

**Ninth Session of the SIDS DOCK Assembly
Via Telephone and Videoconferencing
Thursday, 25th September 2025
4:00 p.m. to 6:00 p.m. (Eastern Daylight Time)**

A/9/18

The GLOEA Projects: Wave Parks, Living Breakwater, Waste-to-Energy

Fourteenth Meeting of the
SIDSDOCK Executive Council

7th July 2025
David Neves Duncan
GLOEA Coordinator

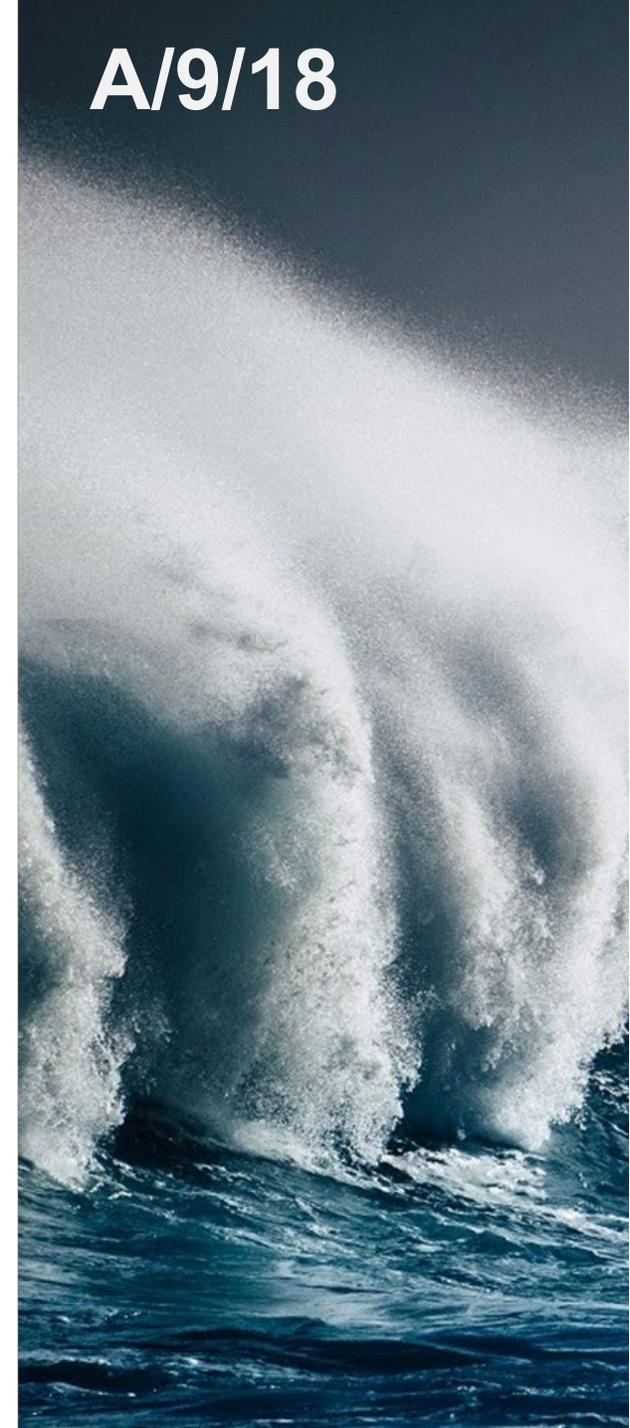


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GLOEA Introduction and Background

Ocean energy is the overlooked renewable source and solution

Jointly launched by SIDS DOCK and UNIDO in 2022

Follow-up to the “call for action” of COP-26 and UN Ocean Conference

GLOEA support from several SIDS Ministers and 22 Pacific islands

GLOEA Secretariat hosted by SIDS DOCK in Belize in 2023

UNIDO provides support for the establishment and the first operational phase

Regional approach implemented through interested GN-SECs

South-south and triangular cooperation through the GN-SEC platform

By 2030, the global value added of the ocean economy will double, reaching over 3 trillion USD and creating 40 million jobs

GLOEA Projects Portfolio

Transforming Island Nations Through Ocean Energy Solutions

Portfolio Overview

12

Total Projects

7

Countries

4

Technologies

1

Active MOU

Project Pipeline

Proposal

Formal proposals submitted

4 33%

Identify

Initial assessment phase

4 33%

Qualify

Due diligence & feasibility

3 25%

MOU Signed

Ready for implementation

1 8%

Technology Portfolio



Seabased Wave Power

5



BIOROCK® Living Breakwater

4



Waste to Energy

2



EV Charging Solutions

1

Geographic Coverage

bz Belize

DM
Dominica

ws Samoa

st São
Tomé

sc
Seychelles

to Tonga

tv Tuvalu

More to
come...

Spanning 3 Ocean Regions
Caribbean • Pacific • Atlantic Ocean

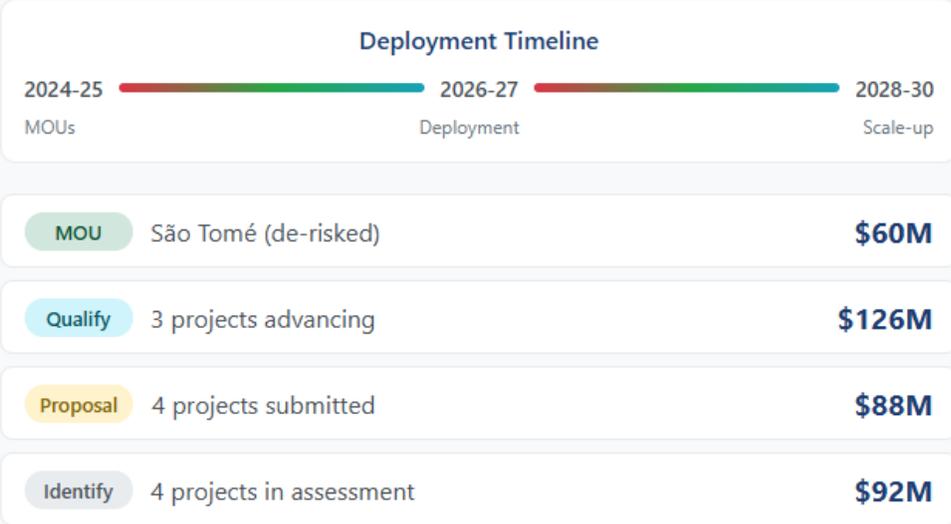
Portfolio Investment Opportunity

Transforming Ocean Energy into Scalable Value

Value by Technology

 Seabased Wave Power 5 projects • 60MW total capacity	\$300M
 Waste to Energy 2 projects • 10MW total capacity	\$40M
 BIOROCK® Breakwaters 4 projects • 8km living infrastructure	\$24M
 EV Charging Solutions 1 project • Island-wide network	\$2M

Value by Development Stage



\$366M* Total Portfolio Value
Range: \$239M - \$439MUSD

\$30.5M Average Portfolio Value | **82%** Wave Power Share | **3** Ocean Regions | **70MW** Total Clean Energy

*Based on completed feasibility studies, industry benchmarks, and project specifications. Final costs subject to detailed engineering.

BZ • Belize

2 Projects • Both in Proposal Stage

Sargassum to Energy

Proposal



Belize Waste-To-Energy Pilot Project – Conversion of Sargassum into the Belize Energy Mix: Commercial Demonstration Project in San Pedro, Belize, using the VARIODIN AG's Technology. Pilot Project to promote the accelerated deployment of integrated waste-to-energy systems in Belize to help respond to the challenges of ocean environmental management, rehabilitation of ecosystems, and the management of Municipal Solid Waste (MSW).

Next Steps

Site visits completed. In discussions with Belize Electricity Limited (BEL). Project will have to be approved by the Public Utilities Commission.

EV Charging Network

Proposal



Proposal for the Development and Deployment of New Electric Vehicle (EV) Transport and Renewable Energy Charging Solutions to Reduce Carbon Emissions, Promote Technology Development and Expand Regional Employment Opportunities, in San Pedro, Belize.

Next Steps

Awaiting Letter of Intent from Minister of Energy. Need to followup post- UNOC3.

TO • Tonga

2 Projects • Identify+ Proposal Stages

North Tongatapu BIOROCK®

Identify



North Tongatapu Nature-based solutions for coastal zone protection and climate adaptation: Living breakwater using electrolytic mineral accretion system. This innovative approach will protect Tonga's vulnerable coastlines while restoring marine ecosystems.

Next Steps

MOU Amendment sent to Government. Awaiting review status.

Tongatapu Wave Power Park

Proposal



Pilot 2 MW Wave Power Park at Tongatapu Island. Potential wave power park site located offshore Tongatapu, at a depth of between 50 and 60 metres, large enough area for 10 MW, preferably more. Excellent expansion potential for future scaling.

Next Steps

MOU Amendment sent to Government. Awaiting review status.

WS • Samoa

2 Projects • Identify + Qualify Stages

BIOROCK® Living Breakwater

Identify



Living breakwater using electrolytic mineral accretion system, BIOROCK® system. This innovative nature-based solution will provide coastal protection while creating marine habitat and supporting coral reef regeneration around Samoa's coastline.

Next Steps

Location to be determined. Seabased conducted a Pre-Feasibility Study. November 2024 MOU drafted. Need follow up.

Apia Wave Power Park

Qualify



The Apia Seabased Wave Power Park. Potential wave power park site located offshore Apia, about 1.5 kilometers to east southeast, and at a depth of between 50 and 65 meters. Initial 2MW capacity with scale-up potential to 10MW.

Next Steps

MOU with Seabased under review. 2MW scale up to 10MW. November 2024 MOU under review. Need to follow up.

SC • Seychelles

2 Projects • Identify + Qualify Stages

BIOROCK® Living Breakwater

Identify



Seychelles' nature-based solutions for coastal zone protection and climate adaptation: Living breakwater using electrolytic mineral accretion system. This innovative system will protect coastlines while restoring coral reef ecosystems.

Next Steps

Early discussion started but no commitment as yet.

Takamata Wave Power Park

Qualify



Pilot 2 MW Wave Power Park at Takamata, using Seabased Wave Technology. This project will harness the Indian Ocean's wave energy resources to provide clean, renewable power for Seychelles' sustainable energy transition.

Next Steps

Preliminary studies conducted by Seabased. The Partners are preparing the site assessment document, and a draft MOU is under discussion among the Partners.

DM • Dominica

2 Projects • Identify + Qualify Stages

Waste to Energy

Identify



The waste-to-energy project is something that can benefit Dominica greatly as tourism destination. This initiative will help address waste management challenges while generating clean energy for the island's growing tourism sector and local communities.

Next Steps

WtE awaiting funding for feasibility study.

Seabased Wave Power Park

Qualify



The establishment of a 2 megawatt (MW) pilot wave power park, which will be expanded to 10MW or more. This project will harness Dominica's excellent wave energy resources to provide clean, renewable power for the island.

Next Steps

Wave Park site identified. Further work to be done after GeoThermal.

ST • São Tomé & Príncipe

1 Project • MOU Signed



Seabased Wave Power Park

MOU



2 MW

Initial Capacity

10+ MW

Scale-up Target

ST1

Site Identified

The establishment of a 2 megawatt (MW) pilot wave power park, which will be expanded to 10MW or more. Potential site identified (ST1). This project will demonstrate the viability of wave energy technology in West African waters and provide clean, renewable energy for São Tomé & Príncipe's sustainable development goals.



Next Steps

MOU under review with the government.

 **Vaiaku BIOROCK® Living Breakwater**

Proposal



 **Critical Climate Adaptation Project**

Protecting one of the world's most vulnerable nations from sea level rise

Vaiaku Nature-based solutions for coastal zone protection and climate adaptation: Living breakwater using electrolytic mineral accretion system. This critical infrastructure project will provide essential coastal protection for Tuvalu while creating new marine habitat and supporting coral reef restoration in this climate-vulnerable Pacific island nation.

 **Next Steps**

Proposal shared with donors and awaiting feedback.

Other Caribbean Wave Power Projects

Barbados

BB Wave Power + Green Hydrogen

MOU Signed 

 First Caribbean MOU Signed - June 2024

Seabased Wave Power Park

2 MW

Pilot Phase

10+ MW

Scale-up

The establishment of a 2 megawatt (MW) pilot wave power park, which will be expanded to 10MW or more. It will serve as input to the BIDD's green hydrogen facility, creating an integrated renewable energy ecosystem.

Next Steps

MOU Signed with Seabased. June 10, 2024

St. Vincent & Grenadines

VC Argyle International Airport Area

Qualify Stage

Argyle Wave Power Park

2 MW

Pilot Phase

10+ MW

Scale-up

The Argyle Seabased Pilot 2 MW Wave Power Park. Potential wave power park site located offshore the Argyle International Airport, about 1.8 kilometres to east, and at a depth of between 40 and 47 metres.

Next Steps

MOU with Seabased under review. 2MW scale up to 10MW. And has gone through due diligence with Government. Signed in March 2025

GLOEA – The Path Forward

Transforming Island Nations Through Ocean Energy Solutions

From Vision to Reality

12

Projects

7

Countries

1

Signed MOU



Accelerating Ocean Energy Transformation



For Governments

Fast-track regulatory approvals and policy support



For Development Partners

Scale funding for feasibility studies and implementation



For Technology Partners

Expand regional deployment capabilities



By 2030: A Caribbean-Pacific Ocean Energy Corridor



40+ MW of wave power capacity



Climate-resilient coastal protection across vulnerable island nations



Regional leadership in blue economy innovation

GLOEA is ready to deliver.

Are you ready to be part of the ocean energy revolution?

QUESTIONS OR DISCUSSION?

