

The Role of Forensic Accounting in Detecting Fraud in Energy Efficiency Reports

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Opinion

Reports on energy efficiency play a crucial role in assessing energy consumption and identifying opportunities for energy savings across various sectors. These reports provide valuable information regarding the energy performance of organizations, industrial plants, buildings and other entities, allowing decision-makers to identify areas for improvement in terms of energy efficiency. However, it is essential to acknowledge the potential for fraudulent practices in the context of reporting on energy efficiency. Since these reports are often utilized to obtain financial incentives, subsidies or certifications, there exists a motivation for manipulating data to achieve specific goals or financial benefits. Fraudsters may employ various tactics, such as presenting fabricated data, exaggerating achieved savings or utilizing other forms of manipulation to create the appearance of greater energy efficiency than what actually exists.

The significance of this issue lies in the fact that incorrect or falsified information about energy efficiency can result in misguided decisions and potentially negative consequences for the environment, economy and society as a whole. Fraudulent energy reporting can erode public trust, lead to an unfair distribution of financial resources and hinder the opportunities to achieve genuine energy savings. This is why forensic accounting plays a critical role in detecting fraud in energy efficiency reports. Forensic accountants utilize specialized techniques and tools to investigate and identify potential signs of fraud within both financial and non-financial data. They meticulously analyze data, conduct audits, investigate transactions, and trace irregularities or inconsistencies, thus ensuring the integrity and accuracy of energy efficiency reporting. GHG (Greenhouse Gas) standards and accounting standards play an important role in energy reporting effectiveness, especially in context monitoring and reduction show greenhouse gases. These standards provide guidelines and framework for collection, measurement, reporting and verification data on emissions greenhouse gas and energy consumption.

GHG standards are established to make it possible consistent and standardized measurement and reporting show greenhouse gases. The most well-known GHG standard is the International Standard ISO [1]. This standard provides guidelines for organizations to identify, quantify, monitor and report emissions of greenhouse gases. Also includes guidelines for verification and certification reports on emissions greenhouse gases. GHG standards also can include national laws and regulations that require specific organizations to collect, report and verify emissions data on greenhouse gases. Examples of such standards include European system trading emissions (EU ETS) and American system reporting on emissions greenhouse gases (Greenhouse Gas Reporting Program). In parallel, accounting standards provide preparation guidelines for financial reports organization. When it comes to reporting on energy efficiency, certain accounting standards have special guidelines or display requests energy data.

The Global Reporting Initiative (GRI) [2] is an organization which develops sustainability reporting guidelines. Their guidelines, known as GRI [2] guidelines, provide framework for collection, preparation and publication sustainability information organization. These guidelines include different aspects of sustainability, including energy efficiency. GRI [2] guidelines require organizations to report on relevant energy data, as what are consumption energy, emissions greenhouse gases and measures to increase energetic efficiency. Guidelines also provide recommendations for quantification and reporting thereof data, to ensure consistency and transparency reporting on energy efficiency. It is important to note that there are others sustainability reporting guidelines which i can include information about energy efficiency. Examples of such guidelines include the Integrated Reporting Framework, Sustainability Accounting Standards Board (SASB) [3] guidelines, Carbon Disclosure Project (CDP) [4] questionnaires and many others.

These sustainability reporting guidelines and frameworks provide organizations structured access collection and reporting on energy efficiency, enabling bearers' decision to better understand and evaluate performance organization in that area.

- a) Global Reporting Initiative (GRI) [2].
- b) International Financial Reporting Standards (IFRS)-International Accounting Standards Board (IASB) [5].
- c) ISO 14064-International Standard for Greenhouse Reporting gases (ISO): <https://www.iso.org/standard/38377.html> [1].
- d) European Union Emission Trading Scheme (EU ETS) [6].
- e) Sustainability Accounting Standards Board (SASB)-Guidelines sustainability developed by the SASB [3].
- f) Carbon Disclosure Project (CDP) [4].
- g) It is important to emphasize that, although are vulnerabilities and fraud possible in energy reporting efficiency, the majority of organizations and professionals who deal with this area act with integrity and deliver reliable information. However, awareness of the possible vulnerabilities and incentives for fraud is important to ensure transparency and credibility in reports on energy efficiency.

Although specific source information about concrete cases or examples fraud in energy reports efficiency are not openly accessible, there are several general examples that were reported in the media:

- A. Volkswagen Diesel-gate: In the known case known as "Diesel-gate", Volkswagen was involved in the fraud which included manipulation emissions harmful gases the code of their own diesel vehicles. It showed how can i manipulate the results tests show and lead to false showing energetic efficiency vehicles.
- B. Source: The Guardian-"Volkswagen emissions scandal: what you need to know" (<https://www.theguardian.com/business/>

[ng-interactive/2015/sep/23/volkswagen-emissions-scandal-explained-diesel-cars](https://www.theguardian.com/business/2015/sep/23/volkswagen-emissions-scandal-explained-diesel-cars))

- C. Fake certification building: In some cases, buildings receive fake energy certificates efficiency or show fake improvement energy performance. It can include manipulation consumption data energy or neglect important aspects of buildings that have an effect on energy efficiency.
- D. Source: The New York Times-"Energy Ratings of Buildings Are Suspect, US Says" (<https://www.nytimes.com/2012/02/06/science/earth/energy-ratings-of-buildings-draw-scrutiny.html>)
- E. It is important to point out that these cases do not apply to everything organizations that deal with reporting on energy efficiency and that they are isolated incidents. However, these examples illustrate potential vulnerabilities and challenges to deal with to meet reporting on energy efficiency and importance correct checks and checks information to ensure reliability and integrity of such reports.
- F. Forensic accounting therefore plays an important role in industries outside traditional financial audit because it is applied for detection, research, and prevention fraud, as well as for providing professional support in cases conflicts and disputes. In context energetic efficiency, forensic accounting can play key role in providing reliable information, identification irregularities and fraud, with an aim of promoting transparency.

Connection between GHG (Greenhouse Gas) standard and forensic accounting is important because GHG standards provide emission reporting guidelines greenhouse gases. Forensic accounting can be applied on reports to ensure credibility and reliability data on emissions, identified possible irregularities provided case support doubts on fraud related to energy reporting efficiency.

Application forensic accounting in energy reports efficiency includes the following aspects:

- a) Forensic accountants analyze reports on energy efficiency to identify irregularities or inaccuracies which can indicate there is a possible fraud. It includes checking data, compliance with regulations and standards, as well as analysis trends and variations.
- b) In case doubts on fraud or irregularities, forensic accountants spend deep research to identify causes, look for evidence and collect relevant information. It can include interviewing witnesses, analysis documents and reviewing digital traces.
- c) Forensic accountants apply analytical techniques and methods for analysis financial data to find irregularities or inaccuracies. It can include comparison reports on energy efficiency with another relevant financial documents and identification deviations.

- d) Forensic accounting can provide support in establishment and monitoring internal control in processes reported.

In context energy reports on emissions greenhouse gases (GHG reports), it is important to note that many of the above activities forensic accounting are still in their infancy. Discovery, research and verification validity GHG reports represent challenging tasks for forensics experts, especially bearing in mind fast development and complexity industry energetic efficiency. It is crucial to understand that we face challenges that concern validity and reliability of delivered data in GHG reports. Since this industry quickly develops standards and guidelines for reporting often lag the new technical and technological innovations. It creates complexity in collection and verification of data, considering determining their relevance in context energetic efficiency. Advances in forensics accounting will be of key significance in dealing with these challenges. Forensic experts will have to develop new one's techniques and methodologies which will enable to effectively investigate and confirm validity of the GHG report, doc simultaneously they consider complex technical aspects and innovations in energy efficiency. This area research opens a wide spectrum of opportunities for academic and practitioners research and further advances in forensics accounting.

A combination of expertise from areas forensic accounting and energy efficiency enables creation of new one's tools, methods and guidelines which will assist in detection and suppression of fraud to ensure validity of GHG reports in the future [7-9].

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