

Carbon Tax Policy and Renewable Energy Investment in Madagascar: A Socio-Economic and Institutional Analysis

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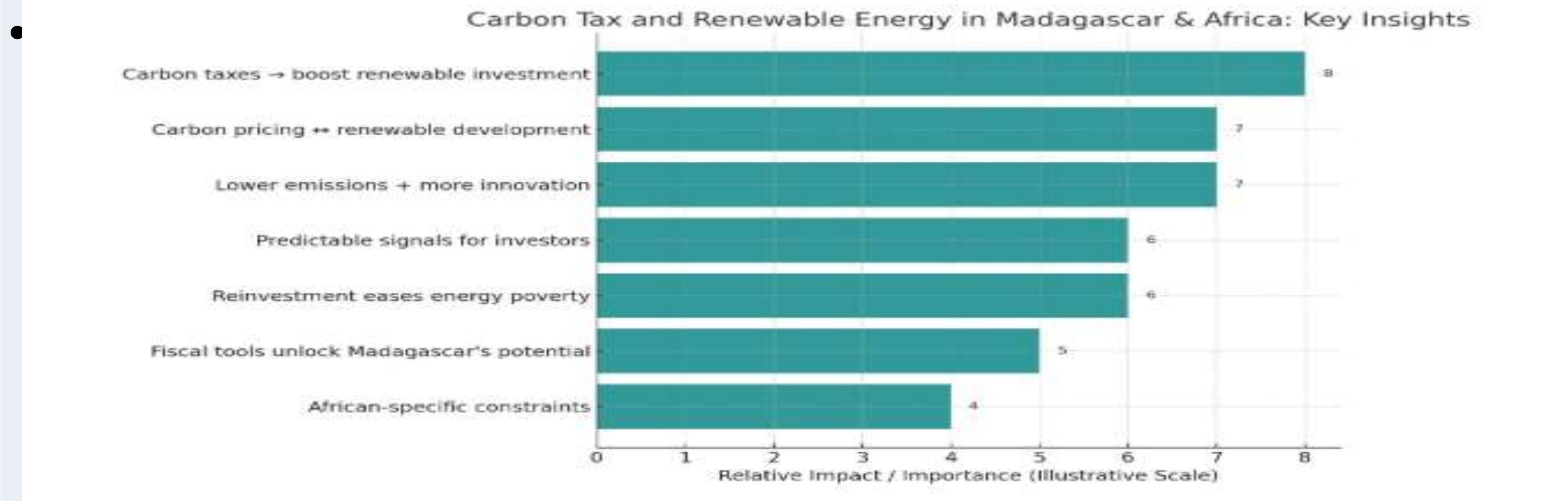
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Context & Motivation

- Climate change is a global challenge, heavily impacting developing nations.
 - Madagascar is highly vulnerable due to its agricultural reliance and infrastructure limitations.
- The Paris Agreement promotes climate adaptation and renewable energy transition.
 - Madagascar has significant renewable energy potential to reduce fossil fuel use.
- Carbon tax is an effective tool to encourage cleaner energy adoption.
 - Despite its benefits, carbon taxation is rare in Africa due to sociopolitical and economic challenges.

Literature Background

- Carbon taxes positively impact renewable energy investment.
- Strong link between carbon pricing and renewable development.
- Carbon taxes reduce emissions and stimulate innovation.
- Well-designed taxes offer predictable signals for investment.
- Reinvestment in renewables can alleviate energy poverty.
- Madagascar uses fiscal tools to unlock renewable potential.



Research Questions

- Investigates the impact of carbon tax policy on renewable energy investment.
- Focuses on Madagascar's socio-economic and environmental context.
- Considers institutional factors influencing policy effectiveness

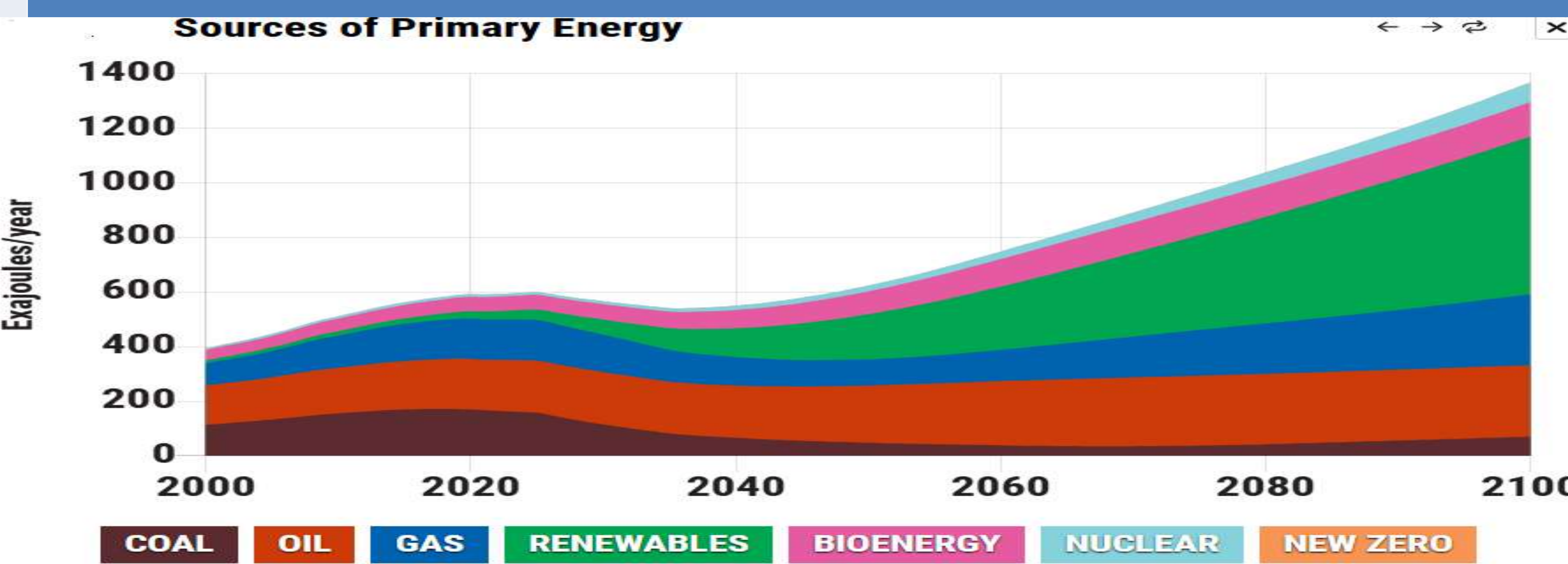
Hypothesis

- Introducing a carbon tax in Madagascar will raise fossil fuel costs.
- Increased costs will boost renewable energy consumption and investment.
- Impact depends on tax design, socio-economic conditions, and institutional capacity.

Data & Methodology

- Utilizes a Computable General Equilibrium (CGE) model to assess carbon tax impacts.
- Simulates economic interactions across sectors in Madagascar.
- Captures direct and indirect effects on households, firms, and government.
- Key data sources: national accounts, Social Accounting Matrix (SAM), energy balance statistics.
- Includes sectoral emission data and behavioral parameters from literature.
- Models scenarios: baseline, carbon tax with varying rates, revenue recycling.

Expected Result



Limitations & Considerations

- Analysis relies on national data quality and availability.
- Sectoral energy use and emissions data are crucial.
- Political feasibility of a carbon tax is not explicitly modeled.
- Institutional readiness for implementation is discussed qualitatively.