GAS UTILITIES

Research Brief

SASB's Industry Brief provides evidence for the disclosure topics in the Gas Utilities 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 disclosure topic (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 disclosure topics likely to constitute material information for companies within a given industry. However, the final determination of materiality is the onus of the company.

Related Documents

- Infrastructure Sustainability Accounting Standards
- Industry Working Group Participants
- SASB Conceptual Framework

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INTRODUCTION

The Gas Utilities industry’s primary function is to build, maintain, and operate the natural gas distribution system, ensuring safe, reliable delivery to the end user. Companies in this industry provide a vital service to their customers, as natural gas is the main source of heat and cooking energy for many people, as well as an overall critical energy source for economic activity.

Companies in this industry must maintain strict safety standards on their distribution networks because natural gas leaks have the potential to cause significant harm to human life and property. While natural gas is a cleaner form of energy than many other sources (e.g., coal), resource efficiency is still a critical theme. Companies in the industry may be able to work with their customers and regulators to seek greater usage efficiency while also being positively economically impacted themselves. Furthermore, as companies in the Gas Utilities industry promote energy efficiency, they can have an impact on the workings of the entire natural gas industry value chain and play a role in the reduction of greenhouse gas (GHG) emissions.

Management (or mismanagement) of certain sustainability issues, therefore, has the potential to affect company valuation through impacts on profits, assets, liabilities, and cost of capital.

Investors would obtain a more holistic and comparable view of performance with gas utilities companies reporting metrics on the highly significant sustainability risks and opportunities that could affect value in the near and long term in their regulatory filings. 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 in the Gas Utilities industry:

- Promoting energy efficiency among customers to decrease consumer costs while positioning business models to benefit from increases in efficiency; and
- Ensuring a strong accident and safety management record, which is vital to protecting human life and avoiding costly negligence claims.

INDUSTRY SUMMARY

The Gas Utilities industry is made up of natural gas distribution and marketing companies. Gas distribution involves operating local low-pressure pipelines. Gas utilities transport this gas to residential, commercial, and industrial end users after receiving it from larger, often interstate transmission pipelines (entities included in the SASB NR0102 Oil & Gas—Midstream industry).

Gas marketing companies are gas brokers that aggregate natural gas into quantities that fit the needs of their different clients (generally enterprise or industrial customers) and then facilitate its transport to their customers through

SUSTAINABILITY DISCLOSURE TOPICS

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other companies’ transmission and distribution lines. A relatively smaller portion of this industry is involved in propane gas distribution. Natural gas is commonly used for heating, cooking, and other energy needs by residential, commercial, and industrial customers.

Natural gas is made up primarily of methane, a highly potent GHG. When it is extracted from the ground by exploration and production companies (entities included in the SASB NR0101 Oil & Gas—Exploration & Production industry), natural gas is made up primarily of methane, along with ethane, butane, and propane. Propane is most often used by rural customers who do not have natural gas pipelines leading to their homes or businesses. This gas is often delivered by bobtail or rack trucks.

In general, natural gas utilities do not own the actual gas wells but rather operate, expand, and maintain the roughly 2 million miles of distribution pipelines in the U.S. Municipally owned gas utilities exist as well, but these tend to be clustered in rural areas where there was historically not a large-enough financial incentive to attract private investment. Roughly 75 percent of the U.S. population is served by an investor-owned utility.

**Market structure**

Broadly speaking, a utility is a natural monopoly—something that has been determined to be both a vital public good and a service that would be inefficient for society to fully leave up to a competitive market. It is a logical distinction. Consider distribution pipelines: It would be wasteful to have multiple companies operate them in the same community; this would be akin to allowing multiple owners of private roadway systems to develop competing road networks through communities.

States strictly regulate gas utility companies so each company’s structure and operations may significantly vary, depending on where it is located. In regulated industry structures, companies in this industry buy gas from multiple suppliers to sell to their customers. In this situation, companies do both distribution and marketing in their allotted geographic area, so there is no competition. In deregulated states, distribution and marketing are legally separated. These “natural gas choice” programs give consumers the ability to choose between different natural gas providers. The utility, in exchange for a continued monopoly over gas distribution, is legally required to transmit all gas equitably along its pipelines for a fixed fee.

Twenty-four states, plus the District of Columbia (D.C.), are currently deregulated to some degree. Nationally, only roughly 18 percent of eligible customers, or around 7 million, participate in these natural gas choice programs.

The inherent monopoly in the distribution segment of this industry, where only one

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1 Industry composition is based on the mapping of the Sustainable Industry Classification System (SICS) to the Bloomberg Industry Classification System (BICS). A list of representative companies appears in Appendix I.
A company can own distribution pipelines in an allotted area, meaning that there are strict regulations on pricing and the rate of return for investors (discussed further in the “Legislative and Regulatory Trends” section, below). Each state has its own utilities commission, often called a public utilities commission (PUC) or a public service commission (PSC), which regulates portions of the gas market in the state (among other goods and/or services).

Broadly speaking, utilities commissions are in charge of approving the rate that gas utilities can charge for their services; deciding what types and amounts of costs can be passed on to ratepayers, and in what rate structures; and determining the “reasonable rate of return” that should be allotted for capital providers.10

Regulated companies in this industry must anticipate and articulate their current and future infrastructure needs to utilities commissions so that the costs can be passed on to ratepayers. Depending on the operation and the type of project, this approval may occur before the utility begins a new project.

Traditionally, however, such capital-project approval does not come until after the project is completed, giving rise to regulatory risks associated with project approval, as well as regulatory lag. As a result, utilities may naturally gravitate toward capital expenditures and capital raises associated with projects that they have a high level of confidence in being approved by their regulators. These regulatory risks and obstacles can limit how proactively gas utilities respond to certain infrastructure issues, as it depends on the sentiment of their regulators.

However, because the returns that regulated utilities earn are generally calculated on the rate base (generally, the level of approved capital investment), they have a conflicting incentive to invest heavily, so long as there is a high likelihood of such projects being approved.

Companies also need to manage projects efficiently, as company shareholders are often liable for projects that go over the budget allowed by the utilities commission. Gas utilities may be able to recover costs from unforeseen events or accidents, unless they are found to be negligent, in which case the resulting fines and/or loss of revenue may be borne by the shareholders.

Historically, a utility’s revenue was directly proportional to the amount of gas it sold (i.e., volumetric ratemaking). However, in recent years, utilities and regulators in more than a dozen states have put in place varying “decoupling” strategies. Under decoupling, a utility’s revenue is no longer directly tied to the volume of gas sold, thereby removing a theoretical disincentive for utilities to promote energy efficiency (this concept is discussed in greater detail in the End-Use Efficiency disclosure topic).11 There are a myriad of different regulatory mechanisms that can fall under the category of decoupling, but generally they set up a system of revenue recovery to counterbalance variables—such as weather fluctuations—that can have a significant effect on customers’ gas demand.12

**Revenue drivers**

As of January 27, 2016, the Gas Utilities industry had approximate global annual revenues of $294.4 billion for the most recent fiscal years (FY) reported by companies.13 Natural gas distribution accounted for $250.6 billion of this revenue, gas marketing accounted for $43.7 billion gas marketing accounted for $43.7 billion, and propane gas distribution accounted for $20.9 billion.14 The five companies that best represent this industry are NiSource, Atmos Energy, AGL Resources, UGI Corporation, and Questar Corporation. The FY2014 median net income
margin for companies in this industry is 7.26 percent.\textsuperscript{15}

This industry’s largest consumer base is residential households, followed by industrial and commercial customers.\textsuperscript{16} On a macro level, customer demand for natural gas generally follows economic and population growth. New home builds have a significant effect on natural gas demand, as consumers can choose to install natural gas appliances. Weather also has a major impact on company revenue, especially in states without any decoupling, as natural gas is often used for heating.\textsuperscript{17} Indeed, it is common practice for companies in this industry to list average temperatures, or weather-normalized financial results, in their Form 10-Ks and other regulatory filings, as that can help explain a significant portion of revenue volatility.\textsuperscript{18}

This industry has also benefited from the relatively lower GHG emissions of natural gas, compared with those of other fossil fuels used in electricity production, making natural gas a more attractive option for businesses and individuals looking to lower their carbon footprint.\textsuperscript{19}

The rise of hydraulic fracturing (“fracking”) in the U.S. has driven down the domestic price of natural gas significantly through an expansion of supply. The average cost in the U.S. between 2005 and 2010 was 47 percent higher than the average cost between January 2011 and December 2015 (as measured by the Henry Hub Natural Gas Spot Price).\textsuperscript{20}

**Costs and barriers to entry**

Generally, in a regulated environment, these cost fluctuations are allowed to be passed on directly to customers. In unregulated environments, however, decreasing gas prices result in lower costs for the utility. Even if the utility is not directly affected by gas prices, it will be affected by the resulting shifts in demand. However, the current climate of lower prices generally raises demand for natural gas, which, in the medium to long term, increases demand for more natural gas infrastructure that gas utilities can then get a return on.\textsuperscript{21} On average, the purchase of natural gas accounts for 57 percent of the industry’s total revenue, distribution-related operating costs account for approximately 20 percent, and depreciation represents 4.3 percent of the average company’s revenue, as pipeline upgrades require massive capital expenditures. Wages make up a relatively low percentage of revenue—an average of 4 percent.\textsuperscript{22} The industry requires—and currently is facing a shortage of—some highly skilled engineers and pipeline technicians.\textsuperscript{23}

This industry exhibits a relatively low level of national concentration. Generally, companies focus on local and regional operations, as the regulatory environment can make operating across state lines difficult. Recently, there has been a trend toward consolidation in regional markets, but no firm has a significantly large national position.\textsuperscript{24}

Gas distribution, especially in the regulated segment, has a prohibitively high barrier to entry, as regulation nearly guarantees a company a continued monopoly in its assigned area. The high costs of infrastructure investment and safety and environmental compliance also make local competition extremely difficult.\textsuperscript{25}

Generally, 60 percent of the price residential customers pay for natural gas is based on the cost of the gas itself, and 40 percent is based on distribution-related costs. The U.S. has significant regional pricing differences based on the market structure and the proximity to natural gas deposits.\textsuperscript{26}
Company valuation

Traditionally, investors have viewed utilities as low-risk investments. They are also prized for their steady dividend yields. This means that investment in this industry generally has an inverse relationship to the interest rate, as investors seek predictable, low-risk returns. When treasury bonds have low yields, utility stocks generally benefit. To value a company in this industry, analysts will typically examine its five-year plan for capital expenditures, the company’s cost of debt (as reflected in its corporate bond rate), its current and potential new customer growth rate, and the rate structures, as well as the equity ratio and return on equity that is allowed by regulation in its service area.

Apart from the financial drivers mentioned above, investors examine the local regulatory environment, as it can vary substantially at the state level (which is discussed further in the “Legislative and Regulatory Trends” section, below). State politics directly impact the regulations, as the state governor usually nominates the public utility commissioners, who generally serve staggered, six-year terms. This gives the political party in power a large influence over the policies of the state utilities commission.

Analysis of a regulated utility’s financial performance and its future risks and opportunities should be conducted in conjunction with an understanding of a utility’s rate structure. While rate structures and ratemaking are extremely complex topics that vary widely by state and utility, investors who deepen their understanding of a utility’s views and objectives on ratemaking—including past rate cases and expected future rate cases—as well as company performance relative to specific rate structures, will provide further context to assessing the risk-return profile of utilities in an environment where increasing resource efficiency and GHG mitigation is paramount.

LEGISLATIVE AND REGULATORY TRENDS IN THE GAS UTILITIES INDUSTRY

Regulations in the U.S. and abroad represent the formal boundaries of companies’ operations and are often designed to address the social and environmental externalities that businesses can create. Beyond formal regulation, industry practices and self-regulatory efforts act as quasi-regulation and also form part of the social contract between business and society. In this section, SASB provides a brief summary of key regulations and legislative efforts related to this industry, focusing on social and environmental factors. SASB also describes self-regulatory efforts on the part of the industry, which could serve to pre-empt further regulation.²

The natural monopoly that characterizes the Gas Utilities industry is accompanied by heavy and direct regulation. The potential environmental and safety hazards that accompany natural gas distribution lead to significant state and federal legislation to protect the public. Regulations that affect the demand and supply of natural gas and related products also have a direct impact on this industry, since it plays a supporting role to the broader natural gas sector.

The prices and services of regulated utilities are highly regulated by state utilities commissions. Regulated gas utilities submit rate proposals to utilities commissions in the form of rate cases, which are then taken into consideration when the

² 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.
utilities commission establishes the rates and rate structures. Many costs, such as fluctuating natural gas prices, can be directly passed on to customers.

State utilities commissions also stipulate the “allowed rate of return” for these projects. It is important to note that this return is not guaranteed, as the utility still needs to ensure that it keeps its costs within its estimates and that it avoids fines. Rather, the utility is in a position where it has a reasonable opportunity to earn the agreed-upon rate of return. If events occur that create what the utility believes to be an unavoidable cost, it can often make a case to the utilities commission to pass those costs on to customers.27

Twenty-five states have utilities that use a form of decoupling.28 Decoupled rate structures attempt to remove the linear relationship between the amount of gas a utility sells and the company’s revenues. Typically, decoupling mechanisms tie company margins to the number of customers it has and/or set up a system of revenue recovery to counterbalance variables—such as weather and efficiency fluctuations—that can have a significant effect on customer demand for gas.29 For example, South Carolina’s Piedmont Natural Gas is allowed to adjust rates depending on weather patterns.30 This helps smooth out revenue. However, there is a cap, so that if the weather is abnormally cold or warm, the utility is not completely protected from the fluctuations.31

Utilities are often in favor of decoupling because it may reduce the volatility of revenues and returns. In many places decoupling also has strong political and public support, as it addresses the disincentive for energy conservation in traditional pricing systems.32 Some states also provide performance incentives for companies that achieve consumption-reduction targets among their customers.

The Federal Energy Regulatory Commission (FERC) is the federal regulatory body that oversees interstate natural gas trade. While it does not directly affect members of this industry, its laws still can have major effects on the operations of gas distribution utilities. One of its most important rulings is FERC Order No. 636, often called the Final Restructuring Rule, as it was the culmination of decades of utility deregulation when it was passed, in 1992. The order necessitated the separation of the transmission and the sale of natural gas. It allowed many larger customers to sidestep distribution services and buy their gas directly from suppliers. In response, many state utilities commissions either encouraged or required similarly open access for their distribution lines, giving customers a choice in their gas provider.33

The U.S. Department of Transportation’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.34 The PHMSA sets minimum federal safety standards, but distribution pipelines are also governed by their state utilities commissions. A 2013 survey by the National Association of Pipeline Safety Representatives (NAPSR) found 1,361 state regulations, orders, or legislation provisions that went above the minimum federal requirements, and many of these focus on reporting and safety.35

Fugitive emissions or leaks from natural gas pipelines are currently not directly regulated at the state or federal level, although regulation is expected to be forthcoming. President Barack Obama’s 2013 Climate Action Plan called on the U.S. Environmental Protection Agency (EPA), as
well as other federal agencies, to address methane leakage. Current estimates of the gas utilities’ contribution to U.S. GHG emissions are low. The EPA found that in 2013, 0.4 percent of the total U.S. GHG emissions came from the industry. However, this is still a concern, as methane, the industry’s main emission, has a global warming potential that is 28 times greater than carbon dioxide’s over a 100-year period. The natural gas sector as a whole produces a quarter of all U.S. methane emissions (which themselves are 10 percent of total U.S. GHG emissions). Natural gas distribution specifically accounts for 5 percent of the total from the natural gas sector. Although by affecting demand, gas utilities can play a significant role in emissions reduction (as discussed later in the End-Use Efficiency issue). The EPA has a voluntary program called Natural Gas STAR that helps utilities reduce their methane emissions and improve their operational efficiency.

Utilities generally must monitor and report leaks to their utilities commission on a yearly basis. Specific laws differ by state. For example, in New York, natural gas leaks that do not pose an immediate physical danger to those near them and that are detected more than five feet from a building are generally considered non-hazardous. Utilities must report a list of these leaks to the utilities commission, but their repair may not be a legal priority. On the other hand, California has some of the strictest laws nationwide. For example, California’s 2014 Senate Bill 1371 requires utilities to routinely check, measure, and fix all methane leaks.

**SUSTAINABILITY-RELATED RISKS AND OPPORTUNITIES**

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

Broad industry trends and characteristics are driving the importance of sustainability performance in the Gas Utilities industry:

- **Environmental externalities of operations**: Gas utilities, given the proper regulatory climate, have a significant role to play in ensuring the most efficient use of natural gas by their customers, reducing both house utility bills and household emissions, as well as reducing risk for the utility.

- **Social license to operate**: Gas utilities are allowed to operate as a monopoly and in so doing have a significant license to operate. They risk losing this license if they are not vigilant regarding safety and emergency preparedness, as pipelines run throughout communities. This industry has faced increased scrutiny over high-profile accidents that have resulted in a loss of human life, increasing the importance of proper safety procedures.

As described above, the regulatory and legislative environment surrounding the Gas Utilities industry emphasizes the importance of sustainability management and performance. Specifically, recent trends suggest a regulatory emphasis on energy efficiency, 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 financial implications for companies in the Gas Utilities 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, which highlights the frequency with which each topic is discussed in these documents. The evidence of interest is also based on the results of consultation with experts participating in an industry working group (IWG) convened by SASB. The IWG results represent the perspective of a balanced group of stakeholders, including corporations, investors or market participants, and public interest intermediaries.

The industry-specific sustainability disclosure topics and metrics identified in this brief are the result of a year-long standards development process, which takes into account the aforementioned evidence of interest, evidence of financial impact discussed in detail in this brief, inputs from a 90-day public comment period, and additional inputs from conversations with industry or issue experts.

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. Finally, Appendix IV provides an analysis of the quality of current disclosure on these issues in SEC filings by the leading companies in the industry.

**BUSINESS MODEL AND INNOVATION**

This dimension of sustainability is concerned with the impact of environmental and social factors on innovation and business models. It addresses the integration of environmental and social factors in the value-creation process of companies, including resource efficiency and other innovation in the production process. It also includes product innovation and efficiency and responsibility in the design, use-phase, and disposal of products. It includes management of environmental and social impacts on tangible and financial assets—either a company’s own or those it manages as the fiduciary for others.

The business protections allowed to companies in this industry come with certain societal expectations that are important to meet for companies to retain their social license to operate. In some regions the regulatory climate is pushing for utilities to be partners in end-customer resource efficiency, creating direct and indirect rewards for companies that can achieve these goals.

**End-Use Efficiency**

Natural gas produces fewer GHG emissions than other fossil fuels do, making its proliferation a key strategy for many governments and regulators striving to reduce these emissions. While displacing more emissions-intensive energy sources could contribute to significant net reductions of GHGs in the economy, the natural gas value chain does still produce meaningful levels of GHGs. This indicates that as policymakers and regulators look to address climate change, efficient consumption of natural gas will be an important theme over the long term, despite the favorable emissions profile of natural gas when compared to the profiles of some other forms of energy (e.g., coal). This industry, through efforts to increase end-user efficiency, can reduce overall natural gas emissions.

Gas utilities can partake in a wide range of activities to promote energy efficiency among
their customers, while potentially seeing financial benefits themselves. If successful, these activities result in overall efficiency increases or demand decreases, which can meaningfully reduce GHG emissions from the sector as a whole. Such activities may include, proposing rate structures that incentivize efficient consumption while rewarding companies for increasing end-use efficiency, providing low-interest loans to purchase more energy efficient appliances, creating and disseminating information and tools to help customers become more aware of ways to reduce their energy bills, and assisting with the weatherization of customers’ homes. How a gas utility stands to gain or lose from this trend toward GHG mitigation is significantly predicated on its regulatory environment.

As mentioned earlier in the “Legislative and Regulatory Trends” section, some utilities, regulators, and states are pursuing alternative ratemaking that promotes efficiency or at least removes utilities’ potential disincentives to promote efficiency. While the specifics of such rate structures and programs vary widely by state and utility, “decoupling” measures generally remove the disincentive for utilities to work with their customers on efficiency efforts, through delinking utility revenues from their customers’ consumption.

The resulting rate structure indicates that utilities can proceed with encouraging end-customer efficiency (or at the very least, not discouraging efficiency), without jeopardizing revenues—and potentially even growing revenues from reduced customer consumption through a variety of other related programs, such as performance incentives tied to energy efficiency. Overall, such rate structures designed to promote efficiency are generally seen as reducing the risk profile of utilities, while potentially providing financial incentives for effectively promoting end-use efficiency.

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

- Customer gas savings from efficiency measures by market.

**Evidence**

Roughly 66 percent of the natural gas in the U.S. is used by customers of this industry; the rest is mainly used for electricity generation. The natural gas industry as a whole is responsible for roughly 2.5 percent of U.S. anthropogenic GHG emissions. The White House has set a goal to cut nationwide methane emissions by 40 to 45 percent by 2025, compared to 2012 levels, and this industry has an integral role to play. This makes continued regulatory emphasis on this issue likely in the coming decade.

According to a survey from the American Gas Association (AGA), natural gas utilities invested $1.27 billion in efficiency programs in 2014, which helped customers save 175 trillion Btus of energy (1.75 billion therms), amounting to a reduction in carbon dioxide emissions of 9.1 million metric tons. The proposed budget for 2015 increased to more than $1.46 billion. This represents a 356 percent rise from 2007, when the national investment hovered around $320 million. In 2014 these programs helped reduce gas consumption by 18 percent for participating households and reduced their annual natural gas bill by $137. Expenditures on these efforts vary significantly between states. For example, California (a state with decoupling) spent $311 million on these efforts in 2014 and budgeted nearly $370 million for 2015, while Texas (a state...
without decoupling) spent $2.9 million in 2014 and budgeted $4.4 million in 2015.  

On the company level, Peoples Gas, a Chicago-based regulated utility, reported spending $19 million in 2013—roughly $25 per residential customer—on natural gas efficiency programs. That year, the utility reported savings of 7.77 million therms, or 0.71 percent of its retail sales.  

In addition to supporting public policy objectives around resource efficiency and GHG mitigation, these efficiency programs function well for gas utilities with alternative rate structures (e.g., decoupled rate structures), as utilities can obtain economic incentives for the successful implementation of efficiency programs and, at the very least, are not penalized financially when customer efficiency efforts are successful. Within these mechanisms, which can be requested by the utility (although decoupling can also come from state-level efficiency initiatives), decoupling is explicitly tied to energy efficiency. For example, in Michigan, natural gas utilities are allowed to request a decoupling mechanism, as long as they are spending at least 0.5 percent of their total revenue on energy efficiency programs. Of course, it should be noted that gas utilities ultimately do not have control over their rate structure and whether they are eligible for decoupling.

Twenty-seven states have programs that provide economic incentives for investor-owned utilities that reach and/or exceed energy efficiency performance targets. Analysis by the American Council for an Energy-Efficient Economy shows that these generally fall into three categories: performance target incentives (bonuses based on hitting certain targets), shared savings (utilities receiving a percentage of the net savings), and rate-of-return incentives (an increased return on equity). While the amounts vary by regulatory environment, they can be significant; California’s Pacific Gas and Electric (PG&E) reported that for its energy efficiency efforts (including both gas and electric operations) between 2012 and 2014, it was awarded roughly $60 million. Furthermore, eight states have monetary penalties for failing to meet state energy efficiency standards; penalties vary by state and the size of the utility. For example, a large utility in Illinois could be penalized $665,000.  

AGL Resources, an Atlanta-based gas utility, disclosed in its FY2014 Form 10-K, “Three of our utilities have decoupled regulatory mechanisms in place that encourage conservation. We believe that separating, or decoupling, the recoverable amount of these fixed costs from the customer throughput volumes, or amounts of natural gas used by our customers, allows us to encourage our customers’ energy conservation and ensures a more stable recovery of our fixed costs.”  

While the topic of implementing alternative ratemaking that performs well from the perspective of all stakeholders is extremely complex, the overall theme of the importance of rate design to shareholders in assessing company value is increasingly critical in an environment where growing resource efficiency and GHG mitigation are public policy and consumer objectives. The American Gas Foundation also recognizes the need for modernization of rate design related to efficiency needs among other drivers. In a paper produced in conjunction with an executive forum, “Rethinking Natural Gas Utility Rate Design,” the organization stated, “Investors are giving a premium to companies with rate designs such as SFV [straight fixed-variable], decoupling, and bad-debt recovery through tracking mechanisms, believing that regulators and LDCs [local distribution companies] must align customers’
efficiency interests with companies’ profit interests. Investors, consumers, companies, and regulators will all benefit from innovative rate designs that promote customer efficiency and protect shareholder returns.”55

Value Impact

Companies that are able to align their financial incentives with the objectives of public policy and consumers—namely, increasing resource efficiency and reducing GHG emissions—may be better positioned over the long term to outperform on risk-adjusted returns. Utilities can work with regulators in this regard to continue the growth of potentially favorable alternative-rate designs, such as decoupling, and other programs designed to promote end-use efficiency and demand reductions, while rewarding companies for strong performance in these areas and potentially financially penalizing those with poor performance. Such efforts, together with improving the energy efficiency performance of customers through specific initiatives, may increase the stability of long-term revenues, provide additional revenue upside opportunities, and drive down the cost of capital as a result of risk reductions with the rate structures that can accompany efficiency efforts.

Given the growing urgency to act on climate change mitigation, it is likely that energy sector regulations will increasingly emphasize energy efficiency. Thus the probability and magnitude of impacts from this issue are likely to further increase in the future.

Operational Safety, Emergency Preparedness, and Response

Operating a vast network of pipelines requires a complex, structured approach to inspections and maintenance to prevent emergency situations such as accidents or leaks. Without proper inspection, maintenance, and retrofitting, an aging or otherwise neglected pipeline infrastructure increases the likelihood of incidents such as combustion, resulting in fires or explosions. Accidents—particularly fatal accidents—can result in claims of negligence against companies, leading to costly court battles and fines.

In many parts of the country, concerns about aging infrastructure have caused companies in the industry to look for ways to expedite the replacement approval process, especially in cases where pipelines are located near densely populated areas. This is especially true on the East

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 are in potential conflict with the interest of broader stakeholder groups (government, community, customers, and employees). They therefore create a potential liability, or worse, a limitation or removal of license to operate. This includes regulatory compliance, lobbying, and political contributions. It also includes risk management, safety management, supply chain and resource management, conflict of interest, anti-competitive behavior, and corruption and bribery.

Specifically in the Gas Utilities industry, companies that demonstrate leadership and strong governance procedures directed at accident prevention and prompt corrective action during emergencies can benefit from a stronger societal license to operate. Through enhanced reputational value, such companies could potentially benefit from the favorable opinion of their regulators and customers.
Coast, which has the country’s oldest distribution infrastructure, including a higher proportion of unprotected steel and cast iron pipelines. These are more susceptible to leaks than newer lined steel or plastic piping.\textsuperscript{56} In New York, more than half the pipelines are made of cast iron, wrought iron, or unprotected steel.\textsuperscript{57} However, as previously mentioned, utilities can generally recover infrastructure upgrade costs only with utilities commission approval, so companies need to be sure that the utilities commission will see the infrastructure upgrades as being in the best interest of ratepayers.

To ease the regulatory friction in upgrading infrastructure, some utilities have made proposals of Targeted Infrastructure Replacement Fund Programs (TIFPs), which allow for the recovery of capital costs for specific types of projects between rate cases. These programs have been increasingly approved by utilities commissions. In areas where these programs have not been implemented, the capital repayment structure for these upgrades and repairs is made in the general rate case.\textsuperscript{58} These costs vary depending on the location of the pipelines, but are generally rather expensive.

Employee training and sophisticated technology that allows for the cost-effective monitoring of leaks are vital resources that help companies manage the risk of escaping natural gas igniting and causing bodily harm and infrastructure and property damage.\textsuperscript{59} Company performance in this area can be analyzed in a cost-beneficial way through the following direct or indirect performance metrics (see Appendix III for metrics with their full detail):

- Number of (1) reportable pipeline incidents, (2) Corrective Action Orders (CAO), (3) Notices of Probable Violation (NOPV);
- Average response time for gas emergencies;
- Percentage of distribution pipeline that is (1) cast and/or wrought iron and (2) unprotected steel; and
- Discussion of management systems used to integrate a culture of safety and emergency preparedness throughout project lifecycles.

**Evidence**

Gas distribution line accidents have resulted in more than 120 deaths and were responsible for more than $775 million in damages between 2004 and 2014.\textsuperscript{60} During this period, there was an annual average of 28 serious incidents, defined as events that include a fatality or an injury requiring in-patient hospitalization. While still a serious issue for the industry, these incidents have been trending downward recently, which is partially due to technological advances. Between 2012 and 2014, gas distribution companies averaged 23 incidents per year.\textsuperscript{61} However, aging pipelines could mean this downward trend may not continue in the long term without effective actions to strengthen the pipe infrastructure. As mentioned, these upgrade costs can vary significantly by location. For example, in Pittsburgh, it costs roughly $1 million per mile to replace distribution lines; in New York City, it costs $10 million per mile.\textsuperscript{62} Paradoxically, the riskier that a utility is perceived to be (in regard to its safety record), it will likely have more trouble raising capital, making these needed upgrades costlier or potentially prohibitively expensive without regulatory intervention.

Distribution lines can explode, causing loss of human life and property, as well as serious regulatory repercussions. A 2011 distribution line blast in Allentown, Pennsylvania, killed five people and leveled a city block. UGI, a Pennsylvania-based natural gas distribution company, was fined
$500,000 for improperly odorizing some of its gas and for failing to check for corrosion in its pipelines—both measures that potentially could have helped avoid the explosion.63

After the PUC investigation, UGI was required to spend between $2 million and $4 million to add equipment to better spread mercaptan, an odorant, throughout its lines.64 Furthermore, it was directed to accelerate its replacement of cast-iron pipelines, which cost an estimated $18 million a year in 2013 and 2014 and ultimately is estimated to cost $1.2 billion.65 UGI was replacing pipes at a rate of 6 to 10 miles per year, but in the aftermath of the accident has now greatly accelerated its replacement rate to 63 to 66 miles per year.66 This explosion also caused the Pennsylvania government to raise the maximum fine for pipeline safety incidents from $500,000 to $2 million.67

A 2014 explosion in East Harlem that killed eight people, injured 50 people, and displaced more than 100 families led to increased media scrutiny of Consolidated Edison, a large regulated utility based in New York City.68 It was subsequently revealed that of the 525 people who had been trained to connect pipe sections between 2009 and 2014, 301 had lapses in their qualifications.69 The National Transportation Safety Board issued a report in 2015 that found that the explosion could have been avoided if two Con Edison pipelines had been properly connected; it also found that New York City also should have repaired a hole in the sewer main.70

Con Edison faced initial costs of $1.9 million for emergency response and repair,71 and since the blast, the company has been shouldering the increased expense of surveying its 4,300 miles of gas lines monthly, instead of the yearly inspections required by state and federal law.72 Con Edison could also face both fines and legal action from this incident.73

Con Edison, in its FY2015 Form 10-K, noted the incident under “Other Material Contingencies”: “Approximately seventy suits are pending against the company seeking generally unspecified damages and, in one case, punitive damages, for wrongful death, personal injury, property damage and business interruption. The company has notified its insurers of the incident and believes that the policies in force at the time of the incident will cover the company’s costs, in excess of a required retention (the amount of which is not material), to satisfy any liability it may have for damages in connection with the incident. The company is unable to estimate the amount or range of its possible loss related to the incident. At December 31, 2015, the company had not accrued a liability for the incident.”74 Credit rating agency Fitch, in assessing the credit risk of Con Edison, noted that it has been unable to verify the extent of the insurance coverage for this incident.75

While companies in this industry have insurance to cover potential damages, it may not always fully protect the company from losses. As Atmos Energy, a Dallas-based natural gas distributor with operations in both regulated and deregulated markets, noted in its FY2014 Form 10-K, “Because some of our…distribution facilities are near or are in populated areas, any loss of human life or adverse financial results resulting from such events could be large. If these events were not fully covered by our general liability and property insurance, which policies are subject to certain limits and deductibles, our operations or financial results could be adversely affected.”76

**Value Impact**

Operational safety management has implications for the cost structure of gas utilities. Companies
that are found negligent in accidents can incur costs and fines that cannot be passed on to their customers. Accidents can lead to legal and regulatory actions that could result in extraordinary expenses, contingent liabilities, an increase in insurance costs, and an increase in a company’s cost of capital.

While the probability of these events is low, their impact, however, can be significant—raising costs and cutting into the otherwise generally stable returns investors expect from utilities. On the other hand, capital expenditures to upgrade aging infrastructure may be built into rates, depending on the utilities commission and rate design, resulting in higher profits. Furthermore, accidents can significantly impact utilities’ own infrastructure and their reputation, affecting both tangible and intangible assets.

Over time, the probability of this impact is likely to increase as the current infrastructure of pipelines continues to age.

**SASB INDUSTRY WATCH LIST**

The following section provides a brief description of sustainability disclosure topics that are not likely to constitute material information at present but could do so in the future.

**Distribution Network Cybersecurity**

Systemic or regional disruptions may occur if gas utilities are not prepared to handle cyber-attacks. These attacks could result in frequent or significant service disruptions and the need to upgrade or repair compromised equipment. Gas utilities own and operate infrastructure that people and businesses rely on for critical functions, such as heating. Natural gas is the main heating fuel for 43 percent of U.S. households. Disruption to natural gas pipelines in winter could potentially result in a high death toll, especially in the dangerously frigid climates of the upper Midwest and the Northeast.

The cybersecurity of some unnamed gas utilities has been compromised. Since 2011, Chinese hackers have attempted to infiltrate at least 23 natural gas pipelines, and authorities have confirmed that they were able to gain access to private information and to gain control of systems at 10 facilities. With this kind of access, hackers could concentrate gas in certain pipelines, causing them to explode.

Cybersecurity is the focus of a presidential initiative, as it has been identified as one of the chief U.S. security weaknesses. In 2014, the U.S. Department of Homeland Security sent a warning to gas utilities stating that many of their substation and pipeline controls were not adequately secure. This political support makes it likely that rate cases seeking to specifically address the strengthening of this infrastructure will be approved, potentially a boon for investors in this industry. As more elements of operational infrastructure are connected to the Internet, and as companies move information technology infrastructure to shared networks, it is likely that companies’ risks from cyber-attacks will increase in the future.
### APPENDIX I

**FIVE REPRESENTATIVE GAS UTILITIES COMPANIES**

<table>
<thead>
<tr>
<th>COMPANY NAME (TICKER SYMBOL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NiSource (NI)</td>
</tr>
<tr>
<td>Atmos Energy (ATO)</td>
</tr>
<tr>
<td>AGL Resources (GAS)</td>
</tr>
<tr>
<td>UGL Corporation (UGI)</td>
</tr>
<tr>
<td>Questar Corporation (STR)</td>
</tr>
</tbody>
</table>

This list includes five companies representative of the Gas Utilities industry and its activities. This includes only companies for which the Gas Utilities industry is the primary industry, companies that are U.S.-listed but are not primarily traded over the counter, and for which 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 March 24, 2015.
## APPENDIX IIA:
Evidence for Sustainability Disclosure Topics

<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>EI Revenue &amp; Cost</td>
</tr>
<tr>
<td>End-use Efficiency</td>
<td>63</td>
<td>67</td>
<td>2</td>
</tr>
<tr>
<td>Operational Safety, Emergency Preparedness, and Response</td>
<td>71*</td>
<td>75</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, 20-Fs, 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 likely to 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. 1 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>Cost of Capital</th>
<th>Industry Divestment Risk</th>
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<tbody>
<tr>
<td>Market Share</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>New Markets</td>
<td></td>
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<td>Pricing Power</td>
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<tr>
<td>Cost of Revenue</td>
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<tr>
<td>R&amp;D</td>
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<tr>
<td>CapEx</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Extraordinary Expenses</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Tangible Assets</td>
<td></td>
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<tr>
<td>Intangible Assets</td>
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<td></td>
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<tr>
<td>Contingent Liabilities &amp; Provisions</td>
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<td></td>
</tr>
<tr>
<td>Pension &amp; Other Liabilities</td>
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<td></td>
</tr>
</tbody>
</table>

- **High Impact**: Dark Grey
- **Medium Impact**: Light Grey

### End-use Efficiency
- **High Impact**

### Operational Safety, Emergency Preparedness, and Response
- **Medium Impact**
- **High Impact**
## APPENDIX III

### SUSTAINABILITY ACCOUNTING METRICS—GAS UTILITIES

<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>End-Use Efficiency</td>
<td>Customer gas savings from efficiency measures by market&lt;sup&gt;4&lt;/sup&gt;</td>
<td>Quantitative</td>
<td>Million British Thermal Units (MMBtu)</td>
<td>IF0102-01</td>
</tr>
<tr>
<td>Operational Safety, Emergency Preparedness, and Response</td>
<td>Number of (1) reportable pipeline incidents, (2) Corrective Action Orders (CAO), and (3) Notices of Probable Violation (NOPV)&lt;sup&gt;5&lt;/sup&gt;</td>
<td>Quantitative</td>
<td>Number</td>
<td>IF0102-02</td>
</tr>
<tr>
<td></td>
<td>Average response time for gas emergencies</td>
<td>Quantitative</td>
<td>Minutes</td>
<td>IF0102-03</td>
</tr>
<tr>
<td></td>
<td>Percentage of distribution pipeline that is (1) cast and/or wrought iron and (2) unprotected steel</td>
<td>Quantitative</td>
<td>Percentage (%) by kilometers (km)</td>
<td>IF0102-04</td>
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<tr>
<td></td>
<td>Discussion of management systems used to integrate a culture of safety and emergency preparedness throughout project lifecycles</td>
<td>Discussion and Analysis</td>
<td>n/a</td>
<td>IF0102-05</td>
</tr>
</tbody>
</table>

<sup>4</sup> Note to IF0102-01—The registrant shall discuss customer efficiency measures that are required by regulations for each of its relevant markets.

<sup>5</sup> Note to IF0102-02—The registrant shall discuss notable incidents such as those that affected a significant number of customers, created extended disruptions to service, or resulted in serious injury or death.
APPENDIX IV: Analysis of SEC Disclosures | Gas Utilities

The following graph demonstrates an aggregate assessment of how representative U.S.-listed Gas Utilities companies are currently reporting on sustainability topics in their SEC annual filings.

**TYPE OF DISCLOSURE ON SUSTAINABILITY TOPICS**

<table>
<thead>
<tr>
<th>Gas Utilities</th>
<th>0%</th>
<th>10%</th>
<th>20%</th>
<th>30%</th>
<th>40%</th>
<th>50%</th>
<th>60%</th>
<th>70%</th>
<th>80%</th>
<th>90%</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>End-Use Efficiency</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>67%</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>
<td></td>
<td></td>
<td></td>
<td>75%</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

13 Data from Bloomberg Professional service, accessed on March 24, 2015, using the ICS <GO> command. The data represents global revenues of companies listed on global exchanges and traded over the counter from the Gas Utilities industry, using Levels 4, 5, and 6 of the Bloomberg Industry Classification System. Revenue of Gazprom reported under the BICS Level 6 Natural Gas Distributors segment (equal to approximately $93 billion at the time of data retrieval) is not included, as the activities reported under “Gas Distribution” as a segment would be defined as those performed by integrated oil and gas companies under U.S. law.
14 Ibid. NB: The reason that the revenue figure for gas distributors is larger than the combined amount of propane gas distributors and natural gas distributors is that not all companies are classified down to BICS Level 6.
15 Author’s calculation based on data from Bloomberg Professional service, accessed on March 24, 2015, using the ICS <GO> command.
17 AmeriGas Partners, FY2015 Q1 Earnings Call, p. 3., accessed from Bloomberg Professional service, March 24, 2015, using the CF <GO> command.
22 Harris, Industry Report 22121 Natural Gas Distribution in the US, p. 20.
25 Ibid., p. 22.
29 “Revenue Decoupling: An Overview,” Center for Climate and Energy Solutions.
32 Ibid.


65 Wereschagin, “Decrepit Pa. Natural Gas Utility Pipelines Years from Upgrade.”


67 Ibid.


