



STRATEGIES FOR GREENING CROSS-BORDER ROAD FREIGHT TRANSPORT IN SOUTH AFRICA

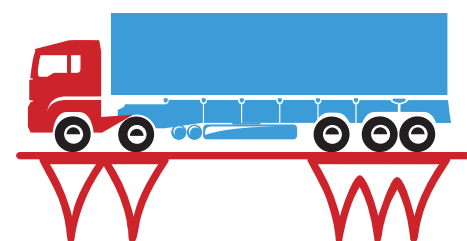
Dr V. Tsako



Ms. N.N. Sokhetye



Mr. S. Dyodo



ISWIM

6 - 10 November 2023
Brisbane, Australia



FORUM

Presentation Outline



TECHNOLOGY
CONVERGENCE 2023



Author/s:

Dr V. Tsako, Ms. N.N. Sokhetye & Mr. S. Dyodo

Introduction



Purpose of paper: To share findings from an investigation of strategies to reduce greenhouse gas emissions and assess the readiness of the cross-border road freight industry in adopting green alternatives.

Aim of study: To evaluate strategies to reduce greenhouse gas emissions, assess the readiness of cross-border freight operators to shift to greener energy sources.

Significance of study: This paper is significant in providing valuable insights into eagerness from industry operators on potential for adopting various decarbonisation strategies as well as addressing challenges and opportunities for decarbonising or reducing carbon in the transportation sector in a developing country context.

Author/s:

Dr V. Tsako, Ms. N.N. Sokhetye & Mr. S. Dyodo

Literature Review



Introduction: The transportation sector is a major contributor to greenhouse gas emissions, with the road freight transport sector being a significant contributor.

Historical Perspectives: The 2015 Paris Agreement states that there is a report done by Intergovernmental Panel on Climate Change (IPCC) stipulating that the globe is facing climate impacts that requires rapid global emissions reductions by 45% -2030

Challenges & opportunities: The shift of cargo from rail to road due to deregulation and the subsequent underutilisation of rail, led to; increased heavy vehicles on the roads that contributes significantly on carbon emissions due to ;
On-going delays at border posts, Overloaded heavy vehicles, Over speeding truck, Lack of driver training & Unroadworthy trucks

Strategies: Achieve a 30% modal shift of freight transport from road to rail, promote improved efficiency in fossil fuel powered vehicles and improved environmental performance of fossil fuels, Invest in sources of green energy's infrastructure, such as biogas filling stations, electric car charging points, GIS integrator ICT technology platforms for locating stations, regulating future pricing and proving statistics.

Author/s:

Dr V. Tsako, Ms. N.N. Sokhetye & Mr. S. Dyodo

Research Methodology



Qualitative, descriptive, interpretivist paradigm.

Telephonic interviews, using a semi-structured interview guide with open-ended questions.

Interviews were audio-recorded and transcribed for analysis.

The population - South African cross-border freight operators.

Purposive sampling was used, 10 out of 15 participants took part.

Author/s:

Dr V. Tsako, Ms. N.N. Sokhetye & Mr. S. Dyodo

Results from primary data

- Government regulations and policies should exert pressure on emitters

- Government should introduce reward initiatives like, tax rebates when purchasing green compliant vehicles

- Provision of infrastructure for electric vehicles by government

- No operator is using electrified or other alternative fuel vehicles due to unavailability of infrastructure

Results from literature review

- As per the trends in implementing green transport solutions, Africa is notably lagging in terms of freight transportation.

- 12000 volume of trucks using high carbon emitting fuel in South Africa (cross-border)

- Coincides with the notion that emissions from the transport sector in South Africa account for 10.8% of the country's total GHG Emissions (DOT, 2018)

- Emphasis on government support on funding and EV infrastructure.

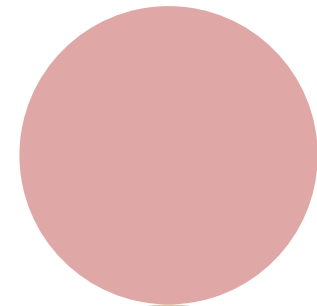
Discussion

- Cross-border freight operators are ready for green transport compliance subject to government interventions, regulations, and support.
- The urgency to reduce GHG emissions necessitates a strategic approach that balances effectiveness and feasibility
- South Africa, faces the dual challenge of minimizing its carbon footprint while fostering economic growth and development
- To achieve this delicate equilibrium, the country must harness solutions that offer both immediate emissions reductions and require minimal upfront investment.

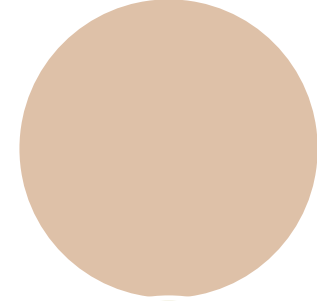
Author/s:

Dr V. Tsako, Ms. N.N. Sokhetye & Mr. S. Dyodo

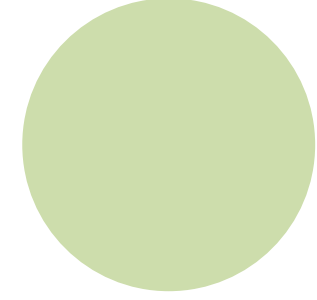
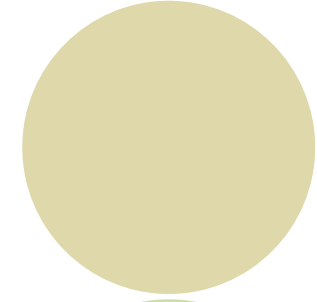
Discussion



The emphasis on alternate fuels emerges as a pivotal approach for South Africa..



Integrating alternate fuels into the existing energy and transportation infrastructure holds the potential for rapid and tangible emissions reductions



Author/s:

Dr V. Tsako, Ms. N.N. Sokhetye & Mr. S. Dyodo

Managerial implications

Government should have intensive consultations with the freight industry on green transport initiatives.

Government should subsequently develop and implement policies and framework on reducing carbon in the freight space.

Government should support the green initiatives on transport by introducing reward initiatives like tax incentives

Government should invest in charging stations for electric freight vehicles along the corridors to SADC member states.

Author/s:

Dr V. Tsako, Ms. N.N. Sokhetye & Mr. S. Dyodo

Limitations



Author/s:

Dr V. Tsako, Ms. N.N. Sokhetye & Mr. S. Dyodo

Conclusion & recommendations



Call for collaboration between governments, industry stakeholders, and researchers to develop and implement sustainable and cleaner road freight transport systems in the SADC region.

Author/s:

Dr V. Tsako, Ms. N.N. Sokhetye & Mr. S. Dyodo

Conclusion & recommendations



Invest in Clean Technologies: Embrace innovation and invest in green technologies such as electric and hydrogen-powered vehicles, renewable energy sources, and sustainable logistics solutions to reduce carbon footprint

Author/s:

Dr V. Tsako, Ms. N.N. Sokhetye & Mr. S. Dyodo



TECHNOLOGY
CONVERGENCE **2023**



Author/s:

Dr V. Tsako, Ms. N.N. Sokhetye & Mr. S. Dyodo