

DISCLOSURE OF ENVIRONMENTAL INFORMATION FOR THE EXAMPLE OF BULGARIAN THERMAL POWER PLANTS

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Abstract: Growing pressure on businesses to disclose environmental information also implies an increase in the volume of such disclosures. This article is an attempt to present the guidelines and to assess the levels of environmental information disclosure in Bulgaria.

Companies, which were identified as the most responsible for air pollution, are thermal power plants. We have studied only these, which produce electricity. A checklist, containing 17 environmental performance assessment criteria, was developed and was completed based on the information, disclosed in the companies' annual financial statements, their activity reports and their websites. Based on a comparative analysis of the quantitative and qualitative information, disclosed by examined companies, we discovered that most companies disclose quantity environmental information, largely neglecting qualitative information. Taking into account the character of their activity, they should disclose more environmental information, especially qualitative information.

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Introduction

The purpose of this article is to research the existence of ecological disclosures in Bulgarian thermal power plants activity. The author has developed a system of 17 criteria to assess the level of environmental disclosures. The article is based on a 5-year period study, which as a result leads to relevant findings and conclusions.

Disclosure of environmental information for the example of Bulgarian thermal power plants

Since the late 1970s, many studies and publications have been made on the scope of environmental disclosures. They are a result of the growing public response to the disturbing impact of industrial activities on nature.

As a result of the research, it can be concluded that these publications can be divided into four main types:

1. Empirical studies of disclosures of climate change issues - Prado-Lorenzo J., Rodriguez-Dominguez, Gallego-Alvarez & Garcia-Sanchez (2009); Pellegrino & Lodhia (2012); Freedman & Jaggi (2009); Solomon, Solomon, Norton, & Joseph (2011) and more authors aim to analyse individual factors underlying the disclosure of information on issues, related to emissions of greenhouse gases and their impact on the global climate, comparison between environmental disclosures in different countries and regions, and others. Both annual financial statements and company websites, social and environmental reports, sustainable development reports were studied, and Freedman even used surveys on the companies themselves for research purposes;
2. Theoretical and regulatory studies, as studies of Andrew & Cortese (2011); Bowen & Whittneben (2010); Olson (2010); Milne & Grubnic (2011); Bebbington & Larrinaga-Gonzalez (2008) - they are all orientated towards the history of global warming and the way that it reflects in the creation of legal and fiscal regimes, which affect both end-users of goods and services and producers. Emissions trading schemes are being explored, the lack of specific regulatory requirements about assessment and disclosure of information for emission rights and how the methodologies for reporting emission rights reflect on the information that is revealed about them;
3. Practice-oriented studies like these of Lovell, de Aguiar, Bebbington, & Larrinaga-Gonzalez (2010); and KPMG (2008; 2012), which gives opinions on environmental accounting and carbon accounting in particular - surveys of large and well-established groups such as audit firms or accounting organizations that provide practical guidance on accounting treatment and reporting environmental costs such as emission allowances, nature recovery costs and others. The purpose of the surveys is to summarize the existing practices on the matter and to facilitate both accountants in their work on reporting and the disclosure of emissions of harmful gases.

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These surveys are a kind of guidance for easier understanding financial statements of companies.

4. Literature reviews - Stechemesser & Guenther (2012) summarize a large volume of literature on environmental accounting and in particular carbon dioxide emissions. They accentuate on drawing up definitions by comparing and deducting existing data and classifying them in different classifications. The reviews are orientated to researchers, legislation and practice to improve the understanding of carbon emissions and to "clarify" the boundaries of problems in reporting in businesses.

Data and methodology

Current condition of greenhouse gas emissions in Bulgaria has been studied based on the Third National Action Plan on Climate Change for the period 2013-2020, published by the Ministry of the Environment and Water (2012). It has been established that the energy sector is responsible for the biggest part of greenhouse gases in total sum of emissions, which determines their prime importance for the implementation of national reduction targets.

The Bulgarian Ministry of energy (2017) announced that according to Directive 2003/87/EC of the European Parliament and of the Council for 2016 year 6 528 467 free allowances had been allocated for 23 companies in the Republic of Bulgaria by The European Commission. The structure of greenhouse gas emissions by sectoral resources shows that thermal and electricity production accounts for over 90% of the greenhouse gas emissions.

As a result, this study focuses on the information from condensing thermal power plants that are the main greenhouse gas emitters in Bulgaria. Thus, six companies are included in the final sample. Only "TPP Maritsa East 2" EAD (1,604 MW) is a state property, owned by "Bulgarian Energy Holding" EAD. The others - TPP "Contour Global Maritsa East 3" AD (908 MW), "AES-ZS MARITZA EAST I" EOOD (686 MW), "TPP Maritsa 3" AD (100 MW), "Toplofikacia Ruse" EAD (110 MW) and TPP "Bobov dol" EAD (380 MW) are wholly or predominantly private property. The author has made reference to the European Commission's website (2018), which shows that 83% (5 435 806) of the allowances allocated to Bulgaria for 2016 are to the benefit of these plants.

The empirical study was conducted using the following methodology:

- Identifying companies that are the most responsible for the greenhouse gases emitted;
- Based on existing legal framework in the Republic of Bulgaria, the author has drawn 17 criteria to examine the environmental information, disclosed by the companies. A checklist has been made up, divided into three areas, as follows:
 - The existence of environmental programs and compliance with normative requirements;
 - Used capacity and consumed resources;
 - The expenditure incurred for prevention and restoration of the environment.
- The author has made an analysis of the annual financial statements (AFS) of the companies, their activity reports (AAR) and the information, which have been published on their web - sites.

All this allows the author to analyse both the quantitative and qualitative ecological disclosures and to compare the level of disclosure of environmental information between the surveyed companies.

Results and Discussion

The next table is an attempt of illustrating and summarizing the results of the conducted study. Each of researched companies is numbered as follows:

1. TPP "AES-ZS MARITZA EAST I" EOOD;
2. TPP "Maritsa East 2" EAD;
3. TPP "Contour Global Maritsa East 3" AD;
4. TPP "Maritsa 3" AD;
5. TPP "Bobov dol" EAD;
6. "Toplofikacia Ruse" EAD.

Table 1: Comparison of the level of disclosure of environmental information in the surveyed enterprises

availability of disclosure in	web site	2016		2015		2014		2013		2012	
		AAR	AFS	AAR	AFS	AAR	AFS	AAR	AFS	AAR	AFS
Is the activity in compliance with the legal requirements?	1, 2, 3, 6	1,2,5,6	5	1,2,5,6	4,5	2, 5, 6	4, 5	2, 5	4, 5	2, 5	4, 5
measuring and monitoring greenhouse gases emissions	1, 2, 5, 6										
environmental and certification programs	2, 5	1,2,3,6	4	2,3,6		2, 3, 6		2, 3, 6		2, 3, 6	
social or environmental policies	1, 2, 3	2,3,6		2,3,6	1	2, 3, 6	1	2, 3, 6	1	2, 3, 6	1
installed power capacity	1, 2, 3, 5, 6	1,2,3,6	1,5,6	1,2,3	1,5,6	1,2,3,5	1,5,6	1,2,3,5	1,5,6	1,2,3,5	1,5,6
used power	2	1,2,3		2,3		2,3,5		2,3,5		2,3,5	1
energy consumption			1,2,3,4,5		1,2,3,4,5		1,2,3,4,5		1,2,3,4,5		1,2,3,4,5
fuels for production process	3, 5, 6	1,2	1,2,3,5	2,6	1,2,3,4,5	2,6	1,2,3,4,5	2	1,2,3,4,5	2	1,2,3,4,5
water consumption			5		2,5		5		5		2,5
harmful gasses emissions			6		6		3,5,6		6	5	3,6
disposal industrial waste	2,5,6	1	1,3		1,3		1,3		1,2,3		1,2,3
environmental protection expenditures	1, 2, 6	6		2,3		2,5,6	2,3,4,5	2	2,3,4,5	2,5,6	2,4,5
provisions for decommissioning and rehabilitations			2,3		2,3		2,3		2,3	2	2,3
paid allowances		1,2	1,2,3,5,6	2,6	1,2,3,4,5,6	2	1,2,3,4,5,6	2	1,2,4,5,6	5	2,5,6
environmental fines and penalties		1	2,5		4,5		4,5		2,4,5		2,4,5
third party compensation											
other environmental indicators	1, 3, 6	6		2,6		2					

Source: Author

At whole, it is noticeable that none of the studied companies discloses information on the third-party compensation paid criterion. After research into the companies, it was found that for the examined period 2012 – 2016 there were no such cases. Nevertheless, the author maintains the opinion that in the case of environmental damages to outsiders, if they are compensated for the damages suffered, external consumers should be informed which implies in the disclosures to have a specific text about the existence or absence of such.

Regarding the consumption of energy for production process, water and fuels, information is mainly disclosed in the appendixes to annual financial statements of the companies and most often through the money indicator. It is recommendable to indicate the used quantities in the appropriate units of measurement in order to be able to compare the resources used not only in terms of value, but also in terms of quantity. This would create preconditions for neutralizing the impact of price changes and the opportunity for external consumers to get an idea on the production capacity of individual enterprises.

Only two companies disclose information about provisions for ecological liabilities - TPP "Maritsa East 2" EAD and TPP "Contour Global Maritsa East 3" AD. They have made provisions for their obligation to buy the excess over allocated and purchased greenhouse gas emissions for the year and provisions for their obligation to recover technological and biological adjustments to the terrain harmed by their activities. It is interesting that enterprises prefer a policy of accruing expenses, but not the observance of the conservatism principle and their earlier anticipation.

Each of companies discloses information about environmental protection expenditures during the examined period of 2012 – 2016. They are mainly investments in fixed assets, which reduce the pollution caused by thermal power plants, for example, flue gas desulphurization installations, landfills for waste reclamation, water purification plants, etc. Environmental protection costs are one of the criteria on which the largest volume of information is revealed, both in annual financial statements and in annual activity reports of the enterprises. On the other hand, data on the amount of greenhouse gas emission allowances paid by companies are mainly disclosed in the annual financial statements. It is recommendable for companies to disclose both quantitative and qualitative information for allocated and bought allowances in their annual activity reports, so far as emission allowances are a leading indicator in the thermal power plants industry. Any third parties as shareholders, employees or society, should have more detailed information about the damages, which companies have caused to the environment by operating.

Four of the companies report costs of environmental fines and penalties presented in the appendix to their annual financial statements, with TPP "Bobov dol" EAD reporting expenditure in each year of the surveyed period. It would be good for companies to explain these fines to stakeholders and to disclose their policies to overcome the identified weaknesses and violations instead of hiding this information in the notes of their annual financial statements. On the one hand, this would show the company's positive attitude to improve its environmental policy and to comply with regulatory requirements and, on the other hand, would have a positive impact on the image of thermal power plants.

Conclusion

In summary, companies basically disclose quantitative information in their annual financial statements and partly in their annual activity reports and non-financial information on their web sites. In the latter, the data is mainly about the existence of environmental policy, programs for environmental preservation and certification of companies (like ISO 14 001), as well as other environmental performance indicators such as awards, sustainability reports and environmental conservation and prevention activities.

As a major drawback, it could be noted that the volume and quality of the disclosed information is extremely limited, and the issue is boiled down to the requirements of the applicable accounting standards and regulations in law. The most detailed and consistent practices in disclosure of environmental protection activities information are in TPP "Maritsa East 2" EAD and TPP "Contour Global Maritsa East 3" AD. According to the author the reason is that the first company is state property and has implemented greater transparency in its policy, and the second is wholly foreign ownership, and the "western practices" for detailed disclosure and stakeholders oriented approach exert more beneficial influence on the disclosed information.

It is important to note that companies should pay more attention to different aspects of disclosing environmental information related to their activities. In addition, thermal power plants are one of the

major environmental polluters and a leading greenhouse gas issuer in Bulgaria. Air pollution is an universal problem affecting the interests of the whole world, and a problem that goes beyond borders of individual countries. Therefore, there is a need for transparency in the policies of companies on environmental issues, clear principles of action on environmental management and awareness for employees, shareholders and human society.

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