

# PROJECT BRIEF

March 2018

EU-GIZ ACSE

ADAPTING TO CLIMATE CHANGE AND SUSTAINABLE ENERGY



PACIFIC ISLANDS  
FORUM SECRETARIAT



giz Deutsche Gesellschaft  
für Internationale  
Zusammenarbeit (GIZ) GmbH



## Samoa: Energy Bill and Sustainable Bioenergy

### Background

Samoa is a Polynesian island nation located in the southern Pacific Ocean, south of the equator between New Zealand and Hawaii. Approximately 99% of the estimated 192,000 population have access to electricity. Renewable energy sources currently generate approximately 30% of the Samoa's electricity with the largest contributions from hydropower. Other renewable energy resources such as wind and solar are also being used but biomass has not yet been adopted as a means of electricity generation.

Samoa is exposed to natural disasters such as droughts and cyclones, which can reduce generation capacity or cause damage to hydropower infrastructure. The risk of prolonged drought and damaging cyclones pose a threat to Samoa's national energy security and there is a need to diversify the nation's renewable energy sources.

Within this context, the project will target the Samoa Trust Estate Corporation's (STEC) plantation (6000 acres) at Mulifanua, which is located near Faleolo International Airport on the island of Upolu. The plantation was once a productive agricultural land growing coconuts and other crops, but over time has become covered with invasive species, which will be also harvested as fuel wood for the power plant. Improvements to energy sector policy and legislative frameworks will benefit the broader population of Samoa. This project is aligned with the Strategy for Development of Samoa, the National Energy Sector Plan, as well as several national policies and projects, aimed at reinvigorating agriculture and mitigating climate change impacts. It will also contribute to the Government's renewable energy target and encourages the use of sustainable energy.

### Project Summary

**Location:** Mulifanua, Upolu, Samoa

**Objective:** To enhance energy security in Samoa through development of a biomass supply chain for biomass gasification to support electricity generation

**Implementing Agency:** Ministry of Finance, Energy Policy, Coordination and Management Division

**Budget:** € 624, 000

**Duration:** 2015—2019

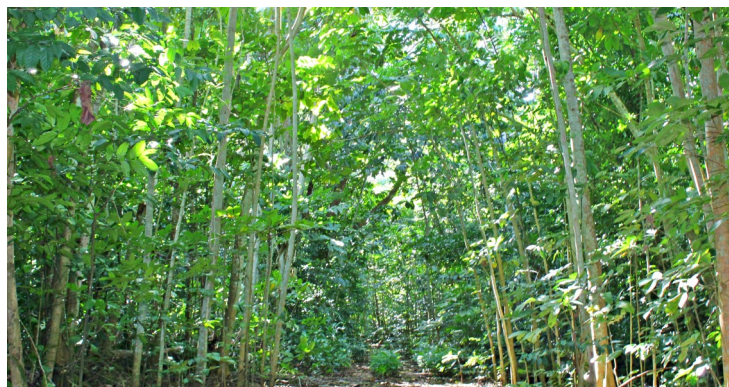
### Project Objective

The project will enhance energy security in Samoa through the development of a biomass supply chain to feed biomass gasification plant and generate electricity.

### Current situation

There are significant biomass resources available in Samoa, which could be harvested and used to generate electricity. The encroachment of biomass (e.g. weeds, non-productive trees) into coconut plantations is an issue faced by plantation owners. These encroachments make harvesting and replanting of coconuts and other crops more difficult, negatively impacting on Samoa's coconut oil export potential, and the ability to accommodate the traditional intercropping (bananas, taro, cassava) and livestock production in coconut plantations.

There is a current lack of accurate quantitative data on the size and stratification of the waste biomass and this has constrained efforts to use these biomass resources as a feedstock to generate electricity whilst at the same time helping to in-



crease coconut plantation productivity.

Private sector participation in the energy sector has been constrained by the lack of a legislated enabling framework to procure private sector investments in the energy sector. There is also a lack of minimum performance standards for the private sector participation in the energy sector that has acted as a barrier to taking advantage of this excess biomass as a feedstock for electricity generation. This has caused delays in realising biomass gasification renewable energy power projects.

## What Is EU-GIZ ACSE Doing?

The EU-GIZ ACSE programme helps the people of fifteen Pacific island countries address two common challenges: adapting to climate change and reducing their dependence on fossil fuels.

GIZ is supporting the Government of Samoa to assess the biomass resource potential of the STEC plantation at Mulifanua. The project will provide support in planning the biomass supply chain up until its use as feedstock for a proposed future gasification power plant. Additionally, the project is supporting the development of overarching energy legislation to help facilitate private sector investment into the energy sector. These objectives will be achieved through two complementary components:

### Component 1. Development of an Overarching Energy Legislation

The project will fill legislative gaps in the energy sector by supporting the process of developing a comprehensive energy bill for the country. The bill will outline a legal framework for energy sector operations and should provide greater clarity to investors in the energy sector. The overall objective for the energy bill is to minimise the risks and therefore promote investment in the energy sector by providing greater clarity and certainty to private sector investors.

### Component 2. Biomass Supply Chain Assessment and Planning

The project will establish a GIS-based forest inventory, Biomass Harvest and Management plan, design and construct a drying shed, procure machineries for biomass harvest and transport, and conduct harvest and feedstock production trials for a gasification power plant. The cleared plantation will be replanted in coconuts and other crops. A smaller part of the plantation area will be used to grow short rotation wood species such as *Leucaena leucocephala* in order to render biomass gasification sustainable on the long run. The project will also assess the market potential for coconut timber as a significant part of the palms are likely to be removed because of senility.

## Organisational Context

The Ministry of Finance is leading the project, which is implemented by the Energy Policy Coordination and Management Division in close partnership with the Office of Attorney General, Samoa Trust Estate Corporation, Electric Power Corporation, Scientific and Research Organisation of Samoa, The Pacific Community - Geoscience and Land Resource Divisions, Ministry of Natural Resources and Environment, Ministry of Women, Community and Social Development and the project management unit under the Energy Policy Coordination and Management Division.

## Contact

### Sione Foliaki

Assistant Chief Executive Officer and EU-GIZ ACSE Project Manager, Energy Policy Coordination and Management Division, Ministry of Finance, Government of Samoa  
Sione.Foliaki@mof.gov.ws

### Dr Wulf Killmann

Director, EU-GIZ Adapting to Climate Change and Sustainable Energy (ACSE) Programme  
wulf.killmann@giz.de

**Disclaimer:** This publication has been produced with the assistance of the European Union. The contents of this publication are the sole responsibility of GIZ and can in no way be taken to reflect the views of the European Union.

**Images:** Samoa Trust Estate Corporation