OIL & GAS MIDSTREAM
Research Brief

SASB’s Industry Brief provides evidence for the material sustainability issues in the industry. The brief opens with a summary of the industry, including relevant legislative and regulatory trends and sustainability risks and opportunities. Following this, evidence for each material sustainability issue (in the categories of Environment, Social Capital, Human Capital, Business Model and Innovation, and Leadership and Governance) is presented. SASB’s Industry Brief can be used to understand the data underlying SASB Sustainability Accounting Standards. For accounting metrics and disclosure guidance, please see SASB’s Sustainability Accounting Standards. For information about the legal basis for SASB and SASB’s standards development process, please see the Conceptual Framework.

SASB identifies the minimum set of sustainability issues likely to be material for companies within a given industry. However, the final determination of materiality is the onus of the company.

Related Documents

- Non-Renewable Resources Sustainability Accounting Standards
- Industry Working Group Participants
- SASB Conceptual Framework

INDUSTRY LEAD

Himani Phadke

CONTRIBUTORS

Andrew Collins
Henrik Cotran
Stephanie Glazer
Anton Gorodniuk
Jerome Lavigne-Delville
Nashat Moin
Arturo Rodriguez
Jean Rogers
Gabriella Vozza

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INTRODUCTION

The Oil & Gas Midstream industry serves as critical infrastructure for the transport and storage of hydrocarbons that serve the energy needs of the economy. Growth in shale oil and gas production in the U.S. is creating the need for an expanded midstream network of pipelines, rail, tankers, and terminals.

While facilitating the transport of hydrocarbons from areas of oil and gas production to consumer markets, the industry essentially handles hazardous materials, and as such, its environmental and social impacts can be significant if not properly managed. The construction and operation of midstream assets have the potential to create environmental and social externalities that companies in the industry must address in order to protect and enhance shareholder value.

In recent years, regulation and public opinion have focused on greenhouse gas emissions from the Non-Renewable Resources sector and their impact on climate change. Increased attention is being paid to enhanced conservation of ecosystems, as well as safety of oil and gas activities after several high-profile accidents and spills. Furthermore, several midstream companies own or operate pipeline infrastructure that is difficult to replicate in a particular area and requires large capital expenditures. This creates natural monopoly conditions. Pipeline operations are therefore heavily regulated to ensure activities do not hinder competition. Therefore, management (or mismanagement) of material sustainability issues has the potential to affect company valuation through impacts on profits, assets, liabilities, and cost of capital.

If Oil & Gas Midstream companies reported metrics on the material sustainability risks as well as opportunities that could affect value in the near- and long-term in their regulatory filings, then investors would obtain a more holistic and comparable view of performance. This would include both positive and negative externalities, and the non-financial forms of capital that the industry relies on for value creation.

Specifically, performance on the following sustainability issues will drive competitiveness within the Oil & Gas Midstream industry:

- Reducing direct greenhouse gas (GHG) emissions and harmful air pollutants;
- Mitigating ecological impacts of network construction and operations;
- Ensuring competitive behavior through fair pricing and access to the midstream infrastructure; and
- Ensuring operational safety, maintaining a culture of safety among workers, and taking adequate actions to prevent and address emergencies.
INDUSTRY SUMMARY

The Oil & Gas Midstream industry consists of companies involved in the transportation or storage of natural gas, crude oil and refined petroleum products. Midstream natural gas activities involve gathering, transporting, and processing of natural gas from the wellhead, removal of impurities, production of natural gas liquids, storage, pipeline transport, and the shipping, liquefaction or regasification of liquefied natural gas (LNG). Midstream oil activities, meanwhile, mainly involve transport of crude oil and refined products over land, using a network of pipes and pumping stations, as well as trucks and rail cars. Tanker ships or barges transport oil and refined products over oceans and rivers. Companies that operate bulk stations and terminals, as well as those that manufacture and install storage tanks and pipelines, are also part of this industry.

Integrated oil and gas companies may operate across two or more parts of the oil and gas value chain, including midstream operations discussed here, upstream (exploration and production) operations, and refining and marketing operations. Sustainability disclosure topics specific to the three components of the value chain are discussed in separate SASB Industry Briefs.

The global Oil & Gas Midstream industry has an annual revenue of around $670 billion.\(^1\) The Midstream industry has on- and offshore operations in North America, mainly in the U.S. The midstream companies listed in Appendix I had gross margins ranging from 2.07 percent to 7.31 percent in fiscal year 2013, and net income margins of 0.22 percent to 5.44 percent in the same year.\(^2\)

Transmission and distribution, which involve the undertaking of both midstream companies and utilities, comprise nearly half of the cost of delivered gas. This signifies the importance of pricing in this segment for the end-user price of gas. On the other hand, distribution and marketing costs are only one-tenth of the price of gasoline at the pump.\(^3\)\(^4\) In the U.S., the Federal Energy Regulatory Commission (FERC) regulates the rates for interstate pipeline transportation. Pipelines are considered natural monopolies, with pipeline companies holding significant market power, since pipeline infrastructure in a particular area generally provides control over all the oil or gas transported to the area.\(^5\) Pipeline companies can only increase rates if they can prove that they experienced a rise in the cost of operations or undertook investments to improve infrastructure. Due to the nature of pipeline construction, there is a high barrier to entry in this segment of the Midstream industry.

Midstream companies also generate revenues from fees charged for transportation of oil or gas through other means, such as trucks or barges, and for storage services.\(^6\) Generally, Oil & Gas Midstream industry revenues are driven by increases in the demand for oil and gas, which leads to higher volumes transported and stored. As utility companies turn increasingly to

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1 Industry composition is based on the mapping of the Sustainable Industry Classification System (SICS\(^\text{TM}\)) to the Bloomberg Industry Classification System (BICS). A list of five representative companies appears in Appendix I.
natural gas, and as domestic unconventional hydrocarbon production is growing, industry revenue is likely to increase in the medium term, particularly for pipeline companies. However, the production of oil from oil sands has led to the transport of heavy, highly viscous, acidic bitumen. Unlike other oils that float on water, bitumen sinks to the bottom of water bodies, making it difficult to clean if released and so is more harmful to the environment. Therefore, transport of bitumen is causing concern from environmental groups and the general public.7

Purchases of materials, which include fuel to run compressors and pumps, are a major expense for the pipeline segments of the industry—accounting for 35 percent of total revenues for crude oil and 45 percent for gas pipelines. Other major costs for this segment are wages (19 percent and 13 percent of revenues respectively for crude oil and gas pipelines) and depreciation of capital equipment (14 percent and 12 percent of revenues respectively for crude oil and gas pipelines). While the industry has been able to reduce expenditure on wages with automation, the capital intensive network has a fixed cost of depreciation every year. Furthermore, maintenance charges have increased due to the expansion and aging of the pipeline infrastructure.8,9 Midstream companies transporting oil or gas via other means may own or lease physical assets such as trucks, rail terminals, and rail cars.10 Midstream companies are often structured as Master Limited Partnerships (MLPs), which are publicly-traded companies, but organized as partnerships under state law. For energy MLPs, unit-holders generally pay income taxes at individual rates rather than paying tax at the corporate rate as a business.11

Recent industry trends are likely to affect the profitability of several market segments of the Oil & Gas Midstream industry. The amount of crude oil transported via rail has grown exponentially as some refiners have expressed a preference for the flexibility of rail in sourcing crude oil from multiple markets over fixed pipeline commitments. Even though pipeline transport costs a third to half of rail transport, the short-term contracts, modular nature of rail tracks, and ability to access nearly any market nation-wide makes rail an attractive option.12

In order to capitalize on lower domestic crude oil prices, U.S. East Coast refiners that have traditionally processed imported Brent crude have announced plans to process domestic Bakken crude oil. To gain access to Bakken crude without delays, they are purchasing rail cars and building rail terminals. In March 2013, 71 percent of Bakken crude was transported by rail.12 According to the Association of American Railroads, 97,135 carloads of crude oil were shipped across the country in the first quarter of 2013, a 166 percent increase over the same period the previous year.14

As the share of rail transport continues to grow, larger midstream companies are beginning to diversify and add rail capacity. Some midstream companies may already have more diversified operations than their peers. For example, Kinder Morgan delivers more than 1.6 billion cubic feet of carbon dioxide per day via pipeline to upstream companies for enhanced oil recovery, which involves injecting fluids or gases to increase yield from oil fields.15

Furthermore, with the expansion of shale gas production in the U.S., many companies are looking to export LNG. Previously, the U.S.
depended on significant volumes of natural gas imports, requiring LNG import terminals. With a shift in focus to exports, many midstream companies are looking to gain approval for constructing and operating LNG export facilities. For exports to countries that do not have a Free Trade Agreement (FTA) with the U.S., companies need to get approval on a case-by-case basis from the U.S. Department of Energy, and Federal Energy Regulatory Commission (FERC). Such approvals can take several months to materialize, in the face of geopolitical, safety, environmental, and U.S. public interest considerations.16

LEGISLATIVE AND REGULATORY TRENDS IN THE OIL & GAS MIDSTREAM INDUSTRY

Since this industry plays a supporting role to the broader oil and gas sector, regulations affecting the demand and supply of oil and gas and related products have a direct impact on the industry. The natural monopoly characteristics of some segments of the industry mean that the industry faces heavy, direct regulation related to competitive behavior. Additionally, specific environmental and safety laws and rules can affect operations. The following section provides a brief summary of key regulations and legislative efforts related to this industry.11

While much of the industry is deregulated, the Midstream natural gas segment is heavily regulated in the U.S. by FERC. In the 1980s, FERC implemented a series of rulings that changed the role of pipeline companies from gas merchants to transportation service providers. FERC regulates construction and expansion of gas pipeline, storage and LNG facilities, facility abandonment, access to pipeline capacity, and establishment of rates for service. The following includes some of the federal programs and regulations related to environmental and social impacts that are reviewed for any pipeline project impact and related compliance.17

- Endangered Species Act;
- National Historic Preservation Act;
- Coastal Zone Management Act;
- Clean Water Act (CWA), including the National Pollutant Discharge Elimination System program;
- Clean Air Act (CAA);
- Archaeological and Historic Act;
- Wild and Scenic Rivers Act;
- National Wilderness Act;
- National Parks and Recreation Act;
- Magnuson-Stevens Fishery Conservation and Management Act;
- New Source Performance Standards (NSPS); and
- Oil Pollution Act.

Pipeline companies are also subject to regulations from state utility commissions for

1 This section does not purport to contain a comprehensive review of all regulations related to this industry, but is intended to highlight some ways in which regulatory trends are impacting the industry.
intra-state operations.\textsuperscript{18} FERC also regulates rates and access to oil pipelines, but does not oversee their construction. Instead, state regulations govern route approval for oil pipeline construction. State or federal environmental permits for pipeline construction typically involve an environmental assessment, which must address potential environmental impacts and prevention or mitigation measures.\textsuperscript{19}

Furthermore, several regulations govern air emissions from the Midstream industry’s operations. Under the U.S. Environmental Protection Agency’s (EPA) CAA rules, stationary emitters of large quantities of greenhouse gases (GHGs) are required to report their emissions to the agency. California’s cap-and-trade system, Assembly Bill 32 (AB32), puts a limit on emissions from the energy-intensive process of cooling, liquefying, pressurizing, and transporting gas.\textsuperscript{20}

The industry’s activities are also subject to the federal New Source Performance Standards (NSPS), which include standards on volatile organic compounds and sulfur dioxide for the oil and gas industry.

In addition, the U.S. Department of Transportation (DOT), U.S. Fish & Wildlife Services, and individual states have laws governing the industry. The DOT’s Pipeline and Hazardous Materials Safety Administration (PHMSA) establishes national policy, sets and enforces standards, and conducts research to prevent incidents related to hazardous materials transportation.\textsuperscript{21}

The Hazardous Liquids Pipeline Safety Act (HLP-SA) of 1979 (amended by the Pipeline Safety Improvement Act of 2002 and the Pipeline Inspection, Protection, Enforcement and Safety Act of 2006) includes safety requirements for the design, installation, testing, construction, operation, replacement, and management of pipeline and tank facilities. Pipeline operators are required to adopt measures designed to reduce the environmental impact of oil discharges from on-shore oil pipelines, including maintaining a comprehensive spill response plan and performing related training for personnel. Furthermore, the Pipeline Safety, Regulatory Certainty and Job Creation Act of 2011 increased maximum penalties for violating federal pipeline safety regulations. It also directs the DOT to conduct further studies on issues, such as reviewing certain pipeline exemptions.\textsuperscript{22}

Nearly half of all crude oil moves by water worldwide.\textsuperscript{23} The Jones Act of 1920 (also known as the Merchant Marine Act) requires all goods transported by water between U.S. ports to be carried in U.S.-flagged ships. The U.S. Coast Guard is primarily responsible for implementing the Act to Prevent Pollution from Ships, a U.S. law that implements the provisions of the International Convention for the Prevention of Pollution from Ships. This applies to all U.S.-flagged ships anywhere in the world, plus all foreign-flagged ships in navigable waters and ports under U.S. jurisdiction. Violators of the act are subject to fines for discharges into the sea and air.\textsuperscript{24}
Environmental laws affecting upstream or downstream oil and gas activities or related industries could also affect Midstream industry operations. The administration of President Obama has focused on mitigating carbon emissions. The administration recently proposed new rules to reduce emissions from U.S. power plants by 30 percent from 2005 levels by 2030.25 As a result, plants polluting the most (i.e. coal-fired power plants) may be required to limit emissions. This is likely to increase the fraction of power that is generated from natural gas, boosting revenue for companies in this industry.

Furthermore, rules related to market manipulation and price fixing by FERC and other agencies could affect the Midstream industry. The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 expanded the powers of the U.S. Commodity Futures Trading Commission (CFTC) to prosecute parties involved in the manipulation of commodities markets. Following this, the CFTC issued Anti-Manipulation and Anti-Fraud Rules, prohibiting price manipulation in swaps, futures, and physical commodities trading.26 Similarly, based on authority provided by Congress, the Federal Trade Commission (FTC) issued a rule prohibiting market manipulation specifically in the wholesale petroleum industry, which became effective in 2009. The rule relates to “the purchase or sale of crude oil, gasoline, or petroleum distillates at wholesale, and the reporting of false or misleading information related to the wholesale price of those products.”27 The FTC is also a member of the Oil and Gas Price Fraud Working Group, an interagency effort by state and federal authorities to monitor and share information on the oil and gas markets.28

SUSTAINABILITY-RELATED RISKS & OPPORTUNITIES

Industry drivers and recent regulations suggest that while traditional value drivers will continue to impact financial performance, intangible assets such as environmental and social capitals, company leadership and governance, and the company’s ability to innovate to address environmental and social issues are likely to contribute increasingly to financial and business value.

Broad industry trends and characteristics are driving the importance of sustainability performance in the Oil & Gas Midstream industry:

- **Use of fossil fuels**: The Midstream industry is capital-intensive and relies on fossil fuels to transport oil and gas. As a result, it is impacted by rising fuel costs and stringent air emissions regulations.

- **Negative externalities**: Regular operations, accidental leaks, spills, and explosions from the extensive network of pipelines, railroads, and ship tankers used to transport oil and gas can cause significant impacts on terrestrial and marine biodiversity. In addition, the transport process burns fossil fuels and releases GHGs and other harmful gases that lead to environmental degradation and have negative health impacts.

- **Social license to operate**: Pipeline companies in particular rely on support from communities to grant them rights-of-way for their pipelines. Negative impacts, or negative public perceptions of such companies,
are therefore likely to disrupt or destroy this social license to operate.

As described above, the regulatory and legislative environment surrounding the Oil & Gas Midstream industry emphasizes the importance of sustainability management and performance. Specifically, recent trends suggest a regulatory emphasis on environmental protection, which will serve to align the interests of society with those of investors.

The following section provides a brief description of each sustainability issue that is likely to have material implications for companies in the Oil & Gas Midstream industry. This includes an explanation of how the issue could impact valuation and evidence of actual financial impact. Further information on the nature of the value impact, based on SASB’s research and analysis, is provided in Appendix IIA and IIB. Appendix IIA also provides a summary of the evidence of investor interest in the issues. This is based on a systematic analysis of companies’ 10-K and 20-F filings, shareholder resolutions, and other public documents, as well as the results of consultation with experts participating in an industry working group convened by SASB.

A summary of the recommended disclosure framework and accounting metrics appears in Appendix III. The complete SASB standards for the industry, including technical protocols, can be downloaded from www.sasb.org.

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ENVIRONMENT

The environmental dimension of sustainability includes corporate impacts on the environment. This could be through the use of non-renewable natural resources as inputs to the factors of production (e.g., minerals, ecosystems, and biodiversity) or environmental externalities and harmful releases in the environment, such as air and water pollution, waste disposal, and greenhouse gas emissions.

Although midstream companies are not responsible for drilling and extracting natural resources, the construction and operation of pipelines, rail tracks, compressor stations, storage facilities, and terminals can have significant ongoing impacts on the environment and human health. In addition to complying with numerous laws and regulations, companies that are mindful of their impacts on climate, local air quality, and ecosystems will find themselves better positioned to expand their services.

Greenhouse Gas & Other Air Emissions

The Oil & Gas Midstream industry generates significant quantities of GHGs and air emissions that can be hazardous to human health and the environment. Operations can be impacted directly by regulations limiting and/or
pricing carbon emissions or other air pollutants. Community opposition to the siting of pipelines or road and rail routes can also affect midstream operations, particularly as new routes are required to transport hydrocarbons from areas of expanding unconventional oil and gas production. Uncertainties about the nature of future GHG regulations also create operational risks for companies. On the other hand, operational efficiencies could be gained from managing fugitive emissions of saleable natural gas, resulting in higher revenues and lower costs.

The primary sources of air emissions in the Oil & Gas Midstream industry include: compressor engine exhausts, oil and condensate tank vents, natural gas processing, and fugitive emissions. The industry also has emissions from trucks, trains, and ships. Air emissions include: carbon dioxide, methane, ethane, benzene, toluene, xylene, carbon monoxide, and ozone. Inhaling these vapors or being in contact with contaminated soil or water can pose risks to human health. High levels of emissions for some of these pollutants have been detected near pipelines and compressor stations in Texas. At times, these emissions have exceeded human health standards.

Fugitive emissions or gas leaked during the transportation of natural gas are difficult to monitor and address. Methane is the primary component of natural gas and its global warming potential is 21 times that of carbon dioxide. While natural gas is a cleaner burning fuel than coal (a shift from coal to gas in electricity generation is expected to provide a 50 percent reduction in GHG emissions), leakage of the highly potent GHG methane from the natural gas value chain has the potential to lower the extent of benefits significantly. As a result, the management of methane emissions from natural gas transport and storage has emerged as a major operational, reputational, and regulatory risk for midstream companies. This is especially true when considering the expansion in natural gas production from shale resources.

Companies that cost-effectively reduce emissions from their operations by implementing innovative monitoring and mitigation technologies and processes and improving fuel efficiency could reduce regulatory risks and enjoy operational efficiencies. Company performance in this area can be analyzed in a cost-beneficial way internally and externally through the following direct or indirect performance metrics (see Appendix III for metrics with their full detail):

- Scope 1 emissions, percentage covered under a regulatory program;
- Long- and short-term strategy to manage Scope 1 emissions; and
- Air emissions from industry-specific pollutants.

**Evidence**

Financial impacts on midstream companies from their GHG and other air emissions could be of three types: additional costs from regulations of GHGs or air emissions that aim to
internalize the societal costs of emissions, potential for generating additional revenues from capturing and selling GHGs like carbon dioxide and methane, and cost savings from enhanced fuel efficiency.

Under the CAA, facilities in petroleum and natural gas systems are required to report emissions from combustion, venting, equipment leaks, and flaring. Total GHG emissions in 2012 from natural gas processing, transmission, underground storage, and LNG imports/exports reported to the EPA amounted to around 85 million metric tons of carbon dioxide equivalent (CO₂-e), or 39 percent of the total from petroleum and natural gas systems. Given the significant contribution of petroleum and natural gas systems to global GHGs and other harmful air pollutants, the EPA introduced rules in 2012 for oil and gas companies to reduce emissions. These include, for example, requirements under the NSPS for new storage tanks at compressor stations to reduce volatile organic compound (VOC) emissions by at least 95 percent (for tanks with VOC emissions of six tons a year or more).

Similarly, state-level legislation and regulations can also affect operations of midstream companies with significant GHG and other air emissions. As a result of California’s AB32 cap-and-trade system, several midstream facilities, including compressor and storage stations, are required to reduce emissions or buy carbon credits (or permissions to emit) from the market. Both reduction of emissions and purchase of credits pose additional costs to the industry. Regulations in this area are also constantly evolving, creating operational risks for the industry. For example, California is also conducting field measurements of fugitive methane emissions from natural gas distribution pipelines. The results of the study are expected to inform the cost-effectiveness of developing regulations specific to fugitive GHG emissions from these operations.

Enbridge Energy Management LLC reports, in its fiscal year (FY) 2012 Form 10-K, that as a result of the CAA (as well as the CWA) the company will “incur costs in the next several years for air pollution control equipment and spill prevention measures in connection with maintaining existing facilities and obtaining permits and approvals for any new or acquired facilities.” They also acknowledge that compliance with NSPS will incur additional costs.

Violations of air emissions rules could lead to regulatory fines and penalties, including additional measures to control emissions that may entail increased operating costs or capital expenditures. ConocoPhillips, an exploration and production company with pipeline distribution facilities, agreed to pay $175,000 to the EPA for violations of the Title V Federal Operating Permit Program of the CAA at two compressor stations in Colorado. Measures taken as a result of the settlement will significantly reduce emissions of VOCs, hazardous air pollutants, and carbon monoxide. In addition, the company is expected to conserve 5.5 million cubic feet of gas annually.

Companies like Oneok Partners are cognizant of the implications of future GHG regulations for their industry. The company mentions in its Form 10-K for FY 2013 that “[f]uture legislation and/or regulation designed to reduce [GHG] emissions could make some of our activities uneconomic to maintain or operate.”
The company says that it may not be able to pass on all the higher costs to its customers or recover all compliance costs, adversely affecting the company’s future results of operations, cash flows, or financial condition. However, according to the company: “Although the regulation of [GHG] emissions may have a material impact on our operations and rates, we believe it is premature to attempt to quantify the potential costs of the impacts.”

Management of GHG emissions can also be an area of opportunity for the oil and gas industry. In 2010, ExxonMobil Corp., an integrated oil and gas company, captured and sold four million metric tons of carbon dioxide from its gas processing facilities to area oil producers for enhanced oil recovery. Furthermore, most methane control technologies have payback periods of less than three years. The Natural Resource Defense Council estimates that control processes could generate $2 billion in annual revenues for the oil and gas industries and reduce methane emissions by 80 percent.

**Value Impact**

Regulation of GHG emissions results in direct, chronic impacts on the industry. Midstream companies could face significantly higher operational costs and capital expenditures, either through monitoring or reduction of emissions or purchase of carbon credits. Regional and federal regulations on other air emissions can impose additional costs of reporting and compliance, as well as one-time costs and contingent liabilities related to fines and settlements for violations of the law. Human health consequences of localized air emissions can also impact a company’s reputation and brand value, and ultimately its intangible assets.

Companies with significant GHG emissions could also face a higher risk profile, and therefore cost of capital, due to the uncertain nature of future (likely more stringent) GHG regulations.

In particular, increasing concerns about methane leakage are likely to increase future regulatory risks. The probability and magnitude of the impact of GHG emissions and other air emissions on financial results in this industry are likely to increase in the medium term.

**Ecological Impacts**

Storage and transport of the vast quantities of crude oil, natural gas, and related products produced worldwide to refineries and end users through a vast network of maritime transportation, pipelines, trains, and trucks has considerable risk to the environment and local communities. Of these, pipeline construction and operations can have the most significant ecological impacts, including habitat loss and alteration through land use. Leaks and accidental discharges can also damage ecosystems in the areas of operation.

Pipelines can impact the environment in several ways, including natural habitat loss and

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*The impacts of low probability, high magnitude spills and explosions are discussed further under the topic of Operational Safety, Emergency Preparedness and Response.*
fragmentation, changes in species movement, and sedimentation. Although most pipelines are buried, their construction, monitoring, and maintenance require clearing and maintaining open easements over ecologically-sensitive land and private property. A pipeline right-of-way (ROW) grants the pipeline operator a “permanent, limited interest in the land.” Among other things, this enables the pipeline company to install, operate, alter, repair, maintain, replace, and protect one or more pipelines within the designated easement. While the widths of pipelines vary, during operations approximately 50 feet of permanent easement is maintained over the pipes. It may be wider during the construction phase.

Such pipeline rights-of-way can reduce water quality, cause extensive soil disturbance during construction, and increase risk of erosion and sedimentation. They can also remove vegetation and wetlands, and disturb wildlife habitat by creating a significant and permanent fragmenting feature through natural habitats. Offshore pipelines can also have significant environmental impacts: Disturbance of surface sediments, their communities, and hard substrate communities can result in long-lasting alteration of the bottom topography.

Regulatory agencies, supported by legislation that protects endangered species and ecologically sensitive areas, require plans to mitigate or remediate negative ecological impacts prior to project approval. Midstream companies could mitigate operational risks by incorporating considerations of ecological impacts in their project planning, including optimizing existing rights-of-way, and preventing and proactively managing ecological impacts during construction or operations. They could also improve reputation, and therefore, long-term growth by gaining easier access to new projects and sources of revenue.

This is particularly important as the number and size of protected conservation areas has increased exponentially around the world over the past several years. As oil and gas companies attempt to access more remote, ecologically sensitive locations like the Arctic and deep-water resources, and as growth in unconventional hydrocarbon production necessitates an expanding midstream infrastructure, risks that pipeline routes and midstream operations will affect biodiversity, and therefore, company value could be exacerbated.

Company performance in this area can be analyzed in a cost-beneficial way internally and externally through the following direct or indirect performance metrics (see Appendix III for metrics with their full detail):

- Environmental management policies and practices for active operations;
- Land owned, leased, and/or operated within areas of protected conservation status or endangered species’ habitat;
- Disturbed land and restoration of impacted area; and
- Number and volume of spills, volumes in ecologically sensitive areas, volumes recovered.
Evidence

Ecological considerations factor into planning the locations of pipelines and terminals and have the potential to affect project costs. These considerations are often driven by legislation that protects endangered species. TransCanada’s proposed route for the Keystone XL pipeline was revised several times to reduce risks to an array of wetlands and dunes near the Ogallala aquifer in Nebraska. Furthermore, the U.S. Fish and Wildlife Service required TransCanada, the Keystone XL pipeline builder, to train field workers on the correct procedure to clear land to reduce threats to the American burying beetle and other endangered species.

This is a heavily regulated industry with many acts governing the planning and permitting processes. However, concerns remain over environmental and social impacts that might affect project development, despite well-established environmental laws in North America protecting biodiversity and ecosystems. For example, there are organized campaigns against — and public opposition to — the construction of the Keystone XL pipeline due to its potential impacts on the environment. TransCanada had one of many regulatory hurdles to clear in November 2011: That month, President Obama cited environmental concerns about the pipeline’s route in Nebraska to delay a final decision on the pipeline. In April 2014, the U.S. State Department announced an indefinite extension to an inter-agency review of the pipeline. The Department cited ongoing litigation over the constitutionality of a Nebraska law that allowed the pipeline’s route through the state.

Given regulatory uncertainty and public opposition to the Keystone XL pipeline, TransCanada is considering building rail loading and unloading facilities, a more expensive option compared to the pipeline, which would also require the company to modify its existing contractual relationships with customers. The company has already spent $2 billion preparing the $5.4 billion Keystone XL pipeline as it awaits regulatory approval.

As concerns over ecological impacts grow, companies could face the risk of additional areas being designated as protected under new or existing laws. In fact, from 1990 to 2010, global protected area coverage increased from 8.8 percent to 12.7 percent on land, and from 0.9 percent to 4 percent in marine areas under national jurisdiction.

Midstream companies recognize the costs and operational risks associated with regulatory requirements around biodiversity protection. Enterprise Products Partners notes in its Form 10-K for FY 2013: “Some of our current or future planned facilities may be located in areas that are designated as a habitat for endangered or threatened species and, if so, may limit or impose increased costs on facility construction or operation. In addition, the designation of previously unidentified endangered or threatened species could cause us to incur additional costs or become subject to operating restrictions or bans in the affected areas.”

Companies face the risk of lawsuits for ecological impacts due to operational spills, leaks, and clearing of vital ecosystems. In 2013, Southeast
Louisiana Flood Protection Authority-East filed a lawsuit against a number of oil and gas and pipeline companies. The flood protection agency blamed them for the ecological destruction of coastal wetlands as a result of the network of thousands of miles of oil and gas pipeline canals in the area. The agency alleges that oil and gas production and transportation resulted in killing vegetation, eroding soil, and allowing salt water to spread into freshwater areas. These activities also affected the ecosystem’s ability to provide a natural defense to storms in the state of Louisiana.53

Oil and gas activities, including pipeline operations, allegedly have taken up $470 billion of Louisiana’s natural resources over the previous 20 years. The flood protection agency’s lawsuit seeks abatement and restoration of affected coastal lands. According to the U.S. Geological survey, oil and gas activities are among the primary causes of coastal land loss. Since 1932, the state has lost more than 1,900 square miles of coastal lands. In the coming decades, an additional 700 square miles are expected to be lost.54

Midstream operations in the Arctic can be particularly challenging, with risks of substantial ecological impacts and significant fines. Integrated oil company BP was fined $25 million in 2011 to settle charges related to two spills occurring from its pipeline network in Alaska in 2006 and failure to comply with a government order to maintain the pipelines to prevent corrosion. The poor maintenance led to the discharge of more than 5,000 barrels of oil into the Arctic tundra and into a lake on Alaska’s North Slope.55

Value Impact

Minimizing risks and impacts to biodiversity and ecosystems can help companies manage operational risk, which can have direct impacts on costs and contingent liabilities. A higher risk profile could affect cost of capital. U.S. Federal agencies require plans to mitigate or remediate negative ecological impacts prior to approval. Together with regulatory compliance, this could require significant capital and operational expenditures. Operating in ecologically sensitive areas can lead to delays in project approval or completion. It could also require increased expenditures for pursuing alternative options. For projects with large capital requirements, this could affect overall profitability. Negative ecological impacts could also result in significant litigation costs, regulatory penalties, remediation costs, or contingent liabilities.

A company’s reputation in managing ecological impacts could also have chronic effects on its growth over the long-term. A stronger license to operate through best practices in biodiversity management could enable the company to access new locations for its transportation and storage infrastructure, and therefore, expand operations and revenues.

With the expansion of midstream operations to accommodate the growth in North American oil and gas production, and increasing concerns and protection of ecologically sensitive areas and species, the probability and magnitude of impact on financial results from this issue are likely to increase in the future.
SOCIAL CAPITAL

Social capital relates to the perceived role of business in society, or the expectation of business contribution to society in return for its license to operate. It addresses the management of relationships with key outside stakeholders, such as customers, local communities, the public, and the government. It includes issues around access to products and services, affordability, responsible business practices in marketing, and customer privacy.

Midstream industry operations rely on pipeline rights-of-way, requiring negotiations with local communities and individual property owners. These negotiations can hinge on the significant social externalities that midstream operations in general have the potential to generate. The release of air pollutants, as well as the safety and integrity of operations, are particularly significant. These impacts are addressed by the disclosure topics of “Greenhouse Gas & Other Air Emissions,” as well as “Operational Safety, Emergency Preparedness, and Response.”

LEADERSHIP AND GOVERNANCE

As applied to sustainability, governance involves the management of issues that are inherent to the business model or common practice in the industry and that are in potential conflict with the interest of broader stakeholder groups (government, community, customers, and employees) and therefore create a potential liability, or worse, a limitation or removal of license to operate. This includes risk management, safety management, supply chain and resource management, conflict of interest, anti-competitive behavior, and corruption and bribery.

For midstream companies, activities that restrict competition, create unfair pricing, or result in market manipulation can have significant repercussions due to regulatory action. In addition, maintaining the safety of vast midstream assets is important for a company’s social license to operate and to minimize operational risks.

Competitive Behavior

Companies that own natural gas pipelines and storage facilities face numerous and constantly changing regulations from the FERC in all aspects of their operations, including rates charged, access offered to pipelines, and the siting and construction of new facilities. Pipeline companies enjoy a natural monopoly, and FERC regulations ensure that companies do not abuse this position through unfair pricing, discriminatory service, or by other means.

Furthermore, concerned about the impacts of oil and gas market distortions on American consumers and businesses, regulators in the U.S. have focused on and investigated market manipulation by oil and gas companies, including midstream companies in recent years. This includes new market manipulation regulations from the FTC and the CFTC, with a potential impact on the Midstream industry.

Midstream companies face uncertainty in relation to their ability to change the rates
charged, which could affect their ability to recover costs. Companies could face complaints from market participants—complaints that result in prospective rate changes or compensation payments. Companies may also face penalties from the FERC or other agencies for violating regulations governing competitive behavior.

Company performance in this area can be analyzed in a cost-beneficial way internally and externally through the following direct or indirect performance metrics (see Appendix III for metrics with their full detail):

- Amount of legal and regulatory fines and settlements associated with federal pipeline and storage regulations.

**Evidence**

Midstream companies have faced numerous fines and penalties related to manipulation of prices, unauthorized fees, and unlawful use of pipeline capacity. These penalties could have a chronic impact on company value. For example, Enterprise Texas, an affiliate of midstream company Enterprise Product Partners, had to pay a civil penalty of $315,000 in 2013 under an agreement reached with the FERC related to unauthorized fees charged to customers of its pipelines between 2004 and 2012. The company agreed not to pass through any of the costs of the penalty to its present or future customers, and also refunded $7.2 million to customers. In 2009, the FERC combined civil penalties with certain compliance measures, and in some cases, disgorgement of unjust profits.

Companies could also face significant fines from violating market manipulation rules implemented by other agencies. Regulations issued by the FTC in 2009 to prohibit market manipulation in the petroleum industry, including midstream companies, carry civil penalties of up to $1 million per violation per day.

Market manipulation actions by midstream companies could also affect their license to operate. The company Energy Transfer highlights this concern in its Form 10-K for FY 2012, stating, “Should we violate laws and regulations prohibiting market manipulation, we could be subject to substantial fines and penalties and lose the governmental authorizations needed to conduct our businesses.” Furthermore, in their Form 10-K filings, several midstream companies highlight the risk to value from third-party damages claims related to market manipulation. Oneok Inc. reports in its Form 10-K for FY 2013 that it could face material costs in the future related to ongoing litigation claiming damages for alleged market manipulation or false reporting of prices to gas index publications by the company and others.

**Value Impact**

Companies’ ability to manage the changing legal and regulatory environment, as well as their ability to ensure their operations are competitive, could have both acute and chronic impacts on value. Acute impacts could arise
from major regulatory sanctions in the form of extraordinary expenses and contingent liabilities to compensate third parties. Such rulings may also impose limits on companies’ ability to charge higher prices and restrict their license to operate in certain markets, with dual impacts on revenue in terms of market share and pricing.

Over the long-term, repeated violations — whether resulting in minor or significant regulatory penalties at the time — could affect a company’s reputation. This chronic effect could restrict a company’s ability to gain regulatory approvals and expand operations, limiting its long-term revenue growth potential and raising its risk profile and therefore, cost of capital.

Operational Safety, Emergency Preparedness, and Response

Operating a vast network of pipelines, rail cars, or trucks necessitates vigilance in relation to the integrity of operations and preparedness for emergency situations like accidents, spills, or leaks. An aging pipeline infrastructure could increase the likelihood of such incidents without proper inspection, maintenance, and retrofitting. Spills or accidents resulting in unintended releases of hydrocarbons could have wide-ranging impacts on the environment, employees, and local communities. These products have the potential to combust and accidents can result in fires or explosions. They may release toxic chemicals into the environment, affecting the health of both employees and local community members. Furthermore, the physical properties of crude oil and its derivative products can hinder the normal functioning of organisms, such as marine life and vegetation.

For the midstream gas segment, the main risks are pipeline explosions and environmental contamination from compressor stations. For transportation of oil, in addition to pipeline leaks, accidents of oil tankers or barges and spills from rail cars are also quite common.

These factors could erode a company’s social license to operate. Significant events could create one-time costs from fines and corrective actions and contingent liabilities for environmental remediation or damages in lawsuits. Spills also represent lost revenues. Performance on operational safety could affect a company’s risk profile over the long-term.

In order to avoid or minimize such risks, investigations of past incidents show that it is extremely important to develop a strong safety culture, and establish a thorough and systematic approach to safety and risk management. This includes emergency preparedness and response and operational integrity, across the company and in relationships with contractors. The physical properties of the products being transported can have significant implications for safety procedures and emergency preparedness plans.

Company performance in this area can be analyzed in a cost-beneficial way internally and externally through the following direct or
indirect performance metrics (see Appendix III for metrics with their full detail):

- Number of reportable pipeline incidents, percentage significant;
- Number of releases from rail transportation; and
- Management systems for a culture of safety and preparedness.

**Evidence**

Spills, leaks, and explosions of oil and gas during transportation or storage are frequent occurrences, representing not only costs for companies, but also lost revenues. Ensuring the integrity of the 2.5 million miles of pipelines that are responsible for delivering oil and gas to markets across the U.S. is critical. Pipelines have an average of 280 spills a year, with nearly 3.5 million gallons of oil spilled from pipelines each year in the past decade. In 2013, there were 622 reported incidents, resulting in 10 fatalities, over $310 million in property damage, and 89,000 net barrels of oil lost. A majority of those incidents were the result of materials or welding defects and equipment failures.

Transporting crude oil by rail is also risky. According to the Association of American Railroads, the rate of hazardous material spills by railroads is about 2.7 times greater than pipelines. Between 2002 and 2012, U.S. railroads suffered 129 spill incidents resulting in 95,256 gallons of lost crude oil.

Transportation by marine tankers, although likely not under the direct control of midstream companies, also carries risks of spills and leaks. According to the International Tanker Owners Pollution Federation Limited, approximately 5.75 million metric tons of oil were lost as a result of tanker incidents between 1970 and 2012. While tanker safety has improved over time, in 2012 there were seven spills that discharged an average of 100 metric tons per incident.

Incidents and incident response can have significant impacts on the reputation of oil and gas midstream companies and create substantial one-time costs or contingent liabilities. In a related industry, Pacific Gas & Electric (PG&E), one of the largest providers of natural gas and electricity, could face $2.25 billion in penalties for a deadly gas pipeline explosion in San Bruno in 2010. That incident burned down several houses and resulted in eight deaths and many injuries. A division of California Public Utilities Commission recommended the fine, which, if approved, would be the largest ever imposed by a state regulatory agency. It could lead to bankruptcy for PG&E. The company was charged with 12 pipeline safety violations in a criminal case related to the 2010 explosion in April 2014. Regulators investigating the blast determined that inadequate quality controls, deficient management, and a corporate culture that emphasized profits over safety caused the accident. Mandated safety work and other expenses as a result of the accident cost the company $1.4 billion.

Other incidents highlight the potential channels of impact on company value. The state of Arkansas is seeking civil penalties for alleged violations of state waste and pollution laws by Exxon as well as liability for damages related to a pipeline spill of about 5,000 barrels of
heavy Canadian crude oil that contaminated 22 homes, forcing residents to evacuate. In another case, Magellan Midstream Partners, which owns the longest refined petroleum product domestic pipeline, agreed to pay $5.3 million in civil penalties for violations of the CWA, due to discharges from its pipelines in six states over ten years.

In 2010, Enbridge Energy Partners LLP reported a pipeline rupture in Michigan. The leak released 843,000 gallons of oil into Talmadge Creek and Kalamazoo River. The diluted bitumen released in the spill sank to the bottom of the waterways. Despite the costly clean up (upwards of $810 million), the EPA estimates that about 180,000 gallons remain in the river bottom sediment. The civil penalty was a record $3.7 million.

Regulations related to pipeline safety are continually evolving and becoming more stringent as a result of the significant impacts on communities, workers, and the environment from pipeline incidents. The 2002 and 2006 amendments to the HLPSA resulted in the DOT adopting rules that require pipeline operators to implement integrity management programs, including more frequent inspections, correction of identified anomalies and other measures, to ensure pipeline safety in “high consequence areas.” Such locations are high population areas, areas unusually sensitive to environmental damage, and commercially navigable waterways. Federal pipeline safety regulations also require operators to have public awareness programs to educate the public, appropriate government organizations, and persons engaged in excavation-related activities.

In addition, 2012 PHMSA guidance on record keeping for the industry could in fact affect revenues. According to Kinder Morgan’s Form 10-K for FY 2013, failure to locate such records or to verify maximum pressures at which pipelines are operating could result in reductions of allowable operating pressures. This, in turn, would reduce available capacity on their pipelines.

Midstream companies with rail cars also face risks from oil spills and explosions, as well as heightened public and regulatory concerns. For example, in July 2013, 72 carloads of crude oil transported by U.S.-based Rail World Inc. broke loose from the tracks in Canada and resulted in 47 deaths. The incident also destroyed many homes, businesses, a municipal library, and a bar. Concerns arising from these incidents are leading to new rail safety rules. The DOT is proposing new rules for a comprehensive update to structural standards for tank cars and also to operational standards. These rules are expected to create additional costs for both railroad companies and for midstream companies, who would have to bear the cost of retrofitting or replacing rail tank cars.

Many of the leading midstream companies discuss in their Form 10-K filings the possibility of significant operating and capital expenditures related to operational safety, and higher expenditures with new and future regulations. For example, according to the Form 10-K disclosure for FY 2013 by Plains Group Holding, the company had significant and increasing capital and operating expenditures in the past few years, in order to meet U.S. DoT rules regarding pipeline integrity. The company
states that in the U.S., costs associated with the inspection, testing and correction of identified anomalies were approximately $57 million in 2013, $39 million in 2012, and $32 million in 2011. It expects significant additional costs if new or more strictly interpreted pipeline safety requirements are implemented.  

Between 2010 and 2012, Sunoco Logistics experienced releases at different pipeline and pump station facilities. This required the company to implement corrective actions and environmental remediation pursuant to orders from the EPA and PHMSA. The company also had to pay a minor settlement amount in relation to one such incident. Such smaller incidents are unlikely to have acute, material impacts on company value in the short-term. However, their cumulative effect over the medium- to long-term could erode a company’s license to operate, and could invite greater regulatory scrutiny, with higher costs.

**Value Impact**

Recurring accidents can have a chronic impact on value over the long-term, by affecting a company's reputation with local communities, ultimately affecting its social license to operate. This can impact a company's ability to gain rights-of-way and new sources of revenue.

Companies seen as having a poor safety record could also face higher insurance premiums and risk premiums. This affects both operating costs and the cost of capital.
APPENDIX I: Five Representative Companies

**Oil & Gas Midstream**

<table>
<thead>
<tr>
<th>COMPANY NAME (TICKER SYMBOL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plains All American Pipeline (PAA)</td>
</tr>
<tr>
<td>Enterprise Products Partners (EPD)</td>
</tr>
<tr>
<td>Energy Transfer Equity (ETE)</td>
</tr>
<tr>
<td>Global Partners (GLP)</td>
</tr>
<tr>
<td>Sunoco Logistics Partners (SXL)</td>
</tr>
</tbody>
</table>

**Integrated Oil & Gas**

<table>
<thead>
<tr>
<th>COMPANY NAME (TICKER SYMBOL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exxon Mobil Corp (XOM)</td>
</tr>
<tr>
<td>Royal Dutch-ADR (RDS)</td>
</tr>
<tr>
<td>Chevron Corp (CVX)</td>
</tr>
<tr>
<td>Petrochina-ADR (PTR)</td>
</tr>
<tr>
<td>BP (BP)</td>
</tr>
</tbody>
</table>

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**Footnotes:**

IV This list includes five companies representative of the Oil & Gas Midstream industry and its activities. This includes only companies for which the Oil & Gas Midstream industry is the primary industry, that are U.S.-listed but are not primarily traded Over-the-Counter, and where at least 20 percent of revenue is generated by activities in this industry, according to the latest information available on Bloomberg Professional Services. Retrieved on 30 May 2014.

V This list includes five companies representative of integrated oil and gas activities. This includes only companies for which the Integrated Oil & Gas industry is the primary industry under the Bloomberg Industry Classification System, and that are U.S.-listed but are not primarily traded Over-the-Counter, according to the latest information available on Bloomberg Professional Services. Retrieved on 9 June 2014.
APPENDIX IIA: Evidence for Sustainability Disclosure Topic

<table>
<thead>
<tr>
<th>Sustainability Disclosure Topics</th>
<th>EVIDENCE OF INTEREST</th>
<th>EVIDENCE OF FINANCIAL IMPACT</th>
<th>FORWARD-LOOKING IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HM (1-100)</td>
<td>IWGs %</td>
<td>Priority</td>
</tr>
<tr>
<td>Greenhouse Gas &amp; Other Air Emissions</td>
<td>75*</td>
<td>100</td>
<td>3</td>
</tr>
<tr>
<td>Ecological Impacts</td>
<td>70*</td>
<td>93</td>
<td>2</td>
</tr>
<tr>
<td>Competitive Behavior</td>
<td>80*</td>
<td>(-)</td>
<td>(-)</td>
</tr>
<tr>
<td>Operational Safety, Emergency Preparedness, and Response</td>
<td>60</td>
<td>100</td>
<td>1</td>
</tr>
</tbody>
</table>

HM: Heat Map, a score out of 100 indicating the relative importance of the topic among SASB’s initial list of 43 generic sustainability issues; asterisks indicate “top issues.” The score is based on the frequency of relevant keywords in documents (i.e., 10-Ks, shareholder resolutions, legal news, news articles, and corporate sustainability reports) that are available on the Bloomberg terminal for the industry’s publicly-listed companies; issues for which keyword frequency is in the top quartile are “top issues.”

IWGs: SASB Industry Working Groups

%: The percentage of IWG participants that found the disclosure topic to likely constitute material information for companies in the industry. (-) denotes that the issue was added after the IWG was convened.

Priority: Average ranking of the issue in terms of importance. One denotes the most important issue. (-) denotes that the issue was added after the IWG was convened.

EI: Evidence of Interest, a subjective assessment based on quantitative and qualitative findings.

EFI: Evidence of Financial Impact, a subjective assessment based on quantitative and qualitative findings.

FLI: Forward Looking Impact, a subjective assessment on the presence of a material forward-looking impact.
# APPENDIX IIB: Evidence of Financial Impact for Sustainability Disclosure Topics

<table>
<thead>
<tr>
<th>Evidence of Financial Impact</th>
<th>Revenue</th>
<th>Operating Expenses</th>
<th>Non-operating Expenses</th>
<th>Assets</th>
<th>Liabilities</th>
<th>Risk Profile</th>
<th>Industry Divestment Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Market Size</td>
<td>Pricing Power</td>
<td>COGS</td>
<td>R&amp;D</td>
<td>CapEx</td>
<td>Extra-ordinary Expenses</td>
<td>Tangible Assets</td>
</tr>
<tr>
<td>Greenhouse Gas &amp; Other Air Emissions</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Ecological Impacts</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Competitive Behavior</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Operational Safety, Emergency Preparedness, and Response</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
</tbody>
</table>

Legend:
- **MEDIUM IMPACT**
- **HIGH IMPACT**
## APPENDIX III: Sustainability Accounting Metrics | Oil & Gas Midstream

<table>
<thead>
<tr>
<th>TOPIC</th>
<th>ACCOUNTING METRIC</th>
<th>CATEGORY</th>
<th>UNIT OF MEASURE</th>
<th>CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greenhouse Gas &amp; Other Air Emissions</td>
<td>Gross global Scope 1 emissions, percentage covered under a regulatory program</td>
<td>Quantitative</td>
<td>Metric tons CO₂ₚ, Percentage (%)</td>
<td>NR0102-01</td>
</tr>
<tr>
<td></td>
<td>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</td>
<td>Discussion and Analysis</td>
<td>n/a</td>
<td>NR0102-02</td>
</tr>
<tr>
<td></td>
<td>Air emissions for the following pollutants: NOₓ (excluding N₂O), SOₓ, volatile organic compounds (VOCs), and particulate matter (PM)</td>
<td>Quantitative</td>
<td>Metric tons</td>
<td>NR0102-03</td>
</tr>
<tr>
<td>Ecological Impacts</td>
<td>Description of environmental management policies and practices for active operations</td>
<td>Discussion and Analysis</td>
<td>n/a</td>
<td>NR0102-04</td>
</tr>
<tr>
<td></td>
<td>Percentage of land owned, leased, and/or operated within areas of protected conservation status or endangered species habitat</td>
<td>Quantitative</td>
<td>Percentage (%) by acreage</td>
<td>NR0102-05</td>
</tr>
<tr>
<td></td>
<td>Terrestrial acreage disturbed; percentage of impacted area restored⁶</td>
<td>Quantitative</td>
<td>Acres, Percentage (%)</td>
<td>NR0102-06</td>
</tr>
<tr>
<td></td>
<td>Number and aggregate volume of hydrocarbon spills, volume in Arctic, volume in Unusually Sensitive Areas (USAs), and volume recovered</td>
<td>Quantitative</td>
<td>Number, Barrels (bbls)</td>
<td>NR0102-07</td>
</tr>
<tr>
<td>Competitive Behavior</td>
<td>Amount of legal and regulatory fines and settlements associated with federal pipeline and storage regulations⁷</td>
<td>Quantitative</td>
<td>U.S. Dollars ($)</td>
<td>NR0102-08</td>
</tr>
<tr>
<td>Operational Safety, Emergency Preparedness, and Response</td>
<td>Number of reportable pipeline incidents, percentage significant</td>
<td>Quantitative</td>
<td>Number, Percentage (%)</td>
<td>NR0102-09</td>
</tr>
<tr>
<td></td>
<td>Number of (1) accident releases and (2) non-accident releases (NARs) from rail transportation⁸</td>
<td>Quantitative</td>
<td>Number</td>
<td>NR0102-10</td>
</tr>
<tr>
<td></td>
<td>Discussion of management systems used to integrate a culture of safety and emergency preparedness throughout the value chain and throughout project lifecycles</td>
<td>Discussion and Analysis</td>
<td>n/a</td>
<td>NR0102-11</td>
</tr>
</tbody>
</table>

⁶ Note to NR0102-06 – Disclosure shall include a description of the registrant’s environmental restoration best practices and the percentage of operations to which it was applied, if not all.

⁷ Note to NR0102-08 – Disclosure shall include a description of fines and settlements and corrective actions implemented in response to events.

⁸ Note to NR0102-10 – Disclosure shall include a discussion of processes, procedures, and strategies to manage non-accident and accident releases.
The following graph demonstrates an aggregate assessment of how the top ten U.S.-domiciled Oil & Gas Midstream companies, plus the top three U.S.-domiciled Integrated Oil and Gas companies, by revenue, are currently reporting on sustainability topics in the Form 10-K.

<table>
<thead>
<tr>
<th>Type of Disclosure on Sustainability Topics</th>
<th>No Disclosure</th>
<th>Boilerplate</th>
<th>Industry-Specific</th>
<th>Metrics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greenhouse Gas &amp; Other Air Emissions</td>
<td></td>
<td></td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Ecological Impacts</td>
<td>0%</td>
<td>93%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competitive Behavior</td>
<td></td>
<td></td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Operational Safety, Emergency Preparedness, and Response</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

IWG Feedback*

*Percentage of IWG participants that agreed topic was likely to constitute material information for companies in the industry.
References

1 Data from Bloomberg Professional service accessed on June 12, 2014, using the ICS <GO> command. The data represents global revenues of companies listed on global exchanges and traded over-the-counter (OTC) from the Oil & Gas Midstream industry, using Level 3 of the Bloomberg Industry Classification System.

2 Reported company data for fiscal year 2013 using the FA <GO> command on Bloomberg Professional service, accessed on June 9, 2014.


8 IBISWorld. Gas Pipeline Transportation in the U.S. December 2012.

9 IBISWorld. Oil Pipeline Transportation in the U.S. December 2012.


19 IBISWorld. Oil Pipeline Transportation in the U.S. December 2012.


22 Forms 10-K for fiscal year 2013 for Plains Group Holdings (Page 1-36) and Oneok Partners (Page 1-16).


References (Cont.)

References (Cont.)


56 For example, see Form 10-K for FY 2012, Enterprise Products Products.


59 Form 10-K for fiscal year 2013, Plains Group Holding, page 1A-43.

60 Form 10-K for fiscal year 2012, Energy Transfer.

61 For example, see Form 10-K for FY 2012, Targa Resources Partners.


References (Cont.)


82 Form 10-K for FY 2013, Sunoco Logistics. Page 3-29.