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Implementation of type III environmental declaration based on ISO 14025: a case study on an ideal and reality of the PROPER program implementation in Indonesia

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Abstract. Environmental management program performance ratings for companies (PROPER) is a public disclosure program for environmental compliance by the Indonesian Ministry of Environment and Forestry (KLHK). PROPER is a type of government policy to enhance the business' environmental management performance by the law's requirements. Furthermore, PROPER is an example of how environmental management has become more open and democratic in Indonesia. The application of this instrument is an effort by the KLHK to implement some of the virtues of good governance — transparency, equity, responsibility, and community participation — in environmental management. In 2021, the PROPER Program expanded its activities' scope by including elements of LCA implementation in the program report. This paper aims to provide recommendations for the PROPER program implementation concerning applying the ISO 14025 standard. The method used in this study are literature studies of related regulations and mapping the existing conditions against the conformity of the ISO 14025 standard. The study shows that the current PROPER program has met several requirements of the ISO 14025, comprising life cycle assessments and environmental product declarations. However, the existing program should have determined that PCR is one of the elements required to assess environmental management performance ratings.

1. Introduction

Indonesia, a nation with a population of more than 250 million, is one with high carbon emissions [1]. The consumption of fossil fuels inevitably supports many economic activities. There is a propensity for a nation's economic expansion to be positively correlated with the level of its carbon emissions [2]. All nations must take part in decreasing carbon emissions using all available methods. By 2030, Indonesia wants to reduce its carbon emissions by 29% [3]. On the other hand, the main reason for companies to implement an environmental management system is the obligation due to the regulations related to the environment, as well as reducing environmental impacts, which are considered Corporate Social Responsibility from the company [4]. Most businesses in developing nations strongly focus on financial benefits rather than the environment [4].

To improve companies' environmental management orientation, all industrial businesses in Indonesia must apply for the Company Performance Rating Program in Environmental Management by the Indonesian Ministry of Environment and Forestry (KLHK), namely the PROPER program. PROPER is a program to reduce companies' negative environmental and societal impacts [5]. To implement a continuous improvement program for environmental management, the PROPER program was launched in 1997 [6]. It accommodates an acknowledgment rating of corporate environmental performance. The



PROPER encourages businesses to manage their environment in an inventive way. By encouraging pollution reduction through the introduction of clean technology concepts, promoting an environmental management system, and conducting business ethically through the implementation of community development, this program aims to serve as a regulatory mechanism that can promote and enforce compliance with pollution control standards [6].

The Minister of Environment and Forestry's Regulation No. 1/2021 contained the most recent PROPER [7]. The performance evaluation method for this PROPER is color-coded based on performance rating. Five ratings are available: gold, green, blue, red, and black [8]. Black is rated 1, and gold is rated 5, with 5 being the highest. Gold represents great performance, Green represents very good performance, Blue represents good performance, Red represents non-compliance, and Black represents environmental harm. The results of these ratings are then made public during a formal news conference and posted online [9]. The blue grade represents a company's adherence to environmental regulations, whereas the green and gold ratings represent above-and-beyond compliance and consistent environmental management successes, respectively [10]. In 2021, the results of the PROPER program rating assessment for participants who passed were 2554 companies; there were no companies with a black rating, 621 companies with a red rating, 1700 companies with a blue rating, 186 companies with a green rating, and 47 companies with a gold rating [11]. Companies that obtain PROPER consist of various sectors (Table 1). In 2022, the PROPER program was attended by 3162 companies in Indonesia [12].

Table 1. PROPER rating assessment for industrial sectors in 2020-2021 [11]

| No | Industrial sector | 2020-2021 PROPER Rating | | | | | | | |
|-------|--------------------------------|-------------------------|------|-------|------|------|------|------|------|
| | | Gold | | Green | | Blue | | Red | |
| | | unit | % | unit | % | unit | % | unit | % |
| 1 | Petrochemical | 2 | 4,3 | 16 | 8,6 | 16 | 0,9 | 6 | 1,0 |
| 2 | Energy | 32 | 68,1 | 107 | 57,5 | 225 | 13,2 | 15 | 2,4 |
| 3 | Consumer goods | 2 | 4,3 | 13 | 7,0 | 382 | 22,5 | 227 | 36,6 |
| 4 | Automotive/Manufacturing | 1 | 2,1 | 3 | 1,6 | 81 | 4,8 | 21 | 3,4 |
| 5 | Mining/metallurgy | 6 | 12,8 | 22 | 11,8 | 152 | 8,9 | 71 | 11,4 |
| 6 | Trading & service | 0 | 0,0 | 2 | 1,1 | 26 | 1,5 | 11 | 1,8 |
| 7 | Chemical & pharmacy industries | 1 | 2,1 | 2 | 1,1 | 107 | 6,3 | 34 | 5,5 |
| 8 | Plantation & Farming | 2 | 4,3 | 18 | 9,6 | 541 | 31,8 | 82 | 13,2 |
| 9 | Building & materials | 0 | 0,0 | 3 | 1,6 | 52 | 3,1 | 95 | 15,3 |
| 10 | Processing industries | 0 | 0,0 | 0 | 0,0 | 53 | 3,1 | 39 | 6,3 |
| 11 | Electronics & home appliances | 0 | 0,0 | 0 | 0,0 | 44 | 2,6 | 6 | 1,0 |
| 12 | Waste management | 0 | 0,0 | 0 | 0,0 | 11 | 0,6 | 3 | 0,5 |
| 13 | Plastics products | 1 | 2,1 | 0 | 0,0 | 10 | 0,6 | 11 | 1,8 |
| Total | | 47 | | 186 | | 1700 | | 621 | |

International environmental management standards have been published by the International Organization for Standardization (ISO) and can be used as a guide while carrying out eco-labeling operations. ISO standards related to eco-label are divided into types: type I, II, and III [13]. Three types of eco-labels are used in the ISO 14020 standards as a basis for classification. The three standard types have some differences. Type I under ISO 14024:2018 is a certification carried out by an independent third party based on specific criteria or requirements; type II refers to ISO 14021:2016, is a self-declaration from the manufacturer based on environmental impact analysis of the product, and Type III according to ISO 14025 is an environmental product declaration carried out by the manufacturer based on product category rules using the life cycle assessment (LCA) method. [14].

Based on both PROPER and ISO standards explained above, to improve and enhance The Minister of Environment and Forestry of The Republic of Indonesia Regulation No. 1/2021 concerning The Company Performance Rating, this paper has been written by conducting a thorough analysis of this regulation using the principles and procedures of the current ISO 14025. Additionally, the Type III

environmental declarations, as defined by ISO 14025:2006, are the topic of this work. It must constantly be founded on data obtained from an assessment of the product's life cycle by ISO 14040 standard. An environmental product declaration (EPD) is another name for it [15].

2. Methods

This study was conducted by using qualitative analysis and the descriptive method. First, we looked at the standards of ISO 14025:2006 for type III environmental declaration implementation activities. Then we also studied the phase and activities of the PROPER program according to the Company Performance Rating Program in Environmental Management Regulation of The Minister of Environment and Forestry of The Republic of Indonesia No. 1/2021. At the final stage, this study compared the activities required by ISO 14025 and the PROPER program implementation to analyze the gap between them. A table was made to make it easier to compare the actions needed by the ISO 14025 standard and the activities carried out in the present PROPER program. The use of tables is a way to facilitate mapping, which activities in ISO 14025 have not been carried out in the PROPER program. This study provides recommendations for activities that have not been carried out in the PROPER program to refine the PROPER program in the future so that the PROPER program complies with the ISO 14025 standard.

3. Result and Discussion

3.1 *Process and requirements for implementing ISO 14025*

In implementing an environmental declaration of type III by ISO 14025 [16], several processes and requirements must be met in its application. The following table summarises these processes, activities, and requirements.

3.2 *PROPER program process*

The PROPER rating process comprises both compliance aspects and beyond compliance aspects. The compliance aspect of companies involves evaluating whether companies already comply with environmental regulations. Beyond compliance is evaluated according to the company's fulfillment of additional criteria, including their environmental management system, energy and resources efficiency, emission reduction, biodiversity protection, community development, internalization of environmental and social cost factors into business, life cycle assessment, and contributing to the sustainable development goals [17]. By the Republic of Indonesia's Minister of Environment and Forestry's Regulation No. 1/2021 [18], to get a Green and Gold rating, a company must meet the criteria categorized in the 'beyond compliance' criteria. These requirements include the implementation of a life cycle assessment, environmental management systems for improving energy efficiency, reducing emissions, improving water efficiency, reducing wastewater pollutant load, reducing and utilizing B3 waste, reducing and utilizing non-B3 waste, protecting biodiversity, empowering local communities, disaster preparedness, and fostering social innovation. The objectives of a life cycle assessment (LCA) are to determine the sustainability of resource use and disposal in the environment and assess and put into practice any potential for environmental improvement. LCA thus provides the foundation for decision-making to enhance the company's environmental performance [19].

3.3 *Mapping between the PROPER program and ISO 14025 – type III environmental declaration*

The PROPER program that has been implemented at this time must be in harmony with international standards to guarantee its acceptance in the international community. The results showed several differences between the activities in the PROPER program and the ISO 14025 standard (Table 3). Some activities, especially conformity assessment, require a competent and independent third party. This is done to ensure the assessment's suitability, such as the principles used in the certification process [20].

Table 2. Content of ISO 14025 standard [16]

| Process | ISO 14025 standard | |
|--|--------------------|--|
| | Clause | Description |
| Program development | 6.1 | Program operators that operate Type III environmental declaration programs voluntarily follow general program guidelines. |
| General program instruction | 6.2 | Geographical area, industry sector, product or product group are examples of the program's scope. |
| | 6.3 | Responsibilities for the administration of Type III/program operator. |
| | 6.4 | There is a General Program Instruction Request/program operator. |
| | 6.5 | The operator must identify and contact interested parties through a transparent, open consultation procedure communicated to the participant or program operator. |
| | 8.3 | Rules for data confidentiality. |
| Product category rules (PCR) development | 6.5 | Describes the development of PCR, rules that describe methodological aspects, and general procedures for producing and verifying environment/operator Type III program. |
| | 6.7 | Procedure for the development of PCR / program operator. |
| | 8.3 | Requirements for product-specific data for competitive business requirements, rules for data confidentiality, and sensitive information covered by intellectual property rights. |
| PCR | 6.6 | Product category definitions are made utilizing a transparent procedure or program operator. |
| | 6.5 | Describes the development of PCR, rules that describe methodological aspects, and general procedures for producing and verifying environment/operator Type III program. |
| | 6.7 | The PCR development process and the program operator. |
| Draft Type III environmental declaration | 7.1 | Comparing the environmental qualities of items that satisfy comparable functional requirements is the goal of type III environmental statement. |
| | 7.2.1 | Format and parameters provided by the program operator, including the format and parameters identified in the PCR. |
| | 7.2.2 | Information modules, LCA, LCI, or other pertinent data. |
| | 7.2.3 | Information about the environment in general. |
| Independent verification | 8.1.4 | Independent verification of the declaration. |
| | 8.3 | Business information designated secret and given to an independent verification process must be kept private. |
| The 3rd party verification | 8.1.1 | The third-party must avoid creating a conflict of interest and is not involved in the LCA or the creation of the declaration. |
| Type III environmental declaration | 6.3 | The program operator must implement the type III environmental declaration program. |
| | 7.3 | The program manager must release the revised declaration. |

Table 3. Gap analysis between ISO 14025 and the PROPER program

| Process-based on ISO 14025 | Activities | PROPER program activities | Recommendations for program improvement |
|---|---|---|---|
| Program development | Program Establishment | Regulation regarding program implementation | No need improvement |
| General program instruction | Development of the program | Regulation regarding program implementation | No need improvement |
| Development of product category rules (PCR) | The PCR document development | None | Establishing a PCR development team consisting of stakeholders: industry associations, regulators, academics, and experts |
| | Define product category | None | |
| | Information gathering or production based on product category LCA | Submit LCA report for Green-rated companies | Review of LCA report by Research Center for LCA as an underlying LCA for PCR development |
| PCR | Development of the PCR document | None | PCR development by the development team based on the results of a review of the underlying LCA |
| | PCR review | None | Review of PCR document by Research Center for LCA |

| Process-based on ISO 14025 | Activities | PROPER program activities | Recommendations for program improvement |
|--|--|--|--|
| Draft Type III environmental declaration | Drafting of declaration | Submit the PROPER program report | No need improvement |
| | Independent verification | None | No need improvement |
| Verification by an independent party | LCA data verification | None | LCA data verification by Research Center for LCA |
| | Independent verification of the declaration | None | Verification of the declaration by the Research Center for LCA |
| | Third-party verification | None | Verification by Research Center for LCA |
| Type III environmental product declaration | Recording and publication of the declaration | Ministry of Environment and Forestry publication rating firm | Need an organization that can issue or provide a label |
| | Updating the declaration | Update database of rated companies by the Ministry of Environment and Forestry | No need improvement |

4. Conclusion

The number of participants PROPER program will increase significantly from 2021 to 2022. Assessment result in 2021 shows that almost 10 % of the participants in 2021 have been assessed as beyond the compliance category with a green and gold rating. Then, almost 70 % of the participants in 2021 were assessed as a compliance category with a blue rating. These numbers will go up by observing an increased number of PROPER participants in 2022. This situation illustrates an increase in the awareness and acceptance of PROPER participants, including the industries or manufacturers in Indonesia. Therefore, the PROPER program must be continuously improved so that the implementation of performance ratings in Environmental Management runs well. The current PROPER program has met several requirements of ISO 14025 standard, comprising life cycle assessments and environmental product declarations. However, the existing PROPER program has not yet determined that PCR is one of the elements required to assess environmental management performance ratings. Therefore, this paper recommends adding the PCR aspect as a new requirement, establishing a PCR development team consisting of stakeholders: industry associations, regulators, academics, and experts. Review and verification of LCA report by Research Center for LCA as an underlying LCA for PCR development. Based on that, the new PROPER program regulation will hopefully comply with the implementation of ISO 14025. If this can be realized, the PROPER program report can be equalized with the Environmental Product Declaration report defined in ISO 14025. The study results in this paper are expected to inspire further research to improve Indonesia's environmental management system continuously.

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