



**SIDS DOCK SECRETARIAT  
MISSION TO TONGA  
21-28 MARCH 2026**

**TONGA NATIONAL ENERGY AWARENESS WEEK  
TANO'A INTERNATIONAL DATELINE HOTEL  
NUKU'ALOFA, TONGA  
26-27 MARCH 2026**



**PREPARED BY:**

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**EXECUTIVE SUMMARY**

The SIDS DOCK Secretariat Mission to Tonga, undertaken from 21-28 March 2026, was conducted to strengthen cooperation with the Government of Tonga and national stakeholders in advancing the country's sustainable energy transition agenda. The mission, supported by the United Nations Industrial Development Organization (UNIDO) and the Global Network of Regional Sustainable Energy Centers (GN-SEC), was led by Ms. Christine Neves Duncan, Chief of Staff and Project Director of the SIDS DOCK Secretariat, and was coordinated with the Ministry of Meteorology, Energy, Information, Disaster Management, Environment, Climate Change and Communications (MEIDECC). The mission sought to support Tonga's renewable energy and climate resilience objectives through participation in the Tonga National Energy Awareness Week (26-27 March 2026), consultations on strategic energy initiatives, high-level government meetings, and assessments of renewable energy infrastructure and future project opportunities. The mission also reinforced Tonga's leadership role within SIDS DOCK and the Pacific region in promoting ocean energy development and innovative climate-resilient solutions.

A number of key activities were undertaken during the mission, including participation in the two-day Tonga National Energy Awareness Week held under the theme "Building a Sustainable Energy Future for Tonga." The workshop brought together government agencies, utilities, development partners, private sector representatives, and community stakeholders to discuss renewable energy integration, transport electrification, grid modernization, energy storage, financing mechanisms, and capacity-building needs. The mission also included high-level consultations with senior government officials, including representatives from the Prime Minister's Office, MEIDECC, Tonga Power Limited, and the Tonga Energy Commission. In addition, renewable energy project site visits were conducted to assess operational solar PV facilities, battery storage systems, solar water solutions, and wind energy infrastructure, while consultations were also held regarding priority projects such as the proposed Wave Energy Park Project, OTEC development, grid modernization, and coastal resilience initiatives.

The mission's findings confirmed that Tonga has made substantial progress in advancing renewable energy deployment and strengthening its policy framework for sustainable energy development. Existing renewable energy projects are already contributing to reductions in diesel dependence, lower greenhouse gas emissions, and improved energy security. Stakeholders demonstrated strong support for expanding renewable energy generation, strengthening climate resilience, and integrating ocean energy technologies into Tonga's future energy mix. However, the mission also identified several important challenges, including financing constraints, grid

integration complexities, limited technical capacity, infrastructure vulnerability to climate impacts, and the need for strengthened institutional coordination and project preparation support. Discussions further highlighted the importance of integrated planning approaches that connect energy security with transport, water, disaster resilience, environmental sustainability, and socio-economic development.

The mission produced several strategic outcomes that will help guide future collaboration between Tonga, SIDS DOCK, and development partners. Stakeholders reaffirmed support for advancing the proposed Wave Energy Park Project and expanding technical cooperation related to ocean energy, renewable energy integration, and climate-resilient infrastructure development. The mission also strengthened partnerships among national institutions, regional organizations, international agencies, and private sector stakeholders committed to supporting Tonga's energy transition. Discussions emphasized the importance of mobilizing climate finance, strengthening institutional capacity, and promoting innovative financing mechanisms to accelerate implementation of priority renewable energy projects and sustainable infrastructure initiatives.

Priority recommendations arising from the mission include accelerating feasibility studies and resource assessments for renewable and ocean energy projects; strengthening grid modernization and energy storage systems; enhancing policy, regulatory, and institutional frameworks; and expanding technical training and capacity-building programmes for government agencies and utilities. The mission also recommended increasing private sector participation, strengthening public awareness and stakeholder engagement, and developing blended financing approaches to support investment in innovative renewable energy technologies. Particular emphasis was placed on improving climate resilience standards for future infrastructure projects and strengthening integrated national planning processes aligned with TERMPLUS and Tonga's broader sustainable development goals.

The mission concluded with agreement on several next steps and follow-up actions to maintain momentum and strengthen implementation of Tonga's energy transition priorities. Immediate actions include advancing discussions related to the Wave Energy Park Project amendment, initiating technical and feasibility studies, strengthening coordination mechanisms among partners, and identifying financing opportunities for project preparation activities. Medium- and long-term follow-up actions include expanding regional cooperation, supporting institutional strengthening, advancing climate finance mobilization, and continuing technical collaboration between Tonga, SIDS DOCK, development partners, and the private sector. The mission reaffirmed that continued partnership and sustained support will be essential to helping Tonga achieve its goal of a secure, resilient, and low-carbon energy future while strengthening its role as a regional leader in sustainable energy development among Pacific Small Island Developing States.

## **1. INTRODUCTION & BACKGROUND**

### **1.1 Overview of SIDS DOCK's Engagement in Tonga**

Tonga's engagement with SIDS DOCK follows a clear, escalating trajectory from early political endorsement to high-level leadership in the organisation. Tonga is now one of the most visible Pacific champions of SIDS DOCK's ocean energy agenda. Tonga's engagement with SIDS DOCK has evolved through four phases:

- a. Foundational Engagement (2014 -2015): Signing the SIDS DOCK Statute and joining the institutional framework.
- b. Strategic - Strengthening Energy Transition Commitments (2022): Positioning ocean energy as a national and SIDS-wide priority.
- c. High-Level Leadership in SIDS DOCK (2022-present): Holding top positions (Assembly President and Vice President, Executive Council Chair, SIDS DOCK Foundation President) and driving global advocacy for ocean energy financing at the international level, including the UN Ocean Conferences and the annual UNFCCC COP.
- d. Technology Partnerships (2023): Tonga selected Seabased Wave Power as part of its renewable energy transition strategy and signed the first Memorandum of Understanding for the development and deployment of a pilot 2MW Wave Power Park (scaling up to 10MW), that led to seven SIDS joining the SIDS Wave Programme, along with addressing nontechnical barriers such as regulatory, financial, and institutional constraints, to support successful implementation and scalability of ocean energy projects.

### **1.2 National Energy and Climate Context**

Tonga's dependence on imported diesel exposes it to global price volatility and supply disruptions. SIDS DOCK's mandate - reducing fossil fuel dependence in SIDS - supports Tonga's energy transition goals and is in alignment with Tonga's National Priorities, NDCs, and Energy Transition Goals. Tonga's national energy and climate context is defined by extreme climate vulnerability, heavy dependence on imported diesel, and an ambitious shift toward renewable energy and resilience. SIDS DOCK aligns tightly with Tonga's national priorities, NDCs, and long-term energy transition goals by supporting renewable energy deployment, energy security, resilience, and access to climate finance.

Tonga is one of the world's most climate-vulnerable countries, facing rising sea levels, intensifying cyclones, and disaster shocks such as the 2022 Hunga Tonga-Hunga Ha'apai eruption and tsunami. Tonga's emissions are negligible globally, but climate impacts threaten lives, infrastructure, and national development. Tonga relies heavily on imported diesel for electricity and transport, creating high energy costs and exposure to global supply shocks. Transport remains the largest and hardest-to-abate sector. Tonga is implementing an Electric Vehicle Roadmap and broader transport decarbonization initiatives. However, Tonga has made significant progress in renewable electricity generation, achieving over 60% of targeted energy emissions reductions since its 2020 NDC. Anchored in the Energy Act 2021, Climate Change Fund Act 2021, TSDF II (2015–2025), Tonga Energy Road Map 2021 – 2035 (TERMPLUS), and Tonga's LT-LEDS (2021–2050), Tonga commits to:

- 70% renewable electricity by 2030.
- 100% renewable electricity by 2035.
- Expanded mitigation in transport, Agriculture, Forestry and Other Land Use (AFOLU), waste, and Industrial Processes and Product Use (IPPU) sectors.
- Strengthened adaptation in coastal protection, water security, fisheries, forestry, and disaster risk management.

## 2.0 PURPOSE OF THE SIDS DOCK MISSION

Ms. Christine Neves Duncan, Chief of Staff and Project Director traveled to Tonga on behalf of the SIDS DOCK Secretariat on a technical mission from 21-28 March 2026. In this regard and noting the significant progress that the Government and the MIEDECC have made in leading the launch and promotion of the Global Ocean Energy Alliance (GLOEA) and promoting and advancing Ocean Energy, the SIDS DOCK Secretariat received permission from the Government of Tonga to conduct the mission to Tonga, coordinated with the MEIDECC, for the purposes listed below, and to meet with high officials and relevant stakeholders.

The mission was supported by the United Nations Industrial Development Organization (UNIDO) and the Global Network of Regional Sustainable Energy Centers (GN-SEC), and Seabased Company, a SIDS DOCK Partner, was a co-sponsor for the Networking Reception, following the Workshop.

### 2.1 Objectives of the SIDS DOCK Mission:

- Tonga National Energy Awareness Week, 26-27 March 2026** - to participate in the event, deliver a presentation, field visits, attend Networking Reception, and to provide technical support to the MEIDECC.
- The SIDS DOCK Organization** – to provide an update on the role and functions of SIDS DOCK and how Tonga has helped to significantly raise awareness about SIDS' most important resource, our oceans, and the promotion of the need for Ocean Energy in the SIDS energy mix.
- The Governance Structure: SIDS DOCK Bureau, SIDS DOCK Executive Council & The SIDS DOCK Secretariat** - to discuss the important role that Tonga plays in the governance of the SIDS DOCK organisation serving as past President and Vice President of the Bureau, and elected member of the SIDS DOCK Executive Council, and a member of the Board of Directors for the SIDS DOCK Foundation.
- Consultation on the Tonga Indicative Project Pipeline** - to provide an update on the progress made in developing, for the first time in SIDS, an Ocean Energy Indicative Project Pipeline. In March 2023, Tonga, Seabased Company and SIDS DOCK, signed a Memorandum of Understanding (MoU) for the development and deployment of a 2-Megawatt (MW) Wave Power Park for scaling up to 10MW or the amount needed by the country to meet demand - we will follow up on the proposed Amendment to be signed to

move the project forward. In November 2023, Tonga led the Pacific SIDS High-Level Learning Tour of the Okinawa Prefecture Deep Ocean Water Research Center, in Okinawa, Japan, a one-week mission, along with Tuvalu and Samoa, to observe the facility – follow up on conducting site studies. We will also hold discussions on the potential for a project titled, “Regional Project Proposal: Pacific Small Island Developing States (SIDS) Initiative to Reduce Coral Reef Mortality, Coastal Erosion, and Sea-Level Rise Using a Proven Nature-Based System: Electrolytic Mineral Accretion Technology (“Biorock”).

- e. **Consultation with the Tonga Power Limited and other relevant stakeholders** – to discuss how the partners can cooperate to identify tools to tackle interconnection for integrating wave energy into the national grid to provide quality reliable supply to consumers. Seabased, SIDS DOCK, the PCREEE and UNIDO will work with the Government to help promote capacity building of the Tonga Power Limited to integrate renewable energy, and in particular wave energy into the grid, and to support Tonga’s energy transition.
- f. **Consultation on the Proposal for the Tonga-IWON Pilot Zero-Carbon Food & Herbal-Botanical Processing Facility:** The Island Women Open Network (IWON) has developed, along with its partners, a “Pilot Initiative for the Development of a Global Sustainable Botanical / Herbal Supplier Market from SIDS.” The project promotes climate resilience, biodiversity conservation, sustainable livelihoods, sustainable investments in clean energy and looking at multiple value chains “from the field to the fork.” A Concept for a Zero-Carbon Food & Herbal-Botanical Processing Facility was presented in Antigua & Barbuda at the SIDS4 Conference in May 2024, and a draft proposal has been developed in partnership with Tonga (MEIDECC), SIDS DOCK, PCREEE, UNIDO and the GN-SEC.

### 3. TWO-DAY TONGA NATIONAL ENERGY AWARENESS WORKSHOP



The Tonga National Energy Awareness Week served as a key component of the TERMPLUS Update Program, which is anticipated to initiate the review of Tonga’s Energy Sector Policy. (A copy of the meeting agenda is attached as Annex A). TERMPLUS (Tonga Energy Road Map 2021-2035) is Tonga’s national energy policy and 15-year strategic roadmap guiding how the country will transition to a more secure, resilient, and renewable energy future. It is the successor to the original Tonga Energy Road Map (TERM) 2010-2020 and expands the scope, targets, and implementation pathways for the next phase of Tonga’s energy transformation. As Tonga advances toward its national energy and climate targets, including enhanced energy security, increased renewable energy penetration, and strengthened resilience, the need for inclusive, well-coordinated national dialogue has never been more critical. His Excellency Lord Fatafehi Fakafanua, Prime Minister and Minister of Meteorology,

Energy, Information, Disaster Management, Environment, Climate Change and Communications (MEIDECC), Government of the Kingdom of Tonga, delivered the workshop Opening Remarks.

The Tonga National Energy Awareness Week Theme: *Building a Sustainable Energy Future for Tonga*, provided a unified national platform for government ministries, public enterprises, private companies, utilities, community organizations, academic institutions, regional bodies, and development partners to:

- Showcase ongoing and planned energy initiatives.
- Share progress, lessons learned, and innovations.
- Strengthen public understanding of Tonga's energy transition.
- Reinforce alignment with TERMPLUS and broader national development priorities.
- Foster collaboration among stakeholders working toward Tonga's energy and climate goals.

By bringing together the full spectrum of energy sector actors, the event helped ensure that the TERMPLUS policy review is informed by current realities, community perspectives, and the collective expertise of national and international partners.

### **3.1 Objectives of the Workshop**

- To recognize the overall progress of the energy sector in Tonga and celebrate achievements in energy related projects;
- To engage the private sector in open discussions on energy issues and educate potential investors and developers about project opportunities;
- To highlight and increase understanding of the role of RE and EE and e-mobility in Tonga's development goals;
- Create a platform where the RE developers, project investors, financiers, policy makers and regulators come together to discuss the way forward to accelerate investments in the Energy sector.

### **3.2 Workshop Partners**

- Global Green Growth Institute (GGGI)
- Pacific Community's Centre for Renewable Energy and Energy Efficiency (PCREEE)
- MEIDECC
- Tonga Power Limited
- Tonga Energy Commission
- Ministry of Public Enterprises (MPE)
- Development partners: DFAT, New Zealand Ministry of Foreign Affairs and Trade (MFAT), Asian Development Bank (ADB) EU, UNDP, UNEP, SIDS DOCK, GEF.
- Private Sector: Seabased Company.

### **3.3 Key Issues Discussed**

- Decarbonizing of Land Transport Sector in Tonga.
- Pacific Regional EV Programmes.

- Success stories – Voices from Early EV adopters /owners.
- Renewable energy integration.
- Grid stability and storage.
- Energy access.
- Capacity building.
- Regulatory and institutional frameworks.
- Financing mechanisms.

### **3.4 Main Outcomes and Recommendations**

The Tonga National Energy Awareness Week successfully strengthened national dialogue on Tonga’s energy transition priorities and reinforced broad stakeholder support for achieving the country’s renewable energy and climate resilience targets under TERMPLUS. Participants reached consensus on the importance of accelerating renewable energy deployment, modernizing grid infrastructure, improving energy storage systems, and advancing transport electrification initiatives. The workshop also highlighted the growing importance of ocean energy technologies, particularly wave energy, as part of Tonga’s long-term strategy to reduce dependence on imported diesel and enhance national energy security. Stakeholders further recognized the importance of integrated planning approaches that connect energy policy with climate adaptation, disaster resilience, sustainable livelihoods, and social inclusion.

Discussions during the workshop identified several critical barriers affecting the pace of Tonga’s energy transition, including limited financing access, grid integration challenges, insufficient technical capacity, data gaps, and institutional coordination constraints. Participants emphasized the need for stronger project preparation support, enhanced regulatory and policy frameworks, and expanded technical training for utilities and government agencies. Priority recommendations included accelerating feasibility studies for ocean energy and grid modernization projects, strengthening partnerships with regional and international organizations, increasing private sector engagement, and expanding public awareness and education programmes related to renewable energy and electric mobility. Participants also encouraged the development of innovative financing mechanisms and blended finance models to help de-risk investments and attract long-term climate and energy financing to Tonga.

## **4. HIGH-LEVEL GOVERNMENT CONSULTATIONS**

### **4.1 Meetings with Senior Government Officials**

The SIDS DOCK Secretariat held a series of high-level consultations with senior government officials and institutional stakeholders to discuss Tonga’s evolving energy transition priorities and opportunities for enhanced cooperation. Meetings were conducted with representatives from the Prime Minister’s Office, the Ministry of Meteorology, Energy, Information, Disaster Management, Environment, Climate Change and Communications (MEIDECC), Tonga Power Limited, the Tonga Energy Commission, and other relevant ministries and agencies. These consultations provided an opportunity to review national progress under TERMPLUS, discuss priority renewable energy initiatives, and identify areas where SIDS DOCK and its partners could provide technical and institutional support.

Government officials reaffirmed Tonga's commitment to achieving its renewable energy and climate targets despite ongoing challenges associated with geographic isolation, climate vulnerability, and dependence on imported fuels. Discussions also highlighted Tonga's leadership role within the Pacific region in promoting ocean energy development and advancing international advocacy for increased support to Small Island Developing States (SIDS) pursuing sustainable energy transitions. Stakeholders expressed appreciation for the continued collaboration between Tonga, SIDS DOCK, UNIDO, PCREEE, Seabased Company, and other development partners in supporting the country's energy transformation agenda.

## **4.2 Key Discussion Areas**

Consultations focused extensively on Tonga's national energy priorities, including strengthening energy security, reducing fossil fuel dependence, expanding renewable electricity generation, and improving grid resilience. Discussions reviewed ongoing efforts to scale up solar energy deployment, battery storage integration, transport electrification, and the potential development of ocean energy technologies such as wave energy and Ocean Thermal Energy Conversion (OTEC). Particular attention was given to the importance of ensuring that future energy investments align with Tonga's climate adaptation and disaster risk reduction strategies.

Stakeholders also discussed financing needs and institutional support requirements necessary to accelerate implementation of major energy projects. Concerns were raised regarding the high upfront costs of renewable energy infrastructure, the limited availability of concessional financing, and the technical complexities associated with integrating variable renewable energy into small island grids. Participants emphasized the need for strengthened project preparation mechanisms, improved policy coordination, and increased access to international climate finance facilities to support Tonga's transition toward a low-carbon and climate-resilient economy.

## **4.3 Cross-Sectoral Issues Discussed**

The consultations highlighted the importance of adopting integrated, cross-sectoral approaches to sustainable development planning. Discussions emphasized the close relationship between energy security, water security, transport systems, food systems, and climate resilience. Participants acknowledged that reliable and affordable renewable energy is critical not only for electricity generation, but also for supporting water infrastructure, public health systems, communications, tourism, agriculture, and economic productivity across Tonga's outer islands and vulnerable coastal communities.

Transport electrification emerged as a major area of interest, particularly in relation to reducing diesel consumption and improving long-term energy affordability. Discussions also explored the role of gender inclusion, youth participation, and community engagement in ensuring equitable access to the benefits of the energy transition. Stakeholders recognized that capacity development at both institutional and community levels will be essential for sustaining long-term energy sector reforms and ensuring effective operation and maintenance of renewable energy systems.

## **4.4 Institutional Needs and Priorities**

Government agencies and institutional partners identified several priority areas requiring additional support to strengthen implementation capacity within Tonga's energy sector. These included the need for enhanced project preparation support, improved energy data collection and planning tools, specialized technical training programmes, and expanded policy and regulatory assistance. Tonga Power Limited and other stakeholders also emphasized the importance of strengthening grid management capabilities to support increased integration of renewable and ocean energy technologies into the national electricity system.

Discussions further highlighted the need to strengthen institutional coordination mechanisms among ministries, utilities, regulators, and development partners to avoid duplication of efforts and improve implementation efficiency. Participants noted that long-term success will depend on sustained investments in human resource development, including technical training, knowledge exchange programmes, and regional cooperation initiatives that enable Tonga to access global expertise and emerging technologies relevant to island energy systems.

#### **4.5 Outcomes and Agreed Actions**

The consultations resulted in several important understandings and areas of agreement between the Government of Tonga, SIDS DOCK, and participating partners. Stakeholders agreed to continue advancing cooperation on renewable energy integration, wave energy development, grid modernization, and climate-resilient infrastructure planning. Discussions also confirmed continued interest in progressing the proposed Wave Energy Park Project, expanding technical cooperation related to ocean energy resource assessments, and supporting future feasibility and interconnection studies.

Participants also agreed to strengthen collaboration on project preparation and climate finance mobilization, including identifying opportunities for support through multilateral development banks, bilateral donors, and private sector investors. The Government of Tonga welcomed continued engagement with SIDS DOCK and its partners to support technical capacity-building, institutional strengthening, and policy development efforts. The mission further reinforced Tonga's position as a leading Pacific advocate for sustainable ocean energy solutions and regional cooperation among SIDS pursuing resilient and low-carbon energy transitions.

### **5. RENEWABLE ENERGY PROJECT SITE VISITS**

#### **5.1 Objectives of Site Visits**

The renewable energy project site visits, part of the Tonga National Energy Awareness Week Agenda, formed an important component of the SIDS DOCK mission to Tonga, providing an opportunity to directly observe existing renewable energy infrastructure, assess operational performance, and engage with technical personnel and project stakeholders. The visits were designed to support a better understanding of the practical opportunities and constraints affecting Tonga's renewable energy transition, while also identifying areas where technical cooperation and future investment support may be required.

The site visits also allowed SIDS DOCK to examine how renewable energy systems are contributing to Tonga's national energy security, climate resilience, and emissions reduction objectives under TERMPLUS. Particular attention was given to infrastructure resilience, maintenance arrangements, grid integration considerations, and opportunities to scale up renewable energy deployment across Tonga's main and outer islands. Discussions during the visits further explored how lessons learned from existing projects could inform future renewable energy and ocean energy investments within Tonga and other Pacific SIDS.

## 5.2 Sites Visited

The mission included visits to several renewable energy facilities and related infrastructure projects in Tonga, including solar photovoltaic (PV) installations, TPL battery energy storage systems, solar water solutions, and wind energy facilities. There was an electric vehicle (EV) demonstration where workshop participants got the opportunity to test drive a Tesla and a (other car).

### Sites: WINNIE TO NAME THE LOCATION OF THE SITE VISITS

- Wind farm facility
- TPL compound with battery storage
- PV facility
- Solar water solution facility
- EV Demonstration: Tanoa Hotel

These visits provided valuable insight into the country's growing renewable energy portfolio and the progress being made toward reducing reliance on imported diesel generation. The facilities demonstrated the increasing role of renewable technologies in supporting Tonga's energy transition and improving electricity system resilience.



At the solar PV facilities, the mission team observed the integration of utility-scale renewable generation into Tonga's electricity network and discussed operational experiences with facility operators and technical staff. A visit was paid to Tonga's first ever Battery Energy Storage Systems to store renewable energy generation from its solar and wind farm. The battery storage facility

highlighted the importance of energy storage technologies in managing intermittency, supporting grid stability, and improving reliability during periods of variable renewable generation. Site visits

also included discussions on solar-powered water solutions and the contribution of renewable energy technologies to water security and sustainable community services.

### **5.3 Observations and Findings**

The site visits demonstrated that Tonga has made meaningful progress in deploying renewable energy infrastructure and strengthening the technical foundation for a more resilient and sustainable electricity system. Operational renewable energy projects were contributing positively to national efforts to reduce diesel consumption, lower greenhouse gas emissions, and improve long-term energy affordability. Technical personnel highlighted the growing experience within Tonga's energy sector in operating and maintaining renewable energy systems, while also acknowledging ongoing challenges associated with system integration, maintenance costs, and access to specialized technical expertise.



Several technical and operational challenges were identified during the visits, including exposure of infrastructure to severe weather events, the need for enhanced maintenance planning, and the complexity of integrating higher shares of intermittent renewable energy into small island grids. Stakeholders also emphasized the importance of strengthening climate resilience standards for future infrastructure investments, particularly in light of Tonga's vulnerability to cyclones, sea-

level rise, and natural disasters. Community impacts and social benefits associated with renewable energy projects were viewed positively, especially where projects contributed to improved energy access, reduced fuel costs, and enhanced reliability of electricity supply.

### **5.4 Opportunities Identified**

The mission identified significant opportunities for expanding renewable energy deployment and strengthening Tonga's long-term energy resilience. Discussions highlighted the potential for scaling up solar and battery storage systems, enhancing grid modernization efforts, and introducing complementary renewable technologies such as wave energy and Ocean Thermal Energy Conversion (OTEC). Participants also noted opportunities to replicate successful renewable energy solutions across Tonga's outer islands, where energy access challenges and fuel transportation costs remain significant.



Additional opportunities were identified for technical assistance, institutional strengthening, and private sector engagement. Stakeholders expressed interest in accessing further support for feasibility studies, grid integration analysis, workforce training, and climate-resilient infrastructure planning. The site visits also reinforced the importance of developing strategic partnerships with regional organizations,

international development partners, and technology providers to support knowledge transfer, investment mobilization, and implementation of innovative clean energy projects. These findings aligned closely with Tonga's broader national objective of achieving 100% renewable electricity generation by 2035 while enhancing energy security and climate resilience.

## **6. POTENTIAL PROJECTS AND FOLLOW-UP ACTIONS**

### **6.1 Priority Project Concepts Identified**

During the mission, several priority project concepts were identified as having strong potential to support Tonga's energy transition, climate resilience, and sustainable development objectives. Among the most significant initiatives discussed was the proposed Wave Energy Park Project, which builds upon the existing Memorandum of Understanding signed between Tonga, SIDS DOCK, and Seabased Company for the development of a pilot 2MW wave power facility with future expansion potential up to 10MW. Stakeholders reaffirmed the strategic importance of ocean energy technologies as part of Tonga's long-term renewable energy diversification strategy and emphasized the country's leadership role in promoting ocean energy within the Pacific region.

Additional project concepts discussed included grid modernization initiatives, battery storage expansion, Ocean Thermal Energy Conversion (OTEC) opportunities, and the proposed Coral Reef and Coastline Biorock Project aimed at supporting coastal resilience and marine ecosystem protection. The mission also reviewed concepts related to transport electrification, including electric vehicle and EV golf cart deployment for outer islands, as well as capacity-building programmes designed to strengthen institutional and technical capabilities across the energy sector. These projects were recognized as important components of a broader integrated approach to sustainable energy development, climate adaptation, and economic resilience in Tonga.

### **6.2 Proposed Technical Assistance**

Stakeholders identified several areas where targeted technical assistance would be required to advance project development and implementation. Priority support needs included feasibility studies, ocean and renewable energy resource assessments, grid integration analysis, environmental and social impact assessments, and project preparation assistance. Discussions

emphasized that early-stage technical support will be critical to reducing project risks, strengthening investment readiness, and improving the bankability of renewable energy and climate resilience initiatives.

Institutional and policy support requirements were also highlighted during the consultations. Government agencies and utilities identified the need for assistance in strengthening regulatory frameworks, updating technical standards, enhancing energy planning tools, and improving coordination among national institutions involved in the energy transition process. Capacity-building support for Tonga Power Limited, MEIDECC and relevant ministries was identified as a priority area, particularly in relation to renewable energy integration, grid management, ocean energy technologies, and climate-resilient infrastructure planning.

### **6.3 Financing Opportunities**

The mission explored a range of financing opportunities that could support implementation of Tonga's priority energy and climate projects. Stakeholders discussed the importance of accessing international climate finance mechanisms, including the Green Climate Fund (GCF), Global Environment Facility (GEF), Adaptation Fund, and other multilateral climate financing instruments. Discussions also emphasized the need to strengthen project preparation in order to improve Tonga's ability to attract concessional financing and private sector participation for large-scale renewable energy infrastructure projects.

Potential financing support from multilateral development banks, bilateral development partners, and regional organizations was also considered. Participants highlighted the importance of blended finance approaches that combine grants, concessional loans, technical assistance, and private investment to reduce financial risks associated with innovative technologies such as wave energy and OTEC. The mission further underscored the value of strengthening partnerships with international organizations and technology providers to support investment mobilization and long-term project sustainability.

### **6.4 Recommended Follow-Up Actions**

Several immediate follow-up actions were recommended to maintain momentum generated during the mission and advance priority initiatives. In the short term (0-6 months), stakeholders recommended strengthening coordination among partners, advancing discussions related to the Wave Energy Park Project amendment, initiating technical and feasibility studies, and identifying financing opportunities for project preparation activities. Additional near-term priorities included enhancing stakeholder engagement, supporting policy review processes under TERMPLUS, and strengthening public awareness activities related to renewable energy and climate resilience.

Medium-term actions (6-24 months) include advancing detailed engineering studies, strengthening institutional capacity building programmes, expanding regional cooperation initiatives, and progressing investment mobilization efforts for renewable energy and ocean energy projects. Longer-term collaboration opportunities identified during the mission include the development of integrated low-carbon infrastructure systems, expanded ocean energy deployment, and the

establishment of Tonga as a regional demonstration hub for innovative renewable energy technologies and climate resilience solutions in Pacific SIDS.

## **6.5 Proposed Next Steps Between SIDS DOCK and Tonga**

The mission reaffirmed the strong partnership between the Government of Tonga and the SIDS DOCK Secretariat and identified several practical next steps to strengthen ongoing collaboration. Stakeholders agreed on the importance of maintaining regular coordination mechanisms between SIDS DOCK, MEIDECC, Tonga Power Limited, and development partners to monitor project progress, share technical information, and coordinate future support activities. Discussions also supported the continuation of technical missions, stakeholder consultations, and joint project development activities to advance Tonga's renewable energy and climate resilience agenda.

Participants further agreed that continued collaboration will be essential to supporting Tonga's long-term objective of achieving a secure, resilient, and low-carbon energy future. SIDS DOCK and its partners expressed their commitment to assisting Tonga in mobilizing technical expertise, strengthening institutional capacity, and identifying financing opportunities to support implementation of priority projects. The mission concluded that Tonga's leadership in ocean energy advocacy and sustainable energy development provides an important model for other Small Island Developing States pursuing ambitious climate and energy transition goals.

## **7. CONCLUSION**

The SIDS DOCK Secretariat Mission to Tonga successfully strengthened cooperation between the Government of Tonga, SIDS DOCK, development partners, and key national stakeholders in advancing Tonga's sustainable energy transition agenda. The mission provided an important platform for strategic dialogue, technical consultations, stakeholder engagement, and field-level assessment of ongoing renewable energy initiatives. Through participation in the Tonga National Energy Awareness Week, high-level government consultations, and renewable energy project site visits, the mission reinforced Tonga's strong commitment to achieving its national renewable energy, climate resilience, and sustainable development objectives under TERMPLUS and related national frameworks.

The mission highlighted Tonga's continued leadership among Small Island Developing States (SIDS) in promoting innovative renewable energy solutions, particularly in the area of ocean energy development. Discussions confirmed broad national and international support for accelerating renewable energy deployment, strengthening grid resilience, expanding transport electrification, and advancing climate adaptation measures. The consultations also emphasized the importance of integrated planning approaches that connect energy security, disaster resilience, environmental sustainability, and socio-economic development. At the same time, the mission identified several challenges that require continued attention, including financing constraints, technical capacity limitations, infrastructure resilience, and the need for enhanced institutional coordination.

The renewable energy project site visits demonstrated that Tonga is making progress in reducing dependence on imported fossil fuels and increasing renewable energy penetration within its

electricity system. Existing solar, wind, and battery storage are contributing positively to national energy security and emissions reduction efforts, while also providing valuable lessons for future project expansion and replication. The mission further identified important opportunities for scaling up renewable energy investments, strengthening climate-resilient infrastructure, and advancing innovative projects such as the Wave Energy Park Project, OTEC initiatives, and the Coral Reef and Coastline Biorock Project.

The consultations and discussions undertaken during the mission reaffirmed the importance of continued partnership and collaboration between Tonga, SIDS DOCK, regional institutions, development partners, and the private sector. Stakeholders recognized that achieving Tonga's ambitious target of 100% renewable electricity generation by 2035 will require sustained technical support, access to climate finance, strengthened institutional capacity, and coordinated long-term planning. The mission also reinforced the critical role that SIDS DOCK can play in supporting project preparation, mobilizing international partnerships, facilitating knowledge exchange, and advancing innovative solutions tailored to the unique needs of SIDS.

Overall, the mission demonstrated that Tonga is well-positioned to continue serving as a regional leader in sustainable energy development and climate resilience among Pacific SIDS. The strong political commitment demonstrated by the Government of Tonga, combined with growing regional and international partnerships, provides a solid foundation for accelerating the country's energy transition and strengthening long-term resilience. The mission concluded that continued engagement between Tonga and SIDS DOCK will be essential to advancing transformational energy projects, mobilizing investment, and supporting a sustainable, low-carbon, and climate-resilient future for Tonga and the wider Pacific region.