**Investment in Green Energy Storage Research through Cross-Collaboration**

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**Executive Summary**

This essay analyzes Company X’s sustainability report of 2017 and critically evaluates its stakeholder engagement practices using utilitarian and agency viewpoints. It is found that X’s decisions favour its shareholders and executives, despite the environment being a key stakeholder when evaluated under the stakeholder salience model.

According to sustainability reports, X aims to contribute to SDG-13 by various initiatives to tackle climate change and its reporting is found to be fairly compliant with G4-1 standards. However, while energy forecasts for 2040 predict an increase in the use of renewables, unlike its competitors, X’s primary focus continues to be on fossil fuels. It is also under pressure from several ESG organizations to set sustainability targets and risks losing institutional investors if it fails to comply.

Thus, in order to make a socially responsible investment, green energy storage research is a viable option. With X’s cash reserves, cross-collaboration with other companies like Alphabet and a Cambridge model of leadership at X is found suitable to achieve this. A KPMG true value analysis reveals a business case that creates value for the society in the long term.

This utilitarian decision could help X gain recognition as a company that is truly Beyond Fossil Fuels.

**Investment in Green Energy Storage Research through Cross-Collaboration**

X is an integrated oil and gas company that provides customers with fuel from its exploration, refining, trading and supplying activities and is ranked as the 5th largest public energy company in the world (Forbes 2017). X’s sustainability reports (2017a, p.13) reveal that 56% of exploration and development activities focus on gas as opposed to oil. The company (X, 2017b, p.47) predicts that global energy demand for 2035 is expected to increase by 30% with the number of electric and hybrid vehicles reaching 100 million. This will shift the energy mix from fossil fuels to renewables and will account for half of the growth in energy supplied in the next 20 years. However, X has exited the solar energy business in 2011 (David, 2013) and reversed the decision to spin off its wind energy business (Hill, 2013) indicating that it is trying to move away from renewable energy business. The suggestion put forward here is that an alternative but responsible investment for X may be in the area of green energy storage research which could give confidence to institutional investors to invest or continue to remain invested in X.

This essay first analyses the current approach that X adopts towards its stakeholders and shareholders through utilitarian and agency viewpoints. Secondly, it evaluates environment as a stakeholder using the stakeholder salience model. Thirdly, it investigates the strategy and performance of X in its commitment to climate change and low carbon emissions using G4-1 guidelines. Next, it makes recommendations about a responsible investment in green energy storage using the cross-collaboration model. Lastly, it uses KPMG’s true value analysis to evaluate the externalities of this decision and suggests the Cambridge Model of Sustainability Leadership to put it in to practice.

An analysis of the sustainability report shows that X’s decisions are not utilitarian. In the short-term, to remain profitable amidst falling oil prices since 2012, X has been cutting costs with a significant headcount reduction, a decrease in taxes and contribution to communities (X 2017a, p. 9). It also reported three fatalities in 2016 suggesting that employee safety is still being compromised to cut costs. These casualties and decision to cease employment means that pleasure of these individuals has decreased due to loss of their monthly income leading to reduced access to economic resources for essentials such as food, water, shelter and increased pain because of limited access to quality services such as health and education. In turn, the government and communities have lost access to funds which could have been used in development activities to provide amenities for uplifting the society. Hence, the pleasure of societies that benefit indirectly from the use of these resources is also reduced.

At the same time, the salary of X’s CEO increased by 20% to £13.8mn and he is still among the top paid in FTSE100 (Telegraph, 2017). This shows that the pleasure of top management is given prominence over employee retention and compensation. Also, dividends distributed to shareholders increased by $1,196mn and in some instances, assets were liquidated to fund the dividend payouts (Connington, 2016). While this may have cheered the investors and increased their pleasure, it is clearly a short-term decision whose benefits are targeted at only one stakeholder group. In selling assets to pay dividends, the company has over-looked the opportunity cost of investing in ventures that could have yielded sustainable long term returns which could have, in turn, provided additional employment opportunities, more taxes to the government and funds for development of communities. In fact, this approach suggests that dividend payment to shareholders and higher salaries to senior management are a top priority for X. It can thus be argued that X’s decisions are not long-term in nature and not all stakeholders are being considered in its decision making. Further, its decisions maximize pleasure for a few selected groups while causing pain to others. Hence, the decisions are against the principles of utilitarianism as defined by Mill and Bentham (see Painter-Morland and Bos, 2011, p. 118).

The dividend history since 1999 shows that cash pay-outs were made every quarter including the last quarter of 2010 despite the Gulf oil spill that was costly for X (X.com,2017). Despite this huge cash outflow, X decided to sell assets worth $10bn in 2013 to pay dividends (Rankin, 2013). Dividends of 239 US cents per ADS in 2015 and 238 cents per ADS in 2016 were paid despite reported losses of $6,400mn in 2015 and a meagre profit of $172mn in 2016 (X.com, 2017). This suggest the agency viewpoint (see Painter-Morland and Bos, 2011, p.15) at X where the senior management are taking decisions and acting in the interest of the owners to ensure financial returns at any cost. In taking such a view, there is a risk that other stakeholders such as the environment may not be considered and instead could be potentially harmed.

The environment is an important stakeholder for X. Considering the ‘enlightened stakeholder maximization’ of Jensen (see Branco and Rodrigues, 2007), X cannot maximize value if any important stakeholder is ignored or mistreated. This theory is supported by the Deepwater Horizon tragedy where the project was rushed to maximize the profits for shareholders, but in this process other stakeholders like the environment and employees were ignored leading to extensive damage and losses. In the end, overlooking some stakeholders did not result in shareholder value maximization.

Evaluating the environment by the stakeholder salience model as defined by Mitchell, Agle and Wood (see Painter-Morland and Bos, 2011, p. 118), results in a high score on legitimacy as X’s exploration in upstream activities is directly dependent on the availability of petroleum and natural gas. Without these, X would cease to exist. Urgency is crucial when the environment is impacted as seen in the context of the Gulf oil spill where 3.2 million barrels of oil (Sherwell and Lawler,2015) leaked into the ocean and caused huge damage to sea life and the marine eco system. X could not afford to ignore this damage and was forced by the government, communities and other environmental organizations to immediately control the spread of oil and eventually shut down the leak. It was forced to clean up the ecosystem, pay fines of $61.6mn (Mufson, 2016) and seven years later the incident is still one of the worst oil spills in history causing X huge reputational and financial damage. This proves that the environment is a very powerful and influential stakeholder. Despite arguments by Branco and Rodrigues (2007) that environment is not human and cannot be given stakeholder status, evaluation under the stakeholder salience model strongly indicates that environment should be considered as a stakeholder by X as it ranks high in terms of legitimacy, urgency and power.

The environment forms a key part of X’s strategy (2017a, p.1) but there are no targets or timelines set for carbon reduction. This strategy has been evaluated in the light of the G4-1 issued by GRI (2015) which is the general standard disclosure that deals with strategy and analysis. The overview provided by Mr. A (CEO) identifies energy transition as a challenge for sustainability while reducing carbon emissions. X has set aside $1 billion for investment in low carbon technologies towards the industry Oil and Gas Climate Initiative. This aligns with the company’s long-term strategy to be part of the global initiative to tackle climate change and is supported by its initiatives in the last two decades to help tackle climate change. In addition, it is part of the Paris Agreement to hold temperature rise to less than 2oC. However, there are reports by Chapman (2017) that X is bracing itself for 5o C change in temperature, indicating that this disclosure is not fully transparent. X (2017a, p. 8) reported that emissions of CO2 have increased from 45.1million tonnes to 46.1 million tonnes in just the last year. This trend is also seen in direct GHG (Green House Gases) from upstream and refining operations. Reports from Riley (2017) indicate that X produces 1.3% of GHG and is among the top 100 polluting companies causing 71% of GHG emissions in the last three decades. These reports challenge the commitment of the company towards its climate initiatives. The CEO has also indicated that X would be going slow on investing in green energy as the company is not clear about where to invest (see Gosden, 2017) and this contradicts its claims that renewable energy is its priority. Thus, a lot of discrepancies emerge in X’s reporting and actual practices leading to questions about the credibility and transparency of its reporting. According to McGrath (2017) and Farell (2016), institutional investors are unhappy that X failed to address requests from last year’s resolutions and it is yet to publish a strategy to meet the objective of a less than 2o increase. Bloomberg (2017a) has scored it at 61.89 out of 100 for ESG disclosures indicating considerable room for improvement. It is thus recommended that in the future, X provides clear action plan, and that it quantifies and sets a specific target for climate and carbon initiatives.

 The U.S Energy Information Administration (2017) projects that oil (31%) and gas (25%) will account for around 410 quadrillion btu out of 735 quadrillion btu by 2040. Given this data, X’s current strategy of changing the portfolio mix to increase gas production to meet the energy demands would seem to be the move in the right direction. This projection also reveals that renewables (17%) will also account for 125 quadrillion btu of which solar and wind will have the fastest growth, accounting for 3.9trillion kwH by 2040. In line with this statistic, X’s competitor Company Y is investing $1bn dollar in research every year in renewables (Hirtenstein,2017) and Company Z has recently purchased a 23% stake in the renewable energy company W (Keohane, 2017). However, X ‘s focus continues to be in the fossil fuel sector.

Charity institutions like ShareAction that promote environment, social and governance(ESG) are now urging investors to pressure X to set milestones and make immediate progress towards a low carbon model. As per Bloomberg (2017a), 53.45% of its shares are held among 767 institutions, among which 78.85 % are Investment advisors. Its low ESG score (Bloomberg,2017b) of 68.05 combined with its lack of initiative to make any new ESG investments could result in investors either voicing their dissatisfaction or exiting X as Hirschman did (see Louche and Lydenberg 2011, p.76). The governance model at an Institutional investor MFS Investment Management in the US (2017) is used here to illustrate the possible actions that can be taken by such investors. MFS uses a combination of voting and exclusions from the SRI strategies toolbox to fulfil their responsibility towards ESG decisions in companies where they invest. The company has ESG analysts voice their opinion through proxy voting to influence ESG investment decision. They also incorporate a company’s ESG risk and opportunities in their security analysis and if necessary, eliminate a position entirely. If X repeatedly chooses to ignore shareholder’s voices, it exposes itself to the risk of other investors exiting or analysts excluding it from their portfolio, resulting in lower share value and credibility due to poor ratings. To avoid this, X should look to get ahead of the curve in investing in green energy to avoid exclusion.

X’s sale of the solar energy business in 2011 shows its lack of expertise in managing renewables. A re-entry into this sector may not augur well for it. A suitable alternative investment for X could be in green energy storage projects. Some of the current technology for storage of renewable energy are inefficient and short-lived leading to penalisation of those opting to tap into the green energy market (PhysOrg, 2017). States like California in the US have invested heavily in solar energy to meet their electricity needs. However, an over-production of solar energy in 2017 resulted them having to pay their neighboring states to consume the excess as it could not be stored (Franz, 2017). A similar scenario may replay while meeting the growing demand for renewable energy from companies such as Wal-Mart, General Motors, that are trying to reduce costs and encourage companies investing in sustainable energy (Gregorio, 2017). Hence, the lack of storage options is a key issue to be addressed if supply and demand for green energy are to be met across different times zones and geographies. To this end, an innovation in storage of renewable energy could increase its reliability, availability and boost production and consumption.

The UK government is investing £250 million under the Faraday challenge (Pratt , 2017) for research in storage solutions. The CISL (2017) in their trends brief predict that tech-driven innovations will create products which, among other things, also contribute to growth of renewable energy. X (2017c, p. 124), has cash and cash equivalents of $23,484 million and it can collaborate with companies researching such solutions.

Alphabet, the parent company of Google is close to building a proto-type of a cost-effective solution for green energy storage but has faced issues in the recent past like reduced investments from venture capitalists and governments (Galeon, 2017) and an investment by X can ensure it completes this research. This investment encompasses ESG factors, in addition to being a viable and profitable venture. It considers environment as it could reduce carbon emissions and would have a social impact as it could create job opportunities and promote exports of solar energy produced in countries like India and China to western countries and addresses the mismatch between availability and demand of renewable energy. In the past, Alphabet has shut down projects that stray away from its core areas, but X could now can steer the governance through engagement and voting. X would have thus delivered to its stakeholders the product, practise and process of a responsible investment as defined by Louche and Lydenberg (2011).

In internalizing the externalities from the KPMG true value analysis (Appendix 2), X has an opportunity to create a business case as a pioneer and a visionary company that revolutionized the widespread use of green energy by addressing the issue of unpredictability associated with it. The research could yield a unique product that could garner trust and support from its investors, customers and in communities where it operates. The production of the new product would result in creation of new industries, jobs, opportunities across the production and supply chain, thus boosting the economy as a whole and lowering the cost of production significantly. The resulting wide spread use of green energy by companies would reduce GHG emissions and the target of less than 2oC climate change can be globally achieved leading to relaxed regulations for reporting GHG and climate targets. This means X could gradually reduce investments in climate initiatives. The decision thus reflects the characteristics of a triple bottom investment like long-term perspective, best interest of all stakeholders and encouraging interaction between X and the society. When translated to quantitative terms, the internalized costs of breakthrough in the solution for green energy storage helps to grow the net societal value in the long-run and increases the pleasure and decreases the pain for most stakeholders. Hence, this investment would be recommended from a utilitarian view.

 The investment also aligns well with the strategy of the leadership team as it has embraced Sustainable Development Goal (SDG) 13 (X, 2017a, p.47) to address the issue of global climate change. This investment combined with a sustainable leadership team at X could ensure that the decision making at X shifts from an agency view to socially responsible investment.

Courtice (2011) suggests seven characteristics required for a sustainable leader. While working towards the issue of green energy storage, the CEO at X has to demonstrate his systemic understanding. With a vision to make a difference, he has to adopt an inclusive style, advocating the safety value and be an activist for green energy in all the decisions at X. He should have the skill to think long term and communicate his vision by for example, having a division for clean energy services or using the existing X supply chain to distribute green energy in the future for a lower cost and compensate for its lost oil and gas portfolio.

As an outcome of adopting this approach, the leader should then take the cross-collaboration route as recommended by CISL (2017). Drawing from the story of ‘en.lighten’ as illustrated by CISL and Ecofys (2015), he should strengthen engagement between various research centres across companies, geographies and ownerships and set up a common platform so scientists across the world researching green energy storage solutions can exchange knowledge and thus progress with the research at a much faster pace. This can also help resolve the issue of funding and infrastructure facilities that many developing countries lack. X could also invite executives from Siemens, Cisco, Philips, etc, which are deemed to be the most sustainable companies in the world, to be independent directors on its Board to send a strong message that the company is dedicated and serious in its efforts.

The above analysis and recommendations indicate that there is a great potential for X to contribute to renewables by investing in research for green energy storage by adopting a cross-collaboration approach. Having a sustainability leader at X who has a long-term vision of benefitting most of the stakeholders, through the green energy storage research, could act as a powerful catalyst. This shift will change its focus from its current agency view to making a responsible investment and the value that it creates for the society will provide long-term benefits to an increased number of stakeholders while also aligning to its strategic goal of low carbon emissions and climate change as per the Paris agreement. Thereby, X can make a positive change and become a company that people truly identify as ‘Beyond Fossil Fuels’.

**Appendix 1**

## Module: RESPONSIBLE AND SUSTAINABLE LEADERSHIP

## SUMMATIVE MODULE ASSESSMENT

**Task 1: Individual assignment (60% of final mark)**

A comprehensive 3500-word individual written assignment analysing a company’s efforts towards embedding sustainability and ethics, reflecting on its leadership approach, and critically evaluating its reporting practices.

In order to determine your understanding of the theories and practices around sustainable and responsible business, you are tasked with analyzing the sustainability performance of a large multinational in the extractive industries, Company X (X). You will have to gather and study all available resources that could provide you with insight into their performance in the areas of sustainability and ethics, including their sustainability report, other forms of sustainability accounting, website resources, case material, and secondary academic analyses of their practices.

**Content:**

In your assignment, please assess the sustainability and ethics performance of X by *critically evaluating* the following:

1. X’s approach and commitment to values
2. X’s stakeholder engagement practices
3. X’s commitment to sustainable consumption and sustainable finance
4. Their leadership approach towards responsible and sustainable business
5. Their implementation strategies towards sustainable and responsible business across the value-chain
6. Those risk management strategies and compliance measures that pertain to ethics and sustainability

**Structure of the assignment**

1. Introduction: a clear framing the paper’s main argument; providing conceptual clarification
2. Main body:
* Develop a theoretical framework: assess the main theories that you chose to apply and critically evaluate their contribution to assessing the case at hand
* Critical evaluation of each of the content areas mentioned above
1. Conclusion: a summary of X’s strengths and weaknesses in the area of sustainability and ethics, and suggestions on how they might improve their performance in this area.

In order to prepare you for success in the final individual assignment mentioned above, an assessment brief will be made available to you. This will indicate what will be expected of you to reach a certain level of performance. It will identify specific success factors on each level: fail, marginal fail, commendation, distinction or exceptional distinction (each with its subcategories).

The main criteria upon which our assessment is based include:

* Critical analyses of and insight into the material we discussed
* Theoretical knowledge and understanding
* Application of theory to practical problem-solving
* Translating theoretical insights into management systems and practices
* Further important stylistic factors include overall structure, argumentation flow, and editing.

**Appendix 2**

What is KPMG true value?

KPMG True Value is a tool to understand how the value a business creates and reduces for society is likely to affect the value it creates for shareholders. This knowledge provides a new lens for decision-making to improve performance, inform strategy and increase influence. KPMG True Value is a 3-step process that can be applied across sectors and geographies. It is scalable and can be applied to a whole company, a division or a specific project.

STEP 1: Identify the value a company creates and reduces for society through its externalities and express this in financial terms

STEP 2: Assess how the internalization of externalities is likely to affect future earnings (through regulation, stakeholder action and market dynamics)

 STEP 3: Develop business cases that build and protect future value for shareholders by increasing the value created for society

(Source: https://home.kpmg.com/content/dam/kpmg/pdf/2015/06/introduction-kpmg-values.pdf)

Based on the above guideline, KPMG true value analysis has been used to analyze the externalities of the alternative to invest in green energy storage solution.

STEP 1: The positive externalities are the creation of new jobs due to investing in research that translates to buying power to more people giving access to various resources and improving GDP. The investment in renewable energy storage solution by X will boost the industry’s confidence about the future of green energy. This will cause a cascading effect whereby more companies will want to jump on this bandwagon to set up and start supplying renewable sources thus revolutionizing its usage. This will lead to reduced carbon emissions in the near future leading to lesser pollution (even in the short term) and reduced the money spend by the society on respiratory and lung diseases like asthma, leukaemia, birth defects in kids, etc. whose benefits will continue in the long term.

To summarize,

* Economic positive: New industry leading to new jobs and wages, taxes to government, dividends to shareholders, loan interest to lenders
* Economic negatives: Lower penalties, reduced legal charges
* Social Positives: Infrastructure development, Employment opportunities in underdeveloped countries
* Social Negatives: Effect on lung and chest diseases, lower birth defects in children
* Environmental Positives: Wide spread Renewable energy usage adoption
* Environmental Negatives: Reduced use of fossil fuels, lesser possibility of leakage of petroleum in transit, lower greenhouse gases

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