



Energy Transition in African SIDS' Ports

Global Supply Chain Forum 2024
Barbados

Kailash DHUNNOO
Senior Manager, Technical Services
Mauritius Ports Authority



Agenda

- Introduction to African SIDS and their Ports
- Current Energy Landscape
- Drivers of the Energy Transition
- Barriers to Overcome Energy Transition
- Opportunities and Key Strategies for the Energy Transition
- Case Study: Port Louis Harbour
- Support Needed for Energy Transition
- What is next for Port Louis Harbour
- Inter-institutional Collaboration & Partnerships
- Capacity Building
- Conclusion and Key Takeaways



African SIDS and their Ports

- **What are SIDS?** Small Island Developing States (SIDS) are a group of countries facing unique social, economic, and environmental vulnerabilities. African SIDS include Cabo Verde, Comoros, Guinea-Bissau, Mauritius, São Tomé and Príncipe, and Seychelles
- **Why focus on ports?** Ports are crucial gateways for trade and economic activity in SIDS. They are also major energy consumers and contributors to greenhouse gas emissions.
- **The imperative for change:** Climate change poses significant threats to SIDS, including rising sea levels, extreme weather events, and ocean acidification. Energy transition is essential for resilience and sustainable development.





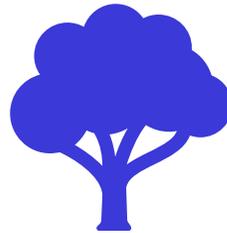
Current Energy Landscape and Drivers of Transition



Current Energy Landscape



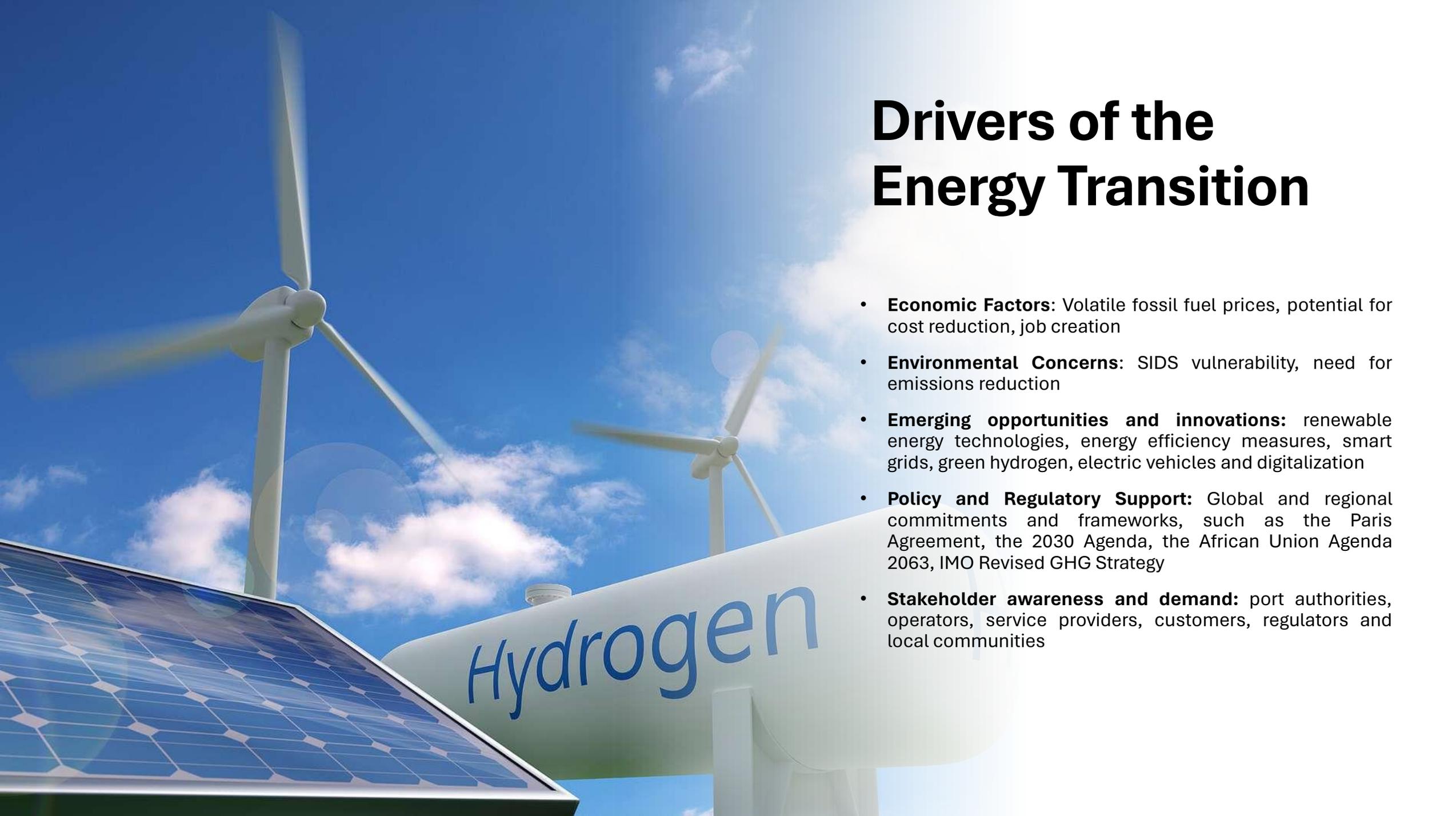
African SIDS' ports rely heavily on fossil fuels: inefficient energy use, limited RE integration



This poses environmental, economic and social challenges



There is a need to shift to more sustainable and resilient energy sources and systems



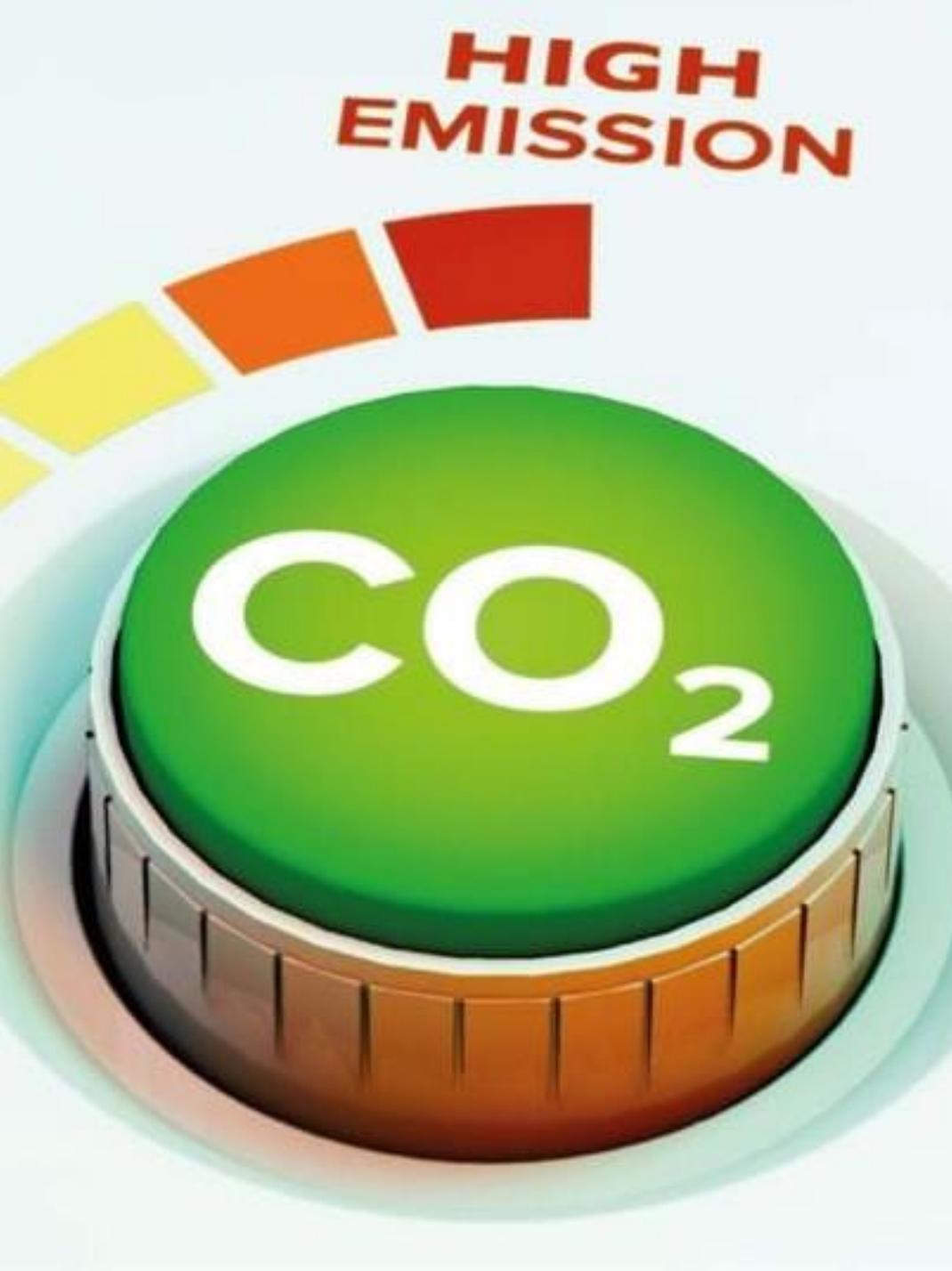
Drivers of the Energy Transition

- **Economic Factors:** Volatile fossil fuel prices, potential for cost reduction, job creation
- **Environmental Concerns:** SIDS vulnerability, need for emissions reduction
- **Emerging opportunities and innovations:** renewable energy technologies, energy efficiency measures, smart grids, green hydrogen, electric vehicles and digitalization
- **Policy and Regulatory Support:** Global and regional commitments and frameworks, such as the Paris Agreement, the 2030 Agenda, the African Union Agenda 2063, IMO Revised GHG Strategy
- **Stakeholder awareness and demand:** port authorities, operators, service providers, customers, regulators and local communities

Barriers to Overcome Transition

- **High Upfront Costs:** Energy transition projects, especially large-scale renewable energy installations, often require significant initial investments. This can be a barrier for SIDS with limited financial resources.
- **Technical Capacity and Expertise:** SIDS may lack the technical expertise and skilled workforce needed to design, implement, and maintain complex energy projects.
- **Regulatory Frameworks:** Outdated or unclear regulations can create uncertainties for investors and hinder the development of clean energy projects. Streamlining permitting processes and creating supportive policies are crucial.
- **Grid Infrastructure:** In some SIDS, the existing grid infrastructure may not be equipped to handle the integration of variable renewable energy sources like solar and wind. Grid modernization and expansion may be required.
- **Public Awareness and Acceptance:** Ensuring public understanding and support for energy transition projects is essential for their successful implementation. Engaging with local communities and addressing their concerns is key.





Key Strategies for Energy Transition

- **Energy efficiency:** Implement measures to optimize energy use in port operations, such as upgrading equipment, improving building insulation, and using smart energy management systems.
- **Renewable energy:** Develop and integrate renewable energy sources like solar and wind power to displace fossil fuels.
- **Electrification:** Transition to electric vehicles and equipment for port operations, powered by clean electricity.
- **Energy storage:** Utilize energy storage technologies to integrate renewable energy sources and ensure reliable power supply.
- **Partnerships and collaboration:** Foster collaboration between governments, international organizations, private sector actors, and local communities to mobilize resources and expertise for energy transition.

Case Study: Port Louis Harbour



Initiatives

Energy Efficiency and Renewable Energy Strategic Planning [2013]

Comprehensive study for the installation of Grid Connected Rooftop Solar PV panels [2019]

Feasibility Study OnShore Power Supply at Port Louis Cruise Terminal [2022]



Outcomes (Potential and Realized)

Increased energy efficiency [35,000 kWh]

Reduced reliance on fossil fuels [720, 000 kWh of RE from SPV]

Reduction in port-related emissions [680 tons from SPV, 3000 tons from OPS]



Support Needed for Energy Transition



Supporting Mechanisms to Advance Successfully towards the Transition



Technical assistance and capacity building



Financial support and mechanisms



Knowledge sharing and best practices exchange



Policy dialogue and advocacy



Partnership and collaboration





What is next for Port Louis Harbour?

- Scaling Up Existing Initiatives
- Piloting New Technologies
- Exploring Funding Opportunities
- The port also intends to align its energy transition strategy with the national and regional vision and agenda, and to contribute to the sustainable development goals and the climate change targets

Inter-institutional Collaboration & Partnerships

- The energy transition in the port sector requires a multi-stakeholder and multi-sectoral approach, involving various actors and institutions at different levels
- African Development Bank (AfDB)
- Agence Française de Développement (AFD)
- African Union (AU)





UNCTAD Sustainable Smart Port Project in Africa

- **Objective of the Project**

Strengthening the capacities of selected countries in Africa, including SIDS, in building Sustainable Smart Ports (SSP) that promote sustainable energy and technology-driven solutions for a better and sustainable recovery from the COVID-19 pandemic and the achievement of the SDGs.

- **Assessment of the SSP Status of Port Louis**

Energy Transition [what is the current situation regarding energy transition in the port and what is the potential for RE generation]

Energy Efficiency [how can the EE be improved looking at the current operations in the port area and the energy consumption]

Capacity Building

- Capacity building is a key enabler and a critical factor for the success of the energy transition in the port sector
- Capacity building refers to the process of enhancing the skills, knowledge, competencies and capabilities of the port stakeholders and institutions to plan, implement and monitor the energy transition initiatives
- Capacity building can be delivered through various modalities and methods, such as: training and workshops, mentoring and coaching, study tours and site visits, webinars and online courses, publications and manuals, and networks and platforms
- Capacity building can target different levels and dimensions, such as: individual, organizational, institutional, technical, managerial, financial, and policy





Conclusion and Key Takeaways

- Energy transition is an opportunity, not just a necessity for African SIDS ports.
- Renewable energy adoption can lead to:
 - Reduced energy costs and increased economic stability
 - New investments and job creation
 - Climate change mitigation and resilience
- Sustainable development model for the region
- Collaboration, investment, and capacity building are crucial for success.