

Why Is Non-Economic Information Important to Carbon Disclosure?

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ABSTRACT

Objective – The purpose of this study is to provide the argument that carbon disclosure must not only provide economic but also non-economic information. The more comprehensive disclosure of carbon emission is expected to change the behavior of industries in realizing a more environmentally friendly production process.

Methodology/Technique – Data were collected through interviews and observation of documentations from three parties: the BOWL company, the Ministry of Forest and Environment and the Ministry of Industry.

Findings – Results show that the rating program of the industry's performance in environmental management (PROPER) from the government's perspective is an instrument which can encourage and establish the industry's compliance and awareness of environmental management regulations.

Novelty – This paper also focused on analysing how the government applies regulation approaches in changing the industry's paradigm to undertake ethical businesses.

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1. Introduction

Of late, global warming has become an issue around the world and this is due to its impact on the sustainability of planet earth and the life of the ecosystem. Global conferences and meetings have called for countries to reduce their carbon emission so that the GHG effects can be minimized. As an emerging country, with industrialisation development, Indonesia is also committed towards making a contribution in slowing down global warming. This commitment begins with the Kyoto Protocol as a national regulation in 2004. In a statement made by the Indonesian President, Susilo Bambang Yudhoyono in a Conference of the Parties 15, it was mentioned that Indonesia is committed to reducing the GHG emission by 26 percent from its business as a usual activity by 2020. This will continue with Indonesia's commitment in the Paris Agreement which aims to reduce carbon emission by 29 percent in 2030. Nonetheless, this commitment is still being carried out in a pragmatic approach which accentuates the economic aspect such as carbon trading mechanism. Many

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researches (Calel, 2013; Callon, 2009; Lohmann, 2009) argue that carbon trading mechanism, until now, is unable to make real contributions in reducing GHG emissions. This is because the economic approach was developed under the antropocentrism point of view, implying that technical implementation is not taking the side of ecological interest (Lehman, 1999; Gray, 2002). Therefore, it is important to determine the non-economic aspect which is developed under another paradigm as a means to lead behavioral changes among industrial members.

The BOWL company is a national cement company located in East Java, Indonesia. Its main activity is to manufacture cement products for sale in the domestic market and abroad. In the production process, the company uses raw materials like limestone and coal fuels. Such materials and fuel leading to cement production has the potential of producing CO₂ which is derived from the limestone utilization as raw material and coal combustion as an energy source. Due to government regulations, the BOWL company has implemented a mandated reporting mandatory to the Environmental Impact Assessment (EIA) document to the government from 1997 until now. Besides implementing the mandatory environmental disclosure, the BOWL company also follows the government program in terms of environmental performance measurement voluntarily.

This paper uses the ecocentrism point of view to argue that a combination of economics and non economics aspect is important as a significant contribution in reducing GHG emission. Ecocentrism is often used by scholars (Jones & Solomon, 2013; Kortenkamp & Moore, 2001; Shane, 2007) to discuss environmental ethics. According to these scholars, ecocentrism reasoning explains that humans and non-humans have intrinsic values; human beings are thus obliged to apply ethical behavior in their interactions with nonhumans as a form of respect to the existence of this value. Acknowledging the intrinsic value will motivate the attitude to respect nature and as a consequence, change industrial behavior in their interaction with nature. This will lead to the idea that a company's environmental performance can not be measured from just the economics aspect only, but also from non economic information. In other words, it is important to find out the company's attitude in treating nature as an entity. This attitude can not be disclosed in economics information. For that reason, this paper argues that non-economics information is very important in providing carbon disclosure.

The disclosure of environmental information is useful for internal and external interests. According to Burritt and Saka (2006), the preparation of environmental disclosure involves environmental accounting management as a tool for internal management decision making. However, conventional environmental management accounting is considered less effective in providing a comprehensive information about the company's financial performance and its relation to the environmental impact. Moreover, Burritt and Saka (2006) assert that "fundamental environmental critique of conventional management accounting is that it largely ignores the separate identification, classification, measurement and reporting of environmental information". Based on the criticism, Burritt and Saka (2006) suggest that it is important to separate environmental management accounting between economic and non-economic aspects. This is because each type of information has different functions such as monetary information indicating whether the monetary environmental management activities can survive in economic terms while environmental information in non-monetary terms indicate how many products were produced according to environmental quality standards. However, non-economic environmental information provides more environmental information from a broader dimension (Burritt & Saka, 2006).

The ecocentrism paradigm views reality holistically, that is, reality as a whole and not separately (Capra, 1987). Therefore, the company's interest in achieving maximum performance must be balanced with the interests of the environmental protection. On the one hand, the ecocentrism paradigm serves as the ethical behavior of companies in interacting with the environment. Ethical behavior, under the ecocentrism paradigm, is different from ethical behavior under the non-ecocentrism paradigm as described by Capra (1987) who says that "The reason why the old paradigm of ethics cannot deal with these problems is that, it is anthropocentric". The old perception of the company (i.e anthropocentric) against environmental ethics is that ethical behavior on the environment cannot help the company achieve efficiency. Company behavior that prioritizes corporate

financial performance takes the assumption that ethical behavior on the environment is not related to the company's performance (see Capra, 1987). .

GHG emission in industry comes from fossil combustion which produces energy. In Indonesia, coal is a major source of energy for industries because this energy source is cheaper and it produces calories similar to larger energy sources (Ministry of Energy; Mineral Resources of Republic, Indonesia, 2014). However, under the national campaign to reduce GHG emission, companies have to use their energy efficiently. Therefore, it is inevitable for industries involved in innovating energy saving technology to use alternative fuels which can be obtained from waste utilization, as a means of reducing carbon emission. It is not easy to invite industries to disclose the information about what they have done to nature and it is also not easy to get industries to explain How they solve the GHG emission problem or What kind of energy saving technology they invest in. Hence, as an initial step, the government has an important role to play in raising industries' awareness and to insist that they prepare an environmental report.

The regulation passed down by formal institutions are important as they serve as instruments for industries to abide by in implementing emission control. This is because the regulations and rules formalized by formal institutions hold strong legal implications and sanctions (punishment) particularly when a misconduct occurs. Ratnatunga (2008) states that "Business entities will need to consider new business practices in order to take advantage of (or at least not be disadvantaged by) mandatory carbon rationing and trading schemes under the Kyoto protocol." This implies that the regulation can be a tool which can motivate companies to undertake environmental impact management practices. Similarly, at the national level, in this case, Indonesia, the government, as a regulator, has a very important role in encouraging companies to implement a more ethical business environment. Nevertheless, Andrew and Cortese (2011) explain that there are two regulatory approaches to be adhered to: self-regulatory approach and command and control regulatory approach. Each regulatory approach has its own advantages and disadvantages.

The Indonesian government has published three environmental performance instruments in trying to address the issue of environmental conservation and they include the Environmental Impact Assessment (EIA), the rating program of companies performance in environmental management (*PROPER*) and the Green Industry Program(GI). One of these is mandatory while the others are voluntary.

According to Kolk (2003) "standardization of sustainability reporting, through initiatives such as the GRI, and government regulation and encouragement is likely to increase both the quantity and quality". Therefore, these three instruments can also function as a standard of reference for companies in preparing their environmental performance report. In that regard, this paper argues that non-economic information is important enough for evaluating a company's performance in reducing carbon emission. This paper also aims to analyse how the government applies regulation approaches in changing the industry's paradigm in undertaking ethical businesses.

2. Research Method

In order to understand that non-economic information is equally important in carbon disclosure, it is necessary to explore more about the concept of environmental impact management. Information about this concept is obtained from the government which acts as a regulator that controls the negative impact of the environment due to industrial processes. Data were collected through interviews and observations of documentation from three parties involving the BOWL company, the Ministry of Forest and Environment and the Ministry of Industry.

In the first step, data concerning management activities in reducing the environmental impact were collected from the BOWL company, a national cement manufacturing company, that is characterized by the energy-intensive industry. Data showed that the company was using the government regulation from the Ministry of Forest and Environment and the Ministry of Industry as a base to measure its environmental performance. Although these two government agencies have regulations according to their own working

programs, they also issue regulations pertaining to the mitigation of environmental impact of industries. The Ministry of Forest and Environment controls the industry's behavior in maintaining environmental conservation and the Ministry of Industry manages the development of the national industry. In this regard, it should be understood that data obtained from the BOWL company would gain the fundamental concept of environmental reporting undertaken by company. The second step was to ensure that data were collected from interviews conducted with personnels from the said company and the two other government agencies. The final step was to get data transcribed, coded and then thematically analysed. These themes will be based on the preparations and findings noted in the report which were analyzed by using the systemic perspective (Capra, 2002). In the systemic perspective, we have to think that everything works in relationship, relationship works in a context, relationship forms a pattern and relationships will be interconnected to form a bigger context, pattern, and meaning.

3. Research Findings

Of the three programs developed by the Indonesia government, the first program had used a command and control regulatory approach (Andrew & Cortese, 2011) which focuses more on supervision and coordination of activities undertaken as a means to ensure the company's compliance with environmental regulations. The implementation of the EIA is based on the Act of Republic of Indonesia No.32/2009. This act specifically refers to air protection and is based on the Ministerial Decree of Forestry and Environment No. 13/1995. This act specifically serves to ensure that environmental management is implemented appropriately. Additional environmental regulations were also issued by the governor of every district in Indonesia. The aim is similar since every district is also given the same mandate to control and manage environmental management. In the case of the BOWL company, it also has to abide by the regulation issued by the district governor, Regulation No.10/2009, on emission quality standard (Governor of East Java, 2009).

The existence of these environmental laws seem to encourage BOWL to undertake the management of environmental impact. The chief of the Bureau of Safety and Health of BOWL's employee and environment stated that his department had prepared all the EIA documents. (See below for excerpts.) Completing these documents require measurement and periodical reporting. Both of these were carried out by using stringent government standards. This compliance to government environmental reporting standards will increase the quality of the reports generated (Kolk, 2003).

For environmental management, we refer to the EIA document released by the government. There are many items we have to comply with including the measurement of dust particles emission. This is our obligation. Subsequent to the emission measurement, we also prepare the EIA reports which is addressed to the organization that created the EIA documents. If the EIA documents state that the report is for the environmental board in the district office, we will submit the EIA report to the environmental board in the district office.

(Bureau chief of safety and health of employee and environment of BOWL)

It is simple, if the EIA obliges us to undertake the measurement once in six months. In fact the district regulation commands us to measure air quality once in three months. Then we will go with the most stringent regulation (i.e. The Governor Regulation No.10/2009 on emission quality standard). (Bureau chief of safety and health of employee and environment)

Achieving the air emission standard of the government is not easy. Companies need to implement certain policies and technology which can enable them to minimize air pollution. This can be done for example, through the implementation of emission control devices. Nonetheless, as encouragement, the government should consider giving incentives to companies so that they carry out voluntarily implementation by adjusting

their policies to accommodate new technology as shifting from old technology to new ones can be very costly. For this reason, the government also created another instrument namely *PROPER* which aims to stimulate innovation among companies in managing the environmental impact. This instrument was intended to serve as a medium for introducing and building a new understanding with regards to the concept of green competitiveness. Undeniably, formulating proper instruments can be arduous as it takes time. For example, this instrument was formally introduced in 1990 by the Ministerial Regulation of Environment under regulation No.6/2013. The approach was changed from its initial introduction of a “command and control” approach to become a “bright spot” approach (Ministry of Forest and Environment of Republic of Indonesia, 2013, p.2). Apparently, the command and control approach has not been able to effectively encourage companies to comply with the environmental control implementation. Since the bright spot approach stimulates awareness of environmental management, it appears that companies are taking it as a means to conduct best practices in carrying out the environmental impact control. According to Andrew and Cortese (2011) every approach (e.i. control and command strategies and self-regulatory strategies) have advantages and disadvantages. The Indonesian government had earlier found that self-regulatory strategy was more effective and efficient. However, it was not found to be fully utilized in the self-regulatory strategy (Andrew & Cortese, 2011). Part of this instrument mechanism was also using the command and control strategy to evaluate companies’ compliance to environmental regulations.

For the Ministry of Environment, *PROPER* is an instrument used to raise the company’s awareness about the environment. In this context the *PROPER* instrument is closely related to the EIA standard which has to be met by the company. The EIA instrument places more emphasis on compliance with emission standards set by the government while the *PROPER* instrument is a continuation of the EIA. Under *PROPER*, the company provides information relating to the innovations implemented to meet the emission standards set by the government in EIA. This is substantiated by the following interview excerpts.

So we just monitor and generate reports. What is monitored?... We refer to... the first one we had EIA, what coordinate and spot should be monitored, that is in the EIA document. Besides, the monitoring process also refers to existing environmental regulations at the time, what items monitored what?...This is also related to the emission, here we examine emissions from the chimney at the plant.

(Bureau chief of safety and health of employee and environment of BOWL)

PROPER rating was given to companies that do things more than required (beyond compliance). Things required are environmental quality standards, but if company turns out its efficiency through the application of innovation ... and the fact that innovation is costly, then – we appreciate this company and give incentives.

(Staff of Environmental of Ministry)

In *PROPER*, there are several questions we must answer and explain it in the report. For “blue” award of *PROPER*, there are several basic question, such as what we have to do for environment?... is that things already done?... if it has been done, we must attach the evidences on the report. “Blue” award is compliant in nature, while “green” award is beyond compliant.

(Staff of *PROPER* and Government Regulation of BOWL)

From the excerpts given, it can be concluded that *PROPER*, from the government’s perspective is an instrument to encourage and establish companies’ compliance and awareness to environmental management regulation. From the industry’s perspective, *PROPER* is a path to reach an integration between environmental interest in sustainability and company’s interest in making profit.

How is its (company) ability to decrease emission, is there one of them who cannot decrease the emission, why do they cannot decrease, is it because they do not understand of how to decreasing the emission. We, basically, intend to train and guide industry, and later will undertake verification into the field.

(Staff of Ministry of Industry)

Based on the above results, it can be understood that the EIA is an instrument of the government to increase industry obedience in fulfilling the criteria for good environmental governance while PROPER is a program of the government to encourage and build awareness (beyond compliant) and industry innovation in realizing good industrial wastes governance. Nevertheless, for industries, these two instruments were not adequate enough to establish a systemic understanding. Thus, these instruments were unable to create “green competitiveness” which can integrate company interest in making profit as well as conservation of the environment. Due to this, in 2011, the government released the Green Industry Award through the Ministry of Industry via regulation No.05/M-IND/PER/1/2011. The purpose is as follows:

“Green industry” (GI) is one of the objectives of the national Industrialization, as defined in Article 3 of Law No. 3 of 2014 on Industry. To encourage the establishment of a green industry, the Ministry of Industry present the “Green Industry” to companies who have contributed to the country's economy, benefiting the community and participate in preserving the function of the environment through the utilization of resources and efficient implementation of production processes that are environmentally friendly. The award is intended to motivate companies to improve their industrial efforts towards “green industry”

(Guidance Book of Green Industry Award, 2015, p. i)

To optimize its support to the implementation of the GI program, the government revised the Ministry of Industry's regulation of No.05/M-IND/PER/1/2011 to become the Ministry of Industry's regulation No.18/M-IND/PER/3/. Completion of this regulation is a tactical step selected by the government as an effort to improve companies' understanding and implementation of efficient production process that can conserve the environmental resources. This efficiency is emphasized as follows:

“Green Industry” is the industry in the production process prioritizes the efficiency and effectiveness of resource use in a sustainable manner, so as can harmonize industrial development and environmental preservation, and also benefit society. In other words, “Green Industry” is an approach oriented towards improving efficiency through the act of sparing the use of materials, water and energy; use of alternative energy; use of material that safe for humans and the environment; and the use of low-carbon technologies with the goal of improving productivity and waste minimization approach that emphasizes the business in order to provide increased economic efficiency and environmental.

(Guidance Book of Green Industry Award, 2015, p. 1)

Not only does the GI program serve as a government effort to encourage obedience and awareness of industries regarding waste management, the GI program is also a reflection of the Indonesian government's commitment in reducing global warming as mentioned above, 26% in 2020 and 29% in 2030. Thus, the GI program is one out of many of the government's strategic steps to realize emission reduction. This is further explained as:

Development of GI is also an effort to support Government's commitment in reducing greenhouse gas emissions, as stated by the President at a meeting on climate change in Copenhagen in 2009, that Indonesia is determined to reduce greenhouse gas emissions by 26% in 2020 and is targeted to be achieved by 2019. This commitment requires efforts and thorough actions including the industrial sector which is one contributor of carbon emissions

(Guidance Book of Green Industry Award, 2015, p. 2)

The existence of the GI program was responded well by BOWL which in turn, used the *Waste Heat Recovery Power Generation* (WHRPG) as an energy saving technology that utilizes waste heat from engine that is then converted into electrical energy for industry need. This is supported as:

Utilizing wasted energy, heat energy from kiln. We build here WHRPG technology, the installation was on the fifth Plant of our company. The technology was the cooperation between BOWL and Japan...and for Southeast Asia Region, we are the first cement company implemented the technology

(Head of Environmental Department of BOWL)

The statement provided suggests that the GI Program has a positive impact on industry resource-saving. The positive impact came in the form of an availability of an alternative electrical energy as a result of waste heat utilization that is transformed by the WHRPG technology. Consequently, the industry can save the electrical energy generated by coal combustion thereby, leading to industry efficiency activity in term of energy cost and reducing carbon emission from coal burning. In other words, industry has gained two advantages at the same time.

4. Discussion

The Indonesian government has stated that the EIA, *PROPER* and GI industry are instruments that can enhance the protection of the environment more efficiently. They not only build obedience, raise awareness, create innovation and efficiency, they also help to maintain and preserve the going concerns of industry and environment sustainability. At the same time, it appears that industries also interpret the EIA, *PROPER* and GI industry as a new paradigm in carrying out their businesses. This new paradigm has changed the business orientation from conventional industrial business towards one where industries care about environment sustainability as well as make profits. Such change was noted in BOWL. The existence of the WHRPG technology is evidence of this change. Financially, investment in this technology is high and it does not seem to give much benefits to BOWL. Nonetheless, BOWL considers these regulations as an important thing to do as it will bring back larger benefits to BOWL both in cost-saving for electrical energy purchase and in the reduction of carbon emission from coal-based energy usage. In other words, BOWL gets two benefits from the implementation: economic benefit and ecology benefit. Therefore, carrying out a business with environmental awareness will prosper BOWL in the long run.

The orientation of industries in Indonesia should be geared towards considering environmental sustainability because in implementing the orientation, the value of ethics and morals to the environment is elevated. In the theory of environmental ethics, this business point of view is in line with ecocentrism which states that human beings cannot live without nature thus, human beings must maintain and preserve the nature for survival. Industries which understand this concept and choose to prioritize the creation of profits through the conservation of the natural environment is a systemic perspective or “systems thinking”. This means that BOWL and the environment are interconnected. Therefore, to maintain the business continuity and sustainability of the nature, the industry must carry out the production process which strives to achieve a balance of industry interests and nature conservation interests. Therefore, it is clear that the EIA, the *PROPER* program and the GI program educate industries to use systemic thinking in running business processes. By doing so, it can be seen that the EIA, *PROPER* program and GI program help to explain that the non-economic information is important in creating good environmental governance, as in the case of BOWL.

Based on the explanation above, the model for carbon disclosure proposed by this paper is a carbon disclosure that uses the ecocentrism point of view, systemic thinking and an attitude that is oriented on achieving the balance of industry going concern and environment sustainability. Thus, on the one hand it will

give an opportunity to industries to run their business while on the other hand, it also preserves environment by decreasing carbon emission. The model of carbon disclosure proposed is as follows.

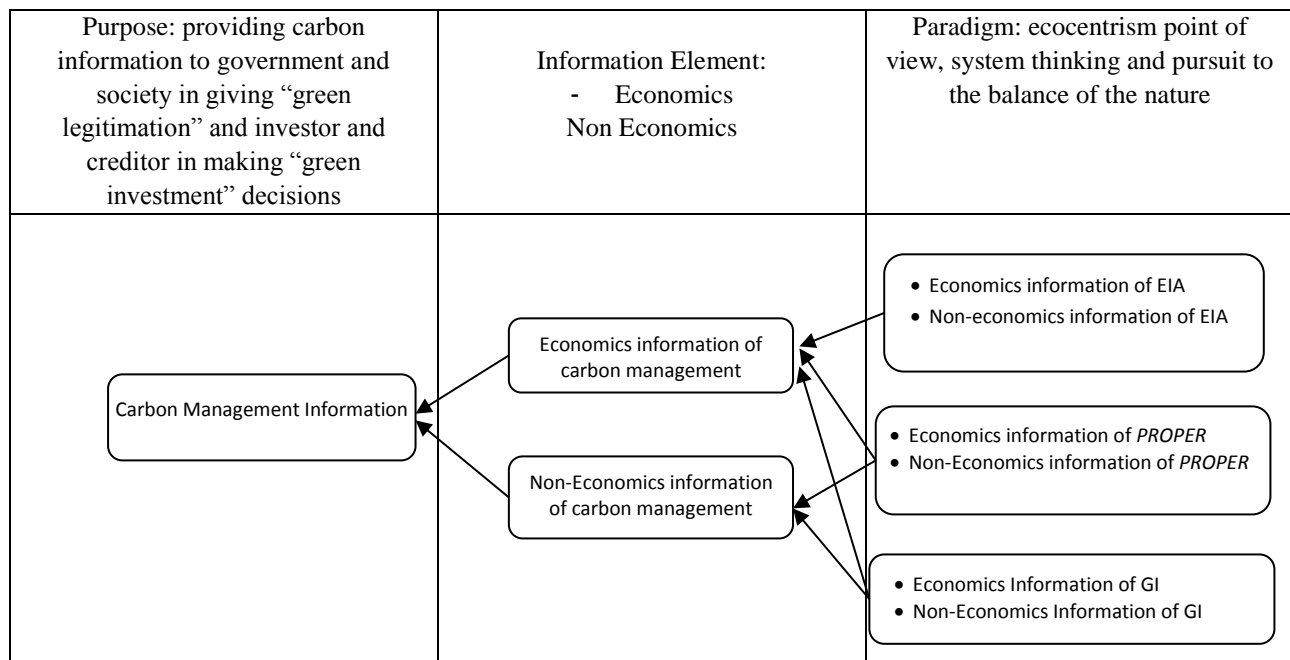


Figure 1. Carbon Disclosure Proposed Model

5. Conclusion

As Indonesia's commitment in contributing to the reduction of global warming, the government is attempting to reorganize the industry, which is a major sector producing carbon emissions, by increasing industry awareness of the environmental impacts generated. Implementation of this commitment is supported by three environmental assessment instruments prepared by the government namely the EIA, *PROPER* program and GI program. Each instrument has a legal basis governing the procedures for execution and implementation techniques, so that the legal basis can serve as a guide for industries in implementing environmental impact control. To support this national commitment, the central government allows each province to control and manage emissions generated by industries operating in their respective areas by issuing governor regulation pertaining to environmental protection. For some industries, this regulation is used as a basis for preparing the EIA reports. The EIA instrument is carried out by the command and control approach where the company is required to perform environmental impact control in accordance with the agreed contract between government and industry. The *PROPER* instrument approach is implemented through incentives and disincentives in the form of recognition to the industry which has implemented environmental impact controls through innovative technologies which are aimed at protecting the environment. Innovative ways in controlling this environment impact were excavated from the company's best practice or bright spot approach. Bright spot approach reveals the best efforts of the industry in reducing environmental damage and maintaining the natural environment. Furthermore, the GI instrument is executed by focusing on efforts to encourage companies in using natural resources efficiently. The idea of efficiency offered by the GI program is the reduction of raw (fresh) materials used and the reduction of fuel using non-renewable resources such as fossil fuels, without reducing the production capacity of the industry. In other words, industries are stimulated into utilizing alternative materials and alternative fuels in their production process. The efficiency aims to improve industrial competitiveness in increasing stakeholders' sensitivity to environmental issues in the global market.

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