

GREEN PORT DEVELOPMENT

The sustainability journey at
Fiji Ports



FIJI BUSINESS EXCELLENCE
SUSTAINABILITY AWARDS 2023



FIJI PORTS CORPORATION PTE LTD

The Smart, Green Gateway for Trade in the Pacific region

CORPORATE PROFILE

IMPLEMENTING SUSTAINABILITY POLICIES

**ENABLING OUR COMMITMENT TO
SUSTAINABILITY**

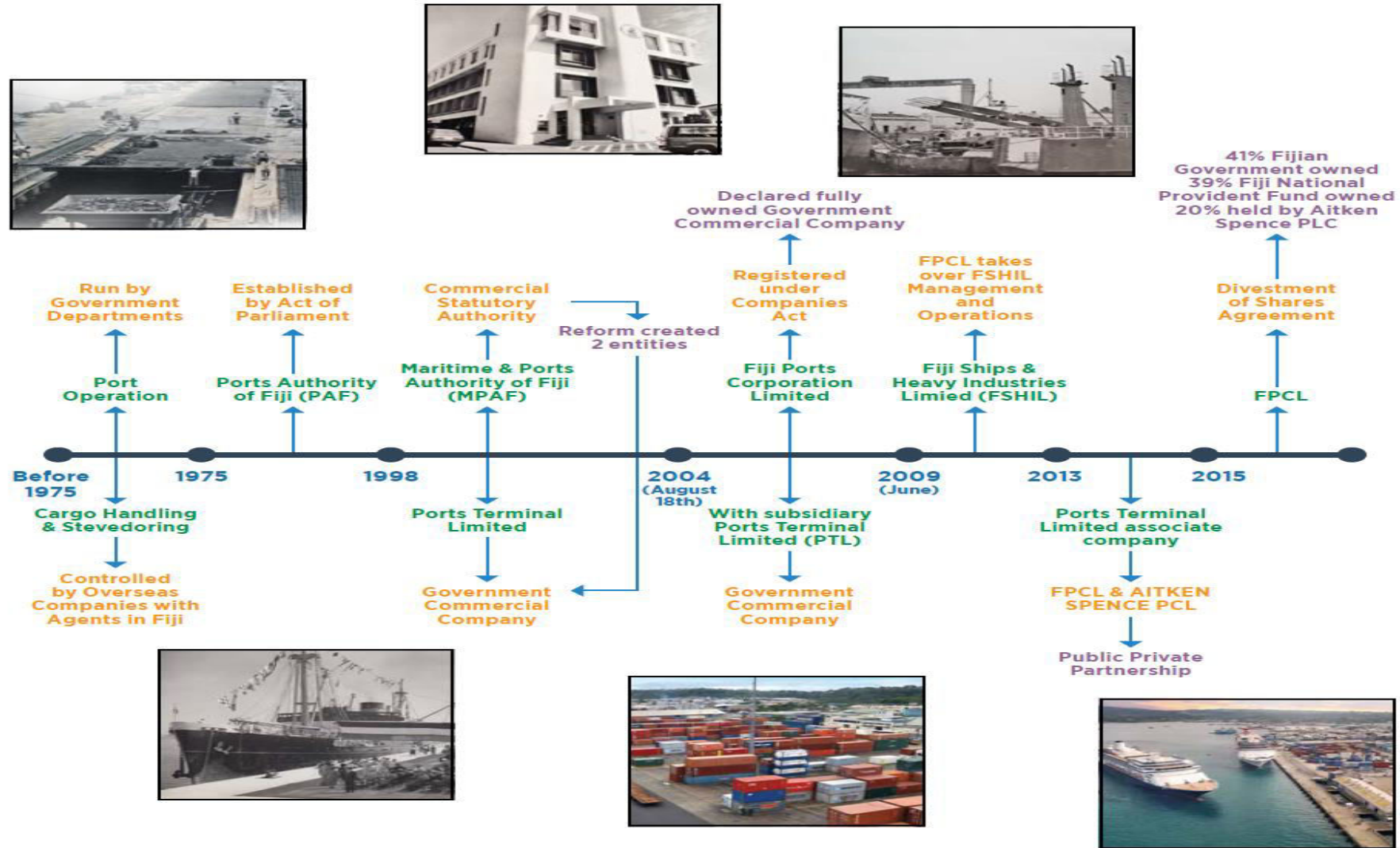
SUSTAINABLE DEVELOPMENT & OPERATIONS

FOSTERING A CULTURE OF SUSTAINABILITY

CHALLENGES & OUR RESPONSE



OUR HISTORY



FPCL - "To be the Smart, Green Gateway for Trade in the Pacific region."

SHAREHOLDING STRUCTURE



Fiji Ports Corporation Limited (FPCL)

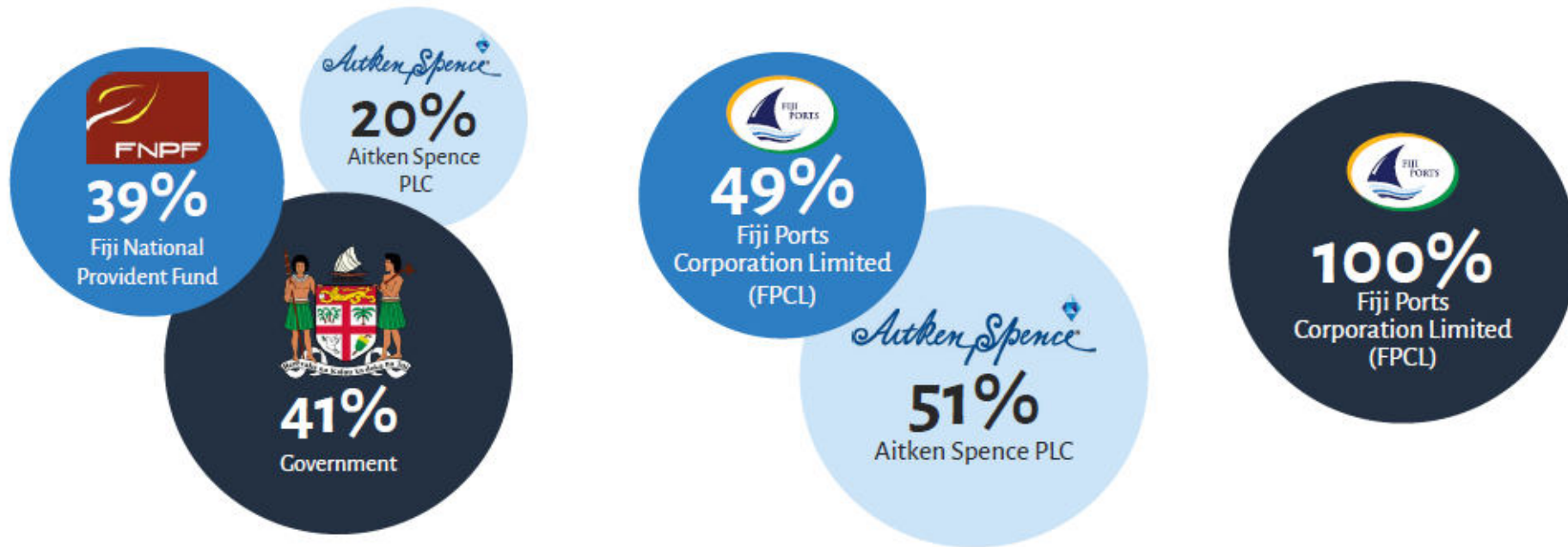
A Port Management Company in Fiji



An Associate Company of FPCL that manages the Cargo Terminals in Suva and Lautoka ports.



A Subsidiary of FPCL providing Slipway and Ship repair Services and Heavy Industry work



ABOUT FPCL



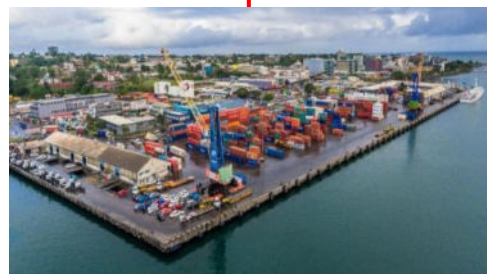
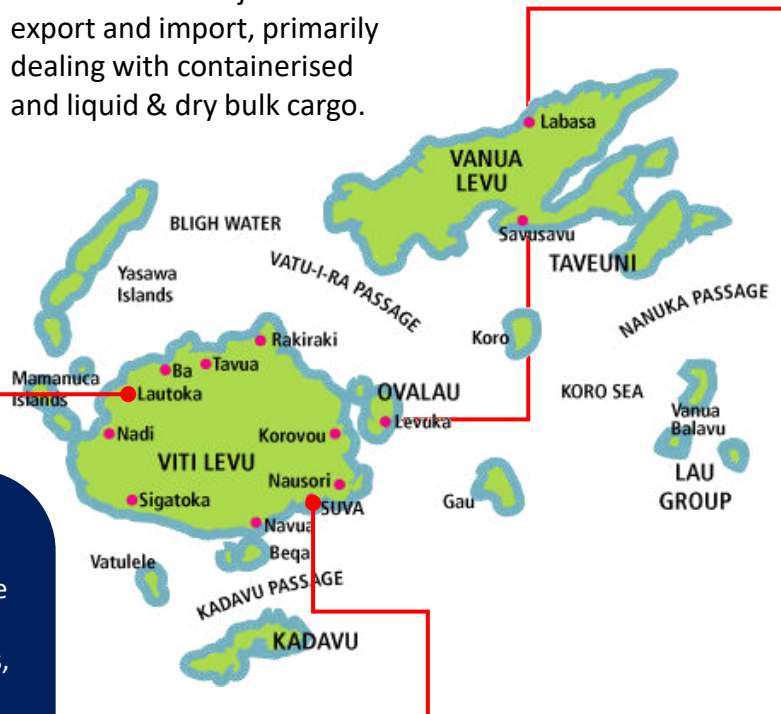
PORT OF LAUTOKA

Has an 11m deep berth, handles 40% of Fiji's total export and import, primarily dealing with containerised and liquid & dry bulk cargo.



PORT OF LEVUKA

A fishing port with a 12m deep berth, it handles a minor 0.22% of the total cargo, primarily dealing with frozen fish for a government-owned tuna canner and some liquid bulk.



PORT OF SUVA

This port has a 12m deep berth, and is Fiji's primary port, handling 60% of all cargo, with a majority being containerised, followed by liquid & dry bulk, and a minor part non-containerised.

As a Port Management Company, Fiji Ports also oversees the operations and International Ship and Port Facility Security (ISPS) requirements for Fiji's secondary ports



Wairiki



Vuda



Malau



The Fiji Ports Corporation Limited (FPCL), originally established as the Ports Authority Fiji (PAF) in 1975, underwent two significant reforms, first in 1998 dividing it into the Maritime and Ports Authority of Fiji and Ports Terminal Limited, and then in 2005, resulting in its current form as FPCL, with the goal of streamlining and improving efficiency in Fiji's port operations.



ROLE OF FIJI PORTS CORPORATION PTE LIMITED (FPCL)



Harbour Master's Functions



Pilotage (*percentage of services subcontracted to private company*)



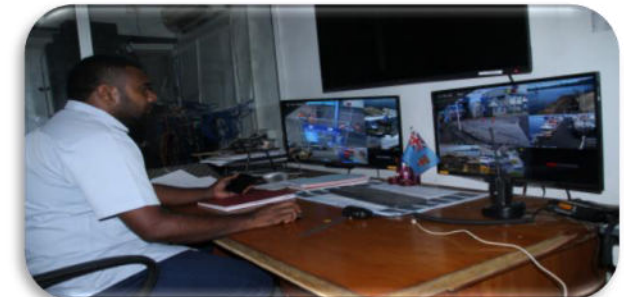
Tugboat Operations (*Subcontracted*)



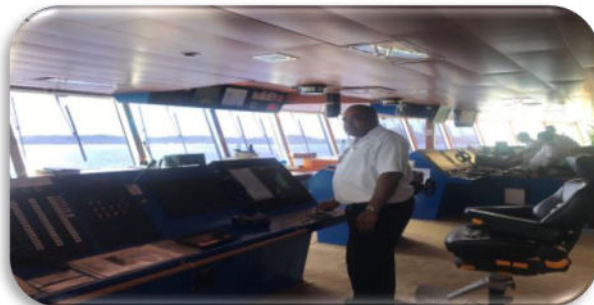
Mooring Services (*Subcontracted*)



Dredging (*Administered by FPCL – Work carried out by private contractor*)



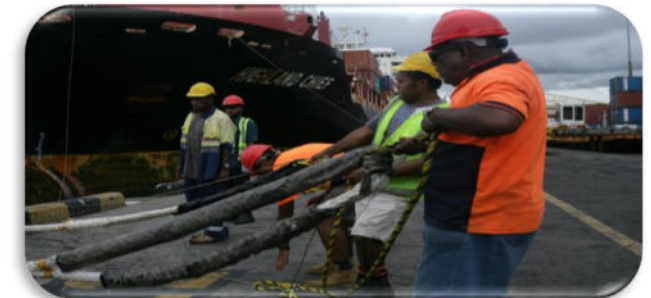
Port Security / Safety Management



Vessel Traffic Services and Anchorage



Repair and Maintenance of Infrastructure



Other Marine Services



ROLE OF FIJI PORTS TERMINAL PTE LIMITED (FPTL)



Stevedoring



Cargo Handling Machinery



Storage



Receiving and Delivery



INTERGRATED MANAGEMENT SYSTEM CERTIFICATIONS

Management Systems for **4 Key Areas** are fully Integrated and International Recognition has been Achieved through **Certification**.



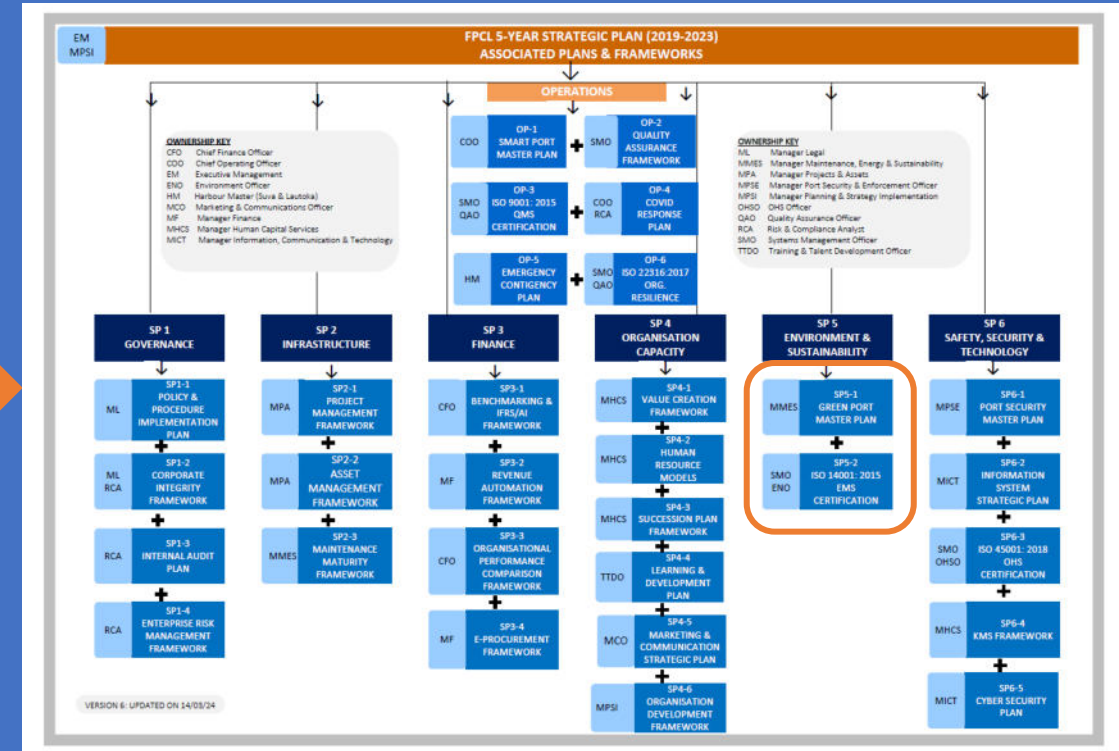
IMPLEMENTING SUSTAINABILITY POLICIES



5 YEAR STRATEGIC PLAN

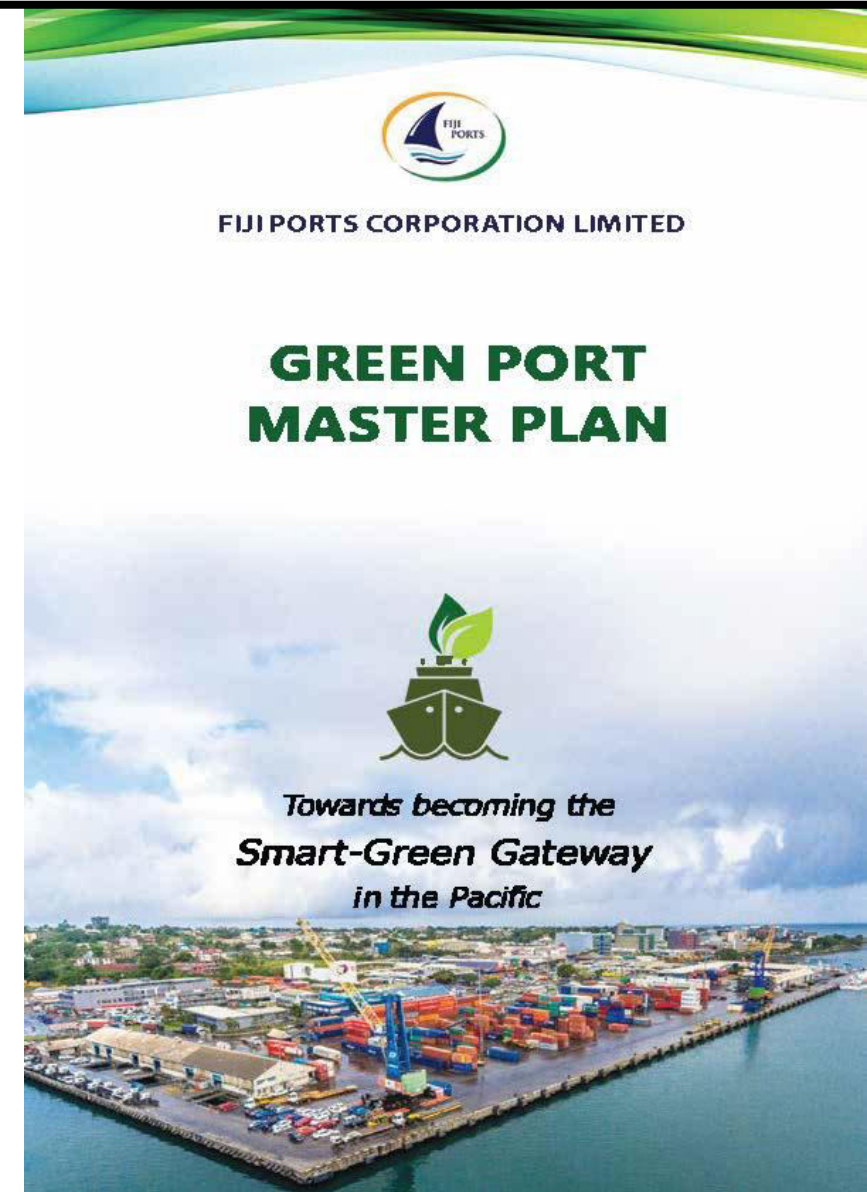
FPCL's 5-Year Strategic Plan (2019-2023) includes a focused **Environmental and Sustainability Strategic Perspective**, one of six key areas shaping our roadmap for the future.

Our 30 associated Plans and frameworks are informed by our Environmental and Sustainability Strategic Perspective, providing the mechanisms to implement best practices in these crucial areas.



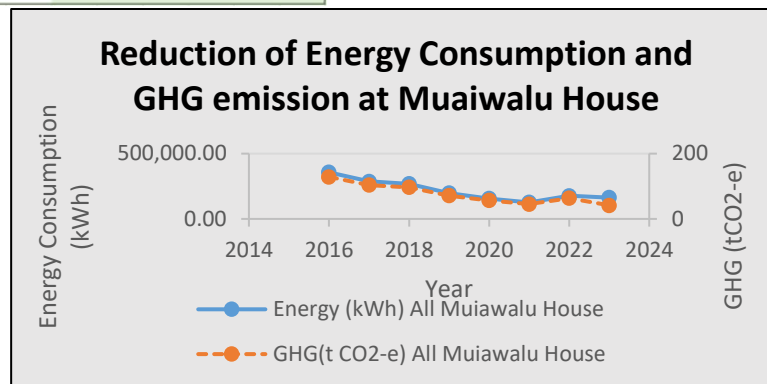
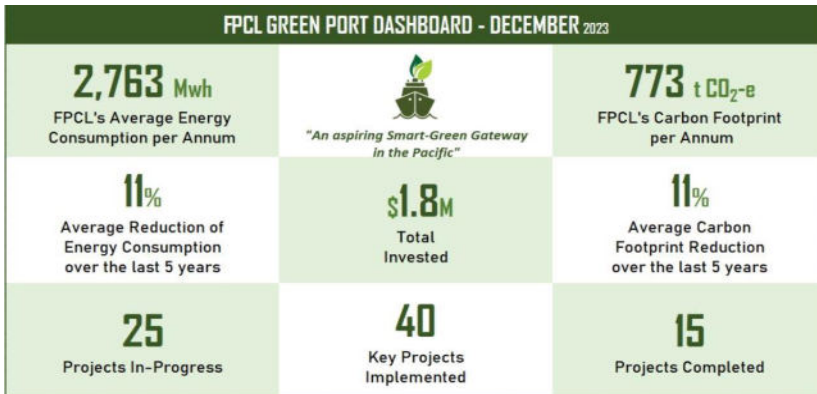
FPCL GREEN PORT MASTER PLAN

- The Green Port Master Plan 2019 is FPCL’s dedicated roadmap for reducing environmental impact from 2019 to 2023.
- While independent, this master plan strategically aligns with FPCL’s 2019-2023 Strategic Plan.
- The plan is pivotal in FPCL’s commitment to achieving multiple Sustainable Development Goals (SDGs).



TRANSFORMING STRATEGY INTO ACTION

Dashboards have been implemented to track our strategic sustainability objectives, providing real-time insights and analytics on the progress and impact of each strategic initiative outlined in the plan.



COMPLETED INITIATIVES

- **Green and Sustainable Practices:** Implemented green purchasing guidelines and incorporated the NSW green port development guide into major projects.
- **Energy and Efficiency:** Completed LED lighting specifications, upgraded energy efficiency at Muaiwalu House, and instituted scheduled air conditioner servicing.
- **Training and Reporting:** Conducted eco-driver training and completed data collection and reporting on greenhouse gas emissions.
- **Water Management:** Undertook water line tracing to identify leaks and completed tracking upgrades for fuel and water usage.

IN-PROGRESS INITIATIVES

- **Renewable Energy and Lighting:** 40% done with solar PV installations on terminal rooftops and 85% done with LED upgrades, targeted for 2023 and 2025.
- **Resource Management:** 30% completion on metering upgrades at Muaiwalu 1 and 10% completion on water metering upgrades, both targeted for 2025.



PORT PROCUREMENT SUSTAINABILITY GUIDELINES

VENDOR REQUIREMENTS

- Vendors must submit sustainability information about their products and services, which will factor into the assessment of quotes and supplier selection.

INTERNAL PROCEDURES

- Staff members initiating logistics requisitions (LRs) are mandated to complete an accompanying sustainability checklist.

TENDER PROCESS

- In tender-based purchases, bidders must detail the environmental impact of their proposals as part of the evaluation criteria.

SPECIFIC GUIDELINES FOR PROCUREMENT CATEGORIES

- Civil Works
- Office Supplies and Stationery
- IT Equipment
- Vehicles
- Maintenance Supplies



FIJI PORTS CORPORATION LIMITED

Sustainability Guidelines for Procurement

Document: Sustainability Guidelines for Procurement			Version: Final	1 of 23
1 st Issue Date	Administered by	Approved by	Last Review Date	Next Review Date
6 Dec 2019	Procurement Coordinator	CEO		

Disclaimer: Handcopies of this document are considered uncontrolled. Please refer to the Fiji Ports Intranet, Corporate Documents, A-2 Policies for the latest version.



INTEGRATED MANAGEMENT SYSTEM

The ISO 14001:2015 certification attests to a rigorous approach to environmental management, ensuring compliance with applicable laws and regulations while emphasising continual improvement in sustainability practices.

FPCL is ISO 14001:2015 Environment Management System certified



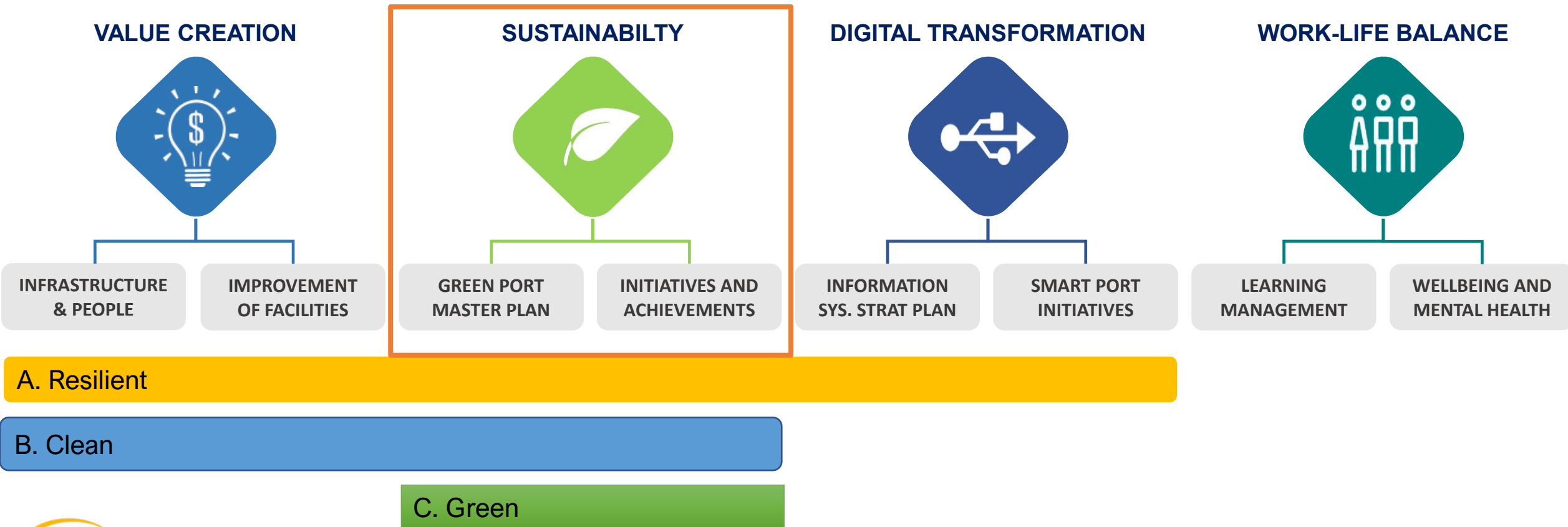
FPCL - "To be the Smart, Green Gateway for Trade in the Pacific region."

ENABLING OUR COMMITMENT TO SUSTAINABILITY



SUSTAINABILITY – ONE OF THE KEY FOCUS AREAS

FPCL'S focus on 4 Key Areas for Charting a Smart, Green Pathway – introduced in 2022 and continuing in 2023 & 2024.



STRATEGIC INVESTMENT IN SUSTAINABILITY INITIATIVES

Since 2016, we have invested significantly on sustainable initiatives that we have delivered, and their positive implications are shown in our Green Port Dashboard and Energy Tracker. FPCL also plan to invest over \$ 1M over the next 3 years..

Year	Description	Investment (FJ\$)
2016	Energy Audit	SPC funded
2016	LED Lighting Upgrades	\$424,763
2019	Port of Suva Electric Incinerator	\$576,772
2021	Solar PV Systems	\$108,554
2021	Carbon Neutral Facility at Muaiwalu 2	\$83,003
2021	Environmentally Friendly Pilot Boat - 1	\$2,100,00
2023	Environmentally Friendly Diesel Incinerator	\$79,036
2023	Environmentally Friendly Pilot Boat - 2	Under construction
2023	Wharf Rehabilitation Project GTS	\$617,000
2024	Port of Lautoka Yard 4 Project	\$11,326,121
2025	Inter Island Passenger Terminal Facility	\$4-5m (Est.)



Carbon neutral facility at Muaiwalu 2



Environmentally friendly diesel incinerator



Lautoka Yard 4 project



Solar PV Systems



Port LED Lighting Upgrades



Pilot Boat



EMPOWERING STAFF THROUGH SUSTAINABILITY TRAINING

Training and Talent Development Program	Date	No. of Staff Attended
Climate Smart Seaport Workshop	April 2014	7
Climate Smart Workshop	July 2014	10
Essentials of Environment Assessment	June 2015	1
National Climate Change Workshop	September 2015	1
Environment Management Workshop	January 2016	12
Montreal Protocol Enforcement	May 2018	2
Fiji Low Emission Development	May 2018	1
Enforcement of ODE Substance	June 2019	2
Certificate in Environmental Impact (EIA)	March 2021	1
Post Pandemic Ports: Safer, Greener, Smarter, Better	August 2021	1
Introduction to Marine Biofouling: Impacts and Management of Risks	January 2023	2
Green Port Summit , Singapore	May 2023	1
Green Building Systems Training	May 2023	1
Ozone Depletion Enforcement Officer	June 2023	1
Workshop on Fiji's National Greenhouse Inventory	July 2023	2
Capacity Building Gas Abatement Cost	July 2023	2



TECHNOLOGY AS AN ENABLER FOR SUSTAINABLE PORTS

FPCL has invested in technology specifically designed to support our environmental protection and sustainability mission.

SOFTWARE & AUTOMATION

- Advanced software programs, app-based solutions, and automated systems streamline our operations in an eco-friendly manner.

RESOURCE MANAGEMENT

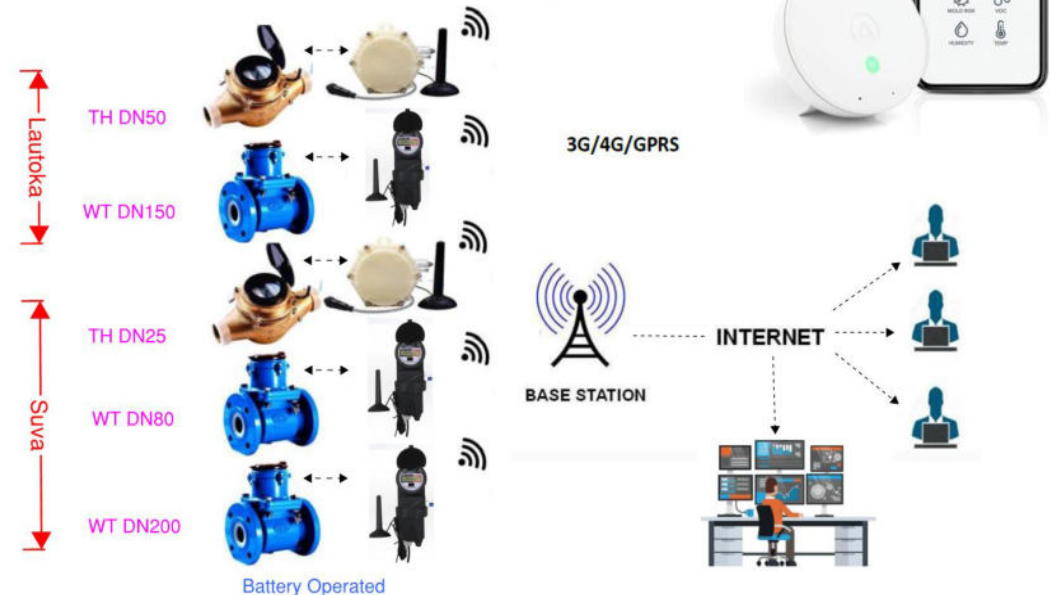
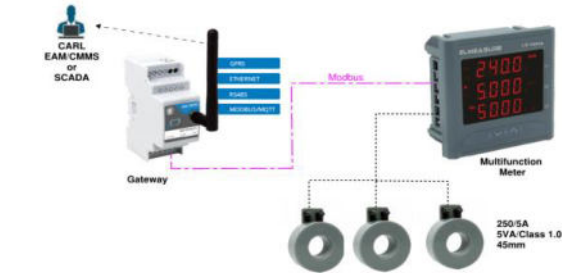
- Smart metering initiatives are underway to meticulously monitor water consumption, detect leakages, and track electricity use, thereby aiding in the reduction of resource wastage.

AIR QUALITY

- Implementing air quality monitoring systems to maintain a healthy and sustainable environment.

ENERGY EFFICIENCY

- Motion sensor lighting systems have been installed to optimise energy consumption.



SUSTAINABLE DEVELOPMENT & OPERATIONS



PIONEERING ENERGY AUDIT IN 2016

Fiji Ports distinguished itself as the first Pacific Port to conduct a Level 1 Energy Audit in 2016. The audit was executed by 8020Green and commissioned by the Secretariat of the Pacific Community (SPC).

IDENTIFICATION OF COST-SAVING PROJECTS

- **Direct Power Supply:** Bypass sub-metering to directly power tenants from the main source.
- **Reefer Energy Efficiency:** Implement power factor correction for the reefer energy supply.
- **Internal Lighting:** Upgrade to LED lighting for enhanced efficiency and reduced costs.
- **Port Yard/Security Lighting:** Follow a lighting design to replace existing lighting with LED solutions.
- **Solar Energy:** Install solar panels on roofs with minimal shading for renewable energy generation.
- **Climate Control:** Replace the office air conditioning system for increased energy efficiency.

ACTION ITEMS FOR COST-SAVING AND SUSTAINABILITY

- **LED Lighting Upgrade:** Proceed with replacing internal lighting fixtures with energy-efficient LEDs.
- **Solar PV Systems Consultation:** Liaise with EFL to explore the feasibility of installing solar PV systems for renewable energy generation.
- **Power Factor Correction:** Liaise with EFL to implement power factor corrections for optimised energy use.
- **Yard Lighting Improvement:** Continue the design process for upgrading yard lighting.

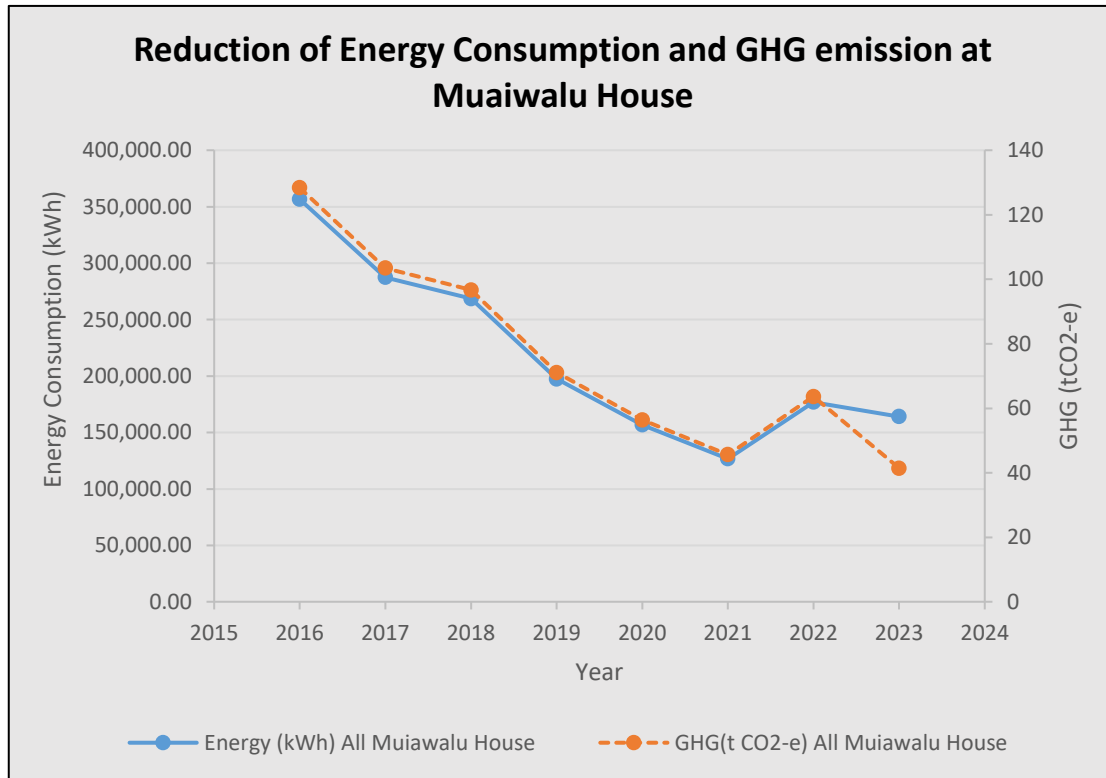
IMPLEMENTATION: MUAIWALU HOUSE ENERGY EFFICIENCY

- Achieved a **21% reduction in electricity consumption** in 2017 compared to 2016.
- Transitioned to LED lighting between December 2016 and March 2017.
- **Forecasted savings amount to \$31,000** and a **reduction of 32 tons in GHG emissions.**
- Actual expenditure for lighting upgrades was under \$23,000 - **LED lights paid for themselves** in terms of cost savings.
- All LED lights have a 3-year warranty, ensuring longevity and performance.

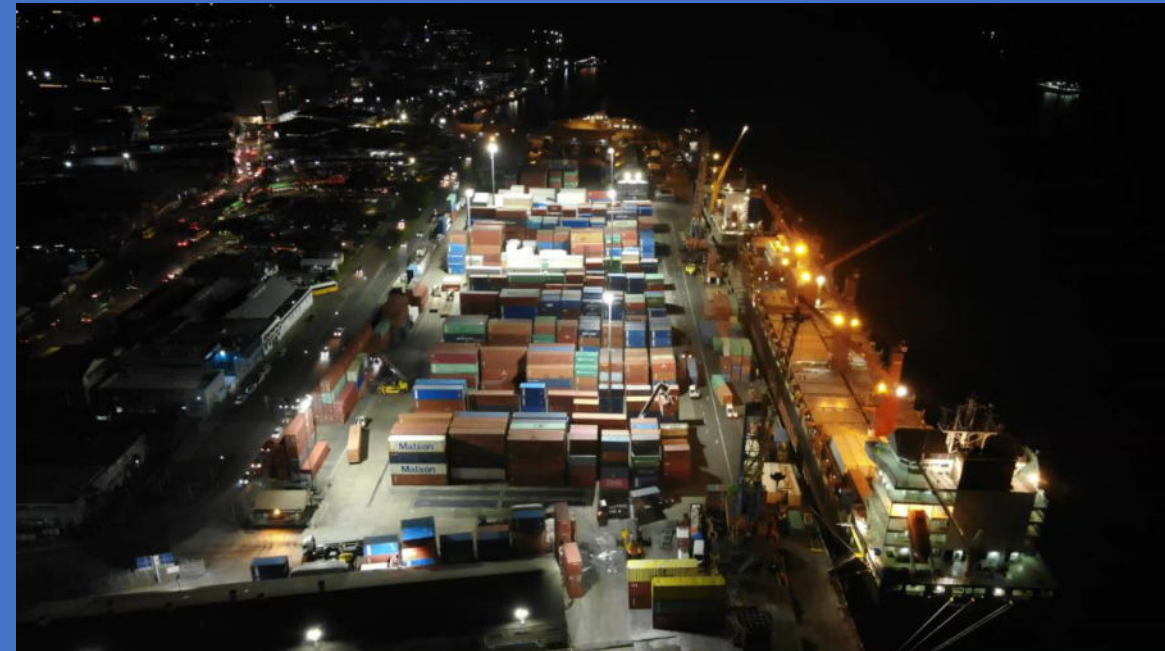


ENERGY EFFICIENCY TRIUMPHS AT FPCL

Using a dedicated energy tracker and targeted efficiency upgrades, FPCL has achieved an average **50% reduction in energy consumption and greenhouse gas emissions at its Head Office.**



Suva and Lautoka Ports are 94% and 81% through their LED upgrades, respectively, contributing to FPCL's 45% energy reduction goal. The Suva project alone replaced 35 high-wattage lights with efficient LEDs, saving an estimated FJ\$50k-\$61k and reducing 53t CO₂e annually.



RENEWABLE ENERGY AND CARBON FOOTPRINT REDUCTION

SOLAR PV SYSTEMS

Commissioned Projects:

- Muaiwalu 2 Jetty: 22kW, 15.4 tCO₂e saved annually.
- Muaiwalu 2 Car Park: 6kW, 3.9 tCO₂e saved annually.

In-progress Projects:

- Muaiwalu House: 28kW, estimated 19.6 tCO₂e to be saved annually.
- Muaiwalu 2 Waiting Shed: 22kW, estimated 19.2 tCO₂e, and \$11,100 to be saved annually.

SOLAR LIGHTING

Completed: 20 units across FPCL facilities.

In progress: Additional 22 units.

NET ZERO AND ENERGY-EFFICIENT FACILITIES

Muaiwalu 2 Renewable Energy Carpark: 100% renewable, \$1,600 and 2.2 tCO₂e saved annually.



Total Annual Carbon Footprint Reduction

60.3 tCO₂e

WHAT IS SPECIAL ABOUT THIS FACILITY
SIMPLE STEPS WITH A BIG IMPACT

- REDUCED MATERIAL USED FOR CONSTRUCTION**
This office has been built by recycling a shipping reefer container.
- POWERED BY 100% RENEWABLE ENERGY**
The rooftop solar system generates the required electricity for the facility.
- ENERGY EFFICIENT**
Energy savings through LED lighting, solar powered carpark lights, inbuilt insulation for cooling and use of energy efficient appliances.
- WASTE MANAGEMENT**
All waste generated in the facility are segregated, recycled and incinerated to reduce landfill waste.
- PROMOTING HEALTH AND WELL-BEING**
Healthier working environments for all.
- CARBON FOOTPRINT REDUCED BY 2.2 tCO₂e PER YEAR**

FIJI PORTS CORPORATION LIMITED



OTHER ENVIRONMENTAL AND SUSTAINABILITY INITIATIVES

RENEWABLE ENERGY & EFFICIENCY MEASURES

- **Electric Incinerator at Suva Port:** Transition from diesel to electric incinerator to reduce carbon emissions.
- **Use of Inverter Type Air Conditioning:** Anticipated 30-45% energy savings.
- **Energy Star-rated Appliances:** Furthering energy efficiency.

WASTE MANAGEMENT

- **Ship Waste Management:** Compliant with MSAF regulations for marine environment protection.

GREEN SPACES AND GUIDELINES

- **Green Space at Muaiwalu 2 Carpark:** Part of FPCL's Green Port Initiative.
- **Incorporation of NSW Green Port Guidelines:** For upcoming major projects like Lautoka Yard 4 and Muaiwalu 2 Interisland Terminal.

CONSTRUCTION AND INFRASTRUCTURE PROJECTS

- **Lautoka Port Container Yard 3:** Completed with environmental benefits and operational efficiency.
- **Lautoka Port Container Yard 4:** Planned construction with sustainable practices incorporated in the design.
- **Draunibota Clinker Discharge Facility:** Relocation from Kings Wharf for operational improvements.

FACILITY UPGRADES

- **Computerised Maintenance Management System (CMMS):** For efficient operational management.
- **Facility Energy-Efficiency Upgrades:** Including sensor lighting and power factor correction.

OLD DIESEL INCINERATOR



ELECTRIC INCINERATOR AT SUVA PORT

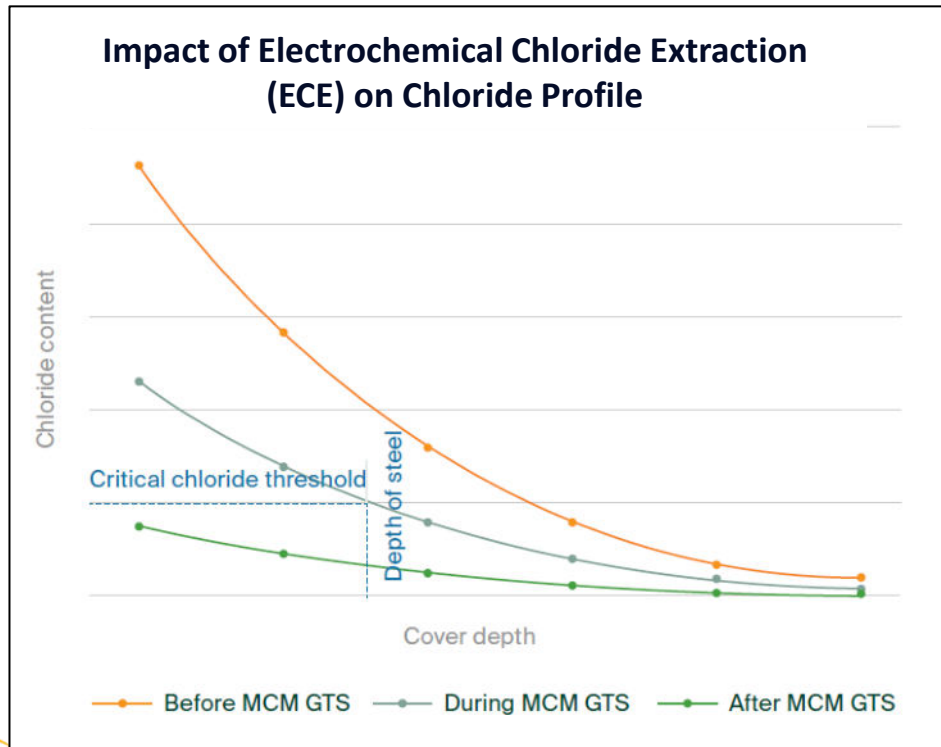


GREEN SPACE AT MUIIWALU 2 CARPARK



SUSTAINABLE INFRASTRUCTURE REHABILITATION - Green Shield

Environmental Benefits: Fiji Ports Corporation Limited is committed to implementing sustainable practices during the project. This includes adopting eco-friendly construction materials, implementing erosion control measures, and minimizing environmental impact. By integrating sustainable approaches, the project contributes to environmental conservation, protecting the marine ecosystem, and ensuring the long-term sustainability of the surrounding environment.



- ✔ MCM GreenTech Shield (GTS) reduces a project's carbon footprint in excess of 50% when compared to the generated CO₂ emissions of traditional Impressed Current Cathodic Protection
- ✔ MCM GTS eliminates approximately 72.5kg of CO₂ emissions for every tonne of concrete removal avoided
- ✔ An additional 3.75kg of CO₂ emissions is eliminated from the project's lifecycle for every man hour of labour saved

BUILDING SUSTAINABILITY INITIATIVES IN PROJECTS

PROPOSED MUAIWALU 2 INTER-ISLAND PASSENGER TERMINAL (currently in Detail Design Phase)

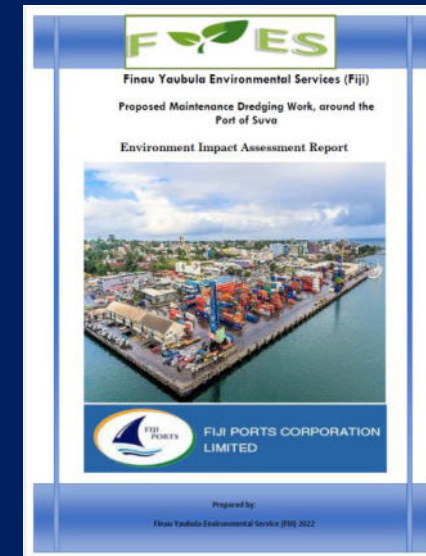


This project aims to achieve:

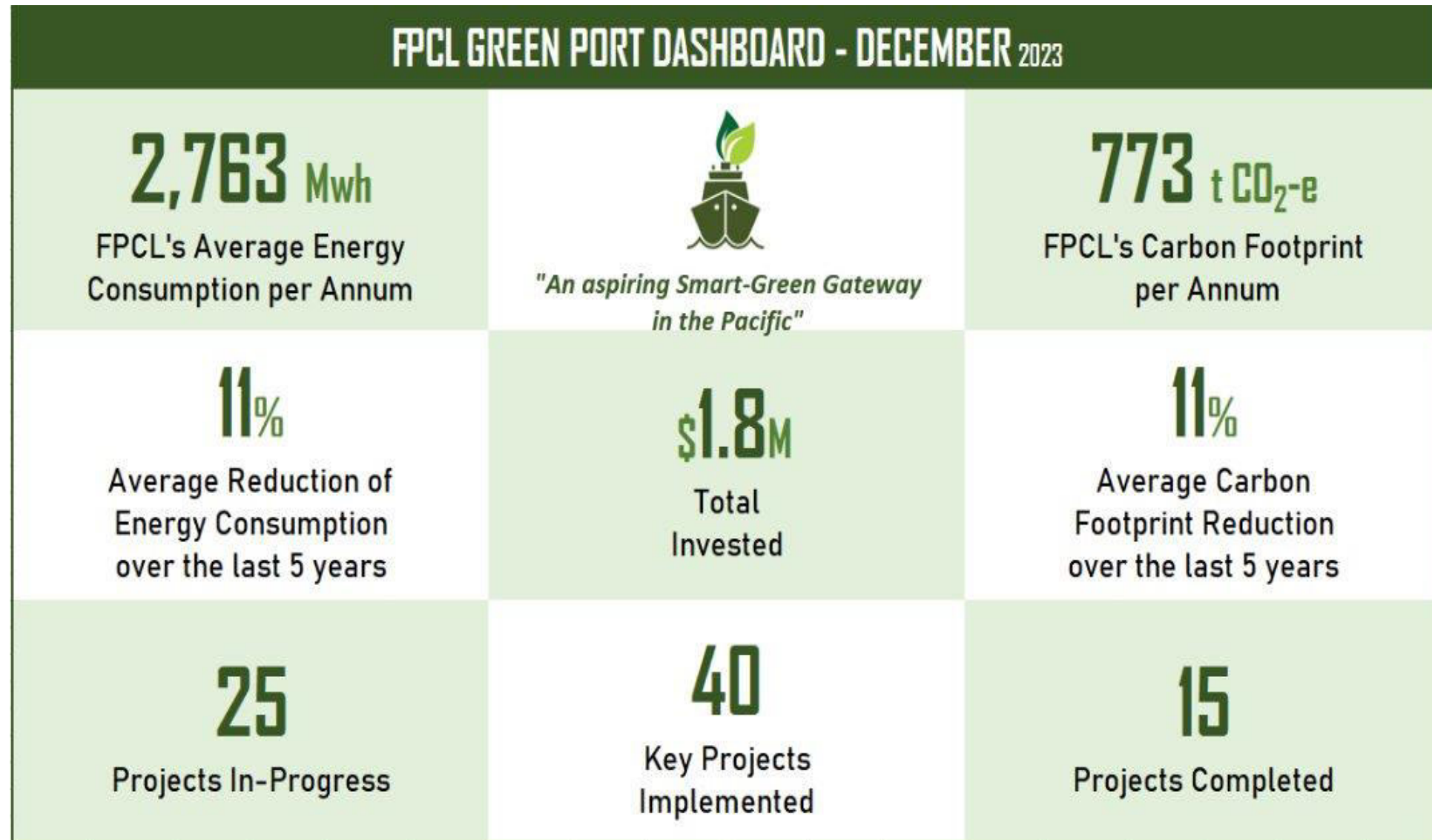
- Ease the current traffic congestion at Tofua Street in Walu Bay by providing a drive through carpark and dedicated loading and offloading area.
- Modernize and promote local interisland shipping via an airconditioned waiting lounge with cafeteria, toilet facility, ATM's and shops.
- Extend the life of the wharf asset by diverting the traffic load to the drive through carpark.
- Contribute to FPCL's corporate social responsibility by providing more than 200 comfortable seats in an air-conditioned waiting area for the travelling public.
- **Reinforce the Green Port Initiative launched by FPCL in 2019 by implementing the terminal building as a 100% solar powered building with rainwater harvesting.**

MAINTENANCE DREDGING PROJECT (Port of Suva)

FPCL has introduced **Environment Impact Assessments (EIAs)** and dredging activity monitoring to maintenance projects, ***promoting a safe environment and sustainable development aspects to minimize the environmental impact likely to be caused by harbour dredging.***



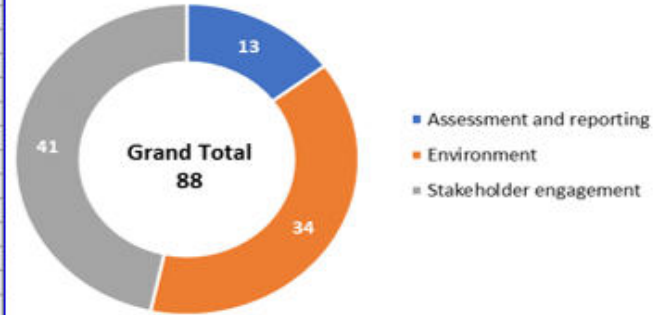
OUR COMMITMENT TO REDUCE THE CARBON FOOTPRINT



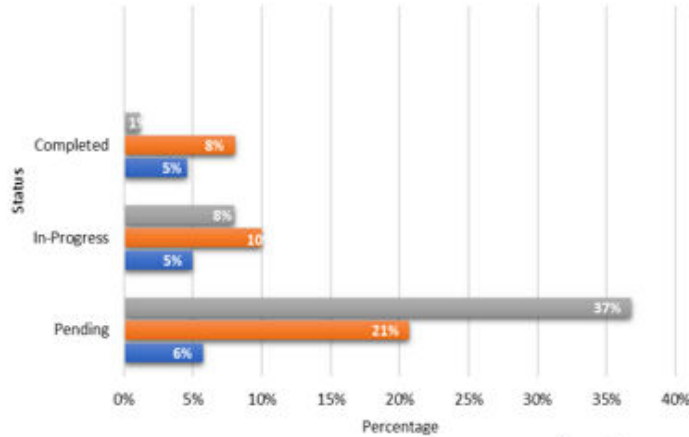
FPCL 5 YEAR STRATEGIC PLAN

STRATEGIC PERSPECTIVE No.5 - IMPLEMENTATION DASHBOARD (2019 - 2023)

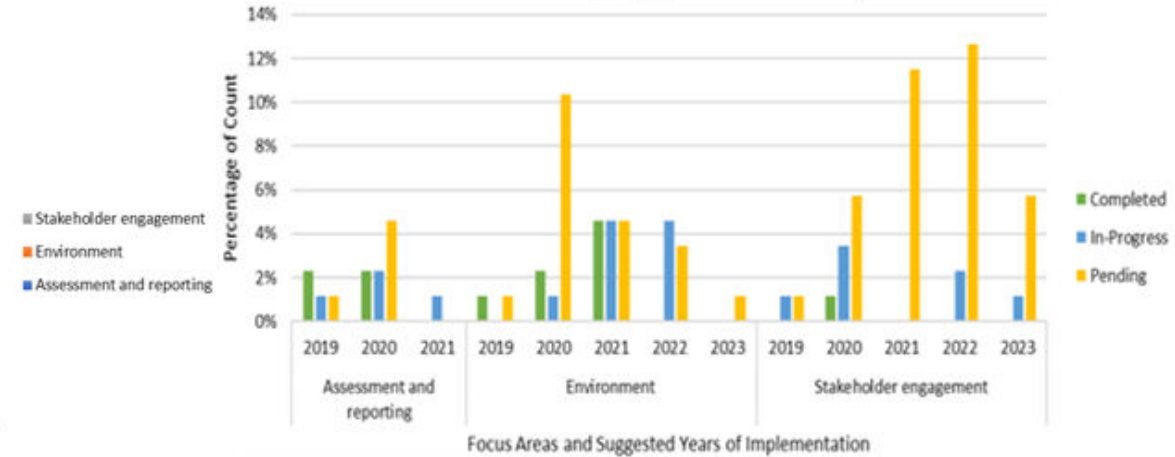
Number of Activities by Area



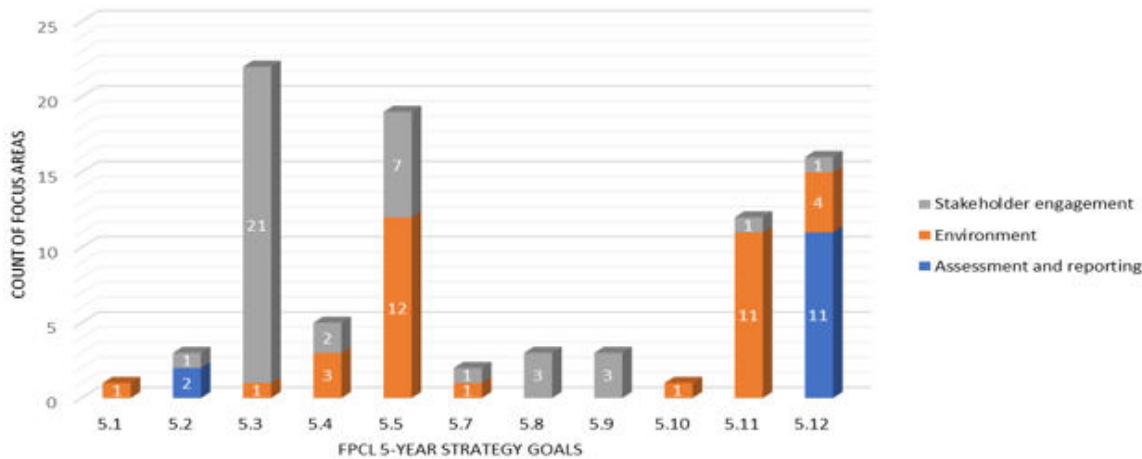
Focus Area Completion Status



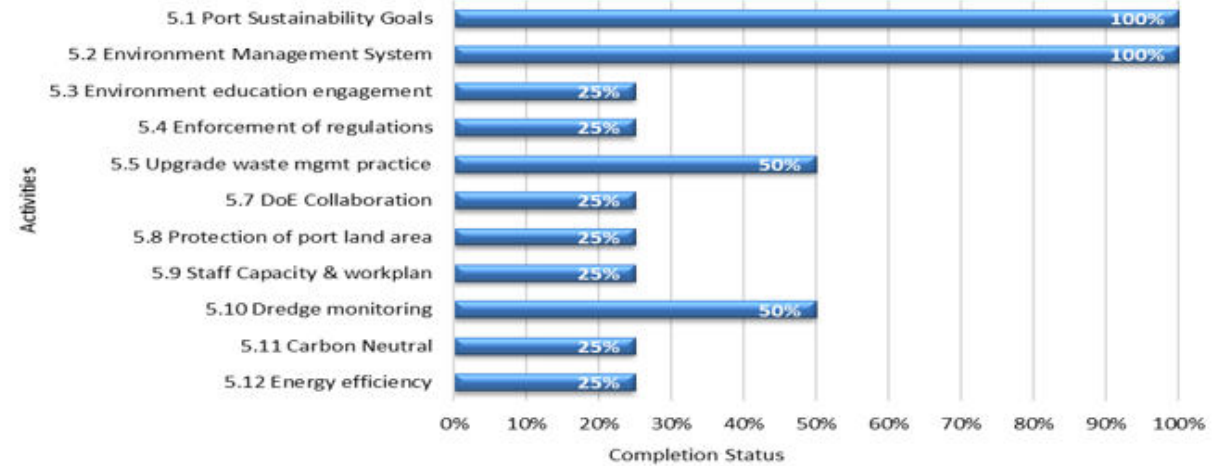
Focus Area by Suggested Years of Implementation



Focus Areas by FPCL's Strategic Goal 5



Strategic Activity Completion Status

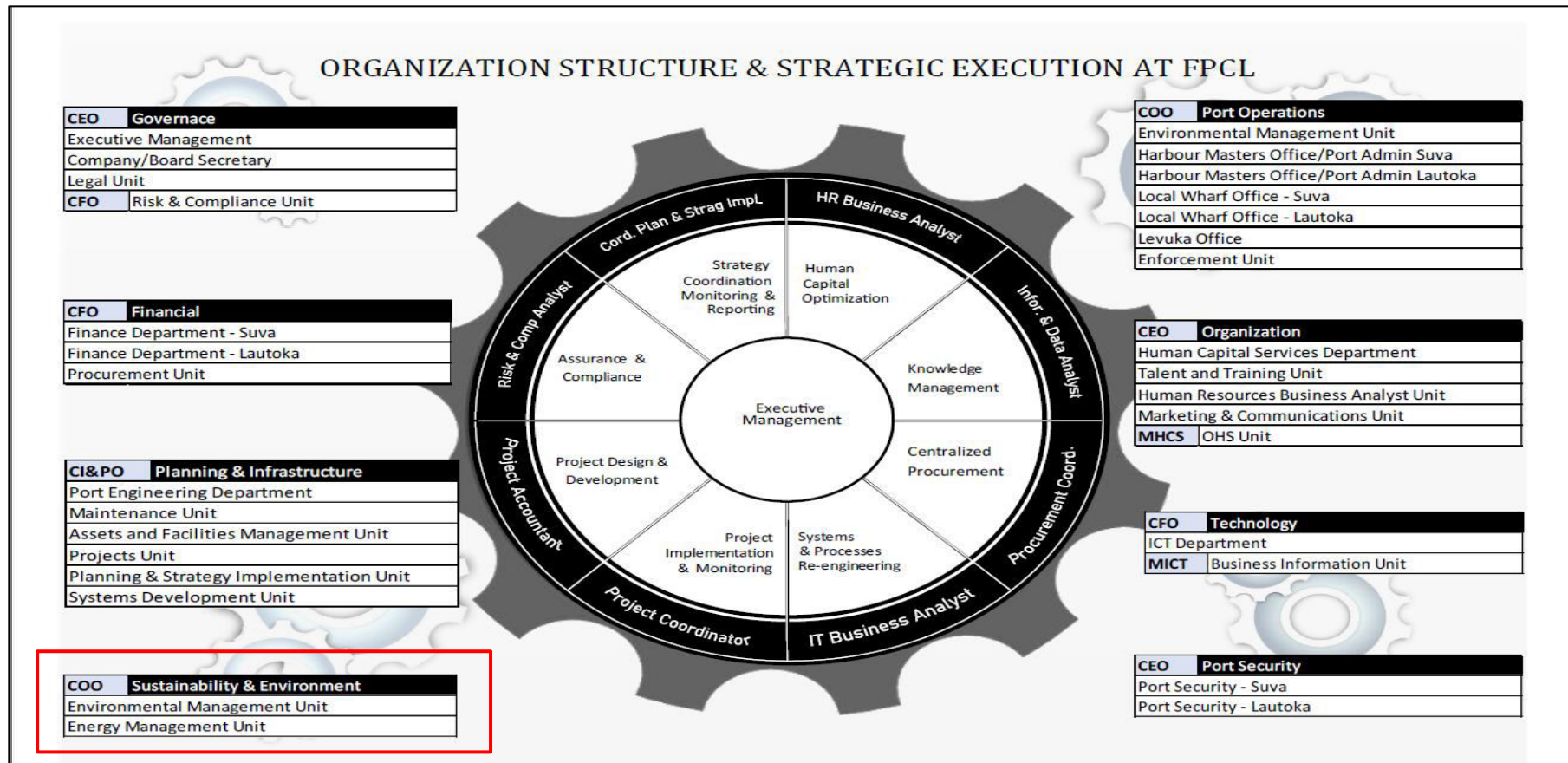


FOSTERING A CULTURE OF SUSTAINABILITY



A SUSTAINABLE CULTURE STARTS AT THE TOP

A **Sustainability & Environment** component is explicitly incorporated within the Chief Operating Officer's purview, reinforcing the importance of these elements across all departments and units.



GREEN PORT – ACHIEVEMENTS

Green Port initiatives were implemented to operate more **Efficiently** and with greater **Sustainability** in line with global trends to **Optimise** business outcomes.

ACHIEVEMENTS



Achievement of ISO Certifications

- ISO 9001: 2015 QMS
- ISO 45001: 2018 OHS
- ISO 14001: 2015 EMS
- ISO 22316: 2017 Org. Resilience

Establishment Carbon Neutral Facility (2021)

Recipient of Akiyama Award for Climate & Energy under Green Port Initiatives (2022 & 2023)



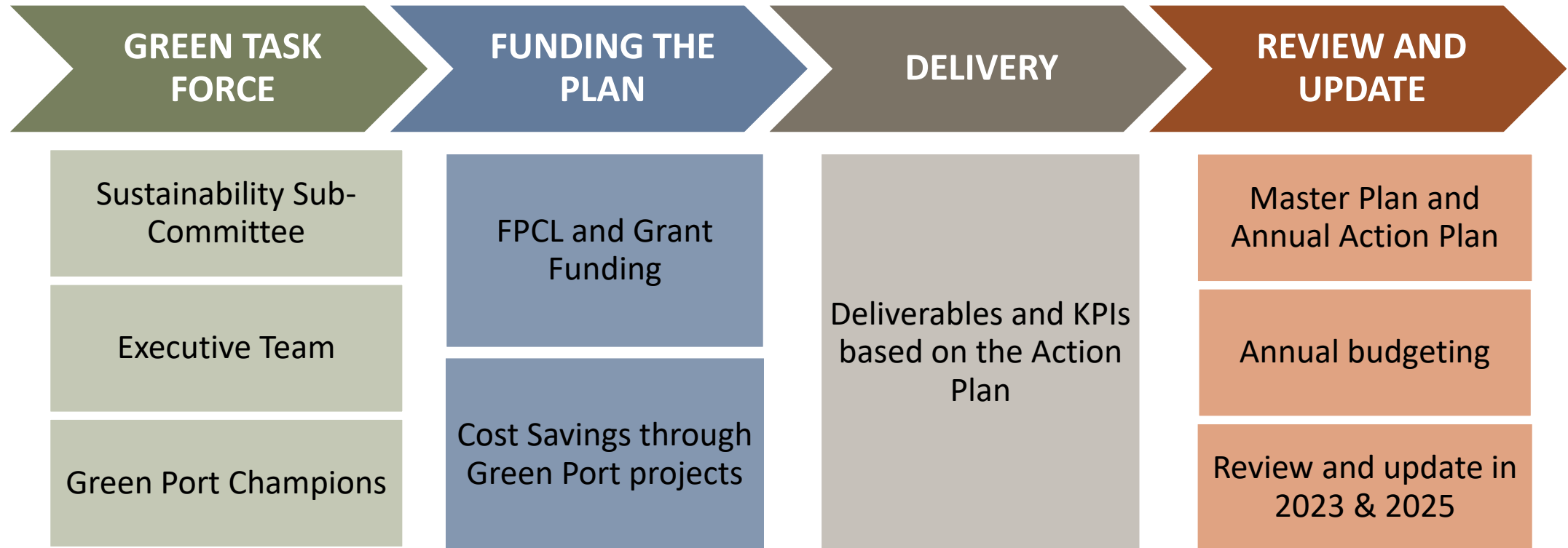
Recipient of Green Award for Protection of the Environment presented by Green Scouts Movement Fiji Islands (2016)



Recipient of President's Fiji Business Excellence Award for Green Sustainability (2023)



GREEN PORT MASTER PLAN - Implementation Methodology



FPCL'S COMMUNITY-LEVEL SUSTAINABILITY INITIATIVES

CLEANUP CAMPAIGNS

- Engaged in maintenance and clean-up efforts at CWM (Colonial War Memorial Hospital).
- Led environmental clean-up activities in Lautoka.
- Participated in World Ocean Day clean-up campaigns in 2019, 2021, 2022 & 2023.



ENVIRONMENTAL CONSERVATION

- Conducted mangrove planting events to help protect and restore marine ecosystems.
- Implemented a forestry re-plantation program to contribute to sustainable land management.



CHALLENGES & OUR RESPONSE

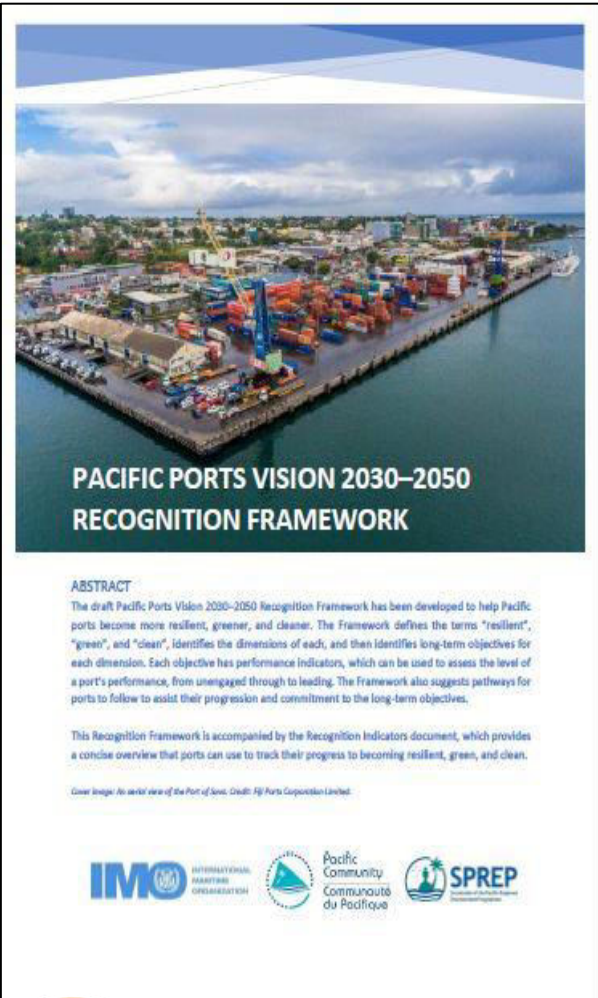


CHALLENGES FACED BY SMALL PORTS

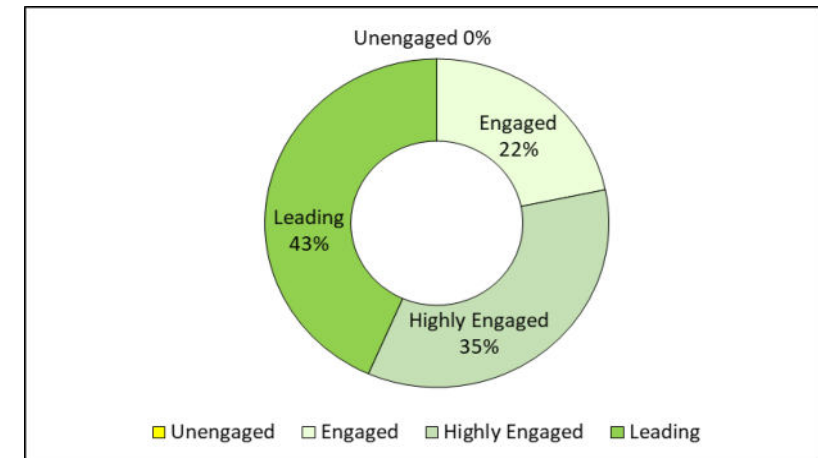
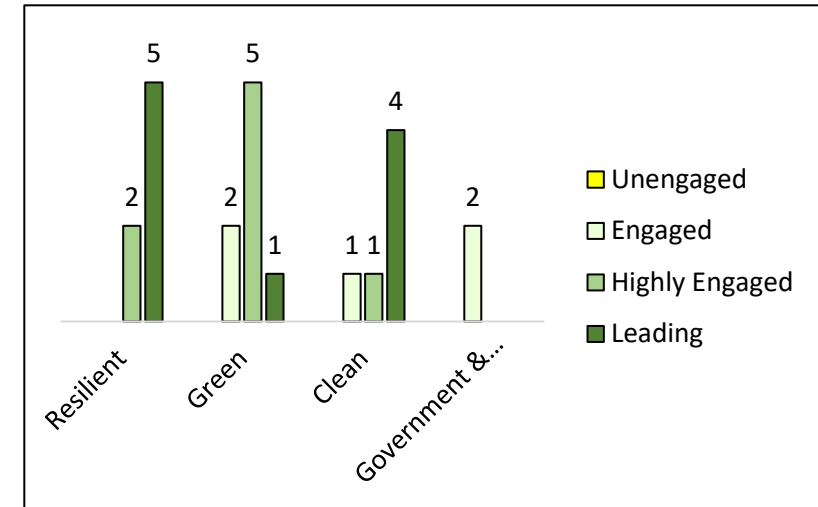
-  **Economic Constraints**
 - Small ports often face financial limitations that significantly hinder their capacity to develop, maintain, and modernise infrastructure, thereby limiting the investment into Environmental and Sustainable Initiatives.
-  **Need for Sustainable Development**
 - Balancing sustainable growth requirements (i.e., environmental conservation, social responsibility, innovation, and climate change mitigation) with economic development presents a multifaceted challenge for small ports.
-  **Resource & Technological Alignment**
 - Small ports grapple with aligning progress with available resources, balancing the need to adopt advanced technologies and effectively use existing infrastructure.
-  **Competitive Pressure from Larger Ports**
 - Small ports face stiff competition from larger ports which benefit from economies of scale, superior connectivity, and well-established relationships, making it difficult to attract and retain clients.
-  **Bureaucratic Challenges & Regulatory Compliance**
 - Navigating complex regulatory frameworks, bureaucratic procedures and ensuring compliance with safety, security, and environmental regulations pose considerable administrative and financial challenges for small ports.
-  **Human Resource Limitations**
 - Constraints in human resources, including limited staffing and lack of skilled labour, can impede the effectiveness of small ports moving towards sustainability.

PACIFIC PORTS VISION 2030-2050 RECOGNITION FRAMEWORK

FPCL has benchmarked its sustainability efforts against the recently launched Pacific Ports Vision 2030-2050 Recognition Framework, **reinforcing our commitment to environmental stewardship as a solution to contemporary challenges.**



PACIFIC PORTS VISION 2030-2050 RECOGNITION INDICATORS	
Indicator	FPCL's Status
RESILIENT	
1 Climate change adaptation	Leading
2 Disasters and emergency response	Leading
3 Cybersecurity	Highly Engaged
4 Support for economic development and operational efficiency	Leading
5 Compliance with international standards: Security	Leading
6 Compliance with international standards: Safety	Leading
7 Compliance with international standards: Data exchange	Highly Engaged
GREEN	
Climate Change Action	
8 Carbon neutrality	Engaged
9 Leadership	Highly Engaged
10 Measurement and monitoring	Highly Engaged
11 Execution	Leading
Energy Efficiency	
12 Awareness	Highly Engaged
13 Execution	Highly Engaged
Incentivizing and enabling green shipping	
14 Engagement	Engaged
15 Implementation	Highly Engaged
CLEAN	
16 Water quality	Engaged
17 Marine spills	Leading
18 Waste management	Leading
19 Community and neighbourhood relations	Leading
20 Dredging and coastal hydrology	Highly Engaged
21 Environmental engagement and compliance	Leading
GOVERNMENT & STAKEHOLDERS	
22 Government	Engaged
23 Stakeholders	Engaged



ASSISTANCE FROM ADB – *General upgrade of Suva Port (1979)*

- There are six (6) ports of entry in Fiji, namely: Suva, Lautoka, Levuka, Wairiki, Malau and Savusavu where the international ports of Suva and Lautoka account for 95% of Fiji's import and export.
- Suva Port was first established in 1883 using a wooded structure, redesigned in 1910 and later reconstructed as a concrete structure in 1963.
- The first loan from the Asian Development Bank (ADB) in 1979 was for a general upgrade for the Suva Port. The port was rehabilitated and developed for containerized cargo.



ASSISTANCE FROM ADB – Suva Port Relocation Feasibility Study (2020-2024)

Project Steering Committee

Consultant Team



and partners,
supported by the
Roko Tuis

Fiji's gateway for trade



FPCL - "To be the Smart, Green Gateway for Trade in the Pacific region."



THANK YOU

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