

source or discharged to the environment, it has been rigorously tested to meet or exceed all discharge criteria. TransCanada's Ocean State Power, Ironwood and Coolidge generating stations utilize a zero-liquid-discharge water treatment system to eliminate any process water discharges to the environment.

Our hydropower assets have a very intimate relationship with water sources, harnessing the raw power of water in the natural environment to create electricity. The water we borrow in our hydropower process is a precious shared resource and TransCanada takes industry-leading measures to ensure its protection. We have achieved a Low Impact Hydropower Institute (LIHI) certification for the bulk of our hydroelectric generation in New England. LIHI is a non-profit organization dedicated to reducing the impacts of hydropower generation through the certification of hydropower facilities that have avoided or reduced their environmental impacts. The LIHI certification program is intended to protect multiple ecosystem components, including river flows, water quality, fish and wildlife, as well as meet recreation and cultural preservation needs. In order to be certified, a hydropower facility must pass the LIHI low impact standard for each of these ecosystem components, with criteria based on the most recent and most stringent state and federal mitigation measures.

ENVIRONMENTAL PROTECTION

We preserve the integrity of the environment through a comprehensive management system. This system is driven by an integrated Health, Safety and Environment Commitment Statement and an environmental management program that guides the proactive management of our risks and requirements.

See the Management Systems section on page 10 for more information on the management systems, programs and procedures that enable TransCanada to ensure compliance with regulatory requirements and support development and adoption of best management practices across all lines of business and assets.

GREENHOUSE GAS EMISSIONS

DIRECT GREENHOUSE GAS EMISSIONS (tCO₂e)¹

| | 2012 | 2013 | 2014 | 2015 |
|-----------------------|------------|------------|------------|------------|
| Natural Gas Pipelines | 6,000,000 | 7,100,000 | 7,400,000 | 7,300,000 |
| Liquids Pipelines | 0 | 0 | 0 | 0 |
| Power | 6,300,000 | 5,100,000 | 5,300,000 | 5,700,000 |
| Total | 12,300,000 | 12,200,000 | 12,700,000 | 13,100,000 |

¹ tCO₂e = tonnes of carbon dioxide equivalent.

Note: Numbers may not add up due to rounding. TransCanada's direct GHG emissions reporting boundary is based on an asset equity share. Our oil storage assets and liquids pipelines are below direct GHG reporting thresholds. The TransGas Natural Gas Pipeline System (in Colombia) is excluded. Coal combustion is the main source of GHG emissions at the coal-fired power plants for which we have agreements to purchase power from the facilities, and represents an indirect GHG emissions source for TransCanada. These arrangements are excluded from our reporting boundary and were terminated in 2016. Values reported in previous TransCanada reports may differ from the above as inputs may be updated after the date of publication of annual reports such as the CSR, and we regularly review reporting scopes and methodologies.

ENVIRONMENTAL PERFORMANCE

At TransCanada, we systematically measure and communicate our performance in a proactive and transparent manner. We are committed to continuously improving our environment performance.

Please see Recognition on page 9 for examples of TransCanada's achievements in environmental, social and economic performance.

Indirect Greenhouse Gas Emissions

Indirect GHG emissions are disclosed in our CDP reports, publicly available at www.cdp.net.

ENVIRONMENTAL RESPONSIBILITY

TransCanada scored in the 100th percentile on the Dow Jones Sustainability Index (DJSI), and earned rankings on the DJSI North America and World Indices in 2015.

CRUDE OIL SPILLS

TransCanada takes extensive preventive measures to ensure that our pipelines operate safely. In the unlikely event of a crude oil spill, TransCanada has extremely comprehensive and prescriptive emergency response plans in place to quickly and effectively minimize risk to people and the environment.

Since beginning operations in July 2010, Keystone has delivered more than 1.2 billion barrels of oil from Canada to the

U.S. The spills that occurred on Keystone during the reporting period (up to December 31, 2015) indicated below have been at pump stations and other above-ground facilities and have been related to leakage from small-diameter fittings and seals. All causative issues have been repaired or addressed. All crude oil spills were cleaned up with no adverse impact to the environment. TransCanada investigates and learns from all crude oil spills to make system-wide improvements in order to prevent similar occurrences.

REPORTABLE CRUDE OIL SPILLS

| | 2011 | 2012 | 2013 | 2014 | 2015 |
|-----------------------|--------|------|-------|------|-------|
| Canada | | | | | |
| Number | 42 | 44 | 21 | 9 | 1 |
| Total Volume (litres) | 438 | 214 | 3,054 | 61 | 2,300 |
| U.S. | | | | | |
| Number | 8 | 0 | 1 | 1 | 0 |
| Total Volume (litres) | 65,753 | 0 | 76 | 238 | 0 |

A reportable spill is defined as one that is reportable to a regulatory body, such as a federal or provincial or state regulator. Prior to July 1, 2014 in Canada, all Keystone crude oil spills, regardless of volume, were reportable to the Canadian Transportation Safety Board (TSB). The higher number of reportable spills prior to 2014 reflects this previous requirement. Data reported in previous TransCanada CSR reports may differ from the above as data have been updated to reflect finalized incident information.

ENVIRONMENTAL FINES (\$s)

| | 2013 | 2014 | 2015 |
|--------------------------------|-----------|----------|-----------|
| Energy Operations | 7,500 US | 1,000 US | 0 |
| Gas and Gas Storage Operations | 1,000 US | 0 | 15,500 US |
| Oil Operations | 0 | 0 | 0 |
| Project Development | 2,690 CAD | 0 | 5,000 CAD |

REGULATORY PERFORMANCE

Regulatory compliance is integral to TransCanada's Environmental Management Program and is the primary guiding principle of our Health, Safety and Environment Commitment Statement.

TransCanada received four regulatory Notices of Violation in 2015 which were resolved by small monetary penalties. The resulting fines totalled US\$15,500 and CAD\$5,000 and were as follows: a Louisiana Department of Public Safety fine of US\$3,500 for the delayed reporting of a minor spill resulting from a mainline valve leak; a Spokane Regional Clear Air Agency fine of US\$8,000 for an air permit limit exceedance during a planned emissions test at one of our compressor stations; a Washington Department of Ecology fine of US\$4,000 for an air permit limit exceedance during a planned emissions test at one of our compressor stations; and a Québec Ministry of Sustainable Development, Environment and the Fight Against Climate Change (the Ministry) fine of CAD\$5,000 for carrying out project-related geophysical surveys in the St. Lawrence River without first obtaining a Certificate of Authorization from the Ministry. All causative factors have been identified and any appropriate corrective action has been performed.

WATER CONSUMPTION

TOTAL WATER CONSUMPTION¹

(million cubic metres)

| | 2014 | 2015 |
|-------|------|------|
| Total | 3.8 | 4.2 |

¹ Total Water Consumption: water withdrawn, net of water discharged to the source with higher or equal quality.

Note: The above data includes our power assets and Canadian pipeline assets.

Photo at right: ANR Pipeline's Blue Lake compressor station in Michigan is part of TransCanada's extensive network of natural gas pipelines, which supplies 20 per cent of the natural gas consumed daily across North America.