CASE STUDY: Coal seam gas: the sustainable business response

Executive Summary

Currently, world face many environment challenges and every business need to follow the sustainable practices to protect this environment and resources to the future generation. Especially in controversial industry like coal seam gas (CSG) sustainable practices are highly important. Currently, there is a huge argument about this industry between the economic benefits and environmental and social impact of it.

In this study, it has comprehensively discussed about the how mining companies need to response to these challenges. Hence, this study has highlighted areas such as waste water management and air emission that companies need to response effectively. Further, this study discuss about the shared value approach and how it bring win-win situation to both companies and communities. Finally, this study discuss about the quadruple bottom line assignment of performance and how this concept change the mining companies' approach on CSG extraction. Secondary data sources such as journal articles, industry related books, research papers etc. have been used to conduct this study.

Table of Contents

Introduction

Coal seam gas (CSG) is a source of methane which obtain from the underground coal formation. CSG is a good energy source that can be used for both domestic and industrial energy requirements. There are two main arguments about the CSG. Some people argue that CSG is a good energy source that provide continuous energy supply. Some of others argue that CSG could have significant environmental and social impact to the mining area. Therefore, CSG industry can be identified as an industry that need proper sustainable management. Proper sustainable management and regulation system could minimize the environmental impact such as adverse impact to the ground water and impact to air quality due to increase methane level of the air and optimize the economic benefits.

Deterioration of air and water quality, emissions are the main environmental impacts due to CSG industry. Deterioration of air quality is a huge environmental and social issue surrounding in mining sites. Gases such as sulfur dioxide, nitrous oxide and methane are normally released in the CSG fracking process. These gases and chemicals are caused to global warming and climate change. Especially methane has been identified as a gas that highly impact to the global warning. Further, chemistry of groundwater can be changed due to toxic water that use in CSG fracking process (Batley, 2012). Further, there are mainly social issues can be raised such as increasing health issues and dividing lands. Therefore, mining companies need to response to reduce these environmental impact while getting economic benefits of CSG.

Question 01

Companies that operate in CSG industry need to address all their stakeholders' concerns and need to be prepared to response to these controversial aspects of the industry. First companies need to develop proper environmental management plan to response these concerns and within that policy companies need to identify the environmental and sociocultural risks and how to take necessary actions to minimize those risks.

One of main environmental risk is deterioration of water quality. There companies should have proper waste water treatment plan to reuse the water associated with CSG. The mining companies need to consider these waste water as a resource since it can utilize many possible requirements by diminishing groundwater impact to aquifers. The water extracted from the coal layers need to be treated with high technology to reuse it to agriculture or release it to environment. Reverse Osmosis is commonly used technology to treat waste water in this industry that has ability to purify more than 112 mega liters of water per day (Jarrett, 2012). Then these water can be used for agricultural purpose or as life stock drinking water. The companies can get water quality report and provide it to relevant stakeholders. Their policy need to define the frequency of conducting the test and it need to according to state and federal regulations.

Further, companies can take risk mitigation actions for emissions during both construction and operation phases. In construction time, companies can develop specific construction environmental management measures to minimize the emission. Further, companies need to set the air quality objectives and need to take actions to achieve those objectives. They need to ensure that all the machineries and vehicles are tailored with the emission control equipment. In operation phase, preventative maintenance drivers need to be implemented to makes sure all equipment operate efficiently. Further, companies need to design and conduct stack emission monitoring program in the areas that NO_2 level is comparatively high (Jarrett, 2017).

Further, companies need to get actions to proper waste management. First, the quantity of waste produced need to be reduced and then try to increase the reuse and recycling opportunities. Hazardous liquid waste need to be stored by using secondary containment structure and dangerous items such as chemicals and fuel need to store separately according to standards to eliminate any negative impact to employees or community (Mudd, Daly and Drinkwater, 2015).

Implementing those mitigation actions and control measurements, companies can ensure to conduct their operations minimizing environmental and social impact. By applying above approaches, companies can minimize air emission, water pollution and other negative impacts and response to the challenges effectively.

Question 02

Shared value approach is defined the practices that improve the competitiveness of the industry while enhancing the social and environmental conditions in the area that industry operates (Diasz, 2017). Shared value approach is differed from corporate social responsibility (CSR). CSR is mainly based on the aspects of giving back to the society and shared value approach is focused on win-win situation for both parties. There need to be recognizable economic benefit to the company and solution for social and environmental problem to identify any practice as a shared value (Daft, 2014).

Mining companies target to operate by diminishing negative social impacts and share value with the communities through developing communities and sponsorship initiatives. Shared value approach of the companies need to be well defined and need to consider both short term and long term aspects. These companies mainly focus on investing community development and encourage community members to participate and take part those programs.

These companies' community development strategy mainly focus on few areas. Education and training is one key area that the companies focus. Companies focus on conducting traineeships in schools and apprenticeships, promoting science, mathematics, engineering and technological studies, post-secondary studies and training that direct to employments. This helps to companies to get support of the community. Further, companies can generate required human resources through their own areas in long run. Therefore, companies can easily find relevant knowledge and skills. Hence, there is win-win situation both the community and the companies.

On the other hand, these companies support to regional growth and improve the living condition. In this aspects, companies mainly develop infrastructure, provide employment opportunities, build up communities, support to business development and capacity building. This aspect cause to physical development and improvement of the living condition in the area. Company aspects, they

can conduct their operation smoothly due to infrastructure development and easily find the required workers from the nearby community.

Further, companies can conduct environment stewardship program to protect regional bio diversity. This kind of programs could help to companies to face the influence of the pressure groups. Especially this kind of programs are useful to get the support of the community when company operates in controversial sector such as CSG.

Question 03

Traditionally many companies measure the success of their performance through only financial perspective. However, now non-financial indicators are also considered for performance measurement. Especially when company operate in environmental and sociocultural sensitive industry, non-financial aspects play key role. Therefore, now many companies publish sustainable report annually with the financial reports. Quadruple bottom line approach is a commonly use mechanism to identify the sustainable practices of the company.

Profit – Here, competitive productivity is considered and financial performance of the company is measured.

People – Quality of the life style including healthiness and wellbeing of the employees and community also indicate the success of the company.

Planet – how company operation impact to the eco system and lifespans is also determined the success of the company.

Progress – Here, it is considered that how adaptive innovation impact to enhance the internal processes of the operation (Robbins, 2001).

Therefore, quadruple bottom line approach focus many aspects in the organization operation. Therefore, instead of only considering wealth maximization, companies consider all the stakeholders' interests. Therefore, operations of mining companies conduct according to sustainable practices and initiatives. Hence, when miming companies operate, they will maintain high level of ethical practices and strong corporate governance framework. Further this approach make companies to develop sustainable development plan and make sure bring their corporate decision making process in line with the sustainable development plan (Hadder, 2012). Therefore,

decision on mining does not only based on return on investment but other sustainable aspect too. Company need to value the rights of the employees and cultures that could be affected due to company operation.

Further, quadruple bottom line approach ensure that the companies continuously put effort to improve their performances in these aspects. Hence, companies need to measure the company performances in each aspects, balance scorecard is a suitable approach to measure the performance of the company (Hadder, 2012). Company need to develop key performance indicators to each aspects to measure the performance. Due to these new aspects of the management, mining companies seek continuous improvement on their environment performance and health and safety performance. Therefore, management has many more aspects to monitor in this kind of company not like just profit motive company.

References

Jarrett, D. A. (2017), *Coal seam gas mining and stakeholder management* [online] pdf available at: https://pdfs.semanticscholar.org/a1ba/b170648ed00567b86f277ed0cbd229106a34.pdf access on 27.03.2019

Batley, G. E. (2012), *Environmental issues associated with coal seam gas recovery: managing the fracking boom* [online] pdf available at: https://www.publish.csiro.au/en/pdf/EN12136 access on 27.03.2019

Mudd, G. M. Daly, E. and Drinkwater, R. T. (2015), *Understanding environmental risks from coal seam gas* [online] pdf available at: file:///C:/Users/ASUS/Downloads/Sub_45_attach1.pdf access on 27.03.2019

Hadder, H. (2012), *The adaptive quadruple bottom line scorecard: measuring organizational sustainability performance* [online] pdf available at: http://www.csin-rcid.ca/downloads/csin_conf_henk_hadders.pdf access on: 27.03.2019

Diasz, L. (2017) "Marketing and business strategy" 1st edition. Colombo: Soft wave printing, pp l

Daft, R. (2014) "New era of management" 11th edition, New Delhi: Cengage Learning

Robbins, S. (2001) "Organizational behavior" 9th edition. New Jersey: Prentice Hall pp 419- 420