in the world by, or on behalf of, Enbridge and our subsidiaries and affiliates whose operations we manage.

As we state in the policy, we define CSR as “conducting business in a socially responsible and ethical manner; protecting the environment and the safety of people; supporting human rights; and engaging, learning from, respecting and supporting the communities and cultures with which we work.”

We recognize the increasing public demand for corporations to be accountable and transparent in all of their business activities, and to be seen as proactively dealing with the issues of the day. With that in mind, in 2003, we became a signatory to the United Nations Global Compact and committed to following its principles, including the “Precautionary Approach,” which states that “businesses should support a precautionary approach to environmental challenges.”

### CORE VALUES & POLICIES

Our core values, along with our CSR and sustainability policies, help us integrate environmental, social and governance considerations into all aspects of our business decision making and performance.

Our value statement is, “Enbridge employees demonstrate Integrity, Safety and Respect in support of our communities, the environment and each other.” This statement serves as a foundation, and a constant guide by which we make our decisions, as a company and as individual employees, every day.

In addition, a variety of other policies and related documents provide direction for specific CSR- and sustainability-related activities, including our:

- Indigenous Peoples Policy,
- Climate Policy, and
- Community Investment Program Criteria and Guidelines.

### GOVERNANCE OF CSR & SUSTAINABILITY

We provide full details on our governance structure and practices in our 2017 Management Information Circular, which is available on [Enbridge.com](http://Enbridge.com).

With specific regard to board-level governance of topics pertaining to CSR and sustainability, our Board has five standing committees to help it carry out its duties and responsibilities:

- Audit, Finance & Risk,
- Governance,
- Safety & Reliability,
- CSR, and
- Human Resources & Compensations.

Each of these committees has specific responsibilities for overseeing various aspects of CSR and sustainability. We have outlined all of these responsibilities in our 2017 Management Information Circular, which is available on Enbridge.com.

With specific regard to the role of the CSR Committee of our Board, this committee reviews and assesses corporate policies, priorities, practices, and strategies related to CSR and sustainability, and provides Enbridge-wide oversight on our performance with respect to key social and environmental impacts, challenges and opportunities, including:

- local/ regional stakeholder engagement, community relations and investment;
- Indigenous consultation and engagement;
- government regulations and policies;
- environment and climate change;
- public and employee communications; and
- measurement, reporting and disclosure.

With specific regard to the governance of our three CSR and sustainability-related priority areas (Safety & Environmental Protection; Stakeholder & Indigenous Inclusion; and Climate & Energy Solutions), the chart below shows where accountabilities lie at the Board Committee, Executive Leadership Team (ELT) and senior management and business function levels.

CSR & Sustainability Priority Areas	Accountability		
	Board Committee	Executive & Senior Management	Business Function
<b>1.0 Safety &amp; Environmental Protection</b> 1.1 Occupational Health & Safety 1.2 Maintaining the Fitness of Enbridge's Systems & Detecting Leaks 1.3 Emergency Preparedness & Response	Audit, Finance & Risk  Safety & Reliability	Executive Leadership Team <ul style="list-style-type: none"> <li>• Executive Vice Presidents of Business Segments</li> <li>• Executive Vice President, Corporate Services</li> <li>• Enbridge-wide Operations &amp; Integrity Committee</li> </ul> Senior Vice President, Operations (LP) Vice President, Enterprise Safety and Operational Reliability Vice President, Enterprise Risk Vice President, Pipeline Integrity (LP) Vice President, Pipeline Control (LP) Vice President, Asset Integrity & Technical Services (GPP) Vice President, Engineering & Asset Management (GD) Vice President Major Projects Vice President & Chief Compliance Officer	Joint Business Unit Councils for <ul style="list-style-type: none"> <li>• Integrity</li> <li>• Crisis &amp; Emergency Response</li> <li>• Process Safety</li> <li>• Safety &amp; Enterprise Risk</li> </ul> Legal & Regulatory Enterprise Safety & Operational Reliability Enterprise Risk Management Business Segment Functions for <ul style="list-style-type: none"> <li>• Integrity</li> <li>• Occupational Health &amp; Safety</li> <li>• Emergency Management</li> <li>• Leak Detection</li> <li>• Pipeline Control</li> <li>• Damage Prevention</li> <li>• Distribution Protection</li> </ul>
<b>2.0 Stakeholder &amp; Indigenous Inclusion</b> 2.1 Stakeholder Engagement 2.2 Indigenous Engagement	CSR	Executive Leadership Team <ul style="list-style-type: none"> <li>• Executive Vice Presidents of Business Segments</li> <li>• Executive Vice President, Corporate Services</li> </ul> Vice President, Public Affairs & Communications	Enterprise Risk Management Corporate Finance & Development Community & Indigenous Engagement Community Investment CSR & Sustainability Legal & Regulatory

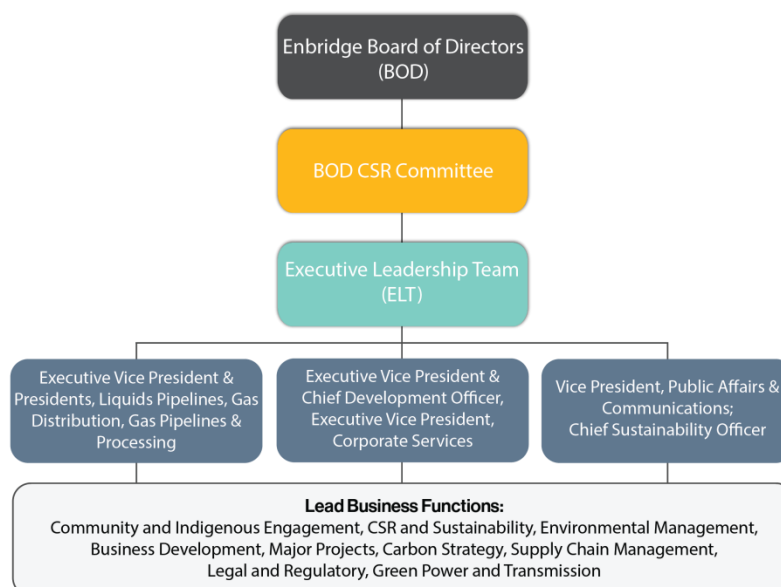


		Chief Sustainability Officer Vice President & Supply Chain Officer Vice President, Major Projects Vice President, Enterprise risk	
<b>3.0 Climate &amp; Energy Solutions</b> 1.1 Climate Change, Emissions Reduction & Energy Efficiency 1.2 Renewable & Alternative Energy Investments	CSR	Executive Leadership Team <ul style="list-style-type: none"> <li>Executive Vice Presidents of Business Segments</li> <li>Executive Vice President &amp; Chief Development Officer</li> <li>Executive Vice President, Corporate Services</li> </ul> Vice President, Enterprise Risk Vice President & Head, Corporate Strategy Vice President, Corporate Development & Investment Review Vice President, New Ventures, Power Vice President, New Ventures, Distribution & Transmission Vice President, Power Operations Vice President, Public Affairs & Communications Chief Sustainability Officer Vice President & Supply Chain Officer	Enterprise Risk Management Corporate Finance & Development Infrastructure Planning (LP) Carbon Strategy (GD) Canadian Midstream Operations (GPP) Corporate/Information Technology – Real Estate & Workplace Services Legal & Regulatory CSR & Sustainability

With specific regard to the governance of our Safety & Environmental Protection priority area, the chart below shows how the accountability structure is organized:



With specific regard to the governance of our priority areas on Stakeholder & Indigenous Inclusion and Climate & Energy Solutions, the chart below shows how the accountability structure is organized:



## CSR & SUSTAINABILITY STRATEGY

Our CSR & Sustainability strategy centers around the following six core activities on which our CSR & Sustainability Team provides subject matter expertise and cross-functional support to all of our business segments and functions. Specific strategies are reviewed regularly by senior management with input from our Board of Directors.

COMMITMENT TO CSR & SUSTAINABILITY		
INTEGRATE	ENGAGE	INNOVATE
<i>Embed social and environmental considerations into key business systems</i>	<i>Stakeholders and Indigenous communities</i>	<i>New collaborative approaches to sustainability challenges</i>
GOVERNANCE		COMMUNITY INVESTMENT
<i>Ensure accountability and oversight</i>		<i>Build shared value, trust and confidence</i>
TRANSPARENCY & DISCLOSURE		
<i>Regularly measure, report and evaluate our performance on environmental, social and governance issues at an Enbridge-wide level</i>		

## ABOUT ENBRIDGE'S 2016 CSR & SUSTAINABILITY REPORT

Our 2016 CSR & Sustainability Report includes performance data from, and events that took place in, 2016. We prepare a CSR & Sustainability Report each year, and published our 2015 CSR & Sustainability Report, which focuses on 2015 data, in March 2016.

Our 2016 CSR & Sustainability Report covers only information on the assets that Enbridge operates. The name

"Enbridge" refers to our entire company (Enbridge Inc.), including our subsidiaries and affiliates. The terms "company," "we," "us" and "our" refer to Enbridge Inc. as a whole.

Where possible, the data we provide refer collectively to Enbridge Inc. as a whole. However, when we report information pertaining to a specific business segment—for example, Liquids Pipelines—we note that.

Although we announced a combination with Spectra Energy in September 2016, because the combination was not completed until February 2017, our *2016 CSR & Sustainability Report* does not include data pertaining to Spectra Energy.

We express dollar amounts in Canadian dollars unless otherwise indicated.

We prepared our *2016 CSR & Sustainability Report* using the Global Reporting Initiative (GRI) G4 sustainability reporting guidelines, which are intended to serve as a generally accepted framework for reporting on an organization's environmental, social and governance performance. The GRI G4 guidelines were designed for use by organizations of any size, sector or location, and take into account the practical considerations faced by organizations ranging from small companies to those with extensive and geographically dispersed operations. The guidelines contain general and sector-specific content that has been agreed on by a wide range of stakeholders around the world to be generally applicable for reporting an organization's sustainability performance.

Under the GRI G4 guidelines, our *2016 CSR & Sustainability Report* is classified as comprehensive.

The data in this report have not been assured by a third party. We have, however, set ourselves a corporate goal of obtaining third-party assurance on the key performance indicators (KPIs) associated with our greenhouse (GHG) emissions; energy consumption; health & safety metrics; water, waste and land and species data; and with our spills and releases. We anticipate that meeting this goal will take between two to four years. In 2017, we plan to continue working toward achieving third-party assurance of our GHG and energy consumption data.

## How we Determined what to Report

In this report, we focus on the CSR- and sustainability-related topics that matter most to our stakeholders, our employees and our business. They are the topics that would substantively influence stakeholders' assessments and decisions regarding Enbridge.

To determine these topics, in previous years, we conducted materiality assessments based on the GRI's G4 guidelines.

For our *2016 CSR & Sustainability Report*, in 2016, we validated these topics based on what we know to be important to us, and on what we heard during our ongoing engagement with stakeholder and Indigenous groups. Based on our original assessments and on our reaffirmations, we determined that the three priority areas that are the subject of our current strategic focus are:

- Safety & Environmental Protection, which includes:
  - Occupational Health & Safety,
  - Maintaining the Fitness of Enbridge's Systems & Detecting Leaks, and
  - Emergency Preparedness & Response.
- Stakeholder & Indigenous Inclusion, which includes:
  - Stakeholder Engagement, and
  - Indigenous Engagement.
- Climate & Energy Solutions, which include:
  - Climate Change, Emissions Reduction & Energy Efficiency, and
  - Renewable & Alternative Energy Investments.

And we determined that the areas that enable us to continually improve our performance in our CSR and

sustainability priority areas, and that, therefore, require our ongoing focus are:

- Employee Relations,
- Environmental Management Systems,
- Supply Chain Management System,
- Customer Relations,
- Research, Development & Innovation
- Corporate Community Investments, and
- Economic Performance & Benefits.

Following are definitions for each of the above areas that are important to our stakeholders, and brief explanations of how they link to our business priorities:

#### *Occupational Health & Safety*

How we protect people and ensure that we comply with all applicable safety policies, requirements and commitments. By doing everything we can in this area, we live up to our Safety value and prevent incidents.

#### *Maintaining the Fitness of Enbridge's Systems & Detecting Leaks*

How we ensure that our systems for energy distribution and delivery are sound and reliable. If we develop and operate strong and highly reliable systems, we can continue to execute on our strategic priorities, and reduce and avoid social and environmental risks and impacts.

#### *Emergency Preparedness & Response*

How we prepare for and respond to emergencies created by our operations such that we minimize impacts and ensure safety. By preparing for and responding to emergencies in the most efficient and effective way possible, we live up to our Safety value, and avoid social and environmental, impacts, costs and displacement.

#### *Stakeholder Engagement*

How we engage stakeholders who are affected by, or who can affect, our activities and operations. Also, how we collaborate with stakeholders to build long-term relationships, create shared value, reduce our environmental impact, improve safety and innovate for the future. If we engage stakeholders in ways that create value for them and for us, we improve our projects and our ability to execute on our strategic priorities.

#### *Indigenous Engagement*

By properly recognizing and respecting Indigenous rights and culture, and by including Indigenous communities in planning and implementing our projects and operations, we reduce economic risk, improve social and environmental outcomes, and enhance our ability to execute on our strategic business priorities.

#### *Climate Change, Emissions Reduction & Energy Efficiency*

How we manage our energy use and reduce our GHG and other emissions. Also, how we help our customers reduce their energy use through demand-side management (DSM) programs. If we invest the resources it will take to reduce our—and our customers'—energy use and resulting emissions, we will save costs and support the transition to a lower-carbon future.

#### *Renewable & Alternative Energy Investments*

How we invest in energy sources that are not derived from hydrocarbons, and in the technologies that support them. By investing in these energy sources and technologies, we are preparing for the opportunities that will come with a lower-carbon future.

#### *Employee Relations*

How we attract, retain, develop and engage skilled employees, and motivate them to remain engaged throughout their careers. Also, how we maintain a healthy workplace and ensure compliance with health and wellness policies and commitments. Maintaining an engaged workforce is key to achieving our business objectives and fulfilling our social and environmental commitments.

### *Environmental Management Systems*

How we conserve biodiversity, manage our land and water use, and comply with all regulatory requirements for environmental protection. Also, how we manage our waste and emissions of ozone-depleting substances. By carefully managing our impact on the environment, we save costs and prevent environmental and social incidents, helping us to build social trust and confidence in our projects and operations.

### *Supply Chain Management System*

How we incorporate social and environmental considerations into our supply chain management system through our procurement processes to reduce impact and create additional benefits. Positive social and economic outcomes from our activities improve our ability to execute on our strategic priorities.

### *Customer Relations*

How we do business with our customers. If we satisfy our customers' needs, and continually change our business to keep up with changing market demands and fundamentals, we will stay in business.

### *Research, Development & Innovation*

Our investments in the research and development (R&D) and innovative technologies that improve the fitness of our systems, and our ability to detect leaks and prevent damage. Also, our investments in the R&D and innovative technologies—such as clean power and energy storage—that have the potential to support future business growth.

### *Community Investments*

How our community investments impact communities. If our community stakeholders are able to benefit from our activities, we are better able to build shared value and the public trust and confidence in our operations that are required for us to execute on our strategic priorities.

### *Economic Performance & Benefits*

How our economic performance benefits investors and other stakeholders through investment returns, taxes, capital and operational spending, salaries and community investments. If our stakeholders are able to share the benefits of our economic performance, we are better able to maintain support for our projects and operations, and to execute on our strategic priorities.

## **ENBRIDGE'S STAKEHOLDERS**

We are accountable to a range of stakeholder groups, including:

- associations and civil society groups,
- communities,
- customers,
- employees, contractors, unions, Board of Directors,
- environmental and other non-governmental organizations,
- governments and government regulatory bodies in Canada and the U.S.,
- individuals and organizations with whom we work to prepare for and respond to emergencies,
- investors,
- landowners,
- local businesses and industry,
- media,
- regulators, and
- right-of-way communities.

Due to their distinct rights, we consider Indigenous groups to be separate from other stakeholder groups. *For more information, please see the Stakeholder Engagement and Indigenous Engagement sections of this report.*



We prioritize, engage with and incorporate feedback from individuals and groups who live and work near—or who can affect or who are affected by, our pipelines, power lines, operations and facilities—using criteria outlined in an integrated management system that that we are implementing to ensure a consistent and rigorous approach to engagement across all of our projects and operations. *For more information, please see the Stakeholder Engagement and Indigenous Engagement sections of this report.*

## SIGNIFICANT SUSTAINABILITY CHALLENGES & OPPORTUNITIES

As a leading transporter, distributor and generator of energy, we are confronted every day with many of the complex issues and opportunities inherent to the challenges of sustainable development. These issues and opportunities pertain largely to our three CSR and sustainability priority areas of Safety & Environmental Protection, Stakeholder & Indigenous Inclusion, and Climate & Energy Solutions. They are influenced by shifts in markets, public attitudes and expectations, and changes that governments are making to public policy and regulation. And they have a significant impact on how we do our job of providing people with the energy they need and want.

In this section we discuss how we are responding to our sustainability challenges and opportunities. To demonstrate the role that our commitment to integrating sustainability into our decision-making systems plays in our response to these challenges and opportunities, we also provide a case study on how we are integrating climate and energy consideration into our business strategy.

### **Safety & Environmental Protection**

Given that we operate some of our pipeline and distribution systems and related storage assets close to populated areas, a major safety incident could result in serious injury to our employees, contractors and members of the public. A major safety incident could also substantially impact public trust and confidence in our business. To maintain that trust and confidence we comply with all regulatory requirements, and extensively monitor and maintain our infrastructure and robust emergency response systems to minimize the consequences of an incident, should one occur.

In addition, a spill or release from one of our systems could pose a serious risk to water quality and cause long-term damage to the environment, erode public trust, and result in significant clean-up and remediation costs. For that reason, we continually work on reducing the likelihood and consequence of environmental incidents, and have implemented prevention, detection and mitigation measures through integrated management systems, plans and processes.

While water is critical to the broader energy industry of which we are a part—upstream oil production and downstream oil refining, for example, both use water in their production systems—because we are primarily a transporter and deliverer of energy, water is not a key input to most of our operations. However, because our pipelines traverse large distances that include water bodies and watercourses, spills pose significant risks to water (both ground water and surface water), as well as to fisheries and wetlands. Also, because our pipelines cross areas where people live and recreate—and because everyone cares deeply about their ability to access clean water—spills, and even the perception or the possibility of spills, pose significant risks to our reputation and our ability to obtain regulatory permits and approvals.

Given the significance of these risks, we address water protection as a priority in our management systems and processes, including our public safety and environmental incident risk treatments. We also address the concerns raised by stakeholders (including customers, local communities, environmental groups, water users, regulators, water management authorities and suppliers) and by Indigenous communities and groups. By working with these individuals and groups to understand their concerns, we incorporate more effective treatment measures into our project management and operations, while supporting the efficiency of regulatory reviews.

Given the significance of these risks, we also engage third-party environmental consultants to conduct risk assessments, which involve identifying waterways, geological conditions and groundwater chemistry that could be impacted by a spill or release; determining the distance that oil could migrate downstream from a spill; determining how oil could flow overland and what water it could impact; and determining oil dispersion patterns in open water bodies, the proximity of spills to municipal water supplies and intakes, and the potential for other impacts.

Based on the results of the assessments, we work with municipalities to develop contingency plans. Where prudent, we also install additional valves to limit the volume of oil that could escape from a pipeline after an incident. *For more information on our initiatives and activities on safety and environmental protection, please see the sections of this report on Risk Management, Occupational Health & Safety, Maintaining the Fitness of Enbridge's Systems & Detecting Leaks, Emergency Preparedness & Response and Environmental Management Systems.*

### **Stakeholder & Indigenous Inclusion**

A significant evolution is occurring in North America with regard to the awareness of the rights and interests of Indigenous peoples. This evolution—which is occurring among Indigenous peoples themselves, in governments and regulatory agencies, and among business and the public—is being fueled by systemic changes that have been underway for some time now, as well as by recent high-profile events in relation to specific energy and resource development projects.

In Canada, change is being driven by court decisions regarding what constitutes an acceptable level of Indigenous consultation, and by actions arising from the Truth and Reconciliation Commission of Canada. In the U.S., the role of Native American communities in resource development and energy infrastructure is also evolving.

Although Indigenous issues in relation to energy infrastructure can be project specific, they are also frequently borne of larger issues—including historical grievances and the legal relationship between Indigenous communities and senior levels of government. In either case, they speak to the need for better processes on the part of both governments and industry to reconcile the interests of Indigenous communities with the energy infrastructure development.

The changing North American landscape in the area of Indigenous issues is a highly challenging environment in which to operate but, at the same time, there are opportunities for leadership and progress on issues that have created social controversy and stalled projects for some time now. In response to these opportunities, in 2016, we inaugurated a new Indigenous Peoples Policy. And, concurrently, we expanded our Indigenous Engagement Program to enhance our ability to respect the Indigenous communities near our projects and operations, and develop relationships capable of supporting ongoing social, economic and environmental benefits. *For more information, please see the Indigenous Engagement section of this report.*

### **Climate & Energy Solutions**

Climate change and shifting energy market fundamentals are significant issues for us. They drive new challenges as well as new business opportunities.

#### *Business Strategy and Energy Mix Portfolio*

Both our short- and long-term business strategies and plans are structured to enable us to meet current demand for oil for transportation needs and as feedstock for other products required by society, while also responding to new opportunities for renewable energy, electrical transmission and natural gas. We are committed to furthering the development and execution of a business model that will enable us to meet the energy requirements of a lower-carbon world.

We are also committed to contributing to the achievement of local, national and global climate goals, and believe that the oil and gas value chain can be managed and developed in ways that will help ensure that the world stays below the critical global emissions thresholds established by the 2015 U.N. Paris Agreement. Both renewable and non-renewable energy will be required to power the shift to lower-carbon and no-carbon energy required to meet key global emissions reduction targets by 2030 and 2050. This is a transition that will involve major new investments in activities that include re-engineering the electrical grid, addressing energy storage challenges and developing technologies that reduce climate impacts from hydrocarbons. For this reason, both access to energy and energy diversification is a major business opportunity, not just for our company or industry, but for other business sectors as well.



Consumers want energy, environmental protection and more choices. Investors want climate risks managed. And the market will reward companies that solve problems.

As a leader in energy infrastructure systems that deliver oil, natural gas and renewable energy, we believe that Enbridge is uniquely positioned to help bridge the transition to a lower-carbon future by advancing energy diversification while also ensuring the safety and reliability of energy supply. Emerging opportunities that we are acting on include:

- *Helping our natural gas utilities customers manage their emissions and improve energy efficiency:* Our Gas Distribution business segment (GD) has recognized expertise in areas such as demand-side management, energy efficiency and conservation that provide a good platform for offering other energy services to customers.
- *Growing our renewable energy business:* We are one of the largest investors in renewable energy for electricity in Canada and have a growing presence in renewables in both the U.S. and Europe. New technologies are continuing to drive the cost of wind and solar energy to more competitive levels, and new government targets and policies are supporting growth in renewables and electricity. Building on the over \$5 billion we have invested in renewable energy between 2012 and the end of 2016, renewables are a key element in our growth platform. They offer good returns with strong commercial underpinnings and, as such, we intend to double our position in renewables by 2019 (based on our 2015 position). We are pursuing new business opportunities arising from increased consumer demand for renewable energy and new interdependencies between renewables, natural gas and electrical transmission. Because renewable energy is at the forefront of the transition to a lower-carbon future, we are building our competitive advantage as a developer and operator of wind and solar projects, and continue to selectively invest in renewable technology and innovation. In the last 18 months, we have committed to spending another \$2.7 billion on offshore wind projects in Europe. Our investments in renewables technologies include waste heat recovery, run-of- river power generation, and technologies that make renewable energy storage more economical.
- *Expanding the use of natural gas to make access to lower-carbon and renewable energy more feasible:* Natural gas has “game changing” potential to create significant climate benefits while advancing community-based sustainability solutions such as distributed energyrenewables expansion and energy efficiency. It is an important replacement fuel for coal in electricity generation, a lower-carbon source of home heating, a lower-emission fuel for heavy-duty vehicles and large transportation fleets, and an important enabler of renewable and community scale energy. We are evolving our natural gas systems to expand the availability of natural gas in North America, which is central to making the transition to a lower-carbon economy both feasible and affordable across a range of GHG emissions reduction scenarios through to 2030. This includes developing and deploying next-generation technologies and services that can support district energy improve integrated energy resource planning and management at the local and regional level. This expansion will also include investing in opportunities for renewable natural gas (such as biogas for heating), local sequestration, power-to-gas systems that can help store surplus renewable energy, and combined heat and power systems that can help create a path to lower emissions from home heating and power requirements.
- *Taking and Supporting Climate Action:* As we discuss in this report, we are setting second generation, long-term targets for energy efficiency and GHG reduction, and are taking steps to more deeply integrate carbon sensitivities and climate risks into our business and investment decision-making processes. In the process we are significantly improving our internal capacity for forecasting GHG emissions levels and understanding the cost of regulatory compliance as an element in cost-effective reduction strategies. We also support broader climate action by governments in the jurisdictions in which we operate, including the establishment in Alberta of the world’s first “cap” on emissions from oil production. We believe that new incentives for the deployment of emerging technologies in Alberta’s oil sands have the potential to significantly reduce both life cycle investment thresholds and well as emissions intensity. In the case of emissions intensity, potential reductions are estimated to range from 35 up to 70 percent.

### *New Climate Policy and Regulation*

As demonstrated by the international agreement reached in Paris in December 2015 at the 21st Convention of the Parties (COP) to the UN Framework Convention on Climate Change (UNFCCC), governments around the world have agreed on the need to achieve GHG reduction targets by 2030 and 2050 that will limit any increase in average global temperature to less than two degrees Celsius. In Canada and the U.S., a variety of regulatory initiatives are under way at both sub-national and national levels. They include the introduction of emissions limits and reporting requirements; the introduction of carbon pricing and trading systems; the phase-out of coal-fired electricity; the establishment of new energy efficiency and conservation goals and standards; and the increased availability of incentives for investment in technologies that can accelerate emissions reductions and the transition to lower-carbon and renewable energy.

In Canada, the following developments were of particular note in 2016:

- The federal government announced a new Pan-Canadian Framework (PCF) on climate and energy policy, the purpose of which is to align federal and provincial policies to achieve Canada's goals for GHG reduction and energy development. The key components of the PCF include: a federal floor price on carbon; continued phase-out of coal-fired electricity; the establishment of methane reduction targets; and the development of a clean fuel standard.
- Implementation plans were finalized in Alberta's new economy-wide carbon levy on both the production and consumption of fossil fuels and Ontario's new cap and trade system. The levy (or carbon tax) in Alberta applies to GHG emissions from major industrial emitters as well as to the use of transportation and heating fuels. It is part of the provincial government's Climate Leadership Plan, which also includes a commitment to implementing a "cap" on emissions from oil sands production, phasing-out coal-fired electricity; and expanding the province's renewable energy sector.
- Ontario's cap and trade system is the second such system to be implemented in Canada, following Quebec's introduction of one in 2013. Enbridge Gas Distribution (EGD) is now required to acquire GHG emission permits, called "allowances," for its customer, emissions.

We have publicly supported the new carbon pricing policies being adopted by federal and provincial governments in Canada, and are actively engaged in ensuring that the implementation of new carbon and climate policies consider and address competitiveness impacts. *For more information on the economic impacts of new climate policy and regulation on our projects and operations, please see our 2016 MD&A.*

### *Severe Weather Events*

The most severe weather events that our operations have experienced to date are hurricanes along the Texas Gulf Coast, the Alberta and Toronto floods in 2013, and the forest fires that occurred in the summer of 2016 in northern Alberta.

As our systems are part of a broadly based logistics network that connects producers to consumers, all parties are aligned in their contingency planning to shut down in advance of severe storms, and resume operations and energy supply as a first priority following the storm event, thus limiting impacts. We include planning for extreme weather events in our operational response plans, and have installed on-site emergency generators at many of our operational facilities to provide power in the event of extended outages (during ice storms, for example). In addition, because we operate significant infrastructure in the Gulf of Mexico region (both onshore and offshore), and because there is a risk that these assets could be impacted by hurricanes, where possible, we have relocated our onshore assets to higher ground. *For more information, please see the Maintaining the Fitness of Enbridge's Systems & Detecting Leaks and the Climate Change, Emissions Reduction & Energy Efficiency sections of this report.*

### *Investor Due Diligence on Climate Risks*

A growing number of investors are assessing the risks associated with how companies are managing climate impacts and the transition to a lower-carbon future. Our Climate Policy helps drive the alignment between our corporate priorities to grow our existing businesses and develop new platforms for diversification, with our focus on ensuring a

safe and reliable energy supply, and our commitment to managing climate risks while responding to new climate-related opportunities.

In December, 2016, the Task Force on Climate-related Financial Disclosures (TCFD) released its recommendations regarding the inclusion of voluntary climate-related disclosures in mainstream corporate financial filings. Established by Bank of England Governor Mark Carney in his capacity as Chair of the G20's Financial Stability Board, the Task Force was led by former New York City Mayor Michael Bloomberg. Its recommendations are widely seen as an effort to build consensus on a standardized approach to measurement and reporting on the financial risks and implications of climate change.

For the past several years, we have filed an annual submission to the CDP (formerly known as the Carbon Disclosure Project). Our most recent submission achieved a score of "B." We are reviewing our current and planned reporting on climate risks and opportunities to ensure alignment with TCFD recommendations involving corporate systems for governance, strategy and risk management, as well as the use of scenario planning and metrics for tracking and accountability purposes.

#### *Technological Developments, Consumer Demand and Emerging Opportunities for Further Emissions Reduction*

We recognize that consumer demand for affordable lower-carbon energy and renewable energy is growing. While crude oil transportation accounted for a significant portion of our revenues in 2016, we have strategies in place to ensure that our business aligns with changing energy market fundamentals in both the short and long term.

To mitigate risk and capitalize on emerging technologies, we track technological developments, particularly those associated with safer and more efficient energy delivery, and with renewable and alternative energy generation. As we discuss in this report, we have made, and are making, significant investments in research and development and technological innovation in all of these areas. *For more information, please see the Renewable & Alternative Energy Investment and the Research, Development & Innovation sections of this report.*

### **Regulatory Review and Decision Making**

Some individuals and groups oppose our pipeline projects because of concerns regarding local and regional environmental risks and impacts in the event of a spill or release. Others oppose them because they do not believe that infrastructure that delivers fossil fuels is consistent with action on climate change. As we discuss in this report, we are executing a number of different strategies and initiatives to address these concerns, both at the operational level as well as at the policy and strategy level. In addition, we collaborate with industry associations, municipal governments, Indigenous governments and environmental organizations to share information about what we are doing to operate the safe and reliable pipelines that are needed now, as well as what we are doing to advance the transition to a lower-carbon future.

Opposition and concern about pipelines has also made regulators more aware of the need to improve public confidence in the regulatory decision-making processes involving energy projects, including new and existing pipeline infrastructure. As a result, they are changing the way they are regulating pipeline projects and operations.

In 2016, the Government of Canada announced a series of reviews of federal policy and regulation involved in the approval of major energy projects. The series included a review of federal environmental assessment processes and a modernization of the National Energy Board, the federal body that regulates major energy projects. The reviews, which began in 2016 and which will conclude in 2017, incorporate significant opportunities for public comment, input and engagement.

One of the suggestions that we—together with other companies and industry associations in the Canadian energy industry—put forward for discussion was that governments consider introducing a two-step approval process for major energy projects that would enable broader public policy issues to be contemplated in advance of more specific project-based issues. The first step in a project of this nature would assess overarching strategic issues—such as the need for new energy infrastructure, cumulative social and economic impacts at a regional and national level, and other issues related to whether or not a given project proposal is consistent with overall national policy frameworks on, for example, issues such as climate change and reconciliation with Indigenous peoples. Subject to the outcome of

this broad assessment, the second step in this process would focus on more project-specific and locally specific social, economic and environmental impacts, as well as on issues related to safety and to the distribution of benefits and risks.

### Sustainability Integration Case Study: Climate and Energy

Many of the local communities with which we engage have told us that if we want to build energy infrastructure for oil and gas in the short term we also need to be to demonstrate what we are doing to help address climate risks and challenges in the long term.

We believe that a lower-carbon future can support a sustainable, competitive business environment while creating new opportunities moving forward for Enbridge and other companies in the energy sector. As we discuss in this report, our recent combination with Spectra represents a significant shift in our business mix from a focus on liquids pipelines to a more equal balance between natural gas and liquids, along with a continuing focus on growing our renewables and power generation business. This balance enables us to leverage all of our company's assets—pipelines, wind turbines and natural gas processing plants—to support the transition to a lower-carbon economy, while keeping pace with the world's growing energy needs.

Here, as a brief case study, we summarize our current approach to integrating climate and energy considerations into our business:

<b>Factors Driving the Integration of Climate &amp; Energy Considerations into Enbridge's Business Strategy</b>	<ul style="list-style-type: none"> <li>• Global agreements on GHG reduction;</li> <li>• Technological development;</li> <li>• Supply and demand (shifting market fundamentals);</li> <li>• Finance and investment (shifting views of risk and opportunity);</li> <li>• Cost competitiveness (natural gas, renewables, other lower- and no-carbon options);</li> <li>• Government policies (coal retirement, renewable portfolio standards, GHG reduction targets);</li> <li>• Changing consumer and societal expectations; and</li> <li>• “Decoupling” of economic growth and GHG emissions growth in North America, Europe and Asia.</li> </ul>
<b>Integrating Climate &amp; Energy Considerations into Enbridge's Growth and Investment Strategies</b>	<p>Our business composition and investments reflect the importance of incumbent energy sources in delivering secure and affordable energy today, and the need to accelerate the deployment of lower- and no-carbon alternatives. As we determine our investments, we are navigating many of the issues that are reshaping the North American and global energy sector, including the changing dynamics in the relationship between energy systems for crude oil, natural gas and renewables.</p> <p><i>Liquids Infrastructure</i> - Our pipeline systems provide the means by which we transport a significant percentage of the crude oil and natural gas liquids that fuel North America. As such, we continually invest in ways to enhance their efficiency and reliability, and to reduce the carbon emissions from their operations. <i>For more information, please see the Maintaining the Fitness of Enbridge's Systems &amp; Detecting Leaks, and the Climate Change, Emissions Reduction &amp; Energy Efficiency sections of this report.</i></p> <p><i>Natural Gas Infrastructure</i> - In light of shifting business fundamentals, we have identified growth opportunities that extend and diversify our asset base. We capitalized on a major growth opportunity in early 2017 when we combined with Spectra Energy, a premier North American leader in natural gas infrastructure.</p> <p>Natural gas is considered to be a bridge fuel to a lower-carbon economy in that its combustion results in fewer GHG emissions than does the combustion of other hydrocarbons. As such, natural gas is a lower-carbon alternative to coal and other fuels for electricity generation. Natural gas can also be used to underpin the electricity provided by intermittent renewable sources, such as wind and solar. With our Spectra Energy combination, our asset base became almost equally</p>

	<p>weighted between natural gas-related assets and liquid hydrocarbons-related assets. This new weighting is enabling us to supply the energy that people need while we reduce our long-term climate-related risks.</p> <p>Because we recognize the importance of expanding our utility customers' use of natural gas, we are also exploring opportunities to invest in technologies and services that support locally distributed energy. And we are exploring opportunities to invest in "greening" natural gas through the use of renewable natural gas, power-to-gas systems that can help store surplus renewable energy, and combined heat and power systems that can help create a path to lower emissions.</p> <p><b>Renewable Energy Infrastructure</b> – Renewable energy is a key part of our long-term business strategy. It is an attractive platform for growth and diversification of our asset base that provides good returns with strong commercial underpinnings while advancing sustainable lower-carbon and no-carbon solutions to the energy mix. Since 2002, we have invested more than \$5 billion in renewable energy projects globally, and plan to double our 2015-level generating capacity by 2019.</p> <p>In the U.S., the continued growth of Renewable Portfolio Standards at the state level has created attractive investment opportunities for our Green Power &amp; Transmission business segment (GPT). These opportunities, in addition to various tax subsidies and incentives, have enabled us to invest in renewable energy projects in Texas and West Virginia, thereby capitalizing on the emerging lower-carbon economy and associated policy drivers. In Canada, similar mechanisms at the provincial level are advancing investment in renewable energy. <i>For more information, please see the Renewable &amp; Alternative Energy Investments section of this report.</i></p>
<b>Integrating Climate &amp; Energy Considerations into Enbridge's Performance Strategies</b>	<p>In 2015 and 2016, we updated our Climate Policy, which provides the framework for our response to the challenges and opportunities posed by climate change, and which guides our efforts to support the world's transition to lower-carbon energy. Our new Climate Policy reflects shifting stakeholder expectations, scientific evidence and emerging government policy.</p> <p>To chart our path through the transition to a lower-carbon economy, we are developing multi-year Carbon &amp; Energy Efficiency (CEE) plans for each of our business segments. These plans will include goals that are specific to each business segment's current and proposed operations and facilities, and will serve as the foundation for a second generation of emissions targets for Scope 1 (direct) and Scope 2 (indirect) GHG emissions. Our CEE plans will also include strategies for energy use and enhanced energy efficiency, and will support the achievement of regional and national climate goals. We will communicate our progress against these goals through our annual CSR &amp; Sustainability Reports.</p> <p>In addition, to ensure that our growth strategy is continually informed by the realities of climate change and that we have integrated climate risk into our corporate planning and investment decisions, we are developing a methodology to systematically apply an internal price on carbon on all major business spending decisions, and are identifying the potential impacts of carbon pricing on our operations, cost-competitiveness and compliance obligations in jurisdictions in which we operate.</p>
<b>Integrating Climate &amp; Energy Considerations into Enbridge's Engagement Strategies</b>	<p>We take into account the way we engage with our various stakeholders and Indigenous communities on climate and energy issues.</p> <p>As we transition to a lower-carbon economy, we know that the coexistence of energy infrastructure projects and communities must be predicated on strong relationships, and by projects that incorporate mutually agreed upon approaches to risk management, responsible climate action, inclusivity and the creation of shared value. Reconciling energy development with climate action requires new frameworks and partnerships that can advance better understanding of the interdependencies between energy systems. It also requires an improved ability on our part to frame our projects and operations within the context of energy system transition and the need to address climate-related risks.</p> <p>A key element in our engagement on climate and energy issues is our provision to our utilities</p>

	<p>customers of demand-side management programs that help them reduce their energy use and GHG emissions, and save money. <i>For more information, please see the Climate Change, Emissions Reduction &amp; Energy Efficiency section of this report.</i></p> <p>As the world transitions to a lower-carbon economy we also recognize that investors are increasingly concerned about how their investments will be affected by climate-related policies, social acceptance of energy infrastructure projects, and the impacts of climate change itself. Initiatives such as the Financial Stability Board's Task Force on Climate-related Financial Disclosures—which is developing voluntary, consistent climate-related financial risks disclosures for use by companies in providing information to investors, lenders, insurers and other stakeholders—is evidence of that concern.</p> <p>We are committed to reporting on our actions to address the risks and challenges associated with climate change and we do so in a variety of ways. We report on our carbon performance through our annual CSR &amp; Sustainability Reports, and through our submissions to CDP Carbon and the Dow Jones Sustainability Index. We also regularly engage with the investment community and other interested stakeholders to address their questions and obtain their input on our climate and energy strategies.</p> <p>Our future cooperation with voluntary disclosure (and other) initiatives aligns with our desire to be a leader on climate and energy issues. On that front, we regularly contribute to government policy development and support think tanks working on these issues. In 2016, we joined the World Bank Group's Carbon Pricing Leadership Coalition, which has brought together leaders from across government, the private sector and civil society to share experiences working with carbon pricing, and to expand the evidence base for the most effective carbon pricing systems and policies.</p>
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## RISK MANAGEMENT

### Enbridge's Risk Management Foundation

We build on our foundation of operating excellence by adhering to a strong set of core values that reflect what is important to us as a company: Integrity, Safety and Respect in support of our communities, the environment and each other. These values guide our decisions, actions and behaviors.

We recognize that if we fail to meet our safety and environmental protection goals, we won't be able to deliver on any of our other strategic priorities. For that reason, safety & environmental protection, together, is our number one priority, and public safety and environmental incidents are among our top risks. We also monitor other CSR and sustainability-related risks, including challenges associated with climate change, water, reputation and social licence to operate, changing regulatory frameworks, and relationships with Indigenous groups. *For more information, please see the Significant Sustainability Challenges & Opportunities section of this report.*

### How We Manage Risk

Our Board of Directors oversees all of our risks—both those that relate to CSR and sustainability and those that don't—with the ultimate goal of ensuring that we can achieve our long-term strategic priorities. Board Committees are responsible for overseeing specific risks categories.

Our Board's Audit, Finance & Risk Committee is responsible for reviewing specific risk categories under its oversight, including financial, commercial, strategic and legal risks.

Our Board's Safety & Reliability Committee oversees operational, environmental and safety risks, which include our risk and safety culture and risk management guidelines, our policies directed at preventing injury and adverse environmental impacts, and our guidelines, policies, procedures and practices regarding significant safety incidents.

Our Board's CSR Committee oversees our guidelines, policies, procedures and performance related to CSR, and reviews our reporting in this area. The CSR Committee is also responsible for oversight on CSR matters such as human rights, environmental stewardship, stakeholder engagement and inclusion, government relations and Indigenous relations, community investment and reputation. *For more information on our Board, please see Enbridge's 2017 Management Information Circular on Enbridge.com.*

Our Board's Human Resources & Compensation Committee oversees all risks pertaining to human resources.

With regard to policies, our Corporate Financial Risk Management Policy establishes principles and authority limits to ensure that the earnings and cash flows of Enbridge and our subsidiaries are not materially impacted by unmanaged financial risk. The oversight and implementation of this policy is conducted by a committee of senior management through the Corporate Financial Risk Management Committee. Our Chief Financial Officer chairs this committee and is the principal liaison with our Board and our Board's Audit, Finance & Risk Committee. The key responsibilities of the Corporate Financial Risk Management Committee are to:

- regularly monitor and review financial risks to ensure compliance with consolidated policies approved by the Board;
- regularly review the Corporate Financial Risk Management Policy and develop additions or amendments as required for consideration by the Board;
- allocate market price risk and oversee credit risk limits to our business segments;
- conduct monthly monitoring and review to ensure that our business segments complies with their respective Business Segment Risk Management Policies;

- review and approve amendments to market price risk limits and delegated authority limits within existing Business Segment Risk Management Policies;
- review amendments to the approved mandate and business strategies within existing Business Segment Risk Management Policies;
- review and approve new Business Segment Risk Management Policies and new strategies, where a formal policy may not exist, to ensure compliance with the Corporate Financial Risk Management Policy; and
- assess the impact of proposed new businesses or corporate acquisitions on consolidated financial risk.

Our Executive Leadership Team (ELT) and our Operations and Integrity (OIC) Committee are responsible for overseeing the management of our most significant operational risks—a job that includes overseeing programs for pipeline integrity management, leak detection and control systems, damage avoidance and detection, occupational safety, public safety and environmental protection, and incident response. Risk owners and specialists throughout our company are responsible for managing risks within their respective areas.

Overall, risk management is guided by our Enterprise Risk Management Framework—which our Board's Audit, Finance & Risk Committee is responsible for reviewing—and our Safety Management System Framework, which are supported by Joint Business Unit Councils for Integrity, Crisis & Emergency Response, Process Safety, Safety, and Enterprise Risk.

In addition, each year, we present to our Board a Corporate Risk Assessment (CRA), in which we assess the risks related to our businesses, highlighting top risks and notable changes in their risk profile. The CRA's objective is to protect Enbridge through the assessment and prioritization of our major risks, including our treatment efforts and corresponding resource allocations.

Where possible, we use quantitative methods to assess our risks and to monitor the effects of our risk treatments. For example, we use leading and lagging metrics to assess the effectiveness of treatments pertaining to safety, the maintenance of the fitness of our systems and leak detection. To assess our financial risk treatment, we use metrics such as earnings-at-risk to give us insights into our market risk exposures and into the effectiveness of our derivative hedging activities. We also conduct correlation analyses on our market price risks, including interest rates, foreign exchange and commodities prices, to ensure that we fully understand the interrelationships between these risks.

### **Enbridge's Risk and Safety Culture**

It is fundamentally important for us to have a strong risk and safety culture—which we define as shared attitudes, values, norms, beliefs and practices with respect to risk, risk management and safety—that aligns with our core values. As such, as part of our performance management system, we include risk management criteria that address not only *that* something was achieved, but also *how* it was achieved. We also use scorecards that focus on metrics such as safety, environmental protection and employee development. And our incentive programs include metrics for total recordable injury frequency, safety observations, incident investigations, and health & safety training.

In addition, we provide training on risk and safety topics such as hazard management, life-saving rules, incident prevention and emergency preparedness and response.

And we empower leaders to act quickly to enhance or modify any infrastructure, systems, or processes that pose safety violations; to champion the creation of best-in-class health and safety programs; to define and coach disciplined safety leadership behaviors, and; to recognize and clearly communicate the impact of health and safety issues on the business, its employees, profitability and reputation.



We are aligning our risk and safety culture with Canada's National Energy Board (NEB) Statement on Safety Culture, which affirms that a strong risk and safety culture is one in which:

- leaders demonstrate that safety is their overriding value and priority;
- everyone is aware of known hazards while remaining vigilant to new threats;
- every employee feels empowered and recognized for making safe decisions;
- employees feel encouraged to report safety hazards, including instances where they; have committed an error and introduced a threat themselves;
- everyone, including the most junior employees, would not hesitate to take action in response to a safety concern without fear of disciplinary action or reprisal;
- people work safely regardless of whether or not someone is watching; and
- the organization is continually learning from its own and others' experiences with the goal of advancing safety.

We also regularly assess our risk and safety culture through employee surveys and other methods such that we can quickly identify and address strengths and weaknesses.

## BUSINESS CONDUCT, FINES & VIOLATIONS

### Overview

Our intent is to always comply with all legal and regulatory requirements, including those pertaining to employment practices and business conduct. We take steps to ensure that our employees conduct themselves ethically in all business dealings. And we are committed to preventing all forms of corruption within the scope of our business and operations.

We have an Ethics & Compliance Program that guides us in our efforts to maintain ethical business practices and high standards of employee behavior. The initiatives under the program help us maintain good corporate citizenship and prevent violations.

### Ethics & Compliance Program

Our Ethics & Compliance Program is designed to minimize, to the extent possible, incidences of non-compliance and to ensure that our employees and contractors conduct their work ethically, legally and responsibly. It is also intended to minimize the effect of unethical behaviour on our corporate reputation, operations and financial performance; provide internal consistency in the application of compliance and ethical standards; and demonstrate our commitment to corporate responsibility. The program establishes the accountabilities and responsibilities for our personnel, and addresses issues of internal investigations, audits, self-reporting and discipline. As part of the program, we routinely monitor compliance and take steps to improve our compliance and ethics culture through adherence to established policies, practices and procedures. The program consists of the following policies and procedures:

#### *Compliance Policy*

Through our Compliance Policy, we provide a comprehensive system of compliance stewardship and accountability in all of our day-to-day operations. The policy outlines the structure for our Ethics & Compliance Program in accordance with the seven elements of an effective ethics and compliance program as outlined by the U.S. Sentencing Commission's Federal Sentencing Guidelines.

#### *Enbridge Statement on Business Conduct*

In 2016, we introduced a new, comprehensive Statement on Business Conduct. The new version provides greater direction and clearer expectations regarding ethical and compliant conduct; includes guidance on how to avoid conflicts of interest; and offers examples of acceptable forms of gifts and entertainment. It also includes new sections on anti-corruption, money laundering, records management, data privacy, substance abuse and the responsible use of social media. Our Statement on Business Conduct consists of the following elements:

*Human Rights* - Our new Statement on Business Conduct contains provisions that support the protection of human rights and freedoms within our sphere of influence. Our values guide our actions for respecting human rights and for maintaining our reputation as an ethical and responsible employer, business partner and corporate citizen. *For more information, please see the Employee Relations section of this report.*

*Addressing Corruption* – Our Statement on Business Conduct highlights our commitment to preventing all forms of corruption, including bribery and kickbacks. It is never permissible for anyone who works for Enbridge to offer or accept payments, inappropriate gifts or anything of value that could be seen as influencing a business decision. We take steps to ensure that all interactions with public officials (including interactions involving third parties or agents acting on Enbridge's behalf) comply with applicable laws prohibiting bribery and corruption wherever we conduct business. Additionally, we provide online anti-corruption training to employees and provisioned contractors whose roles, responsibilities or geographic focus may directly or indirectly involve corruption or bribery-related risks.

*Addressing the Risk of Fraud* – Under our Statement on Business Conduct and as part of our continuing effort to eliminate opportunities for fraud (including online fraud), we regularly deliver fraud awareness training to employees and provisioned contractors in Canada and the U.S.

*Anti-Competition Prevention* - Our Statement on Business Conduct requires all employees to comply with all applicable competition and anti-trust legislation. Behavior that is prohibited under such legislation includes agreements with competitors to allocate markets or customers, fix prices or production or rig bids.

*Compliance Investigations and Reports* - Our Ethics & Compliance department coordinates investigations into significant compliance matters, whether they arise directly from employees, as a result of incidents, in reports received from the Ethics & Conduct Hotline, or under our Whistle Blower Policy. Depending on the nature of the matter in question, our Vice President & Chief Compliance Officer may report significant events related to non-compliance, auditing matters or general ethics issues either to the Audit, Finance & Risk Committee or to the Safety & Reliability Committee of our Board of Directors.

We engage employees who possess expertise in the area of audits and investigations to assist our Ethics & Compliance Department with investigations into significant non-compliance issues. If necessary, we retain third-party experts to assist with these investigations.

*Non-Retaliation* - We are committed to the principle that no retaliatory action may be taken against anyone who raises non-compliance issues in good faith. Our adherence to this non-retaliation principle is a key component of a strong culture of compliance, and ensures that employees, provisioned contractors and the public can be confident that we will fairly and impartially review and address all issues.

#### *Whistle Blower Policy*

We introduced our Whistle Blower Policy a number of years ago to protect the integrity of our accounting, auditing and financial control processes. Under the policy, employees and outside parties can confidentially report concerns about financial or accounting irregularities or unethical conduct to the chair of the Audit, Finance & Risk Committee of our Board of Directors. Anyone may submit a concern anonymously, and we deliver all submissions in a sealed envelope marked “private and strictly confidential” to the committee chair. Complaints can also be made anonymously through our Ethics and Conduct Hotline.

#### *Enbridge Ethics and Conduct Hotline*

We maintain an Ethics and Conduct Hotline that anyone can use at any time to raise issues through a third-party service provider that provides similar services to other major North American companies. The service provider delivers each hotline report directly to our vice president & chief compliance officer, and to our Ethics & Compliance officers in Canada and the U.S. We investigate all reports to the extent possible to address and resolve the issues raised, which range from human resources complaints to concerns about safety and customers. Individuals who use the hotline may choose to identify themselves or remain anonymous.

In 2016, we received 109 new hotline reports: 55 related to human resources issues, 13 related to safety issues, 9 related to financial concerns, 14 related to allegations of misappropriation or misuse of assets, 5 related to policy and process integrity, and 13 related to customer concerns. We investigated each of the reports and appropriately addressed all confirmed incidents of non-compliance with our policy or with the law.

#### *Enbridge Gas Distribution Office of the Ombudsman*

Enbridge Gas Distribution (EGD), which is one of the affiliates under our Gas Distribution business segment (GD), maintains an Office of the Ombudsman as part of its formal complaint-escalation process to resolve customer complaints that its call center or Claims Department are unable to resolve.

In 2016, EGD’s Office of the Ombudsman responded to nearly 7,900 complaints (0.3 percent of all customer inquiries), the majority of which pertained to billing and collections (about 5,600), or to Open Bill (about 975), through which third-party companies use EGD’s bill to invoice for their own goods or services. With few exceptions, the Office

of the Ombudsman was able to resolve the issues to customers' satisfaction. *For more information, please see the Customer Relations section of this report.*

#### *Tone at the Top*

The oversight of our Ethics & Compliance Program is a shared responsibility of the Audit, Finance & Risk Committee of our Board of Directors, our Executive Leadership Team (ELT) and our Chief Compliance Officer. Our Chief Compliance Officer is responsible for Enbridge-wide oversight of our overall state of compliance and for enhancing our culture of ethics and integrity. At least once per year, our President & Chief Executive Officer communicates to all of our employees and provisioned contractors about the importance of ethical behavior. The message is contained in an on-line training program regarding our Statement on Business Conduct.

#### *Internal Audit*

Our Internal Audit department helps us accomplish our objectives by bringing a systematic and disciplined approach to evaluating and improving the effectiveness of our governance and risk management processes and internal controls. Internal Audit is responsible for evaluating the efficiency and effectiveness of our operations; how we safeguard our assets; our risk management procedures; and our internal controls framework. Internal Audit is also responsible for evaluating the efficiency and effectiveness of our compliance with laws, regulations, policies, procedures and contracts.

#### *Training*

As a condition of employment, all new employees and provisioned contractors are required to complete a course on our Statement on Business Conduct. Subsequently, all employees and provisioned contractors are required to complete Statement on Business Conduct training each year. The online training program requires all employees and provisioned contractors to certify their compliance with our Statement on Business Conduct during the previous calendar year.

In 2016, Ethics & Compliance Department personnel provided dozens of in-person training sessions and presentations on compliance-related issues—including anti-corruption and bribery, antitrust issues and prevention of privacy breaches, so as to prevent all incidents of these issues—to hundreds of employees and provisioned contractors.

### **Prevention of Privacy Breaches**

In 2016, an EGD customer raised a concern over the MyEnbridge online portal and myenbridgegas.com website. The customer learned that, if a MyEnbridge or myenbridgegas.com user had access to account information from the utility bill of any third-party customer, that user could access that customer's date of birth. EGD subsequently removed all customers' ability to view account information such as the date of birth. There was no known loss of customer information or data.

### **Incidents of Corruption and Bribery, Antitrust Breaches and Incidents of Human Rights Abuses and Discrimination**

Our intention is to prevent all breaches against our Statement on Business Conduct, including breaches pertaining to anti-corruption, bribery, anti-trust and human rights (including discrimination on the basis of any grounds).

We are not aware of any incidents of corruption during 2016. We are not aware of any ruling or decision of a court, administrative tribunal or quasi-judicial authority in 2016 that contained a finding that we engaged in any breaches of antitrust laws. We are not aware of any ruling or decision of a court, administrative tribunal or quasi-judicial authority in 2015 or in 2016 that contained a finding that we discriminated against anyone.

## Fines, Penalties & Violations

Our intention is to work according to all external regulations and laws to prevent fines, penalties and violations (monetary and non-monetary).

Beginning in our *2016 CSR & Sustainability Report*, we are reporting all of our fines, penalties and violations (monetary and non-monetary) in excess of CAN\$10,000 and US\$10,000 (depending on the country in which they occurred). As 2016 is the first year for which we are using a \$10,000 threshold, we are not able to compare our 2016 performance with our performance in 2015, for which we used \$50,000 as our threshold, or 2014, for which we had not yet determined a threshold. Unless we have noted otherwise, the fines, penalties and violations (monetary and non-monetary) that we report in this section were paid and recorded during the 2016 financial year. They did not necessarily take place during the 2016 financial year. The fines that are reported in this section are drawn from our internal legal and compliance records and may not account for monetary and non-monetary sanctions that have not been included in those records.

In 2016, we remitted the following fines, penalties and violations (monetary and non-monetary) in Canada and the U.S.:

Canada	<p>We paid fines in respect of two Administrative Monetary Penalties (AMPs) issued by the National Energy Board (NEB). The fines were associated with the activities on our Canadian Liquids Pipelines system. These AMPs were reduced in response to our applications for review (one of the AMPs was reduced from \$52,000 to \$28,000 and the other one was reduced from \$100,000 to \$76,000). Both of these AMPs were based upon alleged violations of applicable environmental guidelines or construction plans. We received the NEB's decisions to reduce these AMPs during the first quarter of 2016. We reported them in our <i>2015 CSR &amp; Sustainability Report</i>.</p> <p>In 2016, the Canada Revenue Agency assessed late penalties in amounts totaling \$150,000, due to our failure to withhold and remit non-resident withholding tax in connection with payments made to a U.S.-based consulting company in 2014 and 2015. We have recovered the tax amounts and the amount of the assessed penalty from the consulting company, resulting in no financial impact.</p> <p>In 2016, an Enbridge affiliated-entity, Tidal Energy Marketing Inc., received a request from U.S. Customs and Border Protection (CBP) to undertake a review of its natural gas and crude oil transactional data. Tidal Energy Marketing Inc. discovered errors and discrepancies that it disclosed to CBP, and that resulted in the remittance of US\$5,428,806.78 in additional duties, taxes and fees.</p>
U.S.	<p>Similar to the above-noted event concerning Tidal Energy Marketing Inc., CBP also requested Tidal Marketing US, LLC. to undertake a review of its natural gas and crude oil transactional data. Tidal Marketing U.S. also discovered errors and discrepancies that it disclosed to CBP and that resulted in the remittance of US\$1,809,034.96 in additional duties, taxes and fees.</p>

In addition, in 2016, a settlement agreement, called a Consent Decree, was filed with the U.S. District Court for the Western District of Michigan Southern Division. The Consent Decree was our signed settlement agreement with the U.S. Environmental Protection Agency and the U.S. Department of Justice regarding our Line 6B crude oil spill near Marshall, Michigan, and our Line 6A crude oil spill in Romeoville, Illinois. Pursuant to the Consent Decree, we will pay US\$62 million in civil penalties, which includes US\$61 million in respect of Line 6B and US\$1 million in respect of Line 6A. The Consent Decree will take effect upon approval by the court.

In 2016, the above fines, penalties and violations (excluding the amounts associated with the Consent Decree, as we have not yet paid those amounts) totaled \$7,341,841.74 in nominal dollars (Canadian and U.S. dollar totals for 2016 added together. We derived this amount by adding CAN\$28,000 + CAN\$76,000 + CAN\$5,428,806.78 + US\$1,809,034.96 to get the \$7,341,841.74 total, which includes Canadian and U.S. dollars). This amount represents about 0.17 percent of our total 2016 operating and administration costs, which were about \$4,360 million.

## GOVERNMENT RELATIONS & LOBBYING

We support democratic and regulatory processes in the jurisdictions in which we conduct business. We do so in accordance with the letter and spirit of all applicable laws of the countries in which we operate. As such, all of our activities pertaining to government relations and lobbying comply with the country, provincial and state laws governing these activities, as well as with our Statement on Business Conduct.

### Governance

The CSR Committee of our Board of Directors provides oversight on our performance with respect to CSR and sustainability matters throughout the enterprise. Their oversight includes receiving quarterly updates from management on activities involving government relations, including lobbying. When appropriate, management also discusses lobbying activities with our Board as part of its oversight responsibilities. In addition, management provides regular updates on lobbying activities to the president of the applicable business segment or to our President & Chief Executive Officer. *For more information, please see our 2017 Management Information Circular, which is available on Enbridge.com.*

### Policy Regarding Political Contributions and Personal Political Participation

Our Statement on Business Conduct applies to Enbridge Inc., each of its subsidiaries and controlled entities, and their respective directors, officers, employees, consultants and contractors in all countries in which we conduct business. The Statement on Business Conduct governs all of our political contributions and provides that “no funds or assets of Enbridge shall be contributed to any political party or organization, or any candidate for public office, except where such contribution is permitted by applicable law and authorized by senior management or the Board of Directors.” In addition, it provides that no employee shall, directly or indirectly, exert influence on another employee to support any political cause, party or candidate.

### Corporate Political Contributions

In 2016, we contributed approximately \$77,300 to provincial political parties in Canada. We did not contribute to federal political parties or politicians in Canada. In Canada, the Federal Accountability Act prohibits corporate political donations at the federal level. Laws governing corporate political donations to provincial entities vary by province, and we strictly adhere to them.

In 2016, we did not make any contributions to political parties, politicians or related institutions in the U.S.

### Lobbying

We participate in the political process to help inform the development of public policies or regulatory processes that are important to our specific projects and business objectives. For example, in 2016, the Government of Canada announced a series of reviews of federal policy and regulations involved in the approval of major energy projects. We provided input both as an individual company and as a member of the Canadian Energy Pipeline Association. *For more information, please see the Significant Sustainability Challenges & Opportunities section of this report.*

As required by law, we file lobbying reports with the Canadian government, the U.S. Congress, and state, provincial and municipal agencies on a regular basis, disclosing information about lobbying activities, including the issues lobbied and agencies contacted.

### Trade Associations

Our primary purpose in joining trade and industry associations is not political. We benefit from, and contribute to, the general business, technical and industry standard-setting expertise that these associations provide. Safety and operational reliability, together, remain our number one priority, and therefore we invest significant time and efforts around safety- and reliability-related issues. We are also committed to supporting the development of responsible public policy in the pipeline industry, and we work with the various trade and industry associations to which we belong on a variety of public policy issues that may impact our business. In doing so, we express our own corporate objectives when policy priorities are established and we do not always agree with all positions taken by these associations.

In 2016, we contributed \$50,000 or more in membership dues to the following organizations in Canada:

- Canada 2020,
- Canada West Foundation,
- Canadian Chamber of Commerce,
- Ontario Energy Association,
- Canadian Gas Association,
- Canadian Energy Pipeline Association, and
- Canadian Association of Petroleum Producers.

In 2016, we also contributed US\$50,000 or more in membership dues to the following organizations in the U.S.:

- American Gas Association,
- American Petroleum Institute,
- Association of Oil Pipe Lines,
- Gas Processors Association,
- Interstate Natural Gas Association of America, and
- Pipeline Research Council International.

Each year, we consider our membership in these associations as part of our annual strategic planning and budgeting process.

# SUSTAINABILITY-RELATED TOPICS OF IMPORTANCE: PRIORITY AREAS

As we explain in the CSR & Sustainability at Enbridge section of this report, we have determined that the three priority areas that are the subject of our current strategic focus are:

- Safety & Environmental Protection, which includes:
  - Occupational Health & Safety,
  - Maintaining the Fitness of Enbridge's Systems & Detecting Leaks, and
  - Emergency Preparedness & Response.
- Stakeholder & Indigenous Inclusion, which includes:
  - Stakeholder Engagement, and
  - Indigenous Engagement.
- Climate & Energy Solutions, which include:
  - Climate Change, Emissions Reduction & Energy Efficiency, and
  - Renewable & Alternative Energy Investments.

The sections that follow provide an overview of our management approach to these areas, and outline our 2016 performance objectives and performance against them.



## 1.1 OCCUPATIONAL HEALTH & SAFETY

### KEY FACTS

Tragically, **two members of our team—contractors working on projects on our behalf—were fatally injured on the job** in separate incidents.

Our rates of 0.55 **recordable injuries** per 200,000 employee hours worked and 0.05 **lost-days injuries** per 200,000 employee hours worked **were the lowest they have been** since we began tracking them.

Our employees spent about **99,345 hours** in 2016 **building their safety knowledge and skills**.

**We developed our draft Enterprise Framework for Contractor Safety Management** to help each of our business segments establish and define its own standard for contractor safety management.

### OVERVIEW & PERFORMANCE OBJECTIVES

Our number one priority is safety—of the public and the communities where we live and work, of our team members across North America, and of the environment. We are continuously striving to improve our safety performance so that we can transport, generate and deliver the energy we all count on as safely as possible.

We have one performance objective for Occupational Health & Safety:

- To ensure safe workplaces and experience zero health or safety incidents.

*Please see 2016 Performance for an overview of our performance against this objective.*

### MANAGEMENT APPROACH

We have established comprehensive and systematic policies and programs across our company to continually enhance the safety of our workforce. Our approach includes a series of Enbridge-wide guiding strategies, policies and systems that are supported by programs and initiatives, some of which we describe below.

#### Occupational Health & Safety Improvement Strategy

We are committed to ensuring that we are leaders in safety. Following our oil spill in 2010 in Marshall, Michigan, we recognized our need to improve our safe work practices and our underlying risk and safety culture. As a priority, we identified six key operational risk areas—Integrity Management; Damage Avoidance and Detection; Leak Detection Capability and Control Systems; Emergency Preparedness; Occupational Safety; and Process Safety—and undertook significant action across our businesses to reduce risks and achieve industry leadership in all six areas.

Over the last six years, through our actions, our safety and environmental protection performance is now at or near industry leading. In 2016, an external assessment confirmed that we are continuing to make significant progress in

identifying and mitigating our significant and material risks. The assessment also provided an opportunity for us to compare our risk management practices to that of others in our industry and to world leaders.

The assessment's findings and recommendations will support the transformation of our risk and safety culture as we strive to achieve industry-leading performance in safety and operational reliability. We recognize that our pursuit of industry best performance is underpinned by behavioral change across Enbridge, and know that change will occur over the long term. We also know that the change will require systems to sustain it, and a continuous leadership presence to drive it forward.

Our most recent five-year strategic plan, which we launched in October 2015, continues to emphasize the importance of safety, operational reliability and the advancement of our risk and safety culture, which will ultimately enable our vision of energy leadership. It focuses on mitigating incidents due to human factors, creating an enterprise risk framework, and improving process safety management. *For more information, please see the Risk Management section of this report.*

### **Safety Management System Framework**

Our Safety Management System Framework provides all of our business segments with common guidance and structure to ensure that our efforts to deliver industry-leading safety and reliability performance are thoroughly and expertly planned, executed, monitored and continuously improved upon using a shared approach.

While each of our business segments has unique operations, the framework establishes the minimum standards and components to which each business segment must adhere. It comprises the following nine elements, which are based on best practices in safety management, and existing and emerging regulatory requirements:

- Leadership Commitment & Accountability;
- Management Review, Safety Assurance, Stakeholder Engagement & Continuous Improvement;
- Risk Management;
- Operational Control;
- Management of Change;
- Incident Management & Investigation;
- Emergency Preparedness & Response;
- Competency, Awareness & Training; and
- Documentation & Recordkeeping.

The framework employs the Plan-Do-Check-Act cycle, which is a methodical approach to managing complex systems that encourages the creation of effective plans and a built-in program of continuous improvement. It also directly aligns with the Integrated Management Systems and Environmental Management Systems that our major business segments—Liquids Pipelines (LP), Gas Pipelines & Processing (GPP) and Enbridge Gas Distribution (EGD), which is one of the affiliates under our Gas Distribution business segment (GD)—have implemented. These management systems set out the governance systems that enable us to meet or exceed regulatory requirements, understand and manage our operational risks, and manage our performance. *For more information, please see the Environmental Management Systems section of this report.*

### **Leadership Commitment**

The first element of our Safety Management System Framework is strong formal leadership.

Leaders are responsible for developing and supporting improved safety performance and a positive risk and safety culture. This responsibility includes establishing, resourcing and executing against a strong set of safety principles to meet ambitious and meaningful safety and reliability objectives. Leaders must also continually assess the implementation and maturity of each of the elements in the Safety Management System. As well, leaders must demonstrate their focus and support for safety and operational reliability through effective and active performance management of their teams, including incentives for strong safety performance that improves over time.



While leaders have specific and defined accountabilities related to safety and operational reliability, all members of the Enbridge team, including contractors, must demonstrate and exercise safety leadership.

### **Health & Safety Principles**

Our Health & Safety Principles complement our core values of Integrity, Safety and Respect by guiding our actions, policies, procedures and culture.

The principles are fundamental beliefs and expectations as we drive toward 100 percent safety. They help create a culture in which safety is everyone's responsibility, leadership is accountable for safety performance, continuous improvement is required, hazards are controlled and our commitment to caring extends beyond the workday. They are:

- All injuries, incidents, and occupational illnesses can be prevented.
- All operating exposures can be controlled.
- Management is accountable for safety performance.
- All employees and contractors are responsible for safety.
- Assessment and improvement are a must.
- We promote off-the-job health and safety for our employees 24/7.

### **Lifesaving Rules**

The Health & Safety Principles complement our six Lifesaving Rules, which are:

- Hazard Management: Always ensure an analysis of potential hazards has been completed and proper authorization received prior to starting the work.
- Driving Safety: Only drive a vehicle or operate equipment when not under the effect of alcohol or any substances that cause impairment.
- Confined Space Entry: Always follow procedures for confined space entry.
- Ground Disturbance: Always follow procedures for locating, positively identifying and excavating buried facilities.
- Isolation of Energized Systems: Always follow procedures for Lockout / Tag-out.
- Reporting of Safety-Related Incidents: Always report significant safety-related incidents.

Where the Health & Safety Principles outline how we *think* about health and safety at Enbridge, and define our philosophy and approach, the Lifesaving Rules define specific actions and behaviors that all Enbridge employees and contractors are obliged to follow. The rules are concrete and absolute, and are backed up by detailed policies and procedures.

### **Contractor Safety Management**

We are committed to protecting the health and safety of all individuals affected by our activities, including our contractors. We consider our contractors and sub-contractors to be our partners in safety and expect them to view safety the way we do. In 2017, we will implement our first *Enterprise Framework for Contractor Safety Management* to help each of our business segments establish and define its own standard for contractor safety management. We expect contractors to be managed throughout the working relationship to ensure that the risks associated with their work are mitigated effectively. In addition, we already have a wide range of ongoing contractor safety processes and programs in place to help us achieve our goal of industry-leading safety performance.

### **Occupational Health and Safety Programs**

As outlined above, we have comprehensive policies, practices, systems and controls in place to protect employees, contractors and sub-contractors. We take a proactive approach to identifying and preventing safety issues, take immediate action when an issue is identified, and continually look for ways to improve our safety performance.

For us, strong safety performance requires a multi-layered management approach to promote and support individual and team contributions.

At an individual level, every employee is required to set safety objectives worth at least 10 percent of his or her total annual individual performance evaluation. These objectives are reviewed and approved by the employee's People Leader, and achievement of the objectives is tracked in our performance management system.

In addition, senior management annually sets detailed safety performance metrics at the business-segment level. These metrics help us to focus on key performance factors related to safety and operational reliability. These metrics are incorporated into our business segment scorecards and account for a minimum of 35 percent of the business-segment performance bonus available to employees. The weighting of these business segment safety objectives increases for leaders, senior leaders and executives, such that we effectively reinforce safety and operational reliability as our number one priority and reward strong safety performance.

## 2016 PERFORMANCE

**PERFORMANCE OBJECTIVE A:** To ensure safe workplaces and experience zero health or safety incidents.

### ENBRIDGE'S PERFORMANCE:

#### Fatalities

We did not achieve a perfect safety record in 2016. Tragically, two members of our team—contractors working on projects on our behalf—were fatally injured on the job in separate incidents. On October 12, a contractor working on an Enbridge Gas Distribution (EGD) job site in Toronto, Ontario, was struck by a vehicle being pursued by police and was fatally injured. On October 14, a contractor working at our Chapman Ranch Wind Project near Corpus Christi, Texas, sustained severe injuries while unloading equipment from a trailer. It is unclear exactly what occurred during the unloading process, but somehow he from the trailer deck and steel bracing landed on him, pinning him to the ground. Sadly, he succumbed to his injuries on October 16.

#### Injuries

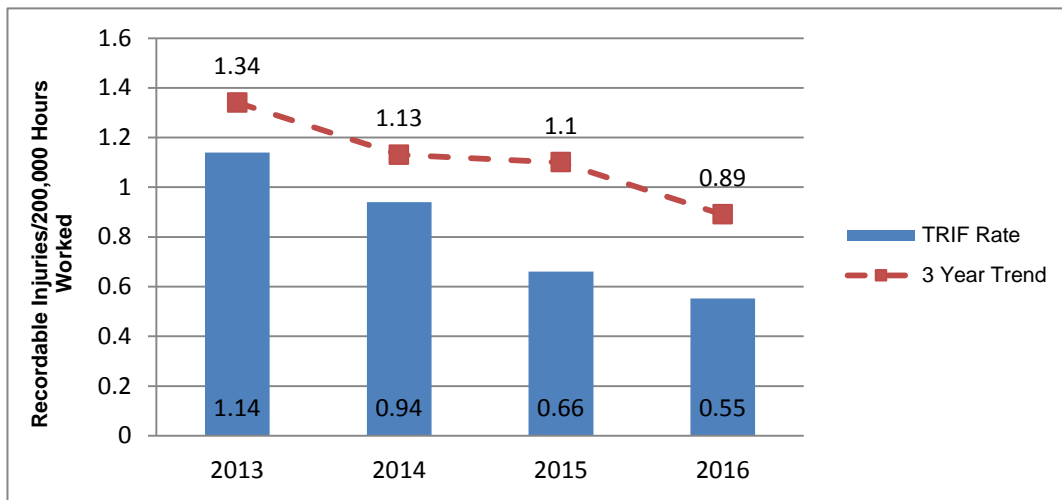
In addition to these two tragic incidents, our health and safety performance in 2016 included the following metrics:

- 44 recordable employee injuries (compared with 60 in 2015 and 77 in 2014);
- 0.55 recordable injuries per 200,000 employee hours worked (compared with 0.66 in 2015 and 0.94 in 2014, and representing an improvement to our three-year average of 0.71); and
- 0.05 days away injuries per 200,000 employee hours worked (compared with 0.12 in 2015 and 0.11 in 2014, and representing an improvement to our three-year average of 0.09).

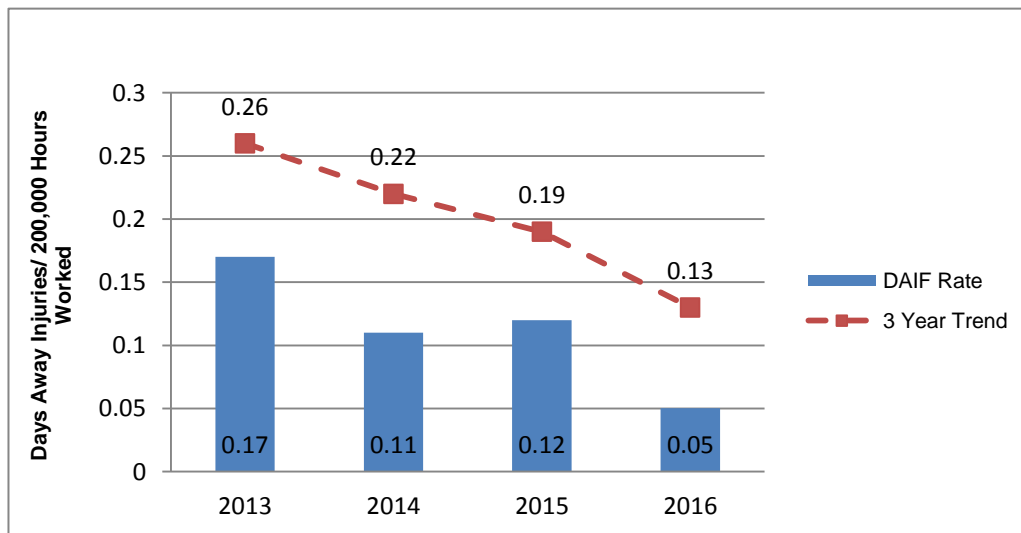
In 2016, our employees worked more than 15.9 million hours, while, in 2015 they worked more than 18 million hours, and, in 2014, they worked about 16.4 million hours. While our 0.55 recordable injuries per 200,000 employee hours worked and 0.05 lost-days injuries per 200,000 employee hours worked rates did not equal zero, they were the lowest that they have been since we began tracking them.

We report all incidents (whether regulators consider them to be reportable or not) to regulators, as well as to our Health & Safety department for tracking, trending and communication regarding lessons learned. In addition, every quarter, we analyze the nature of any injuries that took place, as well as the type and root cause of the incidents that led to the injuries. Our analysis leads us to take specific actions to mitigate workplace risks and improve our safety performance.

### Enbridge-Wide Total Recordable Injury Frequency (Employees), Three-Year Average Trend, 2014 – 2016



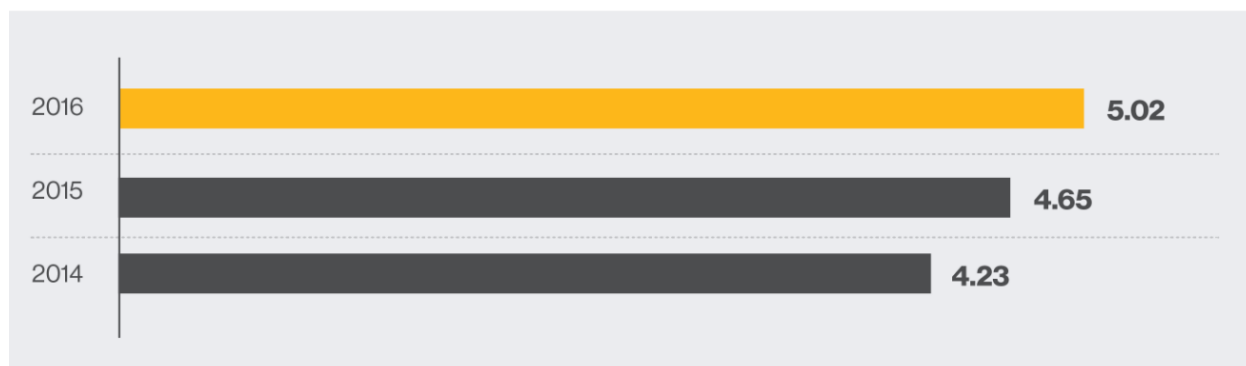
### Enbridge-Wide Days Away Injury Frequency (Employees), Three-Year Average Trend, 2014 – 2016



### Absenteeism

Our absentee rate in 2016 was 5.02 days absent per employee, compared with 4.65 days in 2015 and 4.23 days in 2014. We use the “average number of days absent per employee” metric because we do not track scheduled hours in our Human Resources system.

### Average Number of Days Absent per Employee, 2014 – 2016



### Strengthening Enbridge's Safety Culture

In 2016, we continued to take multiple steps to strengthen our safety culture. In early 2016, more than 9,000 members of our team took the time to share their input and feedback on our safety culture through our Enbridge-wide safety culture perception survey, administered by DuPont. The survey results showed that our overall score, which reflects our team's survey answers as well as our safety performance as measured by our TRIF rate, had increased by five points since the 2013 survey, and showed a 13-point improvement from our baseline results in 2011. Today, we have a relative culture strength score of 74, which is just a few points shy of the threshold of 80 points that DuPont identifies as world class. Based on the survey findings, we are developing corporate and business segment-specific action plans that will build on the strengths and address areas for improvement. In addition, we are now moving from assessments based largely on perception surveys to a comprehensive, multi-method approach that looks at behaviors and safety system artefacts, in addition to safety perceptions. Our new multi-method assessment approach will allow us to gain insight and understanding from the extensive assessment and analysis already performed under our safety management systems.

#### *Developing a Safety Culture Framework*

We operate in multiple jurisdictions and belong to several industry associations with disparate views regarding what constitutes a healthy safety culture. This situation represents a challenge for us as we consider how to develop a consistent safety culture across Enbridge. To address it, in 2016, we began creating our own safety culture based on research into our own lengthy operating experience. While our work in this area is still underway, it will result in the Enbridge Safety Culture Framework (ESCF), which will describe the organizational traits and attributes that define our own safety culture, and that reflect our own goals for excellence in the areas of occupational health and safety and operational reliability.

#### *Addressing Human Factors*

Since 2014, we have been focusing on human factors, which encompass the way people interact with one another, systems and their environment, and how our human nature can lead to unsafe decisions and actions even when we think we are being safe. We are working to maintain awareness and understanding of human factors within Enbridge, and within our industry through several initiatives.

One of these initiatives was that we developed advanced training to help our own investigators learn from incidents, improve operational safety, and better integrate human factors, engineering and organizational factors. The training will result in more consistent investigations across Enbridge.

And, in 2016, our Liquids Pipelines business segment (LP) and Major Projects group jointly produced four "Virtual Tailgate Talk" podcasts on human factors. The podcasts, which on average engaged over 200 listeners on a specific topic for about one hour, introduced each human factor (e.g. seasonal awareness, fatigue, young worker and hazard

control) with corresponding examples from Enbridge, as well as historical examples from outside our company. We also developed Tool Box Talks and posted them on our internal website to allow for broad access to the information.

### *Promoting Driving Safety*

Because driving is one of the most significant and pervasive hazards our team faces every day, both on and off the job, and because it has the potential to affect all of our employees, driving safety is an ongoing area of focus for us.

In 2015, we rolled out our Enbridge-wide DriveWISE campaign as one component of a broader effort to enhance safe driving performance across our company. Built around the acronym WISE, the campaign focuses on four key behaviors that contribute to improved driving safety: Walk around your vehicle; Immerse yourself in the safe driving mindset and plan your route; Secure all items in the car, including yourself; and Exit your parking spot safely. The campaign makes use of multiple internal communications channels, including toolkits for People Leaders to use in engaging their teams, posters, intranet content, videos, and digital signage in our offices. We will continue to assess the effectiveness of the campaign, conduct ongoing communication to sustain awareness of and promote the DriveWISE behaviors, and will provide employees opportunities to share and reinforce the DriveWISE campaign.

### *Remembering Disastrous Incidents through Stories*

In 2014, we introduced a series of foundational safety stories to our employees and contractors. The stories focus on four disastrous incidents from our past that killed and injured members of the public and of our team, disrupted lives and communities, and damaged the environment. Each quarter we pause, across our company, to remember these incidents on their anniversaries to remind ourselves of the consequences of failing in our duty to be safe. For example, on November 28, 2016, we remembered the eighth anniversary of the Milepost 912 incident, during which two members of our team died in a fire that erupted during pipeline repair work near Clearbrook, Minnesota.

Since we launched the stories, we have asked all of our leaders to have meetings to review and discuss each story with their teams as we approach the anniversary of each incident. The foundational stories are intended to become a safety touchstone for every individual at our company and an opportunity for us to lead our teams in an exploration of what safety means for us as an organization.

### *Looking Out for Safety*

All of our employees contribute to our safe and reliable operations by keeping safety as our primary consideration in all actions and decisions.

In addition, all of our employees contribute by performing proactive formal safety observations on each other to provide a systematic way to address and measure both desired and at-risk behaviors. Properly conducted safety observations give effective, interdependent and results-oriented feedback to drive improvement. In 2016, employees and contractors made and submitted 116,539 safety observations.

Highlights of our 2016 performance regarding how we've strengthened our risk and safety culture are summarized below.

<b>Employee risk and safety culture perception score</b>	74
<b>Number of safety observations</b>	116,539

## **Employee Training**

Each of our business segments has evaluated the training that its employees need to safely perform their jobs and has created position-specific descriptions. Using this information, we have created training matrices that enable us to ensure that each employee has the necessary training and knowledge.



Our employees spent about 99,345 hours in 2016 building their safety knowledge and skills.

#### Total Environment, Health and Safety (EH&S) Training Hours and Training Hours per Employee, 2014 – 2016

	2014	2015	2016
<b>Total EH&amp;S training hours</b>	162,080	139,123 <sup>1</sup>	99,345 <sup>2</sup>
<b>EH&amp;S training hours / employee</b>	18.3	15.9 <sup>1</sup>	12.0 <sup>2</sup>

<sup>1</sup> Our total EH&S training hours and EH&S training hours per employee were lower in 2015 than in 2014 because, in 2014, we introduced two new courses (Human Factors and Lifesaving Rules) that are mandatory for all employees, but that must only be renewed once every two to three years.

<sup>2</sup> Our total EH&S training hours and EH&S training hours per employee were lower in 2016 than in 2015 for the same reason as above (i.e. the two new courses we introduced in 2014 must only be renewed once every two to three years), and due to the layoffs and reduced hiring that we experienced in 2016.

#### Enbridge Safety Report to the Community

In September 2016, we released our *2015 Enbridge Safety Report to the Community* by posting it on Enbridge.com and by distributing a hard copy to thousands of our neighbors near our pipelines and facilities across the Canada and the U.S. The report includes stories that highlight the steps we take to keep our communities safe and protect every member of our team, the public and the environment.

#### SUMMARY OF KEY PERFORMANCE INDICATORS

##### Occupational Health & Safety<sup>1</sup>, 2014 – 2016

	2014	2015	2016
<b>Fatalities</b>			
	2 (one employee; one contractor)	0	2(contractors)
<b>Personal Injuries</b>			
<b>Number of employee hours worked</b>	16,406,373	18,293,419.96	15,938,162.49
<b>Number of employee days away injuries</b>	9	11	4
<b>Employee days away injury frequency (days away injuries/200,000 hours worked)</b>	0.11	0.12	0.05
<b>Number of employee days away</b>	267	390	270
<b>Employee days away injury severity (days away/200,000 hours worked)</b>	3.25	4.26	3.39
<b>Number of employee recordable injuries</b>	77	60	44
<b>Employee recordable injury frequency (recordable injuries/200,000 hours worked)</b>	0.94	0.66	0.55
<b>Number of contractor hours worked</b>	37,493,042	27,861,931.55	14,494,612.40
<b>Number of contractor days away injuries</b>	17	12	9
<b>Contractor days away injury frequency (days away injuries/200,000 hours worked)</b>	0.09	0.09	0.12
<b>Number of contractor recordable injuries</b>	192	116	71

<b>Contractor recordable injury frequency (recordable injuries/200,000 hours worked)</b>	1.02	0.83	0.98
<b>Absenteeism</b>			
<b>Number of employees</b>	8,852	8,728	7,902
<b>Number of employee days absent</b>	37,438	40,564	39,633
<b>Number of days absent/employee</b>	4.23	4.65	5.02
<b>Motor Vehicle Incidents (Employee)</b>			
<b>Number of kilometers driven</b>	98,621,451	91,321,716.92	80,000,471.11
<b>Number of contributory motor vehicle incidents</b>	136	147	112
<b>Contributory motor vehicle incident frequency (incidents/100,000 kilometers driven)</b>	1.38	1.61	1.4
<b>H&amp;S Training</b>			
<b>Total H&amp;S training hours</b>	162,080	139,123.01	99,344.62
<b>H&amp;S training hours per employee</b>	18.3	15.94	11.96
<b>Safety Observations</b>			
<b>Number of safety observations</b>	161,296	173,702	116,539

<sup>1</sup> As of 2014, the Occupational Health & Safety performance statistics we report represent a consolidation of data from the following operating business segments and other groups: LP; GPP and Energy Services; EGD, which is one of the affiliate utilities under our GD business segment; Green Power & Transmission (GPT); and Corporate Services.

## 1.2 MAINTAINING THE FITNESS OF OUR SYSTEMS & DETECTING LEAKS

### KEY FACTS

**Eight reportable liquids spills** occurred on our liquids systems in Canada and the U.S., compared with 14 in 2015. We also reported **two significant gas releases** on our natural gas pipelines and distribution network.

We **completed 15,681 pipeline inspections** on our liquids and natural gas pipelines and distribution network. These inspections covered 29,195.12 kilometers (18,141 miles) of our pipeline system across Canada and the U.S.

We carried out **193 in-line inspections and 1,306 integrity digs** across our liquids and natural gas systems.

We **spent \$750 million on programs that help us to maintain system fitness and detect leaks** across our operations in Canada and the U.S. Over the last three years, our investment has totaled more than \$2.88 billion.

### OVERVIEW & PERFORMANCE OBJECTIVES

We continually strive to make our operations safer because we believe that every incident can be prevented. We invest significantly in the fitness of our systems and in leak detection, and continually inspect our pipelines and facilities for safety and reliability.

We have six performance objectives for Maintaining the Fitness of Enbridge's Systems & Detecting Leaks:

- To prevent all liquids spills and leaks.
- To prevent all natural gas releases and leaks.
- To verify and maintain the integrity of all of our pipelines and facilities.
- To improve leak detection and monitoring of our pipelines and facilities.
- To improve our operational reliability, and to maintain a reliability target for our liquids pipelines.
- To continue to invest in our system fitness and leak detection programs.

*Please see 2016 Performance for an overview of our performance against these objectives.*

### MANAGEMENT APPROACH

#### Transportation of Liquids

We operate the world's longest crude oil and a natural gas liquids transportation system, with about 26,200 kilometers (16,340 miles) of pipeline across Canada and the U.S. This system transports crude oil, natural gas liquids and refined products from gathering pipelines to refineries and other pipeline systems.

To deliver product, our Liquids Pipelines business segment (LP) manages a network of high-pressure, large-diameter (12-inch to 48-inch) pipe over long distances, mostly through rural and industrial areas. These pipelines cross diverse terrain, including watercourses and environmentally sensitive areas.

Although LP's network is lengthy, it has a small footprint on the surface land. While it includes some aboveground facilities—for example, terminals and pump stations—its pipelines are mostly buried underground.

Our Gas Pipelines & Processing business segment (GPP) operates some small- to medium-diameter (three-inch to 16-inch) natural gas liquids transmission pipelines. In addition, it operates offshore pipelines in the Gulf of Mexico containing natural gas and natural gas liquids. To treat these products, it operates processing plants that separate out the hydrocarbon liquids from the natural gas streams.

#### *Main Threats, Key Priorities and How we Take Action*

How the integrity of a pipeline is managed depends on the threats the pipeline faces. For liquids pipelines, the main threats to system fitness are:

- corrosion and cracking;
- geohazards;
- third-party mechanical damage to pipe; and
- human error.

In addressing these threats, our key priority is to achieve zero spills or leaks of any of the liquids we transport. In particular, we direct our resources toward preventing off-property spills and leaks because they can impact the environment, damage property, and impact public and worker safety. We address these key priorities by taking the following actions:

*Design and Construction* - We build safety and reliability into our infrastructure long before we construct and operate any of our projects. We carefully select our pipeline routes and line locations, and follow strict standards for engineering and design. We incorporate special design considerations for areas such as road, river and creek crossings and for high-consequence areas where the public may be affected. We adopt the same rigorous approach with our other facilities, such as pump stations, terminals and gas processing plants.

*Monitoring and Prevention* - Once our pipelines are running, we continually monitor them for any signs of trouble and operate them in a way that protects their reliability. This work involves recognizing conditions that have been known to cause failures in the past and carefully analyzing failures from our peers, and then working to minimize the risks.

*Leak and Damage Prevention* - Pipeline fitness, safety and reliability also involve taking a comprehensive approach to leak detection. We devote resources—both people and automated systems—on a continuous, 24/7 basis to ensuring that we control and mitigate any potential problem, should it arise. We monitor our pipelines for possible leaks and damages using a number of methods, each with a different focus and each using different technology, resources and timing.

### **Gathering, Processing and Transportation of Natural Gas**

Through GPP, we operate a 17,500 kilometer (10,800 mile) network of onshore natural gas gathering and transmission lines, and 32 natural gas processing and treatment plants. This network includes small- to large-diameter (two-inch to 20-inch) pipelines that collect sweet and sour natural gas from the wellhead and transport it to gas dehydration and processing plants. GPP's onshore pipelines travel mostly through rural areas. GPP also operates offshore pipelines that carry product from offshore platforms into near-shore facilities. Once the product reaches its processing plants, GPP treats it to sweeten it (remove acids and hydrogen sulphide), as required, and extract other marketable commodities, such as natural gas liquids. In addition to these gathering and processing assets, GPP operates some small- to large-diameter (two-inch to 42-inch) natural gas transmission pipelines.

#### *Main Threats, Key Priorities and How we Take Action*

The main threats to the integrity of this system are:

- internal corrosion (especially at plant facilities);

- External corrosion;
- Geohazards (including submarine currents and scouring at watercourse crossings);
- Third-party mechanical damage to pipe; and
- Human error causing releases of hazardous material.

In addressing these threats, our top priorities are to: prevent leaks and maintain the operability of our plants and pipelines; ensure robust process safety management is followed at processing plants; continue quality control, inspection and preventative maintenance of safety-critical assets; and anticipate potential human error and engineer out or prevent errors through effective management systems. We address these key priorities by taking the following actions:

*Design and construction* - Starting early in the design phase of our GPP projects, we work with our surveyors, our Right-of-Way and Environment groups, and the public to select the best possible routes and locations for our pipelines and facilities. We ensure that our designs meet or exceed all governmental codes and regulations in order to provide the safest and most reliable assets possible. During construction of the assets, we ensure quality by employing professional inspectors to oversee every facet of the construction, as well as to use x-ray or ultrasound to inspect the welds for potential defects. If any defects are found, they are immediately cut out or corrected.

*Monitoring and Prevention* - In addition, after we place our new assets into service, we continue to monitor them for safety and reliability. We do so in a number of ways, including through in-line inspections of our high pressure and sour gas pipelines to detect internal and external corrosion, dents and legacy manufacturing defects; inspections of our plant and station piping and vessels to detect corrosion and cracks; and, regular preventative maintenance of our plant piping, pressure vessels and equipment.

*Leak and Damage Prevention* – As we do for our liquids systems, we monitor the gas system for leaks using a variety of methods, including 24/7 control room monitoring; control room management to ensure the competence of control room operators and the functionality of systems; patrolling our pipeline rights-of-way; and Public Awareness Programs that communicate the importance of safety around gas pipelines.

## **Local Distribution of Natural Gas**

Our Gas Distribution business segment (GD) provides reliable natural gas service to more than two million customers in Ontario (through Enbridge Gas Distribution, EGD), Quebec (through Gazifère), New Brunswick (through Enbridge Gas New Brunswick, EGNB) and the State of New York (through St. Lawrence Gas). GD operates a network of steel and plastic pipe that delivers distribution-quality (clean and dry) natural gas to consumers, mostly in densely populated urban areas. The network also includes services, mains, regulating stations, natural gas storage facilities and steel gas transmission lines. Because GD's customers depend on its natural gas distribution services to heat their homes and businesses, it is critical that GD maintain the reliability of its systems.

### *Main Threats, Key Priorities and How we Take Action*

The main threats to the integrity of this system are third-party mechanical damage to pipeline infrastructure; external corrosion of steel pipe; and human error causing releases of hazardous material. In addressing these threats to the integrity of this system, our top priorities are to: ensure the reliable delivery of natural gas to GD's customers; regularly verify the integrity of GD's pipelines and components; replace components, as needed, with higher reliability designs and materials; focus on damage prevention, leak detection and corrosion prevention programs; and anticipate potential human error and either engineer out, or prevent errors through effective management systems. We address these key priorities by taking the following actions:

*Design and Construction* - We build safety and reliability into our distribution infrastructure and operations in various ways. For example, we use large quantities of corrosion-resistant plastic pipe throughout our network. Our gas stream is clean and dry, helping to reduce the possibility of internal corrosion. We also have a rigorous quality control process to ensure that our gas services are installed according to strict standards.

Pressure on our gas distribution system is also carefully regulated. To ensure that natural gas can be delivered safely into homes and businesses, the pressure is sequentially dropped as it is received from the transmission system, put into crosstown mains and neighborhood distribution networks, and finally before it enters homes. These pressure drops eliminate the possibility of a pipeline rupture and mean that any potential belowground or outside leaks will likely not be harmful as the gas will disperse until the leak can be found and fixed.

*Monitoring and Prevention* - We employ various methods to monitor and prevent potential leaks, including reliability and risk assessments of our distribution system piping and equipment to identify areas of vulnerability; asset condition assessments of our infrastructure to determine which aging assets should be proactively replaced; and corrosion prevention and cathodic protection on steel piping.

*Leak and Damage Prevention* - A key threat to our natural gas distribution system is mechanical damage. This issue is particularly important in an urban environment where infrastructure projects—such as utility upgrades and road works—and home projects all present potential threats to gas services. To address this threat, GD invests in a number of leak detection and damage prevention programs.

## **Management Systems**

Management systems provide an overarching framework for the various actions and programs we carry out to maintain the fitness of our pipelines and facilities. All of our business segments employ management systems that must meet enterprise-wide standards for rigor and effectiveness, but are tailored to the uniqueness of each business segment's operation. These systems represent the rules and the checks and balances that help us to prevent human errors and continuously improve the safety and reliability of our operations.

At the highest level, we have several overlapping Enbridge-wide standards that pertain to our work to maintain the fitness of our systems and detect leaks: Enterprise Risk Management Framework, which guides our Enbridge-wide risk management; Pipeline Process Safety Management System (PPSMS) Specification, which sets out the minimum requirements for safe and reliable operation of our pipelines. These requirements also meet the industry-recommended practice (American Petroleum Institute Recommended Practice 1173) for pipeline safety management systems. Together, these frameworks set out what is required by our business segments to operate safely and to effectively manage risks.

### *Incorporating Process Safety*

As an operator of systems that transport vital, yet hazardous substances, we recognize the importance of process safety and are incorporating it into our business-specific integrated management systems. A spill, leak or release that results from one of the integrity threats listed above is a process safety incident. Process safety incidents typically involve an unexpected failure in a pipeline system or processing facility, often involving a fire, explosion, rupture, or release or leak of hazardous material. These incidents have the potential to injure people and claim lives, impact the environment, and have far-reaching and long-lasting consequences.

Process safety practices work by integrating the outputs of all departments, so that a change in one area will not have an adverse impact somewhere else. By paying close attention to managing process safety, we help to ensure operational reliability and protect workers, the public and the environment.

## **Industry Leadership**

We believe that industry leadership is essential to our safety and reliability strategy because it promotes vigilance and critical self-evaluation, and drives us to continually improve the safety of our operations and work practices. Part of our leadership means taking an active role in promoting best practices in system integrity, leak detection and damage prevention through industry associations, including the American Petroleum Institute (API), Canadian Energy Pipeline Association (CEPA) and Pipeline Research Council International (PRCI).

## 2016 PERFORMANCE

### Note to Readers

We use a tiered system based on API Recommended Practice 754 to analyze and report on our process safety incidents. These incidents include liquids spills and natural gas releases. Using this system, we determine which incidents are reportable and significant for our Board of Directors.

For the purpose of our CSR & Sustainability Report, we define these incidents as follows:

- **Reportable** – Incidents that meet the definitions for Tier 1 or Tier 2 process safety events. Reportable Incidents are events of consequence that we are required to report to our Board of Directors.
- **Significant** – Incidents that meet the definition for Tier 1 process safety events. These incidents have more serious consequences than Tier 2 events.

See below for a detailed description of our incident reporting criteria, including definitions of Tier 1 and Tier 2 events. These reporting criteria take into account the balance of different regulatory requirements in the various jurisdictions in which we operate. They also take into account high potential near-misses.

Our management may decide to upgrade how we classify any event—including those that did not result in any spills, releases or harm, but that were potentially serious—to a higher tier if they deem doing so to be prudent. As such, the incidents that we include in this report have not all resulted in a spill or release.

### Process Safety Event Definitions

We define our tiered system of reporting criteria as follows:

**Tier 1 Process Safety Event** - A Tier 1 process safety event is a loss of primary containment of the greatest consequence. It is an unplanned and/or uncontrolled release of flammable or hazardous<sup>1</sup> material that directly results in: an employee, contractor or subcontractor “days away from work” injury; any injury to a third party that is serious enough to require hospital admission; an officially declared community evacuation or community shelter-in-place<sup>2</sup>; any fire or explosion that is not small enough to be classified as Tier 2. For LP and GPP, motor vehicle fires that were not ignited on the property are classified as Tier 2; an event resulting in major environmental damage, such as a release that covers more than 0.1 hectares (0.25 acres); and product loss of more than the Tier 1 threshold quantity as shown below.

Our management may also classify a Tier 2 process safety event as a Tier 1 process safety event if they deem the event to be significant.<sup>3</sup>

**Tier 2 Process Safety Event** - A Tier 2 process safety event is a loss of primary containment that results in a lesser consequence. It is an unplanned or uncontrolled release of flammable or hazardous<sup>1</sup> material that directly results in: medical aid for an employee, contractor or subcontractor; immediate moderate risk consequences or moderate off-site consequences<sup>4</sup>; a fire or explosion that can be locally contained and extinguished causing little to no damage; and an event resulting in localized environmental damage, such as a release that covers more than 100 square meters (1,080 square feet).

Our management may also classify a Tier 3 process safety event as a Tier 2 process safety event if they deem the event to be important.

**Tier 3 Process Safety Event** - A Tier 3 process safety event represents the failure of one or more layers of protection in our safety system where the severity of the incident or the volume of substance lost from primary containment is less than the Tier 2 threshold. Tier 3 events are internally categorized as near misses, close calls or non-hazardous leaks depending on the department or business segment. While Tier 3 events do not involve appreciable damage or harm, we investigate high potential Tier 3 events, as they represent an opportunity for us to learn how to prevent similar, yet potentially more serious, incidents.

<sup>1</sup> For GD, hazardous material includes carbon monoxide (CO) downstream of the meter where the release or consequences are partly or wholly caused by GD or its contractors.

<sup>2</sup> For GD, this threshold is set at 1,000 premises or greater and also includes disruption of service for more than 1,000



customers.

<sup>3</sup> Our management may include damage to reputation when making this assessment.

<sup>4</sup> For GD, this threshold is set at 100 to 1,000 premises or greater, and it also includes disruption of services for 100 to 1,000 customers.

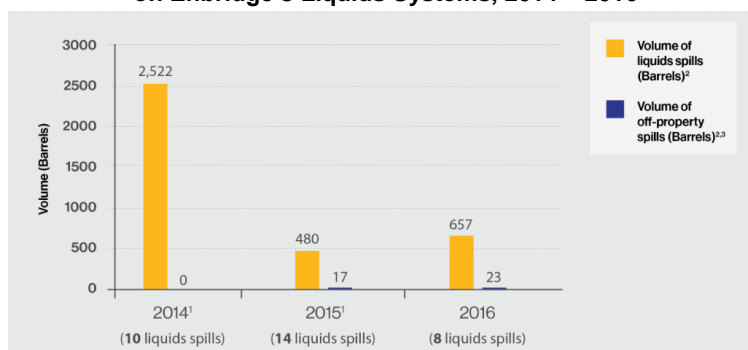
**PERFORMANCE OBJECTIVE A:** To prevent all liquids spills and leaks.

## ENBRIDGE'S PERFORMANCE:

### Overall Performance of our Liquids Systems

In 2016, we delivered more than 3.5 billion barrels of crude oil and natural gas liquids. We experienced eight reportable spills on our liquids systems in Canada and the U.S., which compares with 14 in 2015. The total volume from these spills was 657 barrels, compared with 480 barrels in 2015. Based on the volumes spilled and our gross delivery volumes, we achieved a safe delivery rate of 99.99 percent in 2016.

### Number and Volume (Barrels) of Reportable Spills, and Volume of Reportable Off-Property Spills (Barrels), on Enbridge's Liquids Systems, 2014 – 2016



<sup>1</sup> We have restated the values for our 2014 and 2015 “Number of reportable liquids spills” and “Volume of reportable liquids spills (barrels)” such that they align with our definition for Reportable Incidents (i.e., Tier 1 and Tier 2 process safety events that we are required to report to Our Board of Directors). For more information, please see the Note to Readers at the beginning of this section.

<sup>2</sup> “Number of liquids spills,” “Volume of liquids spills (barrels)” and “Volume of off-property spills (barrels)” are subsets both the “Reportable (Tier 1 and Tier 2) Process Safety Event – Liquids Service” category and of the “Significant (Tier 1) Process Safety Events – Liquids Service” category. We report on these categories in the table below.

<sup>3</sup> Includes volumes released off-site of our property.

During the year, we did not experience any significant (Tier 1) process safety events on our liquids systems, although we did experience 15 reportable (Tier 1 and Tier 2) process safety events.

### Process Safety Events Involving Liquids Commodities, 2014 – 2016

	2014 <sup>1</sup>	2015 <sup>1</sup>	2016 <sup>1</sup>
<b>Reportable (Tier 1 and Tier 2) process safety events – liquids service<sup>2</sup></b>	21	20	15
<b>Significant (Tier 1) process safety events – liquids service<sup>2</sup></b>	2	3	0
<b>Number of reportable liquids spills<sup>3</sup></b>	10	14	8
<b>Volume of reportable liquids spills (barrels)<sup>3</sup></b>	2,522	480	657

<sup>1</sup> We have restated the values for our 2014 and 2015 “Number of reportable liquids spills” and “Volume of reportable liquids spills (barrels)” such that they align with our definition for Reportable Incidents (i.e., Tier 1 and Tier 2 process safety events that we are required to report to our Board of Directors). For more information, please see the Note to Readers at the beginning of this section.

<sup>2</sup> Includes all process safety events that resulted in a loss of primary containment, process-related fire, injury or high-potential near miss.



<sup>3</sup> “Number of reportable liquids spills” and “Volume of liquids spills (barrels)” are subsets of both the “Reportable (Tier 1 and Tier 2) process safety event – liquids service” category and the “Significant (Tier 1) process safety events – liquids service” category.

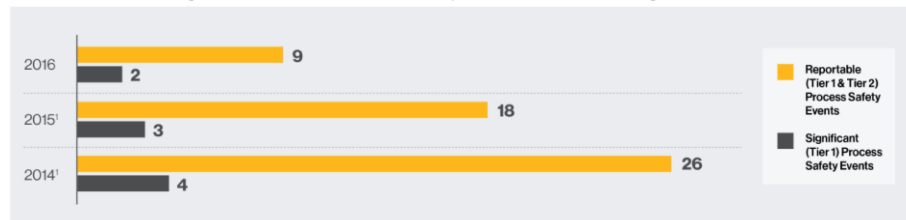
**PERFORMANCE OBJECTIVE B:** To prevent all natural gas releases and leaks.

## ENBRIDGE'S PERFORMANCE:

### Overall Performance of our Natural Gas Pipelines and Distribution Network

In 2016, we transported and distributed more than 400,360,691,000 cubic feet of natural gas through our natural gas pipelines and our natural gas distribution network. Of this total, GPP transported more than 760.7 million cubic feet of natural gas on its gas pipelines system. In 2016, we experienced nine reportable (Tier 1 and 2) process safety events involving natural gas on our natural gas systems. Of this total, we experienced two significant (Tier 1) process safety events.

**Reportable and Significant Process Safety Events Involving Natural Gas, 2014 – 2016**



<sup>1</sup> We have restated the values for our 2014 and 2015 “Reportable (Tier 1 and Tier 2) process safety events” and “Significant (Tier 1) process safety events – gas service” such that they align with our definition for Reportable Incidents (i.e., Tier 1 and Tier 2 process safety events that we are required to report to our Board of Directors). For more information, please see the Note to Readers at the beginning of this section.

### Enbridge's Gas Distribution Business Segment

Our Gas Distribution business segment (GD), which comprises EGD in Ontario, St. Lawrence Gas Company in the State of New York, Gazifère in Quebec, and EGNB in New Brunswick, provides reliable natural gas service to more than two million customers. In 2016, GD delivered more than 399.6 billion cubic feet of natural gas to its customers. A large number of small leaks are detected on our GD network each year because of the significant number of natural gas delivery points, and because the network is located in an ever-changing, ever-growing urban area. In the vast majority of cases, however, these belowground or outside leaks are not hazardous, due to the low delivery pressure on the system. Leaks due to external parties (third parties) damaging pipeline assets make up a significant portion of these releases. The low hazard nature of these small leaks resulted in us excluding these releases from our Tier 2 process safety criteria; however, for transparency, we provide them below:

**Summary of Natural Gas Releases in Enbridge's Gas Distribution Network, 2014 – 2016**

	2014	2015	2016
<b>Number of natural gas releases caused by first- or second-party damages<sup>1</sup></b>	0	0	0
<b>Number of natural gas releases caused by a third party<sup>2</sup></b>	1,459	1,476	1,371
<b>Percentage of emergency calls responded to within 60 minutes<sup>3</sup></b>	Data not available	Data not available	95.7%

<sup>1</sup> First-party damages are mechanical damages caused by GD's employees, while second-party damages are mechanical damages caused by its contractors. GD defines first- and second-party damages as damages that result in: unplanned and uncontrolled releases of more than 150,000 cubic meters of natural gas; unplanned and uncontrolled releases of odorant that directly result in an incident outcome; overpressure exceeding 20 percent maximum operating pressure; or releases of carbon monoxide that directly result in an incident outcome.

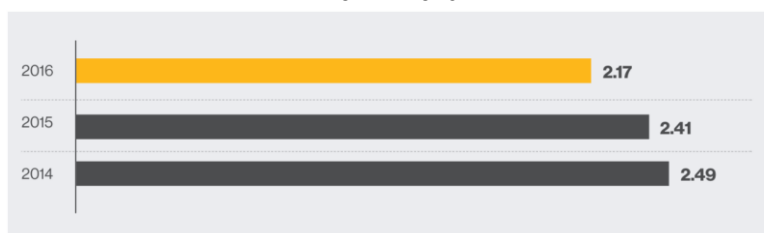
<sup>2</sup> Third-party damages are mechanical damages to GD's pipelines caused by others, such as landowners, municipal workers or excavators working for others.

<sup>3</sup> Regulations require that GD track its response time to emergency situations.

GD only tracks the number of its reportable natural gas releases, and does not estimate the volumes of its reportable natural gas releases that were caused by first-, second- and third-party damages. GD's reportable natural gas releases that were caused by first-, second- and third-party damages and planned venting make up a subset of the fugitive emission amounts that we have reported as GD's Scope 1 GHG Emissions. *Please see 2016 Performance in the Climate Change, Emissions Reduction & Energy Efficiency section of this report.*

GD's releases caused by first-, second- and third-party damages do not include fugitive emissions pertaining to pipeline leaks, customer meter set leaks, station component leaks and leaks due to plastic pipe permeability. The number of damages that occur on GD's natural gas pipeline infrastructure strongly correlates to the amount of construction activity being undertaken in a particular area. As such, one of GD's key damage prevention measures is to provide the location of related underground infrastructure to excavators before they dig. By providing this information, GD has reduced both its normalized number of damages per thousand locate requests and its absolute number of damages. As shown below, in 2016, GD had 2.17 damages per 1,000 third-party locate requests, compared to 2.41 in 2015.

**Damages per 1,000 Third-Party Locate Requests on Enbridge's Natural Gas Distribution Network, 2014 – 2016**



**PERFORMANCE OBJECTIVE C:** To verify and maintain the integrity of all of our pipelines and facilities.

#### ENBRIDGE'S PERFORMANCE:

##### In-line Inspections and Integrity Digs

Each year we conduct a significant number of pipeline inspections using sophisticated tools that incorporate leading imaging and sensor technology. These are capable of scanning for features that could indicate potential problems related to corrosion, cracking, mechanical damage, deformation, or manufacturing or construction defects. Our inspections allow us to monitor the physical condition of our pipelines from the inside and outside, and to gather the information we need to keep our systems fit.

**Summary of Pipeline Inspections across Enbridge, 2016**

Number of pipeline inspections <sup>1</sup>	Total kilometers/miles of pipeline inspections	Number of in-line inspections using smart pigs	Number of integrity digs
15,681	29,195 / 18,141	193	1,306

<sup>1</sup> The number of pipeline inspections includes integrity digs, in-line inspections, hydrostatic pressure tests, corrosion, direct assessments, inspections completed on bridges, inspections completed on slopes and water courses, and other inspections completed such as storage well integrity inspections and valve inspections. Our previous CSR & Sustainability Reports have included primarily in-line inspections.

## How we Maintained the Integrity of our Systems in 2016

### *Monitoring Geohazards*

Our liquids systems cross numerous rivers and widely varying terrain. To protect the integrity of this vast continental system, we closely monitor geohazards, which have the potential to move pipelines, and can result in stresses and strains that could cause pipeline failures.

### *Managing Dents and Interactive Threats*

Some threats on our pipeline systems occur in combination—for example, where cracking, corrosion or a deformation occur at the same location on a pipeline. We call these “interactive threats”. For a number of years, LP has employed various in-line inspection technologies to check for cracking, corrosion and deformation (including dents). Our engineers have overlaid the information that they obtain from these various technologies to evaluate the possibility of interactive threats, and to assess the need for pipe repairs in the field.

### *Enhancing Facility Fitness*

Each year we invest in enhancing the fitness of our liquids and gas system facilities, including our liquids terminals (tank farms), natural gas processing plants, and gas distribution gate stations. We now use new technologies to screen for defects in pipeline facilities that we are not able to detect using in-line inspection devices, or that are difficult to inspect due to the pipe and valve configuration. One of the technologies we are testing to assess facilities is magnetic tomography, which can be used to inspect buried pipe from aboveground without digging or making contact with the pipe, making it a useful option for “unpiggable” or difficult to inspect lines.

### *Inspecting Offshore Platforms*

In 2016, GPP expanded its facility inspection program to its offshore platforms in the Gulf of Mexico by conducting visual and ultrasonic inspections of the structural integrity of piping, vessels and structures on 16 offshore facilities.

### *Asset Management of the Gas Distribution System*

Utilities are critical infrastructure that serve large populations and where even a short outage can negatively impact people’s lives. To maintain the reliability of the system, GD proactively upgrades its gas distribution system; however, the cost to the customer must also be managed.

Asset management is a component of GD’s integrated management system and part of its strategy for striking the right balance between performance, risk and cost, as required by regulators and expected by gas utility customers. Asset management enables GD to make the most informed decisions about its system over the long term, allowing it to reduce safety risks while containing the costs of its services to customers.

### *Inspecting Gas Distribution Customer Assets for Fitness for Service*

Our commitment to safe operation does not end with our own gas distribution assets. We inspect all customer piping and appliances prior to activating natural gas services for our GD customers. This ensures that our pipelines meet service requirements, and that we can constantly and reliably deliver service to customers.

**PERFORMANCE OBJECTIVE D:** To improve leak detection and monitoring of our pipelines and facilities.

### **ENBRIDGE’S PERFORMANCE:**

Because our core business is to safely transport hazardous materials through a network of pipelines, we continually improve the methods we use to prevent and detect leaks and releases. In 2016, we spent \$18.5 million on leak inspection and survey programs in Canada and the U.S.

### *Monitoring for Leaks in our Liquids Systems*

LP continues to improve its CPM systems that collect data from strategically located flow meters, and from pressure and temperature sensors along its liquids pipelines. In 2016, for example, it deployed enhanced leak detection

alarming methodologies to improve its leak detection performance. Developed internally, this method, which involves an advanced leak detection alarming algorithm, is resulting in improved alarm reliability and an enhanced ability to detect different sizes of leaks along LP's liquids system. LP has introduced the method on all of its mainline pipelines that it manages from its control center in Edmonton.

#### *Enhanced Training for GPP Control Center Operators*

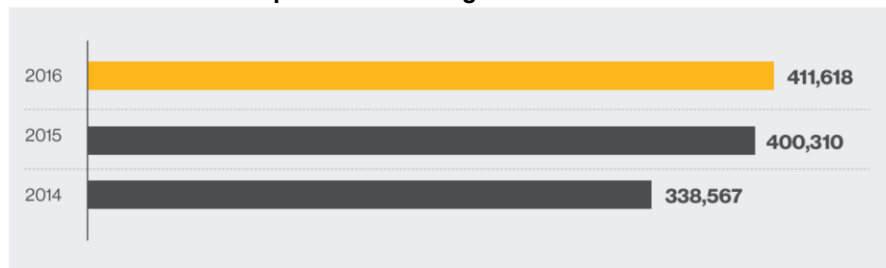
In 2016, we increased training to operators in our GPP control center operations overseeing our natural gas and natural gas liquids pipeline systems. This involved the implementation of a new online control room operator program. Containing 18 electronic modules, the program enables potential candidates to fully understand the systems and methodologies needed to take immediate action in the event of a leak on these systems.

#### *Leak Survey Management of our Gas Distribution Network*

Each year GD conducts leak surveys of its natural gas distribution system based on a combination of set cyclic geographic programs and asset condition-based programs. It reviews the current year's programs and targets any high risk areas in its leak survey program earlier in the year.

In 2016, GD conducted leak surveys on more than 9,543 kilometers (5,929 miles) of distribution mains in its Ontario franchise area and in the Gazifère system in Quebec. GD also surveyed about 411,618 services (the lines used to carry gas from the mains to customers' residences), which represent about 18 percent of GD's total gas services.

**Number of Natural Gas Services Inspected in Enbridge's Natural Gas Distribution Network, 2014 – 2016**



**PERFORMANCE OBJECTIVE E:** To improve our operational reliability, and to maintain a reliability target for our liquids pipelines.

#### **ENBRIDGE'S PERFORMANCE:**

##### **Improvements to Operational Reliability**

#### *Integrity Core Process Cycle*

Our 2010 spill near Marshall, Michigan, demonstrated the severe consequences that can result from a rupture on a liquids hydrocarbon pipeline, and forever reinforced the necessity for preventing every leak and spill. To achieve a high reliability in preventing leaks and spills, LP has established an advanced integrity decision-making framework, called the integrity core process cycle. LP uses this framework to provide a structured approach to assuring and demonstrating the integrity of its liquids pipelines and facilities. The core process cycle aligns with our Safety Management System Framework.

#### *Safety Case Methodology*

As part of the integrity core process cycle, we bring the results of our various decisions together to create an engineering assessment of the effectiveness of each of our pipeline segments. These assessments form the basis of the safety cases we create for each pipeline segment. When preparing the safety cases, we consider a broad range of inputs, including the results of our in-line inspections and integrity digs; specific information about our pipeline assets, including coatings, wall thicknesses and pipe grades; operational data such as operating pressures and flow

rates; threat exposures such as an asset's history, flaws and defects; and the effectiveness of the barriers—or lines of defense—that we have put in place to protect our assets from threats. We link each of our safety cases to the integrity plans that we have created for each of our pipeline segments. If, through our assessments, we determine that a particular pipeline segment's safety level is inadequate, we carry out mitigation measures to ensure that it attains a targeted safety level.

#### *Improving our Understanding of Human Factors*

High reliability organizations recognize the importance of learning from past events and understanding the impacts of human factors (or human behaviors). As part of improving our operational reliability, we have invested significant resources in developing a greater awareness of human factors throughout our industry. For example, in partnership with the CSA, we sponsored the first publication focused on improving human factors in the pipeline industry. We are also now working with CSA, PRCI, API, the European Pipeline Research Group and other organizations to explore opportunities to advance human factors research within our industry throughout the world.

**PERFORMANCE OBJECTIVE F:** To continue to invest in our system fitness and leak detection programs.

#### **ENBRIDGE'S PERFORMANCE:**

##### **Investments in System Fitness and Leak Detection**

We are committed to investing in our system fitness programs and our leak detection and survey programs to achieve our goal of zero spills, leaks and releases. Although the total amount that we invested in these areas decreased from 2014 to 2016, the results we are getting from our investments are increasing. Advancements in predictive (reliability) modelling, data analysis and improved efficiency in carrying out these activities are enabling us to continually enhance the safety and fitness of our systems while optimizing our expenditures.

In 2016, we spent \$750 million on programs that help us to maintain the fitness of our systems and detect leaks across our operations in Canada and the U.S. This amount includes \$731.5 million spent on maintaining system fitness and \$18.5 million spent on leak detection (Canadian dollar amounts). Over the last three years, our investment has totaled more than \$2.8 billion (including Canadian and U.S. dollar amounts).

#### **SUMMARY OF KEY PERFORMANCE INDICATORS**

##### **Maintaining the Fitness of Enbridge's Systems & Detecting Leaks, 2014 – 2016**

	2014	2015	2016
<b>Significant (Tier 1) process safety events involving liquids commodities<sup>1</sup></b>	2	3	0
<b>Reportable (Tier 1 and Tier 2) process safety events involving liquids commodities<sup>1</sup></b>	21	20	15
<b>Number of reportable liquids spills<sup>1,2</sup></b>	10	14	8
<b>Volume of reportable liquids spills (barrels)<sup>1,2</sup></b>	2,522	480	657
<b>Volume of off-property spills (barrels)<sup>2</sup></b>	0	17	23
<b>Significant (Tier 1) process safety events involving natural gas</b>	4	3	2
<b>Reportable (Tier 1 and Tier 2) process safety events involving natural gas<sup>1</sup></b>	26	18	9
<b>Number of natural gas releases caused by first- or second-party damages<sup>1,2</sup></b>	0	0	0
<b>Number of natural gas releases caused by a third party<sup>1</sup></b>	1,459	1,476	1,371
<b>Percentage of emergency calls responded to within 60 minutes</b>	Data not available	Data not available	95.7%
<b>Damages per 1,000 third-party locate requests on our Natural</b>	2.49	2.41	2.17

<b>Gas Distribution network</b>			
<b>Number of in-line pipeline inspections</b>	205	194	193
<b>Total spent on maintaining system fitness and detecting leaks</b>	>\$1.2 billion <sup>3</sup>	\$925.5 million <sup>3</sup>	\$750 <sup>4</sup> million

<sup>1</sup> Our reporting of our spills and releases aligns with code NR0102-07 of the Sustainable Accounting Standards Board (SASB) standards for the Oil & Gas – Midstream industry, Non-Renewable Resources sector.

<sup>2</sup> We have restated the values for our 2014 and 2015 “Number of reportable liquids spills” and “Volume of reportable liquids spills (barrels)” such that they align with our definition for Reportable Incidents (i.e., Tier 1 and Tier 2 process safety events that we are required to report to our Board of Directors). For more information, please see the Note to Readers at the beginning of this section.

<sup>3</sup> Includes Canadian and U.S. dollar amounts.

<sup>4</sup> Includes \$731.5 million spent on maintaining system fitness and \$18.5 million spent on leak detection, for a total of \$750 million (all amounts in Canadian dollars).

## 1.3 EMERGENCY PREPAREDNESS & RESPONSE

### KEY FACTS

In 2016, we ran more than **335 drills and exercises** in all regions where we operate to test and sharpen our emergency preparedness.

**More than 1,800 of our employees and direct contractors have been trained** to support our responses to emergency situations.

About **90 percent of the approximately 2,000 employees** who have been identified as needing up-to-date emergency response training have met the requirement.

### OVERVIEW & PERFORMANCE OBJECTIVES

On our Path to Zero, we believe that all incidents can be prevented and that no release is acceptable. But if an incident does occur, we are ready to respond safely and effectively in partnership with local first response agencies and regional and national authorities. We maintain strong emergency preparedness and response systems. We regularly test and continuously improve our tactics and plans with local first responders, emergency management officials and government officials. And in the event of an incident, our employees and contractors are prepared with robust and tested emergency response plans, training and equipment to ensure a safe, rapid and effective response.

We have five performance objectives for Emergency Preparedness & Response:

- To regularly review our emergency response plans to ensure they are current.
- To maintain and strengthen our Enbridge Enterprise Emergency Response Team (E<sup>3</sup>RT).
- To train our emergency response teams.
- To regularly exercise our emergency response teams.
- To work with key industry and emergency response associations.

*Please see 2016 Performance for an overview of our performance against these objectives.*

### MANAGEMENT APPROACH

#### Procedures

When we experience an incident, we activate our emergency response procedures, which include shutting down and isolating the impacted asset, notifying the appropriate government and regulatory agencies, and managing potential safety and environmental impacts.

Each business segment is prepared to respond to incidents. However, if the capacity of the business segment or region is exceeded or they need additional support, the Enbridge Enterprise Emergency Response Team and the Enbridge Enterprise Crisis Management Team are available to provide support.

## Maintaining Effective Emergency Preparedness

Our people, management systems, planning, investments in equipment and training, and Public Awareness Programs help us to maintain effective emergency preparedness programs.

### *People*

We have dedicated individuals to support our emergency preparedness and response and crisis management systems across Enbridge. In each business segment, senior leaders are responsible for overseeing emergency response programs and plans, and ensuring our various operations are prepared for potential incidents. We also have hundreds of people across our systems, including pipeline maintenance crews and equipment technicians, who are trained to respond at any time.

### *Management Systems*

Our approach to emergency preparedness and response is supported by our use of management systems that set out policy expectations, outline roles and responsibilities, and provide operating guidelines on how to prepare for and respond to emergencies.

### *Planning*

We have established a multi-tiered system that enables us to address varying levels of emergencies in our pipeline assets. We have also defined roles and responsibilities for those who would be involved, including field response teams, regional incident management teams, Enbridge Enterprise Emergency Response Team, incident support teams, and Enbridge Enterprise Crisis Management Team.

If an incident were to escalate, the Enbridge Enterprise Crisis Management Team, which consists of senior executives from across our company, would work closely with the business segment to provide strategic support to reduce the impact of the crisis.

Each of our business segments has detailed emergency preparedness and response plans in place to guide our emergency response, minimize the impact of an incident and comply with regulatory requirements. We also strategically position emergency response equipment across our systems for quick deployment, and ensure that standby personnel, including employees, contractors and response organizations, are available.

Our emergency plans are customized for different operations. In our Power Operations group, for example, we work closely with contract service providers and local first responders to carry out emergency response at our wind and solar facilities.

### *Investments in Equipment and Training*

Each year we invest in emergency response equipment, and train our employees and contractors throughout Canada and the U.S. The training involves staging hundreds of emergency response exercises, including equipment deployments, to test and refine our response plans. Often this training includes third-party observers and participants such as regulators, public officials and first response agencies so that our emergency preparedness is transparent and well-coordinated.

In 2016, LP committed to investing \$7 million in emergency response equipment over the next two years for deployment along our Line 5 pipeline in Michigan, including the Straits of Mackinac. This additional equipment will include high-speed oil containment and recovery systems, additional skimmers, and ice response skimming systems. In the event of a pipeline incident, the additional equipment would help us and other oil spill response organizations to recover product quickly in multiple scenarios—rough open waters, ice cover and near shore. In September, we held a two-day training event with 35 of our emergency responders and local contractors to practice deploying the specialized equipment and mobilizing it into the open water. Currently we are working with oil spill response contractors and other agencies to determine the best locations for equipment storage and deployment in the area.

### *Public Awareness Programs*

Our commitment to emergency preparedness and response also includes our work to ensure that our neighbors are aware of our operations, and how to live and work safely near them. Through our Public Awareness Programs, we



educate landowners, residents, businesses, farmers, excavators, public officials and first responders on how to recognize and report incidents, and on how to stay safe if an incident occurs. *For more information, please see the Stakeholder Engagement section of this report.*

## 2016 PERFORMANCE

**PERFORMANCE OBJECTIVE A:** To regularly review our emergency response plans to ensure they are current.

### ENBRIDGE'S PERFORMANCE:

We have comprehensive emergency response action plans in place to help us respond rapidly anywhere in our company, should an incident occur. We review and update these plans annually. Due to projects and changes in our organization, we often update our plans more frequently.

In 2016, we carried out these additional actions:

- In Canada, we made our emergency response plans for National Energy Board (NEB)-regulated liquids and natural gas pipelines available on our website. The plans focus on first-response actions, and contain the most relevant information for first responder groups both inside and outside of our company. Publishing the plans online enables our stakeholders to better understand the processes that provide for an effective emergency response if an incident were to occur.
- LP updated emergency response plans for all of its regulated pipelines in Canada and the U.S.
- GPP prepared emergency response plans for our recently acquired Tupper Main and Tupper West gas plants in northeastern British Columbia. We also updated the emergency response plan for our gas storage facility in Petal, Mississippi, following the sale of trucking assets.

**PERFORMANCE OBJECTIVE B:** To maintain and strengthen our Enbridge Enterprise Emergency Response Team (E<sup>3</sup>RT).

### ENBRIDGE'S PERFORMANCE:

The E<sup>3</sup>RT is a cross-business-segment group trained to respond to large-scale events in Canada and the U.S. that would require more resources than a single one of our operating region or business segment could provide. This team includes people with the range of diverse skills needed to fill Incident Command System (ICS) roles and ensure a successful emergency response. In 2016, it included about 168 employees from across our company.

In 2016, we held an ICS School to promote consistent training for E<sup>3</sup>RT members and personnel. In March, we ran a week-long school session bringing together nearly 170 employees, including members of the E<sup>3</sup>RT and the LP incident management teams. Participants received role-specific training and were able to practice concepts and roles through a multi-day course in which they worked together to address an emergency scenario—in this case, a third-party strike of a pipeline in a heavily populated area. As a result, employees gained a deeper understanding of our company's Integrated Contingency Plan and the site-specific emergency response plan. In December, we held an additional session to provide role-specific ICS training.

**PERFORMANCE OBJECTIVE C:** To train our emergency response teams.

### ENBRIDGE'S PERFORMANCE:

#### Emergency Response Training

As part of our emergency response training we use the ICS, an emergency response methodology applied across North America by military, first response agencies, and local, state, provincial and federal governments. ICS enables

our employees and contractors to react quickly and efficiently to the emerging issues and challenges that are inevitable in a real-life emergency response. In 2016, we reinforced the ICS training we offer in a number of ways. In December, for example, GD introduced a new training program for its directors. Through practice sessions and group discussion, the training will provide them with ICS training specific to their roles at GD.

While ICS training is an important part of the emergency response training that we offer, it is only one component. We also design emergency response training programs that meet the specific needs of each of our business segments, and which reflect their specific risks and types of emergency situations. For example, LP provides pre-identified operations employees training on boat handling and boom deployment.

In total, we have provided emergency response training to more than 1,800 of our employees and direct contractors.

### **Other Emergency Response Training**

In our Power Operations business, we continue to renew emergency response training that is specific to wind energy facilities. In 2016, about 25 employees took part in a five-day refresher course to ensure consistent emergency response awareness across our wind farms in Canada and the U.S.

**PERFORMANCE OBJECTIVE D:** To regularly exercise our emergency response teams.

#### **ENBRIDGE'S PERFORMANCE:**

To keep our employees and contractors prepared, we stage both discussion-based and operations-based exercises across our company, including seminars, workshops, tabletop exercises, notification drills, equipment deployments, functional exercises, and full-scale exercises involving equipment, our employees and contractors, local first responders and other third-party agencies.

During these exercises, our employees and contractors—often in concert with local and regional first response agencies—participate in activities focused on specific objectives. During these exercises, local first responders, agencies, government and industry representatives often observe the process and have a firsthand look at how we are prepared to react in the event of an incident. The exercises also give them the opportunity to provide feedback on how they would respond or assist during a pipeline emergency. In 2016, we held more than 335 exercises and drills in all regions where we operate.

**PERFORMANCE OBJECTIVE E:** To work with key industry and emergency response associations.

#### **ENBRIDGE'S PERFORMANCE:**

### **Safe Community Program**

One of our flagship community investment programs is our Safe Community program, under which we provide grants to law enforcement agencies, firefighters, emergency medical services, emergency management, 9-1-1 and other related health providers who would respond to emergency situations in or near communities where we have operations. *For more information, please see the Corporate Community Investments section of this report.*

### **Emergency Responder Education Program**

Since 2012, we have offered EREP to first responders to train them on how to safely and effectively respond to pipeline emergencies. EREP is based on Pipeline Emergencies, an industry-leading pipeline emergency response training program that the U.S. National Association of State Fire Marshals developed.

Available online to emergency response organizations in the U.S. and Canada, EREP uses 3D graphics to engage and prepare emergency responders to respond to a pipeline emergency. The online information includes information on ICS and on how we would work with emergency responders in the event of an emergency, as well as tactics and practice scenarios to help first responders visualize potential response situations. Over the last four years, about 2,900 emergency responders, our employees and other interested parties in the U.S. and Canada have completed EREP training.

### Natural Gas Training for Fire Departments

It is critical that first responders know how to properly respond to natural gas-related emergencies so they can protect the public, mitigate property damage and assist GD crews once they are on site. To that end, GD trained nearly 270 firefighters in 2016 through its first responder natural gas awareness program, developed in association with the Canadian Gas Association.

### Leadership through Industry Associations

Through industry associations, we exchange best practices with other operators and participate in committee activities and joint exercises for the purpose of advancing safety and emergency preparedness. In the U.S., we actively participate in public awareness groups sponsored by the American Petroleum Institute (API), the Association of Oil Pipe Lines (AOPL), the Interstate Natural Gas Association of America (INGAA), and the Common Ground Alliance. In Canada, we are a member of the Canadian Gas Association (CGA) and the Canadian Energy Pipeline Association (CEPA). We are also a member of the Pipeline Operators Safety Partnership, a group of pipeline operators who work together to build relationships with first responders and promote pipeline safety at annual conferences. The group has previously participated in conferences such as Fire-Rescue International, the Fire Department Instructors Conference, and the National Emergency Number Association annual conference. In addition, GD is an associate member of the Northeast Gas Association. Membership in this association gives GD access to additional staff and resources from nearby U.S. gas utilities in the event of a major emergency on its natural gas distribution system.

## SUMMARY OF KEY PERFORMANCE INDICATORS

### Emergency Preparedness & Response, 2014 – 2016

	2015	2016
<b>Number of rostered E<sup>3</sup>RT members</b>	175	168
<b>Percentage of employees who met Identified training requirements</b>	~93%	~90%
<b>Number of emergency response exercises conducted</b>	363	337
<b>Percentage of required emergency response exercises completed<sup>1</sup></b>		
Liquids Pipelines	245%	222%
Gas Distribution	85%	115%
Gas Pipelines & Processing	100%	104%

<sup>1</sup> As part of our stakeholder engagement and commitment to emergency preparedness and response, LP completes a large number of equipment deployments beyond what would be required formally under our emergency response exercises.

## 2.1 STAKEHOLDER ENGAGEMENT

### KEY FACTS

In 2016, we **continued to execute project-specific engagement plans** to ensure that our communications and engagement with local stakeholder on new projects for which we are seeking regulatory approval meets or exceed expectations and supports project advancement.

We **continued to introduce engagement plans at the regional level for our liquids pipeline operations in North America** to ensure that our performance on stakeholder engagement and communications can be consistent over the life cycle of our assets, as well as across our different operating regions.

To support our stakeholder engagement plans at the regional and project levels, we **developed and are deploying an integrated management system** that provides a multi-disciplinary platform for tracking our performance, identifying and addressing stakeholder issues, and managing related data and accountabilities.

As a result of our project-based engagement plans, by late 2016, **we had obtained agreements with all of the 1,087 private landowners** along our Line 3 Replacement Program right-of-way in Canada, and **all of the 115 private landowners** along our Line 10 Westover Segment Replacement Project's right-of-way in Ontario.

We developed and are **deploying an Enbridge-wide approach to the Public Awareness Programs** that regulations require us to maintain. We designed this approach to ensure consistency in our performance on our public education obligations and opportunities related to pipeline safety.

### OVERVIEW & PERFORMANCE OBJECTIVES

We are committed to engaging with our stakeholders in a respectful manner, to addressing their input on our projects and operations, and to building mutually beneficial relationships with them. As such, we take a coordinated, systematized and scalable approach to ensuring that we manage these relationships properly.

We have three performance objectives for Stakeholder Engagement:

- To strengthen our performance, and to build trust with local and regional stakeholders by demonstrating accountability and responsiveness to their input and concerns through initiatives undertaken in our Major Project Engagement Plans and Regional Engagement Plans.
- Through our Public Awareness Programs, to build trust with our local and regional stakeholders by ensuring that they are aware of our operations and how to live and work safely near them.
- To extend local benefits from our infrastructure and activities by investing in community-based projects or initiatives in areas of shared interest and priority that we have identified through our project and regionally based engagement plans.

*Please see 2016 Performance for an overview of our performance against these objectives.*

## MANAGEMENT APPROACH

### Policy

The manner in which we engage with stakeholders is governed by our core values of Integrity, Safety and Respect, and by our Corporate Social Responsibility (CSR) Policy, the Stakeholder Relations section of which states that we are committed to timely and meaningful dialogue with all stakeholders through interaction that is clear, honest and respectful.

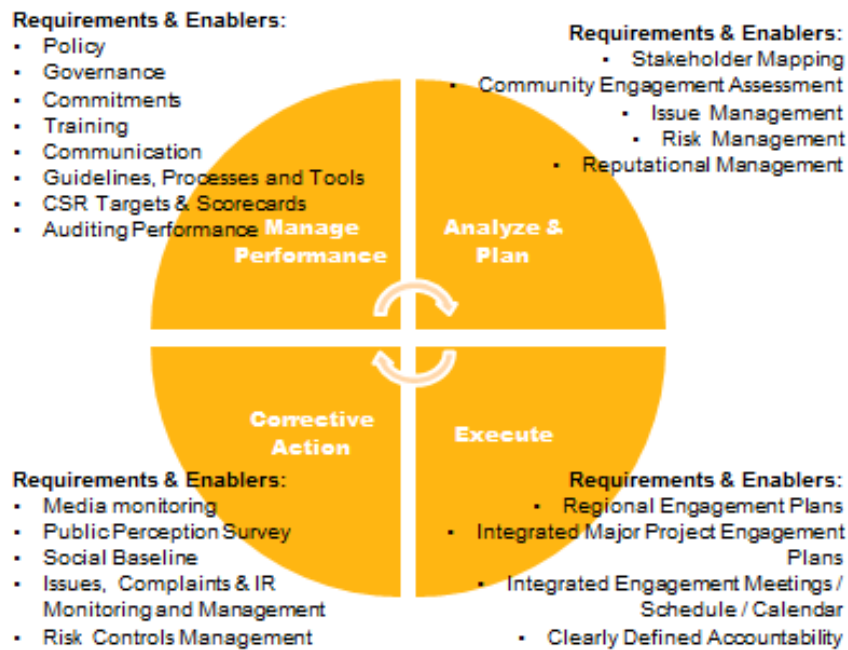
### Enbridge's Stakeholders

For the purposes of this section of our *2016 CSR & Sustainability Report*, our stakeholders include the individuals and groups who live and work near, or who can affect or are affected by, our pipelines, power lines, operations and facilities. They include landowners, communities, governments, business, industry and non-government organizations, and regulators, as well as the individuals and organizations with whom we work to prepare for and respond to emergencies.

We also engage with Indigenous individuals and groups living near our projects and operations in Canada and the U.S. However, because, in both countries, Indigenous peoples have distinct rights, we recognize them as being separate from other stakeholders. *For more information, please see the Indigenous Engagement section of this report.*

### An Integrated Management System for Engagement

In 2016, we launched a new integrated management system designed to support our multidisciplinary and risk-based approach to managing the planning and execution of all of our stakeholder and Indigenous engagement, inclusion and communication activities. As shown in the diagram below, this system involves four stages—Analyze & Plan, Execute, Corrective Action, and Manage Performance—each of which has its own requirements and enablers.



Our integrated management system for engagement is coordinated, systematized and scalable, and incorporates standardized processes, procedures, tools and templates to provide consistency in our stakeholder and Indigenous relationships across all of our projects and operations. It is based on leading industry practices and global benchmarking systems, and further advances accountability, documented reporting and continuous improvement. In 2016, we began incorporating this system into our engagement plans at both the project and regional level, as well as in all of our Indigenous engagement plans. *For further information on our Indigenous engagement plans, please see the Indigenous Engagement section of this report.*

### Major Project Engagement Plans

As each of our new projects enters the planning stage, we create customized engagement plans for them. These plans are proactive, two-way communication and consultation strategies designed to help us: understand stakeholder issues; answer their questions and obtain their input on our project plans; improve our awareness of more broadly based community-based interests and perspectives; and make changes to our plans based on we learn.

Our Major Project Engagement Plans involve identifying and prioritizing stakeholders, tailoring engagement methods according to stakeholder priority levels, identifying and analyzing issues and risks, and developing mitigation plans and processes to respond to issues and risks that might occur.

To ensure that our project-based engagement is effective and appropriate, we reach out to stakeholders and their communities to get to know them, the local environment, and the potential issues and risks that currently exist. We conduct our outreach through surveys, focus groups and meetings with community members that represent the potentially affected region. We engage and communicate through newsletters, fact sheets, presentations, project update letters, telephone calls, emails, advertising, social media updates and community events and open houses.

## **Regional Engagement Plans**

Our Regional Engagement Plans enable alignment between our approach to issue and risk management at the project planning level and our approach to ongoing stakeholder engagement on our operations at the regional level. They enhance our ability to effectively interact with local stakeholders across the life cycle of the asset involved.

In 2016, we introduced Regional Engagement Plan Frameworks in all nine of our North American operating regions for our liquids pipelines. These frameworks include a number of best practice processes—including stakeholder identification, analysis and prioritization; issues, risk and reputation management; integrated governance; objective and target setting; and outcome reporting—and they become the operational documents that we update annually, and that we use to manage our stakeholder relationships in each region in a manner that is coordinated between our project planning and operations. They also become ongoing action plans for each of our regions.

As our projects become operational, our Regional Engagement Plans guide our ongoing engagement, and help us develop and maintain long-term stakeholder relationships in each region. Our multidisciplinary teams execute the Regional Engagement Plans for each region in an integrated manner, incorporating the knowledge they have gained through stakeholder engagement on the ground. Using these plans, they build an understanding of the regional engagement environment, and of the concerns and interests of our stakeholders.

We strive to understand the impact our activities have on our stakeholders, as well as the influence that our stakeholders may have on our operations. As such, in each Regional Engagement Plan, we identify stakeholder issues associated with our operations such that we can be highly accountable for—and responsive to—grievances, concerns, issues and requests, and can address stakeholder concerns in a proactive way. Our Regional Engagement Plans help us consistently coordinate our stakeholder engagements across our company, and take the entire region in which an operation is situated into account. The plans not only ensure that our engagement is ongoing and meaningful to stakeholders and regulators, but also serve as a foundation of stakeholder data when new projects are initiated in a region.

## **Responding to Stakeholder Grievances, Concerns, Issues and Requests**

We recognize that some stakeholders have concerns about our projects and operations, and we respect their desire to voice them. We welcome and encourage respectful, two-way dialogue, and take all stakeholder grievances, concerns, issues and requests seriously.

Through our Regional Engagement Plans, we have created processes to proactively manage stakeholder concerns and questions or complaints in each region. We log issues as they emerge throughout the year, identify and prioritize potential issues, and develop appropriate engagement or communication actions to resolve them.

We offer stakeholders a variety of methods by which they can reach us, including toll-free telephone lines, in-person meetings and dedicated e-mail addresses. Our Regional Engagement Plans also include opportunities for stakeholders to access us, and for us to listen and respond to them.

We carefully track all grievances, concerns, issues and requests such that we can effectively follow up, and so that we can incorporate them into our Major Project Engagement Plans and our Regional Engagement Plans.

## **Public Awareness Programs**

In Canada and the U.S., regulations require us to maintain Public Awareness Programs that provide local stakeholders with information on how to live and work safely near pipelines and associated facilities. While the requirements for these programs vary between Canada and the U.S. and across the provinces and states, we have developed an Enbridge-wide approach to ensure quality and consistency of performance, such that we meet—and sometimes exceed—the regulatory requirements. Through our Enbridge-wide approach, we strive to demonstrate our commitment to safety by: providing a minimum standard for safety engagement and communication; contributing to local emergency response readiness; aligning communications regarding damage prevention, emergency



management, community investment and asset location; and leveraging leading practices to continuously improve our Public Awareness Programs. Through our Public Awareness Programs we also support our Emergency Responder Education Program (EREP), under which we offer free online training to first responders near our pipeline corridors. *For more information, please see the Emergency Preparedness & Response section of this report and 2016 Performance in this section of this report.*

## 2016 PERFORMANCE

**PERFORMANCE OBJECTIVE A:** To strengthen our performance, and to build trust with local and regional stakeholders by demonstrating accountability and responsiveness to their input and concerns through initiatives undertaken in our Major Project Engagement Plans and Regional Engagement Plans.

### ENBRIDGE'S PERFORMANCE:

The following examples illustrate how we demonstrated accountability and responsiveness to our stakeholders through the initiatives in our Major Project Engagement Plans and Regional Engagement Plans.

#### *Line 3 Replacement Program*

Our \$7.5-billion Line 3 Replacement Program (L3RP) will involve replacing the majority of our existing Line 3, which is one of our primary mainline pipelines running from Hardisty, Alberta, to Superior, Wisconsin, with new pipe. On April 25, 2016, the federal regulator in Canada, the National Energy Board, concluded that the replacement program is in the Canadian public interest and recommended the project's approval to the federal government. The NEB imposed 89 conditions in its recommendation and, since April of 2016, we have been working through the conditions to ensure that we identify, address and communicate all potential compliance issues.

Throughout 2016, we engaged with over a thousand landowners along the L3RP right-of-way, as well as with municipalities, community groups, unions, trade associations, and Chambers of Commerce. Our discussions with stakeholders included project updates and information regarding our commitment to safe operations. We also worked to ensure that businesses located in communities along the right-of-way will have the opportunity to participate in economic opportunities generated by the L3RP. We were able to establish agreements with all of the 1,087 private landowners along the proposed Canadian route, and the project was able to secure support from the Canadian Association of Energy and Pipeline Landowners Associations.

Beginning in May 2016, Natural Resources Canada (NRCAN) introduced an online engagement program on the L3RP to solicit additional public input on the project. We supported this program by conducting our own extensive outreach with numerous project stakeholders to encourage participation in the online survey. NRCAN received over 3,000 responses to its survey, the majority of which came from individuals living along the pipeline route.

A separate report by Environment & Climate Change Canada that assessed the upstream GHG emissions and potential climate impacts associated with the production and processing of crude oil transported by L3RP found that, based on a capacity of 760,000 barrels per day, emissions associated with the project could be between 19 and 26 megatonnes of carbon dioxide equivalent per year. This assessment also found that the extent to which these emissions could be considered incremental (by enabling upstream emissions beyond those that would have occurred without the project) depended on economic conditions—such as the price of oil—and the cost and availability of alternative transportation infrastructure.

The Canadian federal government approved the Canadian portion of L3RP in November 2016. We continue to engage with local stakeholders and Indigenous communities to ensure that all regulatory conditions are met, and that the environmental protection and economic benefits of this important project are realized.

In the U.S., we carried out our stakeholder outreach for the L3RP in conjunction with our engagement on our Sandpiper project, prior to our withdrawal of our regulatory application for the Sandpiper project in September 2016. The combined effort was due to the fact that both projects shared one right-of-way. Throughout 2016, we engaged



with local government, landowners, business and civic organizations, as well as first responders. We hosted meetings with landowners and stakeholders along our existing right-of-way to discuss the deactivation of our existing Line 3, and engaged separately with 16 soil and water conservation and watershed districts. The feedback we received from local stakeholders resulted in 50 adjustments to our proposed route. We also launched a proactive program to provide emergency response training to volunteer fire departments along our project right-of-way. A total of 49 training events took place in 2016 and 845 local emergency responders received training. In addition, we hosted tours of our pump stations and of the Clearbrook Terminal for elected officials, business and economic groups, and volunteer firefighters.

In the spring of 2016, the Minnesota Department of Commerce conducted a series of meetings to gather public input on the scope of the Environmental Impact Statement (EIS) for our L3RP application. We supported 12 public scoping meetings in Minnesota in connection with the process. The draft EIS is expected in 2017, and will be followed by a series of public meetings seeking input before being finalized. The final EIS will help inform final decisions on the project by the Minnesota Public Utilities Commission's in 2018.

#### *Line 9B Reversal and Line 9 Capacity Expansion Project*

Our Line 9B Reversal and Line 9 Capacity Expansion project—which the federal government approved in late 2015, and which began operating in 2016—involved reversing the flow of our Line 9B, a 639-kilometer (397-mile) section of our full Line 9, to enable it to run eastward, instead of westward, from North Westover, Ontario, to Montreal, Quebec. The project also involved expanding the capacity of the entire Line 9, which runs from Sarnia to Montreal.

Our stakeholder engagement on this project provides an example of how we are transitioning our approach to engagement on a project basis to engagement on an asset life cycle basis.

A focus of our 2016 engagement with Line 9 stakeholders was our pipeline maintenance program for the year. We provided affected municipalities with notification of planned maintenance activities within their areas, including a list of planned integrity digs and their locations. We also provided follow-up notification once the work activities were completed, including information on any repairs that were required.

During 2016, some local conservation authorities requested information related to source water protection, spill preparedness, detection and response, valve placement, the frequency of in-line monitoring events, and the operating status of Line 9, which we provided through verbal and written communications and face-to-face meetings. We also provided regular updates to the more than 2,800 private landowners along Line 9, some of whom expressed concerns about property values, the impacts from our integrity dig activity, water quality, and environmental disturbance.

#### *Line 10 Westover Segment Replacement Project*

Under our Line 10 Westover Segment Replacement project, we are replacing 35 kilometers of existing 12-inch diameter pipe with new 20-inch pipe, from our Westover Station in Ontario to the Binbrook area near Hamilton, Ontario. By replacing this segment, rather than conducting preventative maintenance on it, we will minimize the degree to which we disturb landowners and the environment along the right-of-way.

In developing the project, we identified and prioritized our stakeholders, analyzed and understood local issues, put mitigation plans in place, and developed a process for quick responses to stakeholder risks and concerns. Proactive engagement with regional and local elected officials and their staff was effective in keeping decision makers informed about the project. Our advanced risk and issue identification also enabled us to respond to municipal government questions about the scope and need for the project.

Our strategy resulted in thousands of direct and indirect engagements with stakeholders, including a number of open houses, over 400 engagement activities with local leaders and over one thousand face-to-face meetings with landowners. Our early proactive engagement with landowners, conservation authorities, and municipal authorities allowed sufficient time during the project development to finalize the best route for the project to avoid residential and

other sensitive areas. We were ultimately able to enter into agreements with all of the 115 private landowners along the project's right-of-way.

The NEB regulatory hearings for the project took place in October 2016, and the federal government approved it in early 2017. In their decision, the three Hearing Panel members noted that we had revised the project based on consultation from stakeholders. Our engagement activities on project conditions and other stakeholder issues will continue in 2017. The project is expected to be completed in 2018.

#### *Line 67 (Alberta Clipper) Expansion Project*

In 2016, our Line 67 pipeline capacity expansion project at the Canada/U.S. border remained subject to U.S. State Department approval of an amendment to the current Presidential Permit for this pipeline to allow increased operating capacity. A legal challenge to the Department of State's decision to allow a temporary interconnection between our Line 3 and Line 67 pipelines to optimize capacity was denied by the courts in 2016. In early 2017, the Department of State issued a Draft Supplemental Environmental Impact Statement (SEIS). We will continue to engage in 2017 with project stakeholders throughout this federal review and decision-making process.

**PERFORMANCE OBJECTIVE B:** Through our Public Awareness Programs, to build trust with our local and regional stakeholders by ensuring that they are aware of our operations and how to live and work safely near them.

#### **ENBRIDGE'S PERFORMANCE:**

In 2016, in support of our regulatory obligation to provide Public Awareness Programs, we undertook the following initiatives:

##### **Emergency Response Ambassador Program**

In the U.S., we have operated our Emergency Response Ambassador Program since 2013 as a way to build meaningful and lasting relationships with emergency responders near our pipelines and facilities. By the end of 2016, we had trained more than 200 employee ambassadors to conduct in-person outreach with emergency responders using a variety of methods, including emergency response presentations, facility tours and tabletop exercises. In 2016, we began the process of redesigning our educational materials for use by our employee ambassadors to eliminate the need to have multiple written communication materials when engaging with first responders. The new notebook format will provide uniformity across the system, and will be convenient for first responders to store in their vehicles.

Employee ambassadors in Canada deliver a similar outreach program and, in 2016, they carried out more than 340 visits with municipal officials, first responders and 9-1-1 dispatchers near our liquids pipelines. During their meetings, they provide information about the online training that we provide and about our Safe Community Program. *For more information, please see the Corporate Community Investments section of this report.*

##### **Emergency Responder Public Awareness Program Effectiveness Evaluation**

In 2016, we began evaluating the effectiveness of our Emergency Responder Public Awareness Program in Canada. Using a combination of online surveys and phone interviews, we collected feedback from internal personnel involved in implementing the program to evaluate program materials, resourcing needs and confidence in responder preparedness. Our work enabled us to identify program gaps and opportunities to improve our Public Awareness Program for emergency responders.

##### **Line 9B Reversal and Line 9 Capacity Expansion Project (Line 9)**

Emergency preparedness was a key focus of our 2016 stakeholder engagement for Line 9. Our Public Awareness Program includes personal visits to landowners, who either live or own property on the right-of-way, or within 60

meters of the right-of-way, on a three-year cycle. Beginning in 2017, we plan to meet with one-third of landowners each year so that, by the end of a three-year cycle, we will have visited all landowners along the Line 9 right-of-way.

We contacted landowners and tenants up to four times in 2016 with information about pipeline safety, damage avoidance and emergency response through a spring and fall mail-out and an annual calendar mail-out. During the first half of 2016, we contacted over 4,500 landowners and tenants through personal visits or mailings.

We also communicated with representatives from all communities and municipalities in Ontario and Quebec whose land is traversed by Line 9. We communicated through email and letter updates, brochures, meetings, phone calls, and round table discussions, and we participated in additional in-person meetings if requested. For example, in Quebec, we undertook additional consultation at the municipal and regional levels through the Enbridge committee of the Communauté métropolitaine de Montréal (CMM). The Quebec Government participates as a member of the CMM and the NEB attends CMM meetings as an observer.

And we participated in numerous safety-related events with first responder organizations and municipal authorities. For example, in May 2016, we participated in a U.S. Coast Guard full-scale exercise to execute a mock response to a potential cross-border incident on the St. Clair River. We also conducted a full scale multi-agency emergency response exercise in the Kingston, Ontario, area in October of 2016, in fulfillment of NEB requirements to hold such an exercise once every three years.

### **Enbridge Gas Distribution Public Awareness**

In 2016, Enbridge Gas Distribution (EGD), which is one of our natural gas utility affiliates under GD, focused on educating our customers and the public on the smell of natural gas and the steps they should take if they suspect a natural gas leak. We have communicated this information at schools and community events, as well as through emails to our paperless billing customers. Through the program, we have had over 70,000 meaningful conversations with members of the public about natural gas safety.

**PERFORMANCE OBJECTIVE C:** To extend local benefits from our infrastructure and activities by investing in community-based projects or initiatives in areas of shared interest and priority that we have identified through our project and regionally based engagement plans.

### **ENBRIDGE'S PERFORMANCE:**

Here are some examples of how we worked with local stakeholders in 2016 to address shared environmental priorities that we identified through our Major Project Engagement Plans and Regional Engagement Plans.

### **Ecofootprint Grant Program**

We inaugurated our Ecofootprint Grant Program in 2015. This three-year, \$3-million program supports community-led environmental projects in North Dakota, Minnesota and Wisconsin. Under it, we offer grants to improve and protect water quality, advance research related to threatened and endangered species, and foster environmental education. Eligible applicants are nonprofit 501(c)3 organizations, Native American tribes, state government agencies, local governments and post-secondary academic institutions.

In 2015, we contributed nearly \$1 million in Ecofootprint grants to 12 groups in North Dakota, Minnesota and Wisconsin for projects, such as: revegetating and restoring shorelines, establishing pollinator habitats, creating and delivering awareness campaigns on invasive species and researching bat and dragonfly populations. The grants ranged from \$40,000 to \$114,000. In 2016, we awarded nearly \$1 million to 15 groups in these three states for projects such as: reducing phosphorus or restoring water quality in several water conservation districts; protecting significant bird habitat within important bird areas, and the study of microplastics on aquatic life in the St. Louis River and western Lake Superior.

## U.S. National Fish & Wildlife Foundation

In 2016, we continued our support of a range of projects along our U.S. pipeline systems through our \$115,000 donation to the U.S. National Fish & Wildlife Foundation (NFWF) National Wildlife Refuge Friends Program. Our donation enables the program to award small (\$1,500 to \$10,000) grants to organizations involved in stewarding natural resources through conservation projects in Minnesota, Texas, Michigan and Wisconsin.

## SUMMARY OF KEY PERFORMANCE INDICATORS

### Stakeholder Engagement, 2014 – 2016

	2014	2015	2016
Development and incorporation of an integrated management system for engagement plans at the regional and project level	-	Yes	Yes
Development and introduction of Regional Engagement Plan frameworks in all nine liquids pipeline operating regions in North America	-	Yes	Yes

## 2.2 INDIGENOUS ENGAGEMENT

### KEY FACTS

In 2016, we **reviewed our Aboriginal & Native American Policy and replaced it with an Indigenous Peoples Policy** that recognizes the importance of the United Nations Declaration of the Rights of Indigenous Peoples. In our *2017 CSR & Sustainability Report*, we will discuss the frameworks, management systems and strategies that we are using to implement our Indigenous Peoples Policy, and to support best practices on Indigenous consultation and engagement across all of our projects and operations.

In 2016, we **expanded our Indigenous Engagement Program** to strengthen our ability to respect the Indigenous communities near our projects and operations, and to develop long-term mutually beneficial relationships in the areas of environmental stewardship and protection, socio-economic participation and community investment.

In 2016, we spent more than **\$79 million on procuring goods and services from Indigenous businesses, contractors and suppliers** in Canada.

In our *2017 CSR & Sustainability Report*, we will provide additional information on the steps we are taking to **integrate Indigenous and human rights sensitivities into our investment review processes** through early identification across our various investment types.

### OVERVIEW & PERFORMANCE OBJECTIVES

We recognize the history, uniqueness and diversity of Indigenous peoples and strive to build trust and lasting relationships with them. In the course of our projects and operations, we regularly deal with up to 130 Aboriginal communities in Canada and up to 12 Native American tribes in the U.S. In both countries, legal requirements and good business practice mandate consultation and engagement with Indigenous communities on energy infrastructure projects and operations.

We have two performance objectives for Indigenous Engagement:

- To review and strengthen our corporate policy and systems for engagement with Indigenous Peoples.
- To work with Indigenous communities near our projects and operations to create opportunities for engagement through socio-economic participation, environmental stewardship and community investments that can extend across the life cycle of our projects and operations.

*Please see 2016 Performance for an overview of our performance against these objectives.*

### MANAGEMENT APPROACH

#### Indigenous Consultation

Our policies, programs and initiatives involving Indigenous peoples and communities are rooted in our respect for their formal and informal rights and interests. In all instances we seek to consult with Indigenous communities about

our projects and operations, and to resolve any concerns or complaints through direct communication, engagement and, where appropriate, negotiation or mediation.

In some instances, the issues or concerns raised by Indigenous communities are outside the scope of our decision making as an individual business because they arise from broader historical grievances, or from legal relationships between Indigenous communities and senior governments at the provincial, state or federal level. When this situation occurs, it can result in litigation or other forms of court action.

In 2016, three of our projects were the focus of litigation involving the duty of government to consult with Indigenous communities:

The **Northern Gateway Project** was designed to transport Alberta oil across northern Alberta and British Columbia to the west coast port of Kitimat, British Columbia. Federal regulators approved the project in late 2013, subject to 209 conditions. Since then, together with the other Northern Gateway partners—including Aboriginal equity partners and the upstream shippers that were participating in the project—we had been working to meet the conditions, which included increasing Indigenous involvement and benefits. However, the project became the focus of litigation regarding the adequacy of the federal government's consultation with Indigenous communities. In its 2016 decision, the Federal Court of Appeal found that the federal government had not adequately addressed its duty to consult with Indigenous groups, and that further consultation would be required. Subsequently, in November 2016, the federal government directed Canada's National Energy Board (NEB) to dismiss the Northern Gateway Project application. In consultation with potential shippers and Indigenous equity partners, we assessed this decision and concluded that the project could not proceed as envisioned. *For more information, please see our 2016 MD&A.*

Our **Line 9B Reversal and Line 9 Capacity Expansion Project** transports Canadian oil across Ontario to refineries in Quebec. The federal regulator approved the project in 2014, and it was completed and operational by the end of 2015. Around that time, the Chippewas of the Thames First Nation in Ontario launched a court action challenging the adequacy of the federal government's consultation with them on the project. In 2015, the Federal Court of Appeal affirmed the federal regulator's approval of the project. The Chippewas of the Thames First Nation then appealed that decision to the Supreme Court of Canada, whose decision is pending.

Our **Line 3 Replacement Program** will enhance the safety of our Line 3 pipeline, which transports oil from Alberta to Wisconsin, and restore its capacity to 760,000 barrels per day (bpd). Under the project, we will replace existing pipe and, in so doing, restore one of our primary pipelines along our Mainline system for Canadian crude oil. The Canadian government approved the Canadian portion of this project in November 2016, subject to conditions, after the NEB had previously deemed it to be in the public interest. During the project review process we engaged with, and entered into agreements, that directly benefited more than 70 Indigenous communities that live along the route. *For more information, please see 2016 Performance in this section of this report.*

Federal regulators recognized this engagement in a consultation report that concluded that, together with the commitments we had made, the NEB's conditions are responsive to concerns raised by Indigenous groups. In December 2016, the Manitoba Metis Federation and the Association of Manitoba Chiefs applied to the Federal Court of Appeal (Federal Court) for leave to judicially review the Government of Canada's decision to approve the project. The court case has not yet concluded.

In 2016, one of our minority investments in the U.S. was the focus of litigation related to Indigenous consultation and assessment issues. In August 2016, we announced an agreement to acquire a 27.6 percent equity interest in the Bakken Pipeline System, which includes the **Dakota Access Pipeline** that helps deliver U.S. crude from the Bakken Formation to refineries in the Gulf of Mexico. When we announced our intention to invest, processes for regulatory approval and construction were both well advanced and the project was scheduled for completion by year end. A segment of the North Dakota portion of the pipeline subsequently became the focus of on-the-ground protests and litigation led by the Standing Rock Sioux Tribe centered on the federal U.S. Administration's granting (through the U.S. Army Corps of Engineers) of a final easement for the pipeline's crossing of a federally owned and managed area under the Lake Oahe reservoir on the Missouri River. The issues involved in this dispute included the adequacy of consultation with local Native American communities, protection of water and cultural heritage sites, and the

processes used for environmental review. In some instances the on-the-ground protests resulted in violence that impacted people and property. In response to the controversy, the federal U.S. Administration initiated a formal consultation with Native American leaders and groups on the broader issue of how to improve Indigenous involvement in federal review and approval processes for energy infrastructure. With more specific regard to the Dakota Access Pipeline, a U.S. District Court Judge ruled that the U.S. Army Corps of Engineers and the project developer had followed all regulatory requirements with respect to consultation and environmental and cultural assessment. Subsequent decisions by the U.S. Administration and the Courts led to the issuance in the first quarter of 2017 of the final easements required to finish construction of the project by the second quarter of 2017. Locally based protests over the project stopped in early 2017 and, in February 2017, our acquisition of the above-noted minority investment in the Bakken Pipeline System was completed. Meanwhile, tribal litigation over the project is continuing in 2017.

We are committed to working with the other corporate partners involved in the Dakota Access Pipeline to address the concerns of local Indigenous communities related to its safe operation and the protection of water and cultural values. In our *2017 CSR & Sustainability Report*, we will report on the steps we are taking to integrate human and Indigenous rights sensitivities into our investment review processes through early identification across our different types of investments.

## Indigenous Engagement

In 2016, we expanded our Indigenous Engagement Program to support and improve our performance in this critical area. Our Indigenous Engagement Program is based on corporate programs and initiatives in the following areas: enhanced consultation and community involvement processes; socio-economic participation through our management systems and processes for supply chain management; community investment; Indigenous employment; and cultural awareness training, each of which we describe below.

### *Enhanced Consultation and Community Involvement Processes*

While we have always conducted comprehensive project-based engagement, in 2016, we enhanced our focus on proactive engagement with Indigenous communities across the life cycle of our projects and operations. This enhancement is a reflection of the more complex environment in which we operate with regard to requirements and expectations for Indigenous consultation and involvement, and of our desire to establish more enduring relationships with Indigenous communities.

We continue to undertake transparent and meaningful consultations with Indigenous peoples and communities near our projects and operations, engaging early and often. Our goal is to learn as much as possible about the underlying social, economic, political and environmental conditions of the individuals and communities in question, and to understand their expectations, interests and concerns. Where a project requires an environmental and social impact assessment, we provide full disclosure of the results of those assessments in the regulatory hearings and in publicly available documentation.

As part of our consultations and community engagement processes, we respond to community issues, grievances and concerns through direct communication with the communities that are involved. In some cases, we enter into formal project agreements with communities to provide extra assurances regarding community support, environmental protection, or community involvement in project construction through economic opportunities. In cases where a community's concerns pertain to the cumulative effects of development, we provide information about the steps we have taken to minimize these effects, such as following an existing right-of-way. In cases where concerns pertain to the environment, we share our environmental protection plans. When these steps do not resolve the concerns, we meet with the community to discuss additional actions that we could take.

In addition to integrating Indigenous engagement into all of our project planning processes, we also integrate it into our regional plans for ongoing engagement on all of our liquids pipelines operations in North America. To achieve this integration, we have implemented Regional Engagement Plans in each of our nine operating regions for our liquids pipelines in Canada and the U.S. As part of each one, we develop Indigenous Engagement Action Plans to guide our activities in support of the operating regions. These plans require a proactive approach to executing on our



responsibilities and goals related to consultation, engagement and inclusion, while also proactively managing issues and concerns. Our key priorities under the plans include:

- building understanding and meaningful and respectful long-term relationships with Indigenous communities;
- complying with all regulatory requirements;
- incorporating a consideration of historical relationships with Indigenous communities;
- soliciting traditional knowledge and land use information and incorporating it into our operational plans;
- developing strategies to include Indigenous people and communities; and
- identifying—early on—issues or concerns to avoid conflict and delays.

By making Indigenous engagement an integral part of our Regional Engagement Plans, we are making it an integral part of our business strategy.

We recognize that legal, regulatory and historical differences exist between the Indigenous peoples in Canada and those in the U.S. As a result, we tailor our approach to accommodate the differences.

#### *Socio-Economic Participation through Management Systems and Processes for Supply Chain Management*

Indigenous socio-economic participation is one of the key areas in our Indigenous Engagement Program. We have long recognized that hiring Indigenous businesses and contractors supports local employment, gives us the opportunity to understand available services and talent, and helps us build trust and relationships. We have also recognized the important contribution that Indigenous businesses make each year to the overall economy, and have a long history of working with them.

In 2016, we took further steps to integrate Indigenous participation into our supply chain management processes and systems, first by establishing a centralized team within our broader Supply Chain Management (SCM) function to focus on expanding opportunities for socio-economic participation by Indigenous groups. This centralized team includes Indigenous business development specialists with the skill sets required to support the achievement of our goals for Indigenous procurement.

Next, beginning in Canada, we created a centralized and comprehensive Indigenous Business Database, comprising information regarding more than 600 Indigenous-owned businesses and joint ventures, and gathered from a number of pre-existing databases as well as on-the-ground research and outreach by our Supply Chain Management function.

Recognizing that the majority of our Indigenous procurement occurs as indirect participation through sub-contracts with our prime contractors, we developed criteria and embedded tools into our contracting processes so that we can incent greater Indigenous participation as sub-contractors. One of the tools we developed was a Socio-Economic Requirements of Contractors document, which communicates our Indigenous inclusion requirements to potential prime contractors, requires them to create an Indigenous socio-economic plan as part of their bid, and provides them with our Indigenous Peoples Policy, the Indigenous Business Database, and required reporting templates. Through this tool and others, beginning in 2016, we give Indigenous participation greater weight in our decisions to award business.

Once our business has been awarded, the successful prime contractor must incorporate the Indigenous socio-economic plan into its contract execution with us. Our SCM function monitors and tracks the Indigenous socio-economic plan as the work progresses, utilizing monthly reports that require prime contractors to identify their Indigenous sub-contractors, and to report their Indigenous inclusion performance in terms of Indigenous business participation and financial value as a percentage of total procurement.

In 2016, we implemented our new approach into our Canadian project work, and spent more than \$79 million in Canada on procuring goods and services from Indigenous suppliers. We plan to implement it into our Canadian operations work in 2017. We are also working to identify qualified Indigenous suppliers in the U.S. to add to the Indigenous Business Database.



### *Community Investment*

We have long supported numerous educational and cultural initiatives in Indigenous communities, and continued to do so in 2016. We also supported community first responders through our Safe Community program. And, more recently, in response to concerns and interests expressed by Indigenous communities, we supported environmental and sustainable energy initiatives in their communities. *Please see the Aamjiwnaang First Nation example below.*

### *Indigenous Employment*

In support of increasing Indigenous employment within our company, we have developed a framework to identify and execute a series of initiatives. In 2016, our primary initiative was to develop demographic profiles of four pilot communities within our operating areas: Sarnia, Ontario; Fort McMurray, Alberta; Regina, Saskatchewan; and Duluth, Minnesota. The demographic profiles compiled data relevant to the availability of an Indigenous workforce in those communities, including information on education levels, professional experience and skills, and languages spoken. We will build upon this information to execute additional employment initiatives.

### *Cultural Awareness Training*

We provide Indigenous awareness training at Enbridge in support of our commitment to fostering an understanding of the history, traditions, rights and culture of Indigenous peoples among our employees and contractors. Through the training, we strive to build the capacity of our employees and contractors so that they can better communicate and engage with local Indigenous peoples, and can acquire the tools necessary to build trusted and respectful relationships. In 2016, we provided this training to over 300 employees and contractors in four of our operating regions in Canada and the U.S.

## **Human and Indigenous Rights**

Our Statement on Business Conduct contains provisions that support the protection of human rights and freedoms within our sphere of influence. We consistently and rigorously strive to uphold the highest human rights standards in all of our work.

The Canadian Constitution recognizes Aboriginal Peoples in Canada and provides constitutional protection of their Aboriginal and treaty rights. As such, the federal and provincial governments (the Crown) recognize that Aboriginal groups are separate and distinct from other stakeholders, and have an obligation to consult with these groups if a government decision has the potential to adversely impact an asserted constitutionally protected Aboriginal or treaty right. The Crown may decide to delegate the procedural aspects of its consultation obligation to project proponents such as us, and, in certain circumstances, may rely on regulatory processes as satisfying consultation requirements. Regardless of how the Crown discharges its duty to consult, proponents must conduct consultations as part of regulatory processes.

In the U.S., as required under Section 106 of the National Historic Preservation Act, the federal government must consult with recognized Native American tribes and other designated agencies on projects that have the potential to adversely affect historic properties. Generally, under applicable federal law, the Department of the Interior's Bureau of Indian Affairs must grant a right-of-way before a person or company can construct a road, pipeline or other corridor on or across "Indian land" (i.e., land held in trust for a federally recognized Indian tribe or band, or for an individual Native American); or on or across land held in fee by a federally recognized Indian tribe or band or an individual Native American.

## 2016 PERFORMANCE

**PERFORMANCE OBJECTIVE A:** To review and strengthen our corporate policy and systems for engagement with Indigenous Peoples.

### ENBRIDGE'S PERFORMANCE:

In 2016, we inaugurated a new Indigenous Peoples Policy to replace our former Aboriginal & Native American Policy, which had been in place since 2009. Our new policy outlines the key principles that guide our engagement with Indigenous communities in proximity to our projects and operations, which include:

- recognition of the importance of the United Nations Declaration on the Rights of Indigenous Peoples in the context of existing law;
- respect for legal and constitutional rights;
- respect for the relationship between Indigenous peoples and their traditional lands and resources, and commitment to carry out our projects and operations in an environmentally responsible manner;
- forthright and sincere consultation regarding our projects and operations;
- commitment to achieve benefits for communities arising from our projects and operations; and
- fostering understanding of Indigenous history and culture such that we can create mutually-beneficial relationships with Indigenous communities.

In our *2017 CSR & Sustainability Report*, we will provide further information on how we are implementing our Indigenous Peoples Policy through the guidelines, practices and management systems that support best practices on Indigenous consultation and engagement across all of our projects and operations.

**PERFORMANCE OBJECTIVE B:** To work with Indigenous communities near our projects and operations to create opportunities for engagement through socio-economic participation, environmental stewardship and community investments that can extend across the life cycle of our projects and operations.

### ENBRIDGE'S PERFORMANCE:

#### Case Studies of our Work with Indigenous Communities

##### *Norlite Project*

<b>Background</b>	In 2016, we undertook a pilot project to explore how we could increase procurement of Indigenous goods and services. Although construction on our Norlite Project had previously begun, we asked our prime contractors if they would participate in the process outlined in our Socio-Economic Requirements of Contractors document as part of their planning for the 2016 construction season.
<b>Approach</b>	We provided our prime contractors with the Indigenous Business Database and assisted them in the development of Indigenous socio-economic plans.
<b>Outcomes</b>	By the end of the construction season, one of our project contractors had let 12 distinct subcontracts to Indigenous businesses or joint ventures totaling \$1.8M in value, and Indigenous workers made up nearly 12 percent of the total workforce for the season. Our contractors exceeded our expectations with regard to how they embraced this opportunity. They not only considered and hired Indigenous businesses from our Indigenous Business Database, but they located other qualified Indigenous suppliers, which we subsequently added to the database. Two major prime contractors are continuing to hire Indigenous businesses and have committed to engage two Indigenous companies in high-value contracts to provide workforce camps for the project. To date, we have spent \$47 million on Indigenous procurement on the Norlite project.

#### Line 10 Westover Segment Replacement Project (Line 10)

<b>Background</b>	In planning for our Line 10 project, we developed mapping criteria that helped us further prioritize Indigenous communities, groups and organizations within the project area.
<b>Approach</b>	Our engagement strategies included consistent guidelines for agreements and traditional land use studies. We focused on Indigenous awareness for employees, supply chain management, Indigenous employment and community investment. In the end, we documented nearly 500 engagement activities with Indigenous communities or organizations over the course of developing the project.
<b>Outcomes</b>	<p>These strategies enabled us to learn more about the communities' traditional connection to the land and their interest in archaeological assessment. As a result, with three key Indigenous groups, we entered into agreements that addressed the specific concerns of each group, including environmental monitoring and participation in archaeological programs.</p> <p>One of the groups, Six Nations of the Grand River, participated as an intervenor in the Line 10 hearing, citing concerns over treaty rights, Crown consultation, and impacts on wildlife habitat and traditional hunting. We continue to reach out to Six Nations to address their concerns and to demonstrate respect for their rights.</p> <p>In November 2016, in Ancaster, Ontario, we hosted a tradeshow that brought together Indigenous businesses, our prime contractors, labor unions, and representatives from our own Supply Chain Management, Construction, and Operations groups. It gave us the opportunity to better understand the capabilities of local Indigenous businesses, and it gave Indigenous business representatives a better understanding of our—and our prime contractors'—processes and requirements. As well, we partnered with the Laborers' International Union of North America Local 837 to facilitate a six-week training-to-employment program for 16 members of two First Nations in southern Ontario. All participants graduated from the program and eight individuals were placed directly into employment.</p>

#### Line 9B Reversal and Line 9 Capacity Expansion Project

<b>Background</b>	Since 2012, we have been engaging with more than 18 Indigenous groups in Ontario and Quebec regarding our Line 9B Reversal and Line 9 Capacity Expansion project.
<b>Approach</b>	We communicate regularly through project updates and in-person meetings. Our discussions have concerned watercourse crossing management, culturally significant sites, and traditional knowledge.
<b>Outcomes</b>	This continuing engagement has led to partnerships and other capacity-building opportunities. For example, in 2016, we funded a Traditional Land Use study for the Aamjiwnaang First Nation. The study identified highly sensitive areas, giving us information we can use as we plan our future activities. We also collaborated with the Mississaugas of the New Credit First Nation to fund a five-day course on traditional approaches to plant based medicines. About 15 environmental and archaeological field monitors from the First Nation participated in the course.

### Line 3 Replacement Program (Canada) Engagement

<b>Background</b>	<p>Our Line 3 Replacement Program (L3RP) involves replacing the majority of our existing Line 3—which is one of our primary mainline liquids pipelines, and which runs from Hardisty, Alberta, to Superior, Wisconsin—with new pipe, and decommissioning the existing pipe. It is the largest project in our history and, to date, has involved our most extensive outreach to Indigenous groups and communities. The project was approved, subject to conditions, in 2016. These conditions include a requirement for ongoing reporting on Indigenous engagement and traditional land use assessments, as well as the development of an Aboriginal Construction Monitoring Plan.</p>
<b>Approach</b>	<p>Over the two years that led up to the December 2015 NEB hearings on L3RP, we engaged with Indigenous groups and communities across three provinces, some of which have reserve lands as far as 300 kilometers from our pipeline right-of-way. Our engagement activities included consultation to secure the involvement of local Indigenous communities in issues related to engineering, environmental protection, construction, land management, supply chain management and the long-term operation of the pipeline.</p> <p>Our engagement activities also included issuing a guidance document for contractors working on the project aimed at expanding opportunities for Aboriginal socio-economic participation in the project. The document outlines contractors' socio-economic responsibilities on the project and encourages them to maximize participation of Indigenous peoples in their L3RP work, including through partnerships, joint ventures or other business arrangements with Indigenous businesses, and by providing training, mentoring and employment opportunities. Our focus on training initiatives supports the development of transferrable skills that enhance employment opportunities with Enbridge, our contractors and other companies in the energy sector.</p>
<b>Outcomes</b>	<p>We have been able to enter into agreements that directly benefit more than 70 Indigenous communities that live along the route. To date, we have committed over \$27 million to Indigenous groups to support training, traditional knowledge and land use studies, and committed contracts related to our L3RP. We continue to work with Indigenous communities and contractors to identify opportunities for Indigenous involvement in 10 to 30 percent of the employment that is expected to be generated by the project.</p> <p>For example, in 2016, we worked in cooperation with the Saskatchewan Indian Institute of Technology and Saskatchewan Polytechnic to offer pipeline readiness training on the Whitecap Dakota First Nation. Two additional training sessions were held near Fort Qu'Appelle, Saskatchewan, in cooperation with the Fort Hills Qu'Appelle Tribal Council. More than 50 Indigenous participants successfully completed the courses bringing the total number of pipeline readiness trained Indigenous individuals to 125. In collaboration with the International Union of Operating Engineers Local 870, we also offered Heavy Equipment Operator training in Saskatoon, Saskatchewan, for Indigenous participants. Upon successful completion of the training, more than 30 participants were offered union membership and the consequent opportunity to obtain union work.</p>

### Aamjiwnaang First Nation

<b>Background</b>	We have been engaging with the Aamjiwnaang First Nation in Ontario on their interest in energy sustainability.
<b>Approach</b>	Through our community investment program, we partnered with the Aamjiwnaang First Nation to contribute to their desire to develop a 5-megawatt (MW) solar panel system that will be installed on the community-owned recreation center.
<b>Outcomes</b>	Energy generated from the system will be sold to the Ontario electrical grid, which will provide a revenue stream for the community. In addition to the above panel system, our funding will support three additional solar lighting installations. A local Indigenous business has been hired to source and install the system.

## SUMMARY OF KEY PERFORMANCE INDICATORS

### Indigenous Engagement, 2014 – 2016

	2014	2015	2016
<b>Adoption of updated Indigenous Peoples Policy</b>	**	**	Yes
<b>Continued integration of specific goals and plans for Indigenous engagement within broader project and regionally-based plans and processes, with an emphasis on expanding opportunities for early consultation, engagement on environmental stewardship and protection, and socio-economic participation</b>	Yes	Yes	Yes
<b>Amount spent on procuring goods and services from Indigenous businesses, contractors and suppliers in Canada</b>	>\$52 million	>\$63 million	\$79 million
<b>Amount of community investment funding provided to Indigenous communities in Canada</b>	Data not available	>\$800,000	Over \$1 million
<b>Number of employees and contractors receiving Indigenous awareness training</b>	**	**	Over 300

\*\* Initiative begun in 2015 or 2016.

## 3.1 CLIMATE CHANGE, EMISSIONS REDUCTION & ENERGY EFFICIENCY

### KEY FACTS

In 2015, we consulted internally and externally regarding the role we should play in the transition to a lower-carbon future. We used the feedback to **update our corporate Climate Policy**. Our updated policy provides Enbridge-wide guidance and standards on how we are responding to climate risks and opportunities.

We formed a **multi-disciplinary internal working group to research best practices on carbon pricing and to explore the development of a carbon shadow pricing methodology** that we could apply in our corporate planning and investment decision-making processes.

We continued **developing business segment-specific Carbon & Energy Efficiency (CEE) plans for energy use and for GHG emissions**—both Scope 1 and Scope 2. In the future, these plans will serve as the foundation for long-range targets for our energy efficiency and GHG emissions reductions.

Cumulatively, between 1995 and the end of 2015, our demand-side management (DSM) programs saved about **10.3 billion cubic meters of natural gas and reduced carbon dioxide equivalent emissions by 19.4 million tonnes**.

### OVERVIEW & PERFORMANCE OBJECTIVES

We recognize that climate change is a global issue and that we all have a role to play in addressing it, including industry. Our strategy to address the climate impacts resulting from our businesses and to support the transition to a lower-carbon economy includes publicly tracking and reporting on our efforts to reduce our energy use and GHG emissions, setting targets for our energy use and GHG emissions, building out our portfolio of investments in renewable energy and natural gas projects, working with governments, businesses, environmental organizations and communities on new solutions to climate challenges, and investing in DSM programs for our natural gas customers.

We have five performance objectives for Climate Change, Emissions Reduction & Energy Efficiency:

- To reduce our GHG emissions.
- To improve our energy efficiency.
- To help our utilities customers improve their energy efficiency.
- To manage our air emissions.
- To integrate climate considerations into key business systems.

*Please see 2016 Performance for an overview of our performance against these objectives.*

## MANAGEMENT APPROACH

### Governance

The CSR Committee of our Board of Directors has oversight at a governance level for all of our guidelines, policies, procedures, performance and risk management related to our CSR and sustainability performance, including climate change, energy use and carbon management.

In addition, our CSO provides oversight at an Enbridge-wide level for all of our CSR strategies and activities, including climate change. She has a mandate to increase our level of performance and engagement, both internally and externally, on climate issues, as well as to enable the integration of climate considerations into business decision making. Our CSO's responsibilities include disclosing our climate change-related performance, engaging with business segments on their climate action plans, and evaluating climate change risks and opportunities.

Our CSO also provides quarterly updates to our Board and Executive Leadership Team (ELT) on climate issues and opportunities, and has a direct reporting relationship to our Board's CSR Committee. A standing item at all of the CSR Committee's meetings is an update from our CSO on climate issues that includes an overview of recent developments relevant to our businesses and operations, as well as a discussion on climate-related risks.

### Risk Management

Climate change and shifting business fundamentals pose several challenges and risks for us as a diversified energy company that primarily transports oil and gas. These include: carbon pricing policies; severe weather events; and changing investor expectations on climate risk management.

To manage this risk, we have a dedicated risk management function at the corporate level that is independent of specific business segments, and that reports directly to an executive vice president (EVP, the most senior level of management at our company), who, in turn, reports to our Chief Executive Officer and Board of Directors. *For more information, please see our 2017 Management Information Circular, which is available on Enbridge.com.*

### Policies, Frameworks and Systems

While we are required to meet all relevant climate-related regulations within our operational jurisdictions, we also comply with our own policies, frameworks and systems to achieve sound environmental management during both the construction and operation of our assets.

#### *Climate Policy*

As part of the process of updating our environmental goals, in 2015, we updated our corporate Climate Policy to more rigorously outline the steps we are taking to manage climate risks and respond to opportunities. These steps include:

- reducing our own carbon footprint and integrating climate considerations into key business processes such as risk management, business development, investment review and supply chain management;
- growing our renewable energy business;
- expanding the use of natural gas to make access to lower-carbon energy more feasible;
- promoting and enabling energy efficiency through DSM programs;
- collaborating with others to achieve progress on shared climate and energy challenges; and
- supporting the climate and energy goals established by governments in the jurisdictions in which we operate.

#### *Developing Carbon & Energy Efficiency Plans and Setting Targets*

We recognize that for us to play a leadership role in the transition to a lower-carbon future, we must take a proactive approach to reducing our own carbon footprint. Setting and achieving Enbridge-wide targets for GHG reductions and



energy efficiency demonstrates a commitment to managing our own climate risk. In addition, addressing our own carbon footprint helps support the achievement of emission reduction goals set by Canada, the U.S. and other governments in jurisdictions in which we operate.

Because our business segments vary significantly in their emissions profiles, risks and opportunities, we believe we can best achieve further gains by implementing plans at the business-segment level. Accordingly, we are reviewing our current and projected GHG emissions and energy consumption profiles to develop multi-year Carbon & Energy Efficiency (CEE) plans and goals specific to each business segment's current and proposed operations and facilities.

Our CEE plans will serve as the foundation for Enbridge-wide emissions targets for both Scope 1 (direct) and Scope 2 (indirect) GHG emissions. Our work in this area is supported by our emissions data management system, which enables us to track our emissions and to comply with regulatory reporting requirements in both Canada and the U.S.

Business segment CEE plans will identify opportunities to reduce GHG emissions intensity on an output basis and improve energy efficiency. They will also identify capital requirements, timeframes, emissions and cost savings, and applicable performance metrics for inclusion in annual corporate scorecards and incentive programs.

To further secure the climate benefits of natural gas, our business segment-specific CEE plans will, where applicable, also address methane leakage from natural gas processing, transmission and distribution.

#### *External Assurance and Third-party Verification*

For the purposes of our annual reporting on our sustainability performance, we have set ourselves a corporate goal of obtaining third-party assurance on the key performance indicators (KPIs) associated with our GHG emissions; energy consumption; health and safety metrics; water, waste and land and species data; and with our spills and releases. We anticipate that meeting this goal will take between two to four years. In 2017, we plan to continue working toward achieving third-party assurance of our GHG and energy consumption data.

### **Integration of Climate Change into our Business Strategy**

We have incorporated climate change into our business strategy, and are taking action through the following investments and initiatives that are mitigating the impacts of our company and our customers, and helping society transition to a lower-carbon future. *For more information, please see the Significant Sustainability Challenges & Opportunities section of this report.*

#### *Internal Price of Carbon*

We support carbon pricing as an important mechanism for influencing energy consumption and achieving Canadian and U.S. GHG emissions reduction goals. We believe pricing mechanisms drive economically efficient environmental solutions by providing incentives to businesses to invest in conservation and technology that reduce GHG emissions, and to consumers to use energy more efficiently. In 2016, we formed a multi-disciplinary internal working group to research best practices on internal carbon pricing and to explore the development of a carbon shadow-pricing methodology that we could apply in our corporate planning and investment decision-making processes.

#### *Investments in Renewable and Alternative Energy*

We have incorporated climate change into our priorities through our investments in renewable and alternative energy, and, since 2002, have invested over \$5 billion in green power generation and emerging technology projects in Canada, the U.S., the UK and France. We plan to double our generating capacity by 2019. *For more information, please see the Renewable & Alternative Energy Investments section of this report.*

#### *Growth in Natural Gas Infrastructure*

Natural gas will continue to play an important role in the transition to a lower-carbon economy. As such, we are investing in expansion projects within our natural gas distribution franchises and Canadian midstream operations. In 2016, our growth in this area included acquiring the Tupper Main and Tupper West gas plants and associated pipelines in northeastern British Columbia, from the Canadian subsidiary of Murphy Oil Corporation.



In addition, in February 2017, we combined with Spectra Energy Corp (Spectra Energy), a leading natural gas infrastructure company, making Enbridge the largest energy infrastructure company in North America and one of the largest globally. With the merger, we now move 15 to 20 percent of North America's natural gas needs, and now own and operate Canada's two largest natural gas distribution companies that provide safe, reliable service to 3.5 million residential, commercial and industrial customers in Ontario, Quebec, New Brunswick and the State of New York. *For more information, please see the Economic Performance & Benefits section of this report.*

#### *Assisting Customers with Energy Efficiency*

Through a wide range of DSM programs, we encourage these customers—from homeowners to industrial facilities—to adopt energy-savings equipment and operating practices to reduce their natural gas consumption. *For more information, please see Performance Objective C in this section of this report, and the Research, Development & Innovation section of this report.*

#### *Energy-Efficient Buildings and Natural Gas Vehicles*

We have adopted Leadership in Energy and Environmental Design (LEED) certification standards in company-owned and leased offices. *For more information, please see Performance Objective B in this section of this report.*

#### *Stakeholder Engagement and Collaboration*

We attach a high value to engaging with stakeholders on climate change issues, and actively participate in the climate change-related activities of various industry associations, think tanks and governments. We also proactively engage stakeholders regarding the climate change implications of our projects and operations. *For more information, please see the Significant Challenges & Opportunities section of this report.*

#### *Planning for Extreme Weather Events*

We include planning for extreme weather events in our operational response plans, and have installed on-site emergency generators at many of our operational facilities to provide power in the event of extended outages (during ice storms, for example). In addition, because we operate significant infrastructure in the Gulf of Mexico region (both onshore and offshore), and because there is a risk that these assets could be impacted by hurricanes, where possible, we have relocated our onshore assets to higher ground. *For more information, please see the Significant Challenges & Opportunities section of this report.*

### **Emissions Trading Schemes and Carbon Credits**

On January 1, 2015, the Quebec government implemented a cap-and-trade system that requires Gazifère to buy carbon emission allowances on behalf of its customers. Gazifère determines the quantity of allowances it needs based on the volume of natural gas that its customers consume. The amount that Gazifère spends on the allowances matches the amount that it bills its customers through its monthly bills. To help customers reduce their natural gas consumption, GHG emissions and, therefore, their utility bills, Gazifère offers them practical tips and financial assistance programs.

As with Quebec, the Ontario government has also implemented a cap-and-trade system, which went into effect on January 1, 2017. Similar to the case with Gazifère, EGD—which, like Gazifère, is one of the affiliates under GD and a subsidiary of Enbridge Inc.—will also be required to buy emission allowances on behalf of its customers. The Ontario government, however, will also require EGD to purchase emission allowances to cover the GHG emissions that result from the operation of its distribution system.

In 2016, the Ontario Energy Board approved EGD to recover the costs associated with its emission allowance purchase through its rate base. As such, as is the case with Gazifère, EGD will determine the quantity of allowances it needs based on the volume of natural gas that its customers consume, and will bill its customers monthly. And, like Gazifère, EGD helps its customers reduce their natural gas consumption, GHG emissions and utility bills through various DSM programs. *For more information, please see Performance Objective C in this section of the report.*

## 2016 PERFORMANCE

### Note to Readers

#### *Years Covered*

With minor exceptions, we present all energy efficiency, GHG emissions and criteria air contaminant emissions data for three years (2013, 2014 and 2015) to show trends. Data for 2015 were the most current that we had available in time for our 2016 CSR & Sustainability Report, which we posted in the first quarter of 2017.

#### *Global Warming Potential (GWP) Rates*

In this report, we have used the 100-year GWP values from the Fourth Assessment Report by the Intergovernmental Panel on Climate Change to calculate our GHG emissions on a tonnes of carbon dioxide equivalent (t CO<sub>2</sub>e) basis.

#### *Standards, Methodologies and Assumptions*

We compile GHG emissions inventories following the methods and standards that apply to our industry. Our energy use data are predominantly based on metered fuel and electricity consumption, either from our own internal fuel meters or from utility and fuel invoices. In a few cases, we estimate energy use from activity data, such as leased office square footage or vehicle miles driven. Additionally, in jurisdictions with mandatory reporting regulations, we use the methods prescribed in these regulations.

**PERFORMANCE OBJECTIVE A:** To reduce our GHG emissions.

### ENBRIDGE'S PERFORMANCE:

#### Targets

In 2005, we achieved our initial target to reduce the Scope 1 GHG emissions that result from our Canadian operations by 15 percent below 1990 levels and, in fact, achieved an 18 percent reduction. We subsequently set a new 2010 target to reduce our Scope 1 GHG emissions that result from our Canadian operations by 20 percent below 1990 levels and, in 2011, determined that we had in fact achieved a 21 percent reduction.

In 2015, we assessed the feasibility of setting a multi-year, Enbridge-wide target for energy efficiency improvements and GHG emissions reductions that each business segment would implement. Our assessment involved reviewing our business segments' energy use and emissions profiles, finding opportunities for operational improvements and discussing the potential for establishing an intensity-based target with a common metric for the entire company.

In 2016, we continued developing business segment-specific CEE plans for energy use and for GHG emissions—both Scope 1 and Scope 2. In the future, these plans will serve as the foundation for long-range targets for our energy efficiency and GHG emissions reductions. Under the new plans, we expect that 2015 will serve as the baseline year for our updated targets. Because our business segments have such differing profiles with regard to emissions and energy consumption, we will set customized targets for each of them. We expect to begin reporting against our targets in 2018.

#### Enbridge's Scope 1 GHG Emissions

Our Scope 1 GHG emissions include the emissions caused by the stationary combustion equipment we use in our operations and buildings; emissions associated with the operation of our vehicles; emissions caused by our flaring; and fugitive, vented and process emissions associated with natural gas processing, transmission, storage and distribution, which include: fugitive emissions caused by pipeline leaks; fugitive emissions caused by leaks that were

caused by first-, second- and third-party pipeline damages; fugitive customer meter set leaks; fugitive station component leaks; fugitive leaks due to plastic pipe permeability; emissions that result from various types of venting (including emissions that result from purging during energizing; purging during abandonment; venting during integrity work; venting during station maintenance, and pneumatic equipment venting); and emissions from processing natural gas.

With regard to GPP, there is some overlap between the emissions that we report here, in this section of the report, and the releases that we report in the Maintaining the Fitness of Enbridge's Systems & Detecting Leaks section of this report, as some of GPP's emissions are accidental releases. We do not have data that show the extent of the overlap. *For more information, please see the Maintaining the Fitness of Enbridge's Systems & Detecting Leaks section of this report.*

For all of our business segments, we have estimated most of our GHG emissions volumes using emissions factors.

In 2015, our Enbridge-wide Scope 1 GHG emissions decreased about 3.5 percent from their 2014 levels for the following reasons: GPP experienced lower throughput and gas processing volumes in 2015 (GPP's Scope 1 emissions are directly proportional to its system throughput and gas processing volumes); LP stopped using the diesel-fueled stand-by generation it relies on when grid power is not yet available for new pumps, and reduced its use of the natural gas-fired pipeline heater it uses at its Superior Terminal; GD used less natural gas at its underground storage operations and for its distribution line heaters. GD's fuel use varies depending on the amounts of natural gas it injects or removes from its storage facility.

### Enbridge's Scope 1 GHG Emissions, 2013 – 2015, by Business Segment

The following table shows our Scope 1 GHG emissions between 2013 and 2015 for our GPP, LP, GD, Corporate Services and GPT business segments:

Scope 1 (t CO <sub>2</sub> e)	2013	2014	2015
Liquids Pipelines <sup>1</sup>	121,000 <sup>2,3</sup>	56,000 <sup>3</sup>	44,000 <sup>2</sup>
Gas Pipelines & Processing	2,273,000	1,899,000	1,822,000
Gas Distribution <sup>4</sup>	301,000	328,000	339,000
Green Power & Transmission	100	300 <sup>5</sup>	200 <sup>5</sup>
Corporate Services	2,000	2,000	1,000
<b>Total – Scope 1</b>	<b>2,698,000</b>	<b>2,285,000</b>	<b>2,206,000</b>

<sup>1</sup> Our Scope 1 estimates for our LP business segment in the U.S. include vehicle emissions and fugitive emissions from terminal operations (methane and carbon dioxide), as well as stationary combustion-related emissions from pumps, heaters, emergency generators and vapor destruction units. Currently, our Scope 1 emissions inventory does not include emissions that result from space heating, water heating and other small combustion sources. These emissions sources, however, are minor in terms of our LP U.S.'s total Scope 1 and 2 emissions profiles.

<sup>2</sup> In 2013, we used sulfur hexafluoride (SF<sub>6</sub>) as a tracer gas when we conducted hydrostatic pressure testing of Line 14. The CO<sub>2</sub>e of the test (84,800 t) encompasses about 74 percent of LP's 2013 Scope 1 total. No hydrostatic pressure testing requiring tracer gas was done in 2014. In 2015, a hydrostatic pressure test was conducted using a tracer gas (Tracer-R), which has a lower GWP than SF<sub>6</sub> and which resulted in GHG emissions of 8200 t CO<sub>2</sub>e.

<sup>3</sup> 2014, LP's Scope 1 GHG emissions are higher than usual due to its temporary use of diesel-fueled generation for new pumps. We have adjusted the 2013 data to account for the temporary diesel-fueled generation that also took place in 2013.

<sup>4</sup> GD's Scope 1 GHG emissions include reportable natural gas releases that were caused by first-, second- and third-party damages, as well as emissions caused by planned venting. We report the number of first-, second- and third-party damages in more detail in the Maintaining the Fitness of Enbridge's Systems & Detecting Leaks section of this report. In addition to the emissions caused by first-, second- and third-party damages, and by planned venting, GD's Scope 1 GHG

emissions include fugitive emissions pertaining to pipeline leaks, customer meter set leaks, station component leaks and leaks due to plastic pipe permeability. GD's Scope 1 emissions rose in 2015 over 2014 due to the increased amount of venting that it performed during integrity and maintenance work, and due to the tie-in of a new natural gas pipeline. Also, GD's 2015 fugitive emissions increased due to the addition of commercial and residential customers and sales stations.

<sup>5</sup> GPT's Scope 1 GHG emissions are minor and subject to change as this group adds new facilities in the future. We have updated GPT's 2014 data. Both its 2014 and 2015 data are preliminary.

## Enbridge's Scope 2 GHG Emissions

Our Scope 2 emissions include the emissions that result from the off-site generation of electricity, which we buy and consume. In 2015, our Enbridge-wide Scope 2 GHG emissions were about 23 percent higher than they were in 2014, mostly because of LP's increased electricity use. LP uses electricity to operate the pumps that push crude oil and other liquid hydrocarbon products through its pipelines. Its electricity use increased in 2015 because the volume of the product it delivers through its pipelines has increased. The following table shows our Scope 2 GHG emissions between 2013 and 2015 for our LP, GPP, GD, Corporate Services and GPT business segments:

Scope 2 (t CO <sub>2</sub> e)	2013	2014	2015
Liquids Pipelines	2,834,000	3,550,000 <sup>1</sup>	4,408,000
Gas Pipelines & Processing	212,000	204,000	207,000
Gas Distribution	2,400	2,200	1,600
Green Power & Transmission	1,700	100 <sup>2</sup>	800
Corporate Services	2,600	2,600	1,900
<b>Total – Scope 2</b>	<b>3,053,000</b>	<b>3,759,000</b>	<b>4,619,000</b>

<sup>1</sup> We have revised the LP Scope 2 GHG emissions data for 2014 for some of our U.S. pump stations such that they reflect more recent (generally lower) grid average emissions factors. Our revision has resulted in a 4.9 percent decrease from the data we reported in our *2015 CSR & Sustainability Report*.

<sup>2</sup> We have updated GPT's 2014 data. Both the 2014 and 2015 data are preliminary. Each year, we calculate the Scope 2 emissions for the most recent year for which we have data (in this case, 2015) using the most current Environment and Climate Change Canada or U.S. EPA e-GRID grid-average emission factors that are available when we are preparing our inventory. As such, the year-over-year changes in our Scope 2 emissions data may reflect changes in our electricity consumption and changes in the grid emission factors that we have used to calculate our emissions.

## Enbridge's Scope 1 and Scope 2 GHG Emissions Combined

The table below presents our combined Scope 1 and Scope 2 GHG emissions totals. As the graph and table show, while we decreased the total volume of our Scope 1 GHG emissions in 2015, we increased the total volume of our Scope 2 GHG emissions, for a net overall increase in our combined 2015 Scope 1 and Scope 2 emissions of 13 percent over our 2014 levels, and 19 percent over our 2013 levels.

Scope 1 and 2 (t CO <sub>2</sub> e)	2013	2014	2015
Liquids Pipelines	2,955,000	3,607,000	4,451,000
Gas Pipelines & Processing	2,485,000	2,103,000	2,029,000
Gas Distribution	303,000	330,000	340,000
Green Power & Transmission	2,000	0	1,000
Corporate Services	5,000	5,000	4,000
<b>Total - Scope 1 and Scope 2</b>	<b>5,750,000*</b>	<b>6,044,000*</b>	<b>6,825,000*</b>

\*Column amounts may not equal totals due to rounding.

In 2015, we were able to decrease the volume of our Scope 1 GHG emissions—and some of our Scope 2 GHG emissions—through the following initiatives:

#### *Offices and Buildings*

We reduced the Scope 1 and Scope 2 emissions that result from energy use in our offices and buildings through our efforts to build our new facilities to LEED standards. Examples of such facilities are GD's Technology and Operations Centre in the Toronto, Ontario, area and the new Enbridge Gas Storage administrative building in Mooretown, Ontario. We are also renovating GD's Victoria Park offices in Toronto with LEED Gold standards in mind, and have completed three floors, which have been LEED certified. A number of our leased offices are also located in LEED Gold certified buildings, including three of LP's leased offices, our corporate head office in Calgary, Alberta, and GPP's Houston, Texas, office, which is also an Energy Star Certified building.

In 2016, the Canada Green Building Council (CaGBC) awarded our recent renovation of our Calgary downtown headquarters with LEED Silver Certification. And, in Edmonton, Alberta, we are planning to consolidate our offices from six buildings to two—the existing Manulife Place, which is LEED Gold certified; and the new Kelly Ramsey Tower, for which the builders plan to attain LEED Gold Certification.

#### *Vehicles*

GD has the largest NGV fleet in Canada and, by the end of 2016, it had converted 628 of its 841 fleet vehicles to run on natural gas. Every RFP that the Supply Chain Management function now issues on behalf of GD to vehicle manufacturers requires that the supplier provide vehicles that are either NGV ready or that can be easily converted. GD has also begun converting its 203 medium duty trucks, which normally operate on diesel fuel, such that they run on natural gas. Already, GD has converted 14 of them. In addition, GD has reduced its fleet size by standardizing vehicle designs and building in versatility. For jobs that would have previously required three trucks, each with its own capabilities, GD has built three different job functions into one truck. And GD routinely installs hybrid systems that enable work trucks to operate alternating current (AC) and direct current (DC) power tools and equipment from an alternative power source, eliminating the need to have the vehicle engine running. Through these initiatives, in 2015, GD reduced its GHG emissions by about 450 t CO<sub>2</sub>e, compared to levels it would be emitting GD were only operating gasoline or diesel-fueled vehicles.

#### *Employee Travel*

We have implemented initiatives that provide alternatives to business travel. For example, by the end of 2016, we had 39 active TelePresence videoconferencing meeting rooms and, in 2016, our employees held more than 4,900 TelePresence meetings (over 1,800 of which involved three or more rooms). We are also offering an increasing number of on-line training courses to employees.

#### *Stationary Combustion Equipment*

Because our stationary combustion equipment—including the turbines and reciprocating engines that drive the compressors on GPP's gathering and transmission pipelines, as well as a variety of boilers, heaters and line heaters—consumes large volumes of natural gas, we operate it such that we maximize energy efficiency and minimize emissions. We follow recommended maintenance and, in some cases, use asset management software to implement preventive maintenance programs involving air filter, oil and spark plug changes; hose, belt and rod packing inspections; and emission testing. We have also been able to reduce the energy requirements of our line heaters using new technologies and improved temperature control strategies.

#### *Electric Pumps*

Because the pumps that push crude oil through our pipelines consume a large amount of electricity, we aim to optimize their performance such that we lower both our costs and emissions. For example, we manage the thermal characteristics of our system or use additives to reduce friction and improve the product flow. We also use various techniques to minimize pressure cycling, or the fluctuations in our pipelines' operating pressures as we start and stop pumps and move crude oil products with different densities and viscosities.

### Construction

While the emissions associated with constructing our projects are small compared with the emissions associated with their ongoing operations, we have implemented several measures aimed at keeping them as low as possible. For example, we use locally sourced pipe whenever possible. We also establish field offices and worker camps in the areas where we are building projects so as to reduce the travel time of project personnel, and transport workers to work sites via bus to reduce the number of vehicles on the roads.

### Carbon and Sulfur Dioxide Reinjection

While processing natural gas, GPP reinjects the carbon and sulfur dioxide (SO<sub>2</sub>) that results from the process into two acid gas reservoirs near its Aker Treating Plant in East Texas. In 2015, GPP reinjected more than 27,797 t CO<sub>2</sub>e and nearly 226.08 tonnes of SO<sub>2</sub> that it otherwise would have emitted into the atmosphere.

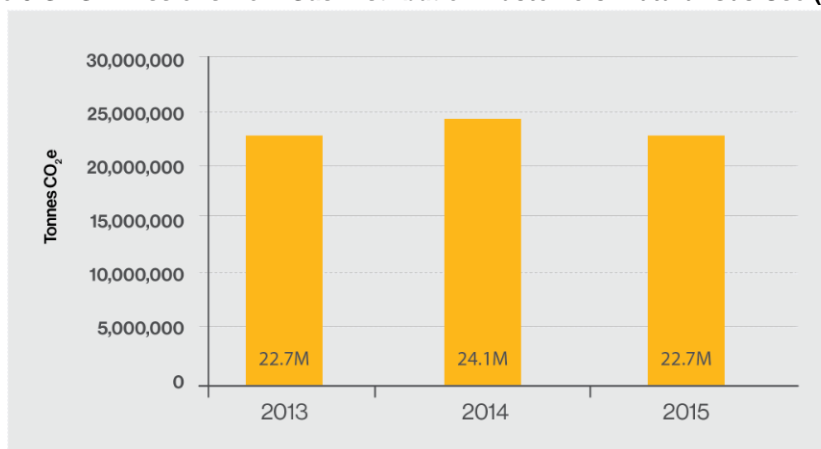
## Enbridge's Scope 3 Emissions

We have not assessed all of the emissions that result from our activities (i.e. our Scope 3 emissions), and we have not set targets for these emissions. We do, however, track and have strategies to reduce the Scope 3 GHG emissions that result from GD's customers' natural gas use, from grid loss and from our employees' air travel for business.

### GHG Emissions that Result from Gas Distribution Customers' Natural Gas Use

In the following graph we provide a high-level estimate of the Scope 3 emissions that resulted from customers' use of the natural gas that GD distributes or sells through its natural gas utility subsidiaries. For simplicity, we have assumed that all of the natural gas that GD sold was combusted.

**Scope 3 GHG Emissions from Gas Distribution Customers' Natural Gas Use (t CO<sub>2</sub>e)**



As with our customers' natural gas use, our annual Scope 3 emissions decrease from 2014 to 2015 was partially the result of a decrease in natural gas sales in 2015—partly because that year was warmer than 2014—despite GD's addition of about 30,000 new customers in 2015. The decrease is also partially the result of the DSM programs that GD offers its customers. GD is committed to helping its natural gas distribution customers use energy wisely and, through a wide range of DSM programs, it encourages customers—from homeowners to industrial facilities—to adopt energy-savings equipment and operating practices to reduce their natural gas consumption. *For more information on our DSM programs and performance, please see Performance Objective C in this section of this report.*

### GHG Emissions that Result from Grid Loss

In the following table, we provide a high-level estimate of the Scope 3 emissions that resulted from the loss of electricity during its transmission and distribution (grid loss). To calculate the estimate, we applied country or regional grid loss percentages to our Scope 2 data. Scope 3 emissions from grid loss vary from year to year depending on a

number of factors, including the amount of electricity purchased, the emissions intensity of the purchased electricity and the percentage grid loss factor, which can vary between electricity supply regions. The higher estimated 2015 GHG emissions due to grid loss reflect that year's higher electricity consumption levels and higher associated Scope 2 GHG emissions.

#### Scope 3 GHG Emissions from Grid Loss (t CO<sub>2</sub>e)

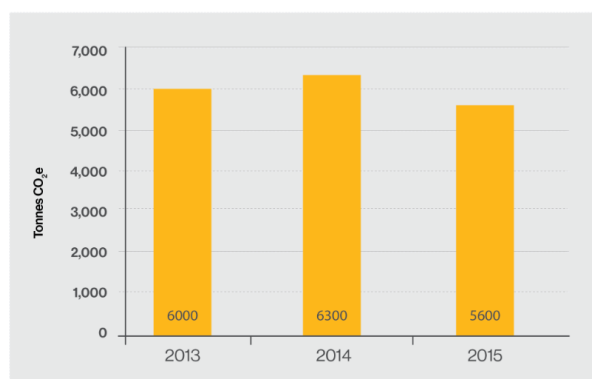
	2013	2014	2015
Canada	87,000	104,000	151,000
U.S.	160,000	201,000	216,000
<b>Total</b>	<b>247,000</b>	<b>305,000</b>	<b>367,000</b>

Note: The above estimates are based on the following national- or regional-level grid loss percentage assumptions: For Canada, 6.67 percent, which we derived from Table A13-1 of Canada's National Inventory Report (EC, 2016); for the U.S., 9.17 percent, which is the eGRID U.S. Eastern Region grid loss percentage, which we took from the eGRID year 2012 summary tables (EPA, 2015). We have recalculated the estimates for each of the years based on these percentage grid loss values.

#### GHG Emissions that Result from Employees' Air Travel for Business

In the following graph, we provide an estimate of the Scope 3 emissions that resulted from our employees' air travel for business.

#### Employee Air Travel for Business (t CO<sub>2</sub>)



For more information, please see *Employee Travel* in this section of this report.

#### Enbridge's Methane Emissions

Methane emissions and, to a lesser extent, carbon dioxide emissions, result from natural gas that has either leaked (through fugitive emissions) or been vented to the atmosphere. We are committed to reducing these emissions through the following efforts.

GD finished removing all of the cast iron piping from its natural gas distribution system in 2012. By completing this process, we estimate that it reduced its annual GHG emissions—chiefly methane—by about 145,000 t CO<sub>2</sub>e per year. It has also replaced the majority of its high-bleed-rate pneumatic equipment. Begun in the early 1990s, this initiative has reduced methane emissions from pneumatic equipment by about 95 percent.

GD continues to manage its systems to reduce methane leaks through its extensive asset integrity program, which targets preventive maintenance on the equipment and piping with a higher risk of leaking. And it has committed significant resources to its Leak Detection and Repair (LDAR) program. Employees at its processing plants now conduct monthly and quarterly LDAR monitoring for natural gas leaks.



For several years, GD has installed excess flow shut-off valves on new service line installations, which reduce the amount of methane (and natural gas) released when service lines are damaged. And has experienced a continued decline in the methane emissions caused by third-party damage to its pipelines, thanks to the implementation of Call Before You Dig/Ontario One Call, a province-wide, one-call locate system that GD helped establish. *For more information, please see the Emergency Preparedness & Response section of this report.*

GPP uses forward-looking infrared (FLIR) cameras in its LDAR monitoring. It has successfully used the cameras at its plants, compressor stations and pipeline rights-of-way to identify leaks and emission sources and to enable timely repairs. The cameras' ease of use and rapid-scan functionality enable GPP to conduct leak detection surveys more often at facilities, resulting in the rapid detection of leaking components and lowered volumes of natural gas lost due to fugitive leaks. GPP also maximizes the energy efficiency of its equipment—and thus reduces the possibility of methane emissions—using best management practices. Best management practices include conducting all recommended routine maintenance, monitoring the operations of individual engines, and ensuring optimal operating conditions.

GPP conducts right-of-way surveillance and air patrols on its gathering and transmission pipelines. The surveillance and patrols help GPP quickly identify leaks. GPP also regularly checks the fitness of its pipelines and other facilities to ensure that they are in good condition.

GPP uses compressed air—rather than natural gas—to start the drivers in its large CAT® 3600-series compressors, thereby eliminating a source of vented emissions. GPP's preventive maintenance program for engines also helps ensure that its compression equipment is performing efficiently, and that combustion-related methane is kept to a minimum. GPP has also replaced its high-bleed-rate pneumatic control devices, such as liquid-level controllers, pressure regulators and valve controllers, with no-bleed and low-bleed alternatives.

**PERFORMANCE OBJECTIVE B:** To improve our energy efficiency.

## **ENBRIDGE'S PERFORMANCE:**

### **Enbridge's Energy Use**

Through our direct use of natural gas, gasoline, diesel and aviation fuel, we consume energy to power our pipeline heaters and compressors, power our fleet vehicles, and power our corporate jet and the aircraft we use to inspect our rights-of-ways. Our direct use of energy for these purposes results in Scope 1 GHG emissions.

Through our use of the electricity that we buy from the grid, we use energy to power the motors that drive the pumps we use to transport liquid hydrocarbon products, light and provide power to our office buildings and operations stations, and power our Supervisory Control and Data Acquisition (SCADA) systems and other monitoring equipment. Our use of electricity results in Scope 2 GHG emissions.

In 2015, we worked to reduce the energy we use within our operations through efficiency improvements and conservation efforts. For example, we proactively reduced our energy use in our offices and buildings through our efforts to design and build new facilities to LEED standards, and we actively source buildings that meet LEED standards when we lease office space. We have also introduced a variety of energy saving initiatives throughout our company, including energy-efficient lighting and motion sensors that turn off lights when inactive, and computer monitors, laptops and photocopiers that enter into a power savings mode after a period of inactivity. And we introduced new heater technologies and improved temperature control strategies that have enabled us to reduce the energy requirements of the pipeline heaters in GD's operations.

### **Enbridge's Energy Use, 2013 – 2015, by Business Segment**

The following tables show our energy use within our operations between 2013 and 2015 for each of our business segments:



### Liquids Pipelines

The three-year energy use data for LP in Canada and the U.S. are shown below. By far, the largest component of LP's energy use is electricity, which LP uses to operate the pumps that move liquid hydrocarbon products through its pipelines. As LP has added new projects to meet producers' needs for greater capacity and access to new markets, the electricity required to move the product has increased with the volume of product that LP delivers.

The decrease in LP's natural gas fuel consumption in 2015 over 2014 reflects the lower amount of natural gas that LP used in its line heater at our Superior Terminal, offset in part by new gas-fired vapor combustion equipment used for emission controls. LP's use of other fuels for its stationary combustion equipment was lower in 2015, as diesel for temporary electricity generation at new pump stations in Canada was no longer required. LP estimates its energy consumption for mobile sources based on distances driven and, in the case of aircraft, hours flown. LP's increasing use of energy for mobile sources reflects the fact that its fleet miles driven and aircraft operating hours in 2015 were higher than in previous years. The increased fleet mileage and aircraft operation in 2015 was due to a variety of factors, including the expanded geographic areas of operation.

**Liquids Pipelines, Energy Use, 2013 – 2015**

Fuel (GJ)	2013	2014	2015
Stationary Combustion Equipment – Natural Gas	284,000	289,000	245,000
Stationary Combustion Equipment – Other Fuels	128,000	323,000	54,000
Mobile Sources – Gasoline, Diesel	114,000	137,000	142,000
Electricity	15,476,000	19,959,000	24,767,000
<b>Total</b>	<b>16,003,000</b>	<b>20,708,000</b>	<b>25,208,000</b>

Note: The above data exclude the energy used by our smaller U.S. offices. 3.6 gigajoules (GJ) = 1 megawatt hour (MWh)

### Gas Pipelines & Processing

Natural gas comprises the largest share of the energy that GPP uses, largely because it fuels the compressors that GPP uses to transport product through its gathering lines and from offshore pipelines to its processing and treating facilities. Other natural gas-fired equipment, such as boilers, amine units and various gas processing equipment, also contributes to GPP's natural gas use volumes. In addition, the Vector natural gas pipeline, which is part of GPP, operates natural gas-fired turbines to run its compressors.

GPP expects year-over-year variability in its natural gas consumption, as its usage depends on many factors, including commodity prices, the number of gas fields it services, the gas treating energy it requires to remove carbon dioxide or hydrogen sulfide (H<sub>2</sub>S) from the gas, the volumes it delivers on the Vector pipeline and its offshore systems, and the extent to which it has expanded its system. Electricity, which GPP uses for lighting, controls, motors and other applications, comprises the next largest share of the overall energy that GPP uses.

**Gas Pipelines & Processing, Energy Use, 2013 – 2015**

Fuel (GJ)	2013	2014	2015
Stationary combustion equipment – natural gas	37,547,000	32,698,000	31,106,000
Mobile sources – gasoline, diesel	507,000	451,000	385,000
Electricity	1,371,000	1,318,000	1,340,000
<b>Total</b>	<b>39,425,000</b>	<b>34,467,000</b>	<b>32,831,000</b>

Note: We have revised the 2014 electricity data to correct a transcription error in the table we used in our 2015 CSR & Sustainability Report. 3.6 GJ = 1 MWh

### Gas Distribution

Natural gas comprises the largest share of energy that GD—which EGD in Ontario; St. Lawrence Gas Company in the State of New York, Gazifère in Quebec, and Enbridge Gas New Brunswick (EGNB) in New Brunswick—uses for its natural gas distribution and underground storage operations. Natural gas fuels the reciprocating engines that drive the compressors that GD uses to inject and withdraw natural gas from underground storage facilities. It also fuels GD's line heaters, space and water heating equipment, and is used in its fleet vehicles.

GD's energy use varies from year to year, mostly because the volume of natural gas injected and withdrawn from its underground storage facilities varies. GD's natural gas needs depend on winter temperatures, and the extent to which GD's customers need natural gas from its storage facilities to meet peak winter demand.

#### Gas Distribution, Energy Use, 2013 – 2015

Fuel (GJ)	2013	2014	2015
Stationary equipment – natural gas	725,000	934,000	852,000
Mobile sources – natural gas	49,000	57,000	49,000
Mobile sources – other fuels	93,000	96,000	102,000
Electricity	73,000	68,000	63,000
<b>Total</b>	<b>940,000</b>	<b>1,155,000</b>	<b>1,066,000</b>

3.6 GJ = 1 MWh

### Green Power & Transmission

As shown below, GPT requires relatively small amounts of energy to operate its wind, solar and geothermal projects.

#### Green Power & Transmission, Energy Use, 2013 – 2015

Fuel (GJ)	2013	2014 <sup>1</sup>	2015
Stationary combustion equipment – natural gas	300	400	600
Stationary combustion equipment – other fuels	600	200	500
Mobile sources – other fuels	1,300	1,100	1,100
Electricity	15,300	4,000	6,300
<b>Total</b>	<b>17,400</b>	<b>5,700</b>	<b>8,600</b>

3.6 GJ = 1 MWh

<sup>1</sup> We have updated GPT's 2014 data. Both the 2014 and 2015 data are preliminary.

### Corporate Services

The table below provides information on the energy we use at our leased head office locations and for our corporate jet. Energy use in our head office locations decreased in 2015 as a result of consolidation of leased office space into one main location, which was upgraded to LEED standards. In 2015, our use of aviation fuel increased over 2014 levels but was equal to 2013 levels.

#### Corporate Services, Energy Use, 2013 – 2015

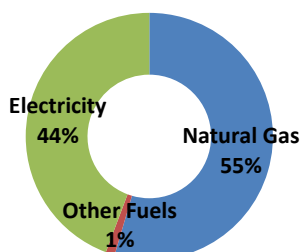
Fuel (GJ)	2013	2014	2015
Stationary combustion equipment – natural gas	16,000	19,000	19,000
Mobile sources – other fuels	19,000	17,000	19,000
Electricity	11,000	12,000	9,000
<b>Total</b>	<b>47,000</b>	<b>48,000</b>	<b>47,000</b>

3.6 GJ = 1 MWh

## Enbridge's Energy Use by Fuel Type – An Overview

As the graph and table below show, in 2015, we derived the energy that we use for our operations from natural gas (55 percent); other fuels such as gasoline, diesel and propane (1 percent); and electricity (44 percent).

**Enbridge's 2015 Energy Use, by Fuel Type**



## The Renewable or Alternative Energy used in Enbridge's Operations

We sell most of the electricity that we generate through our various renewable and alternative energy operations to customers under long-term power purchase agreements (PPAs) or electricity hedges. To power our own operations, we typically use conventional electricity that we buy from the grid. We do, however, generate very small amounts of renewable energy to power some of our operations in Canada. At the end of 2016, GD, for example, had 12 solar panels and two wind generators installed at stations across its system. The solar and wind units served as the primary energy source for the stations, while generators provided emergency backup power. In addition, GD's Victoria Park Centre generated a portion of its power using a turbo expander. While we don't have plans to install more renewable energy units, we will use renewable technology for our operations when it makes sense to do so.

**PERFORMANCE OBJECTIVE C:** To help our utilities customers improve their energy efficiency.

## ENBRIDGE'S PERFORMANCE:

### GD's Customers' Energy Use

While we do not fully account for all of the energy that is used upstream and downstream of our operations, as shown in the following table, we do track the natural gas that our GD customers use (GD's customers comprise customers of its four affiliates, which are EGD in Ontario, St. Lawrence Gas Company in the State of New York, Gazifère in Quebec, and EGNB (in New Brunswick) through our natural gas sales.

**Gas Distribution's Natural Gas Sales (PJ), 2013 – 2015**

	2013	2014	2015
Natural Gas Utility Affiliate under our Gas Distribution Business Segment	Natural Gas Sales <sup>1</sup> (PJ) <sup>2</sup>	Natural Gas Sales <sup>1</sup> (PJ) <sup>2</sup>	Natural Gas Sales <sup>1</sup> (PJ) <sup>2</sup>
Enbridge Gas Distribution (Ontario)	441.5	468.7	444.4
St. Lawrence Gas Company (State of New York)	7.5	7.9	7.5

Gazifère (Quebec)	7.1	7.0	6.8
Enbridge Gas New Brunswick (New Brunswick)	6.6	6.7	6.0
<b>Gas Distribution – total sales</b>	<b>462.7</b>	<b>490.3</b>	<b>464.7</b>

<sup>1</sup> Natural gas sales include retail sales to customers and commercial sales (including transportation services) to industrial and other large natural gas users.

<sup>2</sup> 1 petajoule (PJ) = 1,000,000 gigajoules (GJ). We have converted volume sales data (based on the annual average monthly heating values for gas deliveries) into sales data that are in PJ.

In 2014, GD's natural gas sales increased because 2014 was colder than 2013 and, in 2015, sales decreased—despite the addition of about 30,000 new customers in 2015—because 2015 was warmer than 2014. The decrease in 2015 was also partially the result of the DSM programs that GD offers its customers. GD is committed to helping its natural gas distribution customers use energy wisely and, through a wide range of DSM programs, it encourages customers—from homeowners to industrial facilities—to adopt energy-savings equipment and operating practices to reduce their natural gas consumption.

### *Demand-Side Management*

GD's DSM programs consist of such energy-savings equipment and operating practices as energy-efficiency audits of residential homes, as well as of commercial and industrial facilities; financial rebates and the sharing of technical expertise to encourage customers to adopt energy-saving equipment and practices; work with industry and trade associations in various sectors—such as schools, hotels and motels, construction, automotive, food and beverage, and pulp and paper—to promote DSM programs and enhance industry standards and best practices; design charrettes (planning sessions) that support and educate builders on higher efficiency building options before construction begins, and partnerships with governments, suppliers and equipment manufacturers on investments in new energy-efficient technologies that benefit ratepayers.

In 2015, GD submitted a comprehensive DSM plan to the Ontario Energy Board that would introduce a broad suite of new and enhanced offers. Its multi-year DSM plan, which runs from 2015 to 2020, commits about \$360 million to target seven million cumulative cubic meters of natural gas savings, reducing customers' emissions by roughly 13.4 t CO<sub>2</sub>e over the lifetime of the plan. The DSM plan represents a major step toward increased energy efficiency and reduced customer emissions in Ontario.

Cumulatively, between 1995 and the end of 2015, EGD's DSM programs saved about 10.3 billion cubic meters of natural gas and reduced carbon dioxide equivalent emissions by 19.4 million tonnes<sup>1</sup>. These reductions are similar to those that would be achieved by taking about 3.8 million cars off the road<sup>2</sup> for a year or by meeting the natural gas needs of about 4.3 million homes<sup>3</sup> for a year. These reductions have created net benefits to society worth about \$2.6 billion. For a utility that delivers just over 11 billion cubic meters of natural gas to its customers in an average year, the savings achieved to date are significant, and do not even include the gas savings that will be achieved for decades into the future as a result of past efforts.

In addition to its DSM programs, GD's *Savings by Design* green building program helps builders construct energy efficient, healthy and sustainable homes that exceed Ontario Building Code requirements by at least 25 percent. The initiative brings together a range of subject matter experts and financial incentives during the design, construction and commissioning stages of building and housing projects. In 2016, it was honored with the Smart Energy Communities Award by Quality Urban Energy Systems of Tomorrow (QUEST) Canada. QUEST presents this award each year to recognize leaders who advance smart energy communities in Canada.

<sup>1</sup> Figures are subject to Clearance of Accounts proceeding before the Ontario Energy Board. We have assumed that 1.875 kg of CO<sub>2</sub>e are emitted for each m<sup>3</sup> of natural gas that is consumed.

<sup>2</sup> We have assumed that the average automobile produces 5.1 tonnes of carbon dioxide per year.

<sup>3</sup> We have assumed that a typical residential customer uses 2,400 m<sup>3</sup> per year of natural gas to heat his or her home and water.

**PERFORMANCE OBJECTIVE D:** To manage our air emissions.

#### ENBRIDGE'S PERFORMANCE:

The major air emissions that our facilities release include carbon monoxide, nitrogen oxides and volatile organic compounds (VOCs). Other contaminants that they release, but in much smaller quantities, include sulfur dioxide, hydrogen sulfide, particulate matter and hazardous air pollutants such as n-hexane. Our facilities are designed to ensure that air emissions from our operations are kept below regulated limits.

#### Reporting Criteria Air Contaminants

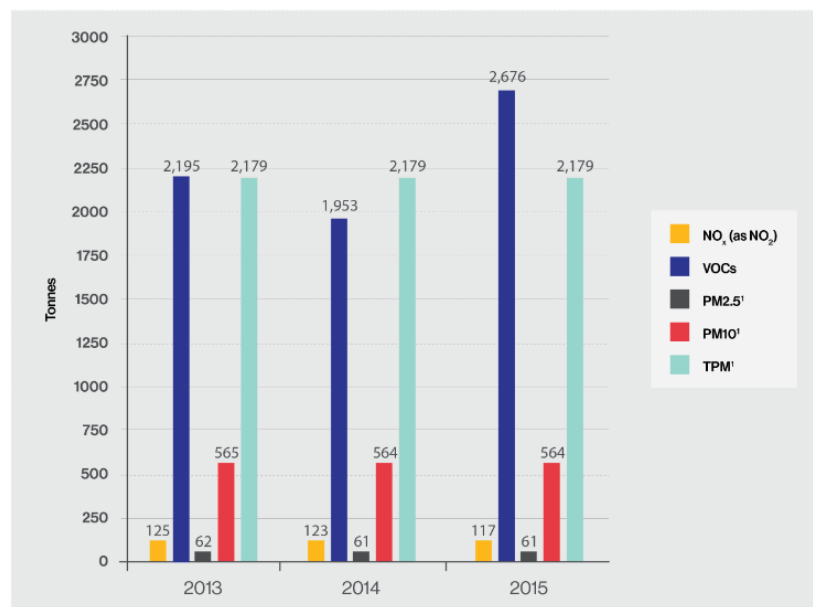
Criteria air contaminants (CACs) are a group of common air pollutants that are released through incineration, industrial production, fuel combustion and transportation vehicles. We have established management programs that define our roles, responsibilities and timelines for reporting our CAC emissions to various government agencies in Canada and the U.S.

We base our CAC emissions estimates on published emission factors applied to fuel use by equipment type. In the case of non-combustion sources, we estimate CAC emissions using modeling programs such as the U.S. EPA's TANKS program. We also use some site- or equipment-specific emission factors. In Canada, LP and GD track and report annual CAC emissions under the National Pollutant Release Inventory (NPRI). The CACs covered under the regulation include nitrogen oxides, sulfur dioxide, VOCs, carbon monoxide and particulate matter. In the U.S., both LP and GPP monitor and report on CAC emissions in compliance with state and federal regulations.

#### Liquids Pipelines

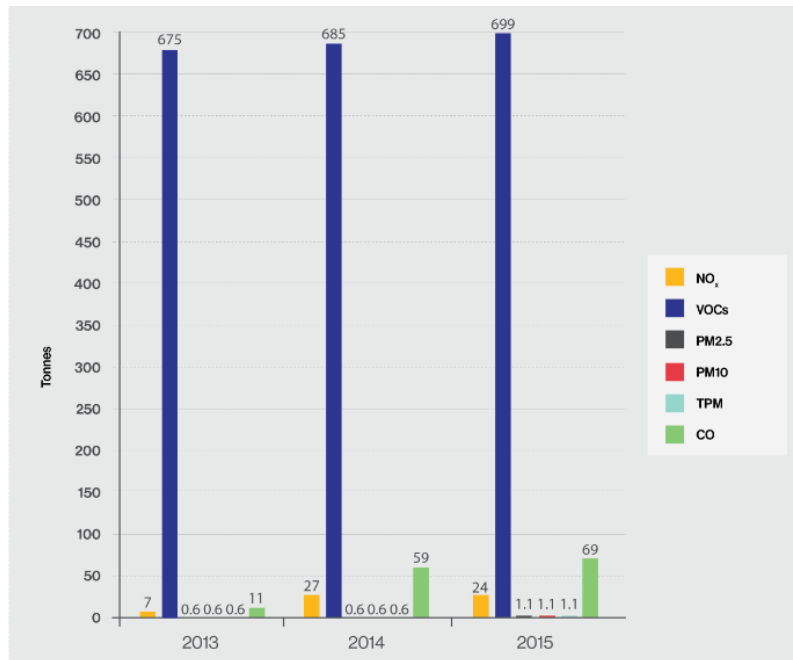
Within LP's operations, the main source of VOC emissions is losses from storage tanks, while the main source of NO<sub>x</sub> emissions is combustion equipment. Air emissions levels vary from year to year depending on a number of factors, including throughput of products at terminals, product composition, maintenance activities such as tank cleaning, implementation of pollution prevention projects and the amounts of fuel used in combustion equipment. The graphs below summarize the CAC data that LP Canada and LP U.S. have reported in their jurisdictions:

**Liquids Pipelines Canada  
Criteria Air Contaminants (tonnes), 2013 – 2015**



Note: The majority of particulate matter (PM 2.5, PM 10 and total particulate matter or TPM) that LP Canada reported under the NPRI program is due to road dust. Much smaller quantities of PM are from stationary combustion sources. All years' data have been updated (minor adjustments) and the data is also restated across all years to reflect the sale of the Cromer Truck Terminal, which occurred prior to December 31, 2015.

### Liquids Pipelines U.S. Criteria Air Contaminants (tonnes), 2013 – 2015



LP has an ambient air monitoring network to monitor the air quality in and around its tank farm at Hardisty, Alberta. The stations collect and monitor the air quality both continuously and on the National Air Pollution Surveillance schedule. In addition to the air monitoring stations, LP conducts semi-annual head-space air sampling on each storage tank to ensure emission-control devices are functioning.

LP is a member of the Strathcona Industrial Association, which owns and operates an air monitoring network in Edmonton and Strathcona County, Alberta. The stations continuously monitor the air quality around LP's Edmonton Terminal. LP is also a member of the Sarnia-Lambton Environmental Association (SLEA), a non-profit cooperative that comprises industries in southwestern Ontario. SLEA monitors ambient environmental conditions to assess the impact of its members on the local environment (air, water and soil). LP operates the Sarnia Terminal, which is within the jurisdiction of SLEA.

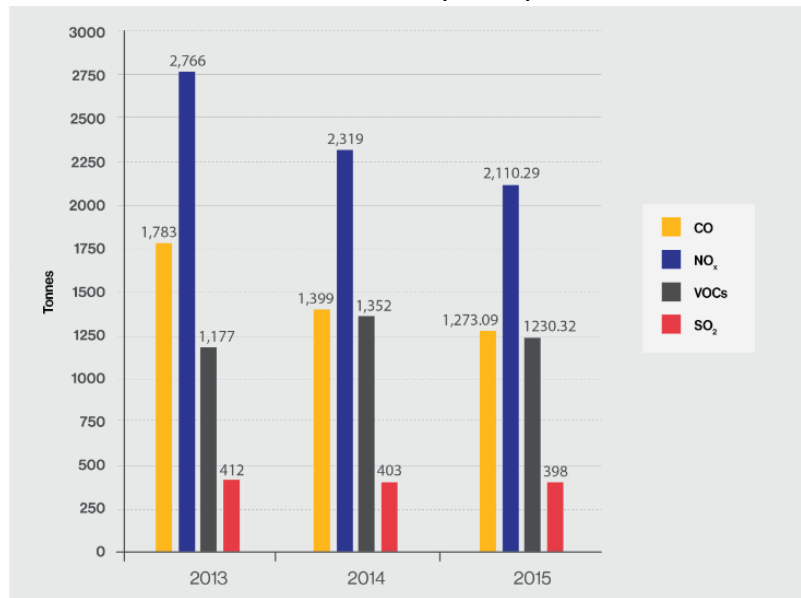
LP has a rigorous maintenance program in place that includes regular inspections of emission control devices, and repair or replacement of them to ensure they meet regulatory criteria.

### Gas Pipelines & Processing

GPP is continually looking for opportunities to upgrade its gas facilities and pipelines in ways that contribute to its operational, environmental and safety goals. One example is acid gas injection, which uses advanced technology to compress acid gas, primarily H<sub>2</sub>S and CO<sub>2</sub>, and inject the gases into suitable underground reservoirs, thereby avoiding emissions to the atmosphere. In 2014, GPP utilized two acid gas injection wells near our Aker Treating Plant in East Texas. In 2014, the facility injected more than 27,797 tonnes of CO<sub>2</sub> and nearly 226.08 tonnes of SO<sub>2</sub> that otherwise would have been emitted to the atmosphere.

GPP reported the following criteria pollutant emissions in the three years in 2013, 2014 and 2015:

### Gas Pipelines & Processing Criteria Air Contaminants (tonnes), 2013 – 2015



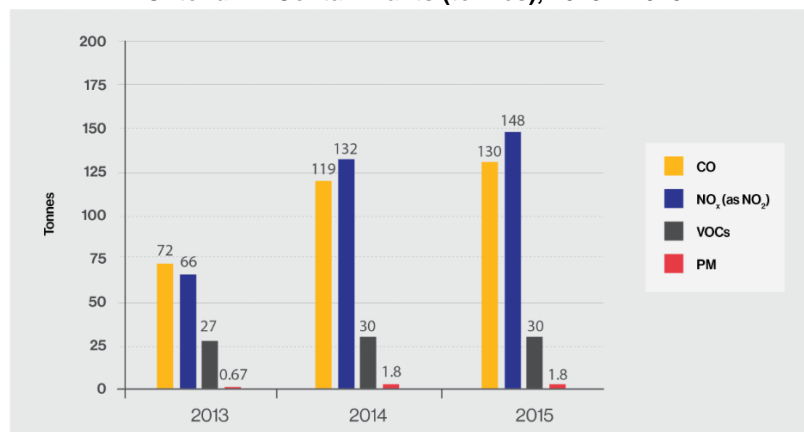
Note: Our 2014 totals include emissions data for GPP's interest in the Vector natural gas pipeline and our storage terminal in Cushing, Oklahoma. We did not include the data from those assets in the totals for previous years.

#### Gas Distribution

In Canada, GD reports annual criteria air contaminant emissions under the NPRI. GD calculates emissions using emission factors or site/equipment-specific data. The emissions that GD reports to NPRI depend on which facilities are above the reporting thresholds for each reportable substance. As such, they fluctuate from year to year.

In 2014 and 2015, GD reported three facilities to NPRI versus only one in 2013. In 2013, one facility that normally would have triggered reporting was out-of-service, but was back in service beginning in 2014. This facility had a higher run time in 2015 than in 2014, which resulted in higher CO and NO<sub>x</sub> emissions in 2015 versus 2014.

### Gas Distribution Criteria Air Contaminants (tonnes), 2013 – 2015



**PERFORMANCE OBJECTIVE E:** To integrate climate considerations into key business systems.

**ENBRIDGE'S PERFORMANCE:**

*For a discussion on how we have integrated climate considerations into key business decisions, please see the Significant Sustainability Challenges & Opportunities section of this report.*

**SUMMARY OF KEY PERFORMANCE INDICATORS**

**Climate Change, Emissions Reduction & Energy Efficiency, 2013 – 2015**

	2013	2014	2015 <sup>1</sup>
<b>Enbridge's Scope 1 and 2 GHG emissions (t CO<sub>2</sub>e)<sup>2</sup></b>			
Enbridge's Scope 1 and 2 GHG emissions	5,750,000	6,044,000	6,825,000
<b>Enbridge's Scope 3 emissions (t CO<sub>2</sub>e)</b>			
From Gas Distribution's customers' natural gas use	22,700,000	24,100,000	22,700,000
From estimated grid loss <sup>3</sup>	247,000	305,000	367,000
<b>Enbridge's energy use<sup>4</sup> (GJ)</b>			
Liquids Pipelines	16,003,000	20,708,000	25,208,000
Gas Pipelines & Processing	39,425,000	34,466,000	32,831,000
Gas Distribution	940,000	1,155,000	1,066,000
Green Power & Transmission	17,400	5,700	8,600
Corporate Services	47,000 GJ	48,000 GJ	28,000 GJ
<b>GD's customers' energy use (based on PJ of natural gas sales)<sup>5</sup></b>	462.7 PJ	490.3 PJ	464.7 PJ
<b>Enbridge's Criteria Air Contaminants (tonnes)<sup>3</sup></b>			
Liquids Pipelines Canada			
NOx (as NO <sub>2</sub> )	125	123	117
VOCs	2,195	1,953	2,676
PM2.5	62	61	61
PM10	565	564	564
TPM	2,179	2,179	2,179
Liquids Pipelines U.S.			
NOx	7	27	24
VOCs	675	685	699
PM2.5	0.6	0.6	1.1
PM10	0.6	0.6	1.1
TPM	0.6	0.6	1.1
CO	11	59	69
Gas Pipelines & Processing			
CO	1,783	1,399	1,273.09
NOx	2,766	2,319	2,110.29
VOCs	1,177	1,352	1,230.32
SO <sub>2</sub>	1,177	403	398
Gas Distribution			
CO	72	119	130
NOx (as NO <sub>2</sub> )	66	132	148
VOCs	27	30	30
PM	0.67	1.8	1.8



- <sup>1</sup> 2015 is the latest year for which we have energy use data and emissions data for GHGs and criteria air contaminants. These data exclude the energy used by our smaller U.S. offices. Our reporting of our Scope 1 GHG emissions aligns with code NR0102-01 of the Sustainable Accounting Standards Board (SASB) standards for the Oil & Gas – Midstream industry, Non-Renewable Resources sector.
- <sup>2</sup> Natural gas sales include retail sales to customers and commercial sales (including transportation services) to industrial and other large natural gas users. 1 PJ = 1,000,000 GJ. We have converted volume sales data (based on the annual average monthly heating values for gas deliveries) into sales data that are in PJ.
- <sup>3</sup> Our reporting of our Criteria Air Contaminants aligns with code NR0102-03 of the SASB standards for the Oil & Gas – Midstream industry, Non-Renewable Resources sector.
- <sup>4</sup> We have updated GPT's 2014 data. Both the 2014 and 2015 data are preliminary.
- <sup>5</sup> Grid loss refers to the Scope 3 emissions that resulted from the loss of electricity during its transmission and distribution. To calculate the estimate, we applied country or regional grid loss percentages to our Scope 2 data from 2013 to 2015.

## 3.2 RENEWABLE & ALTERNATIVE ENERGY INVESTMENTS

### KEY FACTS

Together, as at December 31, 2016, our renewable and alternative energy investments represented **3,026 megawatts (MW) (gross) of green power generation capacity**.<sup>\*</sup> Of this total, we own 2,246 MW of net generating capacity. Our goal is to double our 2015-level generating capacity by 2019.

Based on gross generation figures, our portfolio of green power projects has the potential to meet the electricity needs of **about 1.1 million homes**.

In 2016, we invested about \$600 million in our renewable energy portfolio. Since 2002, we have **invested more than \$5 billion** in renewable and alternative energy projects globally and, since mid 2015, we have committed to investing another \$2.7 billion in offshore wind projects in Europe.

<sup>\*</sup>Gross generating capacity does not include the 497 gross megawatts from the Hohe See offshore wind project, in which we agreed to acquire a 50 percent interest in February 2017.

### OVERVIEW & PERFORMANCE OBJECTIVES

To meet current and future demand, the world needs energy from all sources: liquid hydrocarbons, natural gas and renewable power. As demand for lower-carbon energy sources continues to grow, it is expected that renewable power will account for a larger share of the collective energy mix. We are actively engaged in realizing the new business opportunities that are resulting from this transition. We are one of the largest investors in renewable power in Canada and a growing presence in the U.S. and European markets.

We have four performance objectives for Renewable & Alternative Energy Investments:

- To continue to expand our investments in green energy, and to double our renewable energy generation capacity by 2019 (based on our 2015 baseline).
- To transition to operational self-performance.
- To improve the availability of our wind farms to the power grid.
- To transition to greenfield development.

*Please see 2016 Performance for an overview of our performance against these objectives.*

### MANAGEMENT APPROACH

#### Enbridge's Green Power Portfolio

Since our initial investment in a wind farm in 2002, we have invested over \$5 billion in wind, solar, geothermal, hydropower and waste heat recovery projects. As at December 31, 2016, these projects, including those in operation, planned or under construction, represent 3,026 MW (gross) of green power capacity (excluding the 497 gross megawatts from the Hohe See offshore wind project, in which we agreed to acquire a 50percent interest in February

2017). This is enough to meet the electricity needs of about 1.1 million homes. Today, we are one of the largest renewable energy generators in Canada, and our portfolio of renewable energy projects is diversified and growing.

### Summary of Enbridge's Renewable & Alternative Energy Investments

Project	Location	Commercial Operation Date	Gross Generating Capacity (Gross MW) <sup>1</sup>	Ownership by Enbridge and Subsidiaries at Dec 31, 2016 (%)	Net Generating Capacity by Enbridge and Subsidiaries (Net MW)	Net Generating Capacity <sup>1,2,3</sup> by Enbridge at Dec 31, 2016 (Net MW)
<b>WIND</b>						
1. SunBridge	Gull Lake, SK	2002	11	50%	6	5
2. Magrath	Magrath, AB	2004	30	33%	10	9
3. Chin Chute	Taber, AB	2006	30	33%	10	9
4. Enbridge Ontario Wind Farm <sup>4</sup>	Kincardine, ON	2009	190	100%	190	165
5. Talbot	Ridgetown, ON	2010	99	100%	99	86
6. Greenwich	Dorion, ON	2011	99	100%	99	86
7. Cedar Point	Limon, CO	2011	250	100%	250	250
8. Saint-Robert-Bellarmin	Saint-Robert-Bellarmin, QC	2012	82	50%	41	36
9. Magic Valley	Willacy County, TX	2012	202	80%	161	161
10. Wildcat	Madison County, IN	2012	200	80%	160	160
11. Lac Alfred	Amqui, QC	2013	308	67.5%	208	181
12. Massif du Sud	Chaudière-Appalache Region, QC	2013	154	80%	123	107
13. Blackspring Ridge	Vulcan County, AB	2014	300	50%	150	130
14. Keechi	Jack County, TX	2015	110	100%	110	110
15. New Creek	Grant County, WV	2016	103	100%	103	103
16. Rampion Offshore	Sussex Coast, UK	2018	400	24.9%	100	100
17. Chapman Ranch	Nueces County, TX	2017	249	100%	249	249
<b>SOLAR</b>						
1. Sarnia Solar	Sarnia, ON	2009-2010	80	100%	80	70
2. Tilbury Solar	Tilbury, ON	2010	5	100%	5	4
3. Amherstburg II Solar	Amherstburg, ON	2011	15	100%	15	13
4. Silver State North Solar	Primm, NV	2012	50	100%	50	50
<b>GEO THERMAL</b>						
1. Neal Hot Springs	Malheur County, OR	2012	23	40%	9	9
<b>HYDROPOWER</b>						
1. Wasdell Falls	Washago, ON	2015	2	50%	1	1
<b>ALTERNATIVE</b>						
1. NRGreen Power	Saskatchewan & Alberta	2008-2014	34	50%	17	15
<b>TOTAL</b>			3,026 <sup>1</sup>		2,246	2,109

<sup>1</sup> Does not include the 497 gross megawatts from the Hohe See offshore wind project, in which we agreed to acquire a 50percent interest in February 2017.

<sup>2</sup> We report net generation to align with our financial reporting, and adjust for our investment in the Enbridge Income Fund (EIF). Net MWs reflect our net interest in projects through our 86.9 percent interest in the EIF.

<sup>3</sup> Includes net generating capacity of farms that are still under construction at the reporting date.

<sup>4</sup> The Cruickshank and Underwood wind farms combine to form the Enbridge Ontario Wind Farm.

## Wind Energy

In over a decade, we have invested in 2,817 MW (gross) of wind power capacity, with the potential to serve more than one million homes (excludes the 497 gross megawatts from the Hohe See offshore wind project, in which we agreed to acquire a 50 percent interest in February 2017).

We have interests in 17 wind farms in operation, planned or under construction. In Canada, they are located in Alberta, Saskatchewan, Ontario and Quebec; in the U.S., they are in Colorado, Indiana, Texas and West Virginia. We have also recently entered the European offshore wind market. We have invested in the 400-MW Rampion Offshore Wind Project, which is off the UK Sussex coast. We have also announced a 50 percent joint venture with EDF Energies Nouvelles (EDF EN) with a potential investment of \$4.5 billion in three wind farms off the coast of France.

We sell most of the electricity our wind farms generate to customers under long-term power purchase agreements (PPAs) or electricity hedges. These customers include Independent Electricity System Operator (IESO), SaskPower, Hydro-Quebec, Public Service Company of Colorado, Pacific Gas and Electric, Salesforce, and Microsoft Corporation. These customers generally retain the renewable energy credits (RECs) our wind projects generate.

## Solar Energy

Our four solar energy facilities (three in Ontario and one in Nevada) have a total gross generation capacity of 150 MW. Our 80-MW Sarnia Solar facility near Lake Huron in Sarnia, Ontario, is one of the largest photovoltaic facilities in Canada. We sell the electricity it generates to the IESO under long-term PPAs.

## Geothermal Energy

We own a 40 percent interest in Neal Hot Springs, Oregon's first commercial geothermal power plant. The 23-MW facility delivers electricity to the Idaho Power grid under a long-term PPA.

## Waste Heat Recovery

We have a 50 percent interest in NRGreen Power, which operates five waste heat recovery facilities along the Alliance Pipeline in Saskatchewan and Alberta. Together these projects have a total gross generation capacity of 34 MW. The power generated from the four NRGreen facilities in Saskatchewan is sold under long-term PPAs to SaskPower, while the energy produced by the Whitecourt Recovered Energy Facility in Whitecourt, Alberta, is sold into the Alberta power market on a spot basis.

## Hydropower

We have a 50 percent interest in the Wasdell Falls Hydro Power Project, located on the Severn River near Washago, Ontario. The turbines are the first of their kind in Canada and have been developed especially for low head applications. The 2-MW project completed its first year of operation in 2016 and is backed by a 40-year PPA, delivering energy through the Washago tie line.

## Competitive Positioning and Investment Approach

We are strongly positioned in the renewable energy industry through our strong balance sheet, which allows a competitive cost of capital for investment; our long history in the business as one of the early adopters of renewable energy; our construction and project management expertise from building large energy infrastructure projects across North America; and our operating experience as the operator of large, complex pipeline systems.

We apply a disciplined approach to investing in renewable energy projects. Our green power investments align with our existing business model that focuses on balanced risk-reward opportunities and generating solid returns with stable and strong cash flows.



In most cases, our renewable and alternative energy projects are underpinned by attractive long-term PPAs and price swap arrangements that will deliver stable cash flows and attractive returns similar to those realized by our liquids and gas transportation businesses. We sell all of the electricity generated by our projects to large customers or independent system operators. Many of our customers that have purchased power from our projects acquire the associated environmental benefits, including GHG offsets. In addition, the RECs generated by some of our wind projects are sold through long-term electricity hedges.

We are continuing to expand our interests in green power, with the goal of doubling our renewable energy generation capacity by 2019 (based on our 2015 baseline). To grow our business, we are targeting projects that provide attractive returns to investors and significant environmental benefits; provide opportunities for long-term pricing or price swap arrangements; offer a high-quality energy resource and access to transmission; demonstrate high standards of safety and community engagement during construction and operation; provide growth or expansion opportunities; incorporate the latest proven technologies, and enable us to build collaborative relationships with proven developers and suppliers.

### **Environmental and Social Benefits of Enbridge's Green Power Projects**

We are contributing to a global shift toward a lower-impact energy production mix by investing in green power projects that complement our core business while limiting GHG emissions. Each of our renewable and alternative energy projects provides environmental benefits. Our wind farms provide a source of clean energy, helping to diminish acid rain, smog and the GHGs that contribute to climate change. Our solar facilities generate electricity with no emissions, no waste production and no water use. Our geothermal facility is a zero-emission project that uses heat from the Earth to produce power. Our waste recovery projects generate emissions-free electricity by harnessing the exhaust heat produced by gas turbines at compressor stations. By investing in green power projects, we not only contribute to clean energy, we also help to grow the economy through employment, property taxes and lease payments to landowners.

## **2016 PERFORMANCE**

**PERFORMANCE OBJECTIVE A:** To continue to expand our investments in green energy, and to double our renewable energy generation capacity by 2019 (based on our 2015 baseline).

### **ENBRIDGE'S PERFORMANCE:**

Since 2002, we have invested more than \$5 billion in renewable and alternative energy projects globally and, since mid 2015, we have committed to investing another \$2.7 billion in offshore wind projects in Europe. As part of our investments, we plan to double our 2015-level generating capacity by 2019. In 2016 alone, we invested about \$600 million in our renewable energy portfolio. When investing, we consider government incentives when investing in renewable energy projects. Several programs in Canada, the U.S. and the UK have provided us with the ability to meet investment criteria, including the Modified Accelerated Cost Recovery System (MACRS), the renewable energy Production Tax Credit (PTC) and Renewables Obligation Certificates (ROCs).

#### *Wind Energy Investments*

Wind energy is the fastest-growing electricity source in the world, as substantial technological advances, cost reductions, government incentives and policies, renewable portfolio standards and the availability of long-term PPAs have enabled wind projects to become economically attractive investments. In 2016 and early 2017, we continued to increase our position in this industry:

*New Creek Wind Project* - In December 2016, we completed construction of the 103-MW New Creek project in Grant County, West Virginia. Consisting of 49 Gamesa G97/G90 wind turbines, the project will generate enough electricity to meet the needs of 23,000 homes. New Creek represents our first investment in the PJM power market and is underpinned by a long-term PPA, electricity hedge, REC sales and a fixed five-year operations and maintenance agreement with Gamesa, an international wind turbine manufacturer.

***Chapman Ranch Project*** - In November 2016, we announced our acquisition of a 100 percent interest in the 249-MW Chapman Ranch wind project in Nueces County, Texas. Our total commitment is about US\$360 million. The project, expected to enter service in 2017, consists of 81 turbines and will produce enough clean energy to power more than 64,000 homes a year. The project will be constructed under a fixed-price engineering, procurement and construction agreement with Renewable Energy Systems America. Acciona Windpower North America will provide turbine operations and maintenance services under a five-year fixed-price contract. With the addition of this facility, we will own six wind assets in the U.S. with a combined generating capacity of more than 1,100 MW (gross).

***French Offshore Wind Development*** - In May 2016, we agreed to acquire a 50 percent interest in the French wind development company Éolien Maritime France (EMF), for an investment of \$282 million. We will co-own EMF with EDF EN, a subsidiary of Électricité de France S.A. (EDF) and a largely French state-owned utility that provides electrical power for most of France. Our co-ownership of EMF would allow us to participate in all aspects of development, construction and operation of three large-scale offshore wind farms off the coast of France. These projects would produce 1,428 MW—enough capacity to power up to one million homes. Teams are in place to move us to final investment decisions. Assuming that occurs, construction would start gradually in 2017.

We see great potential in offshore wind. These are commercially attractive projects that come with a potential \$4.5 billion investment by us that includes secure, long-term revenue streams. This investment builds on our first investment in European offshore wind—the English Channel-based Rampion project Rampion project, which we announced in 2015.

***German Offshore Wind Development*** – In February 2017, we agreed to acquire a 50 percent interest in the Hohe See offshore wind project from EnBW, a German utility, for a total investment of \$1.7 billion. We will partner with EnBW to execute the 497-MW project, which will be situated off the coast of Germany in the North Sea. As co-developer, we will participate in construction and operation of the project. When it enters service in late 2019, the wind farm is expected to generate enough capacity to meet the electricity needs of 560,000 homes. Under a German government incentive program, power generated from the project will receive long-term fixed pricing over a 20-year period. The project carries an additional future investment opportunity in a planned 112-MW expansion.

**PERFORMANCE OBJECTIVE B:** To transition to operational self-performance.

**ENBRIDGE'S PERFORMANCE:**

As certain contracts with key service providers begin to expire, we will hire industry professionals and develop rigorous procedures for safely operating and maintaining our wind project assets ourselves. This step will help us to transition our business to operational self-performance, which will involve scheduled and unscheduled inspections, repairs and maintenance of wind turbines, monitoring performance of wind turbines and managing balance-of-plant infrastructure, including electrical inspections, testing and repairs. This step will also increase our familiarity with the assets and provide greater opportunities for optimizing financial performance.

In 2016, we assumed operational self-performance at our Talbot and Greenwich wind farms in Ontario. To prepare for this transition, we have been working to develop safety and maintenance programs for the sites. We have also hired and trained additional technical staff. We are evaluating further opportunities for self-performance across our fleet in Canada and the U.S.

**PERFORMANCE OBJECTIVE C:** To improve the availability of our wind farms to the power grid.

**ENBRIDGE'S PERFORMANCE:**

One of our ongoing priorities is to continually improve the availability of our wind farms to the power grid. As we move to self-performance at our Ontario sites, we are improving our maintenance programs and are looking for

opportunities to strengthen relationships with our equipment vendors and service providers. These steps are expected to further improve the availability of these wind facilities to the grid.

**PERFORMANCE OBJECTIVE D:** To transition to greenfield development.

#### ENBRIDGE'S PERFORMANCE:

To date, we have focused on taking investment stakes in late-stage green power projects built and operated mostly by third parties. Our goal is to move toward a more integrated model, allowing us to take on a greater role in key decisions including offtake, REC sales, turbine supply, and engineering, procurement and construction agreements. As we continue to grow our well-established renewable energy business and build upon the project execution expertise that we are known for, participating in earlier stages of development will allow us to become even more competitive in the renewable energy market.

To put this strategy into action, in 2015 we acquired the 103-MW New Creek Wind Project, a mid-stage development project. Our recent partnership with EDF EN will enable additional opportunities to participate in early-stage project development of offshore wind projects.

#### SUMMARY OF KEY PERFORMANCE INDICATORS

**Renewable & Alternative Energy Investments, 2014 – 2016**

	2014	2015	2016
<b>Amount invested in renewable and alternative energy portfolio</b>	~\$800 million <sup>1</sup>	~\$600 million <sup>1</sup>	~\$600 million <sup>1</sup>
<b>Megawatts (gross) of green power generation capacity represented by our renewable and alternative energy projects<sup>2</sup></b>	2,272MW	2,777 MW	3,026 MW
<b>Megawatts (net) of green power generation capacity represented by our renewable and alternative energy projects<sup>3</sup></b>	1,616 MW	1,881 MW	2,246 MW
<b>Number of homes our portfolio of green power projects has the potential to meet the electricity needs of (based on gross generation figures)<sup>4</sup></b>	>750,000 homes	>1 million homes	>1 million homes

<sup>1</sup> As of December 31, 2016, we had invested over \$5 billion since 2002 to grow our green power generation portfolio.

<sup>2</sup> Gross generating capacity does not include the 497 gross megawatts from the Hohe See offshore wind project, in which we agreed to acquire a 50percent interest in February 2017.

<sup>3</sup> Net generating capacity does not include the 497 gross megawatts from the Hohe See offshore wind project, in which we agreed to acquire a 50percent interest in February 2017.

<sup>4</sup> Does not take into account the 497 gross megawatts from the Hohe See offshore wind project, in which we agreed to acquire a 50 percent interest in February 2017.



# SUSTAINABILITY-RELATED TOPICS OF IMPORTANCE: AREAS THAT ENABLE CONTINUOUS IMPROVEMENT

As we explained in the CSR & Sustainability at Enbridge section of this report, we have determined that the areas that enable us to continually improve our priority areas, and that, therefore require our ongoing focus are:

- Employee Relations,
- Environmental Management Systems,
- Supply Chain Management,
- Customer Relations,
- Research, Development & Innovation.
- Corporate Community Investments, and
- Economic Performance & Benefits.

The sections that follow provide an overview of our management approach to these topics, and outline our 2016 performance objectives and performance against them.

## 4.0 EMPLOYEE RELATIONS

### KEY FACTS

**We foster an environment in which everyone feels connected**, and that welcomes, respects and embraces diversity. We know that a diverse workforce, made up of talented individuals with differing ideas, strengths, interests, backgrounds and points of view, is a strategic advantage that will help us achieve long-term success.

As at December 31, 2016, we employed **7,793 full- and part-time permanent employees, 174 temporary employees and 1,412 contract employees** in Canada and the U.S.

We invested about **1.03 percent of our total salary costs**—which is about \$1,609 per employee—in employee training.

We have **effectively managed gender discrimination** on the basis of salary for employees at levels 1 to 5, and at the manager level.

### OVERVIEW & PERFORMANCE OBJECTIVES

People are the basis of our success. For us to achieve our strategic priorities, we must attract, retain, develop and engage a highly skilled and motivated workforce.

We have five performance objective for Employee Relations:

- To responsibly and respectfully manage our workforce.
- To strengthen and enrich employees through professional development, training and engagement.
- To protect employee rights and freedoms.
- To promote diversity, equality and inclusion in our workforce.
- To provide fair and competitive compensation and eliminate gender discrimination on the basis of salary.

*Please see 2016 Performance for an overview of our performance against these objectives.*

### MANAGEMENT APPROACH

#### Enbridge's Approach

We maintain a foundation of operating excellence by adhering to a strong set of core values: Integrity, Safety and Respect. These values reflect what is important to us in support of our communities, the environment and each other. They represent a constant guide by which we make decisions as a company and determine the “ways we work” together.

We also invest in building a strong pipeline of qualified leaders through Enbridge-wide training and development programs. Our evolving leadership culture and practice shape our reputation, inspire our culture and safeguard our future. With strong leadership, we can confidently meet the challenges and opportunities we encounter while working

to achieve our goals. We have three leadership principles that serve as the foundation for everything we do as leaders: Live the Values, Develop People and Get Results.

In addition, we strive to create a healthy, safe and productive work environment that improves the quality of life and supports individuals in their personal and professional goals. We foster an environment in which everyone feels connected, and that welcomes, respects and embraces diversity. We know that a diverse workforce, made up of talented individuals with differing ideas, strengths, interests, backgrounds and points of view, is a strategic advantage that will help us achieve long-term success. We have a number of internal programs that foster a balanced and inclusive work environment; and celebrate our differences as a source of innovation, inspiration, collaboration and growth.

## **Workforce Profile**

As at December 31, 2016, we employed 7,793 full- and part-time permanent employees in Canada and the U.S.; 174 temporary employees; and 1,412 provisioned contract employees who support the seasonal and project work associated with specific projects. A large majority of our permanent employees work full time (we have 7,693 full-time employees and 100 part-time employees).

As at December 31, 2016, female employees comprised 33.1 percent of our total workforce; 26.8 percent of our total management workforce; 27.1 percent of our total first-line management positions; and 19 percent of our top management positions.

As at December 31, 2016, we employed 1,412 provisioned contractors working in various capacities. We do not track the gender of provisioned contractors, but can report numbers by business segment. We hire provisioned contractors for special projects, where appropriate. Occasionally, when the business need arises, we convert temporary contracts into permanent contracts.

These amounts do not take into consideration our 2017 combination with Spectra Energy.

## **Policies and Programs**

We recognize that having the right talent in the right roles is crucial to our current and long-term business success, and we have a suite of policies and programs that helps us to acquire and retain the talent we need:

### *Responsible Management of Reorganizations*

Until recently, our organizational restructuring efforts focused almost exclusively on re-aligning our resources and work in high growth areas. To support these organizational restructures, we implemented relevant Human Resources policies and programs, including relocations, reassignments, career development planning, severance, performance and talent assessments, and outplacement services, among others. Over the last two years, however, our industry and the global economic environment have shifted. As a result, our reorganization activities have included downsizing and layoffs, and we have extended our regular restructuring practices to support these efforts. Throughout our work in this area, we are strengthening our workforce reduction process such that we treat all affected employees in accordance with our values and with dignity.

### *Employee Development and Training*

Every year, all employees must create an Individual Development Plan (IDP) in partnership with their People Leaders, to document their skills and competency development, and their career progression. To ensure that we support the diverse technical, functional and non-technical needs outlined in our employees' IDPs, we offer a variety of approaches to learning:

Enbridge University - Enbridge University's (ENBU) high-caliber internal learning programs, are offered in locations throughout Canada and the U.S., support our employee competencies and values. We track participation in these programs through our company-wide Learning Management System (eLMS), to which all employees have access. In addition, some business segments have specific training needs that they track outside of the eLMS.

External Courses, Certificates, and Degree Programs - Our investments in training and education provide our employees with the resources they need to perform their best in their roles, and to prepare them for future roles. As part of these investments, we have long supported employee development through our Education Reimbursement Program, which reflects our strategic focus on aligning employees' requested programs of study with our company's strategic priorities.

#### *Employee Programs and Engagement*

In 2016, we were named as one of Canada's Top Diversity Employers for the third year in a row for the following employee programs:

Wellness Program - Our Enbridge-wide Wellness Program supports employees' health by providing tools and resources to help them improve their physical, mental and financial wellbeing. Employees access the program through an online portal, where they complete activities and participate in challenges, and can earn financial incentives. In 2016, we introduced a month-long Not Myself Today campaign designed to encourage and sustain conversations about mental health. The campaign incorporated weekly themes, events and resources that we made available through our intranet.

Indigenous Peoples Policy - In 2016, we developed an Indigenous Peoples Policy to replace our Aboriginal & Native American Policy. The new policy incorporates industry best practices and reflects our commitment to building sustainable, long-term relationships; collaborating with Indigenous communities; supporting the recommendations that resulted from Canada's Truth and Reconciliation Commission; and recognizing the United Nations Declaration on the Rights of Indigenous Peoples. *For more information, please see the Indigenous Engagement section of this report.*

Integrated Accessibility Standards Policy - Under the Integrated Accessibility Standards of the Accessibility for Ontarians with Disabilities Act, our Gas Distribution business segment (GD) is working toward a barrier-free workplace and is increasing accessibility for persons with disabilities in the areas of information, communication and employment. GD now has an Integrated Accessibility Standards Policy and a Multi-Year Accessibility Plan that outlines its strategy for meeting accessibility standards.

We also continually work to improve key engagement drivers, such as:

- **Performance Management:** We use a standardized methodology for establishing performance objectives across the company through which we encourage more frequent performance reviews and feedback between leaders and employees. We also trained leaders and employees on how to conduct effective performance review discussions.
- **Recognition:** Our Stellar Recognition program recognizes and celebrates individuals and teams who embody our core values in their work and in their interactions with customers and other stakeholders.
- **Career Management:** Our standardized online tool allows employees to track their career conversations with their leaders. We also provided training to leaders on how they can enhance their team members' career development.

#### *Freedom of Association, Labor Relations and Collective Bargaining*

We believe that healthy and cooperative labor relations and collective bargaining contribute to our business success. As such, we maintain and foster a cooperative approach to union and management relationships through joint committees with various unions and industrial councils. These committees meet regularly to resolve outstanding issues and to advise on and discuss topics of mutual concern. We also follow the labor laws of the countries in which we operate, and base our actions on our Statement on Business Conduct. *For more information, please see the Business Conduct, Fines & Violations section of this report.*

#### *Human Rights*

We act in alignment with all laws and legislation, and with our Respectful Workplace Policy, our Duty to Accommodate Policy, and our Statement on Business Conduct. We provide each of our business segments with a training package that addresses components of human rights training, including anti-harassment, violence in the workplace and maintaining a respectful workplace. In addition, our Respectful Workplace Policy addresses all

leaders' and employees' responsibilities with regard to human rights and, in particular, the prohibited grounds of discrimination. And each of our business segments has implemented human rights policies and procedures that contain provisions for investigation and resolution of incidents.

As a condition of employment, all new employees are required to read and provide written acknowledgement of their agreement to follow our Statement on Business Conduct. Furthermore, all employees must certify their compliance with the statement each year. *For more information, please see the Business Conduct, Fines & Violations section of this report.*

### *Diversity and Inclusion*

We promote diversity and inclusion in our workforce because we understand that diverse backgrounds, abilities and perspectives help keep us innovative and dynamic, which in turn supports the achievement of our business goals. Our commitment to diversity and inclusion goes beyond legislative requirements, and is built on a number of initiatives that help us build a diverse, inclusive and respectful workplace:

*Diversity & Inclusion Strategic Plan* - In 2016, our executive-led Diversity & Inclusion Steering Committee endorsed a Enbridge-wide Diversity & Inclusion Strategic Plan, and approved a Enbridge-wide structure made up of four regions: Canada West, Canada East, U.S. North and U.S. South. The steering committee assigned each region a Diversity & Inclusion lead, who is responsible for leading a regional Diversity & Inclusion Advisory Group. So far, the groups are active in Canada West and U.S. North, and are being developed in Canada East and U.S. South. The groups promote diversity and inclusion through leadership, advocacy, education and representation.

*Employee Resource Groups* - We support diversity and inclusion programming through a variety of Employee Resource Groups (ERGs) that employees have identified as being important to them, and that they lead. These groups create opportunities for engagement, development, networking and implementing enriched diversity strategies. A few examples of ERGs include Women@Enbridge (for women), Prism Energy (for members of the LGBTQ community) and AERG (for Indigenous employees and contractors).

*Career Development for Women* - Our Diversity & Inclusion department, in partnership with senior leadership of the Women@Enbridge ERG, developed the Women's Career Development Plan, based on the results of focus groups and surveys of more than 300 women at our company, and based on gender-specific metrics. This plan is in addition to, and aligned with, our leadership programs that are accessible to all leaders of any gender. The Women's Career Development Plan's goal is to help women advance in their careers by increasing their representation in leadership roles and by exploring appropriate supportive policy recommendations.

*Diversity Training and Guidance* - We continue to draw on our own research on emerging issues and challenges to develop, and offer workshops and courses related to diversity and inclusion. In 2016, in partnership with our Leadership Development team, we developed and delivered our first diversity and inclusion course specifically for leaders. The course is now a mandatory component of our new Leadership Foundations Certificate Program for first-level leaders—such as supervisors, leads, team leads and foremen—and we offer it across our company. In addition, we offer courses related to culture in the workplace, communication skills and unconscious bias.

### *Promoting Local Social and Economic Development through Local Hiring*

Our commitment to diversity means that we hire people whose skills and abilities contribute to our success, and who reflect the communities in which we live and work. As such, we hire locally first, if possible.

## **2016 PERFORMANCE**

**PERFORMANCE OBJECTIVE A:** To responsibly and respectfully manage our workforce.

### **ENBRIDGE'S PERFORMANCE:**

In 2016, we undertook an Enbridge-wide reorganization of our organizational structure by focusing on what we need to remain competitive and to achieve our strategy of growth and diversification. Our reorganization resulted in a

reduction of 532 positions, 382 in Canada and 150 in the U.S. This amount represented about five percent of our overall workforce. Throughout the process, we treated employees with respect and dignity, and provided support to people who left our company and people who remained. We used comprehensive change management plans to assist with the transitions and incorporated lessons learned from previous layoffs and reassignments. Employees who were laid off received severance packages that exceeded legislated minimum notice periods and included outplacement assistance, and employee and family counseling.

The following table summarizes our overall workforce changes over the past three years:

	2014	2015	2016
<b>Net Employment Creation</b>	268	-122	-950
<b>Net Employment Creation (as a percentage)</b>	3.1%	-1.4%	-10.9%
<b>Total Employee Turnover Rate</b>	9.1%	9.6%	16.6%
<b>Voluntary Employee Turnover Rate</b>	4.2%	3.0%	3.3%

**PERFORMANCE OBJECTIVE B:** To strengthen and enrich employees through professional development, training and engagement.

#### ENBRIDGE'S PERFORMANCE:

Identifying, developing and retaining top talent is key to our business continuity and to the execution of our corporate plans. Although we know that all of our employees contribute to the successful execution of our strategic priorities, we recognize that certain roles and individuals can have a greater impact on business-critical outcomes. As such, to minimize the risks associated with business continuity, as part of our talent review and succession planning process, we regularly identify employees with critical talent and high potential. Once we have identified these employees, we invite them to participate in accelerated development programs that broaden their experience—through opportunities such as certificate programs and workplace transfers—and that support the development of key competencies. As a result of these efforts, internal employees are able to fill many of our open positions.

In 2016, we continued offering our Onboarding Program and our Mentorship Program to our employees. Our goal through our Onboarding Program is to ensure that new employees settle quickly into their jobs and become fully integrated into our company and culture, helping us maintain operational efficiency and reflecting on our bottom line. In 2016, we enhanced our advanced communications to leaders to help prepare them for onboarding new employees and contractors.

Through our Enbridge-wide Mentorship Program, we provide a unique opportunity for employees to learn through professional relationships. The program is designed to strengthen company culture and to support our core values, increase employee engagement, enhance professional networks, expand employees' perspectives, diversify thinking and accelerate career development. Mentorship relationships can include job shadowing, site visits, business case study reviews, participation in departmental presentations and one-on-one monthly meetings.

We also continued to invest in the training and professional development our employees through the numerous avenues, such as Individual Development Plans, training courses, and learning opportunities. For example, 2,992 employees participated in 97 Enbridge University courses, totaling 6,818 course completions across 359 offerings.

The table below summarizes our employee training and development highlights for 2016:

Percent of employees completing Individual Development Plans (IDP)	96.6%
Percentage of total salary costs invested in employee training	1.03%
Amount invested in training per employee	\$1,609
Average number of training hours per employee	22.1
Total number of training courses attended (instructor lead and web-based)	3,723
Number of employees who worked toward their academic goals through our Education Reimbursement Program.	351
Percent of open positions filled by internal employees	45%

**PERFORMANCE OBJECTIVE C:** To protect employee rights and freedoms.

#### ENBRIDGE'S PERFORMANCE:

We act in accordance with all laws and legislation, and with our Respectful Workplace Policy, our Duty to Accommodate Policy, and our Statement on Business Conduct, which underline our commitment to: achieving a diverse workplace; removing systemic barriers that could adversely affect our employees at work and in their careers; implementing measures to prevent discrimination at Enbridge; and helping employees reach their potential.

We continually revisit the content and delivery methodology of our online Respectful Workplace training course to ensure that it is up to date and accessible. We also require all new employees to participate in Respectful Workplace Training within 90 days of their start date. We deliver the training to all of our employees every few years, and make targeted training available as it is needed.

As at December 31, 2016, 10 percent of our 7,793 permanent employees were covered by a negotiated agreement. In 2014, we signed two collective agreements with trade unions; in 2015, we signed two; and in 2016, we signed one. All of them include health and safety considerations. All of our collective bargaining agreements contain a formal grievance and arbitration process that pertains to violations of the respective collective agreement. In addition, we maintain a toll-free telephone line that any employee can use to report any issues, including fraud and violations to our Statement on Business Conduct. In 2016, no one filed any grievances with respect to our impact on society. In 2016, however, employees and their unions filed 20 grievances related to their respective collective agreements. The majority of these grievances have been settled.

	2014	2015	2016
<b>Percentage of Permanent Employees Covered By Negotiated Agreements</b>	10.1%	9.8%	10%
<b>Number of Grievances Filed Regarding Collective Agreements</b>	30	Data not available	20
<b>Number of Human Rights Complaints</b>			0
<b>Number of Employees receiving Respectful Workplace Training in Canada / Anti-Harassment training in the U.S.</b>	Data not available	All employees	200 / 2,118

**PERFORMANCE OBJECTIVE D:** To promote diversity, equality and inclusion in our workforce.

#### ENBRIDGE'S PERFORMANCE:

Through our continual renewal and development of policies and programs, we build a workplace that is equitable and free from harassment. We comply with all state and provincial legislation, and are improving our practices related to accommodation in the workplace through several initiatives and resources that we implemented in 2016: we adapted



our mandatory training to meet the needs of employees with developmental disabilities; and we created guidelines for our e-Learning training that allow for a diverse range of people to access the training comfortably and effectively. Accessibility in e-Learning training is about making content easy for everyone to use, be they individuals with severe vision impairment, individuals with hearing disabilities, or individuals with other physical disabilities.

#### *Compliance with Employment Equity Legislation in Canada and the U.S.*

Enbridge Employee Services Canada Inc. (EESCI) in Canada complies with Canada's Employment Equity Act and, as such, is required each year to track and report its composition of women, persons with disabilities, members of visible minority groups and Indigenous persons. To meet this requirement, we require all new hires in Canada to complete an online survey, giving them the opportunity to voluntarily identify themselves as members of one or more of these groups. The information that we obtain from the surveys gives us important aggregate numbers that we use to analyze our workforce, and on which we base our strategic actions. However self-identification is voluntary and, although we strive to create an environment in which employees feel comfortable self identifying, we recognize that there are constraints associated with obtaining comprehensive data.

Our business segments in the U.S. have an Affirmative Action Plan that includes routinely tracking the composition of our workforce in compliance with government recruiting and reporting requirements. To meet the objectives of our Affirmative Action Plan, our U.S.-based business segments track the ethnicity of all job applicants and employees based on voluntary self-identification; they use this data to determine areas of under-representation such that we can set placement goals. In addition, we are developing recruitment efforts to diversify our applicant pool and to ensure that our workforce reflects the diverse population in the areas where we do business.

In accordance with our affirmative action plan in the U.S., and in an effort to diversify our workforce by attracting diverse candidates to apply, we post all open external positions for recruitment on our website and on the *Direct Employers* website, which targets a diverse workforce by posting all jobs to partner sites that target diverse candidates. In the majority of instances, our job postings attract local applicants, which results in a workforce that is representative of the communities in which we operate. In recent years, our usual efforts toward diversity outreach have been hindered by our lack of recruiting activity. However, when we do begin to increase our recruiting again, we intend to reactivate our established strategies, such as partnering with vocational and trade schools; and attending career fairs targeted to diverse audiences. In 2016, in Canada, we hired one director from the local community while, in the U.S. we did not hire any directors from the local community.

**PERFORMANCE OBJECTIVE E:** To provide fair and competitive compensation and eliminate gender discrimination on the basis of salary.

#### **ENBRIDGE'S PERFORMANCE:**

##### **Base Salaries**

The base salaries we provide take into consideration an employee's role and competencies, current market conditions, and attraction and retention requirements. To determine base salaries, we benchmark ourselves against large pipeline, midstream, energy and utility companies that are similar to us in size, company value, revenues and risk profile.

##### **Gender Pay Equity**

The table below shows the ratio of male to female employees' salaries at the 50<sup>th</sup> percentile at each of our levels for 2016.

<b>Level 1</b>	102%
<b>Level 2</b>	100%
<b>Level 3</b>	99%

<b>Level 4</b>	100%
<b>Level 5</b>	102%
<b>Manager</b>	103%

These ratios show that, effectively, we have managed gender discrimination on the basis of salary for employees at levels 1 to 5, and at the manager level. The ratios reflect the salaries of job families and levels in which both male and female employees are present.

The table below shows how average male and female employee base salaries compared at the executive level (directors and above, base salary only), management level (base salary only; and base salary plus other cash incentives such as bonuses) and non-management level (levels 1 – 5, base salary only)

**Comparison of Average Base Salaries at Various Levels, by Gender, 2016**  
(Canada & U.S.)

<b>2016 Remuneration Female/Male</b>	<b>Non-Management Level (Levels 1 – 5, Base Salary Only)</b>	<b>Management Level (Base Salary Only)</b>	<b>Management Level (Base Salary + Other Cash Incentives, such as bonuses)</b>	<b>Executive Level (Director level and above, Base Salary Only)</b>
<b>Female</b>	\$84,370	\$171,245	\$206,421	\$261,296
<b>Male</b>	\$98,281	\$174,058	\$209,711	\$280,537

### President & Chief Executive Officer Compensation

Our President & Chief Executive Officer's base salary as at December 31, 2016, was \$1,409,000 and his total annualized compensation—reflecting the share of 2012 performance stock options that were attributed to 2016—was \$12,291,407. In 2016, the ratio of our President & CEO's total annualized compensation to that of the average employee's total annualized compensation was 99.6.

In 2016, our President & Chief Executive Officer's base salary increase was 9.99 percent. The ratio of his percentage increase in annual total compensation to the average percentage increase in annual total compensation for all other employees was 14.2. In 2016, his total annualized compensation percent increase was 25.4 percent.

### Sustainable Defined Pension Plans

We maintain pension plans that provide defined benefit and/or defined contribution pension benefits to employees. No employee contributions are required and participation is mandatory for eligible employees in Canada and the U.S.

Pension costs and obligations for the defined benefit pension plans are based on actuarial calculations using assumptions, including discount rates, expected rates of return on plan assets, projected salary increases, retirement age, mortality and termination rates. Our management determines the assumptions and an external actuary reviews them each year.

At year-end 2016, the value of the assets in our Canadian and U.S. defined benefit pension plans was \$2,380 million and our pension obligation was \$2,778 million, leaving a shortfall of \$398 million, which equals about 0.75 percent of our market capitalization. We amortize the actual future results—which could differ from our assumptions and could materially affect the recognized expense and recorded obligations—over future periods.

We remain able to pay the current benefit obligations using cash from operations. In 2017 we expect to pay about \$148 million into our defined benefit pension plans. *For more information, please see our Consolidated Financial Statements for the year ended December 31, 2016.*

## SUMMARY OF KEY PERFORMANCE INDICATORS

### Employee Relations, 2014 – 2016

	2014	2015	2016
<b>Net employment creation</b>			
<b>Net employment creation (permanent employees, full- and part-time) / Net employment creation (permanent employees, full- and part-time) as a percentage</b>	968 / 10.9% (968 X 100% / 8,868 permanent full- and part-time employees = 10.9%)	-122 / -1.4%	-950 / -10.9%
<b>Employee training</b>			
<b>Percentage of total salary costs invested in employee training</b>	1.15%	1.01%	1.03%
<b>Amount Invested per Employee in Training</b>	\$1,358	\$1,402	\$1,609
<b>Negotiated collective agreements</b>			
<b>Percentage of permanent employees covered by negotiated collective agreements</b>	10.1%	9.8%	10%
<b>Number of grievances filed regarding negotiated collective agreements</b>	30	Data not available	20
<b>Human rights</b>			
<b>Number of employees receiving respectful workplace training in Canada / Anti-harassment training in the U.S.</b>	Data not available	All employees in 2015	200 / 2,118
<b>Compensation</b>			
<b>Ratio of annual total compensation of our President &amp; Chief Executive Officer to the average annual total compensation for all other employees, excluding the President &amp; Chief Executive Officer<sup>1</sup></b>	11.20	79	99.6
<b>Ratio of Chief Executive Officer's percentage increase in annual total compensation to the average percentage increase in annual total compensation for all other employees</b>	3.02	5.02	14.2
<b>Turnover</b>			
<b>Voluntary employee turnover rate as a percentage of our total workforce population</b>	4.2%	3%	3.3%
<b>Voluntary new employee turnover rate as a percentage of our total workforce population</b>	7.4%	7%	8%
<b>Gender equality - Ratio of female employees' salaries to male employees' salaries, Levels 1 – 5 and Manager</b>			
<b>Level 1</b>	Data not available	Data not available	102%
<b>Level 2</b>	Data not available	Data not available	100%
<b>Level 3</b>	Data not available	Data not available	99%
<b>Level 4</b>	Data not available	Data not available	100%
<b>Level 5</b>	Data not available	Data not available	102%
<b>Manager</b>	Data not available	Data not available	103%
<b>Percentage of executive bonuses tied to safety, maintenance of the fitness of our systems, and environmental performance</b>			
<b>President &amp; Chief Executive Officer</b>	15.5% - 21.5%	15.5% - 21.5%	15.5% - 21.5%

<b>Executive Vice Presidents (business segments)</b>	22.5% - 30%	22.5% - 30%	22.5% - 30%
<b>Executive Vice Presidents (Corporate)</b>	9.5%	20%	20%

<sup>1</sup> We determined the 2014 ratio using a different methodology than the one we used to determine the 2015 and 2016 ratios. In 2015, we modified the methodology we use such that it aligns with evolving external reporting requirements.

## 5.0 ENVIRONMENTAL MANAGEMENT SYSTEMS

### KEY FACTS

At a business segment level, **our systems for Integrated Management (IMS) and Environmental Management (EMS) are custom designed to respond to the specific requirements of our highly complex operations.** The development and implementation of these frameworks is informed by industry leading protocols, including, but not limited to, ISO 14001.

**Water protection is critical to the successful execution of our business strategy.** In addition to recognizing that clean water is a human right, we recognize that public concerns about the risks associated with liquids pipelines in the vicinity of watercourses can influence progress with regard to developing and maintaining energy infrastructure projects and assets.

Our Technology and Information Services group has established an **Enbridge-wide process to recycle and dispose of obsolete and unneeded Information Technology (IT) equipment in a safe and ecologically-responsible manner.**

We prioritize the **protection and conservation of environmentally sensitive areas and areas of high biodiversity** in all of our project planning, construction and operations.

### OVERVIEW & PERFORMANCE OBJECTIVES

Our environmental management systems ensure that we meet the performance standards and objectives established by regulatory processes and by our own corporate policies and processes. We recognize that protecting our natural resources, enhancing biodiversity and supporting conservation are key to a sustainable environment, and we integrate these concepts into our business decision making and daily operations. We have a significant and growing slate of commercially secured projects in all areas of our business—including our liquids pipelines, renewable energy, and natural gas pipelines and processing. In executing these projects, we use leading construction practices, and we are committed to identifying, mitigating and proactively managing any potential negative impacts to the environment.

We have four performance objectives for our Environmental Management Systems:

- To ensure that environmental management is an integral element in all of our key management frameworks and systems at the Enbridge-wide and business-segment levels.
- To responsibly manage our consumption and disposal of the water we use for testing the safety of our pipelines.
- To responsibly manage our electronic waste, the waste we generate at our buildings, and the waste we generate through our construction and operations.
- To invest in organizations that help us responsibly manage our impact on land and species.

*Please see 2016 Performance for an overview of our performance against these objectives.*

## MANAGEMENT APPROACH

### Policies, Frameworks and Systems

While we are required to meet all relevant environmental regulations within our operational jurisdictions, we also comply with our own policies, frameworks and systems—including environmental policies at the business-segment level—to achieve sound environmental management during both the construction and operation of our assets.

At the Enbridge-wide level, our governance and management of environmental risks and performance is guided by our Enterprise Risk Management Framework and by our Safety Management System Framework, both of which we began implementing in 2015. These two frameworks include the tools and techniques that our business segments use to effectively manage all of their risks, including people, property and the environment.

At a business-segment level, our systems for Integrated Management (IMS) and Environmental Management (EMS) are custom designed to respond to the specific requirements of our highly complex operations. The development and implementation of these frameworks is informed by industry leading protocols, including, but not limited to, ISO 14001.

#### *Risk Management Framework*

The environmental risks and challenges associated with our energy infrastructure include water conservation and protection; and the conservation, restoration or enhancement of land and species.

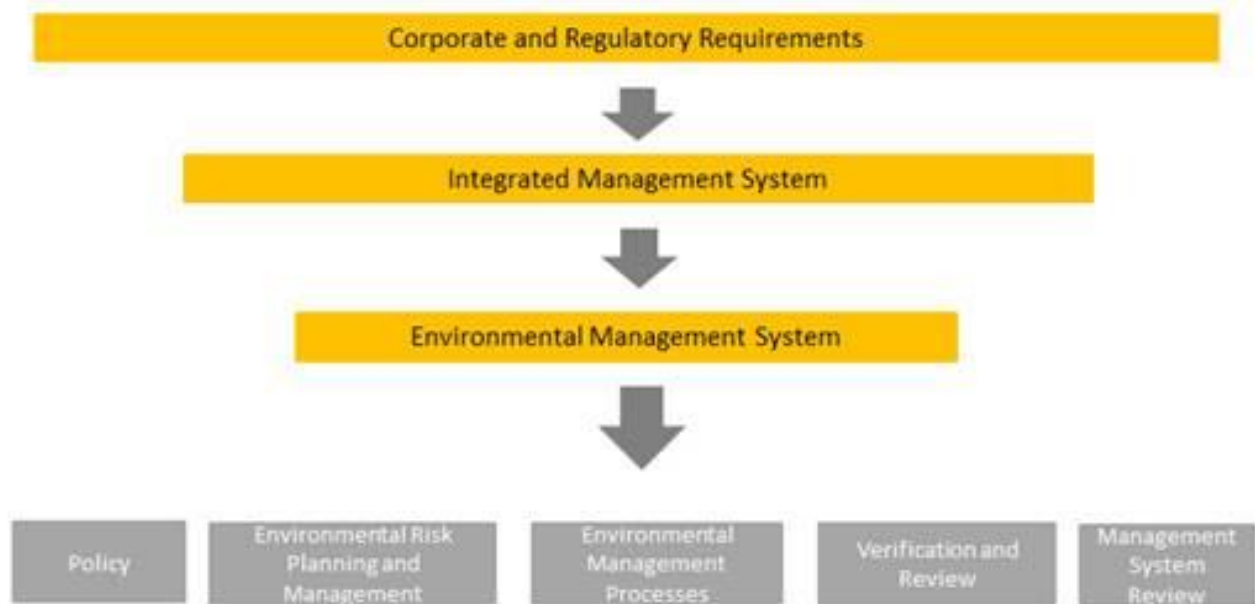
To manage these risks, we have a dedicated risk management function at the corporate level that is independent of specific business segments and that reports directly to an Executive Vice President (the most senior level of management at our company), who in turn reports to our Chief Executive Officer and Board of Directors. Several Board Committees are also responsible for overseeing specific risk categories. The CSR Committee of our Board provides oversight on our performance regarding environmental stewardship and protection, and the Audit, Finance and Risk Committee, and the Safety and Reliability Committee have oversight responsibilities related to environmental risks. *For more information, please see the Risk Management and Significant Sustainability Challenges & Opportunities sections of this report.*

#### *Safety Management System Framework*

Our Safety Management System Framework provides all of our business segments with common guidance and structure to ensure that our efforts to deliver industry-leading safety and systems reliability performance are thoroughly and expertly planned, executed, monitored and continuously improved upon using a shared approach. These procedures are paramount to our effective management of environmental risks and, in many instances, we jointly manage safety, systems integrity and environmental risks through our various Integrated Management System (IMS) and Environmental Management System (EMS) frameworks.

#### *Frameworks for Integrated and Environmental Management Systems*

The following diagram shows how our IMS and EMS systems are generally structured in our main operating business segments.



#### Updating Enbridge's Environmental Goals and Community Investments

In 2016, we concluded our Neutral Footprint program, which we originally adopted in 2009 and through which we committed to help reduce the environmental impact of our liquids pipeline expansion projects within five years of their occurrence by meeting certain goals for replacing trees, conserving land and generating kilowatt hours of green energy. We are developing new environmental goals that will address our focus on carbon performance and water protection.

Through our community investments, we support initiatives that promote environmental stewardship, conservation, habitat remediation and environmental education. *For more information, please see the Corporate Community Investments section of this report.*

#### Mitigating Impacts on Water

We manage our impacts on water in many ways:

##### Waterway Protection

Because our pipelines traverse long distances and many areas where waterways (underground and surface) are present, and because spills can pose significant risks to those waterways—and to the reputation of our business—we are committed to protecting all water in and around our projects and operations. Given the significance of these risks, we make waterway protection a priority in our Integrated Management Systems and Environmental Management Systems.

##### Water Risk Assessments

As part of the regulatory approval process that we undergo with regulators (such as the National Energy Board and the Federal Energy Regulatory Commission, among others) in advance of constructing our pipelines and related infrastructure, and as part of our regular work, we hire third-party environmental consultants to thoroughly assess our water-related risks. Based on the results of the assessments, we work with municipalities to develop contingency plans.



#### *Watercourse and Wetlands Identification*

We provide our project-planning staff with environmental awareness training on how to identify watercourses and wetlands to ensure that we protect them during our planning process. We also train field employees on the importance of protecting watercourses during our pipeline construction and maintenance activities. This training includes proper sediment erosion control methodology, along with effective spill response and notification.

#### *Pipeline Route Selection*

We carefully select our pipeline routes and line locations and maintain world-class standards for engineering and design, including special considerations for areas such as road, rail, river and creek crossings. We take the same rigorous approach with facilities such as stations, terminals and plants.

We evaluate wetlands and watercourse crossings on a case-by-case basis to minimize construction impacts, and when we must cross them, we use a variety of measures to minimize and mitigate our impacts and endeavor to restore impacted areas to as close to their original conditions as possible. In many cases, we use horizontal directional drilling when we must cross beneath watercourses and, before doing so, we always obtain permits from the required authorities and government agencies. We further maintain pipeline integrity through regular inspections of bridge and watercourse crossings.

#### *Water Well Monitoring*

After obtaining consent from property owners, while constructing a project, our Gas Distribution business segment (GD) may monitor the groundwater conditions that are close to residential drinking water wells so that it can detect any construction-related interference to quality and quantity of the groundwater.

#### *Emergency Preparation*

We have comprehensive crisis management and emergency response plans in place to help us respond rapidly anywhere, should a spill or emergency occur, including on water. We also continually train our employees and contractors, and provide training to first responders in our areas of operation throughout Canada and the U.S. to help prepare them for a spill or emergency in the event that one should occur. The training involves staging drills, emergency exercises and equipment deployments each year so that we can test and refine our response plans, and have the shared knowledge and experience to respond to any incident. *For more information, please see the Emergency Preparedness & Response section of this report.*

#### *Working with Regulators, Conservation Authorities and Local Water Utilities*

We engage with regulators on water management issues through a number of industry associations, including the Canadian Energy Pipeline Association (CEPA), the Canadian Gas Association (CGA) and the Alberta Association for Conservation Offsets (AACO), which deals with wetlands. We also maintain direct contact with regulators at various jurisdictional levels to facilitate discussions on specific projects or concerns. We take a proactive approach with regulators by communicating directly with them on project specifics to identify regulatory requirements.

#### *Groundwater Monitoring*

Our Liquids Pipelines business segment (LP) has a Groundwater Monitoring Program under which it installs multiple groundwater wells at each of its facilities. Third-party environmental experts sample the wells each year, and send the samples to accredited laboratories for analysis. The results are then compared to published regulatory guidelines.

If the monitoring results identify potential impacts from our activities, LP transfers the site in question to its Contaminated Site Program, under which third-party experts conduct further work to assess, remediate and manage the contamination.

#### *Stakeholder Engagement and Outreach*

We regularly engage with stakeholders (including customers, local communities, environmental groups, water users, regulators, water management authorities and suppliers) and Indigenous individuals and groups at a local level to provide awareness around the programs we have in place to maintain the fitness and reliability of our systems, and to address concerns about the potential impacts of spills to water quality or quantity. We also communicate the importance of watershed management and protection to local communities along our pipeline rights-of-way through

the support of local environmental initiatives and projects to restore and enhance habitat along streams, rivers and wetlands. By working with these individuals and groups to share information and understand their concerns, we are able to incorporate more effective treatment measures into our project management and operations, while also supporting the efficiency of regulatory reviews.

In 2016, we continued to work with the State of Michigan in a process to provide public confidence that our Line 5 crossing of the Straits of Mackinac continues to operate safely and, as part of that process, contributed \$US3.5 million to two studies that the Michigan Pipelines Advisory Board is conducting. Through the studies, the board is assessing the safety of all of Michigan's pipelines and is conducting an independent risk analysis of our Line 5 crossing. It is also conducting an independent analysis of alternatives, and is examining the fitness for service of our existing Line 5 system along with other modes of transportation.

In 2016, as part of the process, we undertook important preventative maintenance work on our Line 5 crossing, in part, by installing four anchor supports and planning to install 18 more in 2017. In addition, we performed eight in-line inspections on our Line 5 crossing, and plan to perform 14 more in 2017. We also conducted external inspections through an underwater Remotely Operated Vehicle in June 2016.

### **Managing Direct Water Use**

While water is critical to the energy industry of which we are a part—for example, both upstream oil production and downstream oil refining require large volumes of water—because we are primarily a transporter and deliverer of energy, water is not a key input to most of our operations. However, we do use water to hydrostatically pressure test our new and existing pipelines and related infrastructure, such as valves. Hydrostatic pressure testing involves filling sections of pipe with water to a high pressure and maintaining the pressure for a prescribed period of time to confirm the integrity of the pipeline.

The water we use for this purpose can be—but does not need to be—good quality freshwater. We can use, for example, recycled or brackish water, which we can obtain from a third-party water supplier. Since we return most of the water that we use for hydrostatic pressure testing to its source, the amount of water that we actually consume in this process is very small.

#### *Water Runoff*

Storm water runoff makes up the majority of the water that LP releases from its facilities. LP discharges this water into the environment in a controlled manner that does not significantly impact any water bodies. GD, our Gas Pipelines & Processing business segment (GPP) and our Green Power & Transmission business segment (GPT) do not significantly affect any water bodies or related habitats by discharging water or runoff.

### **Mitigating Waste**

Our waste comprises recyclable materials such as paper, scrap metals, packaging materials and construction-related materials, as well as non-hazardous substances such as spent abrasive blast media, oily sorbents and soil.

#### *Waste Reduction and Minimization*

We make every effort to reduce and minimize the volume of waste that we generate through the management programs at our various facilities. We also try to find beneficial ways to reuse or recycle waste by-products. For example, GPP recycles the lube oil it uses in its compressor engines, the spent activated carbon catalyst it uses in its gas treatments, and the spent catalytic converter catalyst it uses to control compressor emissions. Likewise, in Ontario, GD recovers and recycles waste polyethylene pipe, compressor and motor oil, metal, tires, wood, batteries, electronic waste and furniture.

In addition, the property managers at our corporate and other office locations have implemented waste recycling programs that require employees to use recycling receptacles for materials such as paper, plastics, cardboard and batteries, and our offices have green-bin programs for collecting waste organic materials.

Our Technology and Information Services group has also established an Enbridge-wide process to dispose of obsolete and unneeded IT equipment in a safe and ecologically-responsible manner. *For more information, please see 2016 Priorities & Performance in this section of this report.*

### **Mitigating Impacts on Land and Species**

It is important for us and for others that we protect and conserve environmentally sensitive areas and areas of high biodiversity, and we prioritize these activities in our project planning, construction and operations.

#### *Project Planning, Construction and Operations*

Canadian and U.S. regulations require us to submit detailed environmental and socio-economic impact assessments before we construct energy-related projects. These plans inform our consultations with regulators, landowners, right-of-way communities and Indigenous communities throughout the life cycle of our projects.

We also consider options to avoid and mitigate environmental impacts in the project planning phase, and incorporate these options into project-specific Environmental Protection Plans (EPPs).

Actions we take to eliminate or minimize the short- and long-term impacts of construction and operations of our pipeline infrastructure can include:

- minimizing the pipeline length to the extent practicable so as to minimize its environmental impacts, and whenever possible, installing pipelines within existing rights-of-way;
- analyzing various routing alternatives to determine whether they would avoid, minimize or mitigate our impacts to natural resources, including environmentally sensitive areas;
- narrowing the right-of-way to minimize the impact on sensitive plant species and avoid or minimize conflicts with existing or proposed residential and agricultural lands; and
- avoiding construction activities during certain times of the year (e.g. to avoid fish spawning season).

#### *Protecting Sensitive Habitats and Species at Risk*

All of our business segments comply with federal, provincial and state requirements. In Canada, these requirements include the federal Species at Risk Act, which aims to protect flora and fauna and conserve biological diversity.

For example, before LP constructs a pipeline, it surveys the proposed pipeline's entire route to identify wetlands, water bodies and sensitive plant and wildlife. LP uses the survey results to develop an EPP that helps it identify areas that will require alternative construction techniques, timing restrictions (i.e., to minimize impacts during breeding or spawning seasons for certain sensitive species), or route variations (to minimize or avoid impacts to sensitive plant species).

In addition, using digital mapping technology, LP has mapped its entire Canadian system to identify areas along its rights-of-way where there may be species-at-risk habitat. LP regularly updates its maps to ensure that it is working with the most accurate and effective data.

Gas Distribution historically has not had a significant impact on environmentally sensitive areas or areas of high biodiversity. Most of GD's pipelines are installed in urban environments within existing road rights-of-way in previously disturbed soil. By their nature, these areas are not typically areas of high biodiversity.

However, a specific localized area may occasionally be identified as being environmentally sensitive, due to a wetland or watercourse, or a species at risk, in which case GD implements environmental screening or environmental assessments (depending on the regulatory requirements) to identify any features or species that may be impacted by construction activities and implement mitigation measures prior to and during construction activities.

GPT also takes multiple measures to protect and minimize impacts on species at risk during both construction and operation at its facilities. Some of these measures include restricting activity during key times, establishing set-back distances from sensitive habitats, erecting physical barriers, implementing wildlife deterrent strategies, and habitat

restoration. As a result of these measures, GPT has witnessed a reduction and prevention of negative impacts, including on bird and bat mortalities.

#### *Vegetation Management and Restoration*

When managing vegetation at our facilities and on our pipeline rights-of-way, we use the most appropriate methods of keeping them clear for inspection. We design our weed control and re-vegetation activities to stop the encroachment of invasive species, mitigate erosion issues and enhance biodiversity. In conducting this work, we take into account the visible results and perceived impacts on landowners and communities.

#### *Conservation Offsets*

Although there are currently no standard biodiversity metrics at an industry or regulatory level in Canada or the U.S., there is an established trend at both the regulatory or voluntary level toward using biodiversity or conservation offsets. To that end, we are active in a number of communities of practice at the local, regional and global levels that are engaged in developing appropriate methodologies and tools. These communities of practice include the Alberta Association for Conservation Offsets, The Natural Step Canada, and the International Institute for Sustainable Development.

### **Environmental Protection Expenditures and Investments**

We spend millions of dollars each year on activities associated with environmental protection and management. Although we perform most of these activities—environmental impact assessments, and emissions monitoring, management and reporting, for example—to comply with regulatory requirements, we perform some of them—habitat conservation, for example—voluntarily.

A partial list of the environmental protection and management activities that we undertake is as follows:

- aquatic assessments;
- contaminated site management;
- emissions monitoring, management and reporting;
- environmental assessments and internal reviews;
- environmental surveys;
- environmental planning and performance management;
- environmental training for staff and contractors;
- groundwater monitoring;
- habitat conservation and mitigation;
- risk identification and assessment;
- site containment and drainage;
- sponsorship of environmental organizations;
- tree planting; and
- waste management (waste handling and disposal).

We do not currently have the processes in place to provide our total, Enbridge-wide expenditures and investments in these areas.

### **External Assurance of Water and Waste**

For the purposes of our annual reporting on environmental, social and governance (ESG) topics, we have set ourselves a corporate goal of obtaining third-party assurance on the key performance indicators associated with our GHG emissions; energy use; health and safety; water and waste; and spills and releases. We anticipate that it will take us two to four years to achieve this goal. In 2016, we continued our work to improve our internal data collection and management processes in preparation for obtaining third-party assurance.

## 2016 PERFORMANCE

**PERFORMANCE OBJECTIVE A:** To ensure that environmental management is an integral element in all of our key management frameworks and systems at the Enbridge-wide and business-segment levels.

### ENBRIDGE'S PERFORMANCE:

Liquids Pipelines - LP, which includes our Major Projects group, has a comprehensive IMS that sets out a governance framework that integrates and documents organizational structure, resources, accountabilities, policies and processes. Elements of the LP IMS/EMS include:

- explicit governance structures, with accountability to our Executive Leadership Team and/or the Board of Directors;
- identification of products, activities and services that have significant impacts on the environment;
- compliance with environmental regulations;
- objectives, targets and deadlines;
- environmental programs;
- assigned roles and responsibilities;
- environmental training and awareness programs for employees;
- internal and external communication on environmental management issues;
- monitoring and measurement;
- environmental performance records;
- corrective actions to stimulate continual improvement;
- external and internal environmental reviews; and
- external and internal environmental audits, conducted at least every three years.

A key feature of LP's IMS is the governing process, which includes the high-level accountabilities for, and components of, risk, safety management and strategy, including the EMS. Within LP's IMS is a detailed assurance process that outlines the governance related to internal and external audits, internal reviews and self-assessments. LP's IMS also includes other assurance processes, such as Corrective Action Plans, Event Investigations and Management Reviews, each of which apply to individual management systems and programs. The initial LP EMS (IMS-01) was rolled-out in 2003 and an updated version (IMS-06) was implemented in 2012. LP's current EMS includes an annual management review to ensure the adequacy of the environmental framework. In addition, a compliance review occurs on a regular basis, although not annually.

Enbridge Gas Distribution - Enbridge Gas Distribution (EGD), which is one of the affiliates under GD, has a comprehensive IMS (abbreviated as Int-MS) that it rolled out in 2016. The Int-MS sets out a governance framework that integrates and documents core processes, resources, policies, and organizational structures. It encompasses six individual management programs, one of which is EGD's EMS, which it refers to as its "Environmental Management Program."

EGD's Environmental Management Program is based on a requirements list that EGD developed using Enbridge's Safety Management System Framework, ISO 14001, and multiple other corporate and regulatory requirements to ensure all appropriate elements are included. The program provides the governance and direction for EGD to conduct its activities in an environmentally sound manner and to:

- continually identify all environmental aspects and evaluate all related risks;
- develop and implement operational controls, inspections and monitoring programs to address environmental concerns;
- evaluate and improve environmental management and performance;

- ensure a high level of management commitment and leadership, and employee participation;
- measure, monitor and report on environmental performance and metrics;
- ensure compliance with all applicable company requirements and environmental regulations, and obtain all necessary environmental permits; and
- prevent, mitigate or minimize the potential for adverse environmental effects.

Along with rolling out its EMS in 2016, each year, EGD reviews its environmental procedures to ensure that they properly reflect what EGD employees and contractors are doing in the field, and to ensure that they comply with all applicable legislation. Each quarter, EGD also reviews the procedures such that it can address any environmental concerns or compliance issues, and can implement mitigation measures if required.

Gas Pipelines & Processing - GPP has an EMS, and is working on developing an IMS.

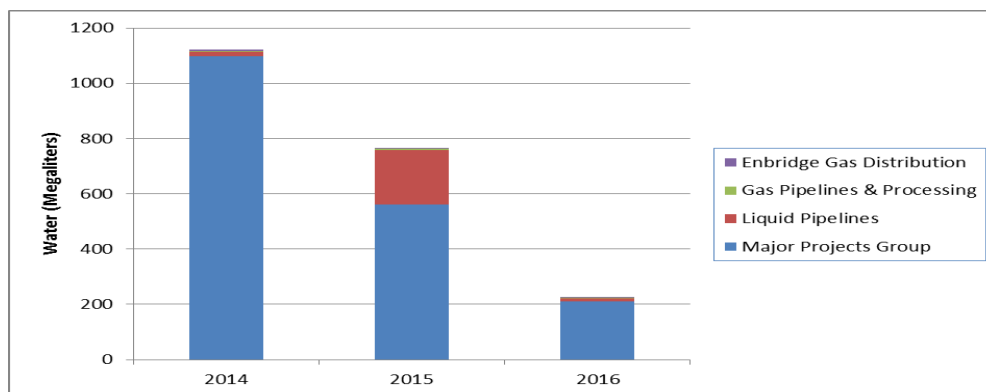
Green Power & Transmission – As, to date, GPT has primarily focused on investing in renewable and alternative energy, it does not have an IMS. It is working on developing a Health, Safety & Environment manual to serve as the beginnings of an EMS as it moves onto a more operational footing with our renewables investments.

**PERFORMANCE OBJECTIVE B:** To responsibly manage our consumption and disposal of the water we use for testing the safety of our pipelines.

#### ENBRIDGE'S PERFORMANCE:

Because we are primarily a transporter and deliverer of energy, water is not a key input to most of our construction or operations. However, we do use water to hydrostatically pressure test our new and existing pipelines and related infrastructure, such as valves. Hydrostatic pressure testing involves filling sections of pipe with water to a high pressure and maintaining the pressure for a prescribed period of time to confirm the integrity of the pipeline. The water we use for this purpose can be—but does not need to be—good quality freshwater. We can use, for example, recycled or brackish water, which we can obtain from a third-party water supplier. Since we return most of the water that we use for hydrostatic pressure testing to its source, the amount of water that we actually consume in this process is very small. Our operations and engineering groups measure and track the water we use for hydrostatic pressure testing for most of our larger projects. They track the water based on the following categories: total volumes withdrawn and discharged; destination of discharged water; and volume by treatment method. The graph and table below show the water use volumes for hydrostatic pressure testing by our LP, GPP and GD business segments and Major Projects group in 2014, 2015 and 2016:

**Enbridge's Water Use Volumes for Hydrostatic Pressure Testing (ML), by Business Segment, 2014 – 2016**



(megaliters)	2014	2015	2016
Liquids Pipelines	17	198	9.5
Major Projects Group	1,100	560	212
Gas Pipelines & Processing	2.5	4.4	3.3
Enbridge Gas Distribution	5.6	0.3	0.5
<b>Total</b>	<b>1,125.1</b>	<b>762.7</b>	<b>225.3</b>

We have rounded the amounts.

We used less water for hydrostatic pressure testing in 2016 than in 2014 and 2015 because we built fewer pipelines that year.

**PERFORMANCE OBJECTIVE C:** To responsibly manage our electronic waste, the waste we generate at our buildings, and the waste we generate through our construction and operations.

#### ENBRIDGE'S PERFORMANCE:

##### Electronic Waste

Our Technology and Information Services team and Supply Chain Management function have established an Enbridge-wide process for donating, re-selling and properly dispositioning obsolete and unneeded electronics—including laptops, desktop computers and monitors—in a safe and ecologically-responsible manner. In 2016, they selected a service provider that assists all of our North American offices with dividing unwanted electronics into assets for donation; assets for re-sale, and assets at the end of their life (e-waste). The result was that, in 2016, we diverted more than 41 metric tonnes of technology waste from landfills, representing an estimated reduction of 133 tonnes of carbon dioxide equivalent (t CO<sub>2</sub>e). This amount is equal to the carbon-carrying capacity of about 3,370 trees grown over 10 years.

#### Weight of Electronics Waste Diverted from Landfills, by Business Segment, Metric Tonnes, 2016

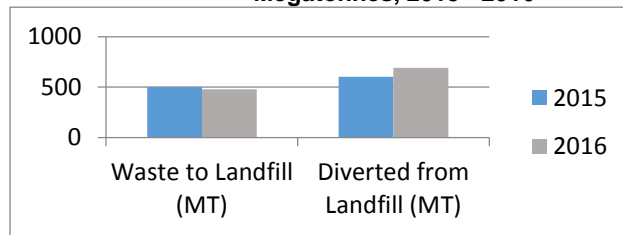
Business Segment	Weight, Metric Tonnes
Liquids Pipelines	18.38
Gas Pipelines & Processing	12.7
Gas Distribution	6.75
Corporate Services	5.24
<b>Total</b>	<b>43.07</b>

##### Waste Generated at Enbridge's Buildings

Although we are currently considering a way that we could track the solid waste that we generate at the buildings we own and lease, at present, we do not have an Enbridge-wide strategy for doing so. However, Enbridge Gas Distribution (EGD), which is one of GD's affiliate utility companies, does track its solid waste (including organics), and makes every effort to minimize it through recycling and organics collection. As the graph and table below show, EGD's 2016 waste diversion rate was 59 percent. This amount represents an increase of five percent from 2015.



**EGD, Volume of Solid Waste Sent to Landfills vs. Volume of Diverted from Landfills, Megatonnes, 2015 - 2016**



	Volume of Solid Waste Sent to Landfills (megatonnes)	Volume of Solid Waste Diverted from Landfills through Recycling and Organics Collection (megatonnes)	Diversion Rate
<b>2015</b>	501	601	54%
<b>2016</b>	478	692	59%

Note: Peterborough is not include in 2015 data as data was not provided by Waste service provider

To support its waste diversion efforts, EGD recycles materials such as cardboard and mixed recyclables such as plastic pipe from field operations, organics, wood skids and scrap metal. EGD also participates in Enbridge's electronics recycling program (see below), and in the Call2Recycle battery recycling program, and uses compostable take-out containers and cutlery in its cafeteria.

#### **Waste Generated from Construction and Operations**

With regard to the waste we generate from our construction and operations, we currently collect only the weight of the hazardous and liquid industrial waste volumes that EGD generates from these activities. For EGD, these wastes are the result of construction and operations in urban environments, where it often encounters contaminated soil and groundwater. While EGD is not responsible for creating these wastes, it takes responsibility for ensuring their proper disposal, and includes the associated waste volumes in its reporting to the Ontario Ministry of the Environment and Climate Change Hazardous Waste Information Network. EGD's 2016 hazardous and liquid industrial waste volumes were unavailable at the time we posted this report.

**PERFORMANCE OBJECTIVE D:** To invest in organizations that help us responsibly manage our impact on land and species.

#### **ENBRIDGE'S PERFORMANCE:**

In 2013, in support of our Flanagan South Pipeline, we donated \$21,306,503 toward a mitigation fund in support of the U.S. Fish and Wildlife Service (USFWS) and The Conservation Fund, to help them conserve and restore the habitat of the Indiana bat and the American burying beetle, along with migratory bird habitat in Illinois, Missouri, Kansas and Oklahoma. In 2016, the mitigation fund helped USFWS and The Conservation Fund protect 2,102 acres of habitat.

Also in 2013, in support of our Line 6B Pipeline Project, we donated a \$4,655,086 mitigation fund to USFWS and The Conservation Fund to conserve and restore grasslands, riparian corridors and shrub, scrub and forest habitats that benefit migratory birds in Indiana and Michigan. In 2016, the mitigation fund helped USFWS and The Conservation Fund conserve 87.82 hectares (217 acres) and restore 53.2 hectares (131.5 acres). *For information about our environmental investments, please see the Corporate Community Investments section of this report.*

In addition:

- After completing construction of our Blackspring Ridge wind farm in 2014, GPT seeded native prairie species. By 2016, it had re-established at least one quarter of the native species in various areas across the site.
- From 2015 to 2020, we will invest \$100,000 in Return the Landscape, a native plant rescue and restoration organization, such that it can restore habitat on a 200-acre parcel of land on the site of our 1,100-acre Sarnia Solar facility in Ontario.
- As part of its final restoration activities in association with its Greater Toronto Area (GTA) project (a project to install 50 kilometers of new natural gas distribution pipelines to meet GTA's growing need for natural gas), Enbridge Gas Distribution (EGD) planted 6,286 trees and shrubs and 4,526 live willow stakes to stabilize river banks. EGD also applied specialized seed mixtures in environmentally sensitive areas within a highly regulated urban corridor.

## SUMMARY OF KEY PERFORMANCE INDICATORS

### Environmental Management Systems, 2014 – 2016

	2014	2015	2016
<b>Environmental Management System framework integration in key management systems (Enbridge-wide and at the business-segment level)</b>	Yes	Yes	Yes
<b>Volume of water used for hydrostatic pressure testing (megaliters)</b>	1,125.1	762.7	225.3
<b>Percentage of water used for hydrostatic pressure testing that we return to the environment</b>	~100%	~100%	~100%
<b>Weight of electronics waste diverted from landfills<sup>1</sup> (metric tonnes)</b>	-	-	43.07

<sup>1</sup> Data are only available beginning 2016.

## 6.0 SUPPLY CHAIN MANAGEMENT

### KEY FACTS

In late 2016, we consolidated our four separate Supply Chain Management (SCM) groups into **one supply chain function that now oversees supply chain management** for all of Enbridge.

In 2016, our SCM function managed the acquisition of **about \$8.1 billion in goods and services** from about 12,000 suppliers.

Our Major Projects group purchased about 324,000 tonnes of steel pipe, about **96 percent of which was made from recycled steel**.

Our Enbridge-wide SCM function now has a **centralized team that is dedicated to furthering the integration of environmental, social and governance (ESG) considerations** into supply chain decision making, with a particular emphasis on **expanding opportunities for Indigenous socio-economic participation**.

### OVERVIEW & PERFORMANCE OBJECTIVES

We recognize that our supply chain plays a key role in our ability to live up to our social responsibility and create shared value. Safety and the creation of opportunities for Indigenous socio-economic participation have been, and continue to be, integral to our SCM strategies and management systems. In 2016, we created a centralized team and multi-year roadmap to help us further integrate Indigenous participation and other environmental, social and governance (ESG) considerations and opportunities into our SCM strategies and programs. We have two ESG-related performance objectives for our Supply Chain Management System:

- To procure goods and services that meet our standards for safety and environmental stewardship, social responsibility and ethical practice.
- To further expand opportunities for Indigenous socio-economic participation in our supply chains.

*Please see 2016 Performance for an overview of our performance against these objectives.*

### MANAGEMENT APPROACH

#### Enbridge's Supply Chain

We work with thousands of suppliers across North America—from major international companies to small, local businesses. Our suppliers cover a wide range of disciplines, including manufacturing, construction, engineering, distribution and consulting, but the majority of our annual spend is in the areas of pipe manufacturing, constructing our pipelines and facilities, maintaining the fitness of our systems, and monitoring for potential leaks.

In 2016, we purchased about \$8.1 billion of goods and services from about 12,000 suppliers serving our liquids pipelines, gas pipelines and processing, gas distribution, renewable energy businesses and other businesses in Canada, the U.S. and internationally. Of this total, we spent about 56.6 percent on Canadian suppliers, 43.3 percent on suppliers from the U.S., and 0.02 percent on suppliers in Europe.

Safety and opportunities for Indigenous involvement are two major considerations in our contract evaluation process. We are also broadening our evaluation criteria to include other environmental, social financial and technical considerations.

## SCM Structure

In October 2016, we consolidated our four separate SCM functions—representing our Liquids Pipelines business segment (LP) and Major projects group, our Gas Pipelines and Processing business segment (GPP), our Gas Distribution business segment (GD) and our Corporate Services business segment—into one supply chain function. The new SCM function is now responsible for overseeing supply chain management for all of Enbridge, and for governing all aspects of supply chain management—from planning and governance, to tactical procurement and materials management, to contract management and strategic sourcing—with the goal of creating maximum value for Enbridge and our stakeholders, and helping us deliver the energy that people need. In 2016, the SCM function created a centralized team to help us further integrate Indigenous participation and other environmental and social considerations and opportunities into our SCM strategies and programs.

## SCM Governance

Our values, as well as a number of specific policies and protocols, govern all of our SCM function's activities.

### *Policies and Protocols*

SCM at Enbridge is governed by the following policies and protocols:

*Statement on Business Conduct* - The SCM function incorporates our Statement on Business Conduct into all of its practices, and in so doing, integrates our commitment to fair labor practices and respect of human rights. *For more information, please see the Business Conduct, Fines and Violations section of this report.*

*SCM Policy* - An Enbridge-wide SCM Policy governs the group's acquisition activities for all goods and services. The policy mandates that SCM activities are to be conducted in an ethical manner that delivers the best overall value for Enbridge while ensuring adherence to our core values. It also states that the SCM function is accountable for managing the risks associated with the acquisition of third-party materials and services.

*SCM Protocol* - A large section of our SCM function is also governed by a comprehensive SCM Protocol that sets out the guidelines and standards for establishing the effective SCM controls that are essential to mitigating our risks and to conducting activities in a manner that meets acceptable industry standards. The protocol requires that all SCM activities adhere to our Statement on Business Conduct and Compliance Policy. The SCM function tracks and measures the compliance of the section of the SCM function that the protocol governs through annual assessments. It plans to extend the SCM Protocol to the entirety of the SCM function in 2017.

## How SCM Integrates Environmental, Social and Governance Factors

The SCM function must procure goods and services that meet our standards for environmental stewardship, social responsibility and ethical practice. The function meets this requirement by integrating ESG factors into our supplier selection and relationship management through a variety of means, including pre-qualification, restricted-party screening, RFPs, proposal evaluations and contracts, and supplier performance management.

### *Pre-qualification*

The SCM function uses the following methods to pre-qualify suppliers:

*ISNetworld* - The SCM function uses ISNetworld (ISN), a global resource for connecting corporations with safe, reliable contractors and suppliers, to pre-qualify service-providing suppliers on the basis of safety.

*Pre-Qualification Subject-Matter Experts* - LP and our Major Projects group utilize subject-matter experts from our Engineering, Operations and Control Systems and Major Projects Quality groups to participate in our supplier pre-qualification process. The subject-matter experts provide input into supplier pre-qualification and disqualification

processes, and provide guidance on emerging issues. They also ensure that our standards regarding safety, quality, labor and environmental practices are upheld throughout our supply chain.

***Environmental and Social Responsibility Pre-qualification*** – The SCM function expects to implement an updated pre-qualification process in 2017, and to implement additional improvements to its Supplier Lifecycle Management process in 2018. In addition to ongoing core requirements related to safety and Indigenous participation, these enhancements will address other environmental and social considerations.

#### ***Restricted-party Screening***

The SCM function largely utilizes a world-leading organization that specializes in global trade management solutions to prescreen and monitor the suppliers with whom we are either doing or intend to do business, to ensure that we do not inadvertently contract with suppliers (parent companies and/or their subsidiaries/affiliates) who have been barred due to any breaches in relevant standards and compliance regulations and/or have behaved in a socially irresponsible manner anywhere in the world. The prescreening and monitoring involves a range of cross-functional departments—SCM, Law, Internal Audit, Compliance, Risk, Quality and Safety—and has proved invaluable, enabling the SCM function to disqualify some suppliers and raise awareness about supplier restrictions throughout Enbridge.

#### ***RFPs, Proposal Evaluations and Contracts***

The SCM function has developed content to address safety and Indigenous participation factors that it includes in all of its RFPs, proposal evaluations and contracts. In late 2016, the SCM function began including broader social and environmental factors in RFPs, proposal evaluations and contracts for LP and the Major Projects group, and will begin doing the same for our other business segments in 2017.

#### ***Risk Management Considerations***

To manage the sustainability risks among our suppliers, the SCM function considers multiple business factors that relate to sustainability, including:

- any environmental standards associated with our suppliers' processes, products or services;
- fundamental human rights (e.g. freedom of association, promoting an inclusive and respectful workplace);
- occupational health and safety;
- business ethics (e.g. corruption, anti-competitive practices);
- quality of management systems; and
- sub-contractor guidance (i.e. whether suppliers require their sub-contractors to adhere to supplier standards).

## **2016 PERFORMANCE**

**PERFORMANCE OBJECTIVE A:** To procure goods and services that meet our standards for safety and environmental stewardship, social responsibility and ethical practice.

### **ENBRIDGE'S PERFORMANCE:**

#### **Recycled Steel Pipe**

The most significant purchase that the SCM function makes is steel pipe. In 2016, on behalf of MP, the SCM function purchased about 324,000 tonnes of steel pipe, about 96 percent of which was made from recycled steel. In 2016, on behalf of GD, the SCM function purchased about 793 tonnes of steel pipe, about 60.7 percent of which comprised steel that had recycled content.

#### **Natural Gas Vehicle Fleet**

GD, which has the largest natural gas vehicle (NGV) fleet in Canada, has converted most of its vehicles so that they run on natural gas. Every RFP that the SCM function issues on behalf of GD to vehicle manufacturers requires that the supplier provide vehicles that are either NGV ready or that have a component for conversion to NGV.

GD has also begun converting its medium duty trucks, standardizing vehicle designs to require fewer vehicles, and installing systems that enable trucks to operate alternating current (AC) and direct current (DC) power tools and equipment from an alternative power source, eliminating the need to have vehicle engines running. *For more information, please see the Climate Change, Emissions Reduction & Energy Efficiency section of this report.*

### Electronics Recycling

Enbridge's Technology and Information Services team has established a Enbridge-wide process for the disposition of obsolete or unneeded electronics—including laptops, desktop computers and monitors—in a safe and ecologically-responsible manner, using a single vendor to service all of Enbridge in North America. Under the program, in 2016, we diverted more than 41 metric tonnes of technology waste from landfills, representing an estimated reduction of 133 metric tons of carbon dioxide equivalent (CO<sub>2</sub>e). This is equal to the carbon-carrying capacity of about 3,370 trees grown over 10 years. *For more information, please see the Environmental Management Systems section of this report.*

### Integration Strategies

In 2016, our SCM function developed a multi-year plan to support further integration of SCM objectives and strategies in four key areas: environmental stewardship; social responsibility; Indigenous engagement; and ethical procurement.

**PERFORMANCE OBJECTIVE B:** To further expand opportunities for Indigenous socio-economic participation in our supply chains.

### ENBRIDGE'S PERFORMANCE:

*Please see the Indigenous Engagement section of this report for an explanation of how we are using our SCM strategies and systems to strengthen our approach to Indigenous socio-economic participation.*

## SUMMARY OF KEY PERFORMANCE INDICATORS

### Supply Chain Management, 2014 – 2016

	2014	2015	2016
<b>Amount spent on procuring goods and services from Indigenous businesses, contractors and suppliers in Canada</b>	>\$52 million	>\$63 million	\$79 million
<b>Amount of steel pipe purchased for Major Projects group/ percentage of which was made from recycled steel</b>	281,227 tonnes (310,000 short tons) /94.2%	220,508 tonnes /96%	324,000 tonnes /96%
<b>Amount of steel pipe purchased for Gas Distribution/ percentage of which was made from recycled steel</b>	11,544 tonnes/5% of which comprised steel that had recycled content of 61%, and 95% of which comprised steel that had recycled content of between 3 and 17.5%	1,243 tonnes /63.8%	793,000 tonnes /60.7%

## 7.0 CUSTOMER RELATIONS

### KEY FACTS

**We have a wide range of customers**—from energy producers who ship their products on our oil and gas transportation networks; to refiners and processors; to the residential, commercial and industrial customers who consume the natural gas we distribute—and **we are constantly seeking opportunities to partner with, and add value for, them.**

Our customer relations teams across our company **aim to provide consistent and reliable service at all times, and are constantly looking for opportunities to improve.**

Enbridge Gas Distribution (EGD), which is one of the affiliates under our Gas Distribution business segment (GD), is the largest natural gas distributor in Canada with more than two million residential, commercial and industrial customers. In 2016, **EGD achieved a 79 percent score on its Customer Satisfaction Index**, which is on par with the score it received in 2015.

### OVERVIEW & PERFORMANCE OBJECTIVES

We strive to be the leader in all aspects of our business, including customer service. We have a wide range of customers—from energy producers who ship their products on our oil and gas transportation networks; to refiners and processors; to the residential, commercial and industrial customers who consume the natural gas we distribute—and we are constantly seeking opportunities to partner with, and add value for, them.

We have two performance objectives for Customer Relations:

- To provide consistent and reliable service to all of our customers.
- To continue to safeguard customer privacy and data.

*Please see 2016 Performance for an overview of our performance against these objectives.*

### MANAGEMENT APPROACH

From an Enbridge-wide perspective, we fulfill our commitments to our customers by ensuring the safety of our systems and delivering the highest levels of reliability; making sure we are efficient so that our customers pay the lowest practical costs for our services; and delivering our growth projects on time and on budget, while attaining high standards for safety, quality, and environmental and regulatory compliance. Through the various demand-side management (DSM) programs that it offers, EGD also helps its natural gas customers adopt energy-saving equipment and practices to reduce their natural gas consumption and their costs. *For more information, please see the Climate Change, Emissions Reduction & Energy Efficiency section of this report.*

Our customer relations teams across our company aim to provide consistent and reliable service at all times. They are constantly looking for opportunities to improve by listening to customers to ensure they understand their needs proactively bringing important information to customers' attention; and being responsive to them and addressing issues effectively and in a timely fashion to our customers' satisfaction.



Each of our business segments has a unique set of customers. Following is a description of each business segment's customers and how it manages its customer relationships:

### **Liquids Pipelines**

LP has three main customer groups: producers; shippers, who range from integrated oil and gas companies to smaller regional producers to marketers who buy crude, aggregate volumes; and refiners. Its customers are primarily concerned about market access, pipeline capacity and capabilities, pipeline apportionment, and that LP is maximizing its network performance.

### **Gas Pipelines & Processing**

Our Gas Pipelines & Processing business segment (GPP), which has an Offshore and an Onshore component, defines its customers as shippers who produce and/or market the natural gas and NGLs that they transport on the GPP gathering and transmission pipeline systems.

#### *GPP Offshore*

GPP Offshores pipelines primarily gather and/or transport natural gas and associated NGLs in the Gulf of Mexico. GPP Offshore also operates a crude gathering system in the Gulf, and is actively pursuing growth opportunities in both the offshore natural gas and crude segments of the industry. GPP Offshores customers are primarily concerned with operational reliability and timely access to critical information.

#### *GPP Onshore*

In addition to providing gas gathering, treating and processing services, GPP Onshore (Mistcast Energy Partners) provides integrated midstream services, including logistics and marketing services to market customers' natural gas, NGLs, condensate and crude oil, as well as truck and rail services and crude and condensate loading and storage facilities. Onshore customers are primarily concerned that GPP ensures that their gas flows—because if it is not flowing, they are not getting paid. They also want GPP to be adaptable when issues arise, to be the lowest-pressure provider and to connect to their wells on time.

### **Enbridge Gas Distribution**

Enbridge Gas Distribution (EGD), which is one of the affiliates under Enbridge's Gas Distribution business segment (GD) and the only affiliate for which we have customer relations-related data, is the largest natural gas distributor in Canada with more than two million residential, commercial and industrial customers. EGD's customers are primarily concerned that their natural gas is delivered safely and reliably; they are given fair and reasonable delivery rates; and that EGD is responsive, responsible, trustworthy and accessible.

EGD uses multiple communication channels to inform and interact regularly with customers. Because customer service and satisfaction are important to EGD, it measures its performance in these areas through a third-party market researcher that conducts ongoing telephone interviews with customers.

EGD bills its customers monthly, which gives it an opportunity to connect with customers at least 12 times a year. (In 2016, EGD issued about 25.2 million residential utility bills.) EGD takes advantage of this touch point by including information in its bills in the form of:

- a company newsletter (six times in 2016);
- rate notices (four times a year);
- safety information (carbon monoxide; Call Before You Dig/Ontario One Call; smell of gas); and
- company programs (budget billing, pre-authorized payment, third-party billing, golden age service).

In addition, EGD responds to customers' questions through its call center and proactively engages customers through its website and Twitter; and since 2005, EGD's Office of the Ombudsman has been resolving customer issues that EGD's call center is unable to resolve.

EGD also engages with its customers through its wide range of DSM programs. Under these programs, EGD provides incentives to customers--from homeowners to large industrial facilities--to encourage them to adopt energy-saving equipment and operating practices that reduce natural gas consumption.

Some of EGD's other initiatives to enhance its customers' experience include its:

- implementation of a mobile website, which registered more than 725,000 visits in 2016, and improvements to the customer experience on its website and other contact channels;
- focus on resolving questions or concerns the first time (i.e., First Call Resolution);
- simplification of common transactions;
- proactive promotion of paperless billing (about 575,000 EGD customers have opted for paperless billing, and in 2016, EGD saw the highest-ever annual adoption rate);
- provision of energy efficiency information that allows customers to compare their own energy use to that of customers in similar-sized homes; and
- company programs (including budget billing, pre-authorized payment, third-party billing and golden age service).

### **Customer Relationship Management Systems**

We collect customer-relevant information using Customer Relationship Management systems that our business segments operate independently. Given each business segments' unique customers, our decentralized approach allows us to provide specific, tailored services to meet our customers' needs.

For example:

- EGD's primary customer database system is its Customer Information Billing System, which holds customer and premises information and handles billing and collections.
- LP centralizes its customer interactions and customer intelligence to maintain focus on its customers' business drivers, needs and expectations.

## **2016 PERFORMANCE**

**PERFORMANCE OBJECTIVE A:** To provide consistent and reliable service to all of our customers.

### **ENBRIDGE'S PERFORMANCE:**

#### **Customer Satisfaction Measurement**

##### *Liquids Pipelines*

While LP did not conduct any formal surveys in 2016, it held more than 500 meetings with its top-ranked (by volume and revenue) customers and received direct positive feedback on its approach and ability to resolve issues collaboratively. Based on that feedback, LP believes that its customer satisfaction has improved and, going forward, it intends to continue its efforts to meet and exceed its customers' expectations.

##### *Gas Pipelines & Processing*

Neither the Offshore nor the Onshore component of GPP conducted any formal surveys in 2016. However, GPP Offshore has regular, informal conversations with many of its customers and, in 2016, received a great deal of positive feedback. Specifically, GPP Offshores customers indicated an appreciation for its responsiveness to their changing needs and its fairness in dealing with issues that occur.

##### *Enbridge Gas Distribution*

In 2016, EGD issued about 25.2 million residential utility bills, and responded to about 28.1 million customer inquiries. EGD's Office of the Ombudsman responded to nearly 7,900 complaints (0.3 percent of all customer inquiries), the

majority of which pertained to billing and collections (about 5,600), or to Open Bill (about 975), through which third-party companies use EGD's bill to bill for their own goods or services. With few exceptions, the Office of the Ombudsman was able to resolve the issues to the customers' satisfaction.

EGD measures customer satisfaction through its Customer Satisfaction Index, which assesses customers' perceptions of EGD's service performance on a wide range of customer touch points. In 2016, EGD achieved a 79 percent score on its Customer Satisfaction Index, which is on par with the score it received in 2015, but which represents a slight improvement from the 77 percent score it received in 2014.

EGD also conducts a reputation study each year to monitor its reputation vis-à-vis its residential customers based on awareness, familiarity, service quality, trust and advocacy. EGD includes benchmarking questions in the study so that it can compare its performance with that of electricity providers in the EGD franchise area. The study conducted during the third quarter of 2016 determined that EGD led in the areas of familiarity, service quality, trust and advocacy.

**PERFORMANCE OBJECTIVE B:** To continue to safeguard customer privacy and data.

#### ENBRIDGE'S PERFORMANCE:

At all levels of our company, we have robust systems and thorough processes in place to help ensure that our customers' privacy and data are protected. In 2016, neither LP, GPP nor EGD received any significant substantiated complaints regarding breaches of customer privacy or losses of customer data in 2016.

#### SUMMARY OF KEY PERFORMANCE INDICATORS

##### Customer Relations, 2014 – 2016

	2014	2015	2016
<b>Customer satisfaction measures</b>			
Liquids Pipelines	Data not available	>500 customer meetings	>500 customer meetings
Gas Pipelines & Processing Offshore	Data not available	Regular, informal conversations with customers	Regular, informal conversations with customers
Gas Pipelines & Processing Onshore	Data not available	Data not available	Data not available
Enbridge Gas Distribution	Achieved 77% on its Customer Satisfaction Index	Achieved 79% on its Customer Satisfaction Index	Achieved 79% on its Customer Satisfaction Index
<b>Number of incidents regarding customer privacy and data protection</b>			
Liquids Pipelines	0	1 <sup>1</sup>	0
Gas Pipelines & Processing Offshore	0	0	0
Gas Pipelines & Processing Onshore	0	0	0
Enbridge Gas Distribution	0	1 <sup>2</sup>	0

- <sup>1</sup> In August 2015, Enbridge Pipelines (FSP) L.L.C. (Enbridge FSP) filed a depreciation study for the Flanagan South Pipeline (FSP) with the FERC. The depreciation study was available publicly on FERC's website and inadvertently contained confidential shipper information. We corrected this situation immediately and received no formal complaints.
- <sup>2</sup> In 2015, a sorting error lead to the inadvertent disclosure of 10 customers' billing information to another customer. EGD quickly notified the affected customers and implemented new privacy controls. None of its customers made any further complaints.

## 8.0 RESEARCH, DEVELOPMENT & INNOVATION

### KEY FACTS

In 2016, our research and development (R&D) and innovation-focused business segments and groups invested about **\$18.3 million\* in sustainability-related technology development and innovation projects**. Our investments focused on improving our systems integrity, enhancing our ability to detect leaks and prevent damage, and growing, complementing and diversifying our business.

Through our Emerging Technology group, we managed a portfolio of **investments in 15 innovative pre-commercial technologies**.

In 2016, our Liquids Pipelines (LP), Gas Distribution (GD) and Gas Pipelines & Processing (GPP) business segments led, participated in or sponsored **more than 128 projects related to research, development and innovation**.

\*Includes Canadian and U.S. dollar amounts.

### OVERVIEW & PERFORMANCE OBJECTIVES

Every year we invest significantly in research, development and innovation-related technologies, processes and methods that improve the fitness of our systems, our leak detection abilities and our damage prevention capabilities. We also invest in emerging technologies—such as clean power and energy storage—that have the potential to support future business growth.

We have three performance objectives for Research, Development & Innovation:

- To continue investing in research, development and innovation that improves our systems for integrity, leak detection and damage prevention.
- To continue investing in research, development and innovation related to emerging technology and power operations, with a view to growing, complementing and diversifying our business.
- To continue to demonstrate industry leadership in research, development and innovation.

*Please see 2016 Performance for an overview of our performance against these objectives.*

### MANAGEMENT APPROACH

While innovation activities take place throughout our entire company, in this report we provide an overview of our work in the areas of systems integrity, leak detection and damage prevention, which takes place primarily in LP, GD and GPP. We also provide an overview of the investments we have made through our Emerging Technology and Power Operations groups. These investments include our interests in renewable and alternative energy and large-scale electricity storage.

### Research, Development and Innovation Related to Systems integrity, Leak Detection and Damage Prevention

#### *Liquids Pipelines*

LP is involved in researching, testing and assessing the best new systems integrity, leak detection, damage prevention and operations technologies through the following three teams:

- Research, Development and Innovation, which is a centralized R&D team with a broad mandate to establish an innovation governance framework and to research, develop and test novel pipeline technologies and solutions. The group focuses on all aspects of pipeline operations including design, construction, operation, maintenance and abandonment.
- Integrity Services, Pipeline Integrity, which focuses on finding technological solutions and methods to mitigate key threats to the integrity of our liquids pipelines systems.
- Leak Detection Testing and Research, which is responsible for researching and testing commercially available leak detection technologies that complement or enhance current capabilities.

Together these teams support the development of advanced pipeline monitoring systems; new tools to prevent, monitor or mitigate corrosion, cracks and deformation; and real-time leak detection technologies.

#### *Gas Distribution*

GD invests in technology development to improve its capabilities in systems integrity, leak detection, damage prevention and Process Safety Management. GD's investment program is primarily managed through its Technology Development department, which works in partnership with vendors and industry consortiums to develop new technologies, conduct in-house field trial investigations and evaluate emerging technologies. The department also works with internal groups to implement new technologies that improve GD's operations. In 2016, Technology Development began exploring potential growth opportunities for our gas distribution business, which include the development of new green energy opportunities—such as power-to-gas energy storage—which GD would use to help balance the electrical grid.

#### *Gas Pipelines & Processing*

GPP invests in the development of advanced pipeline integrity and leak detection technologies through various operating departments, including Systems integrity, Engineering, Control Room and Supervisory Control and Data Acquisition (SCADA).

### **Research, Development and Innovation Related to Emerging Technology and Power Operations**

Through our Emerging Technology group, we continue to be one of a select number of energy companies that supports innovative pre-commercial technologies. Two of our early innovative investments—in wind and solar energy—have already moved past the incubation stage to the point where they have become meaningful and profitable business lines for us. Other of our investments—in geothermal and low-head hydropower—have resulted in operational power generating projects in Oregon and Ontario. In 2016, the Emerging Technology group made a follow-on investment totaling \$1 million in its existing portfolio of technologies. Our Power Operations group also invests in technology development programs to support its green power projects. In 2016, it spent about \$1 million on pilot programs to improve the operational reliability of its wind turbine operations.

## **2016 PERFORMANCE**

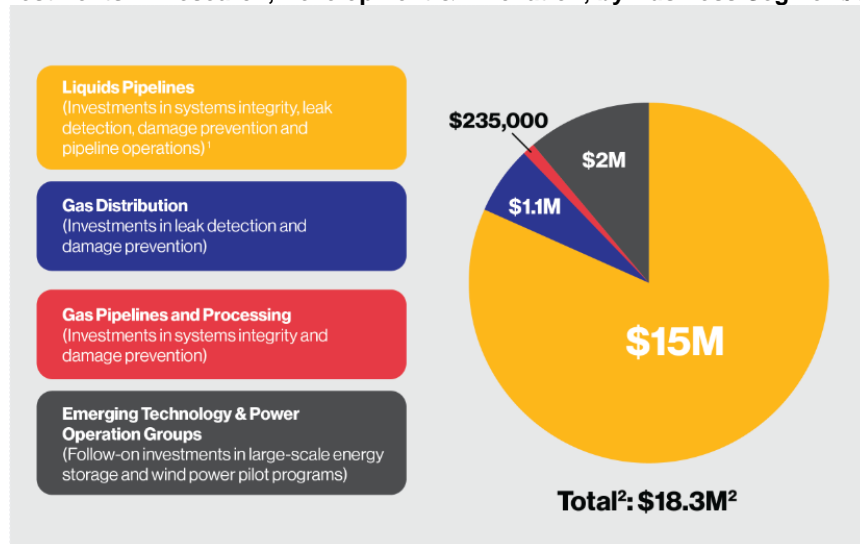
**PERFORMANCE OBJECTIVE A:** To continue investing in research, development and innovation that improves our systems for integrity, leak detection and damage prevention.

### **ENBRIDGE'S PERFORMANCE:**

#### **Enbridge's 2016 Investments in Research, Development & Innovation**

In 2016, our research, development and innovation-focused business segments and groups invested about \$18.3 million in sustainability-related technology development and innovation projects (this amount includes Canadian and U.S. dollar amounts). Our investments focused on improving our systems integrity, enhancing our leak detection and increasing our damage prevention, and on growing, complementing and diversifying our business. The chart below shows how that amount breaks down within our company, and what investment areas were targeted:

## Investments in Research, Development & Innovation, by Business Segment/Group, 2016



<sup>1</sup> Includes LP's contribution of \$350,800 to Pipeline Research Council International's R&D portfolio.

<sup>2</sup> Includes Canadian and U.S. dollar amounts.

## 2016 Investments in Systems Integrity, Leak Detection and Damage Prevention

Following are examples of some of the investments we made in systems integrity, leak detection and damage prevention in 2016:

### *Liquids Pipelines*

**Next Generation Crack In-line Inspection Tools** - To enhance our crack management program, LP engaged in a multi-million dollar venture to develop new crack in-line inspection tools that can detect, size and identify critical crack features with high reliability and little to no impact to our operations. Our pipeline integrity experts have identified and defined criteria for features requiring mitigation based on morphology (structure), size and type. They have also established operational requirements for the tools, including high inspection speeds and the ability to inspect various products. We are in the initial stages of developing the tools, and are currently assessing the technologies that are best suited to meeting our technical requirements.

**Facility Leak Sensors** - Development is underway to build polymer-based hydrocarbon sensors to detect small drip-size leaks on common pipeline facility equipment to aid in early detection. The sensors need to be reliable (with very few false alarms), flexible for use in a variety of locations, and cost-effective due to the number of locations for which the technology may be suitable. Placed below a flange or piece of equipment, the polymer simply expands and sends a signal if a hydrocarbon is present. Once a successful prototype has been completed in the near future, we plan to carry out technology trials.

**Advanced Underwater Sensing** - In 2013, LP acquired an Autonomous Underwater Vehicle (AUV) equipped with advanced sonar technology and, in partnership with Michigan Technological University, has been testing it to support LP's pipeline integrity management program. During these tests, the AUV has been collecting side-scan sonar images to map the bottom of the Straits of Mackinac near our Line 5 crossing in northern Michigan. LP's goal has been to provide a "visual" sonar image of our pipelines and to better understand how they interact with the surrounding bottom substrate on a year-over-year basis. The AUV has provided useful data regarding changes to the



topography near and around the pipeline, and this information has helped inform LP's integrity management program for Line 5.

*Oil-on-Water Leak Detection* - LP is investigating oil-on-water leak detection sensors as part of its effort to enhance its leak detection and monitoring of waterways near our liquids pipelines and facilities. Since 2015, LP has been conducting an oil-on-water leak detection pilot project on the creek within our Edmonton Terminal, testing different sensor technologies for potential use with our projects and operations. Each sensor detects oil on water in a different way: one is based on direct contact with hydrocarbons; the second emits low-level microwaves; and the third views the surface of the water from above to detect reflections of light caused by very thin layers of oil on the water's surface. In 2017, through its laboratory, C-FER Technologies will evaluate how the sensors perform in the presence of hydrocarbons and crude oils released onto water in a controlled environment.

#### *Gas Distribution*

*GPS-Based Excavation Encroachment Notification* - In 2016, GD worked with the Gas Technology Institute (GTI) to field test a prototype Global Positioning System (GPS)-based excavation encroachment notification system. The system combines GPS notification features, with software that is capable of working within boundaries based on Geographic Information System (GIS) data and real-time excavation tracking using low-cost GPS devices. The new technology will enable us to more easily monitor excavation equipment that is operating near our underground pipe facilities. In 2016, we installed the technology in five excavation vehicles and monitored their activity over a one-month period. We plan to work with GTI to further enhance the technology to improve its location accuracy and commercialization.

*Fiber-Optic Damage Prevention Technologies* - GD has been actively testing fiber-optic damage prevention technologies as a potential solution to protecting vital high-pressure gas distribution mains from third-party damages. In 2016, we completed the final phase of testing three fiber optic-based threat detection systems. The results from this testing indicate high detection levels for mechanical excavating equipment, manual digging and vehicle movement. In addition, the testing demonstrated a satisfactory reduction in nuisance alarms as well as improved threat detection. In 2017, we will develop an implementation plan for the technologies.

#### *Gas Pipelines & Processing*

*Automated Ultrasonic Testing (AUT) System* - In the past, inspections of gas plant vessels in GPP have required taking equipment out of service and staff entering confined spaces to inspect and clean equipment. In 2014, GPP piloted the use of a new AUT system that can perform inspections externally without taking units out of service. As the tool moves along the exterior of a plant vessel, it uses an ultrasonic signal to detect pitting and corrosion on the metal surface. The equipment enables the business segment to meet regulatory requirements while avoiding plant shutdowns and improving worker safety. Since 2014, GPP has applied this technology to inspect vessels at seven plants.

*New Management of Change System for Process Safety* - Our Pipeline Process Safety Management System Specification sets out minimum requirements for safe and reliable operations. It is also sets out the minimum requirements we must meet to comply with the industry recommended practice for pipeline safety management systems (American Petroleum Institute Recommended Practice 1173). To implement this standard, GPP has created an online change management portal that integrates all of the core process safety systems for its pipelines and plants. Instead of having to search multiple systems, users can search one centralized information site to find specific safety requirements. As a result, GPP employees will be able to complete and track required process safety tasks more quickly and efficiently.

**PERFORMANCE OBJECTIVE B:** To continue investing in research, development and innovation related to emerging technology and power operations, with a view to growing, complementing and diversifying our business.

## ENBRIDGE'S PERFORMANCE:

### 2016 Investments in Growing, Complementing and Diversifying Enbridge's Business

As global demand for energy continues to grow, we know that society wants to see a greater use of clean power—and we believe that finding lower-impact, lower-carbon energy solutions is in everyone's interests. To that end, we have supported research, development and innovation-related projects that pertain to composite pipe technologies, marine transportation of natural gas and bitumen extraction. GD is advancing innovative technologies that enable customers to improve their efficient use of natural gas and reduce emissions. Through our Power Operations group, we are also conducting pilot programs to enhance our green power operations. And, we hope to add clean power platforms to our portfolio in the years to come, through investments in pre-commercial renewable and alternative energy technologies and large-scale electricity storage. Following are examples of some of the investments we made in 2016:

#### *Investments in Energy Efficiency, Gas Savings and Emissions Reduction*

GD supports the widespread market adoption of new technologies that drive energy efficiency, gas savings and GHG emissions reductions while simultaneously reducing end-user costs. In addition, GD provides support for the development of codes and standards, as well as standard test methods, for energy efficiency. GD is undertaking these efforts as a member of organizations such as the Canadian Gas Association (CGA), the Canadian Standards Association (CSA), the Gas Technology Institute, and the Energy Solutions Center, as well as through collaboration with electric and gas utilities, universities, government and manufacturers. Some of the current research initiatives that GD supports include:

- integrated solutions for Net Zero Homes (homes that produce as much renewable energy as they consume, resulting in zero net GHG emissions),
- micro combined heat and power (CHP) systems, fueled by natural gas, that produce both electricity and heat for homes and small buildings,
- natural gas heat pumps for space heating and cooling and domestic hot water applications, and
- research to further improve combustion and heat recovery capabilities of industrial technologies.

GD is investing in these research initiatives in support of its demand-side management (DSM) programs. *For more information, please see the Climate Change, Emissions Reduction & Energy Efficiency section of this report.*

#### *Wind Farm Operations*

To improve the operational reliability of our wind power projects, our Power Operations group carried out a number of pilot programs in 2016:

- At our Lac Alfred wind farm in Quebec, we retrofitted two of our wind turbines with electrical de-icing technology to improve operations in severe winter conditions. Powered by wind turbines, the technology supplies electricity to heating elements along the edge of each blade to melt ice. We will be evaluating the technology, which we installed in late 2016, over the 2017 winter period. If this evaluation is successful, we will look for opportunities to expand our use of the technology to other locations in our Canadian fleet.
- We are testing the use of various paint coatings to protect the edges of wind turbine blades against ice buildup. The tests, which will take place over the 2017 winter period, will evaluate the amount of ice buildup on the blades, compared to other, uncoated turbine blades at the same height. If the results of the tests are successful, we expect to increase our turbine operating times during winter.
- Our engineers and IT professionals developed an analytics program that reviews and monitors the performance of our turbines at 10-minute intervals. They have made the analytics available as a handy computer dashboard.

#### *Solar Power Technology*

Since 2011, we have invested in next-generation solar technology through a \$9.8-million investment in Morgan Solar, a Canadian start-up. Our investment is helping Morgan Solar to commercialize a new line of concentrated

photovoltaic (PV) panels that boost the power output of solar cells. The technology provides an innovative means of generating solar power more efficiently, for less cost and with a lower environmental footprint. In 2016, we continued to progress the development of a demonstration project at our Silver State North solar facility in Nevada. We anticipate that construction of this demonstration project will begin in 2017.

#### *Utility-Scale Energy Storage Technologies*

In 2012, we entered into a partnership with Mississauga, Ontario-based Hydrogenous Corporation, whose water electrolysis technology can convert surplus renewable energy into hydrogen gas. Under the partnership, which included a \$5-million investment by us, excess electricity from renewable generation would be converted into renewable hydrogen through electrolysis and injected into GD's natural gas distribution network. By converting electricity to gas and storing it in existing pipeline infrastructure more renewable energy can be stored for long periods, increasing the amount of clean energy that can be generated and made available for consumers. Currently, Hydrogenous is developing a power-to-gas storage plant with us that will deliver 2 MW of storage capacity and that will be located in the Greater Toronto Area.

Between 2013 and 2015, we also invested \$8 million in Temporal Power, an Ontario-based manufacturer of electrical energy storage systems. Temporal Power's electrical energy storage technology is based on 4,080-kilogram (9,000-pound) solid-steel flywheels—mechanical batteries that store electrical energy as kinetic energy through continuous high-speed rotation. These flywheels can store surplus energy from renewable sources and then release that power quickly and powerfully back to the grid via an electricity generator, keeping the grid in balance and enabling the grid to embrace intermittent renewable sources such as wind and solar. In southern Ontario, Temporal Power's technology has been incorporated into a 2-MW flywheel energy storage facility near Minto and a 5-MW facility near Clear Creek. In 2016, Temporal Power secured two additional project contracts. Together with Convergent Energy + Power, it has signed an agreement to install an additional 5-MW flywheel energy storage project in Ontario. It is also partnering with WEB Aruba to develop a 5-MW flywheel energy storage system on the Caribbean island of Aruba. Construction of the projects is planned for 2017. In 2016, our Emerging Technology group made a follow-on investment of \$1 million to support further commercialization of the technology.

**PERFORMANCE OBJECTIVE C:** To continue to demonstrate industry leadership in research, development and innovation.

#### **ENBRIDGE'S PERFORMANCE:**

##### **Industry Leadership in Research, Development & Innovation**

We continue to shape industry best practices and technology development through our involvement in various R&D-related industry associations and initiatives. As part of our commitment to improving pipeline safety, we are collaborating with other pipeline operators to evaluate best-in-class external leak detection technologies. Since 2013, through a Joint Industry Program, we have supported groundbreaking leak detection research, using the External Leak Detection Experimental Research (ELDER) test apparatus in Edmonton. The first tool of its kind in the world, ELDER allows external leak detection technologies that are intended for burial on or adjacent to a pipeline to be systematically evaluated in a highly controlled setting that closely represents the environment within which actual liquids pipelines are operated.

We also actively advance R&D and technology innovation through a number of industry research organizations, including: Pipeline Research Council International (PRCI), a global collaborative research development organization for the energy pipeline industry; Petroleum Technology Alliance Canada (PTAC), a non-profit association that facilitates innovation and collaborative R&D in the upstream oil and gas industry; and NYSEARCH, a leading natural gas research, development and demonstration organization based in the U.S.

## SUMMARY OF KEY PERFORMANCE INDICATORS

### Research, Development & Innovation, 2014 – 2016

	2014	2015	2016
<b>Investment amounts in R&amp;D and Innovation</b>			
Liquids Pipelines	\$7.9 million	\$6 million	\$15 million
Gas Distribution	\$1 million	\$1 million	\$1.1 million
Gas Pipelines & Processing	\$1.5 million	\$155,000	\$235,000
Emerging Technology & Power Operations groups	\$21 million	\$5 million	\$2 million
<b>Total<sup>1</sup></b>	~\$31,400,000	~\$12,155,000	~\$18,335,000
<b>Number of investments in innovative pre-commercial technologies under management by our Emerging Technology group</b>	15	15	15
<b>Number of R&amp;D and innovation projects led, participated in or sponsored by Enbridge</b>	>60	81	128

<sup>1</sup> Totals include Canadian and U.S. dollar amounts.

## 9.0 CORPORATE COMMUNITY INVESTMENTS

### KEY FACTS

In 2016, we **invested more than \$13.4 million of our corporate community investment dollars in organizations** across North America in community-strengthening initiatives aligned to our three focus areas.

About **875 of our employees participated in Enbridge's Our Community program** in 2016 by volunteering over 31,000 hours for causes they care about. In recognition of their efforts, under the program, we contributed nearly \$260,000 to communities in Canada and the U.S.

Under our **Safe Community program**, we have awarded grants to U.S. emergency responder organizations since 2002 and to Canadian emergency responder organizations since 2009. **In 2016, we invested more than \$1.47 million** in the program.

In 2016, **we donated \$5.93 million to the United Way** through our fund raising events, employee pledges and matching corporate contribution.

### OVERVIEW & PERFORMANCE OBJECTIVES

Enbridge exists to help fuel the quality of life within communities where we work and operate. As part of our work, we support organizations that champion solutions for safety, environmental and social issues. We collaborate with community leaders to support priorities, and plan and implement initiatives that help improve the quality of life for residents. We also invest where we believe we can make impactful and sustainable change, and where our employees can contribute to their communities.

We have one performance objective for Corporate Community Investments:

- To invest our approved 2016 corporate community investment budget in alignment with the needs of the communities in which we operate and in accordance with all applicable corporate policies.

*Please see 2016 Performance for an overview of our performance against this objective.*

### MANAGEMENT APPROACH

#### Enbridge's Approach

Our community investments occur at three levels: the corporate level, the project level, and the operating level. Our investments in Indigenous communities, however, occur at all three of these levels. This section of our *2016 CSR & Sustainability Report* focuses only on our corporate community investments. *For information on our community and Indigenous investments at the project and operating levels, please see the Stakeholder Engagement and Indigenous Engagement sections of this report.*



Our approach to corporate community investments is driven by need and outcomes, and reflects the values of the communities in which we operate. We use frameworks that provide us with a consistent focus, process and reporting system to help us evaluate the investments we make.

We focus our corporate community investments in three core areas:

- Everyone's Safety,
- Everyone's Community, and
- Everyone's Environment.

We look for opportunities for our employees to get involved in community programs and strengthen their relationships with our stakeholders by working together to build shared value with our communities. To encourage employee volunteerism, Enbridge's Our Community Partners program supports the organizations that are important to our employees and for which they volunteer.

## Governance

Our approach to corporate community investments is governed by our Board of Directors and by our Community Investment and Employee Engagement Policy. Our Board of Directors reviews and approves our annual corporate community investment donation and sponsorship budgets, and all investments must comply with our Statement on Business Conduct.

We practice standardized reporting and tracking in alignment with London Benchmarking Group (LBG) Canada and the Global Reporting Initiative (GRI), and with internal systems, such as Benevity, Inc. and Audit Control documentation.

In 2016, we reviewed our processes for corporate community investments and further developed our Enterprise Community Investment Decision Making Tool, which enables us to apply consistent evaluation criteria across each of our community investments. We began implementing this new tool in our Green Power & Transmission business segment (GPT), our Liquids Pipelines business segment (LP) and at Enbridge Gas Distribution (EGD, which is one of the utility affiliates under our Gas Distribution business segment, GD), and intend to roll it out across our company in 2017.

## 2016 PERFORMANCE

**PERFORMANCE OBJECTIVE A:** To invest our approved 2016 corporate community investment budget in alignment with the needs of the communities in which we operate and in accordance with all applicable corporate policies.

### ENBRIDGE'S PERFORMANCE:

In 2016, we worked closely with community organizations to focus our resources and support. Over the course of our work, we acquired an understanding of their concerns, needs and aspirations through:

- ongoing conversations with community leaders and stakeholders;
- information gathered by Enbridge representatives who live and work in our communities and who regularly meet with community representatives; and
- direct requests from employees and community organizations.

In response to what we heard, in 2016, we invested more than \$13.4 million in organizations in Canada and the U.S. that are aligned with our three focus areas. The table below summarizes the amounts we invested in each of our focus areas, and some of our investment highlights in 2016

Focus Area	2016 Contribution	Investment Highlights
Everyone's Safety	\$2.8 million	Safe Community Program Progressive Agriculture Safety Days
Everyone's Community	\$9.69 million	Enbridge Ride to Conquer Cancer United Way
Everyone's Environment	~\$640,000	Locally based education and restoration projects
Voluntary Employee Contributions	\$260,000	Our Community Partners program

## Investment Highlights

### Everyone's Safety

In 2016, we invested more than \$2.8 million in our Everyone's Safety focus area. A few highlights include:

Safe Community Program - Among our flagship corporate community investments is our Safe Community Program. Through it, we provide grants to firefighters, emergency medical services, emergency management, 9-1-1 operators and other related health providers who would respond to emergency situations in or near our operational communities. The grants help eligible organizations acquire new safety-related equipment, obtain professional training and deliver or receive safety education programs. Communities often have difficulty adequately funding these critical organizations, so our contributions can make a big impact on their safety. In 2016, we invested more than \$1.47 million in the Safe Community Program. Since its inception in 2002 through to the end of 2016, we have invested about \$10 million in the program.

Progressive Agriculture Safety Days® - For us, operational safety and the safety of the communities where we live and work are at the core of everything we do. That's why, in 2016, we began our partnership with the Progressive Agriculture Foundation® (PAF) with a \$100,000 sponsorship of their Progressive Agriculture Safety Days, the largest rural safety and health education program for children in North America. During the program, children learn about potential hazards around the home, ranch or farm, and are encouraged to adopt new safety practices through hands-on activities. Through our partnership with PAF, we are able to reach a large audience to provide important safety information about living and working near our operations. In addition, our employees have opportunities to get involved by organizing or participating in a Safety Day in their community.

### Everyone's Community

In 2016, we invested about \$9.69 million in our Everyone's Community focus area. A few highlights include:

Enbridge Ride to Conquer Cancer - We are the title sponsor of the Alberta, Ontario and Quebec legs of the Enbridge Ride to Conquer Cancer, the largest cycling fundraiser in Canadian history. Since we began our involvement in 2010, more than 1,834 Enbridge cyclists have raised more than \$7 million across Canada, propelling The Ride well past \$339 million in total fundraising for cancer research, treatment and care.

In 2016, in Ontario, 4,253 riders (our employees and others) raised \$17.3 million for the Princess Margaret Cancer Centre; in Quebec, 1,222 riders (our employees and others) raised \$4.4 million for the Jewish General Hospital's Segal Cancer Centre; and in Alberta, 1,402 riders (our employees and others) raised \$6.35 million for the Alberta Cancer Foundation. About 260 of our employees rode in these three rides, and 185 volunteered by serving refreshments and registering riders on site and organizing community teams, among other activities. The money raised through the Enbridge Ride to Conquer Cancer strikes an important blow in the fight against a disease that impacts one in four Canadians. By supporting it, we help advance research, such as clinical trials, which have a direct impact on patients and their families—shortening recovery times and providing better, more enhanced care.

United Way - Employee volunteer teams lead our United Way campaigns in several locations in Canada and the U.S. In 2016, we donated \$5.93 million Enbridge-wide through our fundraising events, employee pledges and matching corporate contribution.



### Everyone's Environment

In 2016, we invested about \$640,000 in our Everyone's Environment focus area. A few highlights include:

Keystone Science School – For the past 14 years, we have contributed to the Keystone Science School, which supports the development of leadership skills for advancing Science, Technology, Engineering and Math (STEM) learning.

Clear Creek Wetland Restoration – Through our five-year commitment to the Clear Creek wetland restoration project in Chatham-Kent, Ontario, and our partnership with the Lower Thames Valley Conservation Authority (LTVCA), Ducks Unlimited Canada, and the Ontario Ministry of Natural Resources and Forestry, we will help return 140 acres of marginal agricultural land to a productive wetland ecosystem.

### Voluntary Contributions from Employees

#### Enbridge's Our Community Partners Program

Enbridge's Our Community Partners program (formerly called Volunteers in Partnership) provides support to employees who wish to contribute their time and dollars to local charitable organizations and programs. The program provides both paid volunteer time for individuals and teams as well as a top-up to their financial contributions to charitable organizations. This important program helps employees to make a difference in our communities and further improve quality of life. In 2016, about 875 employees participated in the program, volunteering over 31,000 hours for causes they care about. In recognition of our employees' efforts, under the program we contributed nearly \$260,000 to communities in Canada and the U.S. Since we established the program in 2010, our employees have contributed more than 100,000 hours—and we have donated more than \$1.86 million to hundreds of organizations in Canada and the U.S.

#### E4e Foundation

We established the energy4everyone Foundation (e4e) in 2009 to improve access to affordable, sustainable and reliable energy by those who need it most. In 2016, we partnered with Light Up The World, which is a non-profit organization, to fund four solar projects in Peru—bringing light to numerous families and schools in remote villages that are not connected to the energy grid. Twenty of our employees volunteered on two of those projects.

Our contribution has had a very real impact on the quality and length of life of the affected people. To date, more than 80,000 people in five countries on three continents have been helped through this initiative to combat energy poverty in the developing world. At the end of 2016, we took steps to dissolve e4e's existence as a separate foundation, and in its place, established a partnership with Light Up The World that will provide ongoing support for similar projects and initiatives.

### SUMMARY OF KEY PERFORMANCE INDICATORS

#### Corporate Community Investments, 2014 – 2016

	2014	2015	2016
<b>Amount invested</b>	~ \$16 million <sup>1</sup>	~ \$19 million <sup>1</sup>	~ \$13.4 million <sup>2</sup>

<sup>1</sup> Includes a mix of corporate, project-based, and regional and operational-based community investments.

<sup>2</sup> Includes corporate community investments only.

## 10.0 ECONOMIC PERFORMANCE & BENEFITS

### KEY FACTS

We have a substantial capital-project portfolio, including **\$27 billion of commercially secured growth projects** coming into service between 2017 and 2019, through which we're building the infrastructure that North America needs to address its energy challenges. In 2016, we **brought into service six major projects with a combined value of \$2 billion.**

In 2016, our **annual adjusted earnings were \$2.1 billion or \$2.28 per common share**, compared with \$1.9 billion or \$2.20 per common share in 2015. Our **adjusted earnings before interest and income taxes (EBIT) were \$4.7 billion** and our **available cash flow from operations (ACFFO) was \$3.7 billion, or \$4.08 per common share.** Full-year adjusted EBIT and ACFFO per share increased by 12 percent and 10 percent, respectively, over the comparative full-year period.

The **compound annual growth rate of our total shareholder return (TSR) has outperformed the Standard and Poor's and the Toronto Stock Exchange (S&P/TSX) Composite over the past five and 10 years** by an average of 3.5 percent and 9.8 percent over each respective annual period.

In 2016, we incurred about **\$4.4 billion of operating and administration costs** and about **\$5.1 billion of capital costs.** We also spent about **\$842 million on employee salaries**; paid about **\$784 million in various types of taxes**; invested about **\$13.4 million in donations and other corporate community investments**; and paid about **\$1,820 million to lenders** in the form of interest paid.

### OVERVIEW & PERFORMANCE OBJECTIVES

Through our consistently strong financial performance, we have steadily generated superior returns to shareholders for more than six decades. At the same time, we also create positive economic impacts and opportunities that benefit many other stakeholders, including our customers, suppliers, community members and organizations, employees and governments.

We have two performance objective for Economic Performance & Benefits:

- To maintain our capacity for strong economic performance by delivering superior long-term value to our shareholders.
- To continue to generate and distribute economic value to employees, suppliers, governments, communities and providers of capital.

*Please see 2016 Performance for an overview of our performance against these objectives.*

### MANAGEMENT APPROACH

#### Industry-Leading Growth

We are currently engaged in a \$27-billion commercially secured growth capital program through which we are building the infrastructure that North America needs to address its energy challenges. In addition, we have about \$48



billion of probability-weighted projects under development. We expect this growth program, which is almost entirely organic and stems from the strategic positioning of our assets, will enable us to deliver highly visible, ongoing dividend growth of 10 to 12 percent per year, on average, through 2024.

### **Addressing Investors' Interests**

We actively engage with our investors who, in 2016, expressed interest in the following areas (among others):

#### *Enbridge Inc./Spectra Energy Corp Combination*

On February 27, 2017, Enbridge Inc. and Spectra Energy combined, making Enbridge the largest energy infrastructure company in North America and a diverse set of low-risk businesses comprising a best-in-class network of crude oil, liquids and natural gas pipelines, a large portfolio of strong, regulated gas distribution utilities and a growing renewable power generation platform.

#### *How We Will Execute on Enbridge's \$27-billion Commercially Secured Growth Capital Program*

We are currently executing a \$27-billion commercially secured growth capital program of projects that are scheduled to come into service through 2019 and that will enhance shareholder value through growing cash flows. In 2015 and 2016, we brought a total of 21 major projects with a combined value of \$10 billion into service.

#### *How We Will Extend and Diversify Enbridge's Growth Beyond 2019*

For several years, we have been focused on identifying opportunities that would extend and diversify our asset base and sources of growth beyond 2019. We have accomplished that goal by combining with Spectra Energy to create a true North American and global energy infrastructure leader six platforms for organic growth: liquids and gas pipelines; U.S. and Canadian midstream businesses; a top tier regulated utility portfolio; and a growing renewable power generation business. In addition to \$27 billion in secured growth projects through 2019, we now have \$48 billion of potential future projects under development beyond 2019. We expect the growth program will enable us to deliver highly visible ongoing dividend growth of 10 to 12 percent per year, on average, through 2024.

#### *Cash Flow Growth, Dividend Growth and Payout Policy*

In January 2017, our Board of Directors approved a 10 percent increase to the 2017 dividend, which was the 22<sup>nd</sup> consecutive annual dividend increase and is on top of a 14 percent increase in 2016 and a 33 percent increase in 2015. These increases reflect the confidence we have in our company's outlook, underpinned by the strength of our businesses, our industry-leading growth program and our sound financial position.

*For more information, please see our 2016 MD&A and financial disclosures.*

## **2016 PERFORMANCE**

**PERFORMANCE OBJECTIVE A:** To maintain our capacity for strong economic performance by delivering superior long-term value to our shareholders.

### **ENBRIDGE'S PERFORMANCE:**

#### **Strong Strategic Growth**

We are currently expanding our presence across North America through strategic acquisitions and growth projects in liquids pipelines, natural gas liquids pipelines, and renewable energy.

#### *Strategic Acquisitions*

*Spectra Energy* – In 2016, we announced that Enbridge Inc. and Spectra Energy Corp would merge in early 2017 to become the largest energy infrastructure company in North America and one of the largest globally. The combined company, called Enbridge Inc., has a company value of \$166 billion (as at February 22, 2017). With combined secured projects in execution of \$27 billion and another \$48 billion of projects under development, the combination will allow us to extend our anticipated 10 to 12 percent annual dividend growth through 2024.

**British Columbia Gas Plants** – In 2016, we acquired the Tupper Main and Tupper West gas plants and associated pipelines in northeastern British Columbia, from the Canadian subsidiary of Murphy Oil Corporation for approximately \$0.5 billion. These assets, which are in operation, are underpinned by long-term contracts that generate highly predictable cash flows.

**French Offshore Wind** – In 2016, we acquired a 50 percent interest in Éolien Maritime France SAS (EMF), a French offshore wind development company. EMF is co-owned by Enbridge and EDF Energies Nouvelles (EDF EN), a subsidiary of Électricité de France S.A. EMF holds licenses for three large-scale offshore wind farms off the coast of France that would produce a combined 1,428 megawatts (MW) of power. The development of these projects is subject to a final investment decision and regulatory approvals, the timing of which is not yet certain. Our portion of the costs incurred to date is approximately \$194 million (€136 million).

**U.S. Wind Project** – In 2016, we acquired a 100 percent interest in the 249-MW Chapman Ranch Wind Project located in Nueces County, Texas. The project is under construction and is expected to be in-service in 2017, at a total estimated cost of US\$0.4 billion.

**German Offshore Wind** – In February 2017, we announced that we had acquired an effective 50 percent ownership in the 497-MW Hohe See Offshore Wind Project. This late-design-stage project is located in the North Sea, 98 kilometers off the coast of Germany. Once in service in 2019, our total investment in the project is expected to be approximately \$1.7 billion (€1.07 billion).

### **Growth Projects**

In 2016, we completed and brought into service the following major projects: the 100,000-barrels-per-day (bpd) Heidelberg Oil Pipeline in the Gulf of Mexico; the \$0.9-billion Greater Toronto Area (GTA) project by Enbridge Gas Distribution Inc. (EGD) to meet growing demand for natural gas distribution services in the GTA and to continue the safe and reliable delivery of natural gas to current and future customers; the US\$0.3-billion expansion of Line 6B on the Lakehead System to 570,000 bpd; this was the final component of our Eastern Access Program, which provides our liquids transportation system customers increased access to refineries in the upper midwest U.S. and eastern Canada; the expansion of the Aux Sable Extraction Plant in Channahon, Illinois, providing approximately 24,500 bpd of incremental fractionation capacity to this plant; and the 103-MW New Creek Wind Project, a wind farm located in West Virginia. *For more information on our growth projects, please visit <http://www.enbridge.com/projects-and-infrastructure/projects>.*

## **Strong Financial Performance**

### **Revenues**

The following table presents our total revenues for the past three financial years. For the purposes of presentation for our 2016 CSR & Sustainability Report, we have included Income from Equity Investments in Revenues:

**Enbridge's Total Revenues, 2014 – 2016**

Year ended December 31 (unaudited; millions of Canadian dollars)	2014	2015	2016
Revenues (including income from equity investments <sup>1</sup> )	38,009 <sup>1</sup>	34,269 <sup>1</sup>	34,988 <sup>1</sup>

<sup>1</sup> Revenues from equity investments for the year ended December 31 were as follows: 2014 - \$368 million; 2015 - \$475 million; 2016 - \$428 million.

### **Earnings and Cash Flow Growth**

In 2016, our annual adjusted earnings were \$2,078 million or \$2.28 per common share, compared with \$1,866 million or \$2.20 per common share in 2015. our adjusted EBIT were \$4,662 million, up 12 percent from 2015. And our ACFFO was \$3,713 million, or \$4.08 per common share in 2016, up 10 percent from 2015.

### *Dividend Growth and Capital Appreciation*

We offer investors a unique value proposition that combines highly desirable attributes, including visible growth, a reliable business model and a growing income stream. We credit this unique value proposition for delivering excellent returns to shareholders, year after year. The shareholders of Enbridge Inc. (TSX:ENB) (NYSE:ENB) realize returns through a combination of dividends and capital appreciation.

### *Share Buybacks*

We did not complete any buybacks of its own shares in 2016.

### *Indices and Rankings*

Ongoing support for our share price comes in part from indices and rankings based on information about our environmental, social, ethical and governance policies and practices. These indices and rankings are based on the concept that a company's commitment to CSR and sustainability will help maintain and grow long-term shareholder value. As a result, a certain segment of investors choose to direct their investments toward companies listed on these indices and rankings. *For more information, please see the Awards & Recognition section of this report.*

**PERFORMANCE OBJECTIVE B:** To continue to generate and distribute economic value to employees, suppliers, governments, communities and providers of capital.

## **ENBRIDGE'S PERFORMANCE:**

### **Economic Value Generated and Distributed**

In addition to creating value for our shareholders, we also create value for our other stakeholders, including our employees (through the salaries we pay), suppliers (through the operations and capital dollars we spend), governments (through the taxes we pay), community members and organizations (through our community investments) and lenders (through interest paid).

As per the table below, in 2016, we incurred about \$4.4 billion of operating and administration costs and about \$5.1 billion of capital costs. We also spent about \$842 million on employee salaries; paid about \$784 million in various types of taxes; invested about \$13.4 million in donations and other corporate community investments; and paid about \$1,820 million to lenders in the form of interest paid. These amounts strengthen the countries and communities in which we do business.

**Economic Value Generated and Distributed, for the year ended December 31, 2016**  
**Unaudited, Millions of Canadian dollars unless otherwise noted**

<b>Economic Value Generated and Distributed</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
Revenues (including income from equity investments)	38,009	34,269	34,988 <sup>1</sup>
Commodity costs and gas distribution costs	29,483	25,241	24,005
Operating and administration costs	3,281	4,152	4,360 <sup>2</sup>
Capital costs	10,527	7,275	5,129 <sup>3</sup>
Adjusted earnings	1,574	1,866	2,078
Available cash flow from operations	2,506	3,154	3,713
Payments to shareholders	1,428	1,884	2,238
Preference share dividends declared	251	288	293
Common share dividends declared	1,177	1,596	1,945
Total base salaries <sup>4</sup>	874	921	842 <sup>5</sup>
Payments to governments	408	611	784 <sup>6</sup>
Donations and other community investments	16	19	13.4
Payments to lenders	1,435	1,835	1,820

Certain amounts in this table have been determined and presented in view of the Global Reporting Initiative 4.0 reporting guidelines and may differ from amounts determined under the U.S. generally accepted accounting principles (GAAP).

<sup>1</sup> Revenues in 2016 include \$428 million of income from equity investments.

<sup>2</sup> In 2016, operating and administration costs amounted to about \$2,040 million in Canada and about \$2,318 million in the U.S. Operating and administration costs that we incurred through our international activities in 2016 amounted to about \$2 million. Total operating and administration costs in 2016 were about \$4,360 million.

<sup>3</sup> In 2016, capital costs amounted to about \$3,136 million in Canada and about \$1,993 million in the U.S. Total capital costs in 2016 were about \$5,129 million.

<sup>4</sup> Total base salaries reflect the base pay of permanent and temporary employees. We have restated the base salaries for 2014 and 2015 such that they are in Canadian dollars. For 2014, we used the Bank of Canada Annual Exchange Rate of 1.1044; for 2015, we used the Bank of Canada Annual Exchange Rate of 1.2787 (we applied the exchange rate to the U.S. amount prior to rounding to the nearest million).

<sup>5</sup> In 2016, total base salaries amounted to about CDN\$572 million for employees in Canada and US\$204 million for employees in the U.S. Using the Bank of Canada Annual Exchange Rate of 1.3248, our total base salaries for 2016 amounted to approximately CDN\$842 million, after rounding (we applied the exchange rate to the U.S. amounts prior to rounding to the nearest million).

<sup>6</sup> In 2016, payments to governments (including property taxes, income taxes and other taxes) in Canada amounted to about \$402 million. Payments to governments (including property taxes, sales and use taxes, income taxes and other taxes) in the U.S. amounted to about \$379 million. Income taxes paid to other governments amounted to about \$3 million. Total payments to governments were about \$784 million. In addition to tax payments made to governments, we employ significant resources, including the cost of salaries, technology and control functions, to comply with various government-imposed requirements to collect and remit taxes on their behalf. In 2016, we collected and remitted \$1.4 billion in sales, withholding, and payroll taxes on behalf of Canadian and U.S. governments.

## SUMMARY OF KEY PERFORMANCE INDICATORS

### Economic Performance & Benefits<sup>1</sup>, 2014 – 2016

	<b>2014</b>	<b>2015</b>	<b>2016</b>
<b>Revenues</b>	38,009	34,269	34,988 <sup>2</sup>
<b>Operating and administration costs</b>	3,281	4,152	4,360 <sup>3</sup>
<b>Capital costs</b>	10,527	7,275	5,129 <sup>4</sup>
<b>Base salaries<sup>5</sup></b>	874	921	842 <sup>6</sup>

<b>Payments to lenders</b>	1,435	1,835	1,820
<b>Taxes paid to governments</b>	408	611	784 <sup>7</sup>
<b>Donations and other community investments</b>	16	19	13.4

Certain amounts in this table have been determined and presented in view of the Global Reporting Initiative 4.0 reporting guidelines and may differ from amounts determined under the U.S. GAAP.

<sup>1</sup> Unaudited, Millions of Canadian dollars unless otherwise noted

<sup>2</sup> Revenues in 2016 include \$428 million of income from equity investments.

<sup>3</sup> In 2016, operating and administration costs amounted to about \$2,040 million in Canada and about \$2,318million in the U.S. Operating and administration costs that we incurred through our international activities in 2016 amounted to about \$2 million. Total operating and administration costs in 2016 were about \$4,360 million.

<sup>4</sup> In 2016, capital costs amounted to about \$3,136 million in Canada and about \$1,993 million in the U.S. Total capital costs in 2016 were about \$5,129 million.

<sup>5</sup> Total base salaries consist of the base pay of permanent and temporary employees. We have restated the base salaries for 2014 and 2015 such that they are in Canadian dollars. For 2014, we used the Bank of Canada Annual Exchange Rate of 1.1044.; for 2015, we used the Bank of Canada Annual Exchange Rate of 1.2787 (we applied the exchange rate to the U.S. amounts prior to rounding to the nearest million).

<sup>7</sup> In 2016, total base salaries amounted to about CDN\$572 million for employees in Canada and US\$204 million for employees in the US. Using the Bank of Canada Annual Exchange Rate of 1.3248, our total base salaries for 2016 amounted to approximately CDN\$842 million, after rounding (we applied the exchange rate to the U.S. amount prior to rounding to the nearest million).

<sup>8</sup> In 2016, payments to governments (including property taxes, income taxes and other taxes) in Canada amounted to about \$402 million. Payments to governments (including property taxes, sales and use taxes, income taxes and other taxes) in the U.S. amounted to about \$379 million. Income taxes paid to other governments amounted to about \$3 million. Total payments to governments were about \$784 million. In addition to tax payments made to governments, we employ significant resources, including the cost of salaries, technology and control functions, to comply with various government-imposed requirements to collect and remit taxes on their behalf. In 2016, we collected and remitted \$1.4 billion in sales, withholding, and payroll taxes on behalf of Canadian and U.S. governments.



# APPENDICES

## AWARDS & RECOGNITION

By focusing on our core values of Integrity, Safety and Respect in support of our communities, the environment and each other, we have received many awards and much recognition over the years from independent third parties for our performance in the areas of sustainability, safety, human resources, community investment and corporate reporting. Listed below are some of the awards and recognition we received in 2016.

### Corporate Sustainability

- **Global 100 List of the Most Sustainable Companies in the World:** Enbridge ranked in 46th place, and was one of nine Canadian companies included on this list.
- **Best 50 Corporate Citizens in Canada:** This award, from Corporate Knights, recognizes Enbridge as being one of the best 50 corporate citizens in Canada. Enbridge came in sixth place.
- **Dow Jones Sustainability World and North America Indices:** The Dow Jones Sustainability Index (DJSI) included Enbridge in both its North America Index—which is based on the top 20 percent of corporate sustainability performers—and its World Index—which is based on the top 10 percent, from an original grouping of nearly 3,400 companies.
- **Newsweek Green Rankings:** In its Green Rankings—which are based on energy use, GHG emissions, and water and waste productivity—*Newsweek* ranked Enbridge the highest among energy companies.
- **CDP:** in 2016, the CDP awarded Enbridge a performance score of 'B' for both our 2016 climate and water disclosure submissions. A 'B' corresponds to a "Management" Disclosure Level score which was above average for peer companies in the energy sector.

### Governance

- **Corporate Governance Rankings:** The *Globe and Mail Report on Business* ranked Enbridge in 28<sup>th</sup> place out of 234 companies on its annual Corporate Governance Rankings. It ranked Enbridge Income Fund in 142<sup>nd</sup> place.

### Employment

- **10 Best Companies to Work For:** The *Financial Post* included Enbridge on its list of the 10 Best Companies to Work For, which recognizes Canadian companies that offer career advancement opportunities and leading-edge benefits.
- **Canada's Top 100 Employers:** This award, from Mediacorp, recognizes employers that lead their industries in offering exceptional workplaces for their employees.

### Financial and Sustainability Reporting

- **Corporate Reporting Award, Chartered Professional Accountants (CPA) Canada:** The Corporate Reporting Awards, presented annually by CPA Canada, recognize the best reporting practices in the country. Enbridge received the 2016 Award of Excellence for Corporate Reporting in the "Utilities and Pipelines/Real Estate" industry sector.

## Renewable Energy

- **Canadian Wind Energy Association (CanWEA) Project-of-the-Year Award:** This award recognized the Blackspring Ridge windfarm, which is jointly owned by Enbridge and EDF Canada Inc., for creating lasting partnerships in the community.

## CONTENT INDEX LINKING TO GLOBAL REPORTING INITIATIVE, UNITED NATIONS GLOBAL COMPACT AND SUSTAINABLE DEVELOPMENT GOALS

We prepared our 2016 CSR & Sustainability Report in accordance with the Global Reporting Initiative (GRI) G4 sustainability reporting guidelines and associated performance indicators. Throughout the report, we have also integrated our commitment to the United Nations Global Compact (UNGC) principles and to the United Nations Sustainable Development Goals (SDGs). The following content index indicates where—either in this report or on Enbridge.com—you can find content pertaining to the GRI G4 performance indicators, UNGC principles and UN SDGs.

GRI G4 Performance Indicators	UNGC Principles	UN SDGs	Relevant section of Enbridge's 2016 CSR & Sustainability Report
<b>STANDARD DISCLOSURES</b>			
<b>STRATEGY &amp; ANALYSIS</b>			
G4-1 Statement from CEO regarding the relevance of sustainability to the organization, and the organization's strategy for addressing sustainability.			Message from Al Monaco
G4-2 Description of key impacts, risks and opportunities.			Significant Sustainability Challenges & Opportunities
<b>ORGANIZATIONAL PROFILE</b>			
G4-3 Name of organization.			The Company
G4-4 Organization's primary brands, products.		7. Ensure access to affordable, reliable, sustainable and modern energy for all.	The Company
G4-5 Location of organization's primary headquarters.			The Company
G4-6 Number of countries in which the organization operates, and names of countries where either the organization has significant operations or that are specifically relevant to the sustainability topics covered in the report.			The Company
G4-7 Nature of ownership and legal form.			The Company
G4-8 Markets served (including geographic breakdown, sectors served, and types of customers and beneficiaries).			The Company
G4-9 Scale of the organization.			The Company
G4-10 Number of employees by employment contract and gender; number of permanent employees by employment type and gender; total workforce by employees and supervised workers and by gender; total workforce by region			Employee Relations

and gender; whether a substantial portion of the organization's work is performed by workers who are legally recognized as self-employed, or by individuals other than employees or supervised workers, including employees and supervised employees of contractors; significant variations in employment numbers (such as seasonal variations in employment in the tourism or agricultural industries).			
G4-11 Percentage of total employees covered by collective bargaining agreements.			Employee Relations
G4-12 Description of organization's supply chain.			Supply Chain Management System
G4-13 Significant changes during the reporting period regarding the organization's size, structure, ownership, or its supply chain, including: changes in the location of, or changes in, operations, including facility openings, closings and expansions; changes in the share capital structure and other capital formation, maintenance, and alteration operations; changes in the location of suppliers, the structure of the supply chain or in relationships with suppliers, including selection and termination.			Employee Relations
G4-14 Whether and how the precautionary approach or principle is addressed by the organization.	Principle #7: Businesses should support a precautionary approach to environmental challenges.		CSR & Sustainability at Enbridge: Definition and Scope of CSR & Sustainability at Enbridge; Maintaining the Fitness of Enbridge's Systems & Detecting Leaks; Climate Change, Energy Use & Emissions; Environmental Management Systems
G4-15 Externally developed economic, environmental and social charters, principles or other initiatives to which the organization subscribes or that it endorses.			CSR & Sustainability at Enbridge: Definition and Scope of CSR & Sustainability at Enbridge
G4-16 Memberships of associations (such as industry associations) and national or international advocacy organizations in which the organization: holds a position on the governance body; participates			Government Relations & Lobbying

in projects or committees; provides substantive funding beyond routine membership dues; views membership as strategic.			
<b>IDENTIFIED MATERIAL ASPECTS AND BOUNDARIES</b>			
G4-17 Entities included in the organization's consolidated financial statements or equivalent documents; Whether any entity included in the organization's consolidated financial statements or equivalent documents is not covered by the report. The organization can report on this Standard Disclosure by referencing the information in publicly available consolidated financial statements or equivalent documents.			The Company
G4-18 Process for defining the report content and the Aspect Boundaries; Explanation of how the organization has implemented the Reporting Principles for Defining Report Content.			CSR & Sustainability at Enbridge: About Enbridge's 2016 CSR & Sustainability Report
G4-19 Material Aspects identified in the process for defining report content.			CSR & Sustainability at Enbridge: About Enbridge's 2016 CSR & Sustainability Report
G4-20 For each Material Aspect, a report on the Aspect Boundary within the organization.			CSR & Sustainability at Enbridge: About Enbridge's 2016 CSR & Sustainability Report
G4-21 For each Material Aspect, a report on the Aspect Boundary outside the organization.			CSR & Sustainability at Enbridge: About Enbridge's 2016 CSR & Sustainability Report
G4-22 The effect of any restatements of information provided in previous reports, and the reasons for such restatements.			Maintaining the Fitness of Enbridge's Systems & Detecting Leaks
G4-23 Significant changes from previous reporting periods in the Scope and Aspect Boundaries.			CSR & Sustainability at Enbridge: About Enbridge's 2016 CSR & Sustainability Report
<b>STAKEHOLDER ENGAGEMENT</b>			
G4-24 The stakeholder groups engaged by the organization.			CSR & Sustainability at Enbridge: Enbridge's Stakeholders
G4-25 The basis for identification and selection of stakeholders with whom to engage.			CSR & Sustainability at Enbridge: Enbridge's Stakeholders
G4-26 The organization's approach to stakeholder engagement, including frequency of engagement by type of stakeholder group, and an indication of whether any of the engagement was undertaken specifically as part of the report			Stakeholder Engagement; Indigenous Engagement

preparation process.			
G4-27 Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting; the stakeholder groups that raised each of the key topics and concerns.			Stakeholder Engagement; Indigenous Engagement
<b>REPORT PROFILE</b>			
G4-28 Reporting period (such as fiscal or calendar year) for information provided.			CSR & Sustainability at Enbridge: About Enbridge's <i>2016 CSR &amp; Sustainability Report</i>
G4-29 Date of most recent previous report.			CSR & Sustainability at Enbridge: About Enbridge's <i>2016 CSR &amp; Sustainability Report</i>
G4-30 Reporting cycle.			CSR & Sustainability at Enbridge: About Enbridge's <i>2016 CSR &amp; Sustainability Report</i>
G4-31 Contact point for questions regarding the report or its contents.			Contact Information
G4-32 "In accordance" option the organization has chosen; GRI Content Index for the chosen option; Reference to the External Assurance Report, if the report has been externally assured.			CSR & Sustainability at Enbridge: About Enbridge's <i>2016 CSR &amp; Sustainability Report</i>
G4-33 Organization's policy and current practice with regard to seeking external assurance for the report; If not included in the assurance report accompanying the sustainability report, an indication of the scope and basis of any external assurance provided; Indication of the relationship between the organization and the assurance providers; Indication of whether the highest governance body or senior executives are involved in seeking assurance for the organization's sustainability report.			CSR & Sustainability at Enbridge: About Enbridge's <i>2016 CSR &amp; Sustainability Report</i>
<b>GOVERNANCE</b>			
G4-34 The governance structure of the organization, including committees of the highest governance body; Identification of any committees responsible for decision-making on economic, environmental and social impacts.			2017 Management Information Circular, on Enbridge.com
G4-35 The process for delegating authority for economic, environmental and social topics from the highest governance body to senior executives and other			CSR & Sustainability at Enbridge: Governance of CSR & Sustainability

employees.			
G4-36 An indication of whether the organization has appointed an executive-level position or positions with responsibility for economic, environmental and social topics, and whether post holders report directly to the highest governance body.			CSR & Sustainability at Enbridge: Governance of CSR & Sustainability
G4-37 The processes for consultation between stakeholders and the highest governance body on economic, environmental and social topics. If consultation is delegated, a description of the person(s) to whom it is delegated and of any feedback processes to the highest governance body.			Business Conduct, Fines & Violations; Stakeholder Engagement; Indigenous Engagement; Supply Chain Management System; Customer Relations
G4-38 Description of the composition of the highest governance body and its committees.			2017 Management Information Circular, on Enbridge.com
G4-39 Indication of whether the Chair of the highest governance body is also an executive officer.			2017 Management Information Circular, on Enbridge.com
G4-40 Overview of the nomination and selection processes for the highest governance body and its committees, and the criteria used for nominating and selecting highest governance body members.			2017 Management Information Circular, on Enbridge.com
G4-41 Processes for the highest governance body to ensure conflicts of interest are avoided and managed; Indication of whether conflicts of interest are disclosed to stakeholders.			2017 Management Information Circular, on Enbridge.com
G4-42 Highest governance body's and senior executives' roles in the development, approval and updating of the organization's purpose, value or mission statements, strategies, policies and goals related to economic, environmental and social impacts.			2017 Management Information Circular, on Enbridge.com
G4-43 The measures taken to develop and enhance the highest governance body's collective knowledge of economic, environmental and social topics.			2017 Management Information Circular, on Enbridge.com
G4-44 The processes for evaluation of the highest governance body's performance with respect to governance of economic, environmental and social topics, and an indication of whether such evaluation is independent or not, and its			2017 Management Information Circular, on Enbridge.com



frequency; Actions taken in response to evaluation of the highest governance body's performance with respect to governance of economic, environmental and social topics, including, as a minimum, changes in membership and organizational practice.			
G4-45 The highest governance body's role in the identification and management of economic, environmental and social impacts, risks and opportunities; The highest governance body's role in the implementation of due diligence processes; An indication of whether stakeholder consultation is used to support the highest governance body's identification and management of economic, environmental and social impacts, risks and opportunities.			2017 Management Information Circular, on Enbridge.com
G4-46 The highest governance body's role in reviewing the effectiveness of the organization's risk management processes for economic, environmental and social topics.			2017 Management Information Circular, on Enbridge.com
G4-47 The frequency of the highest governance body's review of economic, environmental and social impacts, risks and opportunities.			2017 Management Information Circular, on Enbridge.com
G4-48 The highest committee or position that formally reviews and approves the organization's sustainability report and ensures that all material Aspects are covered.			2017 Management Information Circular, on Enbridge.com
G4-49 The process for communicating critical concerns to the highest governance body.			2017 Management Information Circular, on Enbridge.com
G4-50 The nature and total number of critical concerns that were communicated to the highest governance body and the mechanisms used to address and resolve them.			No data available
G4-51 The remuneration policies for the highest governance body and senior executives for various types of remuneration; A description of how performance criteria in the remuneration policy relate to the highest governance bodies and senior executives' economic, environmental and social objectives.			2017 Management Information Circular, on Enbridge.com
G4-52 The process for			2017 Management

determining remuneration; An indication of whether remuneration consultants are involved in determining remuneration and whether they are independent of management; An indication of any other relationships that the remuneration consultants have with the organization.			Information Circular, on Enbridge.com
G4-53 An indication of how stakeholders' views are sought and taken into account regarding remuneration, including the results of votes on remuneration policies and proposals, if applicable.			2017 Management Information Circular, on Enbridge.com
G4-54 The ratio of the annual total compensation for the organization's highest-paid individual in each country of significant operations to the median annual total compensation for all employees (excluding the highest-paid individual) in the same country.			Employee Relations
G4-55 The ratio of percentage increase in annual total compensation for the organization's highest-paid individual in each country of significant operations to the median percentage increase in annual total compensation for all employees (excluding the highest-paid individual) in the same country.			Employee Relations
<b>ETHICS &amp; INTEGRITY</b>			
G4-56 A description of the organization's values, principles, standards and norms of behavior such as codes of conduct and codes of ethics.			Business Conduct, Fines & Violations
G4-57 The internal and external mechanisms for seeking advice on ethical and lawful behavior, and matters related to organizational integrity, such as helplines or advice lines.			Business Conduct, Fines & Violations
G4-58 The internal and external mechanisms for reporting concerns about unethical or unlawful behavior, and matters related to organizational integrity, such as escalation through line management, whistleblowing mechanisms or hotlines.			Business Conduct, Fines & Violations
<b>DISCLOSURES ON MANAGEMENT APPROACH</b>			
G4-DMA An indication of why each Aspect is material, and the impacts that make each Aspect material; An indication of how the organization manages each			Enbridge's 2016 CSR & Sustainability Report

material Aspect or its impacts; An evaluation of the management approach.			
<b>ECONOMIC DISCLOSURES</b>			
<b>ECONOMIC PERFORMANCE</b>			
G4-EC1 Direct Economic Value generated and distributed.		8. Promote inclusive and sustainable economic growth, employment and decent work for all.	Economic Performance & Benefits
G4-EC2 Financial implications and other risks and opportunities for the organization's activities due to climate change.			Significant Sustainability Challenges & Opportunities; Climate Change, Emissions Reduction & Energy Efficiency
G4-EC3 Coverage of the organization's defined benefit plan obligations.			Employee Relations
G4-EC4 Financial assistance received from government.			No data available
<b>MARKET PRESENCE</b>			
G4-EC5 Ratios of standard entry-level wage by gender compared to local minimum wage at significant locations of operation.			Employee Relations
G4-EC6 Proportion of senior management hired from the local community at significant locations of operation. DDSDSDF			Employee Relations
<b>INDIRECT ECONOMIC IMPACTS</b>			
G4-EC7 Development and impact of infrastructure investments and services supported.			No data available No
G4-EC8 Significant indirect economic impacts and the extent of impacts.		1. End poverty in all its forms everywhere.  8. Promote inclusive and sustainable economic growth, employment and decent work for all.	Economic Performance & Benefits
<b>PROCUREMENT PRACTICES</b>			
G4-EC9 Proportion of spending on local suppliers at significant locations of operation.			No data available data
<b>ENVIRONMENTAL DISCLOSURES</b>			
<b>MATERIALS</b>			
G4-EN1 Materials used by weight or volume.			Economic Performance & Benefits
G4-EN2 Percentage of materials used that are recycled input materials.			Supply Chain Management System
<b>ENERGY</b>			
G4-EN3 Energy consumption within the organization.			Climate Change, Emissions Reduction & Energy Efficiency

G4-EN4 Energy consumption outside of the organization.			Climate Change, Emissions Reduction & Energy Efficiency
G4-EN5 Energy intensity.			No data available
G4-EN6 Reduction of energy consumption.	<p>Principle #8: Undertake initiatives to promote greater environmental responsibility, and,</p> <p>Principle #9: Encourage the development and diffusion of environmentally friendly technologies.</p>	<p>12. Ensure sustainable consumption and production patterns.</p> <p>13. Take urgent action to combat climate change and its impacts.</p> <p>17. Revitalize the global partnership for sustainable development.</p>	Climate Change, Emissions Reduction & Energy Efficiency
G4-EN7 Reductions in energy requirements of products and services.	<p>Principle #8: Undertake initiatives to promote greater environmental responsibility, and,</p> <p>Principle #9: Encourage the development and diffusion of environmentally friendly technologies.</p>	7. Ensure access to affordable, reliable, sustainable and modern energy for all.	Climate Change, Emissions Reduction & Energy Efficiency; Renewable & Alternative Energy Investments
<b>WATER</b>			
G4-EN8 Total water withdrawal by source.			Environmental Management Systems
G4-EN9 Water sources significantly affected by withdrawal of water.			No data available
G4-EN10 Percentage and total volume of water recycled and reused.	<p>Principle #8: Undertake initiatives to promote greater environmental responsibility, and,</p> <p>Principle #9: Encourage the development and diffusion of environmentally friendly technologies.</p>	6. Ensure access to water and sanitation for all.	Environmental Management Systems
<b>BIODIVERSITY</b>			
G4-EN11 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas.			No data available
G4-EN12 Description of significant impacts of activities, products and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas.		15. Sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss.	Environmental Management Systems
G4-EN13 Habitats protected or restored.			No data available
G4-EN14 Total number of IUCN Red List species and national conservation list species with			No data available

habitats in areas affected by operations, by level of extinction risk.			
<b>EMISSIONS</b>			
G4-EN15 Direct GHG emissions (Scope 1).			Climate Change, Emissions Reduction & Energy Efficiency
G4-EN16 Energy Indirect GHG emissions (Scope 2).			Climate Change, Emissions Reduction & Energy Efficiency
G4-EN17 Other indirect GHG emissions (Scope 3).			Climate Change, Emissions Reduction & Energy Efficiency
G4-EN18 GHG emissions intensity.			No data available
G4-EN19 Reduction of GHG emissions.	<p>Principle #8: Undertake initiatives to promote greater environmental responsibility, and,</p> <p>Principle #9: Encourage the development and diffusion of environmentally friendly technologies.</p>	<p>13. Take urgent action to combat climate change and its impacts.</p> <p>17. revitalize the global partnership for sustainable development.</p>	Climate Change, Emissions Reduction & Energy Efficiency; Renewable & Alternative Energy
G4-EN20 Emissions of ozone-depleting substances.			Climate Change, Emissions Reduction & Energy Efficiency
G4-EN21 NOx, SOx and other significant air emissions.			Climate Change, Emissions Reduction & Energy Efficiency
<b>EFFLUENTS &amp; WASTE</b>			
G4-EN22 Total water discharge by quality and destination.		6. Ensure access to water and sanitation for all.	Environmental Management Systems
G4-EN23 Total weight of waste by type and disposal method.			Incomplete data
G4-EN24 Total number and volume of significant spills.		6. Ensure access to water and sanitation for all.	Maintaining the Fitness of Enbridge's Systems & Detecting Leaks
G4-EN25 Weight of transported, imported, exported or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III and VIII, and percentage of transported waste shipped internationally.			No data available
G4-EN26 Identity, size, protected status and biodiversity value of water bodies and related habitats significantly affected by the organization's discharges of water and runoff.			No data available
<b>PRODUCTS AND SERVICES</b>			
G4-EN27 Extent of impact mitigation of environmental	Principle #8: Undertake initiatives to promote	9. Build resilient infrastructure,	Maintaining the Fitness of Enbridge's Systems

impacts of products and services.	greater environmental responsibility, and,  Principle #9: Encourage the development and diffusion of environmentally friendly technologies.	promote sustainable industrialization and foster innovation.	& Detecting Leaks ; Climate Change, Emissions Reduction & Energy Efficiency ; Environmental Management Systems; Research, Development & Innovation
G4-EN28 Percentage of products sold and their packaging materials that are reclaimed by category.			No data available
<b>COMPLIANCE</b>			
G4-EN29 Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations.			Business Conduct, Fines & Violations
<b>TRANSPORT</b>			
G4-EN30 Significant environmental impacts of transporting products and other goods and materials for the organization's operations, and transporting members of the workforce.			Environmental Management Systems
<b>OVERALL</b>			
G4-EN31 Total environmental protection expenditures and investments by type.			No data available
<b>SUPPLIER ENVIRONMENTAL ASSESSMENT</b>			
G4-EN32 Percentage of new suppliers that were screened using environmental criteria.			No data available
G4-EN33 Significant actual and potential negative environmental impacts in the supply chain and actions taken.			No data available
<b>ENVIRONMENTAL GRIEVANCE MECHANISMS</b>			
G4-EN34 Number of grievances about environmental impacts filed, addressed and resolved through formal grievance mechanisms.			Business Conduct, Fines & Violations
<b>SOCIAL DISCLOSURES</b>			
<b>LABOUR PRACTICES AND DECENT WORK</b>			
<b>EMPLOYMENT</b>			
G4-LA1 Total number and rates of new employee hires and employee turnover by age group, gender and region.			Employee Relations
G4-LA2 Benefits provided to full-time employees that are not provided to temporary or part-time employees, by significant locations of operation.			Employee Relations
G4-LA3 Return to work and retention rates after parental			Employee Relations

leave, by gender.			
<b>LABOUR/MANAGEMENT RELATIONS</b>			
G4-LA4 Minimum notice periods regarding operational changes, including whether these are specified in collective agreements.			No data available
<b>OCCUPATIONAL HEALTH &amp; SAFETY</b>			
G4-LA5 Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs.			No data available
G4-LA6 Type of injury and rates of injury, occupational diseases, lost days and absenteeism, and total number of work-related fatalities, by region and gender.		3. Ensure healthy lives and promote well-being for all at all ages.	Occupational Health & Safety
G4-LA7 Workers with high incidence of high risk of diseases related to their occupation.			No data available
G4-LA8 Health and safety topics covered in formal agreements with trade unions.		3. Ensure healthy lives and promote well-being for all at all ages.	Employee Relations
<b>TRAINING &amp; EDUCATION</b>			
G4-LA9 Average hours of training per year per employee by gender and by employee category.		4. Ensure inclusive and quality education for all and promote lifelong learning.	Employee Relations
G4-LA10 Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings.		4. Ensure inclusive and quality education for all and promote lifelong learning.	Employee Relations
G4-LA11 Percentage of employees receiving regular performance and career development reviews, by gender and by employee category.			Employee Relations
<b>DIVERSITY &amp; EQUAL OPPORTUNITY</b>			
G4-LA12 Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership and other indicators of diversity.			No data available
<b>EQUAL REMUNERATION FOR WOMEN &amp; MEN</b>			
G4-LA13 Ratio of basic salary and remuneration of women to men by employee category, by significant locations of operation.		5. Achieve gender equality and empower all women and girls.  8. Promote inclusive and sustainable economic growth, employment and decent work for all.	Employee Relations

SUPPLIER ASSESSMENT FOR LABOR PRACTICES			
G4-LA14 Percentage of new suppliers that were screened using labor practices criteria.			No data available
G4-LA15 Significant actual and potential negative impacts for labor practices in the supply chain and actions taken.			No data available
LABOR PRACTICES GRIEVANCE MECHANISMS			
G4-LA16 Number of grievances about labor practices filed, addressed and resolved through formal grievance mechanisms.			Business Conduct, Fines & Violations
HUMAN RIGHTS			
INVESTMENT			
G4-HR1 Total number and percentage of significant investment agreements and contracts that include human rights clauses or that underwent human rights screening.			No data available
G4-HR2 Total hours of employee training on human rights policies or procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained.	Principle #1: Businesses should support and respect the protection of internationally proclaimed human rights, and,  Principle #2: Make sure that they are not complicit in human rights abuses.		Employee Relations
NON-DISCRIMINATION			
G4-HR3 Total number of incidents of discrimination and corrective actions taken.	Principle #6: The elimination of discrimination in respect of employment and occupation.		Business Conduct, Fines & Violations
FREEDOM OF ASSOCIATION AND COLLECTIVE BARGAINING			
G4-HR4 Operations and suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and measures taken to support these rights.			No data available
CHILD LABOR			
G4-HR5 Operations and suppliers identified as having significant risk for incidents of child labor and measures taken to contribute to the effective abolition of child labor.			No data available
FORCED OR COMPULSORY LABOR			
G4-HR6 Operations and suppliers identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor.			No data available
SECURITY PRACTICES			
G4-HR7 Percentage of security			No data available



personnel trained in the organization's human rights policies or procedures that are relevant to operations.			
<b>INDIGENOUS RIGHTS</b>			
G4-HR8 Total number of incidents of violations involving rights of Indigenous peoples and actions taken.	<p>Principle #1: Businesses should support and respect the protection of internationally proclaimed human rights, and</p> <p>Principle #2: Make sure that they are not complicit in human rights abuses.</p>		Business Conduct, Fines & Violations
<b>ASSESSMENT</b>			
G4-HR9 Total number and percentage of operations that have been subject to human rights reviews or impact assessments.			No data available
<b>SUPPLIER HUMAN RIGHTS ASSESSMENT</b>			
G4-HR10 Percentage of new suppliers that were screened using human rights criteria.			No data available
G4-HR11 Significant actual and potential negative human rights impacts in the supply chain and actions taken.			No data available
<b>HUMAN RIGHTS GRIEVANCE MECHANISMS</b>			
G4-HR12 Number of grievances about human rights impacts filed, addressed and resolved through formal grievance mechanisms.	<p>Principle #1: Businesses should support and respect the protection of internationally proclaimed human rights, and,</p> <p>Principle #2: Make sure that they are not complicit in human rights abuses.</p>		Business Conduct, Fines & Violations
<b>SOCIETY</b>			
<b>LOCAL COMMUNITIES</b>			
G4-SO1 Percentage of operations with implemented local community engagement, impact assessments and development programs.		1. End poverty in all its forms everywhere.	Stakeholder Engagement; Indigenous Engagement
G4-SO2 Operations with significant actual and potential negative impacts on local communities.		1. End poverty in all its forms everywhere.	Stakeholder Engagement; Indigenous Engagement
<b>ANTI-CORRUPTION</b>			
G4-SO3 Total number and percentage of operations assessed for risks related to corruption and the significant risks identified.	Principle #10: Businesses should work against corruption in all its forms, including extortion and bribery.		Business Conduct, Fines & Violations
G4-SO4 Communication and training on anti-corruption policies and procedures.	Principle #10: Businesses should work against corruption in all its forms, including extortion and		Business Conduct, Fines & Violations

	bribery.		
G4-SO5 Confirmed incidents of corruption and actions taken.	Principle #10: Businesses should work against corruption in all its forms, including extortion and bribery.		Business Conduct, Fines & Violations
<b>PUBLIC POLICY</b>			
G4-SO6 Total value of political contributions by country and recipient/beneficiary.			Government Relations & Lobbying
<b>ANTI-COMPETITIVE BEHAVIOR</b>			
G4-SO7 Total number of legal actions for anti-competitive behavior, anti-trust and monopoly practices and their outcomes.			Business Conduct, Fines & Violations
<b>COMPLIANCE</b>			
G4-SO8 Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations.			Business Conduct, Fines & Violations
<b>SUPPLIER ASSESSMENT FOR IMPACTS ON SOCIETY</b>			
G4-SO9 Percentage of new suppliers that were screened using criteria for impacts on society.			No data available
G4-SO10 Significant actual and potential negative impacts on society in the supply chain and actions taken.			No data available
<b>GRIEVANCE MECHANISMS FOR IMPACTS ON SOCIETY</b>			
G4-SO11 Number of grievances about impacts on society filed, addressed and resolved through formal grievance mechanisms.			Business Conduct, Fines & Violations
<b>PRODUCT RESPONSIBILITY</b>			
<b>CUSTOMER HEALTH &amp; SAFETY</b>			
G4-PR1 Percentage of significant product and service categories for which health and safety impacts are assessed for improvement.			No data available
G4-PR2 Total number of incidents of non-compliance with regulations and voluntary codes concerning the health and safety impacts of products and services during their life cycle, by type of outcomes.			Business Conduct, Fines & Violations
<b>PRODUCT &amp; SERVICE LABELING</b>			
G4-PR3 Type of product and service information required by the organization's procedures for product and service information and labeling, and percentage of significant product and service categories subject to such information requirements.			No data available

G4-PR4 Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes.			Business Conduct, Fines & Violations
G4-PR5 Results of surveys measuring customer satisfaction.			Customer Relations
<b>MARKETING COMMUNICATIONS</b>			
G4-PR6 Sale of banned or disputed products.			N/A
G4-PR7 Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion and sponsorship, by type of outcomes.			Business Conduct, Fines & Violations
<b>CUSTOMER PRIVACY</b>			
G4-PR8 Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data.			Business Conduct, Fines & Violations; Customer Relations
<b>COMPLIANCE</b>			
G4-PR9 Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services.			Business Conduct, Fines & Violations

## ACRONYMS

	ACRONYM	FULL NAME
A	AACO	Alberta Association for Conservation Offsets
	AC	Alternating current
	ACFFO	Available cash flow from operations
	AD&D	Accidental Death and Dismemberment [insurance]
	AERG	Aboriginal Employee Resource Group (for Indigenous employees and contractors),
	AGA	American Gas Association
	AMC	Assembly of Manitoba Chiefs
	AMP	Administrative Monetary Penalty
	AOPL	Association of Oil Pipe Lines
	API	American Petroleum Institute
	AUT	Automated Ultrasonic Testing [System]
	AUV	Autonomous Underwater Vehicle
B	Bpd	Barrels per day
C	CAC	Criteria air contaminants
	CaGBC	Canada Green Building Council
	CanWEA	Canadian Wind Energy Association
	CAPP	Canadian Association of Petroleum Producers
	CBP	U.S. Customs and Border Protection
	CDP	Carbon Disclosure Project [formerly]
	CEE	Carbon & Energy Efficiency [plans]
	CEO	Chief executive officer
	CEPA	Canadian Energy Pipeline Association
	CGA	Canadian Gas Association
	CH <sup>4</sup>	Methane
	CMM	Communauté métropolitaine de Montréal
	CO	Carbon monoxide
	CO <sub>2</sub>	Carbon dioxide
	COP22	22 <sup>nd</sup> Convention of Parties
	CPA	Chartered Professional Accountants
	CPLC	Carbon Pricing Leadership Coalition
	CPM	Computational pipeline monitoring
	CPTC	Canadian Pipeline Technology Collaborative
	CRA	Corporate Risk Assessment
	CSA	Canadian Standards Association
	CSO	Chief sustainability officer
	CSR	Corporate social responsibility
D	DAIF	Days Away Incident Frequency
	DC	Direct current
	DJSI	Dow Jones Sustainability Index
	DSM	Demand-side management
	DUC	Ducks Unlimited Canada
E	E <sup>3</sup> RT	Enbridge Enterprise Emergency Response Team
	e4e	Energy4Everyone Foundation
	EBIT	Earnings before interest and income taxes
	ECT	Enbridge Commercial Trust
	EDF	Électricité de France S.A.
	EDF EN	EDF Energies Nouvelles
	EELP	Enbridge Energy, Limited Partnership
	EEP	Enbridge Energy Partners, L.P.
	EGD	Enbridge Gas Distribution (inconsistency, sometimes Inc.)
	EGNB	Enbridge Gas New Brunswick
	EH&S	Environment, health and safety
	EIF	Enbridge Income Fund
	EIFH	Enbridge Income Fund Holdings
	EIPLP	Enbridge Income Partners LP
	EIS	Environmental Impact Statement

	ELDER ELT EMAS EMAT EMF EMS ENBU EPA EPP EPS EREP ERG ESCF ESG ETSS EVP	External Leak Detection Experimental Research Executive Leadership Team Eco-Management and Audit Scheme Electromagnetic acoustic transducer Éolien Maritime France SAS Environmental Management System Enbridge University U.S. Environmental Protection Agency Environmental Protection Plan Earnings per share Emergency Responder Education Program Employee Resource Group Enbridge Safety Culture Framework Environmental, social and governance Energy Transition and Sustainability Strategy Executive vice president
F	FERC FLIR FSP	Federal Energy Regulatory Commission Forward looking infrared [cameras] Flanagan South Pipeline
G	GAAP GD GHG GIS GJ GM GPP GPP Onshore GPS GPT GRI GTI GTW GWP	Generally accepted accounting principles Gas Distribution Greenhouse gases Geographic Information System Gigajoule General Manager Gas Pipelines & Processing Miscast Energy Partners Global Positioning System Green Power & Transmission Global Reporting Initiative Gas Technology Institute GRAND TeenWORKS Global Warming Potential
H	H <sub>2</sub> S	Hydrogen sulfide [also sour gas]
I	ICS  IMS  INGAA  ISO  IT  IVP	Incident Command System Integrated Management System Interstate Natural Gas Association of America Incentive Stock Option Information Technology Intelligent Valve Placement [program]
K	Kg KPI	Kilogram Key Performance Indicator
L	L3RP LDAR LEAD LEED eLMS LP LSM LTVCA LTD	Line 3 Replacement Program Leak Detection and Repair Leadership Experience Action-based Development [program] Leadership in Energy and Environmental Design Enbridge Learning Management System Liquids Pipelines Large Standoff Magnetometry Lower Thames Valley Conservation Authority Long-term disability
M	cubic meter m/s MACRS MEP MHCC	m <sup>3</sup>  Meters per second Modified Accelerated Cost Recovery System Miscast Energy Partners, L.P.

	MMF MMSCF MOECC MTM MW	Mental Health Commission of Canada Manitoba Metis Federation Million standard cubic feet –n/a Ontario Ministry of Environment and Climate Change Magnetic tomography method Megawatts
N	NEB NETS NFWF NGLs or NGL NGV NO <sub>x</sub> NPRI NRCAN	National Energy Board [Canada] Network of Employers for Traffic Safety U.S. National Fish & Wildlife Foundation Natural gas liquids Natural gas vehicle Nitrogen oxide National Pollutant Release Inventory Natural Resources Canada
O	OIC OTD	Operations and Integrity Committee Operations Technology Development
P	PAF PCSR PERG PJ PJM PM PPA PPSMS PRCI PSM PSU PTAC PTC PTO PV	Progressive Agriculture Foundation® Pipeline Construction Safety Roundtable Parents and Caregivers Employee Resource Group Petajoule Pennsylvania, Jersey, Maryland Particulate matter Power purchase agreement Pipeline Process Safety Management System Pipeline Research Council International Process Safety Management Performance Stock Unit Petroleum Technology Alliance Canada Production Tax Credit Paid time off Photovoltaic
R	R&D REC or RECs RFP ROC RSU	Research and development Renewable energy credits Request for Proposal Renewables Obligation Certificates Restricted Stock Unit
S	S&P SASB SCADA SCM SF <sub>6</sub> SGA SIA SLEA SO <sub>2</sub> SO <sub>x</sub> SRM STEM SVP	Standard & Poor's Sustainable Accounting Standards Board Supervisory control and data acquisition Supply Chain Management Sulfur hexafluoride Southern Gas Association Strathcona Industrial Association Sarnia-Lambton Environmental Association Sulfur dioxide Sulfur oxide Supplier Relationship Management [program] Science, Technology, Engineering and Math Senior vice president
T	t CO <sub>2</sub> e TERO TOC TPM TRIF TSR TSX	Tonne of carbon dioxide equivalent Tribal Employment Rights Offices Technology and Operations Centre Total particulate matter Total Recordable Injury Frequency Total Shareholder Return Toronto Stock Exchange
U	UK U.S. USFWS	United Kingdom n/a United States U.S. Fish and Wildlife Service
V	VACC	Vendor Audit & Contract Compliance

	VLH VOCs VP	Very Low Head [turbine technology] Volatile organic compounds Vice president
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## CONTACT INFORMATION

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