Outline for presentation by SPREP

- What different policy options, technological innovations and best practices on waste-to-energy are available for different markets and regions to result in emission reductions and sustainable development co-benefits?

  There is a growing interest among Pacific island communities in exploring municipal waste-to-energy options as a means of reducing the need for landfills and dependence on diesel importation for electricity generation. This interest is being driven primarily by international companies promoting proprietary waste-to-energy technology, with little regard to long-term affordability and sustainability.

  Conventional wisdom suggests that the waste-to-energy approach is unsuitable for the majority of Pacific SIDS due to relatively small municipal waste volumes and the dense, wet quality of most waste streams. This is reinforced by the lack of successful case studies of municipal waste-to-energy implementation in other SIDS.

  Waste-to-energy technologies that combust municipal solid waste also transform a fairly innocuous waste stream (general waste) into bottom ash, as well as fly ash and flue gas, which may contain particulate matter, heavy metals, dioxins, furans and sulphur dioxide. Management of these hazardous waste streams requires careful handling, disposal and environmental monitoring, which are beyond the current capacity of Pacific island countries and territories.

  The barriers to this type of projects in Pacific Island Countries (PICs) have been amply covered in the 1994 Barbados Plan of Action and the subsequent 2005 and 2014 SIDS Conferences, in describing the special challenges faced by SIDS. These challenges apply in abundance in the Pacific.

  A challenge for the Pacific Island Countries (PICs) and other Small Island Developing States (SIDS) is the availability of technologies that are suited to the scale of the islands. Some technologies that were suggested (or promoted by developers) in the 1990s were too large for the island setting, and would have resulted in the need to import waste as feedstocks. Another challenge is the poor waste management and waste stream separation practices that have been prevalent in the region until recently.

  In terms of policy options, recognizing the potential for waste to energy (as well as renewable energy) has resulted in most PICs undergoing regulatory changes to encourage private power producers (PPPs), and also spurred on aspects of the regional Cleaner Pacific Strategy and the Framework for Resilient Development in the Pacific (FRDP). These regional policy frameworks are mirrored by more detailed nationally specific policies, which are supported by the regional institutions and frameworks.

  In terms of technological innovations, many of these have come from within the PICs themselves. It should be noted that the term waste is taken very broadly, but in the region has focussed on green waste, invasive species, and manure. Using invasive species and manure, a Christian missionary centre in Samoa developed its own biogas digester using very simple materials. A cost benefit analysis carried out in Tuvalu has resulted in significant green waste being redirected to similar units. A technician in Vanuatu developed a cost effective means to produce biofuel from

wasted coconuts. A Samoan/Australian company is proposing using invasive trees and fallow coconuts to produce electricity and biofuel. An Australian university has developed an incinerator that would be suitable for a small island setting.
It will be important for individual PICs to properly analyse their waste streams in relation to available technologies, to understand the feasibility as well as cost effectiveness of any interventions. This will also include whether it is cost effective to accurately measure any emission reductions.

- What can Parties and non-Party stakeholders supporting the Parties learn from these policy options, technological innovations and best practices, including the enablers and challenges/barriers, for the successful implementation of waste-to-energy technologies to result in emission reductions and sustainable development co-benefits?

  Clearly there is a need to respond directly to the challenges that are specific to regions and sub-regions, as well as to capacity constraints, size of economy, and waste characterization. While most waste to energy technology is focussed on larger countries, there has been little support towards scaling down of technologies for countries such as SIDS. As an example, the Samoan/Australian company has been unable to source funding from GCF due to the conditions set by the Implementing Entities active in the Pacific. These include thresholds for loans (USD 100 million), some IEs will only seek GCF funds to top-up climate change aspects for existing investments, the lack of representation, or sufficient staffing, in the Pacific to name a few. Further, borrowing from commercial banks has been highlighted as a key impediment to projects such as this one. The Samoan/Australian company could not borrow cheap funds locally as there are none available in Samoa. The company also cannot borrow expensive funds easily in Samoa for a project with a Financial Investment Rate of Return (FIRR) of not more than 12%. The FIRR for their project is calculated as 10%.

  SPREP did try to assist, but is unable to handle projects as loans.

  Funding agencies need to understand that there are opportunities for supporting the establishment of 100% renewable energy islands, that there are opportunities to drastically reduce waste through 3Rs and some forms of waste to energy, and that such efforts will make SIDS more resourceful in investing in their own adaptation efforts.

- How to deal with the contractual arrangements between the national, subnational and local governments and the technology providers?

  The private sector in the Pacific is constrained by lack of capacity as well as access to credit. Nevertheless, the Samoan/Australian company has been able to work for over several years to bring their proposal to various funders, with significant interest from respected overseas institutions. Not only would this be transformational in the Pacific that a private sector group is taking the lead on a climate change project, the replication of the project to other locations in the region presents multiple opportunities. The method can either be directly copied to some larger islands like Fiji, Vanuatu and Tonga, or be modified to a hub-and-spokes system for archipelagos like the Marshall Islands.

Many private entities face serious risks from climate impacts and must manage those risks. At the same time, private enterprises are uniquely positioned to contribute to climate action, using innovative technologies to reduce greenhouse gas emissions, innovative business models around sustainable supply chains, and climate-resilient infrastructure design.
It is a fact that it remains a challenge for small scale mitigation projects in SIDS to attract international financing. One example of this is the Pacific experience with the Clean Development Mechanism that has registered only three projects in the Pacific. Successful renewable energy projects in the region have almost been entirely public sector driven, through grants or concessional loans. These public sector quasi-privatised companies have been described in ADB reports as less than optimally efficient.

- How do waste-to-energy policy options and technology solutions contribute to a just transition of the workforce and the creation of decent work and quality jobs?
Currently waste collection and waste site management are not considered high end jobs. While waste collection in most Pacific has been privatised, thus indicating a level of profitability, waste collectors are often minimally paid. However, if waste collection and separation, particularly of green waste, could result in profitable outputs such as electricity or biofuel, the value of the labour would increase. Granted the construction costs of some waste to energy plants will be high, but if properly scaled they could be a good investment. In small societies such as PICs this would inevitably result in greater returns to workers in terms of their paychecks. Greater opportunities would also become available for communities through training and capacity building. The Samoan/Australian company stipulated that social vulnerability would be reduced through the improvement in living standards in rural communities through secured employment and the associated opportunities for affording various social services. Currently many youths in Samoan communities drop out of school to work at home or on family land due to school fees and other factors. Through the feedstock harvesting programme, guaranteed work would be established for community members. These will be ongoing positions for the life of the LHC facility. With employment comes opportunities and more resilient livelihoods. In terms of gender imbalance in hiring this company sought to promote gender through seeking qualified women for senior positions. Manual labour on the plantations will likely be taken on by unemployed males, but there will also be other opportunities for women's employment. The NGO partners to the project are also strong gender advocates. The company also agreed to carry out a gender disaggregated analysis that considers in detail, among others, how men and women will be differently affected and benefit from the project´s activities.