Standards Outcome Report

NON-RENEWABLE RESOURCES

SASB Standards
Development Team
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Executive Summary

This report provides a reference and framework for the SASB Standards Council Non Renewable Resources sector standards outcome review on December 19, 2013.

In the third quarter of 2013, SASB's Standards Development Team identified the material sustainability issues (or disclosure topics) that impact shareholder value in eight industries: Oil & Gas Exploration and Production, Oil & Gas Midstream, Oil & Gas Refining and Marketing, Oil & Gas Services, Coal Operations, Metals and Mining, Iron and Steel Producers, and Construction Materials.

These issues and the associated accounting metrics or key performance indicators (KPIs) have subsequently been vetted by external stakeholders through the Industry Working Group (IWG). This process allowed for each issue and KPI to be evaluated on the basis of materiality, investor interest, and cost-benefit analysis. Based on this feedback and additional research, SASB will put forward for a 90-day public comment period (PCP) on January 14, 2014, accounting standards for the eight industries.

This report provides the Standards Council with an update on SASB's evaluation of IWG feedback and additional evidence research, which form the basis for a revised set of issues and KPIs for public comment. The table in Appendix I shows the list of issues by industry that were presented to the IWG, and SASB's process for revising each of those issues. Section I of this report presents issues for which SASB conducted additional research to determine whether the issue would be retained as material, based on IWG feedback, which suggested that evidence for the materiality of the issue may be weak. Section II provides SASB's review of, and response to, IWG feedback on issues for which there was general agreement about materiality, but where there were some reservations. Section III presents a summary of SASB's evidence research and decision on issues that IWG participants suggested be added to the list of material issues. Finally, Section IV presents an updated list of material issues for the Oil and Gas Services industry, based on IWG feedback, which suggested that many of the issues for the industry be re-evaluated to determine the specific aspect of performance that makes them material, given the complexity of the relationship and division of responsibility between Oil & Gas Exploration and Production companies, and Oil & Gas Services companies. Appendix II contains the list of issues that SASB will present for public comment on January 14, 2014. Appendix III provides sample accounting metrics for the Oil & Gas Exploration and Production industry, for reference.

A supplement to this report provides a materiality assessment of each disclosure topic by the IWG, and a list of all IWG comments on issues.

I. Existing issues needing additional input

These issues received relatively low scores from the industry working groups (IWG) (less than 75% of respondents agreed that the issue is material). The following provides evidence of financial impact and of interest as presented to the IWG, and identifies evidence gaps or questions for consideration. Then based on additional research and informal inputs from industry experts, the SASB Standards Development Team presents its decisions for each issue.

1. ISSUE: COMMUNITY RELATIONS

A. INDUSTRY: OIL AND GAS REFINING AND MARKETING

Evidence of Financial Impact

From Briefs:

(Note – Paragraphs below are extracts from industry briefs and are provided for reference. Please refer to briefs for complete evidence and citations.)

Evidence

"While it can be difficult to establish a direct causal relationship between a company's refinery operations and health impacts, some evidence exists that residents of areas surrounding refineries face higher than average health risks, and that low income or minority populations may be affected disproportionately. Strong community relations and effective community engagement, including communication and transparency at the time of emergencies, can help companies avoid unforeseen disruptions, costs and regulatory actions.

The Contra Costa County Health Services Department lists the residents of Richmond, California, the location of four refinery facilities, as one of the "most at-risk groups" in the county. Residents are hospitalized for chronic diseases at significantly higher rates than the county average, including for female reproductive cancers, which are more than double the county rate. Richmond residents suffer higher rates of asthma, childhood asthma, and asthma-related deaths. Overall, they are at significantly higher risk of dying from heart disease and strokes, with African Americans 1.5 times more likely to die from these diseases, according to the Contra Costa County Health Service Department's Community Health Indicators 2010…

Using data from Geographic Information Systems (GIS), a Carnegie Mellon University study looked at environmental justice issues in the context of areas surrounding U.S. petroleum refineries and found that there are "unquestionably" environmental justice issues in certain areas surrounding refineries, but that it was difficult to draw conclusions at a national level. The study observed that poverty rates are higher for immediate areas around refineries (less than 2.5 miles), rather than surrounding areas (2.5 to 5 miles), except for small, urban refineries. Other studies have varied in their conclusions about the environmental justice implications of petroleum refineries.

The EPA undertook a Petroleum Refinery priority initiative in 1995 to address environmental and public health threats of refineries, particularly related to air emissions. Although it achieved some of the primary goals of the initiative, including addressing 80 percent of the domestic refining capacity and 90 percent of that capacity in environmental justice areas, it remains focused on addressing the remaining 20 percent of the industry. The EPA is also undertaking an Environmental Justice Permitting Initiative, to incorporate environmental justice issues in permitting decisions. This could pose continued regulatory risks for companies.

Additionally, companies may have to pay compensation to local communities for accidental leaks and explosions. For example, a fire at the Richmond refinery of Chevron in 2012 led to shelter-in-place orders for area residents as a result of the smoke generated by the fire. The incident led to approximately 23,900 claims being initiated against the company, and the company provided approximately $10 million in compensation to local hospitals, affected community members, and local government agencies…"

Value Impact

"The impact of R&M activities on local communities can create operational disruptions, for example, through protests or government intervention. Companies may face legal liabilities from their community impacts. Furthermore, in a globalized world with expanding and instantaneous communications, even local impacts can significantly impact a company's brand value. Legacy community impacts can hurt a company's future social license to operate, thus increasing its risk premium."

Evidence of Interest

Materiality Map tests

Score of 35% for this issue, which is low relative to other issues in the industry, but the percentage is higher than for Construction Materials and Oil and Gas Midstream, and only slightly lower than Oil and Gas Exploration and Production and Coal.

Summary of IWG Feedback

4 out of 12 respondents (33%) said this issue is not material. 5 respondents (42%) agreed about its materiality. A respondent from an oil corporation who agreed about materiality, referred to Chevron's expenditures in Richmond to maintain their social license to operate. Another respondent who answered 'Yes' said that the need for community relations is becoming more important especially after the Arab Spring and administrators of oil rich nations are using this as a tool to gain support of the population. This is a general statement, and does not provide specific evidence of materiality for the Refining and Marketing industry. A 'Maybe' comment was similarly not industry-specific. Another 'Maybe' comment discussed how communities rely on tax revenues of large facilities, but did not relate this directly to company performance or materiality of the issue. Some comments suggest that the environmental issues covered in the brief address the pertinent community impacts and risks.

IWG issue priority

IWG members gave the issue an average rank of 5.8 (out of 8 issues); second lowest mean rank, just better than the issue of pricing integrity and transparency.

IWG response breakdown

2 Corporations (50% of corporation respondents) agree about the materiality of this issue, while 2 (50%) say the issue 'Maybe' material. Note that one of the respondents who replied with a 'Maybe' classified themselves as a Corporation, but is a Public Interest Intermediary (consultant). Similarly, one of the Corporation respondents who replied with a 'Yes' is actually also a Public Interest Intermediary (consultant).

50% of market participants (3 out of 6) agreed about materiality; however, 33% (2 out of 6) market participants said the issue is not material.

Additional Delta Series Comments

One respondent from an oil company said in a follow-up email (dated 18 Oct): "…it really depends where a company finds itself in the value chain. For instance, Statoil in North America does not have "visible" midstream therefore community relations is not relevant. For pipeline companies such as Spectra or downstream or integrated companies who have refineries or retail fuel stations this issue is absolutely material. In fact most refineries have community advisory councils (am not sure if this is best practice or a legal requirement)."

Evidence Gaps

A review of existing evidence of financial impact and evidence of interest shows weak support for the materiality of the issue.

Before deciding to remove the issue from the final list, the SASB Standards Development team sought clarification from industry experts on some of their comments on the working group survey response:

- A respondent who disagreed with the materiality of the issue: "I think this is refinery dependent. Some refineries and marketing terminals, based on their location at very close to large communities and therefore they need to have close community relations and management of

odor and emissions. However, some refineries are not close to communities and therefore, community relations are not as material for these sites."
- A respondent who agreed about materiality of the issue commented: "Critical to social license. Look at what Chevron spends in Richmond to maintain theirs."

Additional Research

Clarification from industry experts

Response from disagreeing respondent above (paraphrased):

- Whether refineries are located close to communities or not varies – e.g., the Chevron El Segundo refinery is very close to the community, but there are other more remote refineries in the south-east. Overall, this is not an issue at the industry-level, and is localized depending on the location of the refinery.
- Agree that the relevant aspects of community relations can be covered under the issues of Air Quality and Hazardous Materials Management.

Response from agreeing respondent above (paraphrased):

- According to the respondent, this is absolutely a material issue to R&M companies, particularly for refining operations. Chevron was given as an example, not a one-off; if ultimately the city shuts them down, the capital costs to wind down (and lose) production and potentially move to a new location would be "staggeringly significant enough" to get investors' attention. (The respondent added that it is unlikely that the city will shut them down).
- The respondent suggested looking at BP (or ExxonMobil), who were facing fierce opposition to a refinery expansion (it may have been a chemical plant) in Texas City, just south of Houston. According to the respondent, several of the integrated oil and gas companies invest in Community Advisory Panels (CAPs), though not sure what the administrative costs of these would be. (Note: Based on this comment, SASB did further research on CAPs specifically related to refining and marketing operations, discussed below; integrated oil and gas companies may need CAPs due to their exploration, production, and midstream operations)
- Gas stations tend to be franchises and while Shell and CVX stations have featured in boycotts and protests, the respondent did not think retail forms a significant part of their community relations efforts; it is more about refineries because of the potential dangers they pose to their neighbors.
- The discussion on gas exporting facilities (or where they are converting from imports to exports at existing facilities) is currently focused on permitting. He believes neighboring communities are likely to protest or otherwise act on this issue.

Additional evidence work

A search of 10-Ks did not yield much on Community Advisory Panels. CVR Energy 10-K: "Community Advisory Panel. We developed and continue to support ongoing discussions with the community to share information about our operations and future plans. Our community advisory panel includes wide representation of residents, business owners and local elected representatives for the city and county."

There are a couple of examples of class action lawsuits, but these are related to hazardous materials management (Shell and BP for chemical spills – decision not available/not known; and BP for refinery pollution from underground release of petroleum – settlement offer of $19.5 million, including compensating residents for loss of use or enjoyment). There is also one example of opposition to oil refinery expansion plans in Salt Lake City (result not known) but again, this relates to an existing issue of harmful air emissions.

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Note that the top five pure-play R&M companies have refining operations mainly in developed country markets.

SASB Decision: Remove issue
Remove separate community relations issue because impacts are related to Air Quality and Hazardous Materials Management, already discussed as material issues. The issue is also location-specific.

Review Air Quality KPIs and edit if needed, to capture impacts from proximity of operations to community.

2. ISSUE: PRODUCT STEWARDSHIP

A. INDUSTRY: OIL AND GAS REFINING AND MARKETING

Evidence of Financial Impact

From Briefs:

(Note – Paragraphs below are extracts from industry briefs and are provided for reference. Please refer to briefs for complete evidence and citations.)

Evidence

Evidence suggests that product specification regulations pose significant compliance and operational risks for R&M companies. At the same time, potential reductions in demand for refined petroleum products necessitates investments in alternative fuels and infrastructure.

Companies face risks and additional costs from state and federal regulations requiring the phase-out of gasoline additives such as lead or MTBE, the Renewable Fuel Standard (RFS), CAFE standards for vehicles, and regulations that put a price on carbon, as discussed in the Regulatory Trends section. For example, to comply with EPA's proposed Tier 3 regulations for Ultra Low Sulfur Gasoline, refiners are expected to invest between $3.9 billion to $10 billion in new capital expenditures, to modify their facilities…

Compliance with the RFS also creates operational risks for companies. Petroleum refiners and importers can use Renewable Identification Numbers (RINs), which are assigned to batches of renewable fuels by renewable fuel producers and importers, and can be traded or sold, to demonstrate compliance with the appropriate RFS standard set by the EPA. Recently, due to the use of fraudulently generated RINs, companies that were not aware that the RINs were invalid violated RFS standards. Despite the unintentional use of invalid RINs, the EPA came to a settlement and enforced civil penalties on R&M companies using such RINs, including Marathon Petroleum, Western Refining, and ExxonMobil, among others. Marathon for example, agreed to pay a civil penalty of around $200,000. R&M companies also face higher RIN prices due to increasing demand for RINs…

Apart from regulatory risks, companies face lawsuits for using additives that may be harmful to human health in their products. Contamination of groundwater due to the suspected carcinogenic gasoline additive MTBE has resulted in over 70 lawsuits filed against major oil companies in the U.S. The lawsuits for MTBE-related contamination of 153 public water systems are estimated to have resulted in over $423 million of settlement payments by oil companies over 30 years.

Companies face the possibility of declining demand for pure petroleum products in the medium- to long-term. A recent study found that petroleum refining has a "very high sensitivity" to mitigation policy that puts a price on carbon. According to the study, the industry faces potentially significant declines in output because a carbon constraint increases the cost of the industry's products to consumers relative to clean

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energy products, and because consumers can easily substitute energy from fossil fuels with energy from renewable sources. The International Energy Agency (IEA) estimates that biofuels need to supply about 27 percent of road fuels worldwide by 2050 to meet climate targets, up from three percent in 2012.

Although promoting the use of biofuels can be beneficial, biofuels themselves can generate negative externalities. Irrigation for corn production means that currently biofuels are actually the most water-intensive fuel source in the U.S., with water consumption orders of magnitude greater than for refining crude oil. Crop production for biofuels also has the potential to distort other markets, for example, the food industry. Advanced biofuels could reduce water consumption significantly, but these technologies are yet to be proven on a commercial scale. Although short-term costs to find commercially viable technologies can be significant, and these are lowering investments in advanced biofuels, R&M company investments in research and development (R&D) for such technologies could serve to advance their own long-term profitability. For example, BP, together with DuPont opened a $520 million wheat-to-ethanol facility in the U.K. in 2013, with a plan to eventually make biobutanol, which is more efficient than ethanol.

Infrastructure for alternative fuels and electric vehicle charging is expanding in the U.S., providing both risks and opportunities for R&M companies...

Oil and gas companies recognize product-related risks and opportunities, with around 33 percent of energy firms covered by one study mentioning these in their 10-K forms, and 40 percent in their annual and sustainability reporting. Such disclosures covered both the potential reduction in demand for carbon-intensive fuels, and the potential market for products and services that address climate change risks…In its 10-K for 2012, PBF Energy discusses the risks to its operations from not producing renewable fuels: “Because we do not produce renewable fuels, increasing the volume of renewable fuels that must be blended into our products displaces an increasing volume of our refinery’s product pool, potentially resulting in lower earnings and profitability. In addition, in order to meet certain of these and future EPA requirements, we must purchase credits, known as “RINS,” which have fluctuating costs.”

Value Impact

“R&M companies could face reductions in revenue from fossil fuel-based products and services, particularly with the implementation of GHG mitigation policies, and the emergence of competition from non-fossil fuel products. Regulations, including those on product specifications, have the potential to add to capital expenditures, affecting company cash flow, and to ongoing compliance costs, leading to lower profit margins. Companies at the forefront of developing new products and services that address environmental and social concerns are likely to benefit from higher revenues in the long-term. They are also likely to experience enhanced brand value, and this, together with R&D activities, could lead to greater intangible assets. Companies’ risk premium may also be affected depending on the nature of their product development activities.”

Evidence of Interest

Materiality Map tests

Score of 85% for this issue, high relative to other issues for the industry; higher than score for the same issue in the Coal Operations and Construction Materials industries.

Summary of IWG Feedback

7 out of 12 respondents (58%) agreed about the materiality of the issue, while 5 disagreed. Two of those who agreed made comments consistent with SASB’s description of the issue, and think that climate change and the constant scrutiny of product specifications for R&M companies constitute a material risk.

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Those who disagreed about materiality, gave different reasons, which SASB sought further clarification on. One respondent who disagreed about materiality said that the issue is one of overall corporate strategy on R&D and not an ESG issue. Another disagreeing respondent seems to suggest that what companies should do in this regard is different from actual behavior and performance, and therefore not material, but SASB needs clarification on this comment. A seemingly contradictory comment from another respondent who disagreed about materiality was that product stewardship has been part of a "responsible care" focus in the industry.

Another disagreeing respondent suggests that while there are management systems in place for petroleum products (including ethanol blends and clean fuel in California) SASB's Product Stewardship issue is not the primary risk to the organization. According to another respondent, the process does not result in finished products that end up with consumers, and therefore product stewardship is not material.

IWG issue priority

IWG members gave the issue an average rank of 5.4 (out of 8 issues), third lowest mean rank after Community Relations and Pricing Integrity and Transparency.

IWG response breakdown

2 out of 4 Corporations agreed about materiality, 2 disagreed. However, one of the disagreeing respondents who classified themselves as being from a 'Corporation' is a Public Interest Intermediary (consultant). Similarly, a Corporation respondent who agreed is actually a Public Interest Intermediary (consultant). In summary, 1 of the actual Corporation respondents agreed about materiality, and 1 disagreed.

On the other hand, 5 out of 6 market participants (83%) agreed about materiality, while 1 (17%) disagreed.

Additional Delta Series Comments

- Refined petroleum products have to meet tight specifications; they are commodity products, not traceable when traded. Companies have no control of the value chain and struggle to differentiate themselves, due to the commodity nature of the products. Companies are not engaged in the use-phase.
- On the other hand, Exxon conducts lifecycle assessments of its products.
- One respondent from an oil company said in a follow-up email (dated 18 Oct): "The confusion here may stem from a lack of clear definitions. Difficult to translate a concept that works well in terms of consumer products into a B2B scenario. Issues such as pricing and contracting are probably more relevant and material than end-user responsibility of coal or gasoline."

Evidence Gaps

Strong evidence of financial impact and mixed evidence of interest suggest that the issue should be retained, but framed better.

The SASB Standards Development team sought clarification from industry experts on some of their comments on the working group survey response:

- A respondent who disagreed with the materiality of the issue: "Product stewardship, particularly in this sector, seems too far divorced from the actual behavior and performance of the company to constitute a material issue."
- Another respondent who disagreed with the materiality of the issue: "There are a range of management systems set up in place for petroleum products - such as E10% and the clean fuel

in California. However, I believe this is not the same kind of risk to the organisation. The primary risk is to make sure that the site can supply the required product type for each season."

Through additional evidence gathering, SASB sought to answer the following questions:

- What determines decisions of gas station owners about where to source fuel from and what kind of fuel to source?
- Do R&M companies differentiate themselves on the basis of their products, in their marketing or branding strategies? If so, how does this actually affect their financial performance?
- How traceable are refined petroleum products?

Additional Research

Clarification from industry experts

SASB sought, but did not receive, a response from the first respondent mentioned above.

Response from second respondent mentioned above (paraphrased):

- The response disagreeing with materiality was related more to the 'stewardship' concept, rather than regulatory risks. The issue as described is actually more closely related to compliance and regulatory risk management, which is material. On the other hand, Stewardship, along the lines of non-required improvements and other voluntary improvements such as BP's Opal fuels in Australia, is not material.

Additional evidence work

SASB collected additional evidence for the questions posed above, and found that while gasoline from different refineries often is combined for shipment by pipeline or goes to the same bulk terminal, chemical additives proprietary to specific branded or unbranded gasoline are added at the point where the gasoline is transported from the terminals to retail stations. One-third of gasoline stations in the U.S. are unbranded dealers; unbranded gasoline typically contains generic additives that meet minimum federal standards. Around 36 percent of adult gasoline users are loyal to a certain brand, and companies spend research and development money on additives, patenting them, and market their brand as having the superior additive.

Some companies like ExxonMobil also have product stewardship management systems, for the safe handling, transport, use, and disposal of their products. The company has a Chemicals Research Sustainability Team, which conducts lifecycle analyses.

At the same time, there is a significant proportion of consumers that is not loyal to a particular brand.

Given the above, it is likely to be the case that at this time materiality of this issue comes primarily from regulatory risk. For example, under the Clean Air Act, the EPA requires refiners to register their products with the EPA, and in some cases conduct health effects testing before a new product can be registered, or for an existing one to maintain registration. It requires manufacturers "to analyze the combustion and evaporative emissions generated by their fuel and fuel additive products, survey existing scientific information for each product and, where adequate information is not available, conduct tests to screen for potential adverse health effects of these emissions."

As discussed above in the evidence of financial impact, other risks come from legal actions for using additives that are, or are later found to be, harmful for human health and the environment.

Companies also face changing regulations related to product specifications and fuel blends, and a declining demand for their products in developed markets, with energy efficiency and the use of

alternative fuels. They face a choice between purchasing Renewable Identification Numbers (RINs) and increasing their production or sourcing of renewable fuels (much like the choice between lowering GHG emissions and purchasing carbon credits).

SASB Decision: Retain issue, rename
Given the strong evidence of financial impact, materiality map tests, and additional evidence work, SASB will retain the issue, but rename it. The main focus of the issue is on product-related risks, both existing and evolving, from regulations and lower demand, and how companies are positioning themselves to address these. It may be through simply meeting regulations, or through innovations to lower environmental impacts of their products, beyond regulatory requirements. KPIs will be developed to reflect this.

3. ISSUE: PRICING INTEGRITY AND TRANSPARENCY

A. INDUSTRY: REFINING AND MARKETING

Evidence of Financial Impact

From Briefs:

(Note – Paragraphs below are extracts from industry briefs and are provided for reference. Please refer to briefs for complete evidence and citations.)

Context

Consumers in the U.S. spend a significant proportion of their annual income on gasoline and motor oil, with expenditures on these items increasing by almost 34 percent from 2009 to 2011. Concerned about the impacts of oil and gas market distortions on American consumers and businesses, regulators such as the U.S. Federal Trade Commission (FTC), and the U.S. Commodity Futures Trading Commission (CFTC), have focused on and investigated market manipulation by oil and gas companies, including R&M companies in recent years.

Evidence

Companies in the energy markets, including R&M companies, have in the past faced investigations and enforcement actions from the FTC and CFTC related to manipulating prices of petroleum products, for example, when reporting trades to price index publishers, or in using companies' commodity trading desks.

Furthermore, the FTC opened an investigation in June 2011 focused mainly on refineries, to determine whether petroleum market participants were involved in anticompetitive, manipulative, or fraudulent practices that would allow them to raise prices for consumers. The FTC is continuing the investigation in 2013, with a focus on utilization and maintenance decisions, inventory holding decisions, product supply decisions, product margins and profitability, and capital planning.

The International Organization of Securities Commissions (IOSCO) began an investigation in 2010 about manipulation in the physical commodities markets, concluding that the practices of price-reporting agencies such as Platts suffered from flaws. Both EU anti-trust authorities and the U.S. FTC are currently investigating integrated oil companies including Shell, Statoil and BP (also Platts, and energy trading firms such as Argos Energy) for potentially manipulating prices of crude oil, refined oil products and biofuels since 2002. Platts publishes benchmark oil prices that impact global commodity trading, and are calculated based on transactions that traders report to Platts. Such reported prices can be subject to

manipulation, as was the case with the global interest rate benchmark, the London Interbank Offered Rate (Libor). According to one estimate, following EU regulators' raids on its offices in London and the Netherlands, Shell's market value was affected by approximately GBP 3 billion.

In 2007, BP Products North America, a subsidiary of BP Plc, was required to pay a civil monetary penalty of $125 million to the CFTC, establish a compliance and ethics program, and install a monitor to oversee BP's trading activities in the commodities markets. The CFTC charges against BP related to manipulating and attempting to manipulate the price of propane, and cornering the market for propane over 2003-2004. The monetary settlement, which included paying $53 million into a restitution fund for victims, was the largest manipulation settlement in CFTC history at the time. Related to the same conduct, the DoJ entered into a deferred prosecution agreement with BP America Inc., requiring it to pay $100 million in criminal penalties, and another $25 million into a consumer fraud fund. This demonstrates the potentially extensive financial and operational impacts of activities that result in the manipulation of prices.

While the issue of market manipulation is more likely to be material for integrated companies that enjoy a dominant position in the market, particularly those with large commodities trading desks, this issue could also have a financial impact on independent R&M companies. For example, in 2007, Concord Energy, a gas marketing firm, was asked to pay civil monetary penalties of $800,000 as part of charges that the CFTC brought against the firm and some others for falsely reporting natural gas information in order to manipulate natural gas prices. Also in 2007, the CFTC settled charges against Marathon Petroleum Company for attempting to influence downwards the Platts market assessment for spot cash WTI on November 26, 2003. Marathon, a net buyer of foreign crude oil for which prices were based on the Platts spot cash WTI assessment, would have benefited from a lower price assessment. Marathon was required to pay $1 million in civil penalties.

In addition to market manipulation related to price reporting, companies in the industry may also be investigated for anti-trust issues related to mergers, although given the low industry concentration as discussed above, this may not always result in material impacts. Nevertheless, from 1981 to 2006 the FTC identified 20 large petroleum mergers, a significant proportion of them related to refineries and retail outlets, that it considered would have reduced competition and harmed consumers. For 16 of these transactions, the FTC obtained relief measures that resolved the anti-trust issues, and for the rest the transactions were abandoned after a formal challenge from the FTC.

Value Impact

Companies face legal liabilities from actions leading to market manipulation, as discussed above. Regulatory actions might result in higher ongoing compliance costs, at least for a short period of time, such as from the appointment of a compliance monitor, or might require long-term changes in the compliance policies of the company, adding to operating costs.

Evidence of Interest

Materiality Map tests

Score of 75% for this issue, higher than some others like Employee Health, Safety, and Well-being, Community Relations, and Water Management.

Summary of IWG Feedback

8 out of 12 respondents (67%) agreed about the materiality of the issue, while 3 disagreed.

Two of those agreeing about materiality provided comments consistent with SASB's assessment of the context for the issue, whereby consumers spend a significant proportion of income on refined petroleum products, and as a result, regulators and policymakers are concerned about protecting consumers from

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price manipulation. According to another respondent agreeing about materiality, differences in price elasticity depending on whether crude prices increase or decrease (the 'rockets and feathers' effect, which SASB analyzed) is a significant source of reputational risk for R&M companies.

A couple of comments related to foreign operations of R&M companies, which were not discussed under this issue in the brief. One of them, a 'Maybe' respondent, suggests that pricing in the Middle East is subsidized, and therefore may not be considered material by consumers. A 'Yes' respondent notes that this is a global issue, where different consumers watch the price of fuel and there is a lot of regulation associated with it.

One respondent who disagreed about materiality commented that oil and gas prices are heavily influenced by factors outside the control of R&M companies. The comment however, does not directly refer to the discussion in the brief, which demonstrates specific instances of manipulation by R&M companies, and the investigation and enforcement actions they face. Another comment suggests that scrutiny related to prices is a cost of doing business, and therefore not material. According to the third 'No' respondent, in their business, pricing is more relevant to midstream companies. It is not clear whether this comment relates to the company's specific business context or to industry practice.

IWG issue priority

IWG members gave the issue an average rank of 5.9 out of 8 issues. Issue with the lowest mean rank.

IWG response breakdown

5 out of 6 market participants (83%) agreed about the materiality of this issue, and 1 (17%) disagreed. However, only 1 corporation (25%) agreed about materiality, and 2 (50%) corporation respondents disagreed. Note that one of the two disagreeing Corporation respondents was a Public Interest Intermediary (consultant) who classified themselves as a corporation. Similarly, the one Corporation respondent who said 'Maybe' is also a Public Interest Intermediary (consultant).

Additional Delta Series Comments

Not discussed at Delta Series.

Evidence Gaps

Evidence of financial impact is fairly strong. IWG feedback is mixed, with low priority given to the issue.

The SASB Standards Development team sought clarification from industry experts on some of their comments on the working group survey response:

- A respondent who disagreed with the materiality of the issue: "In our business pricing is more relevant to the midstream where the product is sold at well head."

Additional Research

Clarification from industry experts

Further comments from respondent mentioned above:

"I answered from our company perspective, though I'm sure most E&P companies sell their product at the well-head. Actual refiners may feel differently about this question. While obviously investors are trying to get to 'perfect information,' I'm not sure how transparent they can be without undermining competitiveness. I would suggest looking at other B2B companies to see how transparent they are on pricing across the value chain as an indication of how material this issue is or should be."

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The above clarification suggests that the original response, where the IWG member disagreed about the materiality of the issue, was related to the E&P operations of the respondent's company, and not R&M operations.

Additional evidence work

Additional evidence research confirms the evidence discussion in the brief.

SASB Decision: Retain issue
Given the evidence of financial impact, materiality map tests, and clarification from an IWG member, SASB will retain the issue.

4. ISSUE: PROCESS INNOVATION

A. INDUSTRY: METALS AND MINING

Evidence of Financial Impact

From Briefs:

(Note – Paragraphs below are extracts from industry briefs and are provided for reference. Please refer to briefs for complete evidence and citations.)

Context

In recent years, the mining industry has experienced declines in ore grades, while the seams have been getting deeper and harder to mine. In addition, the recent global economic downturn has led to lower commodity prices, directly impacting the industry's revenues. In this context, companies that develop more efficient and less intensive production processes will create competitive advantage.

Evidence

Using scrap metals and post-consumer recycled metals can generate significant cost savings by bringing down the cost of input. Recycling is also a way to alleviate increasing demand for new metal and mitigate impacts on the environment. For example, using recycled steel in smelters necessitates 40% less water, produces 97% fewer mining wastes, and reduces costs by 90%. A United Nations Environment Programme report cites that the largest municipal recycling park in China is capable of recovering one million tons of copper per year, more than twice the output of the largest copper mine in China.

Xstrata, an Anglo-Swiss mining company, has a long tradition of using recycled metals in its smelters. For Xstrata, recycling is a significant input to metal production providing 15 percent of copper, 20 percent of gold, 10 percent of silver and 85 percent of platinum and palladium. Aluminum has a high recycling rate. Alcoa, a U.S.-based mining company, aims to increase its global recycling rate from 73 percent in 2011 to 90 percent by 2015. Alcoa and Alcoa Foundation also invested $5 million in community-based recycling programs between 2007 and 2012.

Although they vary depending on the country of operation, current mining industry practices are quite energy and labor intensive, and have a significant environmental impact. Since easy-to-mine resources have been depleted, mining companies must increasingly look for more sustainable practices. Many companies have already invested heavily in research programs around the world to develop new, cutting edge technologies and practices that would increase productivity, remove waste, and improve safety, efficiency, and recovery rates. For instance, in 2012, as part of its ongoing "Mine of the Future" program, Rio Tinto, a British-Australian mining company announced a $518 million investment in driverless trains

and trucks for its Australian iron-ore business, as well as large-scale testing of technologies in underground tunneling and mineral recovery.

Value Impact

Innovation in equipment and processes is the key to increasing productivity and cutting costs in the mining industry. Companies' ability to innovate will reduce risk and increase profitability in the long-run. Companies that are leaders in process innovation may be considered industry leaders, thus resulting in easier and cheaper access to capital. Companies' ability to drive process innovation will also reduce risks associated with environmental impacts of operations and command a lower cost of capital.

Evidence of Interest

Materiality Map tests

Score of 75% for this issue, which is relatively high compared to other issues.

Summary of IWG Feedback

58% (21) of IWG respondents agreed about the materiality of this issue. 17% (6) said the issue is not material, and 25% said maybe the issue is material, but had substantial reservations.

Those agreeing about materiality said that process innovation is important for competitive advantage, leadership, cost reduction and profitability. One respondent agreeing about materiality said the proposed metric is limited in judging process innovation, while another such respondent said it is questionable whether we can measure innovation without revealing proprietary information or encouraging green-washing. Another respondent agreeing about materiality cautioned that innovation such as automation can have downsides, and can lead to loss of license to operate if communities don't benefit from employment but only face negative impacts.

Those that consider the issue not to be material, or have reservations about materiality, provided comments that were somewhat consistent with SASB's thinking on process innovation as an Integration Issue i.e. that outcomes of process innovation (e.g. reduced energy use, water use etc.) are material, not necessarily process innovation as an issue in itself. Innovation that reduces energy use, for example, should be discussed under the Energy Management issue.

Others believed that in some mining segments there is not much room for process innovation, that recycling does not seem applicable to all companies, that such information is already available, that while there is some risk, it may not be material, or that benefits to investors from process innovation occur over the long term, and investors are primarily interested in shorter term profits.

IWG issue priority

IWG members gave the issue an average rank of 9.0 (out of 11 issues), which is the lowest mean rank out of all the issues.

IWG response breakdown

12 Corporations (60% of corporation respondents) agreed about the materiality of this issue, with 4 (20%) disagreeing. 4 (57%) Market participants agreed about materiality. The percentage agreeing in both categories is therefore consistent with the overall percentage agreeing.

Additional Delta Series Comments

Not discussed at Delta Series.

Evidence Gaps

Discussion of the issue in the brief may be too broad and touches upon performance on issues already discussed under the environmental issues category. Evidence of interest is mixed.

A bulk of the issue as discussed in the brief covers recycling and reuse of metals, which is a single type of innovation that touches upon multiple environmental impacts (e.g. energy and water consumption, waste reduction), and therefore harder to discuss under each of those issues. However, the brief also discusses investments in new technologies such as driverless trains etc., which perhaps dilutes the materiality of the issue.

Through additional evidence gathering, SASB sought to answer the following questions:

- Is process innovation material by itself, independent of the environmental issues identified?
- What is the extent of innovation/recycling that is achievable across the industry (most industry segments)?
- Does the issue apply to most companies (and industry segments) in the industry?
- What is the incremental value of this disclosure, and how exactly does it relate to sustainability?
- What time period are impacts likely to occur over?
- How much scrap metal is sourced from outside the industry (providing societal benefits beyond reducing environmental impacts of the company's own operations)?

Additional Research

Additional evidence-gathering revealed processes like bioleaching using microorganisms to reduce volume of reagents and water required for the refining process, or a new method of producing Titanium that involves using more environmentally friendly pigments. Evidence on recycling suggests that there is potential for increasing recycling rates for a number of metals, and that recycling provides benefits to companies in the form of reduced costs of production. However, obtaining scrap metal for recycling may require new partnerships outside of the company's immediate operations. This may not always be in the company's control. SASB reviewed this evidence in the context of a new Mining Stewardship/Supply Chain Management issue, discussed below, which was proposed as an additional issue by IWG members.

SASB Decision: Remove issue as currently framed

Given low evidence of interest, SASB will remove the broad 'Process Innovation' issue. Improvements due to process innovation relate to issues already discussed under the 'Environment' category. Process innovation can be one way of improving performance on those issues, but not necessarily the only way.

SASB is considering whether sourcing scrap metal for recycling from outside the industry should be discussed under a Mining Stewardship or Supply Chain Management issue.

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II. Review of IWG feedback for other existing issues

The issues below are those for which close to 75% of IWG members agreed about materiality. IWG comments were reviewed to see whether additional evidence-gathering was needed. The following provides recommendations on these issues based on the analysis of IWG feedback.

INDUSTRY: OIL AND GAS EXPLORATION AND PRODUCTION

Waste Management

75% of IWG members agreed about the materiality of the Waste Management issue. Most of those disagreeing or unsure about materiality were corporations; on the other hand, 96% of market participants considered the issue to be material.

Most of those disagreeing said the issue, while important, does not meet the minimum materiality threshold, as there are well-understood waste management processes, little regulatory and public scrutiny, or limited impacts on profitability given large size of operations, profits etc.

Lowest priority issue, with the lowest mean rank of 7.0 (out of 10 issues). 75% score on Materiality Map (MM) tests.

SASB will retain the issue given the evidence of financial impact in the briefs and evidence of interest. Ultimately, materiality will depend on the nature of operations, but with development of unconventional and offshore resources (particularly oil sands), waste management is likely to be more not less material than with conventional oil and gas. Impacts are likely to be due to chronic costs associated with waste management, and legal or regulatory liabilities, as well as possibility of regulations with greater development of unconventional and deep-water resources.

SASB is considering whether to include a discussion of waste management as part of the Ecological Impacts issue instead of a separate one, since that is the primary sustainability impact of waste generated by this industry.

INDUSTRY: OIL AND GAS REFINING AND MARKETING

Air Quality

67% of IWG members agreed about the materiality of the Air Quality issue, and only 1 person disagreed. The low approval percentage is due to the small sample size, and 3 people responding with a ‘Maybe’.

5 out of 6 (83%) Market Participants considered the issue to be material, while 1 Corporation respondent considered the issue not to be material (2 agreed, 1 said ‘Maybe’). (Note the 1 Corporation respondent who said ‘No’ is actually a Public Interest Intermediary (consultant) and not from a corporation. The comment was: "It is highly regulated and managed with operational controls. Congress is not likely to create more regulation in the near term.") The two Corporation respondents from oil companies consider the issue to be material.

100% score on MM tests.

SASB will retain the Air Quality issue due to strong evidence of financial impact and of interest.

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Hazardous Materials Management

75% of IWG members agreed about the materiality of the Hazardous Materials Management issue, but 2 out of 12 people disagreed. 1 of the disagreeing respondents was from a Corporation; the 3 others classified under Corporations agreed about materiality. The two Corporation respondents from oil companies consider the issue to be material. The other disagreeing respondent was a Market Participant; 4 out of 6 Market Participants (67%) agreed about materiality.

General argument from those disagreeing about materiality or saying it "Maybe" material, is that it is a cost of doing business, and is covered by regulations and associated operational controls.

80% score on MM tests.

Additional note: Another IWG member whom SASB sought clarification from, says there are often many spills and releases occurring at a refinery. Once a refinery is closed it takes years to remediate the site due to the level of contamination. This could be included in hazardous materials management. The issue is that the categories are quite broad and it would be good to define what is material within this management area.

SASB will retain the Hazardous Materials Management issue due to strong evidence of financial impact and of interest. SASB will be considering IWG member comments when finalizing KPIs.

INDUSTRY: OIL AND GAS SERVICES

Employee Health, Safety, Well-being

73% of IWG respondents agreed about the materiality of the Employee Health, Safety and Well-being issue, while 2 respondents (13%) disagreed. Both disagreeing respondents were from the Corporations group, with 33% of the group disagreeing about materiality and 67% (4 out of 6) agreeing about materiality. 67% of market participants (4 out of 6) agreed about materiality, while 33% (2 out of 6) considered that the issue ‘Maybe’ material.

Those corporations disagreeing about materiality said the issue does not affect the company's financial solvency or that the issue does not have separate and distinct characteristics for this industry compared to other heavy industries. On the other hand, the respondents from corporations agreeing about materiality said that employee health and safety is fundamental to protecting and attracting talent, managing for the long term, and being a responsible employer, especially for service companies that depend entirely on employees, and their "brain power and commitment to the company." Accidents can lead to lost work days, and serious accidents including fatalities can lead to law suits and financial penalties.

2 market participant respondents considering that the issue ‘Maybe’ material highlight concerns that: (i) they have not seen enough examples where this has been a material issue with respect to company size, although it could be material for smaller companies; and (ii) the industry has been very focused on safety, Macondo is a rare occurrence, and forcing substantial reporting requirements may not have great benefit, although better disclosure on injury rates and regulatory violations would be helpful.

Evidence in the industry brief suggests that this industry has fatality rates more than 9 times the average rate for all industries, and the fatalities per rig have been increasing. (A review of the data used for this analysis shows that the fatality rate is significantly higher than for some other risky industries such as Coal Operations - 33.64 compared to 17.38 fatalities per 100,000 FTE for U.S. workers). There has been regulatory scrutiny from OSHA in the form of a Regional Emphasis Program, implemented in 2012, in unconventional oil and gas drilling regions. This suggests that the issue does in fact have distinct characteristics for oil and gas services companies compared to other industries, contrary to the concern of one of the disagreeing respondents.

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Additional evidence of financial impact - 10-K statement from Oil States International from Item 1 - Business, in 2012: "Some of our employees who perform services on offshore platforms and vessels are covered by the provisions of the Jones Act, the Death on the High Seas Act and general maritime law. These laws operate to make the liability limits established under states' workers' compensation laws inapplicable to these employees and permit them or their representatives generally to pursue actions against us for damages or job-related injuries with no limitations on our potential liability."

The issue scored 75% on MM tests, which provides some evidence of interest.

SASB will retain the issue, but will seek additional evidence of financial impact (company examples of legal or regulatory liabilities, work stoppages etc.) and take into account respondent concerns above in formulating appropriate metrics.

INDUSTRY: COAL OPERATIONS

Product Stewardship

64% of IWG respondents agreed about materiality (7 out of 11), 1 respondent disagreed, and 27% replied saying 'Maybe'. Corporations generally agreed about materiality (4 out of 5, with the remaining 1 saying Maybe); on the other hand, market participants were divided on the issue with 40% saying Yes, 40% saying Maybe, and 1 respondent disagreeing. According to the disagreeing respondent, the issue is rarely a material driver of company performance.

Arguments for inclusion (paraphrasing IWG responses)

- Customers moving to alternative/cleaner fuels placing pressure on coal companies.

Reservations (paraphrasing 'Maybe' IWG responses, and some Yes responses)

- Product from coal mining is coal, hard to see what product stewardship means for the industry, given the inherently high carbon content of coal.
- Limited potential to make coal 'clean' means that the market cannot easily be extended through product stewardship. Term 'Product stewardship' may not be suitable for coal.
- 'Clean coal' typically refers to carbon capture, which is not proven technology and is expensive. Therefore it is not realistic for coal companies to invest in it.
- These types of disclosures seem less relevant for investment decision-making on a company by company basis, and more relevant if managed by a trade/industry group.

70% score on MM tests.

Additional Delta Series workshop comments: For coal there is good control of environmental practices. Coal contracts tend to be long term. Customers are power plants. There is more traceability. Carbon Capture and Sequestration (CCS) is experimental, too early to ask companies to act on it.

SASB is considering removing the issue given the focus of the issue on CCS, and comments from industry experts suggesting that CCS is not a proven technology yet and therefore it may not be beneficial for coal companies to invest in it.

INDUSTRY: METALS AND MINING

Air Quality

75% of IWG members agreed about materiality for this issue, while 1 disagreed. 8 respondents had reservations about materiality, and replied with a 'Maybe.' 80% of Corporations agreed about materiality, and 20% said 'Maybe'. Only 1 Market Participant thinks the issue is not material, with 4 agreeing about materiality and 2 saying 'Maybe'.

A respondent from a mining corporation who agreed about materiality commented: "As evidence, it is one of the most frequent grievances we receive through our grievance mechanisms."

Some of the ‘Maybe’ respondents felt the materiality of the issue depends on the type of mining (e.g. in gold mining, dust is more an issue than noxious gases), site conditions, or local requirements.

The issue scored 80% on Materiality Map tests, and there was strong evidence of financial impact in the brief.

SASB will retain the Air Quality issue because of relatively strong evidence of interest (only 1 respondent out of 36 disagreeing about materiality) and evidence of financial impact.

INDUSTRY: IRON AND STEEL PRODUCERS

Waste Management

70% (7 out of 10) respondents agreed about materiality, with only 1 disagreeing. The disagreeing respondent is in the Corporations category, in which 1 out of 3 respondents agreed about materiality and 1 out of 3 said ‘Maybe.’ 2 out of 3 Market Participants agreed about materiality, while 1 said ‘Maybe’.

One of the respondents (in the Corporation category, although invited in the Public Interest Intermediary group) agreeing about materiality provided the following evidence: "According to the American [Institute of Steel Construction] (AISC) the current recycled content of structural steel is about 95%. In addition, AISC, recognizes that 20-30 years ago one ton of steel took upwards of 50,000 plus gallons of water - now down to 60 gallons for structural steel. Waste piles and processing waste are another area that has significantly decreased during the last 30 - 40 years. Waste Management therefore is material."

An agreeing Market participant says: "Due to the potential risk of mismanaging with highly toxic materials, and the relatively improved practices of recent years in the US sector does not mean the same level of compliance has been maintained in their foreign operations including subsidiaries. Even within the US, a single incident such as described in the Briefing could have substantial financial as well as environmental impact, thus also to the local communities. It is also important that the industry often owns coal based thermal power plants, which adds substantial amount of coal ash issues."

The only disagreeing respondent says: "Waste types produced by Steel is not changing and rules are changing slowly. Waste is comparatively innocuous and does not require high tech solutions. Improvements can definitely be made, for example further separation and reuse of shredder 'fluff' or isolating zinc and zinc-free bag house dust for increase rates of reuse. I do not see any company's sustainability being threatened by this issue."

The issue scored 55% on MM tests, which was roughly the median % among all the issues for the industry.

Evidence in the brief is fairly strong in showing regulatory risks involved, and in showing how waste can become an income stream, but evidence can be improved by showing costs involved in waste management, clean-up costs, regulatory fines etc.

SASB will retain the issue of Waste Management, because only 1 respondent disagreed, and will look for additional evidence of financial impact before the next round of brief revisions.

Process Innovation

70% (7 out of 10) respondents agreed about materiality, and only 1 disagreed. Among Corporations, 1 out of 3 agreed about materiality, 1 disagreed and 1 said ‘Maybe’. The 1 agreeing respondent classified

themselves in the Corporations group, but is actually a Public Interest Intermediary. All 3 Market Participants agreed about materiality.

The 2 participants who replied with a 'Maybe' were concerned about whether performance on the issue can be measured adequately, and whether companies can be compared on this.

The issue scored 85% on MM tests, the highest score among all the issues for the industry.

Evidence in the brief mainly discusses process innovations to lower GHG emissions and air pollutants, and provides percentage reductions of such emissions. These can be discussed under the relevant environmental issues, consistent with the approach for other industries, and does not warrant separate disclosure.

While aspects of the issue discussed in the brief may be material, SASB will remove Process Innovation as a separate issue and instead discuss innovation under the relevant issue in the Environmental Capital category. This will ensure consistency of approach with other industries.

III. Additional issues proposed by IWG participants

The following table provides a summary of the additional material issues suggested by industry working group members, and reviewed by SASB. This is followed by SASB's decision on the issues, based on additional evidence research.

Oil & Gas - E&P	Oil & Gas - Midstream	Oil & Gas - R&M	Oil & Gas - Services	Coal Operations	Mining & Metals	Construction Materials
Corporate political and financing activity (including funding academic research)	Regulatory compliance & competitive behavior	Business ethics (corruption, bribery in foreign countries)		Regulatory capture and political influence	Resource nationalism	
Fair Labor Practices (including gender balance, average v. exec pay etc.)		Skills gap			Workforce skills development/depletion of skilled workforce (esp. Iron & Steel)	
Supply chain management (Contractor management)			Supply chain management		Supply chain management/ responsible procurement	
Process innovation					Hazardous materials management (cyanide etc. before waste disposal)	Toxicity in use
				Energy management (use of electricity)		

				Air Quality		

Note that no additional issues were proposed for the Iron and Steel Producers industry. Comments related to corporate political spending and lobbying asked for inclusion of SASB's watch list issue of Regulatory Capture and Political Influence as a material issue. SASB considered these comments in the context of its approach on this issue for other industries, and recent developments at the SEC. This issue is discussed separately at the end of this section.

INDUSTRY: OIL AND GAS EXPLORATION AND PRODUCTION

Fair Labor Practices/ Employee Recruitment, Development and Inclusion

SASB did not find evidence to support the issue of fair labor practices as proposed by IWG members. However, SASB considered adding a related issue of Employee Recruitment, Development and Inclusion, given the skills shortage in the industry and low diversity traditionally.

According to further discussions with industry experts and additional evidence research, the skills shortage stems from baby boomers retiring, and companies having laid off workers and not recruiting when conventional oil production was peaking in major oilfields. Companies are finding it difficult to recruit highly skilled workers in a growing investment environment, and some companies are sponsoring students at university to develop the talent pool.

With global operations, companies would benefit from training and developing a local workforce, as there is reluctance among existing employees in the U.S. or other country of domicile to relocate. Greater diversity is important both for innovation as the industry depends on technological improvements, and also for filling the skills gap. The industry is responding by recruiting more female workers, with almost half of oil and gas industry hires in the first quarter of 2013 being women (compared to 82 percent of the existing workforce consisting of men).

The angle of workforce diversity is included in the 'Diversity and Equal Opportunity' and 'Board Structure and Independence' MM issues.

MM Issues	MM Score	Test 1 – 10Ks	Test 3 – CSR	Test 4A – Shldr R.
Diversity and Equal Opportunity	40% (3)	2	4	3
Board Structure and Independence	45% (3)	3	2	4

Note: Individual test scores range from zero to four: 4 is top quartile issue, 1 is lowest quartile issue, and 0 is no hits for issue.
MM Score: Number in parenthesis indicates issue's overall quartile: same scale as for individual tests

The research did not reveal bias or discrimination cases that are publicly known and that led to material regulatory penalties.

SASB will add an issue named Employee Recruitment, Development and Inclusion.

- Issue of skills shortage, in terms of unavailability of skilled workers, and due to age gap, as described above.
- Diversity is related to recruitment to fill skills gap. Attracting a more diverse workforce, and incorporating diversity in the work culture.
- It is also related to health and safety especially when working in remote places. Issue of protecting women and minorities. [Employee Health, Safety, Well-being angle]
- Also an issue of developing the local workforce.

Contractor and supply chain management

Although one way to deal with this issue is to discuss it under Workforce Health, Safety, and Well-being, and Process Safety, Emergency Preparedness and Response, conversations with experts indicate that the line of responsibility between E&P and Service companies is not a clear one for all material ESG issues in this industry, and we may want to call out the important role contractors/service companies play in every aspect of exploration, development and production. Evidence of impact in this case would be related to the fact that E&P companies are affected by GHG and other environmental and safety regulations, but often they do not actually conduct the operations, and depend on numerous contractors/service companies to do so. So without adequate supply chain/contractor selection standards based on service companies' sustainability performance, both magnitude and probability of impact from an environmental, social or other sustainability issue could be significant, leading to regulatory, reputational and litigation risks for E&P companies, affecting their own social license to operate.

Different angles of the issue are covered under 'Employee Health, Safety, and Well-being,' 'Supply chain standards and selections,' and 'Supply chain engagement and transparency' issues of the MM.

MM Issues	MM Score	Test 1 – 10Ks	Test 3 – CSR	Test 4A – Shldr R.
Employee Health, Safety, and Well-being	50% (4)	3	4	3
Supply chain standards and selections	15% (1)	0	2	1
Supply chain engagement and transparency	20% (2)	1	3	0

Note: Individual test scores range from zero to four: 4 is top quartile issue, 1 is lowest quartile issue, and 0 is no hits for issue.
MM Score: Number in parenthesis indicates issue's overall quartile: same scale as for individual tests

SASB will add an issue named Contractor and Supply Chain Management.

- SASB is considering whether to include a separate KPI on supplier standards – selection, performance etc., or instead include the issue with a note that KPIs related to supplier management are integrated in all SASB issues for E&P companies.

Process Innovation

SASB considered the evidence for this issue and its approach for other industries. As discussed above, process innovation can be discussed under existing material environmental issues (e.g. GHG emissions), as one strategy to improve performance on those issues. SASB will strengthen the angle of process innovation in all the material environmental issues to indicate how this can mitigate downside risks and improve competitiveness.

The angle of Process Innovation is included under the 'Research, development and innovation' and 'GHG Emissions and Air Pollution' MM issues.

MM Issues	MM Score	Test 1 – 10Ks	Test 3 – CSR	Test 4A – Shldr R.
Research, development and innovation	45% (3)	0	2	3
GHG Emissions and Air Pollution	90% (4)	4	4	3

Note: Individual test scores range from zero to four: 4 is top quartile issue, 1 is lowest quartile issue, and 0 is no hits for issue.
MM Score: Number in parenthesis indicates issue's overall quartile: same scale as for individual tests

SASB will not include a separate issue for Process Innovation, and will instead highlight this aspect for discussion under the proposed material environmental issues.

INDUSTRY: OIL AND GAS MIDSTREAM

Regulatory Compliance and Competitive Behavior/Market Manipulation

Significant evidence of interest (top quartile in MM tests) and reporting in 10-Ks exists about regulations governing market manipulation (similar to Refining and Marketing). However, there is limited evidence of financial impact on midstream companies. Regulatory and reputational risks are potentially lower than for R&M because midstream companies do not directly influence end-user prices for gasoline.

However, for companies with pipelines, pricing is governed by FERC regulations. Companies recognize material risks associated with the indexing methodology of rates establishment. Moreover, customer complaints or the FERC may challenge existing pipeline rates. Evidence exists for fines from FERC related to pipeline capacity release violations, unauthorized fees, and other penalties for natural gas price manipulation.

The angle of 'market manipulation' is included under the following MM issues:

MM Issues	MM Score	Test 1 – 10Ks	Test 3 – CSR	Test 4A – Shldr R.
Business Ethics and Competitive Behavior	80% (4)	4	4	4

Note: Individual test scores range from zero to four: 4 is top quartile issue, 1 is lowest quartile issue, and 0 is no hits for issue.
MM Score: Number in parenthesis indicates issue's overall quartile: same scale as for individual tests

SASB will include the issue of Regulatory Compliance and Competitive Behavior as a material one for this industry.

INDUSTRY: OIL AND GAS REFINING AND MARKETING

Business Ethics (Corruption, bribery in foreign countries)

There is strong and impactful regulation in the US and UK against bribery and corruption for all companies/industries, and some R&M companies recognize the materiality of risks associated with non-compliance. However, the evidence analyzed so far where companies have had to pay fines etc. or have been investigated for violations of these rules is not specific to R&M activities. Rather the evidence available is for upstream operations.

The angle of 'corruption and bribery' is included under the following MM issues:

MM Issues	MM Score	Test 1 – 10Ks	Test 3 – CSR	Test 4A – Shldr R.
Business Ethics and Competitive Behavior	75% (4)	4	4	4

Note: Individual test scores range from zero to four: 4 is top quartile issue, 1 is lowest quartile issue, and 0 is no hits for issue.
MM Score: Number in parenthesis indicates issue's overall quartile: same scale as for individual tests

SASB will not include a separate issue of Business Ethics given the lack of evidence specific to U.S.-listed companies in the Refining and Marketing industry.

Skills Gap/Employee Recruitment

Issue seems similar to that for oil and gas E&P companies in terms of baby boomers retiring and shortage of skilled workers available to fill the gap. One report suggests it is a top refining industry concern, and impacts include those on cost-effective maintenance and reliability of refining facilities (which one could argue will also affect environmental performance). Some of the companies in the industry recognize skilled labor shortages as one of the material risks in their annual reports. But the largest R&M and Integrated companies do not mention the issue among risk factors.

The angles of 'labor shortages' and 'talent recruitment and retention' are included under the 'Training and development' and 'Recruitment and retention' MM issues.

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MM Issues	MM Score	Test 1 – 10Ks	Test 3 – CSR	Test 4A – Shldr R.
Training and development	45% (3)	3	4	3
Recruitment and retention	20% (1)	0	2	3

Note: Individual test scores range from zero to four: 4 is top quartile issue, 1 is lowest quartile issue, and 0 is no hits for issue.
MM Score: Number in parenthesis indicates issue's overall quartile: same scale as for individual tests

SASB will not include a separate issue of Employee Recruitment for this industry, as evidence of financial impact and link to sustainability for the industry is weak.

INDUSTRY: OIL AND GAS SERVICES

Supply chain management

The angle of conflict minerals and responsible procurement is relevant for companies in the industry (SEC filings analysis). Although initial research did not reveal evidence of financial impact at this time (cost of compliance, regulatory penalties, etc.) the evidence of interest from companies in the industry (10-K analysis, saying that the Dodd-Frank Conflict Minerals rule is material, and showing how) is sufficient to consider the Supply Chain Management Issue as material for the Oil and Gas Services industry.

The cost of performing supply chain due diligence and compliance with reporting requirements as a result of the Conflict Minerals rule is likely to have an impact on companies' financial conditions and results of operations. Additionally, tungsten and tantalum supply is constrained globally and prices are expected to increase, increasing costs of inputs for Oil and Gas Services companies relying on such materials to produce drill bits and other equipment.

Different angles of the issue are covered under 'Supply chain standards and selection,' and 'Raw material demand' issues of MM.

MM Issues	MM Score	Test 1 – 10Ks	Test 3 – CSR	Test 4A – Shldr R.
Raw material demand	20% (2)	3	1	0
Supply chain standards and selection	15% (2)	0	2	2

Note: Individual test scores range from zero to four: 4 is top quartile issue, 1 is lowest quartile issue, and 0 is no hits for issue.
MM Score: Number in parenthesis indicates issue's overall quartile: same scale as for individual tests

SASB will include an issue named Supply Chain Management and Materials Sourcing and will continue to conduct research on other aspects of supply chain management raised by IWG members that may be worth exploring: (i) corruption and bribery (ii) human rights issues and (iii) other environmental and social performance. These have a 'supply chain' aspect because oil and gas supply chains do not end at services companies – those companies themselves may have subcontractors.

Employee Recruitment, Development and Inclusion

SASB will add an issue named Employee Recruitment, Development and Inclusion for the same reasons as discussed under the Exploration and Production industry.

INDUSTRY: COAL OPERATIONS

Energy Management

Although the MM tests suggest Energy Management is a top quartile issue, SEC filings analysis shows materiality of the energy management issue for Coal Mining companies is addressed from the angle of

GHG emissions and regulatory cost associated with them. The energy from electricity used for coal mining is not sufficient to make the issue a stand-alone one.

The angle of 'energy management' is included under the following MM issues:

MM Issues	MM Score	Test 1 – 10Ks	Test 3 – CSR	Test 4A – Shldr R.
Energy Management	60% (4)	4	4	3

Note: Individual test scores range from zero to four: 4 is top quartile issue, 1 is lowest quartile issue, and 0 is no hits for issue.
MM Score: Number in parenthesis indicates issue's overall quartile: same scale as for individual tests

SASB will not add a separate issue since this is discussed under GHG emissions.

Air Quality

Companies in the industry recognize the materiality of changing regulations around Air Quality, particularly the standards limiting particulate matter, sulfur dioxide, and ozone emissions. (New EPA rules, which also mean new state implementation plans). The regulations affect coal miners as well as coal-burning plants. Material impact to coal miners can be direct (from regulatory fines, capital expenditure towards process improvements) and indirect (lower demand for coal from customers). The evidence of financial interest from companies in the industry is sufficient to include the issue even though the research of evidence of financial impact has not revealed any cases of fines for non-compliance or substantial savings through improved mining process and reduced emissions.

The angles of 'non-GHG emissions' and 'air quality' are included under the 'GHG Emissions and Air Pollution' and 'Product Life Cycle Use Impact' MM issues.

MM Issues	MM Score	Test 1 – 10Ks	Test 3 – CSR	Test 4A – Shldr R.
GHG Emissions and Air Pollution	80% (4)	4	4	3
Product Life Cycle Use Impact	30% (2)	3	1	3

Note: Individual test scores range from zero to four: 4 is top quartile issue, 1 is lowest quartile issue, and 0 is no hits for issue.
MM Score: Number in parenthesis indicates issue's overall quartile: same scale as for individual tests

SASB will add an issue named Air Quality.

INDUSTRY: METALS AND MINING

Employee Recruitment, Development and Inclusion

Evidence from SEC filings and industry reports from consulting companies provide evidence of acute shortage of skilled labor in the mining industry. Human capital shortages disrupt projects in the pipeline and have a direct material impact on a company's financial performance, especially in the medium to longer terms. Evidence for this issue includes both resource extraction (mining) and metal processing (metals) business segments.

Similar to the approach for the Oil and Gas E&P industry, recruiting from a diverse talent pool and training and developing a local workforce would enable companies to manage the global skills shortage. Evidence work so far has focused on the skills shortage and local hiring; SASB will seek additional evidence on the aspect of diversity, and accordingly name the issue.

The angles of workforce skill development and shortages (depletion) of skilled workers are included under the following MM issues:

MM Issues	MM Score	Test 1 – 10Ks	Test 3 – CSR	Test 4A – Shldr R.
Training and development	45% (3)	3	4	3

Recruitment and retention	30% (2)	2	2	3

Note: Individual test scores range from zero to four: 4 is top quartile issue, 1 is lowest quartile issue, and 0 is no hits for issue.
MM Score: Number in parenthesis indicates issue's overall quartile: same scale as for individual tests

SASB will add an issue named Employee Recruitment, Development and Inclusion.

Supply Chain Management/ Mining Stewardship

Evidence suggests that this issue is not only about upstream supply chain management, but downstream too. There is evidence of interest on the topic with multiple stewardship programs led by industry associations. E.g., global programs for iron ore, metalliferous coal and manganese (the Steel Stewardship Forum); uranium (the World Nuclear Association and the Australian Uranium Association); aluminum (the International Aluminum Institute); nickel (the Nickel Institute); copper (the International Copper Association), and zinc (the Zinc for Life program).

SASB is investigating further the following elements: (i) industrial eco-system to promote recycling (evidence from ICMM reports and UNEP report on global recycling rates of various metals) (ii) supply chain risk assessments, including human rights performance of suppliers (this may be driven by customer compliance needs and expectations), and (iii) chemicals management (the ICMM considers chemicals management within its Materials Stewardship program, which includes management of hazardous metals and minerals).

These elements relate to activities in the value chain of the industry (upstream and downstream), which may be beyond the direct control of the company but can nevertheless have an impact on company value. Therefore, companies have an incentive to monitor risks in, and manage, the value chain.

The angles for supply chain management are included under the following MM issues:

MM Issues	MM Score	Test 1 – 10Ks	Test 3 – CSR	Test 4A – Shldr R.
Raw material demand	30% (2)	3	2	0
Supply chain standards and selection	20% (2)	1	2	0
SC engagement & transparency	20% (2)	1	3	0

Note: Individual test scores range from zero to four: 4 is top quartile issue, 1 is lowest quartile issue, and 0 is no hits for issue.
MM Score: Number in parenthesis indicates issue's overall quartile: same scale as for individual tests

SASB is considering including the issue of Supply Chain Management/ Mining Stewardship, depending on further evidence work. SASB may include the above three elements in the same issue, or may separate them in multiple issues.

Resource Nationalism

Governments of some countries are increasingly placing additional tax burdens on mining companies, nationalizing assets, and requiring local content or local processing of metals, due to factors such as increasing revenues in the industry from the global commodities boom, economic downturns leading to budget deficits etc. Evidence shows that this issue is material for companies in the industry since it impacts their investment decisions, can impact present and future cash flows etc. Companies and industry associations are coming together to analyze implications for governments of engaging in resource nationalism, for example, greater sovereign risk, and also to consider how companies can deal with this issue.

The Standards Development team considered whether this a sustainability issue, and not pure business risk. Mining companies may be susceptible to resource nationalism because of perceptions about their economic value, or lack thereof, to the country or community from which they extract resources. They are seen as profiting from the resources of a country that are typically government-owned or their extraction

impinges on community rights, and are seen as taking resources out of the country to do so. In return, the government of the country and its people expect certain benefits, such as local employment, tax revenues etc. So the issue of resource nationalism is related to that of providing socio-economic benefits to the community and country of operation, particularly when the country has poor governance structures.

The angle of Resource Nationalism is not covered by any of the MM issues.

SASB will include a discussion of resource nationalism in the context of the Community Relations issue, which also discusses socio-economic development of the community of operation.

Hazardous Materials Management

Transport, storage and handling of hazardous materials used in metals processing is a material issue, with good evidence from 10-K/20-F filings and additional resources. However, hazardous materials like cyanide may be applicable only to some types of mining – e.g., gold. As discussed above, ICMM looks at hazardous materials management as part of its materials stewardship initiatives.

The angle of 'hazardous materials management' is included under the following MM issues:

MM Issues	MM Score	Test 1 – 10Ks	Test 3 – CSR	Test 4A – Shldr R.
Waste management and effluents	80% (4)	4	4	3

Note: Individual test scores range from zero to four: 4 is top quartile issue, 1 is lowest quartile issue, and 0 is no hits for issue.
MM Score: Number in parenthesis indicates issue's overall quartile: same scale as for individual tests

SASB will consider the angle of Hazardous Materials Management in the context of the Supply Chain Management/Mining Stewardship issue discussed above.

INDUSTRY: CONSTRUCTION MATERIALS

Materials Safety

SASB conducted research on product toxicity concerns in this industry. Product toxicity applies mainly to the plastics segment, and to insulation. However, the main component of the Construction Materials industry is cement and concrete products manufacturing, and glass, brick, tile and clay production. These materials typically do not have toxicity concerns related to them. Asbestos is a legacy concern of the industry. Wood products, paints, adhesives etc., which commonly have toxicity concerns associated with them, are not included in this industry according to the Sustainable Industry Classification System (SICS).

The angle of Product Toxicity is included under the 'Product Quality and Safety issue' MM issue. The 'Customer Health and Safety' MM issue includes keywords that are most relevant for consumer-facing industries, but some of these might overlap.

MM Issues	MM Score	Test 1 – 10Ks	Test 3 – CSR	Test 4A – Shldr R.
Product quality and safety	20% (2)	2	1	1
Customer Health and Safety	20% (2)	1	2	2

Note: Individual test scores range from zero to four: 4 is top quartile issue, 1 is lowest quartile issue, and 0 is no hits for issue.
MM Score: Number in parenthesis indicates issue's overall quartile: same scale as for individual tests

While SASB recognizes toxicity concerns related to building materials, materials associated with toxicity are not included in its Construction Materials industry, and therefore SASB will not include a separate issue on Materials Safety. The Product Innovation issue discusses other safety concerns.

SPECIAL CONSIDERATION: ISSUE OF REGULATORY CAPTURE AND POLITICAL INFLUENCE

As discussed above, the issue of Regulatory Capture and Political Influence, related to the issue commonly known as political lobbying or contributions, was included as a Watch List issue for Oil and Gas, and Coal industries, given that the SEC was said to be considering related disclosure. The SEC received record-breaking comments on the petition asking it to make a rule on disclosing political contributions and lobbying (Note that this was not industry-specific). A majority of comments support the rule. Some working group respondents asked that SASB include the issue as a material one for Oil, Gas, and Coal industries, rather than wait for the SEC to determine materiality and disclosure requirements.

Furthermore, after signaling that it might consider formally proposing a rule, the SEC recently dropped the issue from its list of priorities for 2014, along with some other issues. Despite this, the agency is not precluded from acting on the matter. There are also some other initiatives underway to require disclosure on this issue, including legislation introduced by some senators, and the Treasury Department indicating that it might restrain certain tax-exempt groups if they do not disclose their donors.

Given these developments, SASB is currently reviewing its framework for considering issues of political lobbying and contributions for all sectors.

IV. Revised issues for the Oil and Gas Services industry

Following IWG feedback, and given the complexity of the relationship between Oil and Gas Exploration and Production companies and Oil and Gas Services companies, SASB reviewed all issues for the Oil and Gas Services industry, to better define how performance of an Oil and Gas Service company on various environmental and social issues affects its value.

The following is a revised list of material issues for the Oil and Gas Services industry, based on a review of previous evidence, additional evidence work, and calls with industry experts:

- Emissions Reduction Services and Fuels Management
- Water Management Services
- Chemicals Management
- Ecological Impact Management
- Workforce Health, Safety and Well-being
- Employee Recruitment, Development and Inclusion
- Business Ethics and Payments Transparency
- Process Safety, Emergency Preparedness and Response
- Supply Chain Management and Materials Sourcing

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Appendix I: Issues Presented to IWG

SASB's initial assessment and process for reviewing each issue, following IWG:
General agreement, with some reservations *Significant concerns, seeking additional evidence & inputs* *Issue up for removal*

	Oil & Gas - E&P	Oil & Gas - Midstream	Oil & Gas - R&M	Oil & Gas - Services	Coal Operations	Mining & Metals	Iron & Steel Producers	Construction Materials
Environmental	Greenhouse Gas Emissions	Greenhouse Gas and other emissions	Greenhouse Gas Emissions	*Greenhouse Gas Emissions*	Greenhouse Gas Emissions	Greenhouse Gas Emissions	Greenhouse Gas Emissions	Greenhouse Gas Emissions
	Air Quality		*Air Quality*	*Air Quality*		*Air Quality*	Air Quality	Air Quality
						Energy Management	Energy Management	Energy Management
	Water Management		Water Management	Water Management	Water Management	Water Management	Water Management	Water Management
	Waste Management		*Hazardous Materials Management*	Waste Management	Waste Management	Waste Management	*Waste Management*	Waste Management
	Ecological Impacts	Ecological Impacts		*Ecological Impacts*	Ecological Impacts	Ecological Impacts		Ecological Impacts
Social Capital	Community Relations	Community Relations	*Community Relations*	*Community Relations*	Community Relations	Community Relations		Community Relations

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	Oil & Gas - E&P	Oil & Gas - Midstream	Oil & Gas - R&M	Oil & Gas - Services	Coal Operations	Mining & Metals	Iron & Steel Producers	Construction Materials
Human Capital	Workforce Health, Safety & Well-being		Employee health, safety & well-being	*Employee health, safety & well-being*	Worker Health & Safety	Worker Health & Safety	Employee health, safety & well-being	Employee health, safety & well-being
				Labor Relations	Labor Relations	Labor Relations		
Business model & innovation				Process Innovation		*Process Innovation*	*Process Innovation*	
			Product Stewardship		*Product Stewardship*			Product Innovation
Leadership & governance	Business Ethics and Payments Transparency			Business Ethics and Payments Transparency		Business Ethics and Payments Transparency		
			Pricing Integrity and Transparency					Pricing Integrity and Transparency
	Process Safety, Emergency Preparedness and Response	Accidents and Safety Management		Process Safety, Emergency Preparedness and Response				
	Reserves Valuation and Capital Expenditures				Reserves Valuation and Capital Expenditures			
							Supply Chain Management	
# of issues	10	4	8	11	9	11	8	10

	Oil & Gas - E&P	Oil & Gas - Midstream	Oil & Gas - R&M	Oil & Gas - Services	Coal Operations	Mining & Metals	Iron & Steel Producers	Construction Materials
Industry watch list	**Regulatory capture and political influence**	**Regulatory capture and political influence**	**Regulatory capture and political influence**		**Regulatory capture and political influence**	**Regulatory capture and political influence**		
		Pricing Integrity and Transparency		**Pricing Integrity and Transparency**				

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Appendix II: Issues for Public Comment

The following table comprises issues that are likely to be presented for Public Comment on January 14, 2014, based on SASB's review of IWG comments and additional research. Note these issues are not final and are subject to change.

	Oil & Gas - E&P	Oil & Gas - Midstream	Oil & Gas - R&M	Oil & Gas - Services	Coal Operations	Mining & Metals	Iron & Steel Producers	Construction Materials
Environmental	Greenhouse Gas Emissions	Greenhouse Gas and other emissions	Greenhouse Gas Emissions	Emissions Reduction Services and Fuels Management	Greenhouse Gas Emissions	Greenhouse Gas Emissions	Greenhouse Gas Emissions	Greenhouse Gas Emissions
	Air Quality		Air Quality		Air Quality	Air Quality	Air Quality	Air Quality
						Energy Management	Energy Management	Energy Management
	Water Management		Water Management	Water Management Services	Water Management	Water Management	Water Management	Water Management
	Waste Management		Hazardous Materials Management	Chemicals Management	Waste Management	Waste Management	Waste Management	Waste Management
	Ecological Impacts	Ecological Impacts		Ecological Impact Management	Ecological Impacts	Ecological Impacts		Ecological Impacts
Social Capital	Community Relations	Community Relations			Community Relations	Community Relations		Community Relations

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	Oil & Gas - E&P	Oil & Gas - Midstream	Oil & Gas - R&M	Oil & Gas - Services	Coal Operations	Mining & Metals	Iron & Steel Producers	Construction Materials
Human Capital	Workforce Health, Safety & Well-being		Employee health, safety & well-being	Workforce Health, Safety & Well-being	Worker Health & Safety	Worker Health & Safety	Employee health, safety & well-being	Employee health, safety & well-being
	Employee Recruitment, Development, and Inclusion			Employee Recruitment, Development and Inclusion		Employee Recruitment, Development and Inclusion		
					Labor Relations	Labor Relations		
Business model & innovation			Product Specifications and Clean Fuel Blends		Product Stewardship			Product Innovation
Leadership & governance	Business Ethics and Payments Transparency			Business Ethics and Payments Transparency		Business Ethics and Payments Transparency		
		Regulatory Compliance and Competitive Behavior	Pricing and Reporting Integrity					Pricing Integrity and Transparency
	Process Safety, Emergency Preparedness and Response	Process Safety, Emergency Preparedness, and Response		Process Safety, Emergency Preparedness and Response				
	Reserves Valuation and Capital Expenditures				Reserves Valuation and Capital Expenditures			
	Contractor and Supply Chain Management			Supply Chain Management and Materials Sourcing		(Mining Stewardship)	Supply Chain Management	
# of issues	12	5	7	9	10	12	7	10

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Appendix III: Sample Accounting Metrics

The following table lists the disclosure items (KPIs), as they stand currently, for the sustainability topics determined by SASB to be material for the Oil and Gas Exploration and Production industry following IWG feedback. This table provides sample metrics for reference only. The KPIs are currently being revised, and final KPIs put forward for public comment may be different from the ones outlined below.

Topic	Code	Accounting Metric
Greenhouse Gas Emissions	NR0101-01	Gross global Scope 1 emissions (metric tons CO_2-e), percentage covered under a regulatory program, and percentage by hydrocarbon resource.
	NR0101-02	Amount of gross global Scope 1 emissions (metric tons CO_2-e) from: (1) combustion; (2) flared hydrocarbons; (3) process emission; (4) directly vented releases; and (5) fugitive emissions/leaks.
	NR0101-03	Description of long-term and short-term strategy or plan to address climate change-related risks, opportunities and impacts, including emissions reduction targets for Scope 1 emissions that was active in fiscal year, and an analysis of performance against those targets.
Air Quality	NR0101-04	Air emissions, in metric tons, for the following pollutants: NO_x (excluding N_2O), SO_x, particulate matter (PM), and volatile organic compounds (VOCs).
	NR0101-05	Percentage (by productive capacity) of natural gas wells globally that fully implement the U.S. EPA's New Source Performance Standard (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP) rules for completions and equipment.
Water Management	NR0101-06	Volume of fresh water withdrawn (m^3), returned (m^3), recycled (m^3); and percentage in water-stressed regions, defined as High or Extremely High Baseline Water Stress as defined by the WRI Water Risk Atlas.
	NR0101-07	Volume (m^3) of produced water and flowback generated; percentage (1) discharged, (2) injected, (3) recycled; hydrocarbon content (in metrics tons) in water discharged.
	NR0101-08	Percentage of hydraulically fractured wells for which there is public disclosure of all fracturing fluid chemicals used, including those currently exempt from MSDS disclosure per Appendix E to 29 CFR Part §1910.1200.
	NR0101-09	Percentage of hydraulically fractured wells for which there is: • A baseline water quality assessment of groundwater conducted prior to development • Regular monitoring groundwater quality • Communication of findings to relevant stakeholders
	NR0101-10	Percentage of reserves in sites with high conservation value; percentage in Arctic.

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Topic	Code	Accounting Metric
Ecological Impacts	NR0101-11	Number of marine sites (offshore and deep water); description of best practice environmental management plan used throughout the project lifecycle, and the percentage of sites (by number) to which it was applied.
	NR0101-12	Terrestrial sites (by acreage of land disturbed); description of best practice environmental management plan used throughout the project lifecycle, and the percentage of sites (by number) to which it was applied; impacted area (by acreage) that was restored.
	NR0101-13	Number and aggregate volume of hydrocarbon spills greater than one barrel (1 bbl) that reached the environment; volume (bbls) recovered; volume and percentage to soil, to water; percentage and volume in Arctic.
	NR0101-14	Amount of waste from operations (metric tons) by: (1) RCRA exempt, (2) RCRA non-exempt characteristic hazardous waste.
Community Relations	NR0101-15	Discussion of due diligence practices with respect to human and indigenous rights and operating in conflicts zones, such as the integration into activities of the Voluntary Principles on Security and Human Rights or the Guiding Principles of Business and Human Rights.
	NR0101-16	Discussion of due diligence practices relating to the community rights comprising economic rights, social and cultural rights, and environmental rights, including how these practices are applied to business partners.
	NR0101-17	Financial risk (in U.S. dollars) to capital expenditure projects due to country, regional, and/or community risks.
Workforce Health, Safety & Well-being	NR0101-18	Occupational injury statistics, broken down by employees (full time and contract) and short service employees (full time and contact): • Total Recordable Injury Rate (TRIR); • Lost Time Injury Rate (LTIR); • Fatality Rate (excluding illness fatalities); • Near Miss Frequency Rate.
	NR0101-19	Process Safety Event (PSE) rates for Loss of Primary Containment (LOPC) of greater consequence (Tier 1) and lesser consequence (Tier 2), as defined by the International Association of Oil & Gas Producers (OGP).
	NR0101-20	Challenges to Safety Systems indicator rate (Tier 3), as defined by the International Association of Oil & Gas Producers (OGP).
	NR0101-21	Operating Discipline and Management System Performance indicator rate (Tier 4), as defined by the International Association of Oil & Gas Producers (OGP).

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Topic	Code	Accounting Metric
Business Ethics and Payment Transparency	NR0101-22	Description of management system for prevention of corruption and bribery, including employee awareness programs, internal mechanisms for reporting and following up on suspected violations, anti-corruption policies, participation in the Extractive Industry Transparency Coalition (EITI), and due diligence procedures applicable to business partners (e.g., suppliers and contractors).
	NR0101-23	Dollar amount of legal and regulatory fines and settlements associated with bribery, corruption, or other unethical practices related to interactions with foreign officials, including violations of the Foreign Corrupt Practices Act. Description of fines and settlements and corrective actions implemented in response to events.
	NR0101-24	Percentage of proven and probable reserves in countries that have the 20 lowest scores in the Transparency International's Corruption Perception Index survey for 2012.
Process Safety, Emergency Preparedness and Response	NR0101-25	Discussion of management systems used to integrate a culture of safety and preparedness throughout the value chain (including for contract and sub-contract partners) and throughout the exploration and production lifecycle (seismic survey, site survey, exploratory drilling, appraisal drilling, development, and production). Discussion should include how emergencies, accidents, and incidents are managed that could have human health, local community, and environmental impacts, both short term (acute) and long term (chronic).
Reserves Valuation and Capital Expenditures	NR0101-26	Sensitivity of proven and probable reserve levels and valuation based of a range of prince and demand scenarios related to regulatory limits on GHG emissions.
	NR0101-27	Potential carbon content (in metric tons CO_2-e) embedded in proven and probable hydrocarbon reserves.
	NR0101-28	Discussion of how price and demand for hydrocarbons and/or climate regulation influence the capital expenditure strategy for exploration, acquisition, and development of assets.

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