Concept Note 1 (ACSE programme)

Country: Samoa

Location within the Country: Apia

Project Type: Types 1 and 2

Total Request Budget: €650,000

Duration of Project: 4 Years

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Project Title: Energy Bill and the development and implementation of sustainable bioenergy in Samoa.

Background and Rationale:

A 2014 meeting of Pacific Ministers of Energy and Transport called energy a 'key enabler' of development because access to sustainable energy and transport leads to poverty reduction and improved livelihoods in PICTs. 80% of the energy sources for Samoa are imported petroleum, with about 54% consumed by the transport sector. Of about 30 million litres of diesel imported annually, about 35% is used by the transport sector and 65% for electricity generation.

This project is aligned with the Government's Strategy for the Development of Samoa 2012-2016 as well as several national policies and projects, aimed at reinvigorating agriculture, mitigating climate change impacts and encouraging use of sustainable energy. An Energy Bill supporting these national frameworks would be required for the successful implementation of this and complementary projects, which will ultimately reduce petroleum fuel imports.

Two feasibility studies (Fairbain *et al.*, 2010; Wright, 2011) have recommended the use of locally grown resources, such as coconut, for the production of biodiesel. Using a biodiesel pilot plant, the Scientific Research Organization of Samoa (SROS) successfully demonstrated that coconut biodiesel could be produced and used in Samoa. Another feasibility study revealed that biomass gasification for electricity generation is viable in Samoa, with STEC identified as a suitable feedstock supplier. However, a supply chain for delivering biomass to the gasifier is still required.

Objective(s):

1. ensure an enabling environment for private-public partnerships to promote energy security in Samoa
2. establish widespread use of renewable energy for land transport by setting up a coconut biodiesel production facility and distribution network;

3. reduce Samoa's dependence on imported petroleum diesel, and;
4. provide rural communities and commercial oil producers incentives to replant coconut trees and plant other oil yielding crops for oil production to sustain supply for biodiesel production.

Expected Project Outcomes:

1. An Energy Bill providing the legal framework for sustainable use of diverse energy resources;
2. Enabling environment in place to encourage private sector participation in energy investments;
3. Increased production and supply of biodiesel to feed the energy needs of the transport sector;
4. Supply chain built to support the implementation of biomass gasification technology in Samoa; and,
5. Improved economic benefits to the rural communities (local coconut and oil crop farmers and copra/oil producers).

Target Outputs:

1. Regulatory and policy frameworks in place, with innovative financing, tariff and incentive structures to encourage private sector investment into the use of biofuels particulary in the transport sector;
2. Resource mapping, database development, data collection, storage and sharing;
3. Management plan including capital costs for feedstock harvesting equipment for both oil and biomass yielding crops;
4. Secure agreements with project partners for procurement and construction of biodiesel plant, operation of biodiesel production and blending, and distribution of B5 biodiesel blend meeting relevant quality standards;
5. Secure contracts from coconut and oil crop growers and commercial oil producers to supply the biodiesel plant with sufficient oil at required specifications.

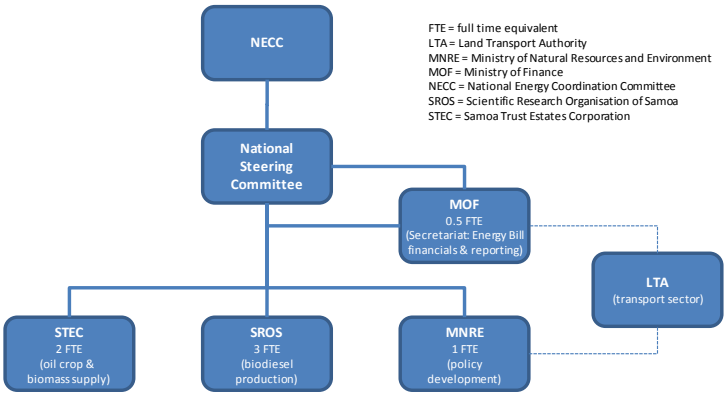
Target Group:

- Private Sector – provided incentives to invest into the energy sector, including renewable energy and transport
- Transport sector – Land Transport Authority (LTA) and diesel vehicle users
- Energy providers – Electric Power Corporation
- Energy users – local communities / population
- Commercial oil producers
- Coconut and oil crop growers, biomass growers and copra suppliers in the rural villages
- Government Ministries/Corporations – MOF, MNRE, SROS, STEC, etc
- Regional Organizations / Development partners / Donors - SPREP – promotion and education for the sustainable energy sector

Indicative budget:

Item	Indicative budget
Output 1: Regulatory and policy framework	€75,000
Output 2: Resource mapping and data management	€25,000
Output 3: Feedstock supply chain	€75,000
Outputs 4: Construction of biodiesel plant	€300,000
Output 5: Supply contracts for biodiesel	€5,000
Project management costs	€65,000
Monitoring & evaluation	€20,000
Communication & visibility	€20,000
Contingencies	€65,000
TOTAL	€650,000

Project management:



Implementing Partners & stakeholders:

The lead agency MOF, responsible for regulatory (Energy Bill) and policy framework development with the assistance of MNRE also financial accounting and reporting, will act as the secretariat for the Project Management Unit consisting of the National Steering Committee. Components of the project will be undertaken by relevant staff at , SROS (biodiesel production expertise), STEC (feedstock supply), Pacific Oil Ltd (oil production), farmers and rural community (raw material supply), LTA (transport policy), Petroleum Product Supplies Ltd (transport fuel distribution) and EPC (electricity distribution). SPREP as an implementing partner will provide technical support and advice as required on SPREP key strategic areas such as climate change (mitigation and adaptation), waste management and pollution control, biodiversity and ecosystem management and environment and monitoring and governance. SPREP can also facilitate communication and promotional materials as required for the project.

Complementary and Replicability:

The production and supply of coconut biodiesel, as well as electricity generation from biomass gasification, have been successfully implemented in the Philippines. The coconut plantation resource in Samoa is sufficient to produce and supply a B5 fuel blend, and

considerations will be given to other oil producing crops in the future, such as *Jatropha*. This project also has a large potential to be replicated in the neighbouring island of Savaii as there is also a large expanse of feedstock available for biomass gasification.

Sustainability and risks:

With the Energy Bill this project will be well supported by the political and institutional framework through government policies as described earlier. Biodiesel production and quality assurance expertises are available at SROS and feedstock can be supplied by STEC and local farmers. Oil production facilities are well established at Pacific Oil Ltd and STEC which have a combined capacity to extract over 40,000 litres per day. There is a great potential for sustainability through the engagement of private sector to absorb and implement activities under this Project. A major risk is the cost and quality of feedstock which dictates the total production cost of biodiesel and biomass generated electricity. Encouraging raw material production and streamlining the supply chain should reduce risk of increasing prices. Other risks may come in the form of tariff structures as well as natural disasters affecting the feedstock supply. Tariff structures will therefore have to be carefully considered in the Energy Bill.

Timeline for plan measures:

The project will have a life of four years with the following overlapping implementation activities:

- Draft Energy Bill (6 months- from public consultation to final draft)
- secure agreements with project partners for construction of plant, operation of biodiesel production and blending, and biodiesel blend distribution (6 months);
- secure contracts to supply biomass to privately owned enterprises establishing biomass gasification (subject to granting of Purchase Power Agreements from Electric Power Corporation);
- procurement and installation of required equipment for B5 biodiesel production and relevant quality assurance systems (12 months);
- optimization of operation and staff training to achieve maximum outputs and meet expected fuel international standards (6 months), and;
- secure contracts from coconut and oil crop growers and commercial oil producers to supply the biodiesel plant with sufficient oil at required specifications (3 months).

Stakeholder engagement in concept note development:

All relevant implementing partners and stakeholders aforementioned have been thoroughly consulted in the development of this concept note.

Support for PDD development:

Assistance is sought on the development of the PDD for this project.