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**REVIEWER'S REPORT**

Manuscript No.: **IJAR-54458**

**Title: THE IMPACT OF ECONOMIC GROWTH, FOREIGN DIRECT INVESTMENT, AND ENERGY ON CLIMATE CHANGE IN WEST AFRICA**

**Recommendation:**
Accept as it is ………………………………
**Accept after minor revision**………………
Accept after major revision ………………
Do not accept (*Reasons below*) ………

| Rating | Excel. | Good | Fair | Poor |
|---|---|---|---|---|
| Originality | | ✓ | | |
| Techn. Quality | ✓ | | | |
| Clarity | | ✓ | | |
| Significance | ✓ | | | |

Reviewer Name: Dr.P.Manochithra

**Date:** 23-10-2025

## *Detailed Reviewer's Report*

**Title of Paper:** *The Impact of Economic Growth, Foreign Direct Investment, and Energy on Climate Change in West Africa*

### General Assessment

This research paper presents a rigorous empirical investigation into the nexus between economic growth, FDI, energy consumption, and carbon emissions in West Africa, framed within the Environmental Kuznets Curve (EKC) hypothesis. The study employs a Panel ARDL model using data from 16 countries (1990–2023). It contributes meaningfully to environmental economics literature by integrating regional heterogeneity, dynamic relationships, and policy relevance. The methodology is technically sound, and the findings are clearly presented with adequate theoretical grounding.

### Originality and Contribution

- **Strengths:**
  - The topic is highly relevant, addressing sustainability challenges in West Africa—a region underrepresented in empirical EKC studies.
  - The paper adds value by simultaneously examining *economic growth*, *energy use*, and *FDI*, a triad rarely analyzed together with such methodological rigor.

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- The confirmation of the EKC hypothesis in this regional context is a significant theoretical contribution.

- **Weaknesses:**
  - The originality could be enhanced by deeper comparative analysis with other African subregions or developing economies.
  - While FDI's insignificance is an interesting result, more explanation could be given about its sectoral composition and policy implications.

## Technical and Methodological Soundness

- **Strengths:**
  - Excellent justification for using the **Panel ARDL–PMG estimator**, suitable for mixed integration orders and heterogeneous panels.
  - Diagnostic tests (unit root, heteroscedasticity, multicollinearity, cointegration) are properly reported and interpreted.
  - The inclusion of GDP squared captures the nonlinear EKC dynamics effectively.
  - The study uses recent and reliable data sources (Our World in Data, IEA, etc.).
- **Weaknesses:**
  - The paper could include a table summarizing lag-length selection results for clarity.
  - The robustness tests could expand by comparing PMG with FMOLS/DOLS or other estimators.
  - Some equations and figures would benefit from clearer formatting (e.g., spacing, subscripts).

## Clarity, Structure, and Presentation

- **Strengths:**
  - The manuscript follows a logical flow: Introduction → Literature Review → Methodology → Results → Discussion → Policy Implications.
  - Tables and figures are well-labeled, enhancing readability.
  - The discussion effectively links results to previous empirical studies.
- **Areas for Improvement:**
  - Minor grammatical issues and typographical errors need proofreading (e.g., spacing inconsistencies, missing article usage).

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- Figures (especially Figure 4) should be resized for better legibility.
- The references section is comprehensive but needs consistent formatting in APA (some DOI links are incomplete or redundant).

## Significance and Policy Relevance

- The paper offers valuable insights for **West African policymakers**, emphasizing:
  - Renewable energy transition.
  - Environmentally responsible FDI policies.
  - Regional cooperation under ECOWAS for sustainable energy strategies.
- It bridges academic research and real-world application effectively.

## Ethical Standards

The paper acknowledges funding from the **Ministry of Higher Education, Science, and Technology of the Republic of Indonesia**, and includes a disclaimer. Ethical and data transparency standards are properly met.

## Reviewer's Final Comments

This manuscript provides a comprehensive and empirically robust analysis of the complex interplay between economic growth, FDI, and energy consumption in shaping carbon emissions in West Africa. The confirmation of the EKC hypothesis, the nuanced role of FDI, and the emphasis on renewable energy policy make this a significant contribution to the field of sustainable development and regional environmental policy. Minor language and formatting improvements will further strengthen its publication readiness.