FIJI PORTS CORPORATION LIMITED

IMPLEMENTATION OF
THE GREEN PORT MASTER PLAN
(2019 – 2023)

"An aspiring Smart-Green Gateway in the Pacific"

CONTENT

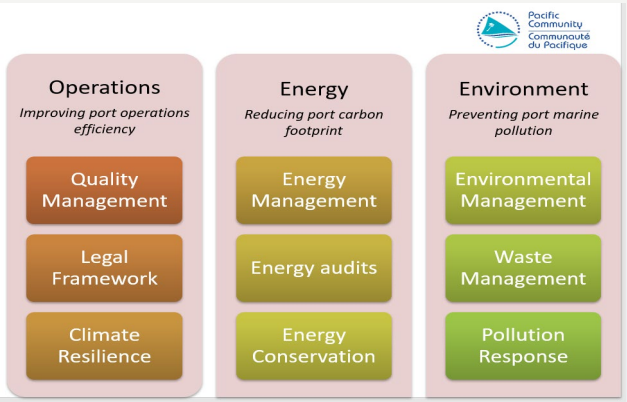
OVERVIEW

ALIGNMENT

This masterplan aligns with:

- FPCL's Five-Year Strategic Plan;
- SPC's Green Pacific Port Concept; and
- Contributes to the achievement of the United Nations Sustainable Development Goals (SDGs)

Strategic Goal 5
Environment



Sustainable Development Goals

FOCUS AREAS

ENVIRONMENT

- ↓ Greenhouse gas (GHG) emissions
- ↓ Air Pollution
- ↓ Water Pollution
- ↓ Land based water and litter
- ↑ Resource usage
- ↑ Cleaner Port
- ↑ Well maintained green spaces in port areas

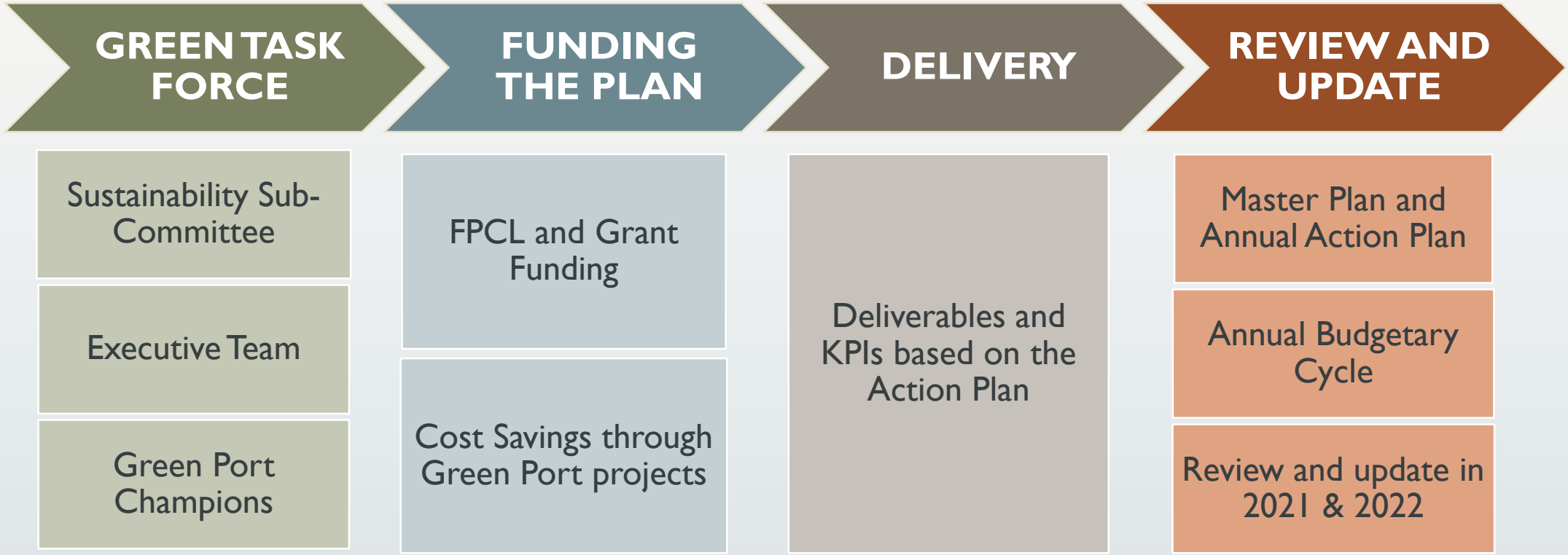
STAKEHOLDER ENGAGEMENT

- ↑ Raising awareness of green port issues and environmental concerns
- ↑ Enforcement of regulations
- ↑ Enabling assistance - helping stakeholders reduce their own environmental footprints

ASSESSING AND REPORTING

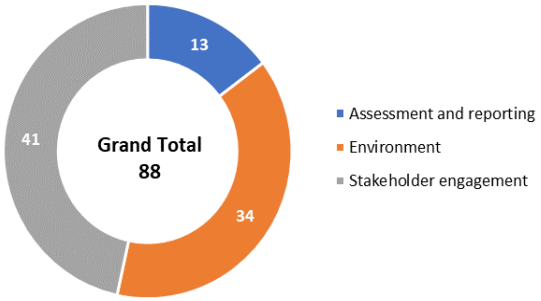
- ↓ Carbon footprint
- ↓ Air quality index
- ↓ Water quality
- ↓ Land based waste and litter
- ↑ Port cleanliness measured
- ↑ Port green space growth

IMPLEMENTATION

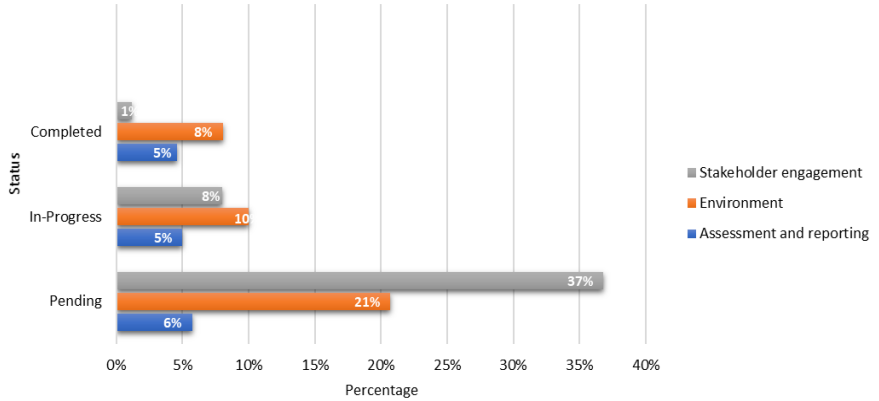


FPCL GREEN PORT MASTERPLAN IMPLEMENTATION DASHBOARD 2019 - 2023

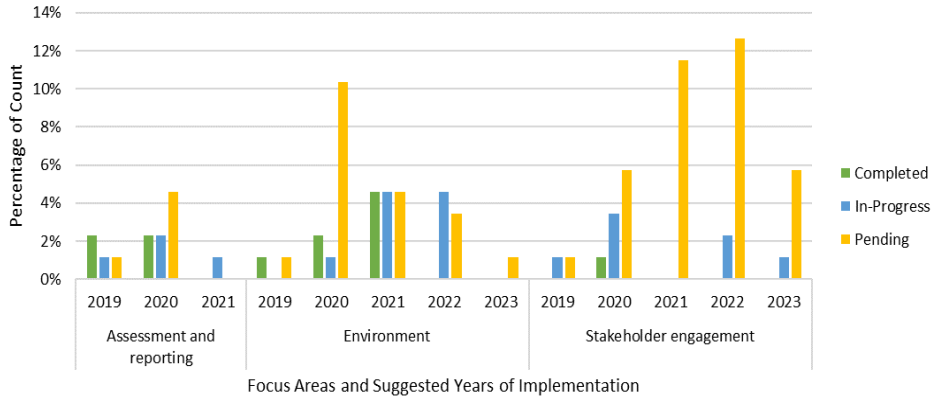
Number of Activities by Area



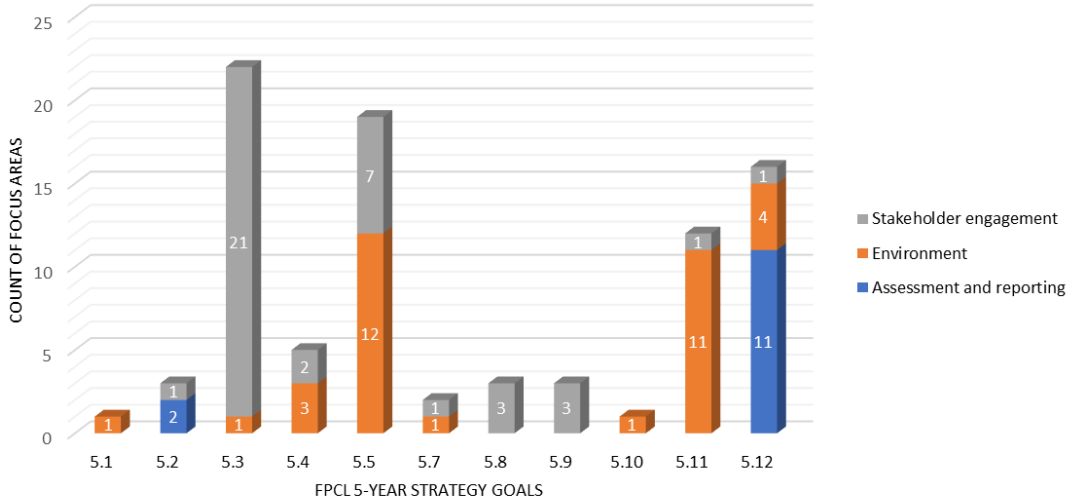
Focus Area Completion Status



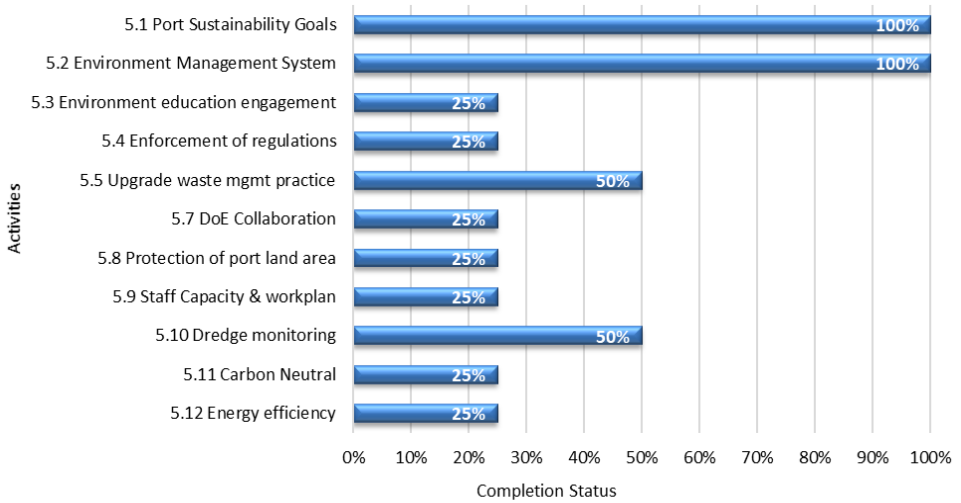
Focus Area by Suggested Years of Implementation



Focus Areas by FPCL's Strategic Goal 5



Strategic Activity Completion Status



ANNUAL ACTION PLAN

Green Port Action Plan 2021																		
	Activity	Strategy	SDG this aligns with	Alignment with SPC framework	Primary responsibility	Secondary responsibility	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21
1	Annual workshop on greenport initiatives to review progress and maintain momentum	5.2	17. Partnership for the goals	Quality Management	ENGM	MCO												T
2	Develop Environment Management System (EMS) in accordance with ISO 14001	5.2	9. Industry, innovation and infrastructure	Quality Management	ENVO	QO						C						
3	Annual stakeholder meetings and briefings	5.3	17. Partnership for the goals	Environmental Management	COO	MCO/ ENGM/ENVO											T	
4	Actively develop and update the green port section of FPCL's website	5.3	17. Partnership for the goals	Environmental Management	MICT	SA												T
5	Encouraging FPTL to upgrade yard lighting to LED, incorporating dimming controlled by guards	5.3	7. Affordable and clean energy & 9. Industry, innovation and infrastructure & 13. Climate action	Energy Conservation	CIPO	PE/COO							O					
6	Establish standards and enforce improved handling of cement offload at the Suva terminal.	5.3	3. Good health and well being & 14. Life below water	Quality Management	COO	ENFO	O											
7	Establish standards around hydraulic oil leakage and leakage clean up (don't hose into sea or into drains) and enforce	5.3	14. Life below water	Quality Management	COO	ENFO							T					
8	Purchase of pollution boat for Lautoka	5.4	14. Life below water	Pollution Response	COO/HMLTK	PC									T			
9	Improve capacity to detect water pollution then using this to detect and prosecute water pollution by vessels.	5.4	14. Life below water	Pollution Response	HMSUV/HMLKT	ENFO/LO						T						
10	Develop and use pollution detection methodologies, procedures and checklists	5.4	14. Life below water	Pollution Response	HMSUV/HMLKT	ENFO									T			
11	Signage on wharfs about spills, littering, dumping and penalties that apply	5.5	3. Good health and well being & 14. Life below water & 15. Life on land	Waste Management	AMO	ENVO					T							
12	Upgrade waste management practices and enforcement for international vessels.	5.5	15. Life on land	Waste Management	COO	AMO/ENFO									T			
13	Upgrade of bins in port areas (more bins, bins for different recycling streams), entering into contracts for collection of recycled waste.	5.5	3. Good health and wellbeing & 15. Life on land	Waste Management	AMO	AMC									T			
14	Deploy segregated bins in office areas	5.5	3. Good health and wellbeing & 15. Life on land	Waste Management	AMO	AMC									T			
15	Make the cleaners responsible for ensuring the different waste streams are properly processed	5.5	3. Good health and wellbeing & 15. Life on land	Waste Management	AMO	AMC									C			
16	Roster one cleaner to work a half day on the weekend.	5.5	3. Good health and wellbeing & 15. Life on land	Waste Management	AMO	AMC									C			

The Green Port Master Plan is delivered through yearly action plans.

FPCL GREEN PORT DASHBOARD - NOVEMBER 2021

3,607 Mwh
FPCL's Average Energy Consumption per Annum

"An aspiring Smart-Green Gateway in the Pacific"

1,291 t CO_2-e
FPCL's Carbon Footprint per Annum

11%
Average Reduction of Energy Consumption over the last 5 years

$1.1M
Total Invested

11%
Average Carbon Footprint Reduction over the last 5 years

25%
Expected Reduction of Energy Consumption by 2023

13
Key Projects Implemented

220 t CO_2-e
Expected Carbon Footprint Reduction by 2023

FPCL's ENERGY REDUCTIONS

Yearly energy reductions

Years	Total Energy Consumption (kWh)
2016	4,878,685
2017	3,881,869
2018	3,134,608
2019	3,058,574
2020	3,079,528
2021	1,468,522

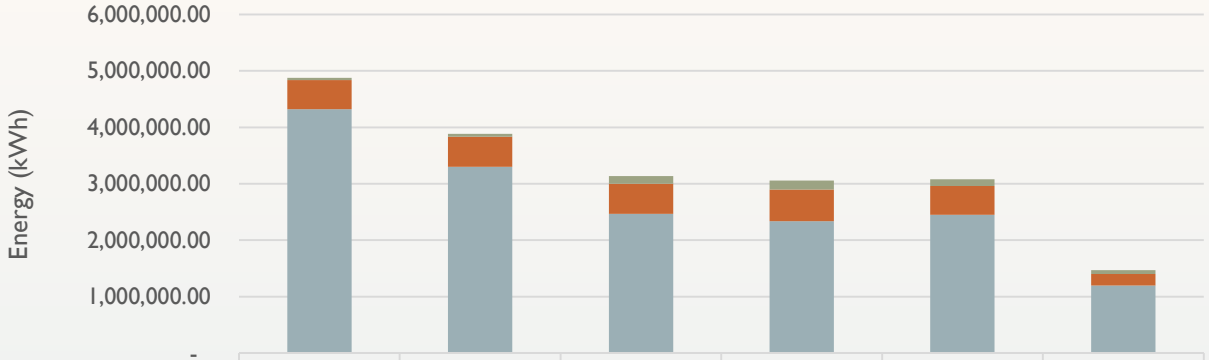
FPCL tracks and monitors its energy consumption and GHG emissions through a dedicated energy tracker.

Yearly GHG reductions

Years	Total GHG emissions (t CO_2-e)
2016	1,747.96
2017	1,390.50
2018	1,108.61
2019	1,114.66
2020	1,091.22
2021	519.98

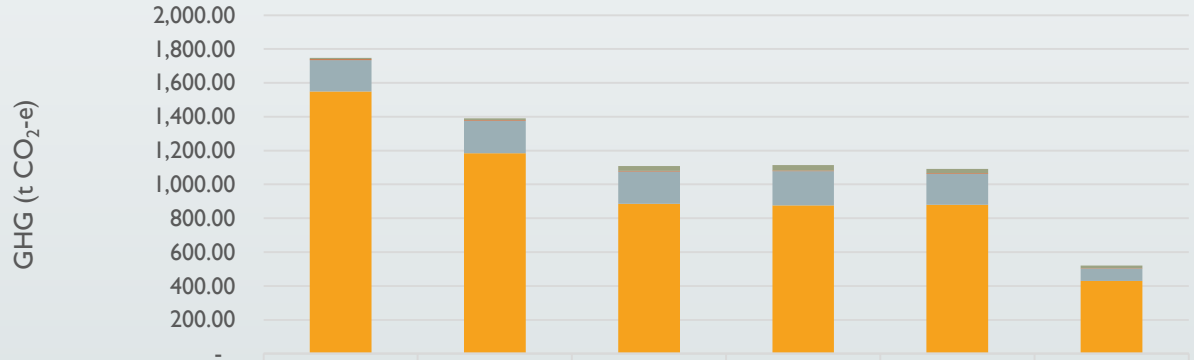
N.B. - 2021 data is up to the month of June only.

Reduction of Energy Consumption (kWh)



	2016	2017	2018	2019	2020	2021
Sum of Energy Fuels (kWh)	42,318.06	48,300.83	135,872.06	163,101.94	117,841.78	66,240.45
Sum of Energy Lautoka (kWh)	517,474.00	532,035.00	533,505.00	561,418.00	512,395.00	204,217.00
Sum of Energy Suva (kWh)	4,302,852.00	3,292,144.00	2,457,582.00	2,324,980.00	2,442,036.05	1,195,175.60
Sum of Energy Levuka (kWh)	16,041.00	9,390.00	7,649.00	9,075.00	7,256.00	2,889.00

Reduction of GHG emissions (t CO_2 -e)

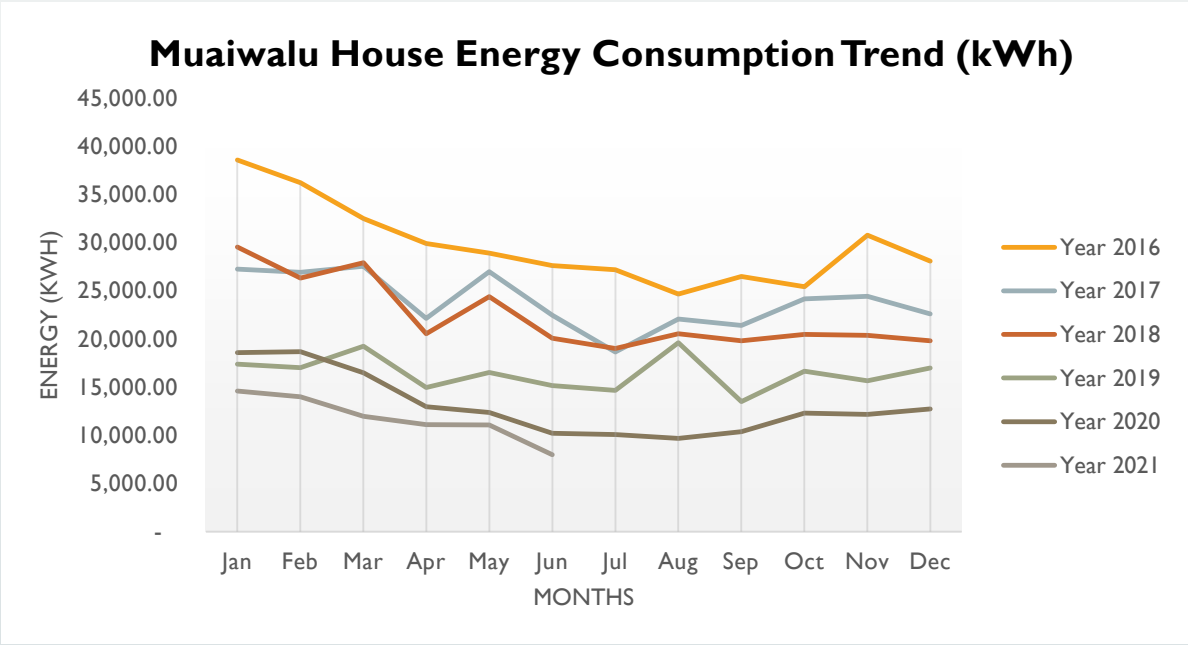


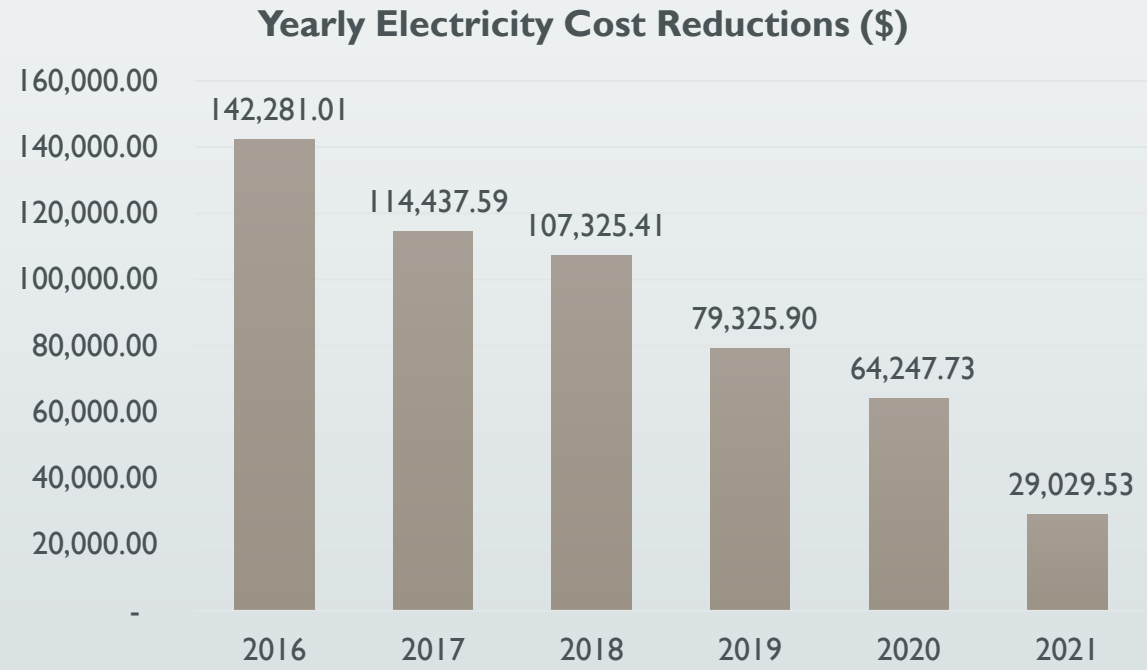
	2016	2017	2018	2019	2020	2021
Sum of GHG(t CO2-e) All fuels	6.87	10.42	29.06	33.13	25.01	15.16
Sum of Levuka GHG(t CO2-e)	5.77	3.38	2.75	3.27	2.61	1.04
Sum of Lautoka GHG(t CO2-e)	186.29	191.53	192.06	202.11	184.46	73.52
Sum of Suva GHG(t CO2-e)	1,549.03	1,185.17	884.73	876.15	879.13	430.26

MUAIWALU HOUSE ENERGY RESULTS – FPCL HEAD OFFICE

Reduction of energy consumption is achieved through:

- LED lighting upgrades
- Air conditioning upgrades
- Efficient appliances (laptops, refrigerators, etc.)
- Solar PV systems
- Light sensors
- Other





N.B. - 2021 data is up to the month of June only.

GREEN PROJECTS

Port of Suva Smart LED Lighting Upgrade Project	Electric Incinerator at Suva Port	Old incinerator
Description: Upgrading of 35 units of 2000W Metal Halides to 1200W high-efficiency LED lighting. 45% reduction in energy usage and an estimated electricity cost savings of $50k-$61k per year. Reduction of 53tCO_2e per year.	Description: Fiji's first electric-powered incinerator was installed at Port of Suva in 2019. This has allowed FPCL to move away from the old inefficient diesel powered, high carbon emitting incinerator.	
		

Muaiwalu 2 Renewable Energy Carpark Facility

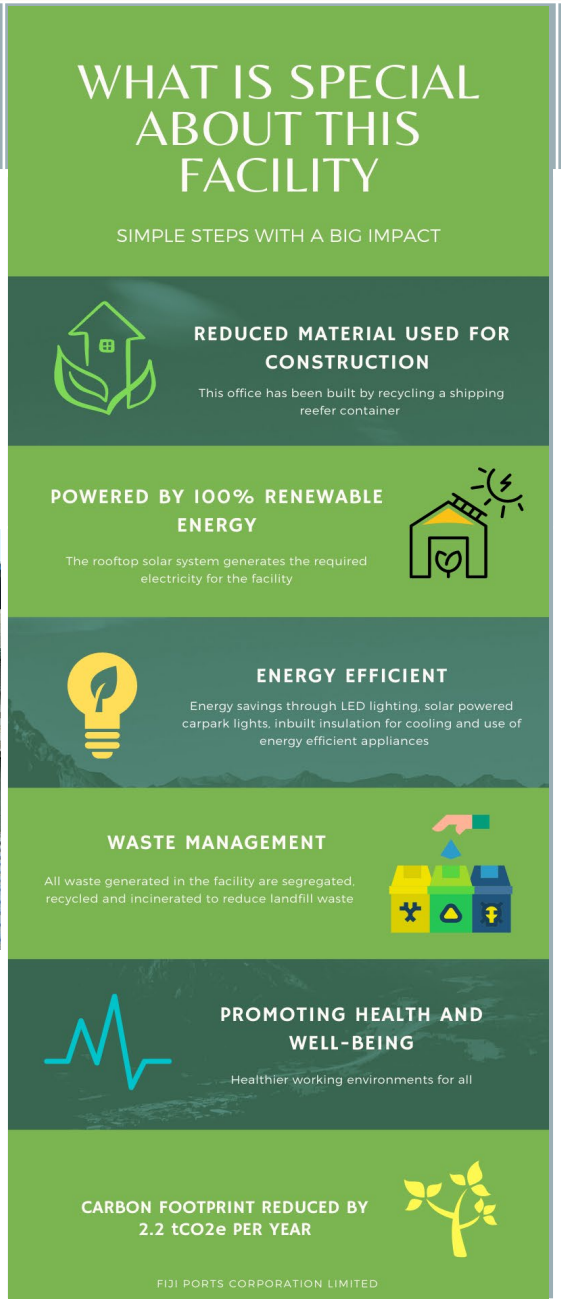
Description:

FPCL's first facility which operates on 100% renewable energy making it a net zero facility.

6kW Solar PV System, Solar carpark lights and other energy efficient upgrades have been installed.

Estimated electricity cost savings $1,600 per year.

Reduction of 2.2tCO_2e per year.



Muaiwalu 2 Waiting Shed Solar PV System Installation – Ongoing

Description:

Muaiwalu 2 Waiting Shed Solar PV System Installation – Ongoing

A 22kW Solar PV System is planned to be installed.

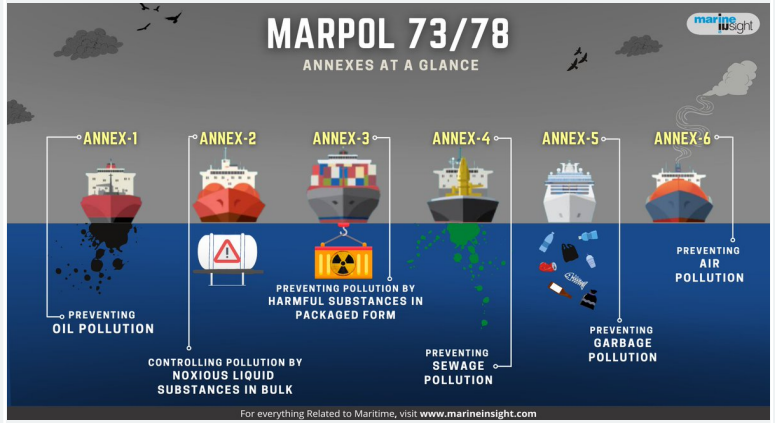
Estimated electricity cost savings $11,100 per year.

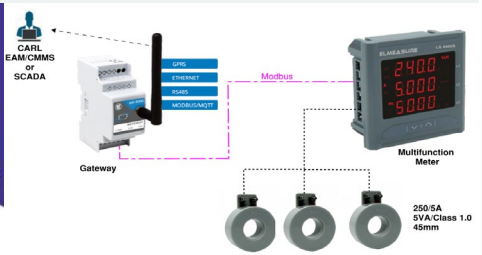
Reduction of 19.2tCO_2e per year.

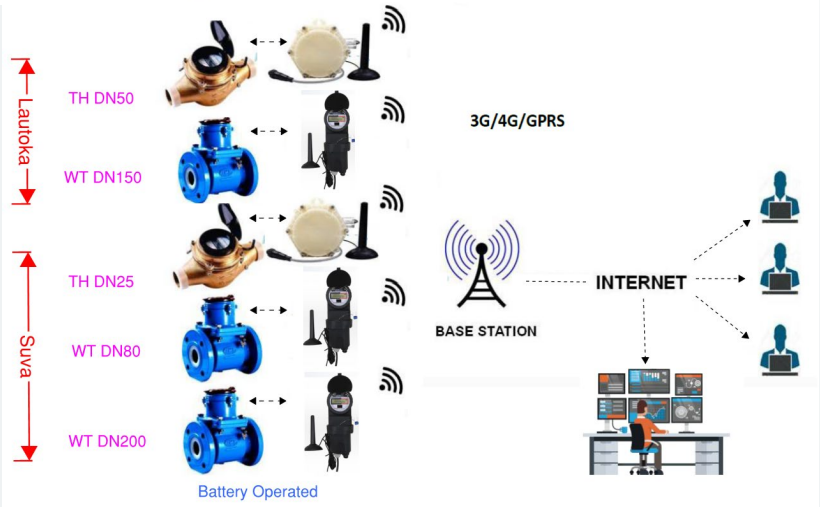
Green Space at Muaiwalu 2 Carpark	Ship Waste Management	Smart Metering
Description: Supporting FPCL's Green Port Initiative, the landscaping works were done at Muaiwalu 2 Carpark to establish a green space.	Description: In compliance with MSAF's regulations and to protect Fiji's marine environment and its marine resources, FPCL has engaged services to allow appropriate reception facilities to manage ship discharged waste.	Description: Implementation of smart metering is in progress to monitor water consumption, leakages and electricity consumption which can assist in eliminating resource wastages and have significant cost savings.

Before:

After:







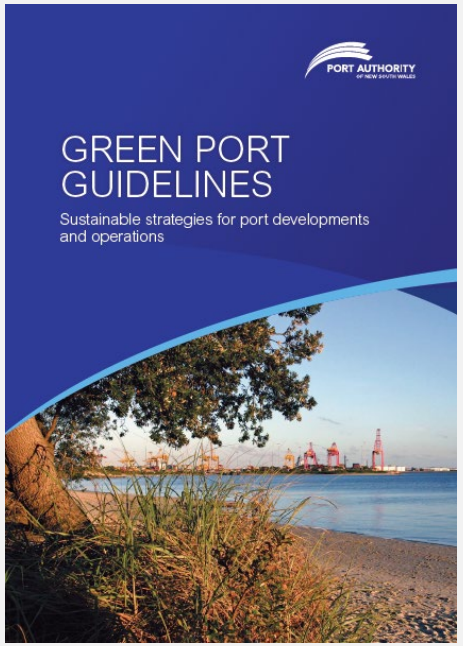
OTHER GREEN INITIATIVES

Implementation of Smart Green Technologies:

- Implementation of a Computerized Maintenance Management System (CMMS),
- Use of Inverter type air conditioning systems for replacement units: 30 – 45% energy savings.
- Purchasing of Energy Star rated appliances.
- Facility LED lighting upgrades and installation of sensors to reduce energy consumption.
- Solar PV Projects.
- Power factor correction.

Other:

- ISO14001:2015 Environmental Management Systems
- Support extended to external stakeholder initiatives.
- Cleanup campaigns.
- Waste Management Plan – Draft
- Upgrading of dated facilities.
- Incorporation of NSW Green Port Guidelines for upcoming major development projects – Lautoka Yard 4, Muaiwalu 2 Interisland terminal facility, etc.
- Draunibota Clinker Discharge Facility Project - Relocation of Clinker Operation from Kings Wharf.



THANK YOU

FPCL's Green Port Master Plan Launch - Lautoka