Supplement to Standards Outcome Review Report

Resource Transformation

This is a supplement to the Standards Outcome Review report for the Resource Transformation sector, prepared for the SASB Standards Council meeting on September 18, 2014. This supplement contains detailed feedback from SASB Industry Working Groups (IWG) for this sector. The Standards Outcome Review report addresses these comments, and based on a review of the comments and additional research, the SASB Standards Development team will put forward for a 90-day public comment period (PCP) on October 7, 2014, accounting standards for the five industries in the Resource Transformation sector.

Section 1

This section provides the percentage of IWG members that determined each issue in an industry, for all five industries, to be likely to be material. Green bars indicate that the IWG respondent agrees that the issue is material, red bars indicate that the IWG respondent disagrees, and blue bars indicate that the IWG participant considers that the issue may be material, but has substantial reservations. These responses determine which issues the SASB Standards Development team investigates further in greater detail to present material issues for public comment.

Section 2

Section 2 lists all the comments received during the IWG, including: the industry, disclosure topic[1], question type on the survey, interest group, suggested disclosure topic where IWG members suggested adding a topic, or response to whether an issue presented to the IWG is considered material, and detailed comments.

Comments related to issues on which there was IWG consensus regarding materiality will be considered when creating issue descriptions for the sustainability accounting standards, and revising industry briefs.

Comments related to other issues have been considered when revising or eliminating issues as being material, as discussed in the Standards Outcome Review report.

Comments related to suggestions for new issues have been considered when adding material issues to an industry, as discussed in the Standards Outcome Review report.

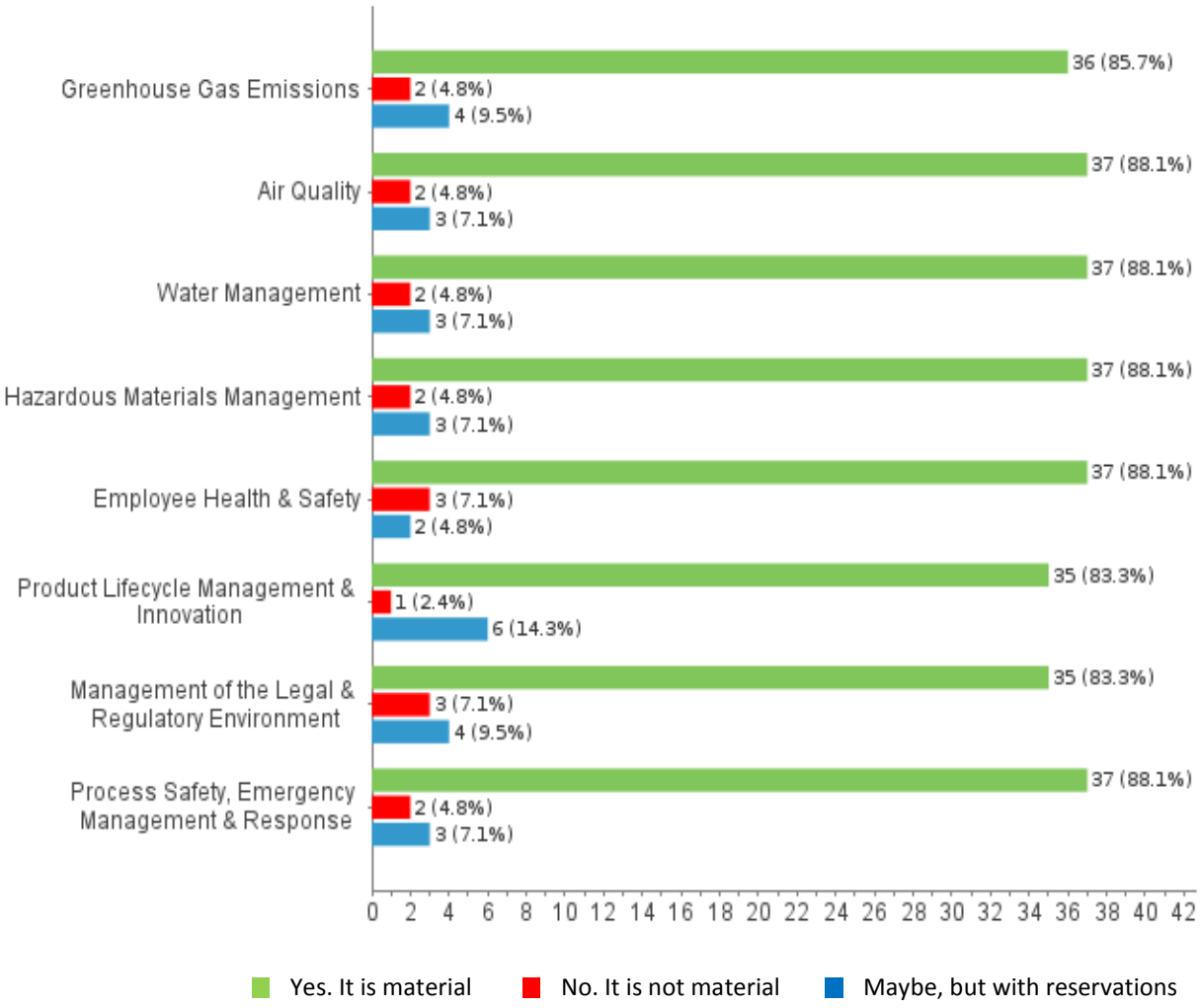
All other comments relate to industry definitions, SASB's overall approach, and IWG participation experience, and will be considered for process improvements.

[1] In cases where general comments were made that related to a sustainability topic already presented by SASB for an industry, these comments have been mapped back to the topic.

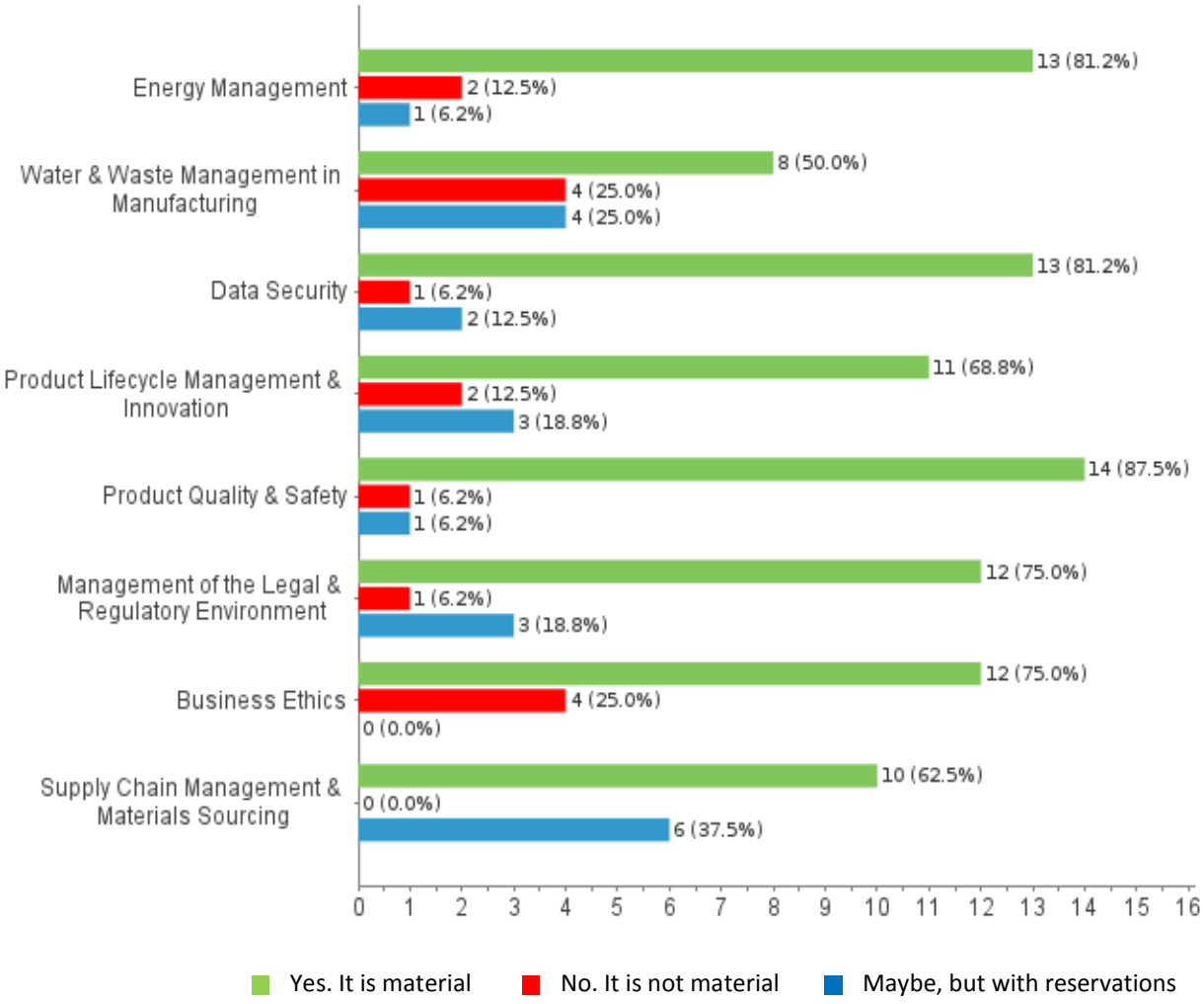
Section 1 - IWG Assessment of Materiality

In your opinion are the following material sustainability issues to the given industry?

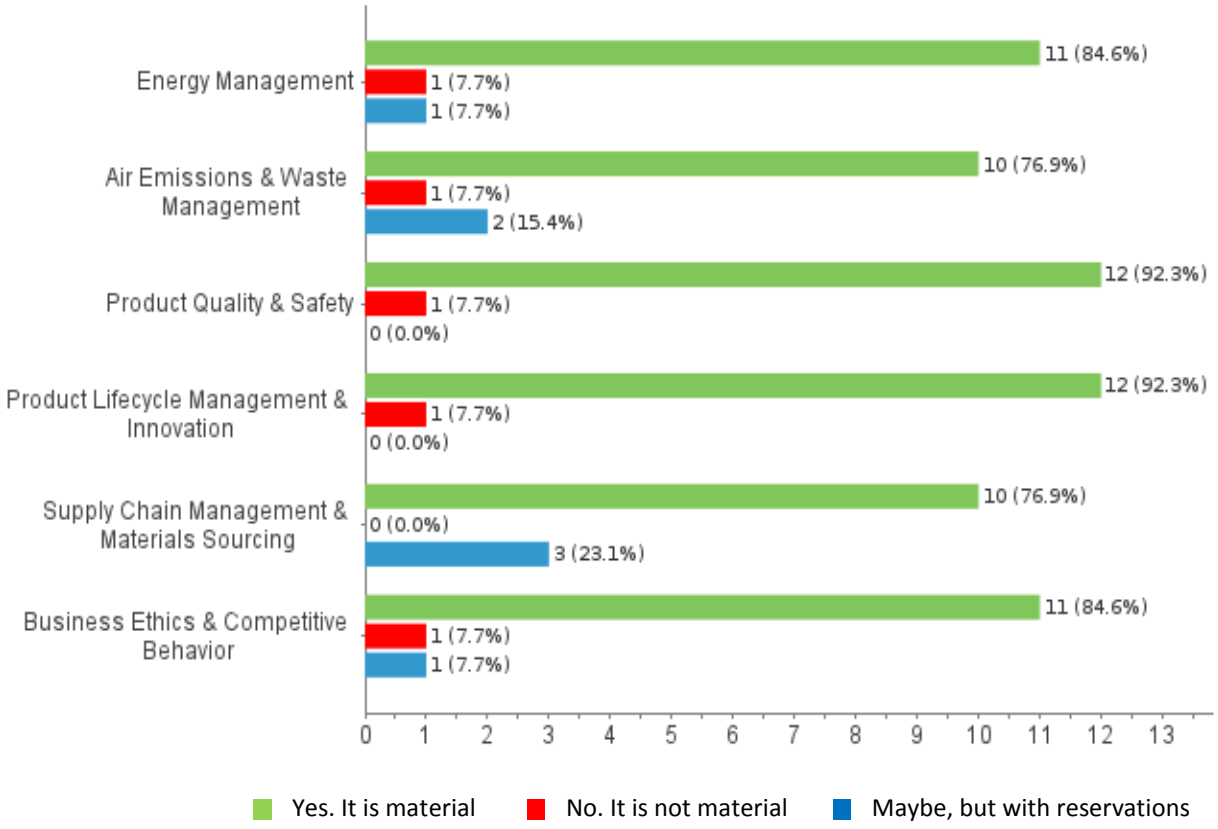
Chemicals



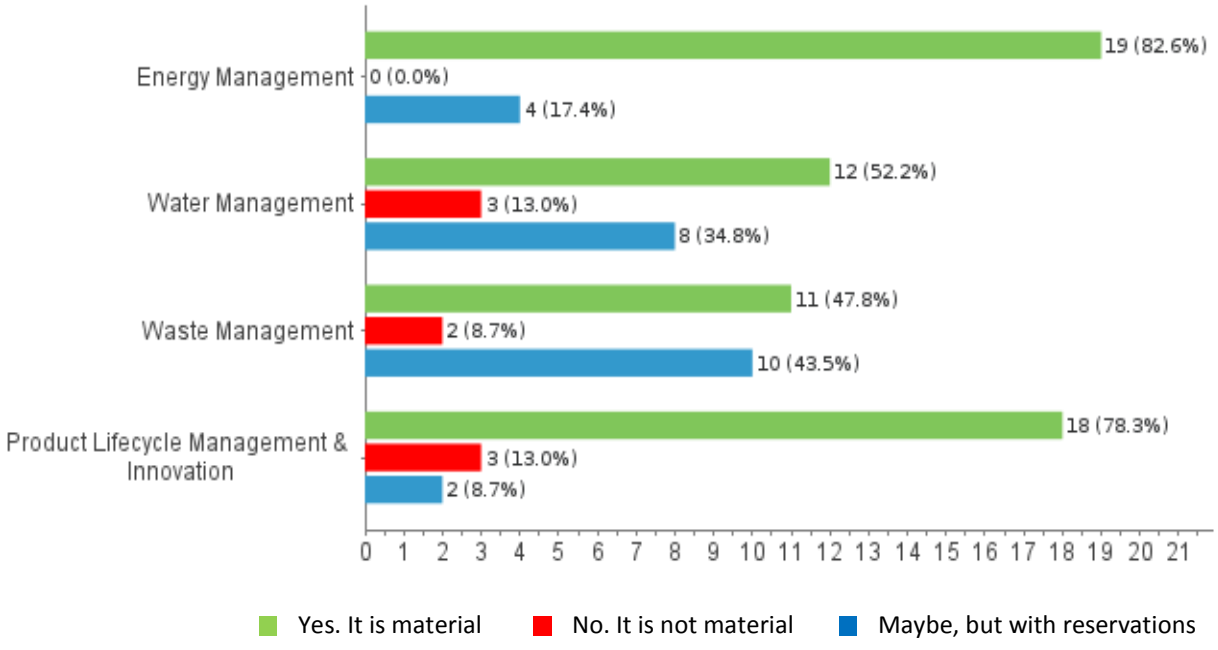
Aerospace & Defense



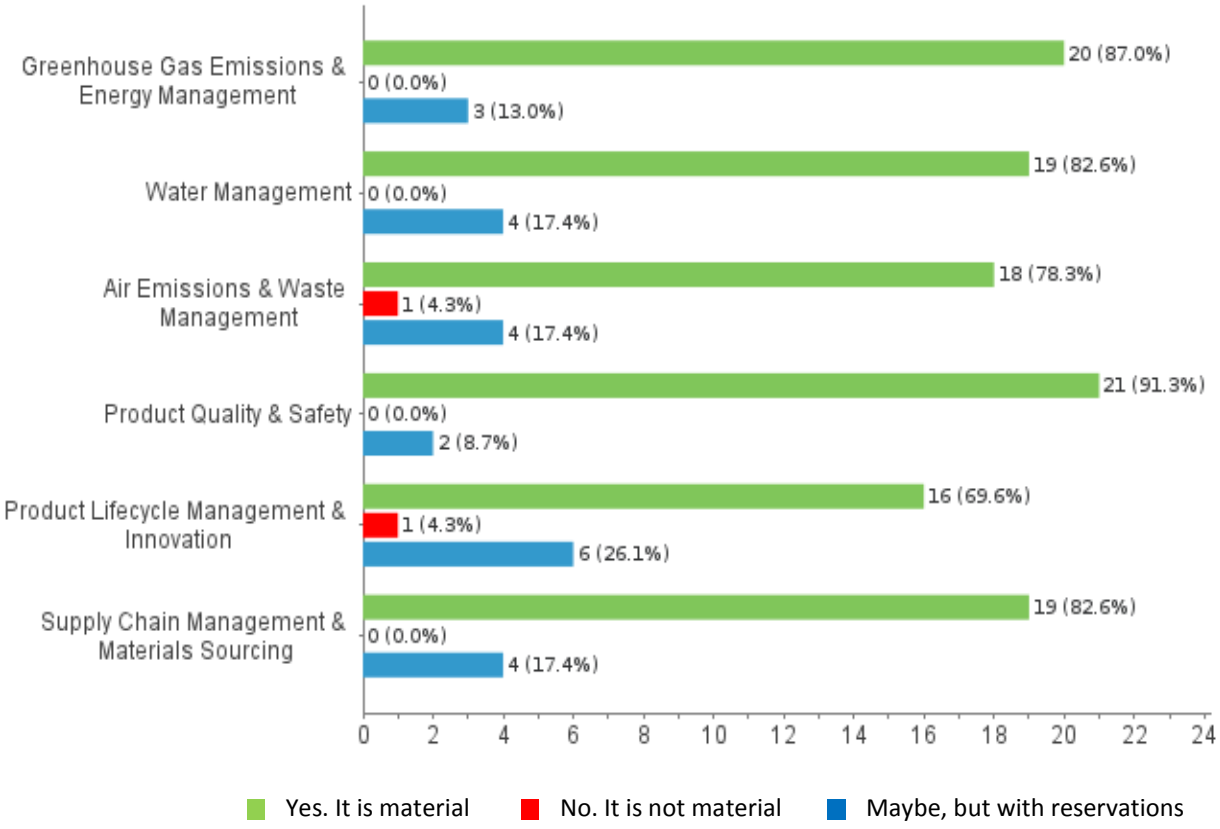
Electrical / Electronic Equipment



Industrial Machinery & Goods



Containers & Packaging



Section 2 - IWG Comments on Disclosure Topics

Industry	Mapping to SASB Topic	Survey Category	Stake-holder Type	Suggested Topic/ Response	IWG Comment (verbatim)
Aerospace & Defense	Business Ethics	Material Issue?	Corporations	Yes	Important to maintaining license to operate. However also worth considering the way that fines are paid given that investigations, etc can drag out over many years before the fine is actually paid by which time the company has learned from the mistake and implemented the appropriate measures and is a different company to what it was when the issue that led to the fine came up. The briefing paper focuses on the legislative environment, when it could be broaden to include what a company is doing to respond to external legislation and to respond to external stakeholder concerns.
Aerospace & Defense	Business Ethics	Material Issue?	Market Participant	No	How can one measure that consistently through a peer set?
Aerospace & Defense	Business Ethics	Material Issue?	Market Participant	No	The industry brief gave an example of United Technologies Corporation pleading guilty to knowingly violating US regulations, with relatively small fines that would not have a material impact on financials of the company. Business ethics is simply not an issue that comes up very much with companies in the industry.
Aerospace & Defense	Business Ethics	Material Issue?	Market Participant	No	measuring business ethics on a consistent basis wold seem to be very subjective and hard to develop consistently equivalent measures - is this the number of times company personel were found guilty of violating the law, the numbers of claims filed against a company - it would seem to be highly subjective as to what the definition was and of course, companies would invariably prefer not disclosing this - while there is certainly a cost for companies that fail to uphold the highest business eithical standards, companies would be very reticent to provide this and it might be quite hard to verify - some investigations could also be classified...
Aerospace & Defense	Business Ethics	Material Issue?	Market Participant	No	Any disclosure on this topic would likely be window dressing as opposed to concrete, supported disclosure.

Aerospace & Defense	Business Ethics	Material Issue?	Market Participant	Yes	Important to maintaining license to operate. However also worth considering the way that fines are paid given that investigations, etc can drag out over many years before the fine is actually paid by which time the company has learned from the mistake and implemented the appropriate measures and is a different company to what it was when the issue that led to the fine came up.
Aerospace & Defense	Business Ethics	Material Issue?	Market Participant	Yes	litigation exposure
Aerospace & Defense	Data Security	Material Issue?	Corporations	Maybe	We recommend against publishing "Number of data security breaches and percentage involving customers' confidential business information or sensitive national security information" metrics externally. There are many reasons for this recommendation. For example, the ability of different companies to identify and respond appropriately to cyber security attacks varies greatly. A company that has advanced capabilities may report more incidents than a company that has minimal capabilities – this sends the wrong message to external stakeholders. In addition, there is currently no cross-sector methodology for analyzing attacks and the clearly identifying something as a "breach". We use the Cyber Kill Chain to describe the phases of an attack. This is widely adopted by large DIB members and increasingly by Govt. agencies, but it is not universal. The lack of a standard analysis framework may cause some companies to report a breach, when a similar occurrence in another company goes unreported. We recommend that companies track these type of metrics internally until more universal standards are widely implement that would allow a reliable apples to apples comparison for investors.
Aerospace & Defense	Data Security	Material Issue?	Corporations	No	While vitally important to both Aerospace and Defense companies and others, companies should not be expected to discuss their data risk management process or breaches, since both of those areas of information could provide hackers with insight into overall system design. If there is some sort of recognized standard it could be acceptable to have companies report compliance with that.

Aerospace & Defense	Data Security	Material Issue?	Corporations	Yes	Industry is dealing with significant amounts of extremely sensitive information often linked to aspects of national security. Having the correct oversight and systems in place to ensure robust data security is critical for maintaining license to operate. BAE Systems operates in a heavily regulated and secure sector, and it must ensure that employees are mindful of the risks that are faced both by the organisation and as individuals with access to highly confidential and sensitive material. Security of information is covered in both our Code of Conduct and employee training. The Company has also developed social media guidelines to help employees and contractors understand how to minimise risks and use digital and social media responsibly. 2013 Annual Report - http://bae-systems-investor-relations-v2.production.investis.com/ Page - 112
Aerospace & Defense	Data Security	Material Issue?	Market Participant	Maybe	no data disclose
Aerospace & Defense	Data Security	Material Issue?	Market Participant	Yes	Companies within the industry spend a tremendous amount on R&D and hold intangible assets that would be materially affected by a breach in data security.
Aerospace & Defense	Data Security	Material Issue?	Market Participant	Yes	Data security is important for all industries/companies. Aero/Def companies may work with classified information, and likely have material non-public information related to contract negotiations & program data.
Aerospace & Defense	Data Security	Material Issue?	Market Participant	Yes	Industry is dealing with significant amounts of extremely sensitive information often linke to aspects of national security. Having the correct oversight and systems in place to ensure robust data security is critical for maintaining license to operate.
Aerospace & Defense	Data Security	Material Issue?	Market Participant	Yes	I don't have any idea of what would constitute "adequate" levels of data safeguards, but this is increasingly becoming a competitive concern and one which investors today have no ability to measure or quantify.
Aerospace & Defense	Data Security	Material Issue?	Public Interest & Intermediaries	Yes	Data security is vital to national security

Aerospace & Defense	Energy Management	Material Issue?	Corporations	Yes	Natural resources, energy, climate change, social issues and economic pressures are closely interconnected. In 2013, we completed a comprehensive analytical framework using a combination of Life Cycle Assessment techniques to more fully understand and prioritize environmental issues in our supply chain, facilities and products. The findings affirmed the most significant issues for our business operations are associated with energy use and its climate change impacts.
Aerospace & Defense	Energy Management	Material Issue?	Corporations	Yes	Energy management in the main is an operating efficiency consideration rather than environmental impact consideration, which results in cost savings particularly important against the challenging back drop of spending cuts on defense by governments. Equally, government customers are not really focusing on environmental factors when making purchasing decisions, as they are largely driven by cost and efficiency considerations. It would therefore he helpful to tie back energy efficiency to cost savings rather than just focusing on amount of energy consumed and sources used. At BAE Systems this issue is focused on driving efficient use of resources to reduce energy use across facilities and manufacturing processes. This benefits the company by reducing/minimising the company's impact on the environment, whilst deriving cost benefits from reduced energy use/improved manufacturing processes. Businesses across the company have environmental management systems in place to monitor energy use and programmes in place to engage employees in reducing energy use. BAE Systems primary use of energy is for heating and lighting workspaces. The Company has relatively few energy-intensive processes. Customer demand for reporting of environmental indicators and reduction targets are mixed across our markets. The Company complies with environmental legislations across the markets it operates in. Environmental Sustainability - http://www.baesystems.com/article/BAES_020347?_afrLoop=11636973153000&_afrWindowMode=0&_afrWindowId=3udu449a_1362#%40%3F_afrWindowId%3D3udu449a_1362%26_afrLoop%3D11636973153000%26_afrWindowMode%3D0%26_adf.ctrl-state%3D3udu449a_1467 2013 Annual Report - http://bae-systems-investor-relations-v2.production.investis.com/ Energy, water and waste – page 62, 63, 116 and 177

Aerospace & Defense	Energy Management	Material Issue?	Corporations	Yes	The DoD is one of our largest customers. Helping the the DoD meet its Energy Management goals both domestically and internationally is vital to National security. http://www.wbdg.org/ccb/DOD/DOD4/dodemhb.pdf
Aerospace & Defense	Energy Management	Material Issue?	Market Participant	No	Not pertinant information
Aerospace & Defense	Energy Management	Material Issue?	Market Participant	No	Not a key indicator
Aerospace & Defense	Energy Management	Material Issue?	Market Participant	Yes	Energy Management is important as it affects input costs for manufacturing processes.
Aerospace & Defense	Energy Management	Material Issue?	Market Participant	Yes	Energy management in the main is an operating efficiency consideration rather than environmental imapact consideration, which results in cost savings particularly importnat against the challenging back drop of spending cuts on defense by governments. Equally, government customers are not really focusing on environmental factors when making purchasing decisions, as they are largely driven by cost and efficiency considerations. It would therefore he helpful to tie back energy effeicincy to cost savings rather than just focusing on amount of energy consumed and sources used.
Aerospace & Defense	Energy Management	Material Issue?	Market Participant	Yes	Energy efficiency of manufacturing and aftermarket service and support operations are increasingly relevant for investors and should be measurable.
Aerospace & Defense	Energy Management	Material Issue?	Public Interest & Intermediaries	Maybe	Energy usage is variable
Aerospace & Defense	Industry insights	Other Comments	Market Participant	DNA - Other comments	Aerospace and Defense as a sector has different measurement degrees (and cost) and could be misconstrued with non-aerospace costs of quality unless very clearly put in context. Some of the items also may be hard to uniformlyl define, non-cost effective to audit and could also be non-disclosable if related to secret or top secret "black box" projects.

Aerospace & Defense	Management of the Legal & Regulatory Environment	Material Issue?	Corporations	Maybe	The title of this indicator is somewhat misleading. Perhaps best to retitle it to Political contributions and lobbying which is supportive of the data that will be gathered for it? The definition and content for this issue is too narrow within the briefing document. As a company representative, the information we presume that should appear below this heading would include export control and product legislation. If this issue is to focus only on lobbying, then the heading needs to change to appropriately focus the stakeholder on the issue. At BAE Systems, our Lobbying and Political Support Policy sets out the standards to be followed by anyone engaged in lobbying or other political engagement on behalf of BAE Systems, including those from outside the business. The principles underpinning this policy are: — BAE Systems engages in lobbying activities in the countries in which it operates in order to communicate with, and inform, legislators and government decision-makers on matters relating to the Company's business; — anyone engaged in lobbying activities on behalf of BAE Systems conducts themselves in a way that conforms with the Company's standards of responsible business conduct; and — BAE Systems does not make corporate contributions or donations to political parties. In the US, the BAE Systems USA Political Action Committee (PAC) enables employees to make bi-partisan contributions to candidates for Congressional seats and to party organisations that support Congressional races. Eligible employees can voluntarily choose to contribute to the PAC, which is managed in compliance with the requirements of the Federal Election Commission. How our business works - http://www.baesystems.com/article/BAES_027275?_afrLoop=11666095445000&_afrWindowMode=0&_afrWindowId=3udu449a_1546#%40%3F_afrWindowId%3D3udu449a_1546%26_afrLoop%3D11666095445000%26_afrWindowMode%3D0%26_adf.ctrl-

					state%3D3udu449a_1651 2013 Annual Report - http://bae-systems-investor-relations-v2.production.investis.com/ Page 113.
Aerospace & Defense	Management of the Legal & Regulatory Environment	Material Issue?	Market Participant	Maybe	The title of this indicator is somewhat misleading. Pehrpas best to retitle it to Political contributions and lobbying which is supportive of the data that will be gathered for it?
Aerospace & Defense	Management of the Legal & Regulatory Environment	Material Issue?	Market Participant	Maybe	How this would be measured is not clear. If it is dollars spent on legal and regulatory oversight, this would seem to be highly subjective and also potentially something that companies would be highly adverse to disclosing (though today spending on lobbying is being required, which is somewhat similar but a bit more specifically measurable).
Aerospace & Defense	Management of the Legal & Regulatory Environment	Material Issue?	Market Participant	No	Although political spending is rising, it doesn't have a direct affect on company financials and is never discussed on earnings calls.
Aerospace & Defense	Management of the Legal & Regulatory Environment	Material Issue?	Market Participant	Yes	structure the industry
Aerospace & Defense	Management of the Legal & Regulatory Environment	Material Issue?	Public Interest & Intermediaries	Maybe	The management of the legal and regulatory environment is also difficult to measure based upon prevailing attitudes and trends in a court of law.

Aerospace & Defense	Metric comment	Add Issue	Market Participant	Win ratio - what percentage of contracts bid were won?	This metric would provide investors with a sense of whether companies possess a uniquely differentiated product or service (an unusually high win rate) or which is less differentiated. It would be almost another way of measuring if a company was adequately investing in its business. Verfying the win rate would be hard and companies would likely be highly reticent to disclose this information because it might competitively disadantage them.
Aerospace & Defense	Metric comment	Other Comments	Corporations	DNA - Other comments	With regards to metrics it would be good to see other global sustainability reporting standards used e.g. United Nations Global Compact, Global Reporting Initiative, Carbon Disclosure Project and Transparency International Defence Industries Index. The UK's non-financial reporting framework, allows companies to report sustainability information by using UNGC framework. These are standards that companies already report against, therefore metrics are tried and tested. They are currently being used by companies and have support of external stakeholders e.g. government, NGO's, customers and the general public.
Aerospace & Defense	Metric comment	Other Comments	Public Interest & Intermediaries	DNA - Other comments	1) Why are not government agencies engaged in these actions allowed to be included in the scope? 2) Many of the metrics lack the defined criteria on how the party would be measures. For example would employees only include FTEs? How is a "critical material" defined? It is difficult to understand how auditable these items are until these are clarified.
Aerospace & Defense	New Issue / Angle	Add Issue	Corporations	Climate Change risk assessment	Climate change presents physical, regulatory and reputational risks to aerospace, and companies should provide information that would allow investors to conclude if these potentially material risks are properly addressed.
Aerospace & Defense	New Issue / Angle	Add Issue	Corporations	Equitable Talent Management, Development, and Retention:	With a highly skilled workforce that includes nearly 60,000 scientists, engineers and technologists, we consider ensuring safety, fostering diversity and creating an inclusive work environment as key components of our business strategy. The efforts to attract, develop and retain a robust, diverse talent pipeline are complex. They are impacted by the limited supply of science, technology, engineering and mathematics (STEM) students and professionals to fill available jobs. Efforts are also impacted by the unique compliance requirements for U.S. federal contractors, all of which must be balanced with customer budget uncertainties.

Aerospace & Defense	New Issue / Angle	Add Issue	Corporations	Future workforce	There is a shortage of qualified engineering and technology graduates globally. There is a need for more young people to consider careers in science, technology, engineering and mathematics to fill this gap and support future growth.
Aerospace & Defense	New Issue / Angle	Add Issue	Corporations	Workplace Safety	Striving for an injury-free workplace results in a better quality of life for employees, higher job performance, product excellence and mission success for our customers. We publicly report on severity (lost days) rates, day away case rates and recordable rates of workplace injuries using U.S. Occupational Safety and Health Administration standards.
Aerospace & Defense	New Issue / Angle	Inaccuracy	Corporations	DNA - Inaccuracy	The brief was not necessarily inaccurate, but rather, incomplete. For example, there was no explanation for why waste management was material. The use of water by this industry was not put into context with other industries. Its water use was labelled as "significant", but this had no accompanying evidence. The Social Capital discussion excluded employee management such as workplace safety, diversity, or retention. There was also a heavy focus on aircraft product line to the exclusion of numerous other product line.
Aerospace & Defense	No action needed	Add Issue	Public Interest & Intermediaries	Security or Operational Risk	The Risk of the operation is relevant and it have to be manage in real time
Aerospace & Defense	No action needed	Inaccuracy	Public Interest & Intermediaries	DNA - Inaccuracy	See prior comment
Aerospace & Defense	Product Lifecycle Management & Innovation	Material Issue?	Corporations	Maybe	Our end-of-life product requirements are contractually dictated by the customer, which in most cases is the U.S. Government. At this time, we are unable to control the collection/ disposal method of these materials. There is a Government protocol as much of this is considered government-furnished equipment (GFE).

Aerospace & Defense	Product Lifecycle Management & Innovation	Material Issue?	Corporations	Maybe	This indicator will not be relevant across aerospace and defence as some product development will be client driven and as such environmental considerations may be difficult to incorporate simply because the customer may not be requiring it. Not clear therefore what this metric is trying to tell us and how that links into materiality. It may be helpful to frame this indicator/factor within the context of 'intelligent procurement' as mentioned elsewhere in this response i.e. linking to cost savings, efficiencies that are gained from better procurement as a result of design innovation, material choice, etc. The product lifecycle development phases differ in the defence industry compared to the FMCG industry, as Government customers scope the product that they want and a company responds with a product design incorporating energy efficiencies and technologies that drive sustainability. So a company's response to tender can influence design decisions and product scope, but cannot make a customer incorporate them into the agreed product contract. Product Stewardship - http://www.baesystems.com/article/BAES_020376?_afrLoop=11583865523000&_afrWindowMode=0&_afrWindowId=3udu449a_937#%40%3F_afrWindowId%3D3udu449a_937%26_afrLoop%3D11583865523000%26_afrWindowMode%3D0%26_adf.ctrl-state%3D3udu449a_1042 2013 Annual Report - http://bae-systems-investor-relations-v2.production.investis.com/ Innovation and product lifecycle – 117 and 118

Aerospace & Defense	Product Lifecycle Management & Innovation	Material Issue?	Market Participant	Maybe	This indicator will not be relevant across an entire business as some product development will be client driven and as such environmental considerations may be difficult to incorporate simply because the customer may not be requiring it. Not clear therefore what this metric is trying to tell us and how that links into materiality. It may be helpful to frame this indicator/factor within the context of 'intelligent procurement' as mentioned elsewhere in this response i.e. linking to cost savings, efficiencies that are gained from better procurement as a result of design innovation, material choice, etc.
Aerospace & Defense	Product Lifecycle Management & Innovation	Material Issue?	Market Participant	No	Required disclosure would be a competitive disadvantage.
Aerospace & Defense	Product Lifecycle Management & Innovation	Material Issue?	Market Participant	Yes	Product lifecycle management is perhaps a bit more subjective to meaure for the Aerospace and Defense sector - there are "new" platforms, new aircraft, new cockpits, re-engined aircraft, etc.
Aerospace & Defense	Product Lifecycle Management & Innovation	Material Issue?	Market Participant	Yes	fuel consumption
Aerospace & Defense	Product Lifecycle Management & Innovation	Material Issue?	Public Interest & Intermediaries	Maybe	Product Lifecycle Management & Innovation are constantly in a state of flux. Measurement controls are not likely to have a relevant factor in sustainability practices.
Aerospace & Defense	Product Lifecycle Management & Innovation	Material Issue?	Public Interest & Intermediaries	No	They don´t manufacture a product, there is not a lifecycle

Aerospace & Defense	Product Quality & Safety	Material Issue?	Corporations	Yes	This is fundamental to maintaining license to operate. It is critical that the BAE Systems' products perform as designed without harm to the people using them. No complex and innovative product, whether used in defence or civilian markets or both, is without risk. It is essential that the company achieves an appropriate balance between the benefits they provide to customers and the risks associated with their use. The Company's Product Safety Policy is principles-based (Accountability; Level of Safety; Conforming Products; and Learning and Sharing Information) and these principles apply throughout a product's life from design and manufacture through use to disposal. It is recognised that some product responsibilities may extend beyond the contractual life of customer contracts. The safety of the Company's products relies on the considered application of its Product Safety Policy, adherence to the Product Safety Management Systems, and the responsible attitudes and behaviours of the many individuals who are alert to the safety implications of their own actions and those of others. Across BAE Systems' businesses, there are a number of working groups that consider product safety issues, different approaches (which reflect the different legal and regulatory environments in which the Company operates), research, best practice and knowledge sharing. These working groups continue to inform the Company's approach to product safety. BAE Systems plc and its subsidiaries are compliant with the global conventions, Oslo and Ottawa, on cluster munitions and anti-personnel devices, respectively. The Group does not manufacture biological or chemical weapons, or those containing white phosphorous or depleted uranium. Product Stewardship - http://www.baesystems.com/article/BAES_020376?_afrLoop=11583865523000&_afrWindowMode=0&_afrWindowId=3udu449a_937#%40%3F_afrWindowId%3D3udu449a_937%26_afrLoop%3D11583865523000%26_afrWindowMode%3D0%26_adf.ctrl-

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Aerospace & Defense	Product Quality & Safety	Material Issue?	Market Participant	Maybe	not disciminating indiscator
Aerospace & Defense	Product Quality & Safety	Material Issue?	Market Participant	No	Required disclosure would be a competitive disadvantage.
Aerospace & Defense	Product Quality & Safety	Material Issue?	Market Participant	Yes	Product quality is vital to aircraft programs. Note issues with 787s over the past couple of years.
Aerospace & Defense	Product Quality & Safety	Material Issue?	Market Participant	Yes	This is critical to maintaining license to operate.
Aerospace & Defense	Product Quality & Safety	Material Issue?	Market Participant	Yes	Product quality or defect rate and percentage of sales or shipment meeting customer quality specifications is a strong indicator of underlying profitability within the aerospace and defense sector. The higher the quality, the lower the rework and excess costs associated with correcting initial substandard quality.
Aerospace & Defense	Product Quality & Safety	Material Issue?	Public Interest & Intermediaries	Yes	ASQ.org
Aerospace & Defense	Supply Chain Management & Materials Sourcing	Add Issue	Market Participant	Intelligent Procure-ment	Would be helpful to understand how companies are thinking about material procurement and how that filters through into their waste management. could be linked to financial savings gained from more intelligent procurement?
Aerospace & Defense	Supply Chain Management & Materials Sourcing	Material Issue?	Corporations	Maybe	Supply chain reliability is essential to this sector, and will be increasingly so as global aerospace production increases in response to expanding demand in developing economies and the replacement of the existing global airline fleet. None of the metrics suggested define a material issue, nor do any define an issue that should significantly impact supply chain reliability.

Aerospace & Defense	Supply Chain Management & Materials Sourcing	Material Issue?	Corporations	Maybe	The indicator on counterfeit components is not equally applicable/relevant to every aerospace and defense company. As a consequence, the consistency and comparability of data will therefore be misleading. It can also be argued that this indicator overlaps with product quality and safety. With respect to critical materials, providing just a quantitative measure can be misleading as it is possible that a critical component may only make up 0.1% of one company's revenue whereas another company may have 10% of its revenues from critical components, but it does not necessarily mean the higher number is a negative signal. The quantitative numbers therefore need to be put into context to avoid misinterpretation of the data as it is equally important to understand what companies are doing to manage the issues around critical components. The numbers alone can be misleading. The definition and content for this issue is too narrowly focused on conflict minerals and counterfeit products within the industry brief. To address sustainability issues across supply chain, the content would also need to incorporate a broader set of supply chain standards/metrics including bribery and corruption, employee standards and human rights. Conflict Minerals BAE Systems provides guidance to its procurement professionals to help them identify the sources of metals such as tantalum, tin, tungsten and gold which could come from minerals mined in conflict regions such as the eastern provinces of the Democratic Republic of Congo. There is concern that mining activities in these areas are fuelling conflict and human rights abuses by directly or indirectly financing armed groups. While BAE Systems do not buy such minerals directly, minerals such as tantalum are found in electronic components purchased from our suppliers. We have developed clauses on conflict minerals that can be used in contracts with major subcontractors. These require suppliers to ensure, and provide evidence, that any items or materials have been purchased from legitimate and responsible sources which are in compliance with United Nations resolutions and not in any way involved in funding conflict. Within the US, BAE Systems Inc, complies with legislation and guidance from SEC.

					Counterfeit Products BAE Systems provides guidance within its global Lifecycle Management Handbooks and training for procurement professionals and engineers to help them identify counterfeit products. Contract Terms and Conditions also include clauses on anti-counterfeit conditions i.e. to certify products are counterfeit free. Within the UK, BAE Systems is part of the MOD/Industry Counterfeit Avoidance Working Group. Within the US, BAE Systems Inc, complies with legislation and has a dedicated policy on Counterfeit avoidance. Conflict Minerals - http://www.baesystems.com/article/BAES_052482/conflict-minerals?_afrLoop=3475375070000 Working with suppliers – http://www.baesystems.com/article/BAES_019988?_afrLoop=11726254497000&_afrWindowMode=0&_afrWindowId=3udu449a_1974#%40%3F_afrWindowId%3D3udu449a_1974%26_afrLoop%3D11726254497000%26_afrWindowMode%3D0%26_adf.ctrl-state%3D3udu449a_2079
Aerospace & Defense	Supply Chain Management & Materials Sourcing	Material Issue?	Market Participant	Maybe	This topic has more relevance recently with increased attention on "conflict minerals" and the compliance costs related to ensuring the supply chain sourcing is legal. But in general, this is not a topic that

Aerospace & Defense	Supply Chain Management & Materials Sourcing	Material Issue?	Market Participant	Maybe	The indicator on counterfit components is not equally applicable/relevant to every aerospace and defense company. As a consequence, the consistency and comparability of data will therefore be misleading. It can also be argued that this indicator overlaps with product quality and safety. With respect to cricial materials, providing just a quantitative measure can be misleading as it is possible that a cricial component may only make up 0.1% of one company's revenue whereas another company may have 10% of its revenues from critical components, but it does not necesserily mean the higher number is a negative signal. The quantitative numbers therefore need to be put into context to avoid misinterpretation of the data as it is equally important to understand what companies are doing to manage the issues around critical components. The numbers alone can be misleading.
Aerospace & Defense	Supply Chain Management & Materials Sourcing	Material Issue?	Market Participant	Maybe	Supply chain management metrics tends to focus on the percentage of material input costs that are purchased are competitive bid for an entire company (rather than divisions or individual businesses) - this is readily quantifiable and verifyable and should be highly relevant for investors.
Aerospace & Defense	Supply Chain Management & Materials Sourcing	Material Issue?	Market Participant	Maybe	no info disclose
Aerospace & Defense	Supply Chain Management & Materials Sourcing	Material Issue?	Public Interest & Intermediaries	Yes	Support for the supply chain threat of a lack in rare earth elements can be found in the United States Magnet Materials Association (USMMA's) February 2010 six-point plan to address what they describe as the "impending rare earth crisis" which they assert poses a significant threat to the economy and national security of the United States http://www.businesswire.com/news/home/20100204006851/en/Magnet-Materials-Supply-Chain-Players-Propose-Six-Point

Aerospace & Defense	Water & Waste Management in Manufacturing	Comment on Brief	Public Interest & Intermediaries	DNA - Comment on Brief	See prior comments on space debris and environmental legacy issues. *[The original comment in Brief states:]* *"When looking at the brief, it appears that about half of the content for supporting the argument for water and waste inclusion is based on costs or concerns from legacy matters rather than ongoing operations. However, when one looks at the SASB metrics to be reported, none address legacy concerns and all are associated with ongoing water use or waste generated in active manufacturing. Legacy concerns are already covered in the financial statements, if they are material. Therefore I would remove the text and the associated environmental liability and superfund references on page 7, as these matters are covered elsewhere and also have no relation to the proposed Water and Waste reporting metrics, which only address impacts from active operations.* *It is suggested that a more appropriate waste related metric than "the percentage of hazardous waste generated in manufacturing (one of the suggested metrics)" would be the number of unrecovered orbital space debris articles derived from products the company manufactured. NASA and the DoD maintain a catalog of orbital debris that could be used as a source of information and they have also highlighted its importance and threat to future space operations*. http://www.nasa.gov/mission_pages/station/news/orbital_debris."
Aerospace & Defense	Water & Waste Management in Manufacturing	Material Issue?	Corporations	Maybe	Water management is important in how it impacts energy use business-wide and water levels in water-stressed regions only. A significant portion of facilities energy use stems from heating, cooling and circulating water in operations. We seek to emphasize focus on water quality and reduction at facilities located in water-stressed regions.

Aerospace & Defense	Water & Waste Management in Manufacturing	Material Issue?	Corporations	Maybe	I believe the water data are material but waste are not. Water is materiality because of expectations of increasing supply shortages, and company ability to operate in water constrained regions is a meterial concern. Unless some sort of unique waste challenge poses a material risk to a company, waste volumes and recycling percentages are not economically or environmentally material in this sector.

Aerospace & Defense	Water & Waste Management in Manufacturing	Material Issue?	Corporations	Yes	The materiality of water management will not be relevant to every aspect of an aerospace and defence business. Some manufacturing processes i.e. aircraft manufacture do not require any water. It may be worth considering also enabling companies to highlight which parts of the business have a particularly high water intensity. Waste management can also be thought of within the context of 'intelligent procurement' i.e. avoiding waste right at the material purchase stage rather than further down the chain. It may therefore make sense to define an indicator that asks how companies procure to avoid waste. On both water and waste management environmental considerations will not be the driving concern but what cost savings can be made. Maybe the indicator can be framed to capture associated cost savings in combination with the resulting waste footprint? At BAE Systems, both issues are focused on driving efficient use of resources to reduce water use and waste generated across facilities and within manufacturing processes. The company's approach is based on eliminating, mitigating and managing water use and waste generated across its sites and processes. Individual product footprints differ for water used and waste generated e.g. water use increases for our ships business at certain points within a products development, for example flooding a dry dock. Environmental considerations are taken into account throughout a product's lifecycle from concept, design and manufacture through to use and disposal via the Company's Lifecycle Management (LCM) process. This includes reducing the environmental impacts of the Company's products during research and development, reducing component/material order volumes during procurement process, minimising waste materials during manufacturing, and helping to reduce the impact of our products when they are used, upgraded or disposed of. Businesses across the Group have environmental management systems in place that monitor and manage impacts from greenhouse gas emissions, material and solvent use, waste products, and emissions to the atmosphere.

					Customer demand for reporting of environmental indicators and reduction targets are mixed across our markets. The Company complies with legislations across the markets it operates in. Environmental Sustainability - http://www.baesystems.com/article/BAES_020347?_afrLoop=11636973153000&_afrWindowMode=0&_afrWindowId=3udu449a_1362#%40%3F_afrWindowId%3D3udu449a_1362%26_afrLoop%3D11636973153000%26_afrWindowMode%3D0%26_adf.ctrl-state%3D3udu449a_1467 2013 Annual Report - http://bae-systems-investor-relations-v2.production.investis.com/ Energy, water and waste – page 62, 63, 116 and 177
Aerospace & Defense	Water & Waste Management in Manufacturing	Material Issue?	Market Participant	Maybe	Companies within the industry rarely discuss Water & Waste Management in their 10K's or on their earnings presentations.
Aerospace & Defense	Water & Waste Management in Manufacturing	Material Issue?	Market Participant	No	Never been used as a reason for good or poor earnings in my career
Aerospace & Defense	Water & Waste Management in Manufacturing	Material Issue?	Market Participant	No	investor would be concerned with water/waste management at an aero/def company.
Aerospace & Defense	Water & Waste Management in Manufacturing	Material Issue?	Market Participant	No	Not a material input cost; no material competitive issues,

Aerospace & Defense	Water & Waste Management in Manufacturing	Material Issue?	Market Participant	No	Not part of RFPs for the industry
Aerospace & Defense	Water & Waste Management in Manufacturing	Material Issue?	Market Participant	Yes	The materialtiy of water management will not be relevant to every aspect of an aerospace and defence business. Some manufacturing processes i.e. aircraft manufacture do not require any water. It may be worth considering also enabling companies to highlight which parts of the business have a particularly high water intensity. Waste mangement can also be thought of within the context of 'intelligent procurement' i.e. avoiding waste right at the material purchase stage rather than further down the chain. It may therefore make sense to define an indicator that asks how companies procure to avoid waste. On both water and waste management environmental considerations will not be the driving concern but what cost savings can be made. Maybe the indicator can be framed to capture associated cost savings in combination with the resulting waste footprint?
Aerospace & Defense	Water & Waste Management in Manufacturing	Material Issue?	Public Interest & Intermediaries	Maybe	When looking at the brief, it appears that about half of the content for supporting the argument for water and waste inclusion is based on costs or concerns from legacy matters rather than ongoing operations. However, when one looks at the SASB metrics to be reported, none address legacy concerns and all are associated with ongoing water use or waste generated in active manufacturing. Legacy concerns are already covered in the financial statements, if they are material. Therefore I would remove the text and the associated environmental liability and superfund references on page 7, as these matters are covered elsewhere and also have no relation to the proposed Water and Waste reporting metrics, which only address impacts from active operations. It is suggested that a more appropriate waste related metric than “the percentage of hazardous waste generated in manufacturing (one of the suggested metrics)” would be the number of unrecovered orbital space debris articles derived from products the company manufactured. NASA and the DoD maintain a catalog of orbital debris that could be used as a source of information and they have also highlighted its importance and threat to future space operations. http://www.nasa.gov/mission_pages/station/news/orbital_debris.

Chemicals	Air Quality	Add Issue	Public Interest & Intermediaries	TRI emissions	I will send under separate cover.
Chemicals	Air Quality	Material Issue?	Corporations	Maybe	Similar to the water, air quality challenges will be depend on where the company is operating and understanding the issues probably can't be done with a roll up of the whole company.
Chemicals	Air Quality	Material Issue?	Corporations	Maybe	Disclosure is subject to magnitude of potential impact and context.
Chemicals	Air Quality	Material Issue?	Corporations	No	We do not view the issue as material.
Chemicals	Air Quality	Material Issue?	Corporations	Yes	Companies that do not proactively address smog emissions will not be able to afford to operate once regulations limit (by fees or emissions limit) due to costly upgrades. Only those in for the long term will remain. Same applies to CO2. Allowable HAP emission limits will continue to decrease and litigation resulting from HAP emissions will increase. All of the above will require capital and commitment.
Chemicals	Air Quality	Material Issue?	Corporations	Yes	Managing off-site impacts is one aspect of responsible manufacture.
Chemicals	Air Quality	Material Issue?	Corporations	Yes	http://www.basf.com/group/corporate/en/sustainability/management-and-instruments/global-materiality-matrix?mid=0
Chemicals	Air Quality	Material Issue?	Corporations	Yes	I feel this information needs to be public so companies are accountable both to shareholders and the general public on what they are doing to improve/maintain air quality.
Chemicals	Air Quality	Material Issue?	Market Participant	Maybe	Current regulations are embedded within current performance and company operations, with no significant reforms on the horizon.
Chemicals	Air Quality	Material Issue?	Market Participant	No	Information is usually boilerplate and differences between companies is not distinguishable.
Chemicals	Air Quality	Material Issue?	Market Participant	Yes	this has to do with potential class action suits from neighbors and license to operate.

Chemicals	Air Quality	Material Issue?	Market Participant	Yes	Air quality has always been an important issue for the chem industry where toxic process emissions are concerned. Plenty of evidence points to a continuing challenge the industry faces to reduce its emissions, whether toxic, ozone producing, acid rain producing, or GHG-related. Chemical companies still remain high on the list of Toxic Release Inventory emitters.
Chemicals	Air Quality	Material Issue?	Market Participant	Yes	Tracking of chemicals company events that impact air quality often provide a pattern that serves as an indicator of company process control, and can foreshadow costly outcomes from both a production and regulatory perspective. Page 103 here: http://www.csb.gov/assets/1/19/CSBFinalReportBP.pdf identifies eight emissions incidents over a 10 year period that preceded the 2005 explosion at the BP Texas City refinery
Chemicals	Air Quality	Material Issue?	Public Interest & Intermediaries	Yes	With increasing Global Warming, carbon emissions and carbon footprints are very important.

Chemicals	Air Quality	Material Issue?	Public Interest & Intermediaries	Yes	The chemical industry is major contributor to Air pollution. Volatile Organic Compounds (VOCs) and particulate matter are a challenge for this industry. There are multiple regulations that a company has to adhere to. Disclosures of regulatory compliance, including permits held and violations over the past year are an interest to the investor. There are both federal and local jurisdictional regulatory compliance issues - and an initial sustainability disclosure would be if a particular company/facility has been in compliance. Another disclosure would be if a company has received any complaints from the community - including lawsuits pending, other public/NGO community complaints. Another Air Quality topic would be investor interest if a facility is using best available technology to mitigate air quality issues. What process changes, best air pollution controls and plans for the upcoming year around air quality mitigation are also of interest to investors. Is there an effort on the way to reduce toxic air pollutants - through new green chemistry processes? Environmental Justice issues of childhood asthma or other community nuisances are to be reported on. This presentation outlines green chemistry alternatives including issues around air pollution - http://www.epa.state.oh.us/Portals/41/training/Green%20Chemistry%20Training.pdf

Chemicals	Air Quality	Material Issue?	Public Interest & Intermediaries	Yes	Chemical manufacturing companies emit other hazardous air pollutants and criteria pollutants through their manufacturing processes. Chemical manufactures in the US are required to implement industrial controls and comply with US EPA rules, with regulatory and compliance risks for noncompliance. Given rules like TSCA, which require disclosure, there is also a reputation risk. Ineffective management of community expectations can hinder expansion given rule like New Source Review. On a global basis, there is trend towards strengthening air pollution regulation.
Chemicals	Air Quality	Material Issue?	Public Interest & Intermediaries	Yes	One specific future risk is information gaps to assist companies in selecting the most cost-effective control strategies, considering their potential impact on multiple pollutants.
Chemicals	Air Quality	Material Issue?	Public Interest & Intermediaries	Yes	The speciality chemical company IFF, for which Iproduced two sustainability reports, discloses its air quality impacts. In particular, its facility in the Netherlands was experiencing negative stakeholder relationships due to the odor and emissions from its plant that was located near a residential area. See page 37 of this report. http://www.iff.com/custom/IFF/IFF_Sustainability_2012.pdf
Chemicals	Air Quality	Material Issue?	Public Interest & Intermediaries	Yes	There are legal requirements under Clean Air Act and non-compliance may result into notices, violation, fines, penalties and even prosecution.
Chemicals	Congratulations	Comment on Brief	Corporations	DNA - Comment on Brief	The brief gave good information. But actual experience with the metrics and how easy they are to obtain is also necessary to complete this survey well.
Chemicals	Congratulations	Other Comments	Corporations	DNA - Other comments	For a complicated business like chemicals, this effort of quantifying the externalities is a good initiative
Chemicals	Congratulations	Other Comments	Corporations	DNA - Other comments	Some good data points and insights.
Chemicals	Congratulations	Other Comments	Market Participant	DNA - Other comments	Very well done!

Chemicals	Congratulations	Other Comments	Market Participant	DNA - Other comments	The material issues as well as the metrics provide relevant information allowing to assess the company's impact and management. Especially, H&S is very well developed including severity of impact of significant incidents.
Chemicals	Congratulations	Other Comments	Public Interest & Intermediaries	DNA - Other comments	Please be sure to keep me in the loop! Very well done.
Chemicals	Employee Health & Safety	Material Issue?	Corporations	Maybe	Disclosure is subject to magnitude of potential impact and context.
Chemicals	Employee Health & Safety	Material Issue?	Corporations	No	We do not view the issue as material.
Chemicals	Employee Health & Safety	Material Issue?	Corporations	Yes	A health and safety reflective employee culture demonstrates commitment by senior leadership on multiple levels.
Chemicals	Employee Health & Safety	Material Issue?	Corporations	Yes	http://www.basf.com/group/corporate/en/sustainability/management-and-instruments/global-materiality-matrix?mid=0
Chemicals	Employee Health & Safety	Material Issue?	Corporations	Yes	Having a safe work environment for employees should be core for all companies and it is a right for employees to have. If people are being hurt at work due to poor working conditions or poor practices, it needs to be known (and corrected).
Chemicals	Employee Health & Safety	Material Issue?	Market Participant	Maybe	The number of employees in chemicals facilities is small compared to many industries. While important, meeting minimum acceptable thresholds in this area is likely not to create a major economic impact, should be easily achievable, and therefore may be less of a differentiator among firms.
Chemicals	Employee Health & Safety	Material Issue?	Market Participant	No	Information is usually boilerplate and differences between companies is not distinguishable.

Chemicals	Employee Health & Safety	Material Issue?	Market Participant	No	As with comments I made for the oil and gas sector, employee health and safety unfortunately is not so material on a relative basis. It should be more material than in fact it is. The main risk with this issue is reputational, and only in so far as an accident injures or kills so many employees as to be a media sensation. OSHA simply doesn't have the muscle to be much of a threat or deterrent to companies neglecting their employees' safety. Of course, if a company is neglectful or ill prepared enough so that employees sue as individuals or as a class, then there is a slight chance that the problem becomes a significant material issue in terms of legal costs, reputational hits, and a decrease in the labor pool as prospective employees avoid working for the company.
Chemicals	Employee Health & Safety	Material Issue?	Market Participant	Yes	employees may be exposed to carcinogens etc during their careers and the result is again potential for class actions. the workforce is the heart of a company, if H/S is lax they will not attract the best and brightest
Chemicals	Employee Health & Safety	Material Issue?	Public Interest & Intermediaries	Yes	If we look at employee health/safety, they are vital to the firm because safe, healthy employees are more amenable to cross-training, more productive, with less sick time - adding considerable value to the firm.
Chemicals	Employee Health & Safety	Material Issue?	Public Interest & Intermediaries	Yes	EH&S is, of course, very relevant to the chemical industry. Sustainability disclosures would at a minimum report L&I claims? OSHA violations and the like - is the company compliant with local jurisdictions, federal regulation, etc. As an investor I would be concerned about the companies exposure to lawsuits, as well as compliance issues. Is the systems and process in place for manufacturing deemed safe - have they been audited. Is there an Environmental Management System (EMS) in place? Health and Safety mgmt. system (ISO 18001). Do they conduct internal audits? Is the company pro-active about employee health issues? Is there a training/awareness program? Has there been improvement in the lowering of risks to employees over time?

Chemicals	Employee Health & Safety	Material Issue?	Public Interest & Intermediaries	Yes	Employee health and safety is a material issue because employees are fundamental to a successful company. I injuries and illnesses result in lost time, injury compensation, and potentially, higher health insurance premiums for employees. However, we also recognize the intangibles benefits of being a company that attracts quality workers. Also, an inadequate safety culture affects a company's relationship with the community.
Chemicals	Employee Health & Safety	Material Issue?	Public Interest & Intermediaries	Yes	This is regulated under OSHA (29 CFR) and hence there is an obligation on the part of the Chemical Industry.
Chemicals	Greenhouse Gas Emissions	Material Issue?	Corporations	Maybe	Many customers have been asking for PRODUCT-specific GHG, CF which, with the right additional information, could be used to back-engineer to product production and purchasing costs.
Chemicals	Greenhouse Gas Emissions	Material Issue?	Corporations	Maybe	The chemical industry is very diverse so while ghg emissions may be very material to a large bulk chemical company, they may be less of an material issue to a specialty chemical company.
Chemicals	Greenhouse Gas Emissions	Material Issue?	Corporations	Maybe	Disclosure is subject to magnitude of potential impact and context..
Chemicals	Greenhouse Gas Emissions	Material Issue?	Corporations	No	We think Climate Change should be added and Greenhouse Gas removed. Climate change is a broader, more comprehensive topic.
Chemicals	Greenhouse Gas Emissions	Material Issue?	Corporations	Yes	See air quality comment below.
Chemicals	Greenhouse Gas Emissions	Material Issue?	Corporations	Yes	We miss the topic of Energy Efficiency in the list of material topics and would suggest to add this to the list of high-priority topics, since this is one of the main concerns of investors, how we ensure energy supply and energy-efficiency in our production processes and how our products contribute to energy-efficiency in their use-phase.
Chemicals	Greenhouse Gas Emissions	Material Issue?	Corporations	Yes	Because of the possibility of creating myriads of chemicals it is important that there a government body that can evaluate the potential of any new chemical which will be registered for the first time to have GHG effects

Chemicals	Greenhouse Gas Emissions	Material Issue?	Corporations	Yes	I feel this information needs to be public so companies are accountable both to shareholders and the general public on what they are doing to reduce GHG emissions.
Chemicals	Greenhouse Gas Emissions	Material Issue?	Market Participant	Maybe	Until regulations require (in some form) a cost for using/processing carbon, this remains somewhat tenuous, or limited in its scope.
Chemicals	Greenhouse Gas Emissions	Material Issue?	Market Participant	No	Information is usually boilerplate and differences between companies is not distinguishable.
Chemicals	Greenhouse Gas Emissions	Material Issue?	Market Participant	Yes	if the company mfg any materials that are classified as GHG is could impact a business or present an opportunity. further if the company has coal fired boilers on site, conversion to nat. gas or implementation of sequestration could be expensive or very difficult depending on location
Chemicals	Greenhouse Gas Emissions	Material Issue?	Market Participant	Yes	The chemical industry uses tremendous amounts of energy and is especially dependent on the combustion of natural gas for its power. It is also heavily dependent on natural gas as a basic feedstock for its chemical production. Between the emissions from combustion and the potential emissions from leaks, the issue of GHGs is an important one, especially as we see the U.S. federal government (finally!!) tightening its rules on emissions. Likewise, regional cap and trade (California, RGGI, etc.) and other GHG reduction initiatives pose considerable cost centers for companies operating in those areas. Natural gas (methane) leakage from chemical company operations may not be much of an issue since the industry likely works hard not to waste an important feedstock, but recent studies are finding significant leakage along the supply chain. http://news.stanford.edu/news/2014/february/methane-leaky-gas-021314.html Increased government and NGO vigilance may present further costs to chemical companies, even if it's only to prove that leakage is prevented. Otherwise, the chemical industry faces all the other consequences of climate change that everyone else does in more extreme weather and tighter regulation.

Chemicals	Greenhouse Gas Emissions	Material Issue?	Market Participant	Yes	Greenhouse gas emissions above a peer-average level (if enough data were standardly disclosed to diagnose such a peer level) serves as an indication of process quality and efficiency. Less emission indicates a more efficient process in better control, and should indicate a more stable, high-quality competitive economic advantage.
Chemicals	Greenhouse Gas Emissions	Material Issue?	Public Interest & Intermediaries	Yes	As above

Chemicals	Greenhouse Gas Emissions	Material Issue?	Public Interest & Intermediaries	Yes	Certainly GHG emissions have to be included in any sustainability standard. The chemical industry in particular has an important role to play. While CO2, N2O and CH4 are products of combustion, some very potent GHGs are manufactured and used in other processes by chemical companies and their customers. Particularity CFCs, HFC's, SF6 and NF3 all have very high global warming potentials (GWP), exhibiting many times the radiative forcing (greenhouse effect) then that of CO2. Sulfur Hexaflouride (SF6) GWP is 25,000 times that of CO2! Chemical companies will have GHG sources from combustion and process emissions from manufacturing, as well as fugitive emissions- planned and unplanned venting events, standard (and measured) leak rates from equipment in use. I would also encourage the acknowledgement of the existing programs for reporting and verification. Unfortunately, in the US, most of the reporting is done voluntarily and not a lot of that! Elsewhere, there are regulatory frameworks - including California and some Canadian provinces. I don't recommend that SASB recreate the wheel, but use existing programs providing value for a companies participation. Other than California, most jurisdictions require the use of 3rd party verifiers who are accredited by an International Accreditation Foundation (IAF) member, such as the American National Standards Institute (ANSI). California, however, has a rigorous program of there own, so I would give companies reporting in a jurisdictional regime the most confidence as an investor. Doing this type of reporting does requires that they have some sort of a GHG management system in place. Of equal value to the aforementioned jurisdictional regimes, I would include voluntary reporters to The Climate Registry (TCR) (http://www.theclimateregistry.org/members/). Lower tier, but still of value I would give participation in CDP, the Carbon Disclosure Project (www.cdp.net) credence. Under CDP, members/reporters don't have to have 3rd party verification, but they get more points if they do. CDP, I believe as an organization is moving to requiring verification. The Global Reporting Initiative (https://www.globalreporting.org/Pages/default.aspx) has a GHG disclosure component to it as well. Finally, self reporting of GHGs is valid. Particularly, if a company has a 3rd party provide assurance of their disclosure.

Chemicals	Greenhouse Gas Emissions	Material Issue?	Public Interest & Intermediaries	Yes	Scope 1 greenhouse gas emissions are a material issues for chemical industry companies, especially those manufacturing chemicals, due to the changing nature of the US and worldwide regulatory landscape, which could include carbon emission taxation, detailed reporting requirements. Additionally, greenhouse gas emissions may constitute a reputational risk if not addressed to the satisfaction of the companies' stakeholders. Some companies additionally consider the possible impacts of climate change (e.g., stronger hurricanes) is their risk assessments.
Chemicals	Greenhouse Gas Emissions	Material Issue?	Public Interest & Intermediaries	Yes	Serious hedging concerns against future carbon risk exposure. Far beyond the risks currently envisioned. Just as airlines hedge jet fuel, companies will need to have access to expert carbon hedging strategies. Especially as it pertains to; - Calculating total carbon footprint - Identify, finance and implement energy efficiency projects - Identify other emissions reduction projects within the operations - Modeling the various carbon scenarios realted to capital investment decisions
Chemicals	Greenhouse Gas Emissions	Material Issue?	Public Interest & Intermediaries	Yes	There are Federal laws (40 CFR Part 98)and State laws (like CARB) that mandate monitoring and reporting of GHG emissions for this Induatry in excess of certain quantities.
Chemicals	Hazardous Materials Management	Material Issue?	Corporations	Maybe	Hazardous materials management could be defined a few different ways. Similiar to transparency in which some NGOs equate to full and complete disclosure of all formulations. Therefore, HMM when NGOs are only concerned about a red-hazard-based-list, rather than practical application of recognized risk evaluations, could also pose significant business risk to an organization without appropriate scientific review.

Chemicals	Hazardous Materials Management	Material Issue?	Corporations	Maybe	If this topic reflects the companies efforts to avoid hazardous waste and/or how a company handles its hazardous waste, we would suggest to rename the topic "Hazardous Waste Management". This would then be part of a responsible production and could be subsumed under a broader topic: "Responsible Production Processes". Our stakeholders did not mention this as a material topic so far: http://www.basf.com/group/corporate/en/sustainability/management-and-instruments/global-materiality-matrix?mid=0
Chemicals	Hazardous Materials Management	Material Issue?	Corporations	Maybe	Disclosure is subject to magnitude of potential impact and context.
Chemicals	Hazardous Materials Management	Material Issue?	Corporations	No	We do not view the issue as material.
Chemicals	Hazardous Materials Management	Material Issue?	Corporations	Yes	I feel this information needs to be public so companies are accountable both to shareholders and the general public on what they are doing to reduce/effectively manage hazardous waste.
Chemicals	Hazardous Materials Management	Material Issue?	Market Participant	No	Information is usually boilerplate and differences between companies is not distinguishable.
Chemicals	Hazardous Materials Management	Material Issue?	Market Participant	Yes	Companies currently treat this (and all of these topics) after the fact in the 10K when something catastrophic occurs given the broad definition of materiality from the Court. it seems that reporting about management should have a preventative outcome. As a shareholder I know that most incidents are preventable and I want to invest in companies that transparently manage their haz matls and work to reduce them.
Chemicals	Hazardous Materials Management	Material Issue?	Market Participant	Yes	Hazardous materials management has long been a material issue for the chemical sector. Witness the history of the Superfund law (CERCLA) and the impacts of RCRA and TRI. Luckily, the concern for compliance seems to be well baked-into the industry's business model by now. Sloppy hazmat management is simply sloppy business.

Chemicals	Hazardous Materials Management	Material Issue?	Market Participant	Yes	Poor management of hazardous materials at any site or within a firm constitute an unseen liability. The costs to remediate are generally material to the balance sheet - though invisible if disclosure is not incentivized.
Chemicals	Hazardous Materials Management	Material Issue?	Public Interest & Intermediaries	Yes	Superfund sites are prime examples. For one of the notable companies with egregious contributions look at W. R. Grace - Woburn, MA.
Chemicals	Hazardous Materials Management	Material Issue?	Public Interest & Intermediaries	Yes	Hazard material mgmt. includes not only disclosures around EH&S, but also key would be management of hazards in the plant, itself - and with transportation of said hazardous chemicals. Disclosures could include # of accidents involving hazardous chemicals, risks to exposure to employees and customers. Risks to liability resulting from poor or inadequate management of chemicals. This is only one recent incident related to unintended release of hazardous chemicals near Charleston, West Virginia (http://www.theguardian.com/world/2014/jan/10/west-virginia-chemical-spill-thousands-exposure-symptoms). Sustainability disclosures - would be again - regulatory compliance, number of incidents, fines/violations. On the positive side would be disclosure around demonstrated improvement of hazardous chemical management. Does the company have a certified ISO 14001 EMS in place? Also, what is the state of the regulatory environment? In W. Virginia regulation and monitoring was extremely lax, as industry, regulators and legislators were more than just friendly. This resulted in 100s getting ill in Charleston, the whole community using bottled water for months. The long-term health damage to people and the environment is unknown.
Chemicals	Hazardous Materials Management	Material Issue?	Public Interest & Intermediaries	Yes	Like the chemical industry, we think that safety is ALWAYS a material issue. Also, employees and communities are key stakeholders and safe operations are definitely material to them.

Chemicals	Hazardous Materials Management	Material Issue?	Public Interest & Intermediaries	Yes	Chemical Indsutry is one of the largest producers of Hazardous and also Non-haz Waste. As Hazardous Waste is a regulated Waste, Chemical Industry is one of the largest producers of Haz Waste and as such is obligated to ensure compliance with the regulation and minimize HAz Waste Generation
Chemicals	Ind. Brief comment	Comment on Brief	Public Interest & Intermediaries	DNA - Comment on Brief	Social Capital wasn't included as a topic - a glaring omission. What was presented, however, is quite useful.
Chemicals	Ind. Brief comment	Innacuracy	Corporations	DNA - Innacuracy	Maybe not an error but an Inconsistency (1)- Page 2 - 95% of all chemicals produced by small companies. Compare to page 6 - chemical industry is 4th largest GHG emitter, if only ~ 5% of total chemicals manufactured (large companies) are included in the total of 170MMtons CO2e. (2) Page 4 Environmental and Social externalities - "Environmental regulation can lower demand" - no it doesn't, it can lower supply, but not lower demand. Public perception can lower demand. (3)Page 5 1st sentence - "Managing energy consumption to minimize direct GHG" if 95% of all chemicals are produced by small companies, then a large% (95%?) of all electricity is purchased, Scope 2 INDIRECT, not Scope 1 DIRECT. (4) Page 5 Environment Section - should also include noise, nuissance, visual impact or presence on community. (5) Page 6 - Air quality - "More recently in March 2014..." Existing Texas regulations were not being complied with - shows a short term vision, the 45MM$ upgrade should have been completed when Reg V rules (including HRVOC) were enacted. (6) Page 6 - "Companies that preemptively improve compliance performance..." That is an extremely politically correct way to say 'Companies with long term visions and/or operate in compliance with rules and regulations...."

Chemicals	Ind. Brief comment	Innacuracy	Corporations	DNA - Innacuracy	List of material topics: - why was the topic "management of the legal and regulatory environment" chosen as material? The heat map shows, that the relative importance only achieved 15% (and aditionally the evidence of financial impact was perceived as "low"). We would suggest to delete this topic and to evaluate whether it could make sense to include the topic of energy-efficiency instead. - We would be interested to learn why the importance of our employees haelth& safety and wellbeeing only scored with 55% and the financial impact and the forward-looking impact is considered as "no". We would strongly recommend to reconsider this statement.

Chemicals	Ind. Brief comment	Innacuracy	Market Participant	DNA - Innacuracy	The brief was excellent, and as someone who has had the joy of following the chemical industry off and on, I know how maddening it can be to try to find 'industry data'. Some companies report this, some that, and finding data points to characterize the industry at large is a challenge. Just a couple of nit picky things. Not inaccuracies, per se, but you know when you see a figure for industry-wide water consumption from 1995, it might not be a reliable indicator as to the current status of the industry's water usage. The figure is given as perhaps one of the few industry wide data points available and therefore is an interesting fact. Perhaps an additional contextual line that is the most recent data point and that things probably have changed in the intervening 20 years. The brief does then go on to quote a 2012 figure of absolute water consumption by reporting companies--it sounds like a big number (4 mil cubic ft/ >half a trillion gallons), but again doesn't resonate much without more context. Also, the reference to the TSCA and the proposed Safe Chemicals Act is too prima facie and superficial. I know you have industry folks to pacify, but any reference to TSCA should at least tip its hat to the exasperation that most non-industry people harbor for it. You don't have to say we believe it an utter failure, but there is a history of futility and frustration associated with it. Recent NYT editorial captures that feeling: http://www.nytimes.com/2013/04/19/opinion/a-toothless-law-on-toxic-chemicals.html?_r=0 Perhaps allude to the controversy by drawing a contrast with its younger, much more robust European cousin, the REACH program. "The requirements under REACH promise to demand much more active preparation on chemical safety than companies have been used to under the 40-year-old TSCA." You have my permission to use the word "LAME" in caps before TSCA, but I'm sure you'll err on the side of discretion. End of vent.

Chemicals	Industry insights	Other Comments	Corporations	DNA - Other comments	It is mentioned twice in the report that the production of the top 18 bulk chemicals are resp. for approx. 75% of total chemicals industry emissions and 80% of energy demand. This could beg the question - why should other chemical companies bother until these companies do something signficant? Being from the pesticide industry I take some issue by including the statistic on page 12 about pesticides (and lead) causing an est. 964,000 deaths etc. There is no mention of the good that they do so my recommendation is to be careful including stats like this without some balance.
Chemicals	Industry insights	Other Comments	Corporations	DNA - Other comments	I would be happy to be contacted to provide clarifying comments or additional subject matter expertise from our company. We are interested in ensuring that SASB standards are helpful to all stakeholders.
Chemicals	Industry insights	Other Comments	Corporations	DNA - Other comments	only advices the investors approach is not sufficient to understand all risks linked with our industry the materiality results are not the same if you consider a time frame of 5/10/20 years the indicators are only risks oriented and don't constitue a clear image of the potentials of the chem industry

Chemicals	Industry insights	Other Comments	Market Participant	DNA - Other comments	If there are future iterations of the brief, you might want to emphasize more the influence of any one company's global geographic location on what does and doesn't impact the industry. It matters a lot where a company operates and sells its products. Supply chain realities also have a way of coming back at you if you ignore or suppress them. So even though Dow or DuPont are ostensibly U.S. companies, they operate around the world and depend on product sales around the world. They also source from suppliers around the world. Drawing direct lines of cause and effect can be difficult, but if US companies are selling pesticides or other hazardous products in developing nations where safety and regulatory cultures are more lax, that's a future (if not current) potential material concern. (http://www.who.int/ceh/capacity/Pesticides.pdf) Historically, these companies also sold more potent forms of pesticides in Central and South American markets. Also, US companies have done well to reduce worker accidents and illnesses on the whole, but the same may not be the case for their suppliers in China or India. On the other side of this, programs like REACH may be European based, but they do have influence on non-European companies doing business there. This can be a positive influence, but also material for the costs of complying with REACH.
Chemicals	Industry insights	Other Comments	Market Participant	DNA - Other comments	The primary challenge that rose to mind when completing this survey was the global nature of chemicals manufacturing - and the tendency of all major firms to have operations in many countries. Firms have historically demonstrated a strong capability to shift supply chains to circumvent local challenges/risks (e.g. with regard to localities that have weak intellectual property protections) and this flexibility could, in the worst case, enable circumventing of local SASB reporting standards. Part of the remedy is to limit reference to U.S. specific metrics (e.g. how many incidents did you report to U.S. authorities vs. how many incidents did you report to any regulator/government) and to word reporting standards with regard to all operations globally. It is a challenge to bear in mind.

Chemicals	Industry insights	Other Comments	Market Participant	DNA - Other comments	This is well thought out and the IT portion very smooth. I applaude your efforts and would like to participate further on other topics. I encourage you to push the limit on this now, many of these items have been reported for years in sustainability reports. Once this intial effort is final it may be a long time before it is updated and expanded. (what is the update process?) Adding a discussion on the intersection of various issues like water, food, energy aomng others would be very valuable to shareholders and require companies to think through them. I would also encourage discussion of supply chain issues. These are the places where the true power of industry innovation and sustainability lies.
Chemicals	Management of the Legal & Regulatory Environment	Material Issue?	Corporations	Maybe	Dialog with politics and society is an opportunity to take a constructive part in shaping the change process. An important political task is to create favorable conditions for business activities and thus promote business success. It is a key concern to ensure that those conditions promote competitiveness and innovation; chemical companies and their customers need to be competitive and innovative to stay successful. We therefore consider dialog with politicians to be the right and duty of a good corporate citizen – and part of sustainable corporate governance. That is why we take an active part in constructive dialog with politicians, business associations, and labor unions, as well as non-government organizations, in the quest for sustainable solutions. Part of our responsible lobbying acitvities is that we diclose our positions in the political dialog, that we supports the registration of lobbyists with political institutions and that our policy states not to fund political parties and members of parliament. The same applies to electoral candidates. But still we see no evidence to highlight the topic of responsible lobbying as material topic, since it could be subsumed under "Responsible Partnering".
Chemicals	Management of the Legal & Regulatory Environment	Material Issue?	Corporations	Maybe	Disclosure is subject to magnitude of potential impact and context.

Chemicals	Management of the Legal & Regulatory Environment	Material Issue?	Corporations	No	We do not view the issue as material.
Chemicals	Management of the Legal & Regulatory Environment	Material Issue?	Corporations	No	My experience is with the pesticide industry where regulations are becoming more stringent. However, if this is referring more to political donations that may somehow result in lenient regulations to benefit a company, then it would be material.
Chemicals	Management of the Legal & Regulatory Environment	Material Issue?	Corporations	Yes	Disclosure of current and historical adherence to regulatory and legal process is critical to evaluation of future performance. Having an auditable process for such evaluation demonstrates the necessary resources to manage the business in the happenstance of an unforeseen event. Having said that, disclosure of financial impact of such business actions does not necessarily equate to culture of the organization nor the potential failures. The process of evaluation and management to ensure compliance (aspects reviews, RCC)
Chemicals	Management of the Legal & Regulatory Environment	Material Issue?	Market Participant	Maybe	Information is boilerplate.
Chemicals	Management of the Legal & Regulatory Environment	Material Issue?	Market Participant	Maybe	The technical nature of issues in this industry requires extensive involvement between firms and governments - discerning the nature of such interaction is quite difficult. Thus metrics could be very misleading.

Chemicals	Management of the Legal & Regulatory Environment	Material Issue?	Market Participant	No	My answer here stems from the reality that the chemical industry already has a robust legal and regulatory infrastructure in place. The chemical industry long ago built a powerful lobbying machine, and needs no help being reminded that this is an important ingredient to their financial success. If anything, I wouldn't mind seeing a weakening of this factor. It would probably make the world a safer place. In a through-the-looking glass kind of way, perhaps including this issue as material would give the public leverage to see just exactly how influential the industry is in legislative and regulatory capture. If companies report lots of detail on how much they spend on lobbying and where, then there would be more pressure on them to explain and/or change counterproductive activities in this sphere. Of course 'counterproductive' is open to interpretation. The way the system is now, the secrecy shrouding lobbying and political influence peddling benefits the industry by slowing down any change in laws and rules governing chemical production and use. Do we really believe the chemical industry wants the public to know exactly how they operate to slow or kill any updates of laws like TSCA or any overarching industrial policies that support the precautionary principle? I would venture to believe they like things the way they are.
Chemicals	Management of the Legal & Regulatory Environment	Material Issue?	Public Interest & Intermediaries	Yes	With increasing demand for transparency by of a firm's regulatory violations and subsequent mitigation, this is one of the key issues, especially for developed countries.

Chemicals	Management of the Legal & Regulatory Environment	Material Issue?	Public Interest & Intermediaries	Yes	Minimal sustainability metrics demand at least adherence to local and federal jurisdictional requirements. Permit violations have a potential of a financial responsibility and may even have the potential of temporarily or even permanently shutting down a facility. If a company has multiple violations against it - would be high risk investment, even if the company remains profitable - as their exposure to fines/shutdowns/lawsuits are high. Disclosure would be a report on violations, changing regulatory environment which will cost the company time and resources to come into compliance. On the other side, is the company proactive and installing pollution control devices before the regulatory framework forces the installation of best available technologies?
Chemicals	Management of the Legal & Regulatory Environment	Material Issue?	Public Interest & Intermediaries	Yes	When dealing with chemicals, legislation pops up that seems like a good idea to the masses but isn't actually based on real science and often doesn't consider the impact to the chemical companies.
Chemicals	Management of the Legal & Regulatory Environment	Material Issue?	Public Interest & Intermediaries	Yes	This relates to the typical disclosure of legal proceedings and the estimate of financial impact on the company

Chemicals	Metric comment	Other Comments	Corporations	DNA - Other comments	- It is still not clear how companies with integrated several industries should handle their metrics. Should the metrics be handled per industry if industry specific, should they be reported on the corporate level if the same metric is used in several industries etc.? 10-K is aimed at the company results as a whole and our focus should be on what is important to the company. I dont think detailed granulity of data would add any benefit, other than perhaps comparability. - The number of the required comparison periods for the metrics should be clarified. In general any, one comparison period or longer trends? - Most of the non-financial numbers discussed are typically not available in the same timeline we use for SEC filings (i.e., within 60 days from the calendar year-end). Anything to be included in a SEC filings needs to meet the SEC filing timeline. The cost to upgrade systems/reporting in order to meet external reporting guidelines will need to be considered with respect to any benefits derived from this reporting. - One clarification needed for all metrics is if the data should be considered for a fully consolidated company or just the majority-owned subsidiaries. For financial reporting purposes, on fully consolidated statements we are required to consolidate some joint ventures because we are deemed the “primary beneficiary.” In these cases, we own 50% or less of these companies but they are fully consolidated in our financial results (this is an accounting/FASB rule). This means that we are not always in control of JV policy decisions. While we have a voice, there is another owner(s) that also influence the policies of the JV. Can you please clarify what is “in-scope” for this reporting – just majority owned subs where we are the sole or majority decision-maker or do you intend to include consolidated variable interest entities into the reporting as well?

Chemicals	Metric comment	Other Comments	Corporations	DNA - Other comments	Since most Companies are operating on a global market, I would encourage SASB Board to better connect with GRI that sets CSR standards for European operation (although operating globally too.) Cefic, the European Chemicals Industry Council is ready to stimulate this research
Chemicals	New Issue / Angle	Add Issue	Corporations	Energy consumption / Energy intensity	Energy costs are significant to profitability.
Chemicals	New Issue / Angle	Add Issue	Corporations	Energy consumption and energy efficiency	Maybe you are trying to capture this with greenhouse gas emissions, but energy consumption is actually the more important (material) issue for the industry right now.
Chemicals	New Issue / Angle	Add Issue	Corporations	Energy efficiency	As noted in the Chemicals Research Briefing, the chemical industry is resource intensive. This includes energy consumption. Many companies have set goals to reduce their energy consumption/improve energy efficiency. Additional work is needed in this area to reduce fossil fuel consumption, GHG emissions, water use for energy production, and to promote energy innovations and renewable energy use.
Chemicals	New Issue / Angle	Add Issue	Corporations	Energy Efficiency	Our investors and other stakeholders consider energy Supply and energy-efficient processes as topic of high-relevance (with high impact on business success)
Chemicals	New Issue / Angle	Add Issue	Corporations	Energy Management	Within the GHG metric, or as separate item, since as pointed out in the research, chemical facilities often have onsite co-generation of electricity, a metric, such as the weighted average efficiency of such systems (by primary fuel type), would help investors see which companies are best utilizing fuel sources.
Chemicals	New Issue / Angle	Add Issue	Corporations	Energy Management	Energy management is included as material in other resource transformation working groups. An argument can be made that it is even more important here, as process energy costs can be significant.

Chemicals	New Issue / Angle	Add Issue	Corporations	Environment accidents, legacy liabilities and remediation	Through M&A, Companies are increasingly going through restructuring. It may become tricky for investors to track legacy liabilities on one hand, and new liabilities on the other hand. Reporting on environmental accidents and remediation plans would help in building data logs and track good vs. worst performers.
Chemicals	New Issue / Angle	Add Issue	Corporations	Global Energy Usage	Companies need to be driving continuous improvement in energy management and usage.
Chemicals	New Issue / Angle	Add Issue	Corporations	raw materials demand and efficiency	Regions like Europe and China are heavily dependant on imports of raw materials. Industries operating in these regions may suffer from the lack of natural resources for their feed stocks. Thus the importance to show an efficient use of resource to be sustainable.
Chemicals	New Issue / Angle	Add Issue	Corporations	Stake-holder Engage-ment	Understanding how engaged an organization is within the groups it serves (communities, customers, suppliers, standards development bodies) is also an indication as to how the company culture values stakeholder materiality.
Chemicals	New Issue / Angle	Add Issue	Corporations	Supply chain standards and selection	Companies tend to subcontract their non-core activities. Hence the selection criterai of their supply chain services providers become the weak link and deserves attention
Chemicals	New Issue / Angle	Add Issue	Market Participant	Comm-unity	In one of the slide Social Capital for Chemicals is blank. This is an oversight. Community is very very important to the Chemical industry. There are many potentially costly issues at the fenceline, groundwater contamination, air pollution, releases from incidents, which all lead to license to operate. Shareholders are entitled to understand what issues exist and how they are being managed and prevented in the future.
Chemicals	New Issue / Angle	Add Issue	Public Interest & Intermediaries	Biodiversity/ eco-degradation	Ecological impact from operations and across value chain, e.g. deforestation, land use changes from mining, declining oceanic health from CO2 emissions and fertilizer run off.

Chemicals	New Issue / Angle	Add Issue	Public Interest & Intermediaries	Energy con-sumption	This needs to complement information on GHG emissions. Depending on the energy metrics, the information may be extremely different.
Chemicals	New Issue / Angle	Add Issue	Public Interest & Intermediaries	Energy use	Chemical companies are heavy users of energy, which is becoming increasingly costly and directly linked with GHG emissions. Sound energy management, energy efficiency and use of renewable energy can reduce costs, reduce TRI, and reduce GHG emissions. See this page from the Dow web site. http://www.dow.com/energy/perspectives/efficiency.htm See also this link: http://www.eia.gov/consumption/manufacturing/briefs/chemical/
Chemicals	New Issue / Angle	Add Issue	Public Interest & Intermediaries	Extreme Weather Asset Manage-ment	Considering the balance between predictable asset deterioration curves and the sudden and unpredictable nature of extreme weather and the long term trends of climate change impacts can serve as an important risk management component.
Chemicals	New Issue / Angle	Add Issue	Public Interest & Intermediaries	Material Sourcing	In Chemical Industry the sustainable procurement practices of the the raw materials & intermidiates can play an important role for sustainable development. The issue renewable raw materials refers to the procurement of renewable raw materials cultivated in a socially and environmentally sustainable way. Comprehensive guidelines aimed at the sustainable cultivation of such raw materials measures aimed at the sustainable procurement of renewable raw materials Many of the chemicals industry's products are derived from crude oil or natural gas. However, due to rising prices and the finite nature of fossil raw materials, increasing amounts of renewable raw materials are also being used. These can bring benefits not only in economic terms, but also from the sustainability point of view, provided that these raw materials are cultivated in a socially and environmentally sustainable way.

Chemicals	New Issue / Angle	Add Issue	Public Interest & Intermediaries	Raw Materials Management and Sourcing [SUPPLY CHAIN MANAGEMENT & MATERIALS SOURCING]	Te cost and availability of raw materials such as petroleum products and natural gas have a material impact on a company's business year to year. Chemical companies are constantly developing less costly sources for their raw materials in developing countries in Asia, Eastern Europe and Latin America. Sourcing and management of these raw materials requires robust management of logistics. Sourcing materials from developing countries also introduces additional risk to the company related to the environmental, health and safety of the company's contracted operations in those countries.
Chemicals	New Issue / Angle	Add Issue	Public Interest & Intermediaries	Social Capital	Social Capital is defined as the network of relationships between individuals, and by extension the organizations that they represent. The context of chemical companies to community relationships - and globally, as products are manufactured and distributed world-wide needs to be explored in the context of sustainability. In this context, issues of Environmental Justice are familiar to large chemical manufacturers. A community with NGO and Gov't participation can properly engaged a company on Environmental Justice issues. What is a company's exposure to environmental justice issues? New set of Metrics around community engagement should be considered. Is there a good or bad relationship with the local community? Could people living close to a chemical plant have a higher risk to cancer? What does the company do to educate the community and mitigate hazards? Is there monitoring in the community? What amount has been invested back to the local community?
Chemicals	New Issue / Angle	Add Issue	Public Interest & Intermediaries	Waste management	waste inventory, waste minimization, recycle, reuse, re-purpose toward zero waste.

Chemicals	New Issue / Angle	Innacuracy	Public Interest & Intermediaries	DNA - Innacuracy	In addition to why the sustainability issues were seledted, I would like to know why other issues were not selected. For example, communication with local communities might be important from the view point of "license to operate", and also training and development might be important for a company's innovation.
Chemicals	New Issue / Angle	Other Comments	Public Interest & Intermediaries	DNA - Other comments	The lack of Social Capital metrics in the original matrix is disappointing. In light of recent chemical spills, where 100,000s of people had to rely on bottled water because of the huge, unprecedented 4-Methylcyclohexanemethanol spill into the Elk River in West Virgina - where the community of Charleston is still suffering. Environmental Justice and ecological destruction due to procurement of raw materials is a concern - how quickly are companies embracing green chemical principals is an important Sustainability metric. I entered a concern about Lifecycle assessment. Chemical companies turning a blind eye to ecological destruction due to their demand of traditional feed stocks. I would like to see an above average SASB "score", when a company accounts for and is responsible to the full upstream and downstream supply chains, and end of life issues for hazardous chemicals and feedstocks.
Chemicals	No action needed	Add Issue	Corporations	Resouces efficiency/ resource scarcity	explanation same as explanation for energy efficiency. Main concern of our investors and stakeholders.
Chemicals	No action needed	Add Issue	Corporations	Societal impacts	the previous topics seem too narrow to understand potential risks linked to societal externalities
Chemicals	No action needed	Add Issue	Public Interest & Intermediaries	Management of sustainability issues	Management of sustainability issues means whether a company manage those issues at a company level or not. This topic might relate to innovation. If a company treat these issues as a company level, they might produce more innovative products, which is just my hypothesis, though. For example, Mitsubishi Chemical, one of the biggest chemical companies in Japan, treats sustainability issues at a company level, as the link#1 shows.

Chemicals	No action needed	Other Comments	Public Interest & Intermediaries	DNA - Other comments	When there may be KPI which investors are hard to use as bass of decision because KPI is detailed generally, I feel it.
Chemicals	Process Safety, Emergency Management & Response	Material Issue?	Corporations	Maybe	Disclosure is subject to magnitude of potential impact and context.
Chemicals	Process Safety, Emergency Management & Response	Material Issue?	Corporations	No	We do not view the issue as material.
Chemicals	Process Safety, Emergency Management & Response	Material Issue?	Corporations	Yes	Look at the Headlines. Texas and West Virginia facilities either bankrupt or significantly impacted by poor Process Safety management.
Chemicals	Process Safety, Emergency Management & Response	Material Issue?	Corporations	Yes	Demonstrating appropriate evaluation of LOPA, RMP, ICP, and business continuity planning is critical to demonstrating a health product offering.
Chemicals	Process Safety, Emergency Management & Response	Material Issue?	Corporations	Yes	http://www.basf.com/group/corporate/en/sustainability/management-and-instruments/global-materiality-matrix?mid=0
Chemicals	Process Safety, Emergency Management & Response	Material Issue?	Corporations	Yes	no additional thoughts here - the reason for Resp. Care and the recent incidents in TX and WV speak for themselves as to why this is material.

Chemicals	Process Safety, Emergency Management & Response	Material Issue?	Market Participant	Maybe	While incidents are costly, proper management is a small portion of firm budgets, so should be achievable and not a good differentiator.
Chemicals	Process Safety, Emergency Management & Response	Material Issue?	Market Participant	Maybe	Often the case, companies are not "tested" until an emergency actually occurs, which can undoubtedly be material, but for most companies over long periods of time this area can be hard for external stakeholder to gauge company performance.
Chemicals	Process Safety, Emergency Management & Response	Material Issue?	Market Participant	No	Information is usually boilerplate and differences between companies is not distinguishable.
Chemicals	Process Safety, Emergency Management & Response	Material Issue?	Market Participant	Yes	You need only look at BP and the ongoing series and wide variety of incidents. They lost their leases in the Gulf for 4 yrs. Systemic management issues need to be called out directly or they will continue and shareholders will suffer.
Chemicals	Process Safety, Emergency Management & Response	Material Issue?	Market Participant	Yes	Accidents still happen. The potential for those on a catastrophic scale will always be there where volatile chemical combinations exist.
Chemicals	Process Safety, Emergency Management & Response	Material Issue?	Public Interest & Intermediaries	Yes	Refer to worker health & safety
Chemicals	Process Safety, Emergency Management & Response	Material Issue?	Public Interest & Intermediaries	Yes	Again, is there systems and processes in place to effectively manage risk exposure? How many accidents have happened at the plant? What is the safety record, and has it improved. What is the results of safety violations? Is there a system of reporting, communicating internally and to the community safety issues? Is training effective?

Chemicals	Process Safety, Emergency Management & Response	Material Issue?	Public Interest & Intermediaries	Yes	The risk of technical failures, which may contribute to the release of hazardous chemicals to land, water and air, is substantial and necessitates a strong safety culture. Technical failures can cause long term impacts to manufacturing sites, distribution sites and surrounding communities. Strong emergency management and response is critical so that companies can react fast to potential technical failures. Many chemical processes use hazardous materials which, if released, could have a devastating impact on surrounding communities and not handled appropriately.
Chemicals	Product Lifecycle Management & Innovation	Add Issue	Corporations	% Revenue dedicated to R&D, product developme nt of Sustainabl e products.	Companies with long term vision will be the only survivors.
Chemicals	Product Lifecycle Management & Innovation	Add Issue	Public Interest & Intermediaries	Biodiversit y	It would be on a case by case basis, but it should be required for companies to proactively assess whether or not they exercise an impact on biodiversity. This is especially important when looking at new green chemicals development, and the potential conflicting use of such materials.
Chemicals	Product Lifecycle Management & Innovation	Material Issue?	Corporations	Maybe	Disclosing across the lifecycle of a product is welcome, but again, some NGOs have misinterpreted what is considered responsible reporting and only consider elimination (based solely on hazard)of certain chemicals to be the only acceptable innovation. John Warner himself acknowledges that the move towards improved chemical compositions will NOT happen overnight.
Chemicals	Product Lifecycle Management & Innovation	Material Issue?	Corporations	Maybe	My main concern is around IP protection for innovation. Otherwise I'm okay with it being material.
Chemicals	Product Lifecycle Management & Innovation	Material Issue?	Corporations	Maybe	Disclosure is subject to magnitude of potential impact and context.

Chemicals	Product Lifecycle Management & Innovation	Material Issue?	Corporations	No	We do not view the issue as material.
Chemicals	Product Lifecycle Management & Innovation	Material Issue?	Corporations	Yes	http://www.basf.com/group/corporate/en/sustainability/management-and-instruments/global-materiality-matrix?mid=0
Chemicals	Product Lifecycle Management & Innovation	Material Issue?	Corporations	Yes	Disruptive innovation is required to address the sustainability issues we're facing.
Chemicals	Product Lifecycle Management & Innovation	Material Issue?	Corporations	Yes	There will likely need to be differentiation depending on whether the company is a bulk or specialty chemical company
Chemicals	Product Lifecycle Management & Innovation	Material Issue?	Market Participant	Maybe	Information is usually boilerplate and differences between companies is not distinguishable.
Chemicals	Product Lifecycle Management & Innovation	Material Issue?	Market Participant	Maybe	Topic in general is still in its infancy, with early adopters benefiting, but large scale incorporation into business models still years off.
Chemicals	Product Lifecycle Management & Innovation	Material Issue?	Market Participant	Yes	Lifecycle mgmt is one way of measuring and somewhat predicting natural resources issues which can be very costly and are just being defined. Ask J and J about the small scrubbing beads in their cleansers. There is no way to clean that up and should have never been placed in the market. The impact is very far reaching into our food supply and the oceans. LCA is one recognized tool for prevention and to educate and spur innovation. As a shareholder I want to know that a company is truly evaluating its products before selling them.

Chemicals	Product Lifecycle Management & Innovation	Material Issue?	Market Participant	Yes	Like hazmat management, product lifecycle policies are a key part of any competitive company's business model. The instruction that historical problems offer--CFCs and other ozone depleting chemicals, PFOA, leaded gasoline, BPA, and so on--have driven home the point that chemical companies must plan for the long term and for potentially indirect consequences of product impacts. A high profile example of a current problematic product (group) is that of GMOs. The risks of popular resistance to GMO products are well-known in Europe, but the uncertainty of consequences related to their long-term use continue to show the need for sophisticated and long-term lifecycle assessment. I would contend that the leading companies in genetically engineered product line run a very large material risk should their bet on GMOs go south. Instances of pest resistance to pesticides are the first knock on this technology. We don't know if the prolonged and widespread use of GM techs will have negative outcomes. It took 40 years for the problem of ozone depletion to reveal itself after the introduction of chlorofluorocarbons, originally touted as a miracle chemical industry product.
Chemicals	Product Lifecycle Management & Innovation	Material Issue?	Market Participant	Yes	Metrics of innovation are a key differentiator between specialty chemicals firms (where R&D + S,G&A/Sales averages >20%) and basic chemicals firms (where this ratio averages just over 10%). Valuation data from Bloomberg clearly show that investors more highly value specialty chemicals firms. Thus data in this area that can help discern between the two types of firms is likely material.

Chemicals	Product Lifecycle Management & Innovation	Material Issue?	Public Interest & Intermediaries	Maybe	Certainly Innovations, such as green chemistry practices are of value. Lifecycle assessment is a topic supported by EPA (http://www.epa.gov/nrmrl/std/lca/lca.html). My reservation for SASB is how hard to push for lifecycle mgmt., and concepts such as the precautionary principal (http://en.wikipedia.org/wiki/Precautionary_principle). These concepts are quite germane to sustainability - and I would like to see SASB add a discussion of LCA for a company's products. I too, think innovation, such as employing Green Chemistry principals and practices should be more widely adopted, and has a long way to go. An example of where sustainable practices should come quickly into play is Bee colony collapse disorder. There is evidence that Neonicotinoid pesticides is a significant culprit. http://bit.ly/1nmvvQf A sustainable practice here would be to take the precautionary principal, remove these substances from being added to the environment till the issue is understood with continued observation and study of bees. Simply why risk everyone's food system at the expense of one manufacturer's profits from production and sale of Neonicotinoids. I'm not an alarmist, but bee populations have dropped 50% or more in some areas, and human labor is supplementing pollination on some farms - not a sustainable practice! Not that this pesticide is the direct cause - but the precautionary principal demands and directs appropriate action. I would like to see Social Capital be added under your matrix for the chemical industry.
Chemicals	Product Lifecycle Management & Innovation	Material Issue?	Public Interest & Intermediaries	Yes	LCA and Management is very important because it shows potential areas along the cycle (supply chain) that where improvement can help reduce pollution. Look at Nelson et al (2010) Life Cycle Evaluation Strategies of Biodiesel Fuel Along the SC in Public Transport, Internat. Journal of Logistics Systems and Mgmt.

Chemicals	Product Lifecycle Management & Innovation	Material Issue?	Public Interest & Intermediaries	Yes	Technological innovations are a material issue, given that innovations generally increase profits and provide a cost savings based on increased process efficiency. Innovation often provides a competitive advantage for companies, as compared to their peers. Innovation is also the key to making impactful improvements either in the operation itself of in the broader value chain. Additionally, effective use of the information gained through life cycle thinking (or assessment) can result in cost savings.
Chemicals	Product Lifecycle Management & Innovation	Material Issue?	Public Interest & Intermediaries	Yes	This relates to supply chain requirements and the impact of each segment of the product lifecycle on the environment

Chemicals	Product Lifecycle Management & Innovation	Material Issue?	Public Interest & Intermediaries	Yes	This is very material as green supply chain activity increases. The lack of internal expertise to evaluate an entities supply chain and LCA exposures remains high. Areas of sub risk to consider - specifically post-impact calculations, modeling and software; Understand weighting Understand the use of normalization in LCA Understand the use of grouping in LCA Be able to make a screening impact assessment (using software) and know the basic LCIA calculation procedure 54 Be able to perform screening, back of the envelope calculations for LCA's 55 Be familiar with available lifecycle tools 56 Know the sources of dedicated LCA data and software and modeling; Use stream-lined LCA techniques or LCA screening analyses when appropriate for a specific situation
Chemicals	Product Lifecycle Management & Innovation	Material Issue?	Public Interest & Intermediaries	Yes	Speciality chemical producer IFF identifies product innovation as one of its greatest competitive advantages. http://www.iff.com/custom/IFF/IFF_Sustainability_2012.pdf

Chemicals	SASB Approach	Other Comments	Corporations	DNA - Other comments	While I am not opposed to adding additional disclosures to 10-K and 10-Q filings that are meaningful to investors and stakeholders, please keep in mind the very tight timelines associated with the filing of these documents with the SEC - within 60 days of a year end. I believe some of the metrics proposed in this research brief will be very difficult to identify/finalize within a 10-K timeline for a large, accelerated filer. The focus should continue to be what is important to an investor/stakeholder and what can be identified and/or quantified within the SEC filing timeline. Cost of capital improvements related to software and instrument upgrades should also be considered. Finally, please consider defining all terms used in future briefs/updates going forward. Some of the terminology and/or metrics in the brief were very U.S. focused - more definition will be needed to be able to apply to operations outside of the U.S.
Chemicals	Survey comment	Comment on Brief	Corporations	DNA - Comment on Brief	I currently work in External Reporting where I am responsible for SEC filings (10-K and 10-Q filings) which is predominantly financial data and management's discussion of financial results or financial condition. The proposed disclosures/metrics in the research brief required subject matter expert input due to the broad range of topics included in the brief. I'm not certain what the SASB could have done to prepare me to complete the survey. Just wanted to point out that the broad range of topics covered and the complexity associated with each topic/proposed metric made it difficult for one person to answer on behalf of a company.
Chemicals	Water Management	Material Issue?	Corporations	Maybe	Water management needs to be done relative to the location- both quality and quantity could be more or less material depending on the local watershed that the company and operating in and a roll up for the whole company will be irrelevant.
Chemicals	Water Management	Material Issue?	Corporations	Maybe	Disclosure is subject to magnitude of potential impact and context.
Chemicals	Water Management	Material Issue?	Corporations	No	We do not view the issue as material.

Chemicals	Water Management	Material Issue?	Corporations	Yes	Cost and availability will impact ability to operate.
Chemicals	Water Management	Material Issue?	Corporations	Yes	Leading organizations are striving to minimize water impacts, particularly in certain regions.
Chemicals	Water Management	Material Issue?	Corporations	Yes	http://www.basf.com/group/corporate/en/sustainability/management-and-instruments/global-materiality-matrix?mid=0
Chemicals	Water Management	Material Issue?	Corporations	Yes	I feel this information needs to be public so companies are accountable both to shareholders and the general public on what they are doing to effectively manage/minimize water usage
Chemicals	Water Management	Material Issue?	Market Participant	No	Information is usually boilerplate and differences between companies is not distinguishable.
Chemicals	Water Management	Material Issue?	Market Participant	Yes	this depends on location of the mfg sites. assuming the company is global it likely operates in water constrained locations or may consider building in such locations. business could be constrained. this is not an issue that can be solved inexpensively or quickly.

Chemicals	Water Management	Material Issue?	Market Participant	Yes	As with any water intensive industry, the chemical industry will have to manage its water use (and effluent) carefully. Potable fresh water supplies--and even fresh water resources not considered immediate drinking water sources--are becoming ever more stressed with increasing demands on aquifers, rivers, and lakes. This particular issue has numerous potential flash-points, especially where drought occurs. Even without drought, rising seas pose the threat of intrusion on groundwater supplies in coastal areas. Chemical plants located on or near the coasts will have to consider this risk.Major chemical operations along the coasts of Louisiana and Texas are vulnerable. Also, as most of the large multinational chemical companies have operations overseas, it won't be just water supply conditions in the U.S. that are involved. The more varied the geographic spread of any one company, the more complex the water equation will be. Flooding from more intense weather events could also come into play. Fortunately, many chemical companies already have sophisticated approaches to their water use and even are among those producers of water filtration and conservation technologies that will help guard their own operations against water supply challenges. Nevertheless, it is and will remain a considerable cost of doing business, and as can always happen plant operations can be susceptible to unprecedented/unpredictable natural resource disruptions and emergencies. The EU has an active water management program for its chemical industry: http://www.e4water.eu/index.php .
Chemicals	Water Management	Material Issue?	Market Participant	Yes	Water use above a peer-average level (if enough data were standardly disclosed to diagnose such a peer level) serves as an indication of process quality and efficiency. Less emission indicates a more efficient process in better control, and should indicate a more stable, high-quality competitive economic advantage.
Chemicals	Water Management	Material Issue?	Public Interest & Intermediaries	Maybe	I think water management could be material if a country where a comany operaes does not put strict regulatins or faces water stress very much. For example, in Japan, water management is strictly regulated and we do not face water stress so much, therefore accidets regardig water manaement do not occur so often, which means water management is not material, and visa versa. This issue depends on area where a company operates.

Chemicals	Water Management	Material Issue?	Public Interest & Intermediaries	Yes	Water is increasingly becoming an asset - not just for recreational purposes, but for use. Water management entails both water/wastewater. As such, management would then encompass treating of ww, effectively enabling the user to discharge the 'clean' water back into public bodies or to WWTPs.
Chemicals	Water Management	Material Issue?	Public Interest & Intermediaries	Yes	There are two issues here - water quality and issues of scarcity. There is a new ISO standard (ISO 14046 - http://www.iso.org/iso/home/store/catalogue_tc/catalogue_detail.htm?csnumber=43263&commid=54808) in the works around water scarcity. We should see this published in the next year or two. Reducing consumption of fresh water in the face of rising global climate temperatures will be an increasingly more important sustainability metric. Investors may ask if there is a Environmental Management System in place - and is water consumption an issue where a particular plant is located or the industry practice in general for a particular chemical process may loom as a larger issue in the upcoming years. The issue of water quality is similar to issues of air toxins - What is the jurisdictional regulatory requirements? What is the company's risk? What permits are being held? Has there been violations in the past year? Are best available technical practices for water treatment being employed? Here's good article on water treatment best and most innovative practices (http://www.waterworld.com/articles/iww/print/volume-12/issue-05/feature-editorial/water-treatment-chemical-and-pharmaceutical-industries.html. Is the nature of the sustainability disclosure showing best and innovative water pollution treatment practices?
Chemicals	Water Management	Material Issue?	Public Interest & Intermediaries	Yes	For all environmental and safety aspects,relevant links are: http://www.unep.org/chemicalsandwaste/UNEPsWork/Mainstreaming/GlobalChemicalsOutlook/tabid/56356/Default.aspx http://www.unep.org/geo/pdfs/geo5/geo5_for_business.pdf

Chemicals	Water Management	Material Issue?	Public Interest & Intermediaries	Yes	Chemical manufacturing companies must address the challenge of securing adequate water supplies for water-intensive chemical manufacturing resources. Also, from a compliance standpoint these same companies are required to comply with stringent regulations, and this is only increasing in level of stringency when considering global regulatory trends.
Chemicals	Water Management	Material Issue?	Public Interest & Intermediaries	Yes	Water management is becoming a critical issue in many areas of the globe, so disclosure of water management and consumption is of interest to investors and stakeholders alike-e
Chemicals	Water Management	Material Issue?	Public Interest & Intermediaries	Yes	Chemical companies are heavy users of water and are vulnerable to growing water scarcity.
Chemicals	Water Management	Material Issue?	Public Interest & Intermediaries	Yes	Again Chemical Industry is always high Water-consuming Industry and Conservation of Water makes for Ecological and Economical Sense.
Containers & Packaging	Air Emissions & Waste Management	Add Issue	Corporations	Air Emissions	This should be its own topic
Containers & Packaging	Air Emissions & Waste Management	Add Issue	Corporations	Waste management	This should be its own topic
Containers & Packaging	Air Emissions & Waste Management	Material Issue?	Corporation	No	Highly regulated area already; difficult to align performance with metrics (even improvement ones) because of significant diversity in containers and packaging sector.
Containers & Packaging	Air Emissions & Waste Management	Material Issue?	Corporation	Yes	As paper mills work to increase post consumer recycled content their waste to land fill amounts will increase. Some type of accomedation needs to be made to acknowlege this conflict.
Containers & Packaging	Air Emissions & Waste Management	Material Issue?	Corporations	Maybe	See Comment on GHG Emission & Energy Topic

Containers & Packaging	Air Emissions & Waste Management	Material Issue?	Corporations	Maybe	We believe that grouping air emissions and waste management together in the same category is not a logical grouping as they are two different issues. One issue could be material and the other not material to any given entity. Our investors have not raised any concerns with these issues (compliance with permits being a given). As of today, we have a hard time saying that these two issues are material. We understand that this could change with future developments. Note: we do not have reservations with these two issues being a DISCLOSURE topic, but we view disclosure and material as two separate items.
Containers & Packaging	Air Emissions & Waste Management	Material Issue?	Corporations	Yes	VOC emissions from printing can cause both human health issues and regulatory issues for sites if not properly contained.
Containers & Packaging	Air Emissions & Waste Management	Material Issue?	Corporations	Yes	The world's population is growing larger, living longer, and consuming more. With this increased pressure on our finite resources and materials, we must move beyond low cost materials to renewable products while improving operating efficiences to reduce waste and improve air quality. In a recent sustainability materiality assessment conducted at 3M that surveyed both internal and external stakeholders, we know that reducing waste is of high stakeholder concern and a significant potential impact on 3M's reputation. It is also an area where 3M has a higher degree of control where continuous progress, and reduction performance have been demonstrated and will continue to be a focus area for the company. Please see our 2014 Sustainability Report on www.3M.com/Sustainability (Stakeholders and Materiality, and Raw Material Scarcity sections)
Containers & Packaging	Air Emissions & Waste Management	Material Issue?	Corporations	Yes	In the paper packaging industry we have had requests for increased recycled content for a number of years. Part of this seems to be driven by ENGO/activist activity but it now seems that customers are also starting to focus on the end of life impacts of products more (e.g. interest in LCA's and cradle-to-cradle programs). This translates directly to both waste management and product design.

Containers & Packaging	Air Emissions & Waste Management	Material Issue?	Corporations	Yes	"Evidence" sounds like all packaging companies use the listed hazardous chemicals, but it depends on teh substrate. Should be made clear in the text. The RockTenn example on page 10 would be a better fit for the water topic, not under Air emissions & waste.
Containers & Packaging	Air Emissions & Waste Management	Material Issue?	Corporations	Yes	Companies need to do everything possible to ensure good air quality in the areas where they operate to limit the effects of climate change; zero waste to landfill needs to be the goal for companies to work towards and figure out ways to recycle their waste
Containers & Packaging	Air Emissions & Waste Management	Material Issue?	Public Interest & Intermediaries	Maybe	These may be two separate things. Maybe combine GHG and Air emissions rather than Waste and Air emissions.
Containers & Packaging	Air Emissions & Waste Management	Material Issue?	Public Interest & Intermediaries	Maybe	I believe air emissions and waste management is a material topic, however it is less than the other ones. I would also separate the two into different topics, as drivers, risks, opportunities and value impact will be different for both. For example, I expect air pollution to be mostly driven by energy use - and this represents a risk in terms of air emissions standards etc. At the same time, one of the ecosystem services of forests (and managed forests) is air quality regulation, ie absorbing air pollution - which thus represents an opportunity. The same holds true for waste - for certain industry, recycling content is key, for most metals for example.
Containers & Packaging	Congratulations	Other Comments	Corporations	DNA - Other comments	Thanks for the time and effort put into this research. Unlike financial statements, there is a lot more grey area in this data since each company is doing something a bit differently, unlike GAAP rules. I look forward to seeing how the process progresses and thank you for including me in this review.
Containers & Packaging	Congratulations	Other Comments	Corporations	DNA - Other comments	The process was extremely efficient and the background information was well researched and useful.
Containers & Packaging	Congratulations	Other Comments	Public Interest & Intermediaries	DNA - Other comments	very good, thank you

Containers & Packaging	Greenhouse Gas Emissions & Energy Management	Material Issue?	Corporation	Maybe	While material, this is already being addressed in invester-related initiatives through the Carbon Disclsure Project. Any inclusion in SASB should be aligned with the CDP and not duplicative. Additionally, from a relevance and decision-making perspective, this metric should be focused on normalized improvement over time, not pure numbers.

Containers & Packaging	Greenhouse Gas Emissions & Energy Management	Material Issue?	Corporations	Maybe	Please accept this as my explanation for reservations for all of the disclosure topics. You will see that I marked most metrics as not comparable based on the following concerns regarding comparability. While I believe you generally have chosen the right topics for the industry, my concern is with how the data related to those topics will be used and how "comparable" they really are. You have defined comparable as "[T]he data allow for peer-to-peer benchmarking within the industry." I also have seen information indicating that the information will be used to describe trends over time for a particular company using the standard and disclosing the information. My concerns are somewhat addressed if indeed the latter is the only use for the information. I doubt, however, that even if this is SASB's intention, users of the disclosed information would limit their use of the material in this manner. When I led the team effort to establish sustainably goals for AF&PA there was significant concern about establishing metrics that worked for the industry, considering the wide diversity of mill types within the industry. Even within the packaging sector, mills vary by fiber source, pulping technology, and other characteristics that can affect many of the environmental metrics you propose. For instance, if one compares environmental and energy metrics for a company manufacturing containerboard (i.e., linerboard or medium) to a company that just has corrugated box plants, it will appear as if the impacts from the corrugated box plants are minimal. Yet, those impacts appear small only because the box plants benefit from the expenditure of energy and use of water at the linerboard and medium mills. Further, packaging can be considered primary or secondary, serving different purposes and having different environmental impacts. And again, this just relates to paper-based packaging. If users of the disclosed information intend to compare the ESG performance of packaging companies in different industries, the challenge to ensure truly "comparable" data is increased significantly. What is needed is some way to provide context and consideration of tradeoffs, which in my view is one of the most important hallmarks of sustainability. My members weigh and optimize tradeoffs and impacts all the time, and it is much more complicated than just considering if metric "x" is higher under one scenario or another. There is a risk that users of the disclosed information will simply focus on the magnitude of metric "x" (or even metrics x, y, and z) to judge sustainably performance. That would be faulty analysis.

					Generally, you picked the right
Containers & Packaging	Greenhouse Gas Emissions & Energy Management	Material Issue?	Corporations	Maybe	We would agree that effective energy management is material. And of course combustion of energy results in ghg emissions. However, while there is a linkage under certain circumstances, that is not universally true. For example one strategy for pulp & paper companies is to burn biomass in order to reduce their reliance on fossil fuels. The implication of linking the two issues denotes causality when that is not necessarily true per the example provided. We believe that ghg emissions could become material in the future, but the standards should be re-evaluated when that becomes the case.
Containers & Packaging	Greenhouse Gas Emissions & Energy Management	Material Issue?	Corporations	Yes	1. Energy (electricity and natural gas) account for a large portion of all packaging manufacturing costs.
Containers & Packaging	Greenhouse Gas Emissions & Energy Management	Material Issue?	Corporations	Yes	Access to dependable energy supply directly affects all businesses and communities. Energy usage and climate concerns require systematic change, and 3M is here to drive that forward. From air emissions to fossil fuels, 3M takes a proactive and collaborative approah to addressing energ demand and climate change in our operations and for our customers. 3M is focusing on understanding those connections and seeking solutions that promote energy conservation, clean energy infrastructure, and reductions in atmospheric greenhouse gas emissions.Please see our 2014 Sustainability Report on www.3M.com/Sustainability (Stakeholders and Materiality, and Climate & Energy Section)

Containers & Packaging	Greenhouse Gas Emissions & Energy Management	Material Issue?	Corporations	Yes	The paper packaging industry uses large amounts of energy to produce its products. Much of this energy is biomass from sustainable forestry operations, providing significant carbon reducing benefits to the environment. However, the U.S. EPA is currently considering a framework to regulate biogenic carbon which could have widespread negative cost impacts to the industry depending on the final ruling. This is one example of the potential material impacts of GHG regulations on the industry. Customers interest in companies carbon footprints also shows the material importance of this topic (e.g. increasing interest from customers in CDP supply chain).
Containers & Packaging	Greenhouse Gas Emissions & Energy Management	Material Issue?	Corporations	Yes	Energy represents a significant cost factor for all companies in this industry, independant of the substrate. Decription as it stands now does not adequately reflect that energy efficiency improvements will lead to reduced costs. An energy management system per se does not automatically lead to efficiency improvements - that is, however, how the current draft is written. Also, scope 3 GHG emissions are not adequately reflected, but can present a major source of emissions for the majority of companies in this sector. In addition, examples in the description provided are very heavy on paper packaging. A broader perspective may help make this more appealing/relevant. Ball, for example, provides extensive information at www.ball.com/energy
Containers & Packaging	Greenhouse Gas Emissions & Energy Management	Material Issue?	Corporations	Yes	no other reasons that what is outlined in the brief; need to limit climate changes
Containers & Packaging	Greenhouse Gas Emissions & Energy Management	Material Issue?	Market Participant	Yes	This sector is the most energy intensive sub-sector in our investment universe, it is crucial for companies to manage both emissions (regulatory risk) and energy use (cost issue).

Containers & Packaging	Ind. Brief comment	Comment on Brief	Corporations	DNA - Comment on Brief	The research brief provided adequate information needed to complete survey, however, the brief would be more effectual if it provided quantitative numbers to substantiate some of its claims. For example, the Brief makes several references San Francisco's ban on the sale of plastic bottles on municipal-owned property. However, it does not quantify to potential magnitude of impact – which to an outside observer seems quite minimal and immaterial. Another example is that on page 4, the brief refers to a "growing demand" that is "leading to increased importance on the recyclability and lifecycle characteristics of containers and packaging." This is a vague statement. What does it really mean to producers and what is the size of the demand? How fast is it growing? Quantitative data to substantiate such claims would improve the impact of the Brief. Information about what companies in this sector are already required to report would be helpful in understanding if the proposed metrics are new or adding new information to existing measures.
Containers & Packaging	Ind. Brief comment	Innacuracy	Corporations	DNA - Innacuracy	On page 5, the Brief incorrectly refers to "water, minerals, ecosystems and biodiversity" as non-renewable natural resources. Water is typically considered a renewable resource. In many cases, so are ecosystems and biodiversity. Overall, the Brief would have benefitted from improved proof-reading. In its current form it reads as having been insufficiently edited or vetted before being presented to the industry working group.

Containers & Packaging	Ind. Brief comment	Innacuracy	Corporations	DNA - Innacuracy	**- Recycled Content: a buzzword that has no relevance when evaluating the environmental performance of some packaging substrates (such as metals). To refer again and again to consumers driving the recycled content debate is also a wrong assumption. See my previous comments and e.g. www.metalpackagingeurope.org/wp-content/uploads/MPE_Recycled_Content_May_2014.pdf** - Recycling: the brief only touches on some obvious aspects, but does not look into the real recycling world, how recycling actually works, where material and money flow and what issues certain substrates have. **- EPR: on page 4 you say that there are no EPR programs for packaging in the U.S., but deposit schemes are one form of EPR. Also, it would be brand owners (the customers of packaging companies) who would have to pay for EPR schemes, not the packaging manufacturer as you indicate several times in the brief.** **- BPA: on page 11, you take a very narrow view on BPA. I can provide you with dozens of references that will tell you the exact opposite. You should not write a brief that reflects opinions of certain groups. Or, if that is the goal, at least provide proof points for different views and, for example, say that "Regulatory agencies from around the world, including the U.S. Food & Drug Administration and the European Food Safety Authority, have conducted extensive research on epoxy-based can coatings containing BPA and have consistently found them to be safe. The FDA, which has conducted wide-ranging research on epoxy-based can coatings containing BPA and reviewed hundreds of other scientific studies, continually reaffirms that the trace amounts of BPA which may be found in food and beverage packaging is safe." For the last time in 2013, btw: http://www.fda.gov/newsevents/publichealthfocus/ucm064437.htm** - Wording: throughout the brief, wording often is inaccurate. On page 5, for example, you say that "The environmental dimension of sustainability includes corporate impact on the environment, either through the use of non-renewable natural resources as input to the factors of production..." as if renewable resources, such as wood (>paper) don't have a negative impact on the environment. **- Balance: The majority of examples refer to paper packaging company. A better balance may make the document more meaningful.**

					- Wrong numbers: the recycling rate for aluminum cans (page 12) in 2011 was at 65% and at 67% in 2012 (see e.g. www.aluminum.org/news/aluminum-can-continues-leadership-sustainable-packaging-most-recycled-beverage-container). - Sustainability context: on page 8 you have another paper example ("RockTenn set a goal of reducing its water discharge by 12 percent by 2020 from 2009 levels"). What good is that in the context of sustainability? You could, for example, use tons of energy to evaporate some of your wastewater, thus reducing your effluent discharge. **- Negative perspective: the brief in general primarily focuses on negative examples, risks, value impacts etc, while not looking at the various aspects from an opportunity standpoint (cost savings, revenue generation, extending license to operate, improving image, competitive advantage, etc).** - Appendices: We would evaluate the appendices IIA and IIB slightly different than what you already included (e.g. EFI and financial impacts). Not sure how you will account for the industry perspective before you finalize the standard.

Containers & Packaging	Ind. Brief comment	Innacuracy	Corporations	DNA - Innacuracy	Very good brief, and thorough. A few notes on specifics... In general, use of company or industry group data in this research should be avoided (Glass Packaging Institute, NAPCOR, Owens Illinois, Saint Gobain, etc) since there is a lot of positioning, infighting, and suspect sustainability claims that go back and forth between certain material substrates. **Page 7 - You use water "usage" and "consumption" interchangably. I recommend to stick with consumption since that is the most important metric.** Page 9 - column 2, paragraph 2 - references should be 109 and 110, not 110 and 111. **Page 11 - I recommend you caveat BPA with "high levels of BPA" since you infer that any level of BPA is harmful. This has not been proven, and low levels below certain thresholds have not been shown to have a harmful human health impact. I'm not saying take it out, just clarify the text to be factual.** **Reference 143 and 144 are clearly biased. Yes, glass can be recycled forever, but you're basically providing a billboard for the glass industry here. Plastic is infinitely recyclable as well, but just like glass, if you provide too much contamination, it will break down and find its way into landfills.** **Reference 156 - Pepsi never launched a plant bottle. I recommend removing this - you can contact Pepsi.** Page 16 para 1 - You are assuming that consumers are asking for more recycled content with no factual basis. Page 16 para 1 ref 177 - "...efforts combined with those of industry participants may be the likely reason..." There is no factual basis here. Recommend removing the word "likely". Page 20 - I have several differences to your risk matrix for evidence. I can share those via screenshot but don't have the time right now to write out all my thoughts. Feel free to email with questions on that.

Containers & Packaging	Ind. Brief comment	Innacuracy	Corporations	DNA - Innacuracy	I wouldn't say there are "inaccuracies," but there are a lot of assumptions being made that may or may not turn out to be true. For example, "sustainability issues that will drive competitiveness" on page 5. While I agree that many of these will drive competitiveness, some I am not sure about HOW they will... On page 13, you state that recycled materials use "much less energy and raw materials" to create a new package. This is not always true with paperboard. The energy impacts of recycled versus virgin paperboard will be driven by the energy mix (e.g. use fossil fuels, use of renewable energy) at each individual mill. Also, paperboard is not infinitely recyclable. It can only be recycled about seven times before the fibers begin to breakdown to the point that they cannot be used. Ultimately, without virgin fiber paperboard production, the supply of recycled fiber would eventually disappear.

Containers & Packaging	Ind. Brief comment	Innacuracy	Corporations	DNA - Innacuracy	There are several general inaccuracies and a few specifics: **General:** Throughout the document there is an assumption that more recycled content is always better. This may be true for other packaging, but not paper. There are environmental and energy tradeoffs. In a recently-released U.S. corrugated industry life cycle analysis the study examined the relative impacts of industry average corrugated products (which contained 46 percent recycled fiber) and 100 percent recycled corrugated products made in 2010. All types of fiber have benefits and contribute to maintaining a sustainable corrugated packaging industry. The LCA showed that both 100 percent recycled and industry average corrugated products have environmental advantages in different impact categories. One is not better than the other across all the environmental impact indicators and the corrugated industry must maintain a supply of new fiber to augment those fibers that are recovered and used for production. See Corrugated Packaging Alliance website (www.corrugated.org). Also, one can not have a "closed loop" for paper recycling. The fibers wear out after a number of uses (depends on the use, but 5-6 is a typical number)and must be discarded. **General Comment on EPR**: Increasing recovery rates and reducing the amount of recyclable products going to landfills is a laudable goal, but extended producer responsibility (EPR) is not the most appropriate way to achieve that goal for paper-based packaging. The voluntary recovery of paper and paper- based packaging is a recycling success story; reliance on EPR will harm businesses engaged in paper recovery and recycling and would dismantle the existing effective infrastructure that currently exists to collect and recycle paper and paper-based packaging materials. The paper industry has voluntarily spent considerable resources – and working with partners in the states – building the infrastructure to recover and recycle our products. The paper recovery rate has exceeded 63% in the U.S. in the last five years. In 2013, 63.5 percent of the paper and paper-based packaging used in the U.S. was recovered for recycling. Recovered paper consumption at U.S. mills edged up an estimated 230,000 tons in 2013. In fact, the amount of paper recovered for recycling has increased by nearly 75 percent since 1990, the year the industry established its first recovery goal.

					The tables below from the U.S. Environmental Protection Agency (EPA) report, Municipal Solid Waste in the United States: 2012 Facts and Figures compare recovery rates for several key industries. The data show that paper and paper-based packaging has the highest recovery rate among major commodities, and that the growth in the recovery rate for paper and paper-based packaging is considerably higher than rates for other major commodities: Recovery of Products from the Municipal Solid Waste Stream (2012) - Recovery Rate Paper and paperboard 64.6% Steel 33.0% Glass 27.7% Aluminum 19.8% Plastics 8.8% Source: U.S. EPA (2014) Growth in Recovery of Products from the Municipal Solid Waste Stream - 2007 Recovery Rate - 2012 Recovery Rate - Change Paper and paperboard 53.9% 64.6% +20.0% Steel 33.8% 33.0% -2.4% Glass 23.0% 27.7 % + 20.4% Aluminum 21.7% 19.8% - 8.8% Plastics 6.8% 8.8% + 29.4%

					Source: U.S. EPA (2014) As a result of these large strides in recycling, paper going to landfills is estimated to have declined by approximately 50 percent since 1990, the year relative to which the paper industry first began benchmarking its recovery goals. Paper Recovered for Recycling vs. Disposed of in Landfills (1990-2013) Obligating the manufacturer to assume all costs associated with managing waste from its products or requiring the manufacturer to take back all of its products and packaging introduced into the commerce stream can be detrimental as marketplace barriers will be introduced that will disrupt rather than optimize recycling supply chains. The practicality is also questionable because the current paper recovery rate is already so high that the marginal costs of additional recovery through this system will be cost prohibitive. Retailers and manufacturers make and sell products, not collect and process recyclables. Consumers play a significant role in whether a product can be recycled, such as how they use products and how they dispose of them. EPR programs create product recycling organizations that then control the recycling and recovery of the recyclable materials, replacing existing competitively managed systems. A better approach is the continued development and promotion of proven best practices that will leverage the existing investments in recovery systems and bolster the robust existing market for recovered commodities. These best practices have repeatedly demonstrated effectiveness in boosting recovered material. Widespread adoption of these best practices for recovery, including efficient collection systems, an optimized processing infrastructure, effective communications and appropriate support mechanisms at the state and local levels will all contribute to increased recovery. **Focus on Paper**: While generally there are examples provided for each industry, it appeared there was much more discussion of paper than other packaging. We certainly appreciate the positive examples and fully understand that you attempted to be even handed, but the examples left an impression that there were more risks and environmental incidents at paper mills v. other manufacturing facilities. In particular, the emphasis on paper company liability at Superfund sites seemed misplaced, when companies in the chemical and other industries are liable parties at Superfund sites much more frequently than paper companies (e.g., page 9, right column).

					Specific Comments: P.4, right column. AF&PA did not launch BPBP "in part…to avoid" EPR. P.7, right column. Pulp and paper mills generally are not in water scarce areas. Water is an integral part of the paper manufacturing process and facilities usually were sited near plentiful water sources. We do not dispute that water scarcity is a growing threat, just that it is overstated regarding pulp and paper mills. While California may account for 10.2% of boxboard production (p.8), boxboard mills use MUCH less water than pulp and paper mills, and therefore water constraints have less of an impact on those mills.
Containers & Packaging	Ind. Brief comment	Innacuracy	Public Interest & Intermediaries	DNA - Innacuracy	page 1, second paragraph confusing, much better so summaries numbers in graphs, tables. rank most important references by topic. input/output relations to other industries is weak. Who are major investors (owners) in container industry? More global comparisons. Number of people employed. Fair Value of PP&E.

Containers & Packaging	Ind. Brief comment	Other Comments	Corporations	DNA - Other comments	Page 13 1st paragraphs Current “Recycling materials has obvious economic and environmental benefits, as typically much less energy and raw materials are needed to create and process a new container using recycled material.142 This axiom does not hold true for fiber based packaging. There should be a call out that this is not true in all instances. The corrugated packaging alliance just published a Life Cycle Analysis shows a different result specific to corrugated packaging. http://www.corrugated.org/ViewPage.aspx?ContentID=36 Page 14 2nd paragraph “Light weighting packaging provides producers with opportunities to limit the environmental and financial impacts associated with transporting packaging. This can result in transportation efficiencies and lower costs of production as less material is used in product creation. Further, companies increasing short to medium-term R&D spending on implementing more recycled content in packaging may be better positioned to capitalize on long term demand and build a competitive advantage.” This statement is only true when the light weighted package provides the same level of protection as the original package. Typically packaging contributes less than 20% of a products carbon footprint. If a light weighted package causes an increase in package failure within the supply chain, the impact of replacing the product both from a financial and environmental perspective will outweigh the savings due to less packaging material. A suggestion would be: “Light weighting packaging, which provide equal or improved product protection, provides producers with opportunities to limit the environmental and financial impacts associated with transporting packaging. This can result in transportation efficiencies and lower costs of production as less material is used in product creation. Further, companies increasing short to medium-term R&D spending on implementing more recycled content in packaging may be better positioned to capitalize on long term demand and build a competitive advantage.”

Containers & Packaging	Ind. Brief comment	Other Comments	Corporations	DNA - Other comments	1. We had a question around why the paper industry was used as the superfund example? 2. Some of the proposed metrics are not applicable to all substrates, we need to make sure all of them are on a comparable basis. 3. You could have used several other companies in the brief. 4. We need to be mindful of the tradeoffs as they relate to recycled content.
Containers & Packaging	Ind. Brief comment	Other Comments	Market Participant	DNA - Other comments	I found a few typos on pages 7 and 8. Specifically, on page 7, in the Evidence section, the word "scarce" appears as scares and on page 8, the word appears as scare. Also on page 8, column 2, third sentence of the paragraph beginning with, "the company spent...the word should be "recover" not recovery.
Containers & Packaging	Ind. Brief comment	Other Comments	Public Interest & Intermediaries	DNA - Other comments	Show and rank best practice disclosure and metrics examples of top companies (US and international).
Containers & Packaging	Industry insights	Comment on Brief	Corporations	DNA - Comment on Brief	The research brief was a decent overview of the industry, but it certainly did not have enough information for anyone to make materiality assessments of the metrics.
Containers & Packaging	Metric comment	Other Comments	Corporations	DNA - Other comments	The research briefing was very very well done. I learned quite a bit while reading the document and commend SASB for their due diligence in putting this together. However, there is still a lot of work to be done here. It will be extremely difficult to find metrics that are truly comparable for this industry. I believe many of these metrics will have to be normalized (e.g. production) and segmented (e.g. mills separate from converting, plastic separate from paperboard) in some form or fashion for them to be comparable.

Containers & Packaging	Metric comment	Other Comments	Corporations	DNA - Other comments	We need to consider that consumer demand and education plays a key role in success of sustainability initiatives and the subsequent competitive advantage. In some of the research produced and metrics proposed I worry that you have overlooked the role of the consumer. For example, increased recyclability may have more to do with consumer behavior than design issue or demand for certified materials are often linked to the perceived value of certification in the marketplace not if the manufacturer supports certification. Where consumer behavior influences outcomes, I don't believe these are fair metrics to assess company performance.
Containers & Packaging	New Issue / Angle	Add Issue	Corporations	Employee Health and Safety	Don't feel that any additional context is needed for employee health and safety as a topic for disclosure.
Containers & Packaging	New Issue / Angle	Add Issue	Corporations	Employee Health and Safety	Although as an industry we may outperform the National average, performance amongst companies varies widely.
Containers & Packaging	New Issue / Angle	Add Issue	Corporations	Internal Ethical and Human Rights Adherance	Supply Chain Management covers off on a company's supply base, but there is no mention of internal reporting required to ensure a company itself is adhering to strong ethical or responsible behaviors with respect to its own workforce.
Containers & Packaging	New Issue / Angle	Add Issue	Corporations	Operational Health & Safety	All packaging companies are part manufacturing companies, with high risks regarding workers' health and safety. The safety management systems and performance directly impact the bottom line and are therefore important for investors.
Containers & Packaging	New Issue / Angle	Add Issue	Market Participant	Labor Management	Companies with poor labor management can be exposed disruptions (strikes) Example: Crown Holding

Containers & Packaging	New Issue / Angle	Add Issue	Market Participant	Workplace practices, labour management, Health & Safety	The C&P sector is highly labour intensive, with often dangerous working environments, relatively high turnover of staff, with potential for missed training etc. This is an industry with a very high level of workplace incidents and accidents, which can lead to further e.g. OSHA fines and loss of reputation.
Containers & Packaging	New Issue / Angle	Add Issue	Public Interest & Intermediaries	Impact on other industries and biodiversity	see TEEB study
Containers & Packaging	New Issue / Angle	Add Issue	Public Interest & Intermediaries	Land use	This will be particularly relevant for the paperboard container industry.
Containers & Packaging	New Issue / Angle	Other Comments	Market Participant	DNA - Other comments [EMPLOYEE HEALTH, SAFETY AND WELL-BEING]	I thought the Industry Brief was excellent and also hope it will be used more broadly after this survey, for example as information more broadly for investors and companies within the C&P sector, in addition and in parallell to the compiled results from these surveys. **In terms of "material metrics", I would again like to highlight the importance of "Workplace practices, Labour management and H&S", as our experience is that these issues are highly relevant in the C&P sector.**
Containers & Packaging	No action needed	Add Issue	Public Interest & Intermediaries	Climate Change Risks	See Appendix II of SASB Orientation Packet
Containers & Packaging	No action needed	Add Issue	Public Interest & Intermediaries	Long Term Viability of Core Business	See Appendix II of SASB Orientation Packet

Containers & Packaging	No action needed	Add Issue	Public Interest & Intermediaries	Research, Development and Innovation	See Appendix II of SASB Orientation Packet
Containers & Packaging	No action needed	Other Comments	Market Participant	DNA - Other comments	The report captured most of the material issues of the sector at the exception of Labor relations.
Containers & Packaging	Product Lifecycle Management & Innovation	Add Issue	Corporations	Leadership and Governance	I think a better assessment on lifecycle thinking and engagement would be a company's involvement in industry efforts. Disclosure on participation and funding on industry initiatives to fund recycling or fight climate change regulation for example provide substantial insight into a company's values, business planning and forward thinking.

Containers & Packaging	Product Lifecycle Management & Innovation	Innacuracy	Corporations	DNA - Innacuracy	Critical to sustainability assessments is recognition of the trade offs incurred. For example, there was much discussion on the need for lightweighting and recyclability, yet no recognition that lightweight products (e.g., flexible films) are often not recyclable and that life cycle studies indicate that the overall benefit is positive. Similar observation for food waste; packaging designed to promote freshness and extend shelf life may have difficulty being recycled, yet the life cycle impact of reducing food waste is significant. The discussion on hazardous chemicals was not scientifically based; 'toxic' chemicals are risk-assessed and are highly regulated by the FDA. The discussion on EPR for packaging does not accurately reflect the existence of other strategies (unit based pricing, mandated recycling, landfill bans) that exist cooperatively with the EU programs. EPR is simply a fund-raiser; it does not contain incentives for consumers to place the recyclable container into the bin. A good example is PET bottles; over 90% of the US population has access to recycling programs for this package -- approx. 30% is actually recycled. Additionally, the brief doesn't address the significant geographic differences between the EU and US; landfill disposal costs are 20-30% of those in the EU, making it cost-positive to avoid landfill. Lastly, the bried doesn't address the $ billions spent in the EU on EPR systems and the impact of the existing, disjointed, member state by member state approach. This is what is envisioned for the U.S. In the Product Lifecycle and Innovation discussion, there are no links to increased demand for Dasani (plant bottle) or Heinz catsup (same); therefore no evidence of higher sales, pricing power or market share. There is also little marketplace evidence that consumers actually purchase products based on the sustainability aspects of its packaging.

Containers & Packaging	Product Lifecycle Management & Innovation	Material Issue?	Corporation	Maybe	Paper and paper based packaging is currently the most recycled and recovered packaging material availalble. On a broad scale the topic of has been addressed for the large majority of the industry. This may be material for a specific sector such as aseptic beverage cartons but not for the broader market and application of fiber based packaging.
Containers & Packaging	Product Lifecycle Management & Innovation	Material Issue?	Corporation	No	Containers and packaging is a highly diverse sector with broad differences in the ability of companies to obtain value for innovative over commodity offerings. Additionally, it is difficult to assign relevant metrics that can measure this area in a way that investers have clear insight into the current and future performance of the company.
Containers & Packaging	Product Lifecycle Management & Innovation	Material Issue?	Corporations	Maybe	We are concerned with the lack of standardization of comparative LCA's as it relates to various substrates.
Containers & Packaging	Product Lifecycle Management & Innovation	Material Issue?	Corporations	Maybe	See Comment on GHG Emission & Energy Topic

Containers & Packaging	Product Lifecycle Management & Innovation	Material Issue?	Corporations	Maybe	I don't believe this metric is measurable. LCA data for one packaging industry or material will vary widely for others. Additionally, there is still dispute around some of the LCA data for certain materials (i.e. Virgin paperboard is currently considered to have a better LCA than recycled). Even if this was a disclosure statement, how people measure lifecycle management varies widely across the industry based on design thinking processes, software used. Often time as packaging manufacturers—companies will provide us with design specs themselves rendering our ability to influence design. Using metrics like percentage of recycled material or light weighting also opens up additional risks depending on the type of product. Too much light-weighting can cause package failure or as in the example you give in the brief it may be heavy-weighting has a better impact. How would investors compare that? Percentage of recycled material impacts the strength of existing materials—sometime more recycled product is worse. Additionally consumer demand needs to be considered. SunChips Biodegradable bag was a great sustainable innovation but consumers hated it—resulting in a decrease in sales. Innovation may often time be customer driven and proprietary for a period of time making disclosure on innovation difficult.
Containers & Packaging	Product Lifecycle Management & Innovation	Material Issue?	Corporations	Maybe	The US needs to start adopting / requiring a recycling infrastructure with education for consumers. Consumers need to be required to recycle or face consequences - i.e. fines. However, we're not there yet with all this so need to get infrastructure/regulations, etc. in place.

Containers & Packaging	Product Lifecycle Management & Innovation	Material Issue?	Corporations	Yes	Products that are not built to optimize each phase of the lifecycle can lead to cost increases or reduced purchases of a product: A. Raw Material Inputs - 1. customers may have aversion to oil based products due to perceived increased energy and emissions from said products 2. Raw material costs will vary, causing packaging companies and brands to switch materials, which will impart capital costs on these companies (glass vs plastic, etc) B. Conversion of raw materials to packaging - Different materials are subject to energy more than others. Eg. glass and aluminum benefit more from recycled material, especially where there are variable or increasing electricity and energy costs. C. Shipping - Different materials impact both the environment and costs based on weight D. Retailer preference - retailers may prefer package types due to the following 1. Certain packages may have more shelf appeal to consumers 2. Certain packages may allow for more impactful claims according to FTC guidelines 3. Some package types may allow for more efficient transport in and between stores (reduced breakage if transitioning from glass to aluminum or plastic) E. End-of-life 1. Recycling may impart costs on brand owners or retailers depending on legislation type (EPR, bottle deposit) 2. Recycling rates may influence consumer purchase decisions 3. Low recycling rates could lead to other issues (plastic waste in waterways), media focus, etc 4. Companies that are vertically integrated into recycling sector would be financially

					affected by changing recycling rates 5. Mix of end-use applications and geographic mix of end users will affect the re-usability of recycled materials and their cost to producers
Containers & Packaging	Product Lifecycle Management & Innovation	Material Issue?	Corporations	Yes	To further advance 3M's vision and to make a positive difference for an expected growing population of over 9 billion lives by 2050, 3M is focused on purposeful and responsible solutions to contribute to a healthier world while creating new opportunities. Our teams are focused on collaborating with our customers and developing product experiences that integrate full life cycle thinking, have net positive impacts and create more sustainable business practices. See our 2014 Sustainability Report on www.3M.com/Sustainability to learn more about our approach and some case study examples.
Containers & Packaging	Product Lifecycle Management & Innovation	Material Issue?	Corporations	Yes	The paper packaging industry provides packaging for large branded Consumer goods companies. Many of these companies are focused on reducing their impact and "designing for the environment". They are starting to look upstream and downstream to their suppliers to provide products and solutions that will assist them in their goals. Companies that do not take this into account will not be able to develop or maintain relationships with these companies. Also see my comments on waste management re. customer interest in LCA, cradle-to-cradle.
Containers & Packaging	Product Lifecycle Management & Innovation	Material Issue?	Market Participant	Yes	We view the companies with the most innovative product development in this area as companies that we would potentially pay a premium price for, long-term beneficiaries.
Containers & Packaging	Product Lifecycle Management & Innovation	Material Issue?	Public Interest & Intermediaries	Maybe	It seems to be inclusive of many of the other disclosure topics. When I think of life cycle management, I am thinking about material sourcing through production emissions and product end of life. I am not sure that it needs to be a stand alone piece.
Containers & Packaging	Product Lifecycle Management & Innovation	Material Issue?	Public Interest & Intermediaries	Yes	LCA includes information on GHG's and energy consumption, human health impacts

Containers & Packaging	Product Lifecycle Management & Innovation	Other Comments	Public Interest & Intermediaries	DNA - Other comments	Product Lifecycle Management and Innovation seems to overlap with many other topics (Supply chain mgmt and amt sourcing, Prod safety, waste mgmt).
Containers & Packaging	Product Quality & Safety	Add Issue	Public Interest & Intermediaries	Social capital	Containers and packagings products are used by consumers and society everyday life. With the advances in technology and social media it is easier for a consumer to share his/her concerns about health impacts with many people.Society is very much linked and losing the client trust is not just dependent about his/her personal experience with the product but also the others's experiences.
Containers & Packaging	Product Quality & Safety	Material Issue?	Corporation	Yes	Metrics relating to recalls are highly relevant as to the focus of the company.
Containers & Packaging	Product Quality & Safety	Material Issue?	Corporations	Maybe	See Comment on GHG Emission & Energy Topic

Containers & Packaging	Product Quality & Safety	Material Issue?	Corporations	Maybe	I have concerns around the ownership and metrics revolving around chemical safety in packaging. There is currently a lot of uncertainty around chemical use in packaging. Key issues that would make me hesitant to suggest this can be a measurable and valuable metric include: - Lack of toxicological studies. There is a public push to revise the federal government's Toxic Substances Control Act to help drive more regulation and increase funding for studies—nor are companies who produce chemicals currently required to produce safety sheets. If our own government or the primary manufacturer is not verifying the safety of chemicals I don't believe the burden of proof should be further down the supply chain on the manufacturers of packaging products. - Current public concern does not address quantity versus use. To be relevant to investors there needs to be education on quantity used. - Customers often dictate what chemicals are used by the packaging manufacturer, disclosure of chemical use then would not necessarily reflect and economic relationship to the packaging manufacturer - Often there is a lag between public perception and science. Recently Mineral Oil in recycled paper packaging (MOSH) was an issue due to a study undertaken by a German scientist. Consumer Product companies were moving away from recycled materials and industry associations and the EU government were rushing to validate findings. This has tremendous negative impact on the recycled paper industry and a year later the findings were proven inconclusive. http://www.rpa100.com/recycled/wp-content/uploads/2011/03/RPTA-eu-mineral-oil-statement-3-15-11.pdf - How would chemicals of concern, leaching risks etc. be established for mandatory disclosure when the science is still inconclusive?

Containers & Packaging	Product Quality & Safety	Material Issue?	Corporations	Yes	1. Product recalls can lead to customer loss (sales loss), man hours spent on investigations (productivity loss), and spoiled material and resource inputs (added costs). 2. Product recalls can lead to loss of consumer and/or customer confidence in brands. 3. Improper design which could result in product safety and quality complaints could result in costly redesigns which would incur both labor, engineering, and design costs. 4. Lawsuits from poor safety or quality, to include breach of contract cases, can incur legal and penalty fees.
Containers & Packaging	Product Quality & Safety	Material Issue?	Corporations	Yes	Chemicals in packaging need to tested to ensure their safety to human health before the packaging is used. The regulations on this need to be stricter so that there is direct evidence of testing results that ensures people's safety.
Containers & Packaging	SASB Approach	Other Comments	Corporations	DNA - Other comments	The process has been relatively easy, but slightly mis-advertised. The working is not really a working group. We did not participate in a formal standard setting process, with multiple levels of vetting and approval. Instead, we provided feedback at one point in the process without the benefit of being able to hear other members' thoughts or share ideas about how to best set this standards.
Containers & Packaging	SASB Approach	Other Comments	Corporations	DNA - Other comments	While I did consult with members, it was difficult to fully engage them due to the constraints imposed by the SASB process. They particularly questioned the requirement that I am representing myself, as opposed to my organization.
Containers & Packaging	SASB Approach	Other Comments	Corporations	DNA - Other comments	This process is very difficult to accomplish with a survey; robust discussion/debate would help address the different viewpoints outlined in the Brief.

Containers & Packaging	Supply Chain Management & Materials Sourcing	Innacuracy	Public Interest & Intermediaries	DNA - Innacuracy	Under "Supply Chain Management & Material Sourcing" edit the 2nd paragraph as follows: Paper packaging companies are implementing responsible sourcing practices in an effort to verify the responsible sourcing of virgin and recycled wood materials. These responsible sourcing methods include various third-party certifications like the Sustainable Forestry Initiative® (SFI), Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification (PEFC). These third-party certifications are important as companies look for greater verification that materials, both virgin and recycled, are from responsible, well managed forests. Under "Supply Chain Management & Material Sourcing," edit the "evidence" section as follows: Chain of Custody Certification (CoC) ensures responsible sourcing of materials through the use of third party certifications like the Forest Stewardship Council (FSC), the Sustainable Forestry Initiative (SFI) and the Programme for the Endorsement of Forest Certification (PEFC). In order to achieve CoC certification, every organization in a company's supply chain must independently obtain third party certification. These certifications help verify that wood fiber is sourced from responsible sources. Standards like SFI also have fiber sourcing certification. This addresses the 90 percent of the world's forests that are not certified. SFI certified organizations must show that the raw material in their supply chain comes from legal and responsible sources, whether the forests are certified or not.
Containers & Packaging	Supply Chain Management & Materials Sourcing	Material Issue?	Corporation	Maybe	Not equally applied across the sector. Currently, only fiber has a mature and traceable sourcing program.
Containers & Packaging	Supply Chain Management & Materials Sourcing	Material Issue?	Corporations	Maybe	See Comment on GHG Emission & Energy Topic

Containers & Packaging	Supply Chain Management & Materials Sourcing	Material Issue?	Corporations	Maybe	This is another issue I believe is hard to measure and define as a comparable metric. Do you measure certifications achieved or percentage of sold product certified? Demand for Supply Chain certification is customer driven by the brand owners not by the manufacturer. While Paper Mills may make specific designation for certified material, converters will only run certified orders if customers request them. On the converting side we have many examples of customers with purchasing policies who require certified materials but who refuse to pay or use the necessary logos for certification because they don't believe there is value in the marktplace. If you measured percentage of certified product sold this may better reflect consumer demand versus company desire and practice. Additionally, for recycled paper manufacturers, making certified material claims is tied to amount of post-consumer product purchased. If there was pressure to put 100% certified recycled paper you would skew the recycled paper market in favor of post-consumer versus pre consumer paper and create a false commodity value. The definition of post-consumer product differs in the US from Canadian or European definitions (EPA vs. ISO). This inconsistency in claims permits companies with operations overseas to sell into the US with the higher post consumer content claim, thereby a greater opportunity to sell more recycled product with certified paper claims. This gives an unfair advantage to North American firms selling similar products. Amount of recycled product in packaging varies widely depending on the material. In some cases too much recycled material can produce ineffective and weak packaging. i.e. Styrofoam can only have 30% of recycled content before it loses stability. With variability across materials and access to recycled sources highly variable, how would you effectively measure and benchmark performance?

Containers & Packaging	Supply Chain Management & Materials Sourcing	Material Issue?	Corporations	Maybe	"Supply Chain Management and Materials Sourcing" would be a better fit under "Business Model and Innovation" as it does not fit under "Leadership & Governance". More importantly, your (repetitive) take on "recycled content" is erroneous and does not differentiate between different substrates at all. While "recycled content" may a fair sustainability indicator for some substrates (such as paper or PET), it does not allow for ANY conclusion on the sustainability profile of metal packaging (different market dynamics, different recycling process, different market value, different demand). There are numerous scientific studies and papers available that explain this. For a very brief overview, please go to http://www.metalpackagingeurope.org/wp-content/uploads/MPE_Recycled_Content_May_2014.pdf. We understand that SASB is looking for one-size-fits all solutions, but this does not work for this very important topic of recycling rates and recycled content. In addition, the "facts" that SASB lists on page 16 on recycling rates are wrong! Aluminum beverage can recycling rates were at 67% in 2012 - so paper recovery rates do NOT double or triple rates of aluminum cans as you say there! You also do not touch at all the topic of scrap values - metals have by far the highest scrap value, subsidizing the collection of other substrates that have little or no value, such as glass. Also, glass, for example, creates all kinds of trouble in single stream recycling (e.g. through breakage, resulting in bales of plastic or metal scrap that cannot be sold to the market). You should talk to some recycling experts, such as a Material Recycling Facility operators, to build some of the complexities of our industry in your industry brief. Also, you repeat several times that consumers demand more sustainable products and more recycled content. Looking beyond some badly designed consumer research programs ("Would you buy…?"), it would be good to provide a reasonable source for that assumption. And last but not least, you say that EPR is a threat for packaging companies. In fact, deposit schemes are one form of EPR, and as you may know, certain states in the U.S. have deposit schemes for beverage containers in place. So this needs to be rewritten in the brief.

Containers & Packaging	Supply Chain Management & Materials Sourcing	Material Issue?	Corporations	Yes	1. Concern over resource use in plastic resin manufacturing industry 2. Need for innovation to lightweight materials and look for alternative sourcing of materials (bio-plastics, post consumer streams) 3. There is aversion to sourcing recycled materials from some parts of the world where there is thought to be brand risk if un-licensed or extremely low income workers are collecting recycle streams of material (eg. recicladores in Colombia or Brazil) 4. Brand risk if there is any sort of ethics, human rights, or safety concern in the supply chain 5. Brand risk if there is an environmental infraction occurring in the supply chain (responsble fiber sourcing that has resulted in fiber standards beyond FSC and SFI for paper and corrugate packaging).
Containers & Packaging	Supply Chain Management & Materials Sourcing	Material Issue?	Corporations	Yes	As a very diversified global business, 3M's supply chain and materials sourcing is equally diverse. Collaborating and setting expectations with suppliers through 3M's Sourcing Sustainability Standard and supply chain policies establishes a framework for management of manufacturing and distribution operations to minimize adverse environmental and social impacts while providing economic value and savings to the company.
Containers & Packaging	Supply Chain Management & Materials Sourcing	Material Issue?	Corporations	Yes	Forest certification is a perfect example of the material importance of supply chain management/materials sourcing for the paper packaging industry. Certification developed in the 1990's as a way to tell "good" wood from "bad" wood. ENGO's and activists have used certification as a proxy for responsible wood sourcing. It is now in my opinion essentially "table stakes" for companies that sell to well-known brands (a review of the paper/packaging procurement policies of some of the larger brands provides context e.g. Staples, HP, Unilever). The Consumer Goods Forum recently developed a policy on deforestation that pushes their members to work only with companies that use responsible sourcing - certification is a proof point. http://www.theconsumergoodsforum.com/the-pulp-paper-and-packaging-guidelines

Containers & Packaging	Supply Chain Management & Materials Sourcing	Material Issue?	Corporations	Yes	we cannot continue depleting our virgin resources; sustainable sourcing standards through 3rd party certification processes need to be put in effect
Containers & Packaging	Supply Chain Management & Materials Sourcing	Material Issue?	Public Interest & Intermediaries	Yes	sfiprogram.org pefc.org
Containers & Packaging	Supply Chain Management & Materials Sourcing	Material Issue?	Public Interest & Intermediaries	Yes	http://reusables.org/category/services/container-management
Containers & Packaging	Supply Chain Management & Materials Sourcing	Other Comments	Public Interest & Intermediaries	DNA - Other comments	I am pleased to see the recognition of SFI in the metrics. It's important to continue to recognize the value of all forest certification standards (SFI, PEFC and FSC) since only 10% of the world's forests are certified. I also want to point out that my expertise is with the metric for “Supply Chain Management & Materials Sourcing.” However, in order to proceed in the survey I had to answer yes to the other sections. It is really the comments related to “Supply Chain Management & Materials Sourcing” you should consider for my submission.
Containers & Packaging	Water Management	Material Issue?	Corporation	Yes	As discussed in the brief, this is a future right to operate topic.
Containers & Packaging	Water Management	Material Issue?	Corporations	Maybe	See Comment on GHG Emission & Energy Topic
Containers & Packaging	Water Management	Material Issue?	Corporations	Maybe	With compliance being a given, water management issues have not had an impact on our value. Disclosure on an issue is one thing, but if the lens is materiality then we have not seen water management come to the fore-front as a material issue.

Containers & Packaging	Water Management	Material Issue?	Corporations	Maybe	Water use and intensity varies greatly depending on what substrate we are talking about. While a paper packaging company (or mill) may use vast amounts of water, other industries use much less water (such as plastic or metal). Thsi should be made clear in the description. Also, units of measure should be used consistently throughout the document - right now, you use gallons and cubic meter, for example. Also, beverage and food customers of packaging companies use a lot more water than packaging companies itself (including agriculture). What is the threshold used by SASB? In addition, water is a local issue - this is not adequately reflected in the current draft. A manufacturing plant in region A may use three times as much water as a plant in region B, but it does not matter because there is plenty of water avalable in region A.
Containers & Packaging	Water Management	Material Issue?	Corporations	Yes	1. You have already referenced the Amcor Sustainability Report that points to this. 2. The plastics industry is heavily reliant on evaporative cooling that requires consistent amounts and quality of fresh water to keep molding presses cool. Any loss of water input could potentially incur large costs to sites (in terms of productivity and material processed). 3. There are few other means to cool molding presses in the plastic conversion industry, unless temperate consitions allow for air cooling
Containers & Packaging	Water Management	Material Issue?	Corporations	Yes	Water is our world's most valuable natural resource. People consume it, farm with it, and manufacture products with it. Reducing water consumption and improving water quality are important elements of environmental stewardship. In a recent sustainability materiality assessment conducted at 3M that surveyed both internal and external stakeholders, we know that water quality and water shortages are of high stakeholder concern and have the potential to have significant impact on 3M's reputation. We use water in our manufacturing processes, heating and cooling, and for other uses. Therefore water quality and availability is a focus of our sustainability strategy. Please see our 2014 Sustainability Report on www.3M.com/Sustainability (Stakeholders and Materiality, and Water section)

Containers & Packaging	Water Management	Material Issue?	Corporations	Yes	The paper packaging industry uses large volumes of process water. This water is ultimately returned (>90+%) to it's source but availability and low cost are essential for the business model to continue to work. It is a fact that water scarcity is becoming an issue for large metropolitan areas as well as smaller towns and cities globally. As water availability becomes more of an issue for these locations municipalities and states will take more interest in large-volume water users. As a result there is a high probability that water rights, availability, and the (potential) increased cost of water usage may impact the viability of manufacturing facilities in the future.
Containers & Packaging	Water Management	Material Issue?	Corporations	Yes	Water managment, supply and quality are all integral to a successful future of our planet and our people to be healthy and companies are obligated to protect our water supply.
Containers & Packaging	Water Management	Material Issue?	Public Interest & Intermediaries	Maybe	I expect water management to be more material for certain types of packaging than others - for example, it will be very material for pulp and paper mills and less material for metallic containers, where water is mostly cooling water which is re-circulated a certain amount of time. This is the same for waste water management - where again I expect it to be more relevant for pulp mills than other type of packaging.
Containers & Packaging	Water Management	Material Issue?	Public Interest & Intermediaries	Yes	http://www.unesco-ihe.org/water-management?gclid=CjgKEAjwkpacBRCNlprWw-u-nBwSJACwHiw-HXIsxKzzpYQAo6Xa5xQWzDj_wKV31xI-aHQDuPs82fD_BwE
Electrical Equipment	Air Emissions & Waste Management	Material Issue?	Corporations	Maybe	Two things to consider: a. much of this equipment is complex and assembled from thousands of components. Therefore the supply chain aspect of production becomes very important, including emissions and wste from a lifecycle standpoint. Second, a lot of what is considered "electrical and electronic equipment is sizeable and would be classified as capital equipment. Large scale, fixed installations are excluded from RoHS currently so some of these enterprises will manage hazardous substances much differently than companies producing small devices or consumer products.
Electrical Equipment	Air Emissions & Waste Management	Material Issue?	Corporations	Yes	Complications arise when much of the manufacturing is outside of the US or at third parties.

Electrical Equipment	Air Emissions & Waste Management	Material Issue?	Corporations	Yes	Not only is waste management tied to the releases to the environment mentioned in the brief, it can also be a measure of efficiency, correlated to gross margins through prime yield. Most waste is lost business value, and a well run business will track and strive to reduce wastes.
Electrical Equipment	Air Emissions & Waste Management	Material Issue?	Market Participant	No	Not material dollar wise
Electrical Equipment	Air Emissions & Waste Management	Material Issue?	Market Participant	Yes	Many states are focused on co2 emissions and carbon releases
Electrical Equipment	Air Emissions & Waste Management	Material Issue?	Public Interest & Intermediaries	Maybe	its not a large risk for company and material level waste generated in this sector
Electrical Equipment	Business Ethics & Competitive Behavior	Material Issue?	Corporations	Yes	Similar to product safety and quality, the impacts of current negative efforts have a delayed outward result.
Electrical Equipment	Business Ethics & Competitive Behavior	Material Issue?	Market Participant	No	While interesting, not always material to an investment decisioin
Electrical Equipment	Business Ethics & Competitive Behavior	Material Issue?	Market Participant	Yes	From a global perspective, competitive behavior will play a greater role than Business ethics in this industry as my view is that firms in this industry have gained enough breadth and depth and unscrupulous behavior would have forced them out already. Competition however, will continue to increase, as US and International companies compete. The means in which each firm chooses to increase market share and further establish themselves, will be key in their efforts to add value or diminish shareholder value by fees imposed if practices are not exercised in a rightful manner.
Electrical Equipment	Business Ethics & Competitive Behavior	Material Issue?	Public Interest & Intermediaries	Maybe	by its nature, the semiconductor/electronic industry is already extremely competitive and there is no need to impose any rule to govern this industry, let the market does its job

Electrical Equipment	Business Ethics & Competitive Behavior	Material Issue?	Public Interest & Intermediaries	Yes	anti-trust or sale of goods globally could become an issue and impact revenues
Electrical Equipment	Energy Management	Material Issue?	Corporations	Yes	Overall energy use can be reduced when companies outsource production.
Electrical Equipment	Energy Management	Material Issue?	Market Participant	Maybe	For some companies, energy management is relevant, but not always for investment decisions
Electrical Equipment	Energy Management	Material Issue?	Market Participant	No	Very hard to compare
Electrical Equipment	Energy Management	Material Issue?	Market Participant	Yes	I believe that as Energy Production and Consumption continues to impact our Earth, and environment, regulations on the domestic front will be required to mirror and keep pace with more stringent demands and regulations already set forth overseas and this will certainly have an impact on a firm's "value" both from a social perspective but also on a company's bottom line if energy management is not taken seriously and firms do not abide.
Electrical Equipment	Energy Management	Material Issue?	Public Interest & Intermediaries	Yes	energy mgmt could be 10 % of total costs
Electrical Equipment	Industry insights	Other Comments	Corporations	DNA - Other comments	Good thoughtful approach. Will need to consider application to US only versus global companies.
Electrical Equipment	New Issue / Angle	Add Issue	Corporations	Water management	Some types of equipment and certain parts of the value chain will consume large amounts of water in the production process.
Electrical Equipment	New Issue / Angle	Add Issue	Market Participant	Employee Health & Safety	Management of health and safety within the business. Specific indicators such as fatalities (employee and contractor) and lost time incident frequency rate would be useful.
Electrical Equipment	Product Lifecycle Management & Innovation	Add Issue	Public Interest & Intermediaries	non-toxic substance alternatives	refer to RoHS and other similar regulations to ease End of Life product management

Electrical Equipment	Product Lifecycle Management & Innovation	Add Issue	Public Interest & Intermediaries	strategic governanc e	board setting innovation metrics and incentives for executive mgmt is key to align Future value with mgmt structure
Electrical Equipment	Product Lifecycle Management & Innovation	Material Issue?	Market Participant	No	While information is interesting, unlikely to influence an investment decision
Electrical Equipment	Product Lifecycle Management & Innovation	Material Issue?	Public Interest & Intermediaries	Yes	Innovation is key to this sector and failure to do and disclose will impact valuation
Electrical Equipment	Product Quality & Safety	Material Issue?	Corporations	Yes	It should be noted that many companies in this segment may issue "safety notices" to customers but those may not be "recalls" per se. Issues may be addressed by way of software fixes, repalcement, etc. but may not fit SASB's definition of a recall. Toys and automotive are covered by regulatory requirements and are forced to use the term "recall".
Electrical Equipment	Product Quality & Safety	Material Issue?	Corporations	Yes	Product quality and safety (or lack of it) represent a long term liability that may be time removed from the events that precipate the negative impact so may only be a retrospective measure, but very important.
Electrical Equipment	Product Quality & Safety	Material Issue?	Market Participant	No	Varies by product
Electrical Equipment	Product Quality & Safety	Material Issue?	Market Participant	Yes	Quality may drive future sales
Electrical Equipment	Product Quality & Safety	Material Issue?	Public Interest & Intermediaries	Yes	poor product quality will impact sales and warranty costs so material impact on P&L and valuation
Electrical Equipment	Supply Chain Management & Materials Sourcing	Material Issue?	Corporations	Maybe	The complexity of supply chain for materials means that large numbers can be implicated for component parts or ingredients. Once removed from the direct supplier, there is little control or authority to obtain information. The effort for the result may be overwhelming. Similar to the current conflict minerals efforts for SEC reporting.

Electrical Equipment	Supply Chain Management & Materials Sourcing	Material Issue?	Market Participant	Maybe	Supply chains are very important, but not so relevant to any investment decision that needs to be made.
Electrical Equipment	Supply Chain Management & Materials Sourcing	Material Issue?	Market Participant	Yes	I think Material Sourcing is of utmost concern as the inability to find adequate materials for replacement can lead a company to financial ruin. Think Porter's 5 forces.
Electrical Equipment	Supply Chain Management & Materials Sourcing	Material Issue?	Public Interest & Intermediaries	Maybe	it a possibly material , apple has had trouble with global supply chain and labor as an example
Industrial Machinery	Congratulations	Other Comments	Corporations	DNA - Other comments	I appreciate the invitation to respond to the questionnaire. The questionnaire is quite interesting and will generate ideas for us to set our own targets. The Industry Brief is also very informative.
Industrial Machinery	Congratulations	Other Comments	Market Participant	DNA - Other comments	Very relevant
Industrial Machinery	Congratulations	Other Comments	Market Participant	DNA - Other comments	I thought the background information was very useful. I think these standards, if adopted, would go a long way in increasing awareness. The fact that the markets leaders in these segments are taking it seriously (e.g., CAT, DE, CMI, etc) gives the effort credibility in my mind.
Industrial Machinery	Congratulations	Other Comments	Market Participant	DNA - Other comments	The entire process has been very well organized and the draft version very well written.
Industrial Machinery	Congratulations	Other Comments	Public Interest & Intermediaries	DNA - Other comments	Well done. Look forward to assisting refinements through this process.

Industrial Machinery	Energy Management	Material Issue?	Corporations	Maybe	Energy management is important to the Company to reduce overall energy consumption relative to the growth of the company. Reduced consumption can positively impact operating expenses from reduced cost per unit of energy purchased and also for the longer term as energy rates rise. Also in line with risk management, reducing overall greenhouse gas emissions can better prepare the company for potential shifts in regulations in favor of carbon reporting and taxation. Reservations are related to the overall significance of energy costs for industrial manufacturers. The overall direct energy costs may differ from company to company based on the location of operations and how vertically integrated the manufacturing processes are, but it may constitute a relatively small portion of cost of goods sold (approximately less than 1% of total Cost of Goods Sold). Although there is a business opportunity to continually improve on energy efficiency and diversify energy sources, the need to disclose this particular item to investors also seems premature.
Industrial Machinery	Energy Management	Material Issue?	Corporations	Maybe	The energy consumption at all facilities likely will be less than 1% of companies in this industry as compared to total revenue. However, energy management represents one of the greatest opportunities to generate cost savings and contribute directly to net profits. In addition, from a life-cycle point of view, energy efficiencies of the products likely will have major impact on the environment and human health.
Industrial Machinery	Energy Management	Material Issue?	Corporations	Yes	Like governanc and ethics, energy management is an important indicator of overall managerial responsibility and competence. It provides a better understanding of how a company manages risk of operational disruption, cost containment and environmental stewardship all in one subject area.
Industrial Machinery	Energy Management	Material Issue?	Corporations	Yes	Energy cost load and future cost risk can be significant.
Industrial Machinery	Energy Management	Material Issue?	Market Participant	Maybe	While I beleive the way a company manages its energy in helpful knowledge, it may no necessarily rise to the level of mateirality
Industrial Machinery	Energy Management	Material Issue?	Market Participant	Yes	differences in feedstock and technology can have a large impact on companies' cost positions, both in an absolute and a relative way

Industrial Machinery	Energy Management	Material Issue?	Market Participant	Yes	Energy management, particularly the energy mix usage (natural gas vs. oil vs. renewable, etc.) of a company has a material impact on input manufacturing and operating costs as well as environmental emissions. This impact affects a company's earnings.
Industrial Machinery	Energy Management	Material Issue?	Market Participant	Yes	Energy efficiency is a rapidly expanding theme across all end markets and all regions of the world.
Industrial Machinery	Energy Management	Material Issue?	Market Participant	Yes	I believe that energy prices will continue to rise and energy will become an increasingly important part of companies' cost structures. Therefore I feel that there will be a material advantage to companies that can optimize and reduce energy usage.
Industrial Machinery	Energy Management	Material Issue?	Market Participant	Yes	Energy is a major cost item to manufacturing companies. These industries are highly competitive; cost reduction is a key tool used to increase margins and profitability.
Industrial Machinery	Energy Management	Material Issue?	Public Interest & Intermediaries	Maybe	See above
Industrial Machinery	Energy Management	Material Issue?	Public Interest & Intermediaries	Yes	The life cycle energy consumption should be calculated to get a comparable energy management rate.
Industrial Machinery	Energy Management	Material Issue?	Public Interest & Intermediaries	Yes	Volatitlity of energy prices are likley into the forseable future. As an important component of cost of goods sold, energy costs are material.
Industrial Machinery	Energy Management	Material Issue?	Public Interest & Intermediaries	Yes	Recent proposed legislation for 30% reduction in carbon missions at fossil fuel-burning power plants may increase upstream costs for manufacturers.
Industrial Machinery	Metric comment	Add Issue	Market Participant	R&D as a percentage of sales	R&D spending is highly correlated with new product vitality. Some companies disclose this information while others don't - there is no uniform standard.
Industrial Machinery	Metric comment	Other Comments	Market Participant	DNA - Other comments	I would try to add metrics that measure the success of R&D (e.g., is there a phase gate process in place? what are its inputs and outputs? etc.) and ask the companies to comment on their strategies on the most material issues - eg, do they work with software companies to develop driverless vehicles?

Industrial Machinery	Metric comment	Other Comments	Public Interest & Intermediaries	DNA - Other comments	The metrics for very different types of products and productions are difficult, and somehow the resource use intensity should be taken into account, and how long is the expected lifespan for the product.
Industrial Machinery	New Issue / Angle	Add Issue	Corporations	Climate Change risk management	Climate change presents a wide range of physical, financial and market risks/opportunities for all companies. I would require companies to identify how/if they have assessed climate change related risks and opportunities, since the absence of a comprehensive review could result in the organization being subject to a material impact for which they are not prepared.
Industrial Machinery	New Issue / Angle	Add Issue	Corporations	HEALTH and Safety metrics in direct operations	There is a direct cost correlation between the impact of lost-time and productivity in factories related to the human capital investments the company makes regarding the health and safety of manufacturing employees. The current global standards can be verified against widely accepted ISO14001 and/or OHSAS 18001. This could potentially be reviewed as a disclosure topic.
Industrial Machinery	New Issue / Angle	Add Issue	Corporations	Transportation GHG	Transportation in the supply chain represents a significant source of GHGs, particularly with increasing globalization.
Industrial Machinery	New Issue / Angle	Add Issue	Market Participant	Human capital	An important driver for this industry is represented by innovation. Without qualified workers to take the next step in innovation, the company may lose significant opportunities. Therefore the retention of qualified workers should be considered.
Industrial Machinery	New Issue / Angle	Add Issue	Market Participant	Labour relations	skilled labour will become scarce
Industrial Machinery	New Issue / Angle	Add Issue	Market Participant	Safety	Management of health and safety within the business. Specific indicators such as fatalities (employee and contractor) and lost time incident frequency rate would be useful.
Industrial Machinery	New Issue / Angle	Add Issue	Public Interest & Intermediaries	GHG Emission	Industrial Equipment & Machinary Sector contributes about 14% of the total GHG emission in the US. and the environmental sustainability is incomplete is the emission from the sector is not monitored and measured.
Industrial Machinery	New Issue / Angle	Add Issue	Public Interest & Intermediaries	Occupational HEALTH and Safety	Machinery manufacturing takes place in a high risk environment, where accidents, illness, and injury can play a material role in the company's success through lawsuits (individual and class action), compliance violations, and insurance (workers compensation).

Industrial Machinery	New Issue / Angle	Add Issue	Public Interest & Intermediaries	People - including HEALTH, safety, diversity and inclusivenes s, talent	Safety is of utmost importance for industrial machinery companies as their work can be dangerous if not adequately controlled. Additionally, people are a major asset in their business, both from a manufacturing and innovating perspective. Several other agencies including GRI consider people topics to be material.
Industrial Machinery	New Issue / Angle	Add Issue	Public Interest & Intermediaries	Pollution manageme nt	Building and operating this type of equipment creates pollution at some degree, and there should be measurable indicators for exhaust fumes, noise, process efficiency, etc.
Industrial Machinery	New Issue / Angle	Add Issue	Public Interest & Intermediaries	Rates of Employee Recruitme nt and Retention	While harder to quantify, non-envnironmental metrcis are also important to investors. Whether the company is a good place in which to work affects financial performance. Recruitment and retention data can be useful and somewhat "hard" data points to guage this topic.
Industrial Machinery	New Issue / Angle	Add Issue	Public Interest & Intermediaries	Supply Chain & Materials Sourcing	The majority of risk for manufacturers is contained within it's supply chain and materials sourcing. Frank Dodd is a good example of how manufacturers need to be aware of the issues facing their material sources and be aware of regulatory issues in that region. In addition, efficiences in logistics could significantly impact the cost to manufacture the good.
Industrial Machinery	New Issue / Angle	Add Issue	Public Interest & Intermediaries	Supply chain resiliency	See attached report on value of sustainable suppliers
Industrial Machinery	No action needed	Comment on Brief	Market Participant	DNA - Comment on Brief	Perhaps what some of the copmanies in the peer group suggest as relevant and why they do not meet SASB threshold.
Industrial Machinery	No action needed	Other Comments	Market Participant	DNA - Other comments	sorry, not much to add in this one at this stage...
Industrial Machinery	No action needed	Other Comments	Market Participant	DNA - Other comments	I have noted any reservations about the consistency, relevance or competitive sensitivity of various proposed standards in my prior comments.

Industrial Machinery	Product Lifecycle Management & Innovation	Add Issue	Corporations	Product energy management / fuel efficiency initiatives	From a life-cycle point of view, majority of the environmental impacts (over 95%) occurs during the use of our products.
Industrial Machinery	Product Lifecycle Management & Innovation	Material Issue?	Corporations	Maybe	Seems more a regulatory driven component and as a result, companies will comply. Also, diversity of equipment, machinery, technologies deployed, may make it challenging to compare across industry.
Industrial Machinery	Product Lifecycle Management & Innovation	Material Issue?	Corporations	No	It is assumed that products are designed in keeping with regulatory requirements. An argument can be made that recall information is material as in indicator or company quality and potential regulatory fines/reputational risks, but the other data requested individually or collectively don't provide information I would find material when making an investment.
Industrial Machinery	Product Lifecycle Management & Innovation	Material Issue?	Corporations	No	Although product lifecycle management provides a wealth of information on products and can lead to reduced environmental impact, the cost of the required assessment is significant and there is not enough supporting evidence available to show a large enough financial return for many products to justify the cost.

Industrial Machinery	Product Lifecycle Management & Innovation	Material Issue?	Corporations	Yes	We agree that industrial manufacturers, especially those designing and producing engine powered machinery, has, to a certain degree, an opportunity to impact fuel and energy efficiency on a larger scale. Based on AGCO's initial carbon life-cycle assessment study findings, the majority of environmental impacts from products is downstream while the product is in use. To a certain degree, immediate impact can be controlled within the manufacturing process, but the greater portion of the life-cycle (downstream) impact and the ability to measure that impacts has yet to be thoroughly defined and standardized. Therefore, before standards are developed on measuring proper product life-cycle management and innovation impact, there are some uncertainties that should be agreed upon regarding agricultural machinery emissions. Some examples include, the impact of emissions affected by weather and natural landscapes, how to manage comprehensive and related agricultural emissions such as manure management and livestock, carbon stored in soil, impact of biomass/tilling, and the scope of the agricultural supply chain that the life-cycle should encompass.
Industrial Machinery	Product Lifecycle Management & Innovation	Material Issue?	Corporations	Yes	Product lifecycle is certainly material - as documented due to emissions regulations and energy load of products in use.
Industrial Machinery	Product Lifecycle Management & Innovation	Material Issue?	Market Participant	No	Material to an investment decision - possibly, but not probable
Industrial Machinery	Product Lifecycle Management & Innovation	Material Issue?	Market Participant	Yes	Innovation is a very likely cause of differences in responses and performance by companies on the otehr material issues; it is also a major driver of the potential for companies to capture value by helping clients solve material issues
Industrial Machinery	Product Lifecycle Management & Innovation	Material Issue?	Market Participant	Yes	Product innovation is an essential part of this industry as companies need to keep pace with stricter regulatory emission standards. As an example, Cummins is a leader in meeting regulatory emission standards and is well positioned to take advantage of opportunities in markets that have greater emission control capabilities vs. Navistar, which has recently failed to keep up with emission standards in heavy trucks and was forced to use competitor engines and thus lose market share.

Industrial Machinery	Product Lifecycle Management & Innovation	Material Issue?	Market Participant	Yes	A regularly cited benchmark for investors today is a company's "Vitality Index" or the percentage of new products out of total sales introduced within the last three or sometimes five years. This is increasingly important since the technological advancement (increased customer value proposition) is highly correlated with R&D spending levels, particularly in developed markets. The higher a company's vitality index, the stronger its assumed pricing is believed to be.
Industrial Machinery	Product Lifecycle Management & Innovation	Material Issue?	Market Participant	Yes	As I feel that energy costs will continue to rise, as well as regulations on emissions resulting from energy usage, I feel that the ability to offer differentiated products with respect to their energy usage will be the key driver for determining revenue growth patterns.
Industrial Machinery	Product Lifecycle Management & Innovation	Material Issue?	Market Participant	Yes	The cost of Tier 4 emissions was extremely high in an industry where it is difficult to raise prices. The emissions regulations had a significant impact on machinery companies costs for multiples years (R&D, capital expenditures, etc.)
Industrial Machinery	Product Lifecycle Management & Innovation	Material Issue?	Market Participant	Yes	Innovation is key for Long term sustainable success
Industrial Machinery	Product Lifecycle Management & Innovation	Material Issue?	Public Interest & Intermediaries	Maybe	Product Lifecycle management may not be applicable to all industrial machinary & goods sector organisation, as the value addition can be achieved for multiple product system for comparitive purpose.
Industrial Machinery	Product Lifecycle Management & Innovation	Material Issue?	Public Interest & Intermediaries	Yes	Machines and goods built are made for heavy constant use, and for a long time, so the total life cycle management is important to compare the competing equipment. It is possible to build cheap machines, which do not last long, and produce much more noise, waste, and pollution when compared to more innovative and expensive products.
Industrial Machinery	Product Lifecycle Management & Innovation	Material Issue?	Public Interest & Intermediaries	Yes	Mandatory rules on product life cycle already exist in the EU and there will be continuing pressure for such regulations in the US. Moreover, educated consumers continue to demand more information on these kinds of data.

Industrial Machinery	Product Lifecycle Management & Innovation	Material Issue?	Public Interest & Intermediaries	Yes	Product lifecycle is highly relevant. A company that innovates a more fuel efficient product will be able to realize higher sales of that product. Additionally, per lifecycle study by Argonne National Lab (see http://www.transportation.anl.gov/pdfs/TA/102.pdf) the largest impacts on the environment from an energy perspective are during the use phase, so understanding the product lifecycle and managing that piece is more relevant than managing the operations piece only.
Industrial Machinery	Product Lifecycle Management & Innovation	Other Comments	Public Interest & Intermediaries	DNA - Other comments	Generally, costs to manufacture the goods have clear links to materiality. Product use and end-of-life can be material if they present a point of differentiation from competitors as they relate to customer service or product design. There appears to be a trend towards increased regulation for producer product liability.
Industrial Machinery	Waste Management	Material Issue?	Corporations	Maybe	Reservations are similar to the logic of energy management disclosure. Although the Company has a business opportunity to diversify waste management practices to divert landfill waste, change waste streams for recycling, and reduce environmental remediation costs, the overall significance is low as a percentage of cost of goods sold.
Industrial Machinery	Waste Management	Material Issue?	Corporations	Maybe	Clarity is needed on companies touting 0 waste to landfill in terms of a consistent definition. Some companies consider waste going to combustion for energy recovery as decrease in amount sent to landfill, yet combustion ash is sent to landfill. Other companies consider combustion ash residuals going to landfill as counting toward landfill disposal. In addition, waste minimization programs can actually COST more money due to fluctuations in commodity pricing as well as distance recovered materials may need to be shipped.
Industrial Machinery	Waste Management	Material Issue?	Corporations	No	It is assumed that companies are complying with governing waste management laws, and the specifics of that compliance plus any voluntary efforts that go "beyond compliance" don't provide enough additional context to rise to the level of material information. The only waste management information depicting a risk or cost that is material is that describing US CERCLA or other site cleanup obligations, and the reserves established for thos obligations are already required reporting.

Industrial Machinery	Waste Management	Material Issue?	Corporations	No	The company spent less than $1 million for disposing /recyclingits waste streams. Even if we include the potential Superfund type of liabilities associated with the disposing / recycling of these wastes, I still don;t believe waste management should constitute material information pertaining to companies in this industry.
Industrial Machinery	Waste Management	Material Issue?	Corporations	Yes	Effectiveness in minimizing waste (particularly hazardous waste) is a reasonable surrogate indicator to understand potential pollution liability.
Industrial Machinery	Waste Management	Material Issue?	Market Participant	Maybe	Waste Management is listed as 'Medium' for evidence of financial impact versus energy and water management at 'low'.
Industrial Machinery	Waste Management	Material Issue?	Market Participant	Maybe	I don't imagine a large spread in potential outcomes for companies here
Industrial Machinery	Waste Management	Material Issue?	Market Participant	Maybe	Waste management generally does not have a direct material impact on companies in the Industrial Machinery & Goods Industry as the five representative companies in the study noted nothing material in their 10K filings. However, mismanagement of waste, can lead to fines from regulatory bodies and additional clean-up costs.
Industrial Machinery	Waste Management	Material Issue?	Market Participant	Maybe	Waste managemend, the ability to reduce landfill use and recyclability of a company's products are gradually beooming more important as the "green" nature of companies' operations become more important for investors
Industrial Machinery	Waste Management	Material Issue?	Market Participant	Maybe	Your brief presented the fact that many of the wastes in this sector are easily recycled. While many of the companies have been around for a long time and have Supefund sites, I don't consider that to be forward looking. I assume that between regulations and cost incentives to reduce waste most of the companies are doing at least an average job and there is no material benefit from waste management strategies
Industrial Machinery	Waste Management	Material Issue?	Market Participant	Yes	Waste represents a long term liability whose impact may not be known for years (ie asbestos, nuclear waste). The impact can be material
Industrial Machinery	Waste Management	Material Issue?	Public Interest & Intermediaries	Maybe	Most materials used in machine building have been recycled already long time, such as metals, so it should not be an issue any more. The waste produced by the machines during their life cycle could be a minor issue.

Industrial Machinery	Waste Management	Material Issue?	Public Interest & Intermediaries	Maybe	○ Water, waste and energy management are material but with reservations. The reservations are primarily due to the much higher impact of the product on the environment during the use phase. Per the Argonne National Lab study - see http://www.transportation.anl.gov/pdfs/TA/102.pdf - "The direct impacts of the vehicle cycle -- producing the truck itself -- were determined to contribute only modestly to the totals, in contrast to results of similar studies with automobiles. The main reasons are the long distances traveled by trucks at low fuel economy." The major impacts are in the products use. As a result, changes in fuel economy of industrial machinery and goods has a material impact. However, the operations to create it and energy, water and waste management around the operations are significant mostly from a cost perspective (i.e., lower utility bills) and from a compliance perspective for operations.
Industrial Machinery	Waste Management	Material Issue?	Public Interest & Intermediaries	Maybe	Waste management is often (but not always) a representation of operational efficiency. However, whether or not materials are recycled will often depend more on the market for recycling (e.g. based on geography, municipal facilities, etc.) than on a companies desire to be efficient.
Industrial Machinery	Waste Management	Material Issue?	Public Interest & Intermediaries	Yes	Reduced waste means reduced potential legal liablity for remediation of industrial waste sites under CERCLA and RCRA.
Industrial Machinery	Waste Management	Material Issue?	Public Interest & Intermediaries	Yes	Site Remediation costs may be reported in 10K as a liability.
Industrial Machinery	Waste Management	Other Comments	Corporations	DNA - Other comments	Enforcement, or lack thereof, is key driver to ensuring companies compliance with waste laws/ regulations. This is especially true in remediation of contaminated sites. Brief could have elaborated that today's compliance may be tomorrow's noncompliance & liability as laws evolve. Best to eliminate, minimize, reuse than dispose if at all posssible. Overall, brief was informative, covered a lot of material and concise.

Industrial Machinery	Water Management	Material Issue?	Corporations	No	The level of significance and current uncertainty regarding water management measures is the rationale for selecting the issue as 'not material'. Generally, as an industry, up-stream industrial machine manufacturers, have significantly lower levels of water withdrawal/use in comparison to other industries such as the chemical or garment industry. Although, we see that expenses related to water use may rise in the future and availability may be an issue in certain countries, based on current costs and usage it does not appear to be a strong enough issue to constitute materiality based on the definition provided to us. Also, the uncertainty related to how to evaluate water usage in the discussion of natural capital is an issue. Until there is some agreed upon consensus on how to valuate water use, it may be more of a risk to disclose water risk to investors than the overall risk of water availability.
Industrial Machinery	Water Management	Material Issue?	Corporations	No	Companies in this industry are not likely major water users. In addition, most companies in this industry do not have major operations in high or extremely high water stressed areas.
Industrial Machinery	Water Management	Material Issue?	Corporations	Yes	Current challenges with global water supply, and significant anticipated increases in demand make water a potential Achilees Heel for many organizations. It is a critically important commodity in increasingly short supply, and descriptions of how corporations are addressing this potentially material risk constitute material information.
Industrial Machinery	Water Management	Material Issue?	Corporations	Yes	Water management is primarily focused on water scarce areas and is material to operating risk exposure.
Industrial Machinery	Water Management	Material Issue?	Corporations	Yes	Companies such as Veolia have developed water models to calculate the true cost of water combining CapEx and OpEx with inclusion of risk & fincancial considerations. http://www.veoliawaterst.com/sustainability/true-cost-water/
Industrial Machinery	Water Management	Material Issue?	Market Participant	Maybe	I don't imagine a large spread in potential outcomes for companies here

Industrial Machinery	Water Management	Material Issue?	Market Participant	Maybe	Water management generally does not have a direct material impact on companies in the Industrial Machinery & Goods Industry as the five representative companies in the study noted nothing material in their 10K filings. However, mismanagement of water, including excessive use or working in regions with scarcity issues could have a material impact on company operations.
Industrial Machinery	Water Management	Material Issue?	Market Participant	Maybe	As your brief noted, water is not a huge input to these companies, therefore I don't believe there is a material advantage to be gained by water management. Unless companies operate in geographies with water stress, in which case there could be advantages, but that also seems like more of a real estate issue.
Industrial Machinery	Water Management	Material Issue?	Market Participant	Maybe	Currently water conservation in the Industrial machinery sector, is not top of mind probably because it is not a major cost factor and is readily available in most key manufacturing regions. As places like India grow as a manufacturing center it could grow in importance.
Industrial Machinery	Water Management	Material Issue?	Market Participant	Maybe	Water today is not as clean as it used to be and in manyt inudstries, used water can be a hazardous material.
Industrial Machinery	Water Management	Material Issue?	Market Participant	Yes	Water conservation is also becoming a metric which is increasingly being focused on by investors since the cost of inefficient use of water is likely to rise in the future, particularly with record droughts now in place across much of the western US.
Industrial Machinery	Water Management	Material Issue?	Market Participant	Yes	water will become scarce
Industrial Machinery	Water Management	Material Issue?	Public Interest & Intermediaries	Maybe	See above
Industrial Machinery	Water Management	Material Issue?	Public Interest & Intermediaries	Maybe	This issues is material primarily for companies operating in areas of water scarcity (or future scarcity). I would hesitate to judge companies simply on their water use and/or recycling without placing it in context of scarcity.

Industrial Machinery	Water Management	Material Issue?	Public Interest & Intermediaries	Maybe	Although the cost of water is projected to increase and management of water in production has value, it may not be significant for some manufacturers. Discharge of water and increasing regulations in California related to the revised Industrial Stormwater Permit do have cost implications to all manufacturers and should be added as a consideration within the water management lifecycle.
Industrial Machinery	Water Management	Material Issue?	Public Interest & Intermediaries	No	This type of activity does not consume much water, nor do most of the machines built, so the issue is not material; compared to such industries as paper and pulp, or energy production, water management is not essential.
Industrial Machinery	Water Management	Material Issue?	Public Interest & Intermediaries	Yes	Water management is not now a significant proportion of costs of goods sold, but is important for industrial facilites "license to operate" in communities concerned about water resource management.