Third session of the SIDS DOCK Assembly

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**SIDS DOCK WORK PROGRAMME**

**SIDS DOCK WASTE-TO-ENERGY (WtE) PROGRAMME**

**ENERGY SERVICES FROM ORGANIC WASTE: INTEGRATED WASTE MANAGEMENT SOLUTIONS FOR COASTAL, MARINE AND FRESHWATER PROTECTION IN SMALL ISLAND DEVELOPING STATES**

The *“Energy Services from Organic Waste: Integrated Waste Management Solutions for Coastal, Marine and Freshwater Protection in SIDS”* Pilot Project (“the Project”) was developed by the Small Island Developing States Sustainable Energy and Climate Resilience Organization (SIDS DOCK), and its partners[[1]](#footnote-1), to address the problem of land-based pollution and over-extraction of marine resources which has taken a toll on the quality of marine biodiversity and consequent impacts on the economies of coastal communities.

Coastal areas are being contaminated with solid waste, sewerage, industrial effluents, chemical run-off from agriculture, and wastes from the transportation sector (lubricants, coolants, battery acid, tires). Liquid waste such as sewerage and effluents from agro-industries and agricultural run-off are harming coral reefs and degrading touristic beaches and fisheries, which are major sources of income for many islands.

In the Caribbean, for example, it is estimated that as much as 60% of wastewater entering the Caribbean Sea is currently untreated (UNEP TR-52 report, 2010) and 65%, or 275,000 tons of solid waste is disposed in open dumps, rivers or the Caribbean Sea. The numbers of people with access to improved sanitation in the Caribbean exceeds 90%, in most cases. However, the numbers with access to centralised wastewater service systems, which collect and treat wastewater are low, ranging from 3% in Saint Vincent and the Grenadines to 30% in Trinidad and Tobago.

In the Pacific, 56% of those on the Cook Islands have utility water connections, with 7% having sewerage connections; in Micronesia, the figures are 36% and 12%, respectively; and Palau 90% and 54%, respectively[[2]](#footnote-2).

Across the SIDS, access to improved sanitation remains a challenge for lower-income communities with implications for public health, through vector and water-borne disease in particular. The existence of private wastewater treatment plants, such as those in the Tourism Sector, help to address this problem but, according to studies by the Caribbean Environmental Health Institute, 75% of these plants do not comply with the criteria for good operation. The effluent is discharged into the aquatic environment (35% into marine and 25% into freshwater bodies). There are also large organic waste producers, like rum distilleries and breweries in SIDS, that also discharge wastewater.

***Problem… Solution…Approach***

Unsustainable waste and sanitation practices increasingly undermine the livelihoods of coastal communities and their economies. Although greater than 70% of the SIDS population lives in coastal cities, towns and villages, there is only limited investment in improved waste management systems, and given the economic situation and the frequent occurrence of natural disasters, it is doubtful that governments on their own can address this problem and avoid the unintended consequences.

The proposed Pilot will promote the up-scaling of proven and SIDS-Appropriate Technologies for the conversion of organic waste-to-energy (WtE), and other waste valorisation solutions to reduce negative environmental, social and economic externalities of current waste and sanitation practices on coastal and marine livelihoods, as well as freshwater resources. The Pilot will focus on the creation of vibrant WtE markets and industries as a tool to promote local economic value creation, social development and environmental protection at the same time. WtE receives only limited attention in renewable energy promotion policies and targets, in general, and very little in the SIDS. The Pilot will focus on liquid effluent waste from agro-industries, sewerage systems, breweries, dairies, slaughterhouses and abattoirs.

Countries will be selected for participation in the Pilot by indicating interest and submission of their initial WtE project pipeline summary, with assistance from the WtE partners. Submitted project proposals would be screened to determine feasibility, identify financing requirements, and the areas for capacity development, training, and public education. Assessment would be based on the project submission, the market for the proposed energy service, and institutional and professional expertise available in-country to implement.

SIDS DOCK will work with partners to support the governments, and to develop and implement the pilot projects in partnership with private sector. The process of project pipeline development begins with a regional meeting (virtual), followed by national workshops that builds on the initial ideas identified at the regional meeting by the various countries. Based on the broader participation of government agencies with responsibilities for waste management, agriculture, water, energy, tourism, and climate change adaptation, the national indicative project pipeline would be prepared.

**NEXT STEPS**

* SIDS DOCK, in partnership with the Pacific and AIMS regional partners, to plan a regional meeting;
* Identify the countries, by region, that which to participate in the pilot. It is proposed that participation included eight (8) countries: six (6) from the Pacific and two (2) from the AIMS;
* Organize and convene national workshops for the eight (8) pilot countries and prepare draft Indicative Project Pipelines for each country;
* Project document preparation to obtain financing (grants, concessions, debt).

**BUDGET[[3]](#footnote-3)**

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| **Item** | **Estimated Amount (US$)** |
| Phase I: Preparation   * Regional Workshop (Pacific and AIMS) * Identification of countries and assessment of indicative project pipeline and national capacity to implement | 250,000 |
| Phase 2: Project Development Technical Assistance to the Governments | 250,000 |
| Phase 3: Mobilizing Investment Financing and Implementation | 100,000 |
| **Total Estimated Cost** | **US$ 600,000** |

1. Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE), Pacific Centre for Renewable Energy and Energy Efficiency (PCREEE), and the Energy Branch of the United Nations Industrial Development Organization (UNIDO) in close coordination with interested Member States, the CCCCC, SPREP and CARICOM Secretariat, World Intellectual Property Organization, Swedish Energy Agency, GIZ and private sector partners. [↑](#footnote-ref-1)
2. Pacific Water and Wastes Association, Pacific Water and Wastewater Utilities Benchmarking Report, 2013. [↑](#footnote-ref-2)
3. The draft project was reviewed proposal has already undergone important stakeholder consultations and was presented during the First Caribbean Waste to Energy Technology Expo and Conference held in St. George’s, Grenada on 20-13 January 2016. The potential objectives, components and activities were discussed in interactive working groups comprising energy, environmental and waste experts from the public and private sector [↑](#footnote-ref-3)