



2017

Environmental, Social, and Governance Report

A Sustainability Accounting Standards Board and
Task Force on Climate-related Financial Disclosures Report

Posted October 30, 2018



A Message from our CEO

Doing Business the Right Way, Every Day

As an energy infrastructure company focused on the transportation and storage of energy products, we are an important part of the system delivering energy across North America. That energy lights and heats our homes and powers businesses and transportation. Affordable energy—efficiently, safely and reliably delivered—sustains and improves our civilization and the opportunities it affords. At Kinder Morgan, we take pride in doing our part. We invest billions of dollars each year building new and expanding existing assets to help deliver a variety of energy products. We do our best to control costs, eliminate unnecessary expenses, and spend investors' money wisely. We seek to run a profitable business that creates lasting benefits for our stakeholders, including our investors, lenders, customers, employees, business partners, regulators, and the communities in which we live and work.

Climate Change

As the world grapples with the issues surrounding climate change, natural gas and renewables are

increasingly working together to meet global energy needs.

Addressing climate change requires the contributions and cooperation of industry, citizens, the environmental community and governments worldwide. This report highlights some of the ways in which we are contributing to that effort and will help us identify ways to do even more.

Compliance

Society has tasked state and federal policymakers and regulators with making the choices necessary to manage the trade-offs between economic growth and environmental or cultural protection—to wisely craft the rules we all live by.

Kinder Morgan is committed to complying with these rules and fosters a culture of compliance within our organization and with our contractors and vendors.

We also recognize that meeting environmental challenges is a shared responsibility, requiring all of us to be part of the solution. We work with others in our industry to develop standards and best practices that inform policymakers' efforts to address issues related to climate change and other corporate social responsibility issues.

Operational Excellence

We believe that safety is of the utmost importance and are fully committed to protecting the public, our employees and contractors, and the environment. Pipelines are the safest and most efficient means of transporting natural gas and petroleum products. We use state-of-the-art technology to monitor and maintain the integrity of our pipelines and storage facilities. To address one of our greatest operational risks, third-party line strikes, we are actively involved with organizations



that promote public awareness and safe digging practices. Preservation of land and wildlife, and cultural and historical resources, is an important component of our construction efforts. We are actively involved in a number of projects aimed at enhancing biodiversity.

We are committed to implementing emission reductions. We have achieved over 108 billion cubic feet of methane emission reductions between 1993 and now. In addition to being in our economic interest to minimize or prevent methane emissions, it's the right thing to do for the environment.

Transparency

We believe in conducting our business transparently and have done so for many years, long before transparency became a corporate buzzword. We were among the first, and remain one of the few, S&P 500 companies to publish our annual budget enabling investors and others to follow our progress throughout the year. Since 2007, we have posted our operational performance. We routinely perform better than our industry peers on environmental and safety measures.

Accountability

We devote significant time to the assessment, analysis and improvement of our businesses, and to



identifying and addressing the related risks and opportunities. We have developed detailed processes and procedures for effectively recording, reporting, and managing our operational performance.

We use our operations management system to integrate a culture of safety, preparedness and resiliency throughout our organization; to operate responsibly, continuously improve, and to provide employees and contractors with a safe work environment.

We rely upon an interlocking system of regularly scheduled weekly, monthly, quarterly and annual meetings, with regular follow-up, to drive continuous assessment and improvement of our business. These meetings

allow our business segments to share information and best practices, focus senior management's attention on immediate and long-term business risks and

opportunities, including those related to the environment, and provide our board with timely information necessary to inform its decisions.

This Report

The report that follows builds on our history of analysis and disclosure of our

performance with respect to the environment, social matters and governance. We are also working to expand our ESG reporting infrastructure and provide milestone commitments.

We at Kinder Morgan are dedicated to doing business the right way, every day. We continuously strive for financial and operational excellence and are committed to being a best in class operator, while also being a good corporate citizen and conducting ourselves in an ethical and responsible manner.

Thank you for taking the time to read this report.

A handwritten signature in black ink that reads "Steven J. Kean". The signature is written in a cursive, slightly slanted style.

Steve Kean
Chief Executive Officer

ENVIRONMENTAL, SOCIAL, AND GOVERNANCE REPORT

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Cautionary Note and Forward-Looking Statements

References to policies and procedures in this report do not represent guarantees or promises about their efficacy, or any assurance that such measures will apply in every case, as there may be exigent circumstances, factors, or considerations that may cause implementation of other measures or exceptions in specific instances. This report includes forward-looking statements within the meaning of applicable securities laws, including the U.S. Private Securities Litigation Reform Act of 1995 and Section 21E of the Securities and Exchange Act of 1934 and securities laws in Canada. Please see the “Important Information About Policies, Procedures, Practices and Forward-Looking Statements” for additional information.

ENVIRONMENTAL, SOCIAL, AND GOVERNANCE REPORT

Glossary

Company Abbreviations

KMI	= Kinder Morgan, Inc. and its operated subsidiaries	TMEP	= Trans Mountain expansion project
KML	= Kinder Morgan Canada Limited and its operated subsidiaries	TMPL	= Trans Mountain pipeline system

Unless the context otherwise requires, references to “KMI”, “Kinder Morgan”, “we,” “us,” “our,” or “the Company” are intended to mean Kinder Morgan, Inc. and its majority-owned and/or controlled subsidiaries, including its consolidated subsidiary, KML.

Common Industry and Other Terms

2°C	= 2° Celsius	DOT	= U.S. Department of Transportation
ACC	= American Chemistry Council	DRA	= Drag Reducing Agent
API	= American Petroleum Institute	ECCC	= Environment and Climate Change Canada
ARPA-E	= U.S. Advanced Research Projects Agency-Energy	EDF	= Environmental Defense Fund
ASEA	= National Agency for Safety, Energy and Environment of Mexico	EHS	= Environmental, Health and Safety
bbbl	= barrel	EIA	= U.S. Energy Information Administration
BBtu/d	= billion British Thermal Units per day	EPA	= U.S. Environmental Protection Agency
Bcf/d	= billion cubic feet per day	ESG	= Environmental, Social, and Governance
Bn-bbl	= billion barrel	FCPA	= U.S. Foreign Corrupt Practices Act
BOE	= barrel of oil equivalent	FERC	= U.S. Federal Energy Regulatory Commission
CCATF	= Climate Change Adaption Task Force	FRA	= U.S. Federal Railroad Association
CDP	= Carbon Disclosure Project	FTC	= U.S. Federal Trade Commission
CEO	= Chief Executive Officer	GHG	= greenhouse gas
CFO	= Chief Financial Officer	GHGRP	= Greenhouse Gas Reporting Program
CFR	= Code of Federal Regulations	GRI	= Global Reporting Initiative
CFTC	= U.S. Commodity Futures Trading Commission	GWP	= global warming potential
CGA	= Common Ground Alliance	HR	= Human Resources
CH ₄	= methane	IAB	= Industry Advisory Board
CO	= carbon monoxide	ICA	= U.S. Interstate Commerce Act
CO ₂	= carbon dioxide	IEA	= International Energy Agency
CO ₂ e	= carbon dioxide equivalent	IMP	= Integrity Management Program
COO	= Chief Operating Officer	INGAA	= Interstate Natural Gas Association of America
CSB	= Chemical Safety Board	IPCC	= Intergovernmental Panel on Climate Change
CSO	= Chief Strategy Officer	ISO	= International Organization for Standardization
DOE	= U.S. Department of Energy	KMAP™	= Kinder Morgan Assessment Protocol™

LDAR	= leak detection and repair	OQ	= Operator Qualification
LEED	= Leadership in Energy and Environmental Design	OSHA	= U.S. Occupational Safety & Health Administration
LMS	= Learning Management System	PHMSA	= U.S. Pipeline and Hazardous Materials Safety Administration
LNG	= liquefied natural gas	PM	= particulate matter
MMbbl/d	= thousand barrels per day	PM ₁₀	= particulate matter 10 micrometers or less in diameter
Mcf	= thousand cubic feet	PM _{2.5}	= particulate matter 2.5 micrometers or less in diameter
MMbbls	= million barrels	RTM	= revenue ton miles
MMbbls/d	= million barrels per day	SASB	= Sustainability Accounting Standards Board
MMton	= million tons	SCADA	= Supervisory Control and Data Acquisition
MONITOR	= Methane Observation Networks with Innovative Technology to Obtain Reductions	SEC	= U.S. Securities and Exchange Commission
N ₂ O	= nitrogen dioxide	SICS TM	= Sustainable Industry Classification System TM
NEB	= National Energy Board of Canada	SO _x	= sulfur oxides
NETL	= U.S. National Energy Technology Laboratory	TCFD	= Task Force on Climate-related Financial Disclosures
NGA	= U.S. Natural Gas Act	TEU	= twenty foot equivalent unit capacity
NGL	= Natural Gas Liquid	TRIR	= Total Reportable Injury Rate
NGO	= Non-government organization	TSB	= Transportation Safety Board of Canada
NO _x	= nitrogen oxides	U.S.	= United States of America
NPRI	= National Pollutant Release Inventory of Canada	USCG	= U.S. Coast Guard
NTSB	= U.S. National Transportation Safety Board	VOCs	= volatile organic compounds
OMS	= Operations Management System	WHC	= Wildlife Habitat Council
ONE	= Our Nation's Energy		

Executive Summary

Welcome to Kinder Morgan, Inc.'s first stand-alone ESG report. We are one of the largest energy infrastructure companies in North America. Our pipelines transport natural gas, refined petroleum products, crude oil, condensate, CO₂, and more. Our terminals store and handle petroleum products, chemicals and other products including petroleum coke, steel, and mineral concentrates.

In this report, we refer to the SASB portion of our report as our "Sustainability Report" and to the TCFD portion of the report as our "TCFD Report". We refer to the SASB Report and TCFD Report collectively as our "Report". We have included the ESG metrics we currently track for operational purposes that overlap with the SASB standards and TCFD recommendations. We provide discussion and analysis of our ESG governance, management systems, programs, and key performance indicators. Following are some report highlights:

- For more than 20 years we have been committed to reducing methane emissions from our natural gas transportation and storage assets. Over the past three years, our emission reductions totaled over 5 million metric tons of CO₂e. With respect to our natural gas transmission and storage assets, we have committed to achieving an intensity target of 0.31% of methane emissions per volume of throughput by 2025. We have worked collaboratively with industry peers, agencies, and EDF to develop methane emission measurement and reduction technologies and best practices. We have several energy management programs to reduce our electricity usage and Scope 2 GHG emissions across our business.
- Preserving and enhancing biodiversity is an important component of our construction and operations efforts. Recognition for our environmental policies and practices include several WHC Conservation Certifications and a project award, the City of Tucson's Tree Champion Award, and the 2017 Verdantix EHS Innovative Technology Award. In 2017 and 2018, we collaborated with The Nature Conservancy and industry peers on a project to improve pipeline construction practices focused on reducing risks of geohazards and protecting habitats and water quality.
- Although this is our first stand-alone ESG report, since 2007 we have tracked and published on our website our performance compared to industry average health and safety and pipeline incident rates. We have consistently achieved better performance than industry averages, and our goal is to both be better than industry and to improve on our own three-year averages.
 - We integrate a culture of safety and emergency preparedness throughout our organization. Over the past three years, our employee health and safety incident rates improved from 1.2 to 1.0 total recordable injuries per 100 employees and our contractor rates improved from 0.9 to 0.8.
 - Pipelines are the safest and most efficient method of transporting natural gas and petroleum products; safer than rail, barge, or truck. We use state-of-the-art technology to monitor and maintain the integrity of our pipelines. We have extensive public awareness, emergency preparedness, business continuity planning, and pipeline inspection programs. Both our reportable pipeline incidents and significant pipeline incidents have steadily improved over the past three years.
- To identify, assess, and manage ESG regulatory risks we maintain a process for identifying, communicating, and verifying compliance with changes in applicable regulatory requirements. Over each of the last three years, we evaluated on average over 1,200 proposed and 480 final new regulations, interpretations, and guidance.
- We believe our neighbors, communities, and governing bodies play an important role in how we conduct our business. We respect the diversity of culture and unique histories of Indigenous Peoples. In 2017, we published policies reflecting our commitment to building trust and fostering

collaboration, communication, and cooperation within the communities and with the Indigenous Peoples that are affected by our construction or operations.

- This report includes discussion and analysis of our governance, strategy, risk management, and metrics and targets for climate-related risks and opportunities.

We are working to expand our ESG reporting infrastructure to make additional disclosures and report additional metrics in future years. In 2019, we expect to conduct an assessment of our business strategy under a 2°C scenario. We are currently developing the necessary processes, procedures, information technology systems, personnel, and controls to expand our emissions reporting infrastructure to meet the SASB GHG reporting standards company-wide. We report gross global Scope 1 and 2 emissions for our Canadian assets in this report and currently anticipate reporting our company-wide Scope 1 and 2 GHG emissions by 2021.

More information about our ESG policies, programs, and performance can be found on our ESG/Sustainability webpage at https://www.kindermorgan.com/ehs/esg_sustainability.aspx.

Part 1 - Sustainability Report

1.0 Introduction

We recognize that operating energy infrastructure, including thousands of miles of pipelines, several natural gas storage facilities and hundreds of terminals across North America is a great responsibility. Throughout our organization, from the top down, we are committed to maintaining and operating our assets safely, efficiently, and in an environmentally responsible manner. To protect our employees, the public, and the environment, we invest hundreds of millions of dollars each year on integrity management, maintenance, and environmental programs to achieve these goals.

Our Report builds on our history of frequent disclosure and analysis of our ESG performance. Since 2007, we have posted our performance against our primary ESG metrics on our website each month. To measure our performance, we compare these ESG metrics to industry averages and our own three-year averages. We also present these metrics at our annual investor meetings. Since 2009, we have posted annually on our website an Operational Excellence Report listing ESG operational achievements. This Report represents the next step in expanding our ESG reporting.

In addition to our corporate and business segment EHS leadership teams and departments, our Board of Directors has a standing EHS Committee, the charter of which is available on our website at https://www.kindermorgan.com/content/docs/kmi_ehs_committee%20charter.pdf. This committee assists our Board in overseeing management's establishment and administration of our EHS policies, programs, procedures, and initiatives that promote the safety and health of our employees, contractors, customers, the public, and the environment. Our Board's EHS Committee also periodically reviews with management our reputation as a responsible corporate citizen and our efforts to employ sustainable business practices consistent with our business purpose and values.

Our Board of Directors has delegated the review and approval of our Report to the Board's EHS Committee. Our Report has been reviewed and input has been provided by each business segment, the Vice President of Corporate EHS, and our ESG Disclosure Committee, which consists of our:

- CEO,
- President,
- CFO,
- Business Segment Presidents,
- General Counsel, and
- Treasurer and Vice President of Investor Relations.

This Report can also be used by our our Board of Directors for making strategic Company decisions, including those related to capital allocation.

After extensive stakeholder dialogue and evaluation of a number of reporting standards and guidelines, we selected SASB as our primary Sustainability Report framework. We chose the SASB framework based on investor and lender feedback and because SASB focuses on disclosures of industry-specific ESG issues. Our disclosure is also informed by the GRI and CDP (formerly the Carbon Disclosure Project) frameworks. The metrics we report include the SASB SICS™ codes and, where there is alignment in metrics, GRI's disclosure codes, and CDP's question numbers. We also used *The Ceres Roadmap for Sustainability* for guidance in developing our Sustainability Report.

Our Sustainability Report primarily includes metrics from the SASB Extractives & Minerals Processing Sector Oil & Gas - Midstream Standard (#EM0102) (SASB Midstream Standard).¹ Our Sustainability Report also includes metrics from other SASB standards, including:

- Extractives & Minerals Processing Sector Oil & Gas – Exploration & Production (#EM0101),
- Extractives & Minerals Processing Sector Oil & Gas – Refining & Marketing (#EM0103),
- Transportation Sector – Marine Transportation (#TR0301), and
- Transportation Sector – Rail Transportation (#TR0401).

The chart below highlights the information contained in this Report and our expected timeline for adding other information in future years' Reports.

Topic	Reporting in 2018 for 2015 to 2017	Year Expected to Begin Reporting for Prior Year(s)
KMI gross global Scope 1 & 2 emissions		2021
KML gross global Scope 1 & 2 emissions	X	
GHG reductions	X	
GHG targets	X	
KMI air emissions for the following pollutants: NO _x (excluding N ₂ O), SO _x , VOCs, and PM		2020
KML air emissions for the following pollutants: NO _x (excluding N ₂ O), SO _x , VOCs, and PM	X	
Number of refineries in or near areas of dense population	X	
Hydrocarbon spills number and volume		2019
Employee and contractor injury rates and number of fatalities	X	
Average hours of employee health, safety, and emergency response training	X	
Marine lost time injury rate	X	
Amount of legal and regulatory fines and settlements from federal pipeline and storage, rate, access, and pricing regulations	X	
Number of reportable pipeline incidents, percentage significant	X	
Percentage of natural gas and hazardous liquids pipelines inspected	X	
Number of FRA recommended violation defects	X	
Board's oversight of risks and opportunities	X	
Management's role in assessing and managing risks and opportunities	X	
Potential climate-related risks, opportunities, and impacts	X	
Financial planning considerations	X	
Resilience of our strategy	X	
Climate-related scenarios, including a 2°C scenario		2019
Risk and opportunity management processes	X	
Climate-related metrics	X	
Climate-related targets	X	

¹ At the time our Sustainability Report was prepared, the SASB standards were provisional. Our Sustainability Report is based on the SASB's October 2017 exposure draft redlines to the provisional standards of June 2014 as updated with the standard changes presented at the July 11, 2018 SASB Board Meeting and included in the *Draft Proposed Revisions to the Provisional Standards: Summary of Changes*.

2.0 Overview of Business

We are one of the largest energy infrastructure companies in North America. We own an interest in or operate approximately 84,000 miles of pipelines, 20 natural gas storage facilities, and 152 terminals. Our pipelines transport:

- natural gas,
- refined petroleum products,
- crude oil,
- condensate,
- CO₂, and
- other products.

Our liquid terminals transload and store commodities including:

- petroleum products,
- ethanol, and
- chemicals.

Our bulk terminals transload and store commodities including:

- petroleum coke,
- steel, and
- mineral concentrates.

We are also a leading provider of CO₂ for our own and others' use, which we and others use for enhanced oil recovery projects, primarily in the Permian Basin.

We have four business segments:

- Natural Gas Pipelines,
- CO₂,
- Products Pipelines, and
- Terminals.

After the sale of the TMPL, the TMEP, Puget Sound pipeline system, and Kinder Morgan Canada Inc., we no longer have a Kinder Morgan Canada Business Segment. Our Jet Fuel pipeline system, formerly reported through our Kinder Morgan Canada Business Segment, is now being reported through our Products Pipelines Business Segment. Our remaining Canadian operations are part of our Products Pipelines and Terminals Business Segments.

We are committed to doing business the right way, every day. To meet this commitment, our employees and representatives must act in accordance with our core values of:

- integrity,
- accountability,
- safety, and
- excellence.

Our Code of Business Conduct and Ethics establishes the high standard of ethical conduct that employees are expected to follow and outlines how everyday behavior is expected to align with our core values. We train each of our employees annually on our Code of Business Conduct and Ethics and maintain compliance programs to prevent and detect potential violations. We encourage employees to speak up,

seek guidance, and report issues or concerns through appropriate channels. We also maintain an anonymous third-party ethics hotline. Reported concerns are evaluated and investigated, as appropriate, by our Internal Audit, HR, EHS, and/or Legal Departments.

For more information see our Code of Business Conduct and Ethics at https://www.kindermorgan.com/content/docs/km_code_of_business_conduct_and_ethics.pdf.

Our common stock trades on the New York Stock Exchange under the ticker symbol “KMI.” For more information about us, please see our Annual Report on Form 10-K for the year ended December 31, 2017, which can be found at the following link: https://ir.kindermorgan.com/sites/kindermorgan.investorhq.businesswire.com/files/report/additional/KMI-2017-10K_Final_as_Filed.pdf.

3.0 Greenhouse Gas Emissions

3.1 Gross Global Scope 1 and 2 Emissions

We anticipate reporting our company-wide GHG Scope 1 and Scope 2 emissions beginning in 2021. Our current U.S. GHG emissions reporting infrastructure is designed primarily to meet the requirements of the EPA GHGRP, Natural Gas STAR Program, and Methane Challenge Program. We are currently developing the additional processes, procedures, information technology systems, personnel, and controls necessary to expand our emissions reporting infrastructure to meet the SASB Midstream Standard. In addition, before reporting publicly, we intend to go through pre-assurance readiness testing using the standards of the American Institute of Certified Public Accountants. Also before reporting publicly, we intend to address any significant observations and recommendations resulting from the pre-assurance readiness testing. We intend to provide progress updates in future Reports.

For our Canadian operations we have the processes, procedures, personnel, and controls in place to report GHG Scope 1 and Scope 2 emissions, so those data are included below. The TMPL, Puget Sound pipeline system, and Kinder Morgan Canada Inc., which were sold on August 31, 2018, are presented as discontinued operations.

3.2 KML Gross Global Scope 1 and 2 Emissions, Percentage Methane, Percentage Covered under a Regulatory Program

(SASB Midstream TA04-11-01, SASB Exploration & Production TA04-01-01, SASB Refining & Marketing EM0103-01, GRI 305-1, CDP CC7.9, CDP CC8.1-8.2f)

Kinder Morgan Canada Limited is KMI’s publicly held Canadian subsidiary, which trades on the Toronto Stock Exchange under the ticker symbol “KML”. KML’s significantly smaller scale relative to KMI makes its GHG emissions more readily measurable than KMI’s, which is why KML’s GHG emissions are available to be included in this report and KMI’s are not. KML generates Scope 1 direct GHG emissions from various sources through pipeline and terminal operations and Scope 2 indirect GHG emissions through electricity consumption.

KML's gross global Scope 1 and Scope 2 GHG emissions data are provided below.

	Year Ended December 31		
	2015	2016	2017
(In metric tons CO ₂ e, except percentages)			
KML gross global Scope 1 emissions from continuing operations(a) (by business segment)			
Cochin Canada	379	400	406
Terminals Canada	5,327	9,469	15,969
Total KML gross global Scope 1 emissions from continuing operations	5,706	9,869	16,375
KML gross global Scope 1 emissions from discontinued operations(b)	6,143	4,779	5,636
KML gross global Scope 1 emissions including discontinued operations	11,849	14,648	22,011
KML gross global Scope 1 emissions from continuing operations(c) (by type of emission)			
Flared Hydrocarbons	3,542	7,719	14,220
Other Combustion	1,988	1,958	1,959
Process Emissions	—	—	—
Other Vented Emissions	176	192	196
Fugitive Emissions from Operations	—	—	—
Total KML gross global Scope 1 emissions from continuing operations	5,706	9,869	16,375
Percentage covered under a regulatory program from continuing operations(d)	0%	0%	0%
Percentage methane from continuing operations	3%	2%	1%
KML gross global Scope 2 emissions from continuing operations(a) (by business segment)			
Cochin Canada	57,711	60,934	69,768
Terminals Canada	6,274	7,964	10,156
Total KML gross global Scope 2 emissions from continuing operations	63,985	68,898	79,924
KML gross global Scope 2 emissions from discontinued operations	117,267	114,922	114,870
KML gross global Scope 2 emissions including discontinued operations	181,252	183,820	194,794
KML combined gross global Scope 1 and 2 emissions from continuing operations	69,691	78,767	96,299

- (a) GHG emissions were quantified per the SASB Midstream Standard and the ISO 14064-1:2006, Greenhouse gases - Part 1: Specification with guidance at the organization level for the quantification and reporting of greenhouse gas emissions and removals. Annual emissions are reported for CO₂, CH₄, and N₂O from direct and indirect sources. The IPCC Fifth Assessment Report (2013) GWPs were used to convert CH₄ and N₂O emissions to equivalent emissions of CO₂ (CO₂e). A GWP of 28 was used for CH₄. A GWP of 265 was used for N₂O. Gross emissions are GHGs emitted to the atmosphere before accounting for GHG reduction activities, offsets, or other adjustments for activities in the reporting period that have reduced or compensated for emissions.
- (b) Represents emissions from the TMPL, Puget Sound pipeline system, and Kinder Morgan Canada Inc. sold on August 31, 2018, and presented here as discontinued operations.
- (c) Emission source types included combustion from equipment, such as stationary and fleet vehicle engines, generators, process heaters, and other industrial equipment; flaring from vapor control units for vapor displaced from tankers and rail cars during loading; venting from storage tanks and pipeline pigging operations; and fugitive emissions.
- (d) Regulatory programs include cap-and-trade programs, carbon tax/fee systems, and other emission control and permit based mechanisms. KML has operations in British Columbia and Alberta, which have carbon levies on major fuels including diesel, gasoline, natural gas, and propane. The fuel purchased by KML covered by these carbon levies is not reported here as emissions covered by a regulatory program because the carbon levies are not applied at the point of emissions. If the

emissions from fuel purchased by KML were reported to be covered by a regulatory program they would constitute 28%, 15%, and 11% of total Scope 1 emissions from continuing operations for 2015, 2016, and 2017, respectively.

Even including its discontinued operations, KML's Scope 1 and Scope 2 emissions represent approximately 0.1% of Canada's 2016 oil and gas sector emissions of approximately 183 megatonnes of CO₂e.²

Over 80% of KML's GHG emissions from continuing operations were indirect emissions from electricity consumption. KML's next largest source of GHG emissions from continuing operations were from vapor control operations at our Terminal Business Segment's Edmonton South Rail Terminal. The increase in Scope 1 emissions from continuing operations year over year was due to increased operations at our Edmonton South Rail Terminal. The terminal loaded approximately 12, 19, and 32 MMbbls of product during 2015, 2016, and 2017, respectively. This terminal is a 50/50 joint venture with Imperial Oil and is the largest origination crude-by-rail terminal in North America.

None of the KML facilities have had emissions greater than 50,000 CO₂e metric tons. Beginning with reports for the year 2017, the ECCC threshold was lowered from 50,000 CO₂e metric tons to include facilities emitting greater than 10,000 CO₂e tons. With the threshold lowered to 10,000 CO₂e tons, KML's Edmonton Rail Terminal reported GHG emissions to the ECCC NPRI for 2017.

The percentage of methane from GHG emissions from KML's continuing operations is minor (1% to 3%) because the products handled by KML generally have very little methane. A third-party verified our KML emissions data, following the ISO 14064-3: Greenhouse Gases - Specification with guidance for the validation and verification of greenhouse gas assertions standard. The verification statement is included in Appendix E.

3.3 Strategy to Manage Gross Global Scope 1 and 2 Emissions

(SASB Midstream EM0102-02, SASB Exploration & Production EM0101-03, SASB Refining & Marketing EM0103-02, CDP CC3.1)

KMI's overall assets include approximately 70,000 miles of natural gas pipelines that transport approximately 40% of the natural gas consumed domestically. Accordingly, we have been an important part of the U.S.'s transition from coal-fired to natural gas-fired electricity generation, which has provided numerous environmental benefits. When burned, natural gas emits approximately half as much CO₂ and one-fifth as much CO compared to coal, and virtually no SO_x, PM, or mercury.^{3,4} These lowered emissions from natural gas-fired plants have contributed significantly to the recent dramatic drop in U.S. CO₂ emissions.

² <https://www.canada.ca/en/environment-climate-change/services/environmental-indicators/greenhouse-gas-emissions.html>

³ U.S. EIA, "How much carbon dioxide is produced when different fuels are burned?" June 8, 2018. <https://www.eia.gov/tools/faqs/faq.php?id=73&t=11>

⁴ U.S. EIA - Natural Gas Issues and Trends 1998, pg. 58, Table 2.

Largely as a result of natural gas-fired power plants, CO₂ emissions from U.S. electricity generation in 2017 were at their lowest rate since 1988⁵, and 28% below their 2007 levels⁶, notwithstanding an increase in the U.S. population from 245 million in 1988 to 326 million in 2017.^{7,8} Stated alternatively, over the 29 years from 1988 to 2017, U.S. population increased over 33%, but the CO₂ emission from electricity generation remained flat. Additionally and importantly, natural gas-fired power plants provide a reliable source of electricity to back up more intermittent renewable sources that further reduce CO₂ emissions in electricity generation, such as solar and wind. Therefore, natural gas-fired power plants are a necessary component in the continued expansion of renewable energy.

In a recent EDF report presenting its meta-analysis of methods for assessing methane emissions from the U.S. oil and gas supply chain,⁹ the EDF recognized both the long-term climate advantages of using natural gas in electricity generation and the feasibility of achieving significant emission reductions by addressing fugitive emissions, one of the primary factors cited as limiting the climate benefits of using natural gas in electricity generation. Significant fugitive emission reductions are possible through broader adoption of emission measurement and reduction best practices and technologies. While several energy companies have made recent headlines for publicly pledging to slash methane emissions from their operations, we have been focused on and committed to methane emission reductions in our operations for years, as discussed in detail in Section 3.3.1 *Methane Reduction Commitment* below.

In 2015 and again in 2016, the EPA finalized rules regulating methane emissions from the production, gathering and processing, and transmission and storage sectors of the oil and natural gas industry. We strongly supported the implementation of voluntary methane emission reductions. Currently, we are continuing participation in several industry initiatives to implement methane emission reductions. Below are a few examples of how we have been actively engaged with various trade organizations and regulatory entities, sharing our data and experience with methane monitoring and management, as well as best practices for achieving methane emission reductions.

3.3.1 Methane Reduction Commitment

We are committed to implementing and reporting our voluntary methane emission reductions as part of EPA's Natural Gas STAR and Methane Challenge programs, and through the ONE Future Coalition.

EPA's Natural Gas STAR Program

For over 20 years, we have voluntarily participated in the EPA's Natural Gas STAR Program. Through the program, we have implemented over 108 billion cubic feet of methane emission reductions since 1993. Our reductions have contributed to the U.S. reducing methane emissions by 15% from 1990 to 2016 while natural gas production has increased 49% over the same period.^{10,11} These results reflect the substantial economic incentives we have to minimize and prevent methane emissions and to keep the natural gas in our pipelines and storage facilities.

⁵ EIA, "Monthly Energy Review- Table 12.6," April 2018. https://www.eia.gov/totalenergy/data/monthly/pdf/sec12_9.pdf

⁶ EIA, "Monthly Energy Review- Table 12.6," April 2018. https://www.eia.gov/totalenergy/data/monthly/pdf/sec12_9.pdf

⁷ U.S. Census Bureau, "Quick Facts." <https://www.census.gov/quickfacts/fact/table/US/PST045216>

⁸ U.S. Census Bureau, "Historical National Population Estimates." <https://www.census.gov/population/estimates/nation/popclockest.txt>

⁹ R. A. Alvarez et al., *Science* 10.1126/science.aar7204 (2018).

¹⁰ U.S. EPA, "Inventory of U.S. Greenhouse Gas Emissions and Sinks, 1990-2016," April 2018. https://www.epa.gov/sites/production/files/2018-01/documents/2018_complete_report.pdf

¹¹ U.S. EIA, "U.S. Dry Natural Gas Production," August 2018. <https://www.eia.gov/dnav/ng/hist/n9070us2m.htm>

The EPA's Natural Gas STAR Summary Report for our reported activities from 1993 through 2016 is included in Appendix D.

ONE Future - Founding Member

ONE Future is a unique coalition of members across the natural gas value chain who are focused on identifying policy and technical solutions that reduce methane emissions associated with the production, gathering, processing, transmission, storage, and distribution of natural gas. ONE Future's members include some of the largest natural gas production, gathering, processing, transmission, storage, and distribution companies in the U.S.

ONE Future's goal is to enhance the energy delivery efficiency of natural gas by limiting energy waste and achieving a total methane emission or "leakage" rate of one percent (or less) of total natural gas production across the natural gas value chain by 2025. That rate represents the point at which the use of natural gas provides obvious and immediate GHG reduction benefits. To put this one percent target in context, a recent EDF article and a recent NETL report estimate current natural gas supply chain emissions at 2.3 and 1.6 percent, respectively, of total natural gas production.^{12,13} So, meeting the ONE Future target of one percent would require an additional 57% to 38% reduction in emissions.

We are a founding member of ONE Future, and through ONE Future we have taken a leadership role working with the EPA to identify the most effective means of implementing methane emissions reductions at natural gas transmission and storage operations. Through ONE Future, we have committed to achieve a methane emissions intensity target for our natural gas transmission and storage operations by 2025. Our target is methane emissions per volume of throughput of 0.31%. We expect to complete our first ONE Future status report before the end of 2018, in which we expect to include 2017 actual methane emissions compared to our target.

EPA's Natural Gas STAR Methane Challenge Program

In 2016, we became a partner in the EPA Natural Gas STAR Methane Challenge Program. The Methane Challenge Program builds upon the Natural Gas STAR Program and provides U.S. oil and gas companies a flexible way to make specific and transparent commitments to implement methane emissions reductions from their operations. We are participating in the Methane Challenge Program under the ONE Future Emission Intensity Commitment Option for our natural gas transmission and storage assets.

The ONE Future Emissions Intensity Commitment is intended to drive actions to achieve segment-specific methane emission reduction targets established by the ONE Future Coalition. Our ONE Future Commitment includes minimizing transmission pipeline blowdown volumes and implementing annual methane leak surveys and maintenance at our natural gas transmission and storage compressor stations.

¹² R. A. Alvarez et al., Science 10.1126/science.aar7204 (2018).

¹³ T. J. Scone, J. Littlefield, D. Augustine, A. Pegallapati, S. Roman-White, G. Zaimas, J. Marriott, and G. Cooney, Industry Partnerships and Their Role in Reducing Natural Gas Supply Chain Greenhouse Gas Emissions. May 1, 2018. <https://www.netl.doe.gov/energy-analyses/temp/NETL-ONE-Future-LCA-Report-01MAY18.pdf>

3.3.2 Industry and Agency Participation

We have undertaken leadership roles in the INGAA GHG Task Force with our employees serving as co-chairs from late 2008 to 2011, from 2013 to early 2017, and again in 2018. As part of that leadership role we, along with INGAA, participated in the Quadrennial Energy Review by the DOE. The Quadrennial Energy Review included a joint effort by the natural gas industry, several federal agencies, and other stakeholders to better understand the issues confronting the natural gas transportation sector and to develop mutually beneficial solutions.

In our leadership role we collaborate with the EPA and DOE on methane emissions reductions. We meet routinely with the EPA to share data and engage in discussions about potential emissions management strategies in an effort to identify the most effective means for implementing methane emission reductions at natural gas transmission and storage operations.

Steve Kean, our CEO, has participated in the DOE's roundtable discussions with government, industry, non-profit, union, and environmental leaders to help identify opportunities, share technical solutions and coordinate best practices for implementing methane emissions reductions.

In 2016 we participated in the Joint Industry Task Force on the regulation of natural gas storage facilities. Our employees contributed to industry technical papers presented in joint hearings of the DOE and PHMSA as well as collaborative meetings with various NGOs developing an understanding of storage facilities, operations, and emissions and safety technologies. Our work is ongoing in numerous federal, state, and industry venues.

We have also worked closely with the DOE, academic institutions, environmental groups, and consultants on several independent technology evaluations and scientific studies.

We participate in the DOE's ARPA-E Project. We are a member of the IAB advising ARPA-E and Colorado State University on the development of a methane emission test site to simulate actual natural gas leaks that might occur at production, gathering, and underground pipeline facilities. This project is part of the ARPA-E MONITOR program. The MONITOR program's goal is to develop innovative and cost-effective methane leak detection technologies to more precisely and efficiently locate and measure methane emissions associated with natural gas operations. The next generation leak detection technologies should drive enhanced leak detection and repairs to further reduce methane emissions. We are actively engaged in the development of the test site, in the evaluation of the various leak detection technologies being developed, and in providing guidance on industry expectations and steps for regulatory approval of these technologies to the test site developers.

We collaborate with the DOE on methane emission estimates and emission factors from gathering compressor stations and underground natural gas storage facilities. We are participating in two DOE-funded studies to develop improved national methane emission estimates and methane emission factors for natural gas gathering compressor stations. The current methane emission factors used for gathering compressor stations are more than twenty years old and based on a limited dataset. The DOE-funded studies are intended to establish improved methane emission factors more representative of the current state of natural gas gathering compressor station operations. Our employees participate on the Steering Committee and Technical Review Committee of each study. We also permitted academic institutions and consultants to perform testing at more than 30 of our natural gas gathering compressor stations. A third DOE-funded study involves estimating methane emissions from underground natural gas storage field

operations. We are working with the consultant leading the study and permitting testing at some of our natural gas storage fields.

We collaborate with DOE's NETL. We participated in a methane emissions life cycle analysis performed by NETL with input from ONE Future members representing each sector of the natural gas industry value chain. The study evaluated specific emission reduction opportunities in each part of the natural gas value chain. The study's analysis informed ONE Future members and others interested in the impact on overall methane life cycle emissions. The study results indicated that the average life cycle methane emission rate for ONE Future members was below the methane emission rate for the U.S., at 0.67% and 1.6% respectively.¹⁴ Also, ONE Future represents 5 to 12% of total throughput in the respective segment of the natural gas industry value chain.

We collaborate with the EDF on GHG emissions. We are one of seven natural gas transmission companies that worked with the EDF to develop a comprehensive GHG emissions inventory for the natural gas transmission and storage sector. Importantly, the results of the EDF study demonstrated that due to actions taken in the natural gas transportation sector over the years to address methane emissions, the EPA had been overstating emissions from natural gas transmission and storage facilities.¹⁵ Since the release of the EDF study, the EPA has used the results to improve its GHG emission estimates for natural gas transmission and storage facilities in its National GHG Emission Inventory report.

We have participated in the New York City Mayor's CCATF since 2016. The CCATF was established in January 2013 to assist in New York City's Hurricane Sandy recovery efforts. The CCATF's objectives are to:

- identify critical infrastructure in New York City that could be at-risk from the effects of climate change,
- facilitate knowledge sharing and develop coordinated adaption strategies to secure these assets, and
- develop findings and recommendations.

We have supported sector trade group communication efforts to explain the need for and benefits of the critical energy infrastructure we own and operate, and of our customers' products that we transport and store. These materials are available at the following websites:

- <http://www.ingaa.org/energylink/>,
- <https://twitter.com/yourenergy/>, and
- <http://www.aopl.org/consumer-benefits/>.

3.3.3 Reporting and Compliance Regulation

Facilities in each of our business segments are subject to the EPA or ECCC GHGRPs, as well as to federal and state leak detection and repair regulations. We have extensive emissions monitoring equipment and measurement programs, and conduct leak surveys under regulatory and voluntary programs. For 2017, we reported emissions to the EPA, ECCC, and thirteen state or local agencies.

¹⁴ T. J. Scone, J. Littlefield, D. Augustine, A. Pegallapati, S. Roman-White, G. Zaimas, J. Marriott, and G. Cooney, Industry Partnerships and Their Role in Reducing Natural Gas Supply Chain Greenhouse Gas Emissions. May 1, 2018. <https://www.netl.doe.gov/energy-analyses/temp/NETL-ONE-Future-LCA-Report-01MAY18.pdf>

¹⁵ D. J. Zimmerle, L. L. Williams, T. L. Vaughn, C. Quinn, R. Subramanian, G. P. Duggan, B. Willson, J. D. Opsomer, A. J. Marchese, D. M. Martinez, A. L. Robinson, Methane emissions from the natural gas transmission and storage system in the United States. *Environ. Sci. Technol.* 49, 9374-9383 (2015). doi:10.1021/acs.est.5b01669 Medline

The EPA's GHGRP requires annual leak detection surveys at subject facilities. We have conducted the GHGRP leak surveys at subject facilities and used the data in annual EPA GHGRP reports.

The EPA's new source performance standards for natural gas processing plants and oil and gas production, transmission, and distribution facilities, and several state specific regulations also require LDAR inspections to identify and fix equipment leaks. For facilities subject to these LDAR inspections, monitoring frequency and methods vary depending on facility type. Surveys may be conducted monthly, quarterly, or annually. We conduct LDAR inspections and identify leaks using optical gas imaging technology or flame ionizing detectors. If we identify a leak during our LDAR inspections, we repair it and then resurvey to document that the repair addressed the leak.

3.3.4 Energy Management (CDP CC8.2)

We strive to be energy efficient and have implemented several energy management initiatives that reduce our energy consumption and Scope 2 indirect GHG emissions. We employ energy management personnel who oversee multiple programs and strategies to both minimize energy costs and monetize our reductions in energy usage. We optimize our operations to reduce peak demand by participating in curtailment and demand response programs, where we reduce energy usage when requested.

Our Houston headquarters building, which we own, is LEED Gold certified. At many facilities we have replaced compact florescent light bulbs with light-emitting diode lighting. We have ongoing initiatives to replace additional compact florescent light bulbs at other facilities.

We participate in demand response, load management, and utility reliability programs, such as the Base Interruptible Program in California and the 4 Coincident Peak Program in Texas. We use variable frequency drives at many pumps to improve pipeline flow control and increase energy efficiency. Variable frequency drives also allow us to monitor the efficiency of our pumps.

The most significant method of reducing energy consumption in our Products Pipelines Business Segment is the use of DRA. DRA is a long-chain polymer chemical that disrupts the molecular activity at the fluid boundary layer near the inside pipe wall, thereby reducing friction loss. Our deployment of DRA in key locations has reduced the electricity needed to move products, allowing us to shut down pump stations that were no longer needed, and avoid building additional pump stations.

In 2018, EnterSolar completed construction of a 2.6 megawatt ground-mounted solar panel array on land leased from us at our Staten Island Terminal. EnterSolar's array consists of 9,000 panels, at the time of completion, the largest in New York City, and will provide power to commercial and residential properties on Staten Island. We are considering similar arrangements at other locations where we may also be able to take advantage of this renewable resource to power our equipment. We are also developing plans to install capacitors at a number of facilities in our Terminals Business Segment to increase power efficiency.

3.4 GHG Reductions and Targets

3.4.1 GHG Reductions

(CDP CC 4.3)

One of the largest sources of methane emissions from a natural gas transmission pipeline results from a pipeline blowdown. Natural gas transmission pipeline blowdowns can occur between compressor stations during planned maintenance or an emergency. We look for opportunities, where practicable, to use maintenance methods that do not require pipeline blowdowns. If maintenance-related blowdowns are required, our procedures minimize blowdown emissions by evaluating and using minimization technologies, where available.

Our natural gas transmission pipeline methane emission reductions reported to EPA's Natural Gas STAR program are provided below. The estimated value of natural gas saved is based on an assumed price of \$3.00 per Mcf for all periods presented. EPA's Natural Gas STAR Summary Report for our reported activities from 1993 through 2016 is included in Appendix D.

	Year Ended December 31		
	2015	2016	2017
Volume of voluntary methane emissions reductions (Mcf)(a)	3,389,548	2,676,969	4,603,489
(b)			
Estimated value of natural gas saved (millions of US dollars)	\$ 11	\$ 8	\$ 15
Voluntary GHG emissions reductions (metric tons CO₂e)(c)	1,626,983	1,284,945	2,209,674

- (a) Methane content of pipeline quality natural gas is estimated at 95% per Methane Challenge Program Guidance.
- (b) Projected submittal date for 2017 methane reductions is based on availability of reporting forms from EPA for the Methane Challenge Program. Schedule is projected to be late Q4 2018. Methane emissions reductions will be reported in metric tons beginning in 2017 going forward per Methane Challenge requirements.
- (c) The reported CO₂e is based on a GWP of 25 if the methane were directly emitted to the atmosphere (GHGRP Subpart W, IPCC 2007). Calculation is from 40 CFR Part 98.233, Equation W-36: Methane (scf) multiplied by methane density (0.0192 kg/ft³) multiplied by .001 (kg to metric tons conversion) multiplied by 25 (GWP).

The methane reductions we reported to EPA for 2015 and 2016 were associated with pipeline drawdowns where gas blowdowns are minimized to the extent practicable by reducing line pressures prior to blowing the pipeline down for maintenance and prior to turbine and electric compression installations.

In addition to the pipeline drawdown activities, for calendar year 2017, we will report methane reductions associated with compressor station leak repairs and alternative pipeline maintenance technologies that reduce the need for pipeline blowdowns.

3.4.2 GHG Targets

(CDP CC 4.1)

Through ONE Future, we have committed to achieve a methane emissions intensity target for our natural gas transmission and storage operations by 2025. Our target is methane emissions per volume of throughput of 0.31%. We expect to complete our first ONE Future status report before the end of 2018, in which we expect to include 2017 actual methane emissions compared to our target.

Since the inception of the EPA GHGRP, our annual leak inspections included compressor stations subject to the EPA GHGRP. In 2017, we inspected additional natural gas transmission and storage compressor stations not subject to the GHGRP, as part of our plan to implement voluntary annual leak inspections at each of our natural gas transmission and storage compressor stations by 2021. We plan to expand

voluntary inspections in annual increments of approximately 20% on average over the five years from 2017-2021.

We conduct leak inspections using optical gas imaging cameras, or other EPA-approved technologies. We conduct methane emission surveys with the components operating in the as-found condition. We identify and evaluate leaks during the inspections and repair them as appropriate.

We plan to evaluate and implement other methane emission reduction technologies or work practices on a case-by-case basis. We report to EPA annually other specific technologies and work practices that we implement.

4.0 Air Quality

4.1 Air Emissions

We conduct the following activities in each of our business segments to manage our air permitting and compliance program:

- monitor, record, report, and pay emission and permit fees;
- identify, record, and maintain a list of stationary air emission sources including insignificant sources and sources of fugitive emissions;
- quantify facility annual emissions per federal, state, provincial, or local requirements and document the basis of the quantification and estimation;
- quantify emissions when changes and/or modifications occur at a facility to determine if the facility permitting status is affected (e.g., exempt, minor, synthetic minor or major under Title V);
- develop and maintain a permit requirements list in our compliance tracking system along with required actions, deadlines, and designated responsible persons; and
- provide regular training and re-training for operations, engineering and maintenance staffs' understanding of permit requirements.

We plan to include the company-wide criteria air emissions that we report to federal, state, provincial, or local agencies beginning with our 2020 report. Included below are the emissions reported for our Canadian operations annually through ECCO's NPRI program. The TMPL, Puget Sound pipeline system, and Kinder Morgan Canada Inc., which were sold on August 31, 2018, are presented as discontinued operations.

4.2 KML Air Emissions for the Following Pollutants: NO_x (excluding N₂O), SO_x, VOCs, and PM (SASB Midstream EM0102-03, SASB Exploration & Production EM0101-04, SASB Refining & Marketing EM0103-03, GRI 305-7)

KML's air emissions data are provided below in metric tons.

	Year Ended December 31		
	2015	2016	2017
KML air emissions from continuing operations(a)(b)			
Cochin Canada(c)			
NO _x (excluding N ₂ O)	—	—	—
SO _x	—	—	—
VOCs	—	—	—
PM	—	—	—

	Year Ended December 31		
	2015	2016	2017
Subtotal	—	—	—
Terminals Canada			
NO _x (excluding N ₂ O)	—	—	—
SO _x	—	—	—
VOCs	13	12	12
PM	4	18	32
Subtotal	17	30	44
KML total air emissions from continuing operations			
NO _x (excluding N ₂ O)	—	—	—
SO _x	—	—	—
VOCs	13	12	12
PM	4	18	32
KML total air emissions from continuing operations	17	30	44
KML total air emissions from discontinued operations(d)	128	110	120
KML total air emissions including discontinued operations	145	140	164

- (a) Included are the emissions reported annually through ECCC's NPRI program. The ECCC NPRI annual emissions reporting thresholds for facilities are as follows: NO_x (excluding N₂O) - 20 tonnes per year, SO_x - 20 tonnes per year, VOCs - 10 tonnes per year, and PM - PM₁₀ 0.5 tonnes per year and PM_{2.5} 0.3 tonnes per year.
- (b) NO_x and SO_x emissions for KML's operations were below the reporting thresholds for 2015, 2016, and 2017.
- (c) Cochin Canada facilities were below the ECCC NPRI reporting thresholds for 2015, 2016, and 2017.
- (d) Represents emissions from the TMPL, Puget Sound pipeline system, and Kinder Morgan Canada Inc. sold on August 31, 2018, and presented here as discontinued operations.

4.3 Number of Refineries

(SASB Refining & Marketing EM0103-04)

The number of refineries we own is included below.

	Year Ended December 31		
	2015	2016	2017
Number of refineries in or near areas of dense population	1	1	1

This refinery is the Galena Park Splitter, located in Galena Park, Texas, operated by our Products Pipelines Business Segment. The Galena Park Splitter is regulated by the EPA as a refinery, although it is not a full-scale refinery. It is a condensate processing facility consisting of two units which separate condensate into its various components to produce intermediate, semi-finished blend stocks like naphthas and distillates. These blend stocks are generally processed further at full-scale refineries. We commissioned the Galena Park Splitter facility in 2014, began first and second phase start-up operations in March 2015 and July 2015, respectively, and had our first full year of operation in 2016.

5.0 Ecological Impacts

5.1 Environmental Management Policies and Practices for Active Operations

(SASB Midstream EM0102-04, SASB Midstream EM0102-05, SASB Exploration & Production EM0101-09, GRI 103-2)

We continually evaluate the regulatory landscape for our operations and new projects and look for opportunities to improve. We maintain corporate policies and business segment specific procedures to

manage environmental matters across our assets. Through our internal monthly regulatory update and verification program, we identify, assess, and manage compliance with changing regulatory requirements. We review, approve, and implement policy and procedural changes through our management of change or similar established processes.

Prior to beginning an expansion project, we develop plans and procedures, including:

- surveying,
- construction,
- impact avoidance,
- mitigation,
- revegetation, and
- operations.

Preservation of land is a key component of our construction efforts, whether in designing a new route for a pipeline project or when performing maintenance on facilities that have been in service for many years. To evaluate a proposed route on a new pipeline project, we conduct civil, cultural and environmental surveys. The purpose of the surveys is to gather information about the following:

- soil,
- topography,
- water,
- vegetation,
- wildlife,
- cultural resources,
- land use, and
- other important biodiversity and social considerations.

We use this information to determine an appropriate route to avoid or minimize impacts on critical habitats, people, and lands. Following construction of new facilities, we restore the right-of-way, including seeding and fertilizing the property to specifications agreed with the landowner. In many instances, our restoration improves habitat compared to the condition in which we found it.

We also focus on wildlife preservation in sensitive areas. Being good stewards of the land requires extra attention in areas impacted by construction.

We are actively involved in a number of projects designed to enhance biodiversity within our operating areas. We have made long-term commitments to managing biodiversity and participate in conservation education and community outreach initiatives. Several of these initiatives have received certification from the WHC, a nonprofit organization that promotes and certifies habitat conservation and management. For a project to receive WHC's Conservation Certification, a third-party must validate the biodiversity enhancement and conservation education activities. Since 1999 we have placed 14 sites in the program and eight facilities have held WHC certification over the last three years.

In 2017, the WHC awarded our Hartford Street Terminal their Remediation Project Award for pollinator forage enhancements as part of a phytoremediation project at the terminal. The Hartford Street Terminal program received its Conservation Certification in 2015.

Also in 2017, we received a Tree Champion Award from the City of Tucson for our ongoing commitment to the "Trees for Tucson" program. The program plants trees at schools across Tucson, Arizona, to improve the environment and provide shade for schoolyards.

Over a two-year period, we collaborated with The Nature Conservancy and several industry peers to develop a report enumerating ways to reduce environmental impacts of pipeline construction on steep slopes.¹⁶ The report was published in 2018 and includes details on ten recommended and four potential best practices. The report focuses on reducing risks of landslides, slips and erosion, and protecting habitat health and water quality. The best practices in the report include performing geohazard assessments and post-construction geohazard monitoring, accurately identifying water features, optimizing groundwater management and using hydroseeding and hydromulching.

We use compliance tracking systems to manage regulatory requirements, permit conditions, and best practices. We report to our management on a monthly basis a summary of our compliance performance. We maintain an audit program to report on environmental and safety practices and implement corrective measures.

We use an incident management database to internally report accidents and near misses, document incident investigation findings, and corrective action items. Our incident management system provides us with the following capabilities:

- gather incident data,
- analyze causes,
- track actions and deadlines,
- identify trends, and
- identify and share preventive actions.

Our incident reporting system serves as an incident analysis and prevention tool, and a regulatory agency interaction internal reporting tool. Weekly senior management meetings include discussions of notable incidents including injuries, vehicle accidents, releases, third-party encroachments onto our thousands of miles of right-of-way, and near misses that may have occurred during the previous week. In May 2017, we were chosen by an independent panel of EHS executives to receive the 2017 Verdantix EHS Innovative Technology Award. The award recognizes our innovative use of technology to improve our EHS performance through the implementation of our incident management system.

For more information see our EHS Policy Statement and Biodiversity Policy on our ESG/Sustainability webpage at https://www.kindermorgan.com/ehs/esg_sustainability.aspx.

5.2 Hydrocarbon Spills

(SASB Midstream EM0102-07, GRI 306-3)

We strive to prevent hydrocarbon releases from our operations. Sometimes hydrocarbon releases do occur, primarily from equipment failures or from loss of power from natural forces. The releases usually are:

- minimal,
- below reportable quantities,
- contained in secondary containment, and
- immediately remediated.

The releases usually do not result in significant environment impacts.

¹⁶ Improving Steep-Slope Pipeline Construction to Reduce Impacts to Natural Resources, 2018.
<https://www.conservationgateway.org/Documents/ImprovingSteepSlopePipelineConstructionReport.pdf>.

In most cases releases of liquids are confined to our property. When a release occurs or migrates outside of containment, our emergency response procedures serve to promptly limit the impact to the environment.

We anticipate reporting the number and volume of hydrocarbon spills, if any, beginning in 2019.

5.3 Marine Spills and Releases to the Environment
(SASB Marine Transportation TR0301-08, GRI 306-3)

We own a fleet of 16 medium range Jones Act-qualified product tankers, each with 330,000 barrels of cargo capacity. Our fleet transports crude oil, condensate, and refined products under long-term contracts with high quality counterparties. Our vessels are operated by Intrepid Ship Management, a subsidiary of Crowley Maritime Corporation, a leading operator and technical manager in the U.S. maritime industry.

Intrepid’s management system is designed to fulfill the requirements of the International Safety Management Code for the Safe Operation of Ships and for Pollution Prevention, ISO 9001:2008 Quality management system, and ISO 14001:2004 Environmental management systems. One of Crowley’s goals is to continually operate with no harm to people, property, or the environment.

The number of marine spills and releases and the aggregate volume are included below in cubic meters.

	Year Ended December 31		
	2015	2016	2017
Number of marine spills and releases to the environment	0	0	1
Aggregate volume of marine spills and releases to the environment	0	0	<0.0001

In 2015 and 2016, our marine transportation operations had no spills or releases into the environment. In 2017, while ballasting a ship at the Philadelphia Shipyard, a bleeder plug on a ballast pump of one of our vessels failed and released approximately four ounces of hydraulic fluid to water. The spill was immediately mitigated and the defective equipment repaired.

6.0 Employee and Contractor Health and Safety

6.1 Discussion of Safety Management Systems to Integrate Culture of Safety and Emergency Preparedness

(SASB Midstream EM0102-11, SASB Exploration & Production TA01-06-01, SASB Refining & Marketing TA04-15-01, GRI 103-2)

6.1.1 Management System Overview

We integrate a culture of safety and emergency preparedness through our OMS. Our OMS establishes a framework that helps us provide employees and contractors with a safe work environment; comply with laws, rules, regulations, policies, and procedures; and identify opportunities to improve. Specifically, our OMS provides a detailed road map to build and sustain a robust safety culture based around:

- leadership and management commitment;
- risk and opportunity management;

- operational controls;
- incident investigation, evaluation, and lessons learned;
- safety assurance;
- emergency management;
- stakeholder engagement;
- management review; and
- continuous improvement.

The main components of our OMS include:

- setting forth our goals and policies for our physical operations;
- describing our approach to sound operations;
- setting forth the roles and responsibilities for conducting sound operations;
- establishing a set of processes to be followed in pursuit of our operations;
- incorporating our EHS requirements; and
- providing for periodic changes, audits, and assessments to improve and assess compliance with the OMS.

Our OMS conforms with API Recommended Practice 1173 for Pipeline Safety Management Systems.

We routinely evaluate and drive improvements in each business segment's implementation of the OMS and employees receive annual training on the system.

Through our Code of Business Conduct and Ethics and our OMS we establish that every employee is expected to share our commitment to the goals of:

- keeping people safe,
- using material and energy efficiently,
- protecting the environment, and
- promoting best practices.

We are continuously looking for opportunities to improve our business. Our employees are expected to help us meet our goals and expectations by:

- following and improving Company and business segment policies and procedures,
- complying with laws and regulations,
- identifying opportunities for improvement,
- operating our assets safely, and
- identifying and addressing risks to people and the environment.

We strive to be a good neighbor and contribute to sustainable development through our systematic approach to EHS management. This approach supports our ability to:

- comply with laws and regulations;
- train employees to be aware of and meet their responsibilities for protection of the environment, health, and safety; and
- achieve continual performance improvement.

For more information, see our OMS webpage at https://www.kindermorgan.com/pages/ehs/ops_mgmt_system.aspx.

Fourteen of our liquid terminals, including our largest, participate in the ACC's Responsible Care® Program. Responsible Care® is an EHS and security performance initiative that includes a management

system framework that drives improvement in key EHS and security operational areas. The program elements include monitoring and reporting our measures for environmental, energy, safety, and accountability performance. As part of the Responsible Care® program, we undergo third-party audits of our headquarters and each of the participating facilities to certify our performance.

6.1.2 Employee and Contractor Safety

As part of our OMS, our employees are encouraged to improve and build upon our established safety culture by sharing information on incidents, completing training, and participating in periodic safety culture surveys. Our employees are empowered to perform their work in a safe and effective manner, taking into account safety-related components of each job. We expect our employees to stop work if an activity is not well understood or could lead to potential harm, and we regularly communicate that expectation to them.

Our policies and procedures require the internal reporting and investigation of incidents, including identification of incident details, impacts, causes, and corrective actions. We use the incident investigation process to identify immediate and root causes that contributed to the incident, to determine the necessary corrective actions, and to provide timely follow-up to check that corrective actions have been completed. We share lessons learned and evolving best practices across our business segments in regular cross-segment operations meetings.

Another feature of our OMS is contractor safety and contractor management. We utilize a multi-faceted approach to foster a culture of safety among our contractors. Our approach begins with our procurement process, which includes contractor vetting using ISNetworld, a nationally recognized contractor management firm. Additional actions we undertake to integrate a culture of safety with our contractors include:

- facility safety orientations;
- field, project, and desktop audits;
- job evaluations;
- training;
- benchmarking and safety statistical analysis; and
- safety inspector placement and training.

For more information see our Contractor Environmental/Safety Manual at <https://www.kindermorgan.com/content/docs/KMContractorSafetyManual.pdf>.

6.2 Total Recordable Injury Rate, Fatalities, and Average Hours of Health, Safety, and Emergency Response Training

(SASB Exploration & Production TA04-05-01, Refining & Marketing EM0103-09, GRI 403-2)

We have developed policies, procedures, and processes to record, report, and manage work-related injuries and illnesses.

Our senior management plays a vital role in establishing a culture that supports occupational health and safety programs and initiatives. Weekly senior management meetings include reports and discussions of notable workplace incidents and near misses that may have occurred during the previous week. Our senior management has established detailed safety performance metrics at the business segment level to focus performance on factors related to both safety and operational reliability. We have a committee of safety and operations personnel who meet monthly to share information related to safety and other

incidents. The committee reviews incidents and applies insights learned across our business segment operations.

We strive for a culture of excellence throughout our operations by seeking skilled employees and contractors with a high degree of competence in terms of education, training, knowledge, and experience. We provide initial training for employees and recurring training on regular intervals. Our training program promotes continuous improvement and helps us meet objectives for an informed and knowledgeable workforce.

We deliver safety training to our employees through:

- computer based training through our LMS,
- instructor-led classroom training, and
- hands-on training.

Our health, safety, and emergency management training covers topics required under the U.S. 29 CFR Part 1910 OSHA standards; Canada Labour Code; and Mexican, state, and provincial equivalent programs, including training on:

- confined spaces,
- crane safety,
- electrical safety,
- emergency response,
- fall protection,
- fire protection,
- hazard communication,
- lockout/tagout,
- personal protective equipment,
- process safety management, and
- respiratory protection.

Employees also receive training in other safety topics that are not required under OSHA 1910 including:

- safe driving,
- back safety, and
- ergonomics.

We provide emergency management training consistent with USCG, EPA, DOT, NEB, and ASEA requirements. We also have an extensive pipeline safety OQ training program.

The annual employee and contractor injury rates, the number of employee and contractor fatalities, and the average number of employee hours spent on health, safety, emergency management, and other safety training topics are provided below.

	Year Ended December 31		
	2015	2016	2017
Total recordable injury rate(a)(b)			
Employees(c)			
Natural Gas Pipelines	1.6	1.2	1.2
CO ₂	0.7	1.0	0.7
Terminals	1.2	1.6	0.9
Products Pipelines	0.9	0.3	0.6
Kinder Morgan Canada	0.9	0.6	0.5

	Year Ended December 31		
	2015	2016	2017
Corporate Shared Services	0.3	0.2	0.7
Company-wide	1.2	1.1	1.0
Contractors(d)			
Natural Gas Pipelines	1.0	1.1	0.9
CO ₂	1.1	1.3	1.4
Terminals	0.6	0.6	0.7
Products Pipelines	1.0	0.2	0.7
Kinder Morgan Canada	0.4	0.2	0.4
Corporate Shared Services	0.0	0.0	0.0
Company-wide	0.9	0.8	0.8
Fatalities			
Employees	1	2	0
Contractors	1	0	1
Average hours of health, safety, and emergency response training			
Hours per employee			
Natural Gas Pipelines	16	18	20
CO ₂	20	19	30
Terminals	11	12	14
Products Pipelines	26	24	28
Kinder Morgan Canada	5	7	7
Corporate Shared Services	3	5	3
Company-wide	14	15	17

- (a) TRIR calculation: total number of injuries multiplied by 200,000 divided by the number of employee hours actually worked. The 200,000 represents the hours 100 employees worked per year. 100 employees working 40 hours per week, 50 weeks per year. It is a standard base for calculating injury rates.
- (b) Rates are as of December 31 of each year. Injuries or illnesses may be reclassified after the end of the year.
- (c) Employee rates include regular full-time, regular part-time, and temporary employees.
- (d) Contractor rates are based on injuries contractors incurred while doing work for KMI on a defined major project or an operations and maintenance project. Injury rates for the contractor's employees operating our marine tankers are not included in the contractor hours here, and are included in the marine lost time injury rates below.

The following initiatives contributed to the contractor TRIR performance improvements:

- increased the number of contractor audits;
- increased the number of safety inspectors dedicated to major projects; and
- added staff to provide quality control of incident data entry into our internal incident management system, to improve incident investigation quality, and to follow-up on related action items.

We experienced one employee fatality in 2015, two in 2016, and none in 2017. There was one contractor fatality in 2015 and one in 2017. For any fatality, we ensure that a root cause investigation is conducted. We may establish committees to study similar incidents and near misses, and where warranted, develop and implement improvements to our policies and procedures. Irrespective of fault, we make adjustments to plans and procedures where appropriate with the goal of eliminating or reducing the chance that a similar incident will happen in the future.

6.3 Marine Lost Time Injury Rate

(SASB Marine Transportation TR0301-12, GRI 403-2)

As noted above, Intrepid Ship Management operates our Jones Act marine transportation vessels. Intrepid's management is actively engaged in monitoring each injury or illness case. Intrepid determines

the case classification, as well as reporting, investigating, and recordkeeping requirements based upon regulatory requirements, industry guidelines, and Intrepid’s processes and procedures. For a marine injury or illness, Intrepid engages contracted medical services, including:

- physician advice at sea,
- maritime telemedicine,
- physician and nurse case management, and
- arrangement and management of shore side medical services.

We do not include Intrepid’s injuries and illnesses or hours worked in our contractor TRIR above. Intrepid’s lost time injury rates on our marine transportation vessels are provided below.

	Year Ended December 31		
	2015	2016	2017
Marine lost time injury rate(a)	0	2.5	1.1

(a) Marine lost time injury rate calculation: total number of lost time injuries multiplied by 1,000,000 divided by number of employee hours actually worked.

Between December 2015 and December 2016, the number of vessels in active service increased from seven to 12. This vessel increase and the associated increase in the number of new merchant mariners contributed to the increase in lost time injury rate from 2015 to 2016. The lost time injury rate decreased from 2016 to 2017 due to, among other programs, the implementation of a fleet safety officers’ program and a quality training program focused on safety leadership, sharing best practices, and increasing crew training on job safety, work permits, and housekeeping. The job safety training programs included a hazard recognition and incident prevention program, and a program designed to prevent common musculoskeletal injuries.

7.0 Competitive Behavior
(SASB Midstream EM0102-08)

Our policies prohibit improper conduct that is intended to exclude competition, eliminate a competitor, or control prices or services in a market. We strive to compete fairly and honestly in each phase of our business and to conduct our operations in compliance with federal, state, provincial, and foreign antitrust laws.

Certain of our U.S. natural gas, refined petroleum products, and crude oil transmission pipelines are subject to regulation by the FERC under the NGA or ICA. Both the NGA and ICA require that we maintain our tariffs on file with the FERC. Those tariffs set forth the rates we charge for providing transportation and storage services on our FERC regulated pipelines as well as the rules and regulations governing these services.

We have policies and procedures that support our ability to comply with and enforce pipeline tariff provisions in a consistent manner and in accordance with the following principles:

- we do not engage in transactions that could be seen as manipulating a market;
- we do not participate in transactions that do not have a legitimate business purpose;
- we do not submit false or misleading price and volume information;
- we do not provide an undue preference to shippers, including an affiliate shipper;
- we do not share, whether directly or through someone else, non-public information about a shipper unless the shipper has given its written consent to do so; and
- we do not make untrue or misleading statements or take actions that would defraud a party.

For more information see our Code of Business Conduct and Ethics at https://www.kindermorgan.com/content/docs/km_code_of_business_conduct_and_ethics.pdf.

The legal and regulatory fines and settlements associated with federal pipeline and storage, rate, access, and pricing regulations are provided below in millions of U.S. dollars.

	Year Ended December 31		
	2015	2016	2017
Amount of legal and regulatory fines and settlements from Federal pipeline and storage, rate, access, and pricing regulations(a)			
Natural Gas Pipelines	\$ 0	\$ 0	\$ 10
CO ₂	\$ 0	\$ 0	\$ 0
Terminals	\$ 0	\$ 0	\$ 0
Products Pipelines	\$ 0	\$ 0	\$ 0
Kinder Morgan Canada	\$ 0	\$ 0	\$ 0
Total	\$ 0	\$ 0	\$ 10

(a) Disclosure includes the amount, excluding legal fees, of fines or settlements associated with federal pipeline and storage regulations, including those related to rates, pipeline access, price gouging, or price fixing. Disclosure includes enforcements from the FERC, the U.S. CFTC, and the U.S. FTC. Disclosure includes civil actions (e.g., civil judgment, settlements, or regulatory penalties) and criminal actions (e.g., criminal judgment, penalties, or restitutions) taken by an entity (government, businesses, or individuals).

The settlement paid in 2017 was for matters that were alleged to have occurred over a decade prior to our ownership and control of El Paso Corporation and El Paso Marketing L.P. Beginning in 2003, several lawsuits were filed by purchasers of natural gas against El Paso Corporation, El Paso Marketing L.P., and numerous other energy companies based on a claim under state antitrust law that such defendants conspired to manipulate the price of natural gas by providing false price information to industry trade publications that published gas indices. Several of the cases have been settled or dismissed. The remaining cases, which are pending in a U.S. District Court in Nevada, include a lawsuit brought by an industrial consumer in Kansas in which approximately \$500 million in damages plus interest has been alleged against all defendants, and a Wisconsin class action in which approximately \$300 million in damages plus interest has been alleged against all defendants. In the Wisconsin class action, the U.S. District Court denied plaintiff's motion for class certification, but on appeal the Ninth Circuit Court of Appeals remanded the case with instructions to the U.S. District Court to provide a more detailed analysis of class certification issues. There remains significant uncertainty regarding the validity of the causes of action, the damages asserted and the level of damages, if any, which may be allocated to us in the remaining lawsuits and therefore, our legal exposure, if any, and costs are not currently determinable.

8.0 Prevention of Corruption and Bribery throughout the Value Chain

(SASB Exploration & Production EM0101-21, GRI 205-2 and 205-3)

We have policies that prohibit us and our employees from participating in corrupt practices. Our policies do not permit our employees, directors, agents, contractors, business partners, or third-party representatives to give or accept bribes, kickbacks, or other improper payments in conjunction with our business. Our employees receive annual training on our Code of Business Conduct and Ethics. While the U.S. FCPA contains a narrow exception that allows for small-dollar facilitation payments to be made to a foreign official in order to expedite routine governmental actions that are non-discretionary in nature, our policies do not allow facilitation payments of any kind. Our ethics hotline enables employees or third parties to anonymously report concerns about corruption and bribery.

Our internal accounting controls require that transactions are:

- accurately described with an explanation of the purpose of the transaction,
- sufficiently supported by documentation, and
- appropriately approved by the required level of management based on the dollar value of the transaction prior to entering into a commitment and again before processing for payment.

Additionally, we have accounting controls around payees being added to our accounting system. The controls require the review and approval by an individual(s) higher in the reporting chain than the person approving the payment in our accounting system.

For more information see our Code of Business Conduct and Ethics at https://www.kindermorgan.com/content/docs/km_code_of_business_conduct_and_ethics.pdf.

9.0 Operational Safety

9.1 Asset Integrity Management

Pipelines are the safest and most efficient method of transporting natural gas and petroleum products.^{17,18} Pipelines are safer than other modes of transportation such as rail, barge, and truck. While the amount of natural gas and petroleum products being used in the U.S. continues to increase, the industry's safety performance in recent years has improved significantly and serious accidents are infrequent.

We are proud of our safety record. We utilize state-of-the-art technology for transmission pipeline and liquid terminal facility integrity and maintenance. We conduct activities to monitor the integrity of our transmission pipelines and liquid terminals including:

- monitoring pipelines and liquid terminals 24 hours a day, 7 days a week by trained personnel using SCADA computer systems;
- visually inspecting pipeline rights-of-way by air and/or ground on a regular basis;
- performing internal pipeline inspections periodically using "smart pigs";
- using cathodic protection to protect our pipelines, storage tanks, and storage wells from external corrosion;
- using our pipeline public awareness program to communicate with stakeholders and prevent third-party damage to our pipelines;
- participating in the Pipeline Safety Management Systems Group to share best practices for safe operations;
- working to continuously develop and improve of our business processes, operations procedures, and risk and opportunity assessments;
- maintaining well defined roles and responsibilities;
- providing employee training; and
- executing quality assurance programs such as third-party audits and application of performance metrics.

¹⁷ "Pipelines are Safest for Transportation of Oil and Gas," Manhattan Institute, June 2013, https://www.manhattan-institute.org/pdf/ib_23.pdf

¹⁸ "The Energy Bottleneck," Manhattan Institute, July 16, 2017, <https://www.manhattan-institute.org/download/10472/article.pdf>

At each of our natural gas storage facilities, we maintain risk management programs and monitoring systems for well and reservoir integrity and deliverability. In 2016, PHMSA issued rules establishing federal standards for underground natural gas storage facilities. These rules respond to Section 12 of the Protecting our Infrastructure of Pipelines and Enhancing Safety Act of 2016, which was enacted following the serious natural gas leak at Southern California Gas Company’s Aliso Canyon facility in California in 2015. In 2017, PHMSA and additional subject matter experts conducted facility safety site assessments at a cross-section of natural gas storage operators. We volunteered one of our facilities to participate in one of the first site assessments.

9.2 Damage Prevention

Because one of our greatest operational risks is third-party line strikes, we actively support organizations whose missions are to promote safe digging, including:

- CGA - we are a platinum-level sponsor and regularly promote CGA’s message to “call 811 before you dig” on our website and social media channels;
- Pipeline Ag Safety Alliance - a member-driven organization whose mission is to prevent damage to buried pipelines through education and improved communication with agricultural communities; and
- Gold Shovel Standard - a nonprofit organization that aims to reduce and prevent damage to buried infrastructure through greater transparency in damage prevention activities among buried-asset operators, locators, and excavators to drive continuous improvement.

9.3 Public Awareness

Our public awareness program is designed to:

- create public awareness about pipelines in the areas where we operate,
- provide important safety information to people living and working near our pipelines,
- increase knowledge of the regulations for working around pipelines,
- prevent damage to our pipelines,
- educate first responders and the public on our emergency preparedness response activities, and
- enhance public safety.

Our public awareness program advocates pipeline safety and safe digging practices to the public through multiple avenues, including:

- brochures,
- newsletters,
- direct mailings, and
- our website at https://www.kindermorgan.com/pages/public_awareness.

9.4 Emergency Preparedness and Business Continuity Planning

Our ability to respond quickly in an emergency is part of our commitment to the safety of the communities where we operate. We maintain site-specific emergency response plans that include agency notifications and response actions to act quickly and efficiently to an emergency. We provide our employees and contractors with regular emergency response training. Our emergency response personnel are trained to conduct response actions including:

- securing the safety of the public and employees,
- promptly notify appropriate governmental response organizations and agencies,
- isolation of the emergency,

- containment and control,
- co-ordination of response activities, and
- restoration of service.

To practice our emergency response and better prepare personnel, we regularly conduct joint mock emergency exercises with first responders. By conducting joint mock emergency exercises, pipeline operators and emergency responders are not only able to test their equipment, personnel, and procedures, but also to meet and work together face-to-face prior to an actual incident. The more familiar we are with one another and each other's procedures, the more effective our integrated response will be in the unlikely event of a real incident.

Example drill scenarios include the following:

- security incidents, including terrorist attacks or bomb threats;
- hurricanes;
- floods;
- tornadoes;
- blizzards;
- pipeline explosions;
- third-party train derailments; and
- events that test our ability to maintain business continuity with our corporate functions.

As part of our commitment to emergency preparedness, we plan for and establish procedures for responding to a wide variety of natural disasters. We complete hazard identification and risk assessments for transmission pipelines. The purpose of these assessments is to identify potential risks and disasters that might occur, and to develop plans for mitigating each scenario. This planning involves local response officials, other operators and their facilities, and land and right-of-way personnel.

To promptly resolve issues and problems created by incidents, we maintain an emergency response notification process and system to inform internal support personnel. Our process is designed to facilitate real-time communication of emergency events to our personnel with incident response or reporting responsibilities. Our process allows for more timely, effective, and efficient responses in emergency situations and reporting to regulatory agencies.

Our leading objectives during an emergency are to contain the situation, respond effectively, and restore customer services as soon as possible. Our responsibility is to provide valuable products and services to our customers and manage our facilities safely and efficiently. In this capacity, our goal is to provide for the well-being and safety of our employees, the public, and the environment. We practice a disciplined, competent, and proactive approach when an emergency occurs.

We mitigate impacts of natural disasters by:

- day-to-day communication,
- infrastructure maintenance,
- awareness of natural events and risks,
- understanding disaster response and business continuity plans, and
- regular training.

We exercise operational and safety practices frequently and regularly check integrity management and disaster recovery plans for our assets.

We maintain a reliable supply chain to support our ability to operate under various conditions. For planning prior to an event, we maintain response and support capabilities to provide significant additional resources beyond the capabilities of our local potentially affected operations. Our supply chain management personnel are responsible for maintaining an accurate resource list of emergency response consultants, materials and supplies vendors, and transportation and fuel sources. We maintain a database of our emergency equipment. We have procedures in place to raise spending limits for affected personnel, to assist affected employees, and to increase security resources.

9.5 Reportable Pipeline Incidents

(SASB Midstream EM0102-09)

Despite our preparedness and prevention efforts, incidents did occur over the reporting period. The number of reportable pipeline incidents, number of significant reportable pipeline incidents, and percentage of significant reportable pipeline incidents are provided below.

	Year Ended December 31		
	2015	2016	2017
Number of reportable pipeline incidents(a)(b)			
Natural Gas Pipelines	23	19	27
CO ₂	7	9	2
Terminals	11	11	11
Products Pipelines	15	15	10
Kinder Morgan Canada	2	2	0
Total	<u>58</u>	<u>56</u>	<u>50</u>
Number of significant reportable pipeline incidents(c)			
Natural Gas Pipelines	3	1	4
CO ₂	1	3	0
Terminals	5	3	5
Products Pipelines	6	4	1
Kinder Morgan Canada	0	0	0
Total	<u>15</u>	<u>11</u>	<u>10</u>
Percentage significant of reportable pipeline incidents			
Natural Gas Pipelines	13%	5%	15%
CO ₂	14%	33%	0%
Terminals	45%	27%	45%
Products Pipelines	40%	27%	10%
Kinder Morgan Canada	0%	0%	0%
Company-wide	<u>26%</u>	<u>20%</u>	<u>20%</u>

- (a) Reportable liquid pipeline incidents include explosions or fires, release of 5 gallons or more (excluding releases of 5 bbls associated with pipeline maintenance activities), a fatality, an injury necessitating hospitalization, and property damage exceeding \$50,000.
- (b) Reportable gas gathering, transmission, storage, and distribution incidents include an event that involves a release of gas from a pipeline, or of liquefied natural gas, liquefied petroleum gas, refrigerant gas, or gas from an LNG facility, and that results in one or more of the following consequences: death, or personal injury necessitating in-patient hospitalization; estimated property damage of \$50,000 or more including loss to the operator and others, or both, but excluding cost of gas lost; unintentional estimated gas loss of three million cubic feet or more; an event that results in an emergency shutdown of an LNG facility. Activation of an emergency shutdown system for reasons other than an actual emergency does not constitute an incident. An event that is significant in the judgment of the operator, even though it did not meet the criteria of the above paragraphs of this definition.
- (c) Significant incidents are defined as greater than or equal to 50 bbls release, greater than 5 bbls highly volatile liquid release, a fatality, an injury necessitating hospitalization; or property damage that exceeds \$50,000 in 1984 dollars.

The majority of incidents we reported were minor; however, a small portion of the incidents reported were categorized as significant due to the incident resulting in property damage exceeding the monetary threshold of \$50,000 or releases being greater than 50 bbls.

9.6 Natural Gas and Hazardous Liquid Pipelines Inspection
(SASB Midstream TA04-13-01)

We constantly strive for safe operations and zero pipeline integrity incidents. As described in Section 9.1 Asset Integrity Management, we utilize risk management programs and state-of-the-art technology for transmission pipeline and liquid terminal facility integrity and maintenance. We work to comply with regulatory requirements, to find opportunities to improve, and to apply sound integrity management principles and technologies. To assist in these efforts, we use a robust IMP that incorporates integrity assessment measures including those to:

- identify, analyze, and prioritize the potential threats to the pipeline, including incorporating actual and potential precursor events that can result in pipeline incidents;
- use a comprehensive and integrated means for examining, prioritizing, and comparing the spectrum of risks and risk reduction activities available;
- implement structured and easily communicated methods for selecting and implementing risk reduction activities including integrity assessments, remediation, and preventive measures;
- track system performance with the goal of improving performance; and
- communicate emerging needs and new technology application opportunities to top management to provide timely resource allocation.

Annually, we conduct a significant number of pipeline inspections using various methods including:

- inline inspections,
- integrity digs,
- hydrostatic tests, and
- direct assessments.

These inspections allow us to monitor the physical condition of our pipelines and gather the information we need to keep our pipeline systems operational and safe.

In our ongoing pursuit of operational excellence, we developed KMAP™, a patented innovative pipeline integrity solution designed to search for flaws in longitudinal welds. KMAP™ is a unique analytical process that provides a more comprehensive and efficient analysis of pipelines than traditional inline inspection tools. We developed KMAP™ as a proactive solution to more thoroughly inspect our pipelines, and have been successfully using this technology since 2011. We also provide KMAP™ as a service to third party pipeline companies across North America.

The percentage of natural gas pipelines and hazardous liquid pipelines inspected by inline inspections, pressure tests, direct assessment, or other technology is presented in the table below.

	Year Ended December 31		
	2015	2016	2017
Percentage of natural gas pipelines inspected	14%	14%	14%
Percentage of hazardous liquid pipelines inspected	24%	22%	19%

From 2015 to 2017 over 25,000 miles of our natural gas pipelines and 9,000 miles of hazardous liquid pipelines were assessed using inline inspections, hydrostatic testing, or direct assessments. The number of inspections varies from year to year depending on our annual integrity program requirements, best practices, and decisions. On average, we inspected our natural gas and liquid pipelines on roughly a 7 and 4 year interval, respectively.

9.7 Number of FRA Recommended Violation Defects
(SASB Rail Transportation TR0401-09)

We operate liquids and bulk products rail loading and unloading facilities across our Terminals, Natural Gas Pipelines, and Products Pipelines business segments. As operator of the facilities, we are regulated and regularly inspected by the FRA. We maintain business segment and site-specific procedures for the safe and efficient operation of the facilities and loading or unloading of rail cars and for compliance with hazardous materials transportation regulations.

The number of FRA recommended violation defects received are provided below.

	Year Ended December 31		
	2015	2016	2017
Number of FRA recommended violation defects			
Natural Gas Pipelines	0	0	0
Terminals	10	9	10
Products Pipelines	0	0	0
Total	10	9	10

The majority of the violations presented were the result of agency inspections at rail yards, many of which are several hundred miles from our facility where a rail car was loaded or unloaded. The violations included such matters as loose bolts, valves, or plugs; defective safety equipment, such as gasket or pins; and in some cases vapor releases from loose equipment. Vapor releases were promptly mitigated by personnel at the rail yards where the releases were detected.

Although these violations involved less than .01% of the total rail cars we processed, we have instituted additional cross-check procedures in an effort eliminate the problems identified in these violations.

10.0 Management of the Legal & Regulatory Environment

Multiple government agencies regulate our business activities, including EPA, PHMSA, NEB, ASEA, OSHA, USCG, and other federal, state, provincial, and local agencies. To identify, assess, and manage new ESG regulatory risks and opportunities we maintain a process for identifying, communicating, and verifying compliance with changes in applicable regulatory requirements. Dedicated internal regulatory experts work with internal and third-party subject matter experts, industry trade groups, and agency personnel to identify changes in the following topics that may affect our operations:

- environmental, personal safety, process safety, and pipeline safety regulatory requirements, interpretations and guidance;
- industry codes and standards; and
- external incident reports, including:
 - NTSB, TSB, and CSB incident investigations;
 - NEB and PHMSA advisory bulletins and failure reports; and
 - ASEA reports.

We distribute a monthly regulatory update internally to personnel with compliance roles and responsibilities. The monthly regulatory update includes both proposed and final publications. Our compliance professionals assess the potential impacts of proposed rules across our business segments. The business segments discuss and coordinate potential compliance approaches and evaluate which proposed requirements warrant providing feedback to a proposing agency. We typically work through trade groups to provide feedback. In some instances we may provide feedback directly to the proposing agency, typically where trade groups do not address specific issues that are important to us or where the potential impact of a proposal is substantial. Our experience has generally been that it is most effective to take a collaborative approach in an effort to identify the most effective means of addressing issues around our type of assets and operations. Where warranted, we work to share data and engage in discussions about potential regulatory and compliance strategies. In some instances where there is confidence in the likely final form of regulation that has been proposed and compliance may require substantial upfront work, we may start making preparations for compliance prior to a regulation being finalized.

We track final publications identified in the monthly regulatory update in an internal application and database. Through the application, business segment and corporate compliance professionals verify that they have reviewed the updated requirements that may impact their business and completed the necessary compliance activities. The Vice President of Corporate EHS and business segment COOs review progress quarterly. The Board EHS Committee is briefed on the most significant of these regulatory changes and compliance activities.

The number of new regulations, interpretations, and guidance for proposed and final regulations impacting our business segments are provided below.

	Year Ended December 31		
	2015	2016	2017
Number of new regulations, interpretations, and guidance			
Proposed	960	1,044	1,812
Final	432	528	480
Total	1,392	1,572	2,292

10.1 Corporate Positions Related to Government Regulations

(SASB Refining & Marketing TA04-16-01, SASB Exploration & Production TA04-10-01, GRI 415-1)

We do not have corporate-sponsored political action committees. We comment on the formulation of legislative and regulatory policy both as an individual company and, more often, through trade associations at the federal, state, provincial, and local level.

We do not contribute to political parties or candidates for public office. We encourage employees, contractors, and others affiliated with us to vote and keep informed on political matters and to support, with their own funds and on their own time, the candidates or parties of their choice. We also encourage and support employees who take a role in community affairs in accordance with our Code of Business Conduct and Ethics.

11.0 Community Relations

11.1 Processes to Manage Risks and Opportunities Associated with Community Rights and Interests (SASB Exploration & Production EM0101-15, GRI 413-1)

We believe our neighbors, governments, and communities play an important role in how we conduct our business. We also live, work, and play in these communities. Our policies promote commitments to help us build trust and foster collaboration within communities in which we operate, including our commitments to:

- community engagement,
- respect,
- transparency and responsiveness,
- negotiate in good faith,
- training,
- fairness, and
- responsible construction.

We continually engage our leadership and resources to effectively fulfill these commitments.

For more information see our Community Relations Policy at https://www.kindermorgan.com/content/docs/Community_Relations_Policy.pdf.

12.0 Security, Human Rights, and Rights of Indigenous Peoples

12.1 Engagement Processes and Due Diligence Practices (SASB Exploration & Production EM0101-14, GRI 103-2)

We respect the diversity of culture and unique history of Indigenous Peoples. We conduct business with Indigenous Peoples consistent with our Code of Conduct and Business Ethics and our Indigenous Peoples and Aboriginal Relations policies. We engage in good faith with community members while communicating and cooperating with affected Indigenous Peoples. We commit to:

- participating in good faith engagement;
- continuing to partner with community members in suitable employment opportunities, as well as education, commercial, and community development opportunities;
- identifying opportunities to support youth, education, culture, and the environment; and
- negotiating in good faith with indigenous and government entities.

For more information see our Indigenous Peoples Policy at https://www.kindermorgan.com/content/docs/Indigenous_Peoples_Policy.pdf and our Canadian Aboriginal Relations Policy at <https://www.kindermorgancanadalimited.com/content/docs/KMC-Aboriginal-Relations-Policy.pdf>.

Appendix A – Sustainability Disclosure Topics & Accounting Metrics

	Unit	Year Ended December 31		
		2015	2016	2017
KML gross global Scope 1 & 2 emissions (Metric tons CO₂e)				
KML gross global Scope 1 emissions from continuing operations	metric tons CO ₂ e	5,706	9,869	16,375
KML gross global Scope 2 emissions from continuing operations(a) (by business segment)	metric tons CO ₂ e	63,985	68,898	79,924
KML combined gross global Scope 1 and 2 emissions from continuing operations	metric tons CO ₂ e	69,691	78,767	96,299
Percentage covered under a regulatory program from continuing operations	%	0%	0%	0%
Percentage methane from continuing operations	%	3%	2%	1%
KML air emissions for the following pollutants:				
NO _x (excluding N ₂ O)	metric tons	—	—	—
SO _x	metric tons	—	—	—
VOCs	metric tons	13	12	12
PM	metric tons	4	18	32
KML total air emissions from continuing operations	metric tons	17	30	44
	Unit	Year Ended December 31		
		2015	2016	2017
GHG Reductions				
Voluntary GHG emissions reductions	metric tons CO ₂ e	1,626,983	1,284,945	2,209,674
Number of refineries in or near areas of dense population	#	1	1	1
Marine spills and releases to the environment				
Number of marine spills and releases to the environment	#	0	0	1
Aggregate volume of marine spills and releases to the environment	cubic meters	0	0	<0.0001
Employee and contractor health and safety				
Total recordable injury rate				
Employees	#	1.2	1.1	1.0
Contractors	#	0.9	0.8	0.8
Fatalities				
Employees	#	1	2	0
Contractors	#	1	0	1
Average hours of employee health, safety, and emergency response training	hours/employee	14	15	17
Marine lost time injury rate	#	0	2.5	1.1

	Unit	Year Ended December 31		
		2015	2016	2017
Competitive Behavior and Pricing Integrity and Transparency				
Amount of legal and regulatory fines and settlements from Federal pipeline and storage, rate, access, and pricing regulations	Million U.S. dollars	\$ 0	\$ 0	\$ 10
Reportable pipeline incidents				
Number of reportable pipeline incidents	#	58	56	50
Percentage significant of reportable pipeline incidents	%	26%	20%	20%
Natural gas and hazardous liquid pipelines inspection				
Percentage of natural gas pipelines inspected	%	14%	14%	14%
Percentage of hazardous liquid pipelines inspected	%	24%	22%	19%
Number of FRA recommended violation defects	#	10	9	10

Appendix B – Activity Metrics

	Unit	Year Ended December 31		
		2015	2016	2017
Number of employees (TR0401-E)	#	11,290	11,121	10,897
Natural Gas Pipelines				
Natural gas transport volumes(a)	BBtu/d	28,196	28,095	29,108
Natural gas sales volumes	BBtu/d	2,419	2,335	2,341
Natural gas gathering volumes(a)	BBtu/d	3,540	2,970	2,653
Crude/condensate gathering volumes	MBbl/d	309	292	273
CO₂				
CO ₂ production (gross)(b)	Bcf/d	1.2	1.2	1.3
CO ₂ production (net)(b)	Bcf/d	0.6	0.6	0.6
CO ₂ production # of terrestrial sites	#	89	89	91
Oil production (gross)(c)	MBbl/d	58.5	54.7	53.3
Oil production (net)(d)	MBbl/d	41.4	38.5	37.8
NGL sales volumes (net)(d)	MBbl/d	10.4	10.3	9.9
Terminals				
Bulk transload tonnage	MMton	55.6	54.8	59.5
Ethanol	MMBbl	63.1	66.7	68.1
Liquids leaseable capacity	MMBbl	78.6	84.7	87.9
Liquids utilization(e)	%	94.6	94.7	93.6
Products Pipelines				
Gasoline(f)	MBbl/d	1,011	1,025	1,038
Diesel fuel	MBbl/d	354	342	351
Jet fuel	MBbl/d	282	288	297
Total refined product volumes(g)	MBbl/d	<u>1,647</u>	<u>1,655</u>	<u>1,686</u>
NGL	MBbl/d	106	109	112
Condensate(g)	MBbl/d	273	324	327
Total delivery volumes(g)	MBbl/d	<u>2,026</u>	<u>2,088</u>	<u>2,125</u>
Ethanol(h)	MBbl/d	113	115	117
KM Canada				
Transport volumes(i)	MBbl/d	316	316	308
Oil & Gas Midstream				
Quantity transported (by mode of transportation) (EM0102-A)				
Pipelines				
1) Natural gas	Bcf	13,000	13,000	13,300
2) Crude oil and petroleum products by business segment				
2a) Products Pipelines	Bn-bbl miles	564	629	631
2b) CO ₂	Bn-bbl miles	110	108	111
2c) Terminals	Bn-bbl miles	12	13	14
2d) KM Canada	Bn-bbl miles	88	89	87

	Unit	Year Ended December 31		
		2015	2016	2017
Total	Bn-bbl miles	774	839	843
Oil & Gas Exploration & Production(j)				
Wellhead production of oil (EM0101-A)	MBbl/d	59	55	54
Number of offshore sites (EM0101-B)	#	0	0	0
Number of terrestrial sites (EM0101-C)	#	1,034	1,136	1,124
Oil & Gas Refining & Marketing				
Refining throughput of crude oil and other feedstocks	BOE	146,000	16,604,000	24,797,000
Refining operating capacity	MMBbl/d	0.05	0.1	0.1
Rail Transportation				
Number of carloads originated (TR0401-A) (k)				
Natural Gas Pipelines	thousands	6	6	6
Terminals(l)	thousands	107	104	145
Products Pipelines	thousands	13	11	8
Total	thousands	126	121	159
Terminals Rail Loading facilities Bulk throughput	MMton	5.2	3.7	5.5
Terminals Rail Loading facilities Liquids throughput	MMton	21	29	43
Number of intermodal units transported (TR0401-B)	#	N/A	N/A	N/A
Track Miles (TR0401-C)	miles	N/A	N/A	N/A
Revenue ton miles (TR0401-D)	RTM	N/A	N/A	N/A
Marine Transportation				
Seagoing personnel (TR0301-A)	#	495	410	518
Nautical miles (TR0301-B)	miles	356,170	464,475	330,970
Operating days (TR0301-C)	days	2,536	2,825	2,834
Barrels transported(m)	MMBbl	177	167	236
Total shipping fleet (TR0301-E)	#	8	12	16
Number of vessel port calls (TR0301-F)	#	505	628	486
Twenty-foot equivalent unit capacity (TR0301-G)(n)	TEU	N/A	N/A	N/A

- (a) Joint venture throughput is reported at our ownership share. Volumes for acquired pipelines are included at our ownership share for the entire period.
- (b) Includes McElmo Dome and Doe Canyon sales volumes.
- (c) Represents 100% of the production from the field. We own an approximately 97% working interest in the SACROC unit, an approximately 50% working interest in the Yates unit, an approximately 99% working interest in the Katz unit and a 99% working interest in the Goldsmith Landreth unit and a 100% working interest in the Tall Cotton field.
- (d) Net after royalties and outside working interests.
- (e) The ratio of our actual leased capacity to our estimated capacity.
- (f) Volumes include ethanol pipeline volumes.
- (g) Joint Venture throughput is reported at our ownership share.
- (h) Represents total ethanol volumes, including ethanol pipeline volumes included in gasoline volumes above.
- (i) Represents Trans Mountain pipeline system volumes.
- (j) Represents number of active and operated oil wells.
- (k) Unless otherwise noted, represents the number of railcars loaded and unloaded.
- (l) Number of rail cars were calculated using average weight and volume per rail car of 100 tons and 821 bbls respectively.
- (m) Represents the cargo barrels transported.
- (n) Twenty-foot equivalent unit capacity is a unit of cargo used to measure a ship's container carrying capacity. We do not operate marine vessels capable of carrying cargo containers.

Appendix C – Sustainability Disclosure Topics & Accounting Metrics Reporting Criteria


Topic	Accounting Metric	Criteria	SASB(a)	GRI (Core) (b)	CDP(c)	Section Page
Greenhouse Gas Emissions	Gross global Scope 1 emissions, percentage methane, percentage covered under a regulatory program	KML GHG emissions to the atmosphere of the GHGs covered under the Kyoto Protocol: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride.	TA04-11-01 TA04-01-01 EM0103-01	305-1	CC8.1- CC8.2f, CC7.9	4
	Description of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	N/A	EM0102-02 EM0101-03 EM0103-02	--	CC 3.1	6
	GHG reductions and targets	KMI GHG reductions and targets.	--	--	CC 4.1, CC 4.3	12
Air Quality	Air emissions for the following pollutants: NO _x (excluding N ₂ O), SO _x , volatile organic compounds (VOCs) and particulate matter (PM)	KML air emissions data that meets Canada's National Pollutant Release Inventory program reporting thresholds.	EM0102-03 EM0101-04 EM0103-03	305-7	--	13
	Number of refineries in or near areas of dense population	N/A	EM0103-04	--	--	14
Ecological Impacts	Description of environmental management policies and practices for active operations	N/A	EM0102-04 EM0102-05 EM0101-09	103-2	--	14
	Number and aggregate volume of spills and releases to the environment	KMI marine contractor spills and releases that result in "significant harm to the environment," per CFR 46 CFR 4.03-65 including spills or releases of: (i) Oil; or (ii) Hazardous substances in quantities equal to or exceeding, in a 24-hour period, the reportable quantity determined in 40 CFR Part 117.	TR0301-08	306-3	--	17
Employee Health & Safety	Discussion of management systems used to integrate a culture of safety and emergency preparedness throughout the value chain and throughout project life cycles	N/A	EM0102-11 TA04-06-01 TA04-15-01	103-2	--	17
	(1) Total Recordable Injury Rate (TRIR); (2) Fatality Count; (3) Average hours of Health, Safety, and Emergency Response Training for: (a) Employees, and, (b) Contractors.	TRIR calculated as total number of recordable cases x 200,000 divided by total hours worked.	TA04-05-01 EM0103-09	403-2	--	19
Marine Accidents & Safety Management	Lost time injury rate	KMI marine contractor lost time injury rate is calculated as number of lost time injuries divided by hours worked.	TR0301-12	403-2	--	21
Competitive Behavior	Amount of legal and regulatory fines and settlements from Federal pipeline and storage, rate, access, and pricing regulations	KMI defines material legal and regulatory fines and settlements as greater than \$100,000.	EM0102-08	--	--	22
Business Ethics	Description of the management system for prevention of corruption and bribery throughout the value chain	N/A	EM0101-21	205-2, 205-3	--	23

Topic	Accounting Metric	Criteria	SASB(a)	GRI (Core) (b)	CDP(c)	Section Page
Operational Safety, Emergency Preparedness, and Response	Number of reportable pipeline incidents, percentage significant	<p>Hazardous liquid pipeline systems - reportable incidents include failure of a pipeline system where there was a release of hazardous liquid or carbon dioxide resulting in the following:</p> <ol style="list-style-type: none"> (1) Explosion or fire. (2) Release of 5 gallons or more, excluding releases of 5 bbls associated with pipeline maintenance activities. (3) Fatality. (4) Injury necessitating hospitalization. (5) Property damage exceeding \$50,000. <p>Gas transmission, gathering, and distribution - reportable incidents include an event that involves a release of gas from a pipeline and that results in one or more of the following consequences:</p> <ol style="list-style-type: none"> (1) A death, or personal injury necessitating in-patient hospitalization. (2) Estimated property damage of \$50,000 or more, including loss to the operator and others, or both, but excluding cost of gas lost. (3) Unintentional estimated gas loss of three million cubic feet or more. <p>Significant is defined as:</p> <ol style="list-style-type: none"> (1) Greater than or equal to 50 bbls (2) Greater than 5 barrels highly volatile liquid (3) Fatality. (4) Injury necessitating hospitalization. (5) Property damage exceeding \$50,000 in 1984 dollars. 	EM0102-09	--	--	27
	Percentage of (1) natural gas and (2) hazardous liquid pipelines inspected	Inspection activities include internal inspection tools capable of detecting corrosion and other threats, pressure tests, direct assessments to address threats of corrosion, and other technologies that can provide equivalent understanding of the pipe condition.	TA04-13-01	--	--	28
Rail Accidents & Safety Management	Number of Federal Rail Administration (FRA) Recommended Violation Defects	Violation noted by an inspector and resulting in a Notice of Probable Violation (NOPV).	TR0401-09	--	--	29
Management of the Legal & Regulatory Environment	Discussion of the corporate positions related to government regulations and/or policy proposals that address environmental and social factors affecting the industry	N/A	TA04-10-01 TA04-16-01	415-1	--	30
Community Relations	Discussion of process to manage risks and opportunities associated with community rights and interests	N/A	EM0101-15	413-1	--	31
Security, Human Rights, and Rights of Indigenous Peoples	Discussion of engagement processes and due diligence practices with respect to human rights, indigenous rights, and operation in areas of conflict	N/A	EM0101-14	103-2	--	31


- (a) SASB Extractives & Minerals Processing Sector Oil & Gas Midstream standard EM0102, SASB Extractives & Minerals Processing Sector Exploration & Production standard EM0101, SASB Extractives & Minerals Processing Sector Refining & Marketing standard EM0103, SASB Transportation Sector Marine Transportation standard TR0301, and SASB Transportation Sector Rail Transportation standard TR0401.
- (b) GRI 103 Management Approach, GRI 305 Emissions, GRI 306 Effluents and Waste, GRI 403 Occupational Health and Safety, GRI 205 Anti-Corruption, GRI 413 Local Communities, and GRI 415 Public Policy.
- (c) CDP CC3 Strategy and Scenario Analysis, CDP CC4 Targets and Performance, CDP CC7 Emissions Methodology, and CDP CC8 Emissions Data.

Appendix D – Natural Gas STAR Summary Report

EPA generated this Natural Gas STAR Report prior to Kinder Morgan’s submission of 2017 new reduction data, so the report only includes 2017 ongoing reductions.



United States
Environmental Protection
Agency



Natural Gas STAR Summary Report (Filtered)

Partner(s)

Colorado Interstate Gas Company, El Paso Natural Gas Company, Kinder Morgan, Natural Gas Pipeline Company of America, Southern Natural Gas Company, Tennessee Gas Pipeline Company

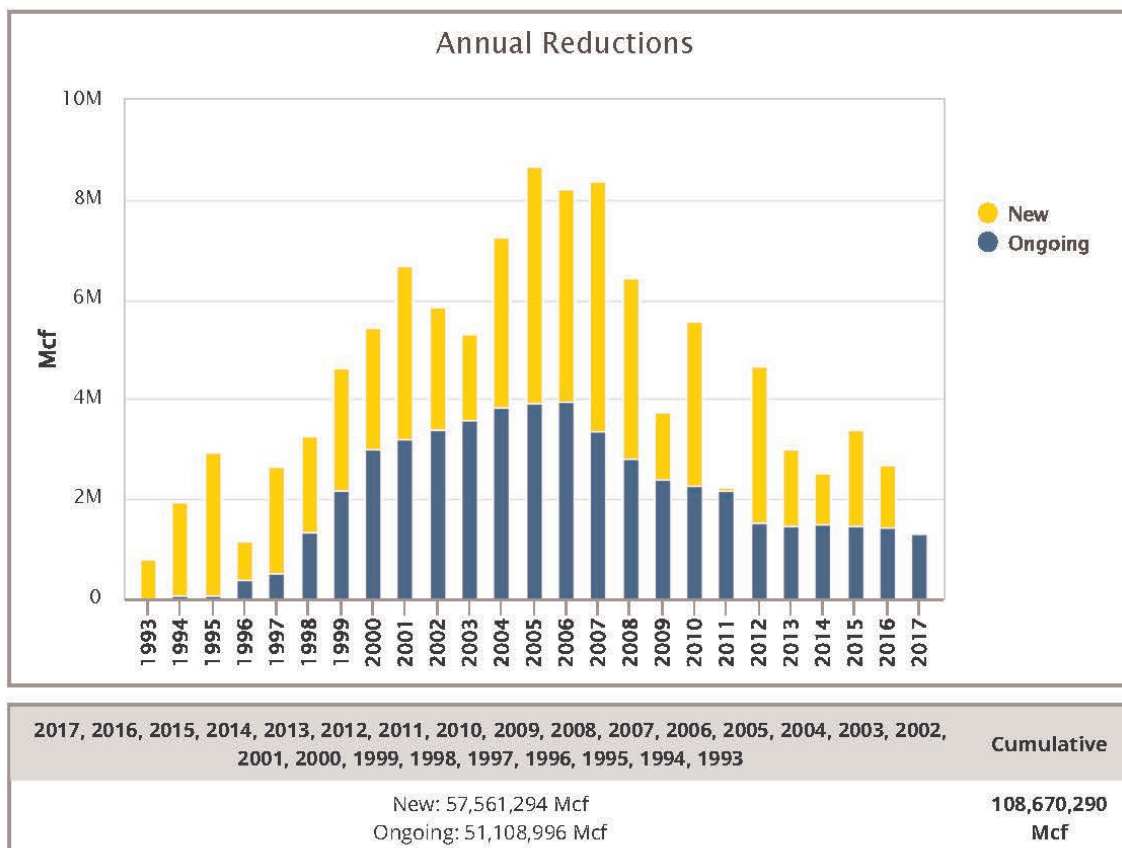
Segment(s)

Distribution, Gathering and Processing, Production, Transmission

Year(s)

2017, 2016, 2015, 2014, 2013, 2012, 2011, 2010, 2009, 2008, 2007, 2006, 2005, 2004, 2003, 2002, 2001, 2000, 1999, 1998, 1997, 1996, 1995, 1994, 1993

This report summarizes the voluntary methane emissions reductions achieved under the EPA Natural Gas STAR Program.



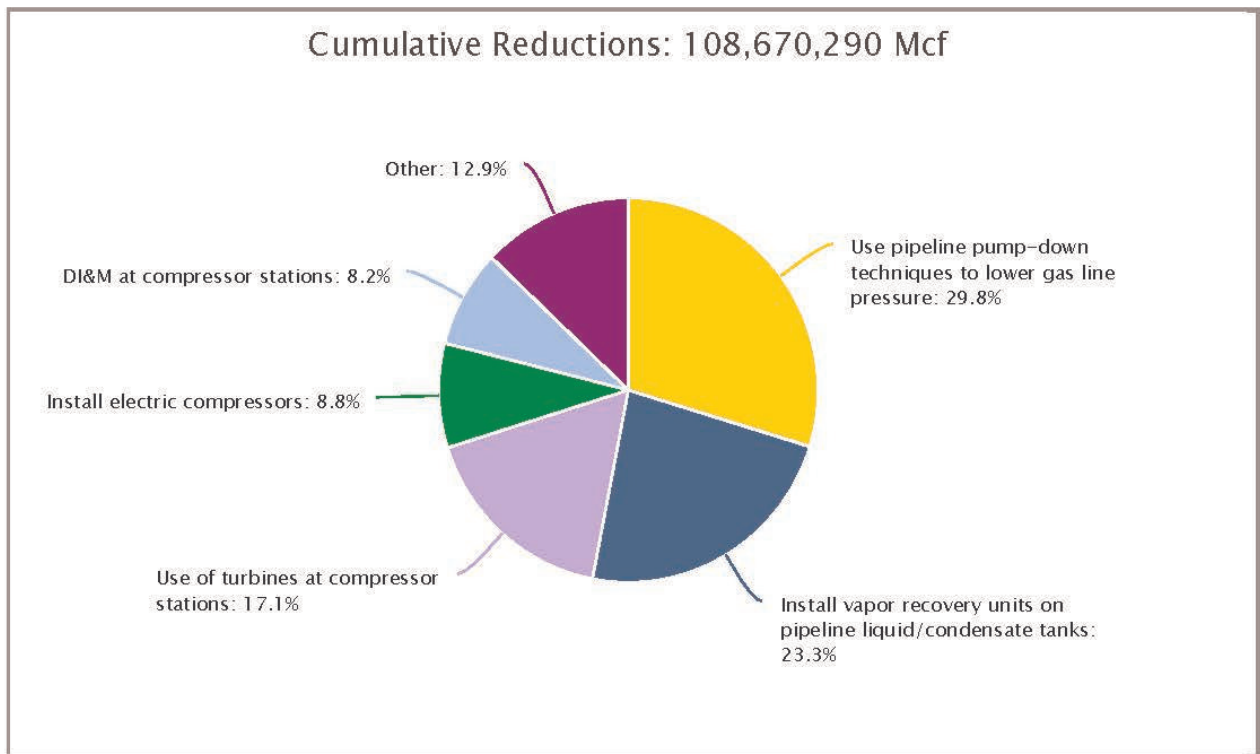
Methane Emission Reduction Equivalencies as of December 2017

See [EPA's Greenhouse Gas Equivalencies Calculator](#) for additional equivalencies and details about the [conversion units](#).

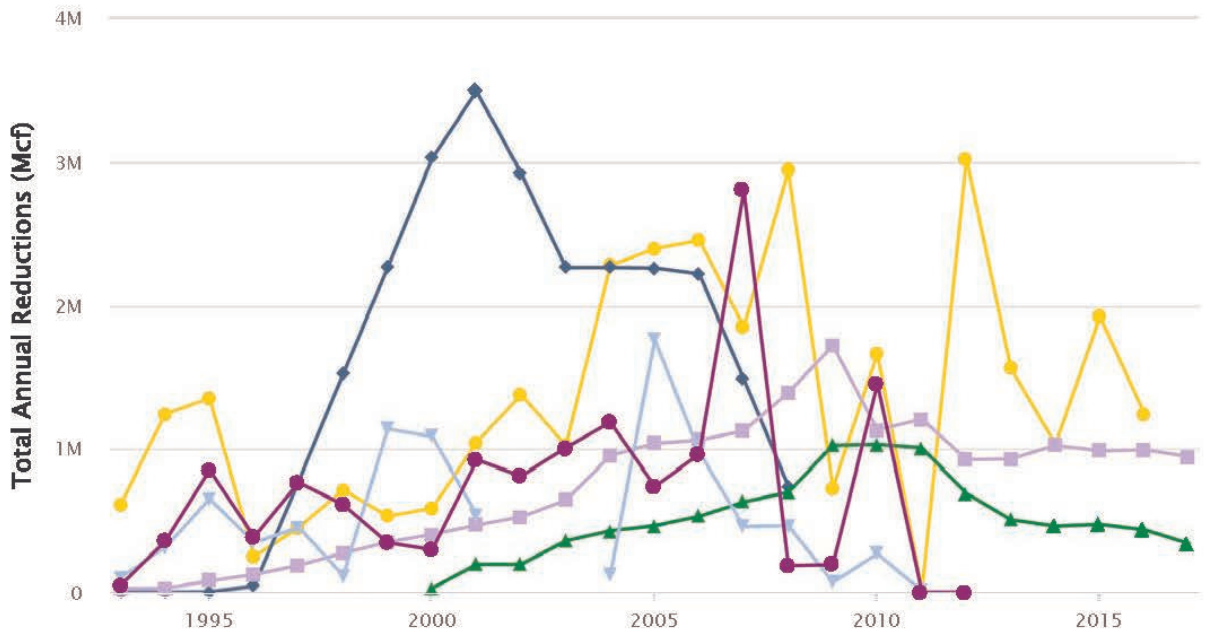
**Cumulative
(108,670,290 Mcf)**

	Tonnes CO ₂ equivalent	52,161,530 MTCO ₂ e
	CO ₂ emissions from the energy used by this many homes in one year	5,632,995 homes
	Carbon sequestered from this many acres of U.S. forests in one year	61,366,506 acres
	Value of methane saved (at \$3 per Mcf)	\$326,010,869

* This total includes the identification and rehabilitation of leaky distribution pipe.



Top Technologies and Practices



- Use pipeline pump-down techniques to lower gas line pressure
- ◆ Install vapor recovery units on pipeline liquid/condensate tanks
- Use of turbines at compressor stations
- ▲ Install electric compressors
- ▲ DI&M at compressor stations
- Other (includes all other technologies and practices)

Appendix E – KML Gross Global Scope 1 and 2 Emissions Verification Statement



1526 Cole Boulevard
 Building 3, Suite 150
 Lakewood, CO 80401

303.792.5555 PHONE
 303.792.0122 FAX

www.trcsolutions.com

VERIFICATION STATEMENT

Kinder Morgan (KM) – Kinder Morgan Canada Limited (KML)

Verification Statement

September 2018

Name: Kinder Morgan Canada Limited (KML)

Prepared By: Daryl J. Whitt, P.E.
 Sr. Project Manager

Signature:

Emissions Inventory:

The verification of the Kinder Morgan Limited (KML) greenhouse gas emissions assertion for 2015, 2016, and 2017 included consideration of 65 facilities and fleet transportation. These facilities and sources are considered to be representative of the whole of KML Operations due to the size, types of operations, and geographic distribution of these facilities. The facilities are as follows:

ALBERTA CRUDE TERMINAL, AB	FORT SASKATCHEWAN DELIVERY, AB
ALBREDA PUMP STATION, BC	GAINFORD PUMP STATION, AB
ANACORTES METER STATION, WA	HAYTER, AB
ATHABASCA PROF BUILDING, AB	HINTON PUMP STATION, AB
BASE LINE TERMINAL, AB	HOPE PIPELINE MAINTENANCE SHOP, BC
BLACKPOOL ADMIN OFFICE, BC	JASPER PUMP STATION, AB
BLACKPOOL PUMP STATION, BC	JET FUEL SYSTEM - TME OFFICE, BC
BLUE RIVER PUMP STATION, BC	KAMLOOPS HELICOPTER HANGER, BC
BROADMOOR PLAZA B, AB	KAMLOOPS STATION, BC
BURLINGTON TRAP STATION, WA	KERROBERT, SK
BURNABY SECURITY GATE, BC	KILOMETER POST 966, BC
BURNABY TECHNICAL SECURITY GATE, BC	KINGSVALE PUMP STATION, BC
BURNABY TERMINAL TANK FARM, BC	LAUREL PUMP STATION, WA
CALGARY HEAD OFFICE, AB	MCMURPHY STATION, BC
CHAPPEL PUMP STATION, BC	NITON STATION, AB
CHIP PUMP STATION, AB	NORTH 40, AB
ALAMEDA, SK	NORTH THOMPSON OFFICE, BC
REGINA MAINTENANCE YARD, SK	PORT KELLS PUMP STATION, BC
ROSETOWN, SK	REARGUARD PUMP STATION, BC
WAINWRIGHT, AB	REGINA LIQUID TERMINAL, SK
CREELMAN, SK	AIRPORT TERMINAL, BC
DARFIELD PUMP STATION, BC	SOVEREIGN, SK
EDMONTON REGIONAL OFFICE, AB	STONY PLAIN PUMP STATION, AB
EDMONTON SOUTH RAIL TERMINAL (ERT), AB	STUMP PUMP STATION, BC
EDMONTON SOUTH TERMINAL, AB	SUMAS, BC
EDMONTON TERMINAL, AB	TMEP PROJECT OFFICE, BC
EDSON PUMP STATION, AB	TRANS MOUNTAIN (BURNABY), BC
ELBOW, SK	VANCOUVER WHARVES, BC
ESTLIN, SK	VEGREVILLE, AB
FABYAN, AB	WAHLEACH PUMP STATION, BC
FERNDALE METER STATION, WA	WESTRIDGE TERMINAL, BC
FINDLATER, SK	WOLF LAKE PUMP STATION, AB
FINN PUMP STATION, BC	

These 65 facilities are representative of the GHG emissions inventory for KML, comprising of: Scope 1 direct emissions from fuel combustion, VOC control combustion, mobile, and fugitive sources of GHGs; Scope 2 indirect emissions from total purchased electricity. TRC has verified approximately 80% of the total KML GHG emissions from a representative sampling of sources at these 65 facilities for 2015, 2016, and 2017, including 95% of Scope 1 emissions and 79% of Scope 2 emissions.

The organizational boundary for these GHG inventories is KML which operates pipeline systems and terminals in Western Canada and in Washington State, USA. Boundaries include facilities, which KML exhibits operational control. Emissions include CO₂, CH₄, and N₂O from direct combustion and CO₂ and CH₄ from fugitive sources, and CO₂e emissions from indirect electricity generation. The KML Operations have no SF₆, PFC or NF₃ emissions.

Greenhouse Gas Management:

KML follows the Sustainability Accounting Standards Board (SASB) Oil and Gas Midstream Standard (2017), and the ISO 14064-1: Greenhouse Gases - Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals, with a centralized approach, to quantify GHG emissions. Primary fuel, energy and production data are collected by local representatives at each facility through standardized data request forms. A third party aggregated the data into a central spreadsheet for emissions calculations, reporting, and verification (calc_2017_KM_GHG_IPCC5 (08-02-2018) for client.xlsx, with updates provided in calc_2017_KM_GHG_IPCC5 (09-12-2018)_client.xlsx). The spreadsheet uses published fuel-based emission factors and process-specific measured emission factors to calculate Scope 1 GHG emissions from fuel combustion, equipment operation run-time, waste incineration, mobile combustion emissions, fugitive emissions, and venting emissions. Scope 2 CO₂e emissions are calculated using emission factors taken from the National Inventory Report for Canada (ECCC 2018) for Indirect Emissions, Emission Factors.

Verification Level of Assurance:

Limited Assurance: A “Limited Assurance,” following the ISO 14064-3 Greenhouse Gases - Specification with guidance for the validation and verification of greenhouse gas assertions, is appropriate for basic GHG reporting and for voluntary reduction efforts where there are no imminent requirements or compliance obligations associated with GHG reductions. This is the case for KML, as direct GHG emissions from the KML facilities are not covered by existing (or pending) regulatory requirements for GHG emissions limitations. A Limited Assurance is intended to establish the basis for stakeholder reporting and external communications; support claims of carbon neutrality, and for credit for early action; and to enable assessments of performance of GHG reduction initiatives towards voluntary targets. Given the status of the KML emissions inventory and management system, a Limited Assurance, as defined in the ISO 14064-3 Standard is appropriate for this project. This verification covers the calendar years 2015, 2016, and 2017 GHG emissions inventories for the facilities listed above.

Summary:

KML’s 2015 assertion of GHG emissions from Scope 1 direct and Scope 2 indirect sources is a total of 193,100 tonnes of CO₂e emissions. KML’s 2016 assertion of GHG emissions from Scope 1 direct and Scope 2 indirect sources is a total of 198,469 tonnes of CO₂e emissions. KML’s 2017 assertion of GHG emissions from Scope 1 direct and Scope 2 indirect sources is a total of 216,804 tonnes of CO₂e emissions. Based on its review of KML’s 2015, 2016, and 2017 GHG emissions inventory for the 65 GHG emitting facilities, including fleet operations, as identified above, TRC has found minor clerical and transcription errors, which do not significantly affect the reported results. TRC has found no evidence that the GHG assertion is not materially correct, and no evidence that KML’s assertion is not a fair and accurate representation of KML’s actual GHG emissions, with a “Limited” level of assurance, according to the ISO 14064-3 Standard.



Verifier Qualifications:

TRC was retained by KM to provide third-party verification of GHG reporting for Inventory Years 2015, 2016, and 2017 for submittals in 2018. TRC's GHG experts are qualified and experienced in performing both "Reasonable" and "Limited" assurance engagements, and have familiarity and expertise in GHG programs, reporting platforms and protocols, including; CDP, WRI/WBCSD GHG Protocol, and ISO 14064-3 Specification with Guidance for the Validation and Verification of Greenhouse Gas Assertions Standard.

The lead verifier and project manager for this engagement is Daryl J. Whitt, P.E. Mr. Whitt is a Professional Engineer with 25 years of environmental management experience in industry and consulting. He has developed GHG inventories for individual facilities, multi-national corporations, and product life cycles for a variety of industries, and by a variety of protocols. He is experienced in performing and leading GHG verifications, based on the ISO 14064-3 Standard.



Part 2 – TCFD Report

The Financial Stability Board’s TCFD has developed climate-related financial disclosures structured around the four thematic areas shown in the following chart.

Core Elements of TCFD’s Recommended Climate-Related Financial Disclosures¹⁹



Our disclosure follows the TCFD structure.

We expect to refine our disclosure as TCFD reporting evolves and matures among energy companies. In 2019, we expect to conduct an assessment of our business strategy under a 2°C scenario. By 2021 we expect to have put in place the processes, controls, and systems necessary to report our company-wide Scope 1 and 2 greenhouse gas emissions.

1.0 Governance

1.1 Board Oversight (CDP CCI.1)

Our Board is responsible to our stockholders for the oversight of our company. Our Board recognizes that effective governance is critical to achieving our performance goals while maintaining the trust and confidence of our various stakeholders, including our:

- investors,
- lenders,
- customers,
- employees,
- business partners,
- regulatory agencies,
- underwriters, and
- other stakeholders.

¹⁹ Task Force on Climate-related Financial Disclosures - Overview of Recommendations (June 2017)

Our Board has oversight responsibility for the assessment of our major business risks and opportunities, and the measures to mitigate and address such risks and opportunities. We consider climate-related risks, where appropriate, in managing our business.

While our Board is ultimately responsible for risk and opportunity oversight, Board committees assist our Board in fulfilling its oversight responsibilities by considering the risks and opportunities within their respective areas of expertise. Our Board's EHS Committee assists our Board with oversight of EHS risk and opportunity management, including increasingly climate-related risks and opportunities. The EHS Committee meets at least semi-annually and receives reports of EHS issues from our Vice President of Corporate EHS. Members of our Board with experience in EHS and regulatory matters assist in ensuring that we are operating consistent with EHS and regulatory best practices, and that the environment and safety are properly considered in Board decision making. Our Board's oversight serves to provide that our assets and long-term business strategy are resilient and adaptable to risks and opportunities, including increasingly climate-related risks and opportunities.

Our Board is briefed regularly by our CEO, President, CFO, CSO, General Counsel, and each business segment president on the following areas:

- business strategies,
- business risks and opportunities,
- major plans of action,
- risk and opportunity management policies,
- annual budgets,
- business plans,
- capital expenditures for major expansion, and
- acquisitions and divestitures

In reviewing and providing guidance in each of these areas, our Board considers climate-related risks and opportunities where appropriate.

1.2 Management's Role (CDP CCI.2)

Our CEO and President assign our business unit presidents, corporate function heads, and subject matter experts the responsibility to assess and manage actual and potential risks and opportunities, including increasingly climate-related risks and opportunities, related to our business. Those individuals in turn use various management systems to assist them with their responsibilities.

Our Vice President of Corporate EHS is responsible for providing strategic leadership for EHS matters, including increasingly climate-related matters, potentially impacting our business. Our Vice President of Corporate EHS is responsible for meeting with investors, lenders, and customers to understand their ESG questions and our risks and opportunities. Our Vice President of Corporate EHS is also responsible for implementing procedures and controls to track the data necessary for our preparation of this Report, and for sharing our results with other senior management and our Board's EHS Committee.

Our CEO and President use a series of regularly scheduled meetings to engage with our business unit presidents, corporate function heads, and subject matter experts on issues related to our business. We use those meetings to monitor progress and performance, and to discuss risks and opportunities, including, where appropriate, climate related risks and opportunities, and plans to address such risks and

opportunities. The frequency of these meetings creates a cycle of continuous assessment and improvement, as action plans are initiated and adjusted based on new information and past experience. The regular cadence and varied length of the meetings, from a few hours to most of a business day, permits extended discussion and regular follow-up on a wide range of action items. The meetings are typically scheduled one year in advance and include:

- Weekly financial and operational review meetings - CEO and President meet two hours each week to review with business segment presidents and corporate function heads financial performance of business for the week, month, quarter and year, and review EHS incidents, project progress, and near term business development opportunities and risks;
- Monthly earnings meetings - CEO and President review actual financial results for the month and the quarter, as applicable;
- Quarterly business reviews - Respective business unit presidents, COOs, and function heads provide to CEO and President a “state of the business” presentation, including medium to longer term strategies, market trends, business risks and opportunities, regulatory and litigation updates, and once or twice a year these reviews may also include a long-range outlook financial projection;
- Quarterly operations meetings - business segment COOs and the Vice President of Corporate EHS share knowledge and best practices across business segments, and review progress on actions taken to improve safety and performance;
- Annual budget reviews - CEO and President review with business segment presidents and corporate function heads annual budgets prepared by each, and establish financial targets and operational metrics against which to evaluate performance in the coming year; and
- Major project reviews - (occur monthly to quarterly) - CEO or President reviews with business segment presidents and project management personnel progress, risks and opportunities, completion dates, and performance vs. budget for projects greater than \$10 million.

A wide range of professionals in our organization typically attend these recurring meetings. They include employees with subject matter expertise applicable to managing climate-related risks and opportunities including:

- technology development;
- business administration;
- strategic management;
- finance and accounting;
- environmental and energy policy, law, and compliance;
- engineering and earth sciences;
- business continuity planning;
- energy markets and marketing;
- legal;
- insurance; and
- public relations.

For more detail on these regularly scheduled, recurring meetings, please see section **3.0 Risk and Opportunity Management** below.

These meetings focus senior management’s attention on near-, medium-, and long-term business risks and opportunities with substantial input from subject matter experts. In addition, senior management engages in ad hoc meetings on an as-needed basis to:

- review and approve new projects and acquisitions,
- review with industry consultants and other experts long-term trends (e.g. demand and supply) for the products we transport and handle, and

- identify and understand disruptive technologies or emerging policies.

The knowledge and information senior management gains from these meetings is presented to the EHS Committee and Board regularly. The Board, in turn, uses the work done at the management level to inform its decisions about the Company's future direction.

2.0 Strategy

In general, our business strategy is to:

- focus on stable, fee-based energy transportation and storage assets that are central to the energy infrastructure of growing markets within North America;
- increase utilization of our existing assets while controlling costs, operating safely, and employing environmentally sound operating practices;
- leverage economies of scale from incremental acquisitions and expansions of assets that fit within our strategy and are accretive to cash flow; and
- maintain a strong balance sheet and return value to our stockholders.

We execute our business strategy, modified as necessary to reflect changing economic conditions and other circumstances, including, among other factors, those related to identified or reasonably anticipated climate change impacts. We recognize that addressing climate change is a global priority. It is a matter that requires the cooperation and contributions of citizens, industry, the environmental community, and governments nationally and globally to advance the broad alignment of environmental responsibility and economic opportunity.

To that end, we operate our businesses in an ethical and responsible manner. We invest in our assets to operate them safely and to protect our employees, the environment, and the communities in which we operate. We work collaboratively within our industry and with governments, environmental groups, Indigenous Peoples, and communities to build our understanding of the issues around climate change and seek potential solutions. We contribute to, embrace, and implement responsible changes in government policy and regulations in North America as they emerge.

Our forward-looking strategies and financial decisions are driven primarily by market opportunities and corporate objectives and responsibilities. We make long-term strategic decisions with the deliberate intention of creating sustainable competitive advantages. To sustain and improve upon our competitive advantages we project and plan for reasonably foreseeable changes, including in governmental regulations, potentially impacting the business and markets in which we operate and to act responsively to such changes as they are implemented. Market and policy responses to climate change are an increasingly important factor in our forward-looking strategic and financial decision-making.

Our understanding and planning for climate-related impacts related to our businesses is of increasing importance because our business model is built to support two principal objectives:

- helping customers by providing safe and reliable natural gas, liquids products and bulk commodity transportation, storage and distribution; and
- creating long-term value for our shareholders.

2.1 Potential Climate-Related Risks, Opportunities, and Impacts (CDP CC2.1)

The need to consider climate-related issues both at the strategic level and at the operational level has been increasing. As our primary business is to transport, store, and distribute energy products, the impact of climate-related risks and opportunities on us are, however, often derivative of the impact on our customers.

We integrate into our management system discussions the identification, assessment, and management of climate-related risks and opportunities across our various time horizons. As discussed in Section 1.2 Management's Role above, we use a series of meetings to monitor the performance of our businesses, and to identify and address opportunities and risks related to the businesses over a variety of time horizons, including:

- near-term - immediate to one year,
 - Management process:
 - weekly, monthly, and quarterly financial and operational reviews, and
 - annual budget reviews;
 - Examples of climate risks and opportunities that are considered:
 - hurricane identification, preparation, and recovery;
 - wildfire identification, preparation, and recovery;
 - energy efficiency and alternative sources of energy;
 - emissions controls; and
 - compliance costs;
- medium-term - one to five years,
 - Management process:
 - quarterly business reviews,
 - long range outlook, and
 - project approval meetings;
 - Examples of climate risks and opportunities that are considered:
 - changes in demand for services or changes in customer preferences;
 - potential production capacity increases and efficiency gains;
 - change in ability to obtain permits or other regulatory approvals; and
 - public opposition due to climate concerns;
- long-term - 5 to 30+ years,
 - Management process:
 - quarterly business reviews and
 - ad hoc meetings with experts.
 - Examples of climate risks and opportunities that are considered:
 - changes in long-term demand for the products we transport and store;
 - potential lower emissions options or replacements for those products,;
 - changes in public policy that may affect growth opportunities in our traditional lines of business; and
 - CO₂ sequestration opportunities.

The TCFD divides climate-related risks into two categories: transitional and physical. Transitional risks are risks related to the transition to a lower-carbon economy, such as policy constraints on emissions, carbon taxes, and shifts in market demand and supply. The TCFD groups transitional risks into four categories:

- policy and legal risk,
- technological risk,
- market risk, and
- reputational risk.

Physical risks are those associated with physical impacts from climate change that could affect assets and operations. Physical risks include the disruption of operations or destruction of property. The TCFD divides physical risk into acute and chronic risks. Acute risks include physical damage from variations in weather patterns, such as severe storms, floods, and drought. Chronic risks include sea-level rise and desertification.

Both transitional and physical climate-related risks may affect our business. We seek to include reasonably anticipated policy directions and regulatory decisions into our business models and projects.

In general, expanding our existing assets and constructing new assets is part of our growth strategy. A variety of factors outside of our control can cause delays in our construction projects. Some examples of these factors include difficulties in obtaining rights-of-way, permits, or other regulatory approvals. Public opposition to our projects can exacerbate these factors. Inclement weather and natural disasters can increase costs or cause delays in construction. Significant cost overruns or delays can have a material adverse effect on our return on investment, results of operations, and cash flows. These factors can result in project cancellations or limit our ability to pursue other growth opportunities.

Some of our pipelines, terminals, and other assets are located in areas susceptible to hurricanes, earthquakes, forest fires, and other natural disasters. Our shipping vessels also operate in areas with similar risks. Natural disasters can damage or destroy our assets or disrupt the supply of the products we transport or store. In the third quarter of 2017, Hurricane Harvey caused disruptions in our operations near the Texas Gulf Coast and, as of December 31, 2017, we had incurred \$27 million in repair costs to our assets in that area. Natural disasters can similarly affect our customer’s facilities. Circumstances could arise in which our losses could exceed our insurance coverage, resulting in material adverse impact to our assets, financial condition, and operational results.

The following two tables contain a list of potential transitional risks and potential physical risks as well as the following:

- potential financial impacts related to such risks,
- available strategy and mitigation measures with respect to such risks, and
- page numbers where the topics are discussed in our Report.

Potential Transitional Risks			
Potential Climate-Related Risk	Potential Financial Impact	Available Strategy and Mitigation Measures	Page
<i>Policy & Legal</i>			
<ul style="list-style-type: none"> – Increased climate change-related regulation and policies resulting in: <ul style="list-style-type: none"> ◦ Higher emission fees and carbon taxes ◦ Higher fuel prices ◦ Additional emission reporting obligations ◦ Mandates on and regulation of customers’ products or our services 	<ul style="list-style-type: none"> – Higher compliance costs – Higher fuel costs – Reduced demand for our traditional services 	– Engaging with regulators, industry organizations, and NGOs	– p 8
		– Systematic monitoring of regulatory proposals and implementation of compliance programs	– p 29
		– Offsetting, reducing, and managing emissions	– p 12
		– Managing energy use and improving efficiency	– p 11
		– Developing new services	– p 53

Potential Transitional Risks

Potential Climate-Related Risk	Potential Financial Impact	Available Strategy and Mitigation Measures	Page
Technology			
<ul style="list-style-type: none"> – Substitution of customers’ existing products with lower emission options – Lower potential demand for existing products due to greater energy efficiencies 	<ul style="list-style-type: none"> – Reduced demand for our traditional services – Write-offs and early retirement of existing assets – Increased customer credit risk, including bankruptcies 	<ul style="list-style-type: none"> – Negotiating contracts with longer terms, with higher per-unit pricing and for a greater percentage of our available capacity 	– p 53
		<ul style="list-style-type: none"> – Adjusting investment evaluation assumptions to assume lower terminal values 	– p 53
		<ul style="list-style-type: none"> – Continued discipline in accounts receivable management and customer credit protections – Developing new services 	– p 53
Market			
<ul style="list-style-type: none"> – Changing consumer behavior reducing demand for customers’ products – Uncertainty in market signals – Increased cost of raw materials 	<ul style="list-style-type: none"> – Reduced demand for our traditional services – Increased production costs due to higher energy prices – Abrupt and unexpected shifts in energy prices and costs – Repricing of oil field reserves 	<ul style="list-style-type: none"> – Negotiating contracts with longer terms, higher per-unit pricing and for a greater percentage of our available capacity. 	– p 53
		<ul style="list-style-type: none"> – Supporting sector trade group efforts to communicate need for and benefits of customers’ goods and our services 	– p 8
		<ul style="list-style-type: none"> – Managing energy use and improving efficiency – Risk management and hedging programs 	– p 11 – p 53
Reputation			
<ul style="list-style-type: none"> – Stigmatization of sector – Increased stakeholder concern or negative stakeholder feedback 	<ul style="list-style-type: none"> – Increase in cost of capital – Increase in cost of public relations – Decreased access to public capital markets 	<ul style="list-style-type: none"> – Adjusting ESG disclosure to target the financial sector by reporting per SASB, TCFD, and other reporting frameworks 	– p 1
		<ul style="list-style-type: none"> – Reducing need to access capital markets, increased internal funding 	– p 53
		<ul style="list-style-type: none"> – Supporting sector trade group efforts to communicate need for and benefits of customers’ goods and our services 	– p 8

Potential Physical Risks

Potential Climate-Related Risk	Potential Financial Impact	Available Strategy and Mitigation Measures	Page
<i>Acute</i>			
<ul style="list-style-type: none"> – More frequent and severe weather events (e.g., hurricanes and floods) leading to business interruption and damage across operations and supply chain 	<ul style="list-style-type: none"> – Reduced revenue as a result of business interruption – Write-offs and increased costs for damaged property – Increased insurance costs 	<ul style="list-style-type: none"> – Business continuity planning – Environmental assessments and management plans – Maintaining necessary types and amounts of insurance 	<ul style="list-style-type: none"> – p 24 – p 14 – p 53
<i>Chronic</i>			
<ul style="list-style-type: none"> – Long-term shifts in climate patterns, possibly resulting in new storm patterns, coastal flooding, and chronic heat waves 	<ul style="list-style-type: none"> – Damage from rising sea levels 	<ul style="list-style-type: none"> – Business continuity planning 	<ul style="list-style-type: none"> – p 24

The TCFD recognizes that an organization’s efforts to mitigate and adapt to climate change also produce opportunities for the organization. The TCFD groups those opportunities into five categories:

- resource efficiency,
- energy source,
- products/services,
- markets, and
- resilience.

As an energy infrastructure company, we recognize and expect that future energy demand will continue to be met in part by a growing proportion of renewable energy sources. Today, the world still relies on coal, oil and natural gas for the vast majority of its energy needs. While delivering access to the secure energy the world needs, we are also pursuing opportunities related to the global effort to address climate change. Specifically, we are:

- expanding our natural gas transmission business which makes access to lower carbon and renewable energy more feasible,
- pursuing opportunities with our producing partners to increase energy efficiency along the value chain,
- making energy efficiency improvements in our operations, and
- exploring new low-carbon technologies and business models.

The following table contains a brief listing of:

- potential opportunities,
- potential financial impacts,
- our strategy and enhancement measures, and
- page numbers where the topics are discussed in this report.

Potential Opportunities

Climate-related Opportunities	Potential Financial Impact	Available Strategy and Enhancement Measures	Page
<i>Resource Efficiency</i>			
– Use of more efficient equipment	– Reduced operating costs through efficiency gains and cost reductions	– Increase utilization of our existing assets while controlling costs	– p 47
– Use of more efficient production and distribution processes	– Increased production capacity, resulting in increased revenues	– Leverage economies of scale from incremental acquisitions and expansions of assets	– p 47
<i>Energy Source</i>			
– Use of lower-emission sources of energy	– Returns on investment in low-emission technology	– Largest portion of capital allocation is to lower-carbon natural gas infrastructure	– p 53
– Use of supportive policy incentives	– Increase capital availability as more investors favor lower-emissions products	– Supporting sector trade group efforts to communicate need for and benefits of customers’ goods and our services	– p 8
– Use of new technologies	– Reputational benefits resulting in increased demand for services		
– Participation in carbon market	– Increased value of fixed assets		
– Shift toward decentralized energy generation			
<i>Products and Services</i>			
– Development and/or expansion of low emission goods and services	– Increased revenue through demand for lower emissions products and services	– Largest portion of capital allocation is to lower-carbon natural gas infrastructure	– p 53
– Ability to diversify business activities	– Better competitive position to reflect shifting consumer preferences, resulting in increased revenues	– Supporting sector trade group efforts to communicate need for and benefits of customers’ goods and our services	– p 8
– Shift in consumer preferences			
<i>Market</i>			
– Increase demand for natural gas services	– Increased revenue from increased demand for natural gas gathering, processing, transportation, storage, and distribution,	– Largest portion of capital allocation is to lower-carbon natural gas infrastructure	– p 53
– Use of public-sector incentives for carbon sequestration	– Increased revenues through access to new and emerging carbon sequestration markets	– Pursuit of carbon sequestration opportunities	– p 53
– Increased demand for reliable fuel for power generation		– Develop new services focused on deliverability	
<i>Resilience</i>			
– Participation in renewable energy programs and adoption of energy efficiency measures	– Increased market valuation through resilience planning	– Business Continuity Planning	– p 24
	– Increased reliability of supply chain and ability to operate under various conditions		

2.2 Financial Planning Considerations

We prioritize risks and opportunities based upon likelihood and significance. We generally give highest priority to potential risks and opportunities considered more probable and more significant. When we assess capital allocation decisions we may adjust required levels and thresholds in the following criteria:

- rates of return on capital;
- payback periods;
- market demand projections;
- projected operating costs, including compliance costs;
- terminal value projections;
- customer contract durations;
- customer and equity partner credit worthiness and protections;
- customer and equity partner concentration;
- per-unit pricing;
- percentage of contracted capacity; and/or
- level of equity participation and partnership.

We have a systematic, disciplined approach to managing working capital through a weekly review of accounts receivable, customer credit-worthiness, and required credit protections. We also have developed and continue to improve our company culture committed to thoughtful cost control.

2.3 Resilience of Our Strategy

Over the past twenty years, we have operated our businesses successfully in a constantly changing regulatory, technology, and market environment. We attribute our success in part to our early responses and course adjustments to market and industry catalysts.

While we adjust course to respond as market and industry catalysts develop, we do not change many attributes related to our operations and strategy, including our:

- discipline in operating our assets safely and reliably,
- disciplined capital allocation,
- management focus on details, and
- focus on stable fee-based energy infrastructure.

We believe these attributes will continue to serve us and our shareholders well in the future.

We routinely evaluate long-term market projections to best position ourselves to capitalize on expected future trends. We also mitigate long-term risks by owning and operating a diversified, highly-contracted asset base of primarily midstream energy infrastructure that is central to the North American economy. Approximately 90% of our estimated current year cash flow is generated from take-or-pay or other fee-based arrangements. Including our financial hedges, over 95% of our current year cash flow is not directly impacted by commodity prices.

We regularly evaluate long-term risks and opportunities, taking into consideration third-party macro-level projections. We generally weigh most heavily the projections the third-parties present as most likely to occur. We regularly evaluate the assumptions that drive the projected range of most likely outcomes. Our subject matter experts assess these projections based on their knowledge and experience, in an effort to best position and leverage our assets to serve our customers in the future.

In IEA's New Policies Scenario and EIA's Reference Case projections, hydrocarbon fuels remain resilient.²⁰ These global and domestic projections indicate consistent growth of natural gas, crude oil, and NGLs for decades to come. Hydrocarbon fuels are affordable, dependable, and plentiful. Given advancements in technology, hydrocarbon fuels are becoming even more affordable, plentiful, and environmentally sustainable. Hydrocarbon fuels are supported by an enormous, sophisticated, worldwide infrastructure network. It would take decades and substantial cost for another technology to overtake this existing infrastructure network.

Increased natural gas use has been, and will continue to be critical to meeting climate goals. In the U.S., natural gas-fired power generation is replacing coal-fired power generation as coal plants are retired. Largely as a result of natural gas-fired power plants, CO₂ emissions from U.S. electricity generation in 2017 were at their lowest rate since 1988, and 28% below their 2007 levels, notwithstanding an increase in the U.S. population from 245 million in 1988 to 326 million in 2017. Stated alternatively, over the 29 years from 1988 to 2017, U.S. population increased over 33%, but the CO₂ emission from electricity generation remained flat. Natural gas power plants also backstop intermittent energy sources like solar and wind generation. The IEA forecasts in their New Policies Scenario that natural gas demand will grow by more than 45% from 2016 through 2040.²¹ North American hydrocarbon demands are varied and growing, and exports are expanding.

With energy demand, including hydrocarbon demand, growing globally, our network of assets will be in demand and growing for decades to come. As the energy mix changes, we are expanding our offerings to reflect those changes. For example, we are putting more focus on marketing the deliverability and reliability of our natural gas transportation and storage network, including as a compliment to renewable energy. We continue to closely monitor these trends and evaluate potential opportunities for, as well as threats to, our businesses.

In 2019, we expect to conduct an assessment of our business strategy under a 2°C scenario.

3.0 Risk and Opportunity Management

Our management system is designed to help us monitor for and assess various types of risks and opportunities, including those related to climate. We identify and evaluate risks and opportunities based on both actual and potential likelihood and significance. Depending on the nature of the risk or opportunity being considered, we evaluate consequences based on a variety of attributes, such as:

- health and safety,
- financial,
- operational, and
- environmental.

Our integrated and comprehensive management system promotes continuous improvement and adjustment to changing conditions, including actual and potential risks and opportunities in the near-, medium-, and long-term. This integrated and comprehensive approach helps facilitate a resiliency for our assets and business strategy.

²⁰ IEA, 2017 World Energy Outlook - New Policies Scenario, November 2017 and EIA, Annual Energy Outlook 2018, February 2018.

²¹ IEA, 2017 World Energy Outlook - New Policies Scenario with 2016E base year, November 2017.

Our management system establishes intentional, routine risk and opportunity management activities that are designed to achieve the following objectives:

- maintain financial and operational discipline;
- reveal and manage risks and opportunities, including increasingly climate-related risks and opportunities; and
- continually improve our performance and culture.

Our management system processes and procedures are effected through regular meetings, processes, and reports that establish a rhythm for our business as outlined in the following table.

Meeting and Topics Covered	Personnel Involved in Process
The noted meetings cover other topics and there are additional regular meetings not listed below.	
Weekly	
<p><i>Monday Management Meeting</i></p> <ul style="list-style-type: none"> – Financial performance vs. budget for the following: <ul style="list-style-type: none"> – demand for our services – costs of compliance, fuel, energy, production, and public relations – General business risks and opportunities – EHS and pipeline encroachment incidents – Customer credit risk changes and accounts receivable activity – Impacts on business from weather, natural disasters, and other incidents, including climate-related changes 	<ul style="list-style-type: none"> – CEO, President, CSO, Business Segment and Operating Company Presidents, CFO, General Counsel, Corporate Department Management
Monthly	
<p><i>Business Segment Operations Meeting</i></p> <ul style="list-style-type: none"> – Progress toward reducing risk of high consequence assets and operations – Internal and external incidents, near misses and lessons learned – Process improvements, efficiency and productivity improvements – Progress on expanding systems to more assets and operations – Goals, and more regulatory and other requirements – Leading indicators and their significance – Significant results of internal and external audits, evaluations, and assessments including status of corrective actions – Stakeholder feedback – Other key performance indicators 	<ul style="list-style-type: none"> – Business Segment and Operating Company Presidents, COOs, Operations and EHS Vice Presidents and Directors
<p><i>Major Project Review for each business segment</i></p> <ul style="list-style-type: none"> – Climate-related permits and compliance activities – Projected capital expenditures – Projected in service date – Remaining risks to opportunities for project costs or schedule – Projected EBITDA – Returns – Safety – Quality – Regulation – Impacts from weather, natural disasters, and other incidents – Supply chains 	<ul style="list-style-type: none"> – CEO, President, Business Segment and Operating Company Presidents, CFO, Project Management, Corporate Department Management

Meeting and Topics Covered

The noted meetings cover other topics and there are additional regular meetings not listed below.

Personnel Involved in Process

Quarterly

Quarterly Business Review for each business segment

- Financial performance
- Near-, medium-, and long-term business drivers and market dynamics including climate-related risks and opportunities
- Commercial discussions
- Strategy
- Progress and plans with respect to reducing risk of high consequence assets and operation
- Internal incidents and lessons learned
- Expansion project updates
- Efficiency and productivity enhancements
- Development and deployment of compliance systems
- Progress on contractor safety programs
- The status and effectiveness of corrective actions resulting from previous management reviews

– CEO, President, Business Segment Operating Company Presidents, CFO, General Counsel, CSO, Corporate Department Management, COO, Department Vice Presidents and Directors

Operations Group Meeting

- Proposed best practices for consideration across business segments
- Conflicts in interpretations of regulatory requirements identified by the EHS or legal departments
- Proposed modifications to the OMS
- Updates from Working Groups
- Internal and external incident and near miss trends and lessons learned

– Vice President Corporate EHS, Business Segment COOs, Working Group Leads

Operations Working Group Meetings

- Operational considerations and regulatory risks
- Incident Review
- Pipeline Integrity
- Operations Management System
- Security
- Disaster Preparation, Response and Recovery
- Regulatory Compliance

– Subject Matter Expert Working Group Members

Periodically

Long-Range Outlook Update

- Five-year projections of:
 - Revenue
 - Capex, Opex, Margins
 - Adjust budget for projects, contract changes, etc.
 - Translated to an annual plan

– CEO, President, Business Segment Operating Company Presidents and COOs, CFO, General Counsel, CSO, Corporate and Segment Financial Planning

Meeting and Topics Covered

The noted meetings cover other topics and there are additional regular meetings not listed below.

Personnel Involved in Process

Annually

Budget

– Manager level and above

- Staffing, assets, systems and other resources needed for business segments to operate in a safe, environmentally sound and efficient manner, including increasingly climate-related changes and issues
- revenue impacts
- compliance costs
- fuel costs
- insurance costs
- public relations costs
- production costs
- Capital expenditures, operating expenditures, and margins
- Adjust budget for projects, contract changes, etc.
- Translated to a monthly plan

In addition to our management system, we maintain other risk management programs. These are fit-for-purpose management system programs to address specific risks, such as:

- Energy commodity price risk,
- Process Safety Management/Risk Management Plans,
- IMP,
- Responsible Care®, and
- Critical Facility Security Plans.

4.0 Metrics and Targets

4.1 Climate-Related Metrics

The following tables include metrics to measure climate-related risk and opportunities.

	Year Ended December 31		
	2015	2016	2017
KML gross global Scope 1 & 2 emissions (Metric tons CO₂e)			
KML gross global Scope 1 emissions from continuing operations	5,706	9,869	16,375
KML gross global Scope 2 emissions from continuing operations	63,985	68,898	79,924
KML total gross global Scope 1 and 2 emissions from continuing operations	69,691	78,767	96,299
Percentage covered under a regulatory program from continuing operations	0%	0%	0%
Percentage methane from continuing operations	3%	2%	1%

	Year Ended December 31		
	2015	2016	2017
GHG Reductions			
Voluntary GHG emissions reductions (metric tons CO ₂ e)	1,626,983	1,284,945	2,209,674

We anticipate reporting our company-wide GHG Scope 1 and Scope 2 emissions beginning in 2021. Our current U.S. GHG emissions reporting infrastructure is designed primarily to meet the requirements of the EPA GHGRP, Natural Gas STAR Program, and Methane Challenge Program. We are currently developing the additional processes, procedures, information technology systems, personnel, and controls necessary to expand our emissions reporting infrastructure to meet the SASB Midstream Standard. In addition, before reporting publicly, we intend to go through pre-assurance readiness testing using the standards of the American Institute of Certified Public Accountants. Also before reporting publicly, we intend to address any significant observations and recommendations resulting from the pre-assurance readiness testing. We intend to provide progress updates in future Reports.

4.2 Climate-Related Targets (CDP CC4.1)

Through ONE Future, we have committed to achieve a methane emissions intensity target for our natural gas transmission and storage operations by 2025. Our target is methane emissions per volume of throughput of 0.31%. We expect to complete our first ONE Future status report before the end of 2018, in which we expect to include 2017 actual methane emissions compared to our target.

Since the inception of the EPA GHGRP, our annual leak inspections included compressor stations subject to the EPA GHGRP. In 2017, we inspected additional natural gas transmission and storage compressor stations not subject to the GHGRP, as part of our plan to implement voluntary annual leak inspections at each of our natural gas transmission and storage compressor stations by 2021. We plan to expand voluntary inspections in annual increments of approximately 20% on average over the five years from 2017-2021.

We conduct leak inspections using optical gas imaging cameras, or other EPA-approved technologies. We conduct methane emission surveys with the components operating in the as-found condition. We identify and evaluate leaks during the inspections and repair them as appropriate.

We plan to evaluate and implement other methane emission reduction technologies or work practices on a case-by-case basis. We report to EPA annually other specific technologies and work practices that we implement.

Important Information About Policies, Procedures, Practices and Forward-Looking Statements

This report includes descriptions of various policies, values, standards, procedures, processes, systems, programs, initiatives, assessments, technologies, practices and similar measures in connection with discussion of Kinder Morgan's overall operations and compliance systems ("Policies and Procedures"). References to Policies and Procedures in this report do not represent guarantees or promises about their efficacy, or any assurance that such measures will apply in every case, as there may be exigent circumstances, factors, or considerations that may cause implementation of other measures or exceptions in specific instances.

This report includes forward-looking statements within the meaning of applicable securities laws, including the U.S. Private Securities Litigation Reform Act of 1995, Section 21E of the Securities and Exchange Act of 1934, and securities laws in Canada. Generally the words "expects," "believes," "anticipates," "plans," "will," "shall," "estimates," "intends," and similar expressions identify forward-looking statements, which are generally not historical in nature. In particular, statements, express or implied, concerning the occurrence, impact or timing of future actions, conditions or events, future operating results or our ability to generate revenues, income or cash flow or to pay dividends, are forward-looking statements.

Forward-looking statements are not guarantees of performance. They are included for the purpose of providing management's current expectations and plans for the future, based on the beliefs and assumptions of management and the information currently available to management. Forward looking statements are subject to risks and uncertainties. Although Kinder Morgan believes that forward-looking statements in this report are based on reasonable assumptions, it can give no assurance that any such forward-looking statements will materialize.

Important factors that could cause actual results to differ significantly from those expressed in or implied by these forward-looking statements include our ability to estimate accurately the time and resources necessary to meet the reporting and assurance testing standards applicable to additional measures we expect to include in future reports; and the other risks and uncertainties described in (i) KMI's reports filed with the SEC, including its Annual Report on Form 10-K for the year-ended December 31, 2017 (under the headings "Risk Factors" and "Information Regarding Forward-Looking Statements" and elsewhere) and its subsequent reports, which are available through the SEC's EDGAR system at www.sec.gov, and on KMI's website at www.kindermorgan.com, and (ii) KML's reports filed with the SEC and on SEDAR, including its Annual Report on Form 10-K for the year-ended December 31, 2017 (under the headings "Risk Factors," "Information Regarding Forward-Looking Statements," "Management's Discussion and Analysis of Financial Condition and Results of Operations" and elsewhere) and KML's subsequent reports, which are available through the SEC's EDGAR system at www.sec.gov, under KML's profile on SEDAR at www.sedar.com and on KML's website at www.kindermorgancanadalimited.com.

Forward-looking statements speak only as of the date they were made, and except to the extent required by law, Kinder Morgan undertakes no obligation to update any forward-looking statement because of new information, future events or other factors. Because of these risks and uncertainties, readers should not place undue reliance on these forward-looking statements or use them for anything other than their intended purpose.

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We are in the process of identifying and developing the processes, procedures, and resources we expect to need to meet standards and limited assurance testing applicable to this report. Except where and how specified for KML GHG emissions, this report and the data presented have not been externally audited, assured, attested, or verified. We make no warranty, express or implied, regarding accuracy, adequacy, completeness, legality, reliability or usefulness of this report.