

Greenwashing Risks In Green Public Procurement: Regulatory Analysis, Conceptual Model, And Mitigation Strategies In Indonesia's E-Purchasing System

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ABSTRACT

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Green Public Procurement (GPP) is a strategic instrument for promoting sustainable development by integrating environmental considerations into public procurement. In Indonesia, the expansion of e-purchasing and sustainable procurement policies has increased the use of environmentally friendly products but also raised the risk of greenwashing, where suppliers make misleading or unverifiable environmental claims. This study analyzes greenwashing risks in green public procurement, particularly within the e-purchasing system, using a qualitative approach based on regulatory analysis and literature review. The findings show that greenwashing can occur throughout the procurement cycle, driven by information asymmetry, weak environmental verification, limited procurement competencies, and the absence of standardized life-cycle assessments. To mitigate these risks, this study proposes the Green Procurement Anti-Greenwashing Framework (GPAGF), which incorporates environmental verification, simplified life-cycle assessment, green scoring, and environmental auditing. The framework is expected to enhance transparency, accountability, and environmental integrity in Indonesia's public procurement system.



1. Introduction

Climate change, environmental degradation, and resource scarcity have encouraged governments worldwide to incorporate sustainability principles into public procurement practices. As one of the largest consumers within national economies, governments possess significant purchasing power capable of influencing markets toward environmentally sustainable products and services. Consequently, Green Public Procurement (GPP) has become an important policy instrument for achieving environmental objectives while ensuring efficient public expenditure.

Green Public Procurement refers to a procurement process whereby public authorities seek goods, services, and works with reduced environmental impacts throughout their life cycle compared to conventional alternatives. Rather than focusing solely on acquisition costs, GPP emphasizes life-cycle performance, resource efficiency, waste reduction, and carbon emission mitigation.

In Indonesia, sustainable procurement principles have gradually been integrated into public procurement policies through Presidential Regulation Number 16 of 2018 concerning Government Procurement of Goods and Services and its amendment through Presidential Regulation Number 12 of 2021. More recently, Presidential Regulation Number 46 of 2025 further strengthened the role of electronic procurement systems and accelerated the utilization of environmentally friendly products through electronic catalogs and e-purchasing mechanisms.

Despite these policy advancements, the implementation of green procurement faces substantial challenges. One of the most significant concerns is greenwashing, a practice in which suppliers communicate

misleading environmental claims that exaggerate the actual environmental performance of products or services. Greenwashing undermines procurement objectives by creating false perceptions of sustainability, leading to inefficient spending, environmental underperformance, and reduced public trust.

The risk of greenwashing is particularly relevant in electronic purchasing systems where procurement officials often rely on information displayed in electronic catalogs without conducting comprehensive environmental verification. As a result, government agencies may inadvertently procure products that appear environmentally friendly but fail to deliver genuine sustainability benefits.

Therefore, understanding and mitigating greenwashing risks have become critical components of effective green public procurement implementation. This study addresses the following research question; what forms of greenwashing risks emerge within green public procurement practices?; what factors contribute to the occurrence of greenwashing in government procurement?; how can greenwashing risks be mitigated within Indonesia's e-purchasing system?. The objectives of this study are to identify the forms of greenwashing risks in green public procurement, to analyze the factors contributing to greenwashing practices and to develop a conceptual framework for mitigating greenwashing risks in government procurement.

2. Method

This study employs a qualitative research design using a literature review and regulatory analysis approach. The research focuses on examining the relationship between sustainable procurement policies and greenwashing risks within government procurement systems.

Data sources include:

- Indonesian procurement regulations;
- Sustainable procurement guidelines;
- International literature on Green Public Procurement (GPP);
- Academic publications concerning environmental governance and greenwashing;
- Reports published by international organizations such as OECD, UNEP, and the European Commission.

The data were analyzed using content analysis techniques. Regulatory provisions related to sustainable procurement and environmental considerations were systematically reviewed and compared with established theories of information asymmetry, environmental governance, and greenwashing. The analysis aimed to identify regulatory gaps, implementation challenges, and opportunities for strengthening environmental accountability within procurement systems.

3. Results and Discussion

Regulatory Framework for Green Public Procurement in Indonesia Presidential Regulation Number 16 of 2018

Indonesia's procurement reform emphasizes value for money, transparency, accountability, and sustainable development. Presidential Regulation Number 16 of 2018 introduced the concept of Sustainable Procurement (Pengadaan Berkelanjutan), encouraging government agencies to consider economic, social, and environmental aspects in procurement decision-making.

This regulatory gap creates opportunities for greenwashing because suppliers may promote products as environmentally friendly without being required to demonstrate independently verified environmental performance. Consequently, procurement officials may encounter difficulties distinguishing between genuinely sustainable products and products that merely employ environmental marketing claims.

In the context of Information Asymmetry Theory [10], the absence of explicit environmental verification requirements increases information imbalances between suppliers and procuring entities. Suppliers possess superior information regarding product composition, manufacturing processes, and environmental impacts, while procurement officials rely primarily on information disclosed during the procurement process.

The subsequent amendment through Presidential Regulation Number 12 of 2021 reinforced these objectives by promoting domestic products, sustainable development goals, and procurement efficiency. These regulations provide a legal foundation for integrating environmental considerations into procurement planning and implementation.

However, while sustainability objectives are explicitly recognized, the regulations provide limited guidance regarding the verification of environmental claims submitted by suppliers. Consequently,

procurement officials often face difficulties distinguishing genuinely sustainable products from products that merely present environmental marketing claims.

3.1 Presidential Regulation Number 46 of 2025

Presidential Regulation Number 46 of 2025 further accelerates procurement digitalization and strengthens the role of electronic catalogs and e-purchasing mechanisms within government procurement processes. The regulation creates opportunities for expanding the market share of environmentally friendly products through centralized electronic procurement systems. Nevertheless, the increasing number of products marketed as environmentally sustainable also increases the risk of greenwashing.

Several challenges emerge under this framework:

- a. Increased reliance on supplier-declared environmental information;
- b. Limited environmental verification capacity among procurement officials;
- c. Diverse environmental labels and certification schemes;
- d. Difficulties in assessing environmental performance throughout product life cycles.

These challenges suggest that digital procurement systems alone cannot eliminate greenwashing risks without complementary verification mechanisms. The expansion of sustainable procurement and e-purchasing mechanisms under Presidential Regulation No. 16 of 2018 and Presidential Regulation No. 46 of 2025 increases the importance of environmental verification systems; without such mechanisms, the risk of greenwashing may significantly reduce the effectiveness of Green Public Procurement implementation in Indonesia.

3.2 Forms of Greenwashing Risks in Green Public Procurement

The study identifies greenwashing risks throughout the procurement cycle.

1) Planning Stage

At the planning stage, environmental objectives are often defined using broad and ambiguous terms such as:

- a. Eco-friendly products;
- b. Green products;
- c. Sustainable materials.

Without measurable environmental indicators, suppliers may exploit these ambiguities by presenting unverifiable environmental claims.

2) Technical Specification Stage

Technical specifications frequently lack performance-based environmental criteria. As a result, suppliers can satisfy procurement requirements through generic environmental statements rather than demonstrating measurable environmental performance.

3) Electronic Catalog Listing Stage

Electronic catalogs provide extensive product information but may rely heavily on self-declared environmental claims. If verification mechanisms are weak, products with questionable sustainability credentials may enter procurement platforms.

4) Supplier Evaluation Stage

Procurement officials often encounter difficulties in assessing:

- a. Environmental certifications;
- b. Carbon footprint declarations;
- c. Life cycle assessments;
- d. Sustainability reports.

These limitations increase the likelihood of selecting suppliers based on misleading environmental information.

5) Contract Implementation Stage

Greenwashing may continue during contract implementation when suppliers substitute approved products with alternatives possessing lower environmental performance than originally proposed.

6) *Monitoring and Audit Stage*

Environmental performance indicators are frequently absent from contract monitoring systems. Consequently, greenwashing practices may remain undetected throughout the contract period.

3.3 *Factors Contributing to Greenwashing*

1) *Information Asymmetry*

Suppliers generally possess more information about product composition and environmental performance than procurement officials. This imbalance creates opportunities for misleading environmental claims.

2) *Limited Environmental Competencies*

Many procurement practitioners possess expertise in procurement regulations but lack technical knowledge regarding environmental assessment methodologies.

3) *Lack of Standardized Verification Systems*

Environmental labels and certification schemes vary significantly across industries, making verification difficult.

4) *Absence of Life Cycle Assessment Integration*

Procurement decisions often focus on acquisition costs rather than environmental impacts throughout the product life cycle.

5) *Weak Environmental Auditing*

Traditional procurement audits prioritize financial and administrative compliance rather than environmental performance outcomes.

3.4 *Empirical Illustration: Greenwashing Risks in E-Purchasing*

The increasing utilization of e-purchasing systems for office equipment, electronic devices, and environmentally preferred products provides a useful illustration of greenwashing risks. For example, suppliers may market products as:

- a. Energy-efficient;
- b. Low-carbon;
- c. Recyclable;
- d. Sustainably sourced.

However, subsequent verification may reveal:

- a. Lack of independent certification;
- b. Absence of life-cycle environmental data;
- c. Unsupported carbon reduction claims;
- d. Inadequate documentation regarding recycled materials.

In such situations, procurement decisions based solely on supplier-provided information may result in ineffective environmental outcomes despite compliance with procurement procedures.

3.5 *Proposed Conceptual Framework: Green Procurement Anti-Greenwashing Framework (GPAGF)*

To address the identified challenges, this study proposes the Green Procurement Anti-Greenwashing Framework (GPAGF).

Stage 1: Environmental Screening

Identify procurement categories with significant environmental impacts, including:

- a. Construction;
- b. Information technology equipment;
- c. Transportation;
- d. Cleaning products;
- e. Food services.

Stage 2: Environmental Verification

Require independent verification through:

- a. Environmental Product Declarations (EPD);
- b. Eco-label certifications;
- c. ISO 14024 certification schemes;

d. Carbon footprint verification.

Stage 3: Simplified Life Cycle Assessment

Conduct simplified assessments of:

- Energy consumption;
- Carbon emissions;
- Water usage;
- Waste generation.

Stage 4: Green Scoring Mechanism

Incorporate environmental performance into supplier evaluation, in Table 1.

Table 1. Evaluation Criteria Green Schoring

Evaluation Criteria	Weight
Price	40%
Technical Quality	30%
Environmental Performance	30%

Source : Perpres 46 Tahun 2026 and Analysis

Stage 5: Contract Monitoring

Monitor environmental commitments during implementation through:

- Product verification;
- Certification reviews;
- Environmental performance reporting.

Stage 6: Environmental Audit

Conduct post-contract environmental audits to evaluate:

- Actual energy savings;
- Carbon emission reductions;
- Waste reduction achievements.

The framework strengthens procurement governance by ensuring that environmental claims are supported by objective evidence throughout the procurement cycle. By strengthening these elements, Indonesia's procurement system can move beyond procedural compliance and achieve genuine environmental sustainability outcomes. This finding supports the proposed Green Procurement Anti-Greenwashing Framework (GPAGF), which positions environmental verification and life-cycle assessment as essential mechanisms for ensuring the credibility of green public procurement.

Greenwashing refers to the intersection of two organizational behaviors: poor environmental performance and positive environmental communication [6]. They define greenwashing as:

"The act of misleading consumers regarding the environmental practices of a company or the environmental benefits of a product or service."

This definition emphasizes the discrepancy between actual environmental performance and the information communicated to stakeholders. The term *greenwashing* was first introduced by environmental activist Jay Westerveld (1986), who used it to describe organizational practices that promote an environmentally responsible image while failing to implement meaningful environmental improvements. Initially associated with the hospitality industry, the concept has since evolved into a broader phenomenon affecting both private and public sectors.

Organizations respond to pressures from stakeholders who influence their success and survival [8]. In public procurement markets, stakeholders include governments, regulators, citizens, environmental groups, and procurement agencies. Growing stakeholder expectations regarding sustainability may encourage suppliers to present themselves as environmentally responsible, sometimes through exaggerated or misleading environmental claims.

Greenwashing occurs when organizations selectively disclose positive environmental information while concealing negative environmental impacts [9] while intentionally concealing negative environmental impacts. In this perspective, greenwashing is not merely the dissemination of false information but also the strategic manipulation of information intended to create an exaggerated perception of environmental responsibility.

4. Conclusion

Greenwashing has emerged as a significant challenge in the implementation of Green Public Procurement (GPP) within Indonesia's increasingly digitalized procurement environment. The findings indicate that greenwashing risks may occur throughout the procurement cycle, including procurement planning, technical specification development, supplier evaluation, contract implementation, and post-procurement monitoring. These risks are primarily driven by information asymmetry, limited environmental competencies among procurement practitioners, inadequate verification mechanisms, and the absence of standardized life-cycle assessment practices.

This study confirms that the expansion of e-purchasing and sustainable procurement policies alone is insufficient to guarantee environmental integrity unless supported by effective verification and monitoring systems. To address these challenges, the study proposes the Green Procurement Anti-Greenwashing Framework (GPAGF), which integrates environmental screening, third-party verification, simplified life-cycle assessment, environmental scoring, contract monitoring, and environmental auditing. The framework provides a practical governance approach to enhance transparency, accountability, and credibility in environmentally sustainable procurement.

The implementation of GPAGF is expected to strengthen the effectiveness of Green Public Procurement in Indonesia by ensuring that environmental claims are supported by verifiable evidence and measurable sustainability outcomes. Future research should empirically validate the proposed framework through quantitative and case-based studies involving procurement officials, suppliers, and policymakers to assess its applicability and impact in real procurement practices.

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Declarations

Author Contributions

Komala Sari contributed to the conceptualization of the study, literature review, regulatory analysis, and manuscript drafting. Agus Sugeng contributed to the development of the research framework, data interpretation, and critical revision of the manuscript. Taufik Candra contributed to the analysis of procurement regulations, manuscript editing, and final approval of the submitted version. All authors have read and approved the final manuscript.

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Conflict of Interest

The authors declare that they have no conflict of interest regarding the publication of this paper.

Ethical Approval

Not applicable. This study is based on literature review and regulatory analysis and did not involve human participants, animals, or personal data requiring ethical approval.

Additional Information

No additional information is available for this paper. All opinions and interpretations presented in this article are solely those of the authors and do not necessarily reflect the views of their affiliated institution.

Data Availability Statement

The data supporting the findings of this study are obtained from publicly available sources, including Indonesian procurement regulations, government policy documents, reports published by international

organizations, and peer-reviewed academic literature cited in the reference list. No proprietary or confidential datasets were generated or analyzed during the conduct of this research.

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