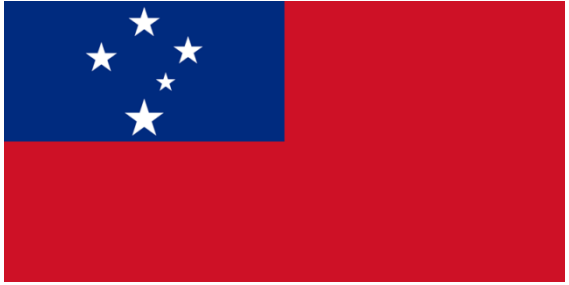


VARIABLE RENEWABLE ENERGY in SAMOA

Workshop on VRE in Pacific Island Countries: Small Grids & Off Grid

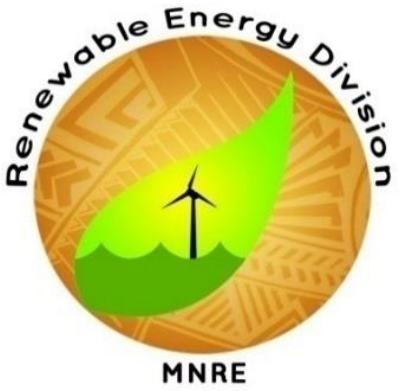
7 Dec 2018

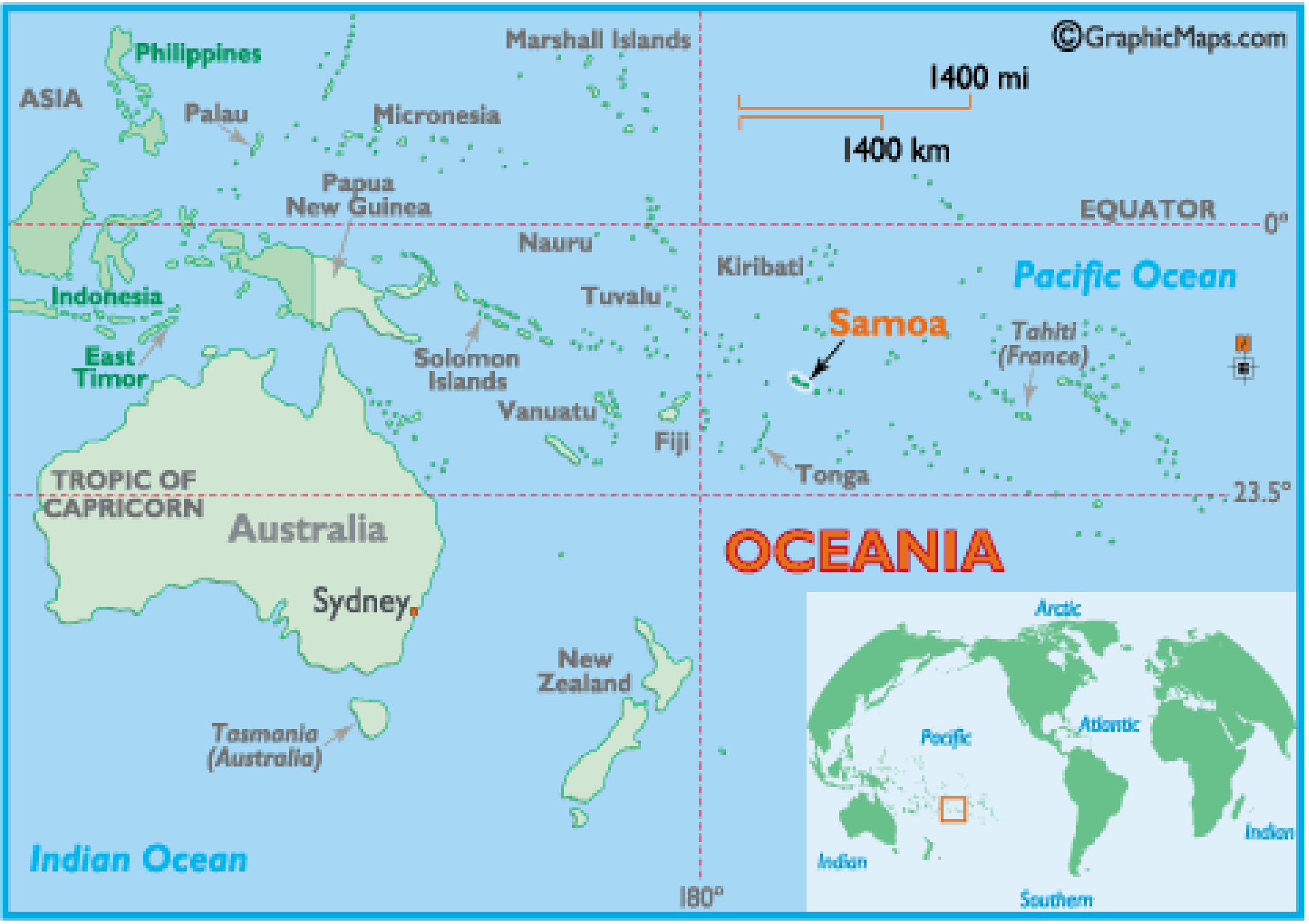
UNSW

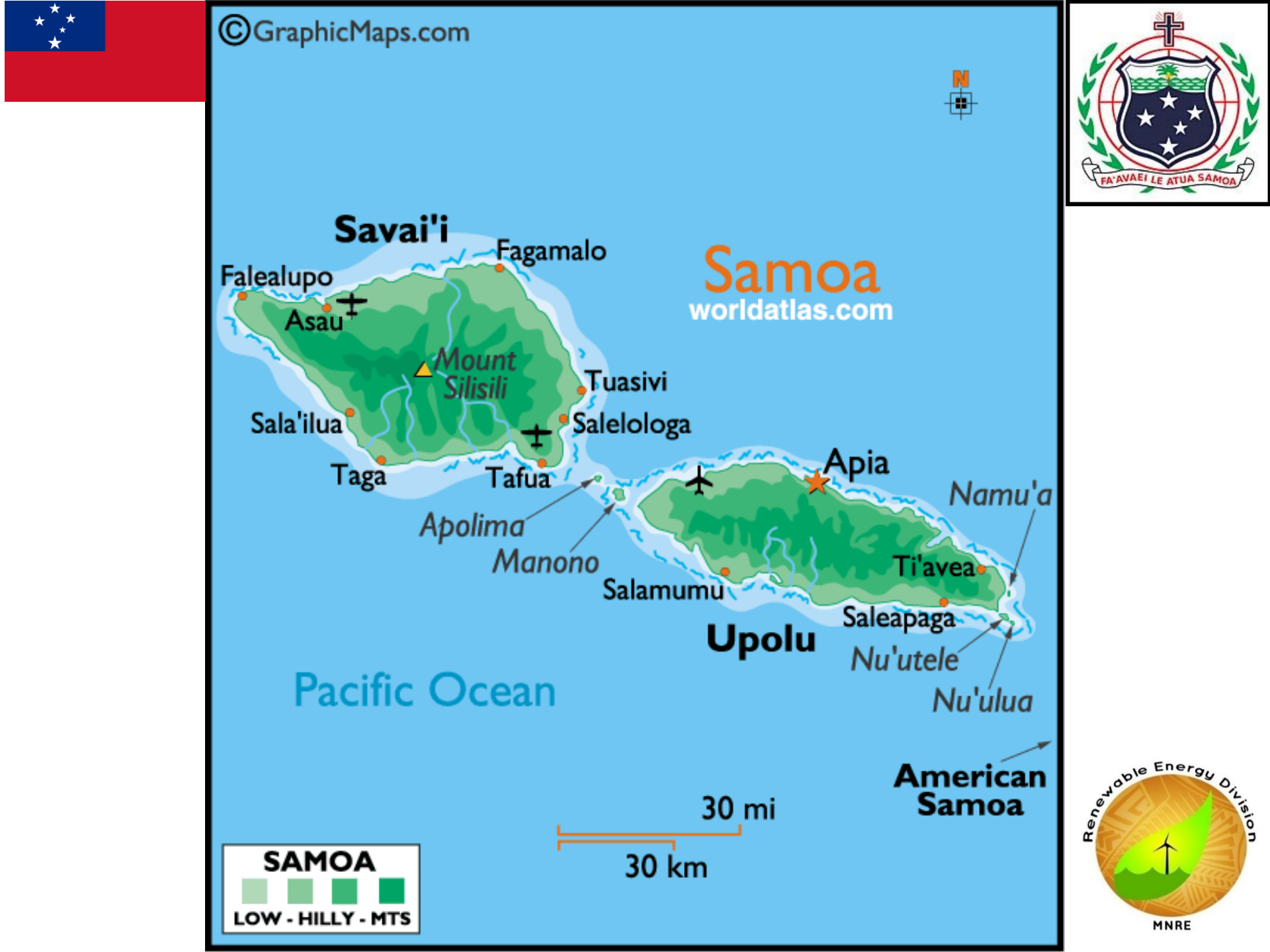
Sydney Australia

Presented by:

Vanda Faasoa - Chan Ting
ACEO Renewable Energy Division
Ministry of Natural Resources & Environment
(Email: vanda@mnre.gov.ws)




©GraphicMaps.com
1400 mi
1400 km
Philippines
ASIA
Palau
Micronesia
Marshall Islands
Papua New Guinea
EQUATOR
0°
Nauru
Kiribati
Pacific Ocean
Indonesia
Tuvalu
Samoa
Tahiti (France)
East Timor
Solomon Islands
Vanuatu
Fiji
Tonga
TROPIC OF CAPRICORN
23.5°
Australia
OCEANIA
Sydney
New Zealand
Tasmania (Australia)
Indian Ocean
180°
Arctic
Pacific
Atlantic
Indian
Indian
Southern


©GraphicMaps.com
N
Savai'i
Fagamalo
Falealupo
Asau
Samoa
worldatlas.com
Mount
Silisili
Tuasivi
Sala'ilua
Salelologa
Taga
Tafua
Apia
Namu'a
Apolima
Manono
Ti'avea
Salamumu
Saleapaga
Upolu
Nu'utele
Nu'ulua
Pacific Ocean
American
Samoa
30 mi
30 km
SAMOA
LOW - HILLY - MTS
FA'AVAEI LE ATUA SAMOA
Renewable Energy Division
MNRE

SAMOA

- Population – 192, 126 (SBS, 2016)
- GDP per capita – AUD $5,670.00
- 4 main inhabited islands
  - Savaii
  - Upolu
  - Manono
  - Apolima

Energy Policies Based On:

- Paris Agreement 2015
- SAMOA Pathway 2014
- Strategy for the Development of Samoa 2016/2017 – 2019/2020
- National Environment Sector Plan 2017 - 2021
- National Energy Sector Plan 2017 – 2022
- SDG #7

Legislation in Samoa

- In use now:
  - Energy Efficiency Act 2017
  - Electricity Power Corporation (EPC) Act 1980
  - Electricity Act 2010
- Yet to be finalized
  - Energy Management Bill
- To be reviewed
  - EPC Act 1980

Renewable Energy Division
MNRE

Samoa's International Commitments

- INDC (Intended Nationally Determined Contributions)
  - To have 100% electricity generated from RE sources by 2025
- NAMA (Nationally Appropriate Mitigation Actions)
  - To upscale our coconut biodiesel production
  - Electric vehicles and related infrastructure changes

Energy Sector

- All decisions made by National Energy Coordinating Committee (NECC)
  - Chaired by the Minister of Finance, Honorable Sili Epa Tuioti
  - Co-chaired by
    - 1) Deputy Prime Minister and Minister of Natural Resources and Environment, Honorable Fiame Naomi Mataafa
    - 2) Minister of Works, Transport and Infrastructure, Honorable Papalii Niko Lee Hang
  - Attended by all Chief Executive Officers and representatives from all the Energy sector stakeholders

National Energy Coordinating Committee (NECC)

- Secretariat is housed under Ministry of Finance (MoF)
- Other stakeholders include:
  - Ministry of Natural Resources and Environment, Renewable Energy Division
  - Electric Power Corporation (EPC)
  - Samoa Trust Estates Corporation (STEC)
  - Scientific Research Organization of Samoa (SROS)
  - Land Transport Authority (LTA)
  - etc

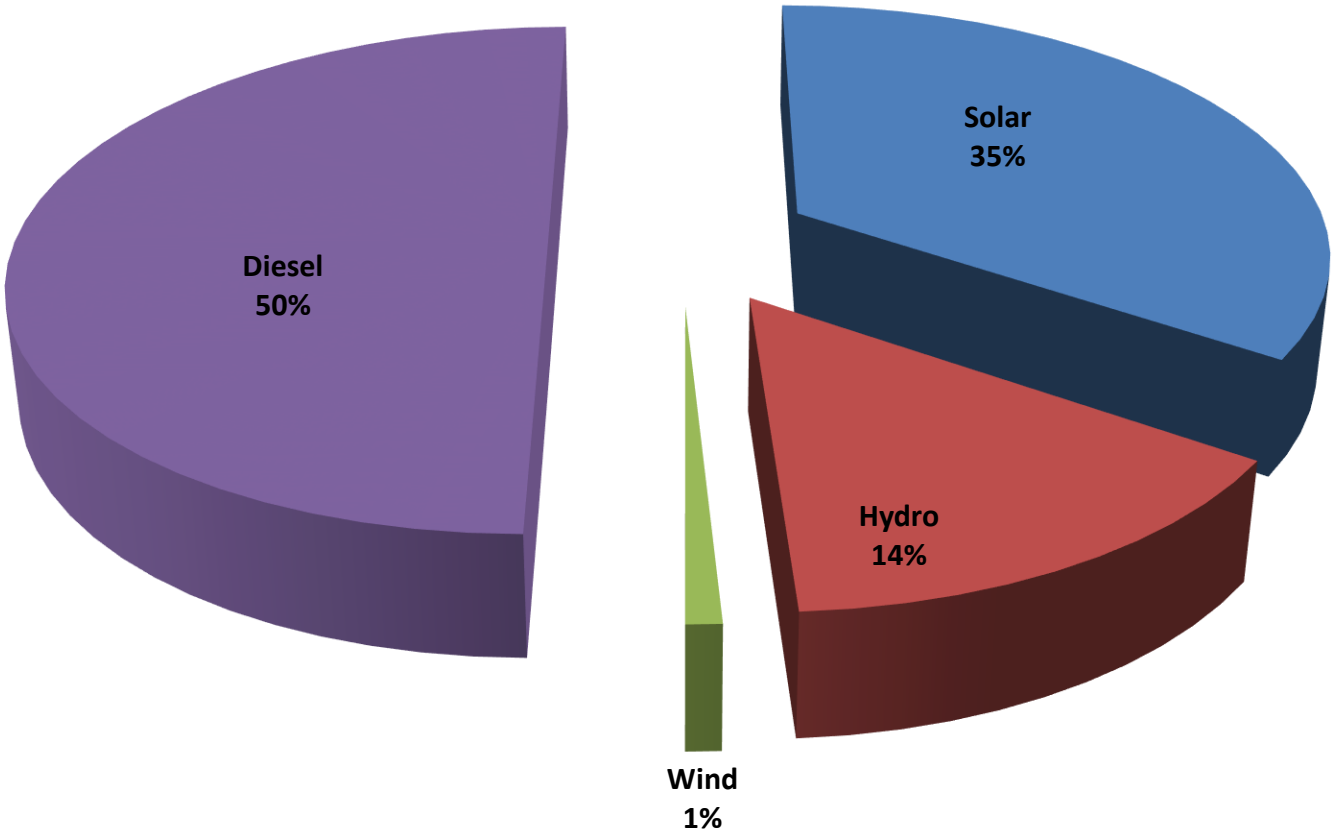
Samoa's INDC

100% Renewable Electricity by 2025

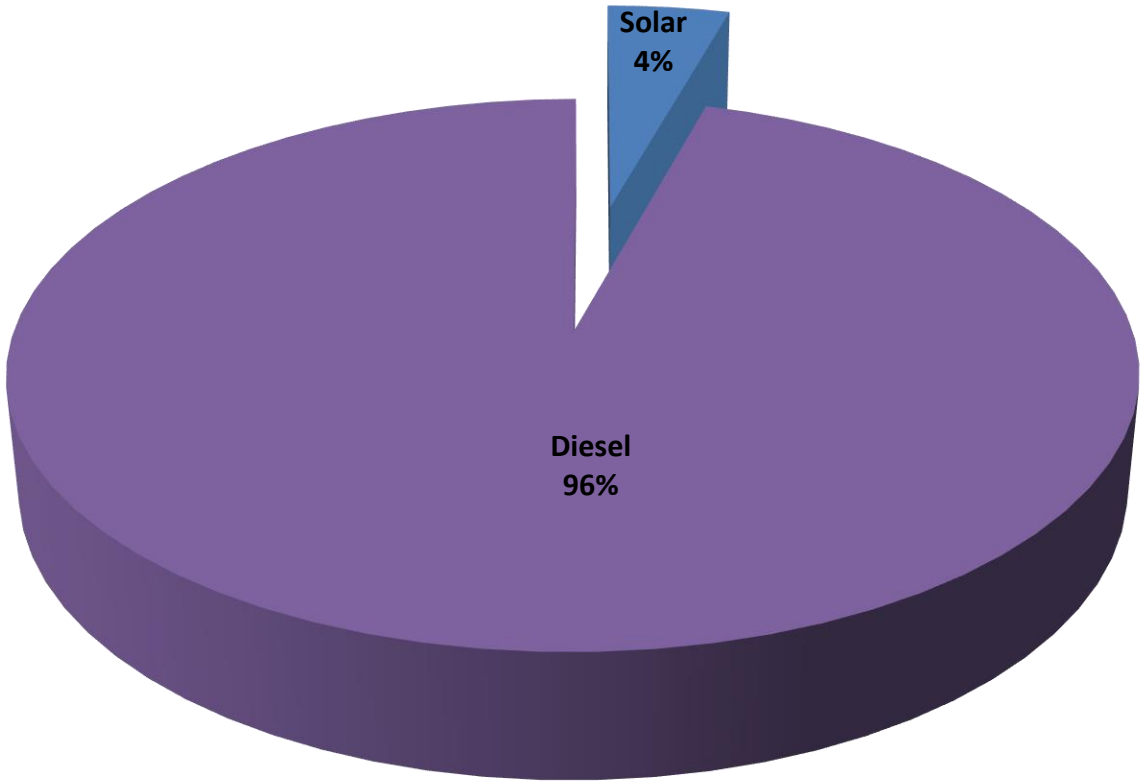
Renewable Energy Division

MNRE

Current Electricity Generation on Upolu Island ~ 25MW



Current Electricity Generation on Savaii Island ~ 3MW



Renewable Energy Division
MNRE

Issues and Challenges

- Grid stability
  - Intermittent supply of RE sources
    - ✓ Solar
    - ✓ Wind
- Land Issues
  - Most RE sources are on land which belongs to village communities

Biogas Electrification

Piu Biogas Electrification Project

Renewable Energy Division

MNRE

BIOGAS

- Treatment of waste to generate clean energy
- Use of animal and plant waste for the generation of biogas
  - Septic waste
  - *Merremia* vine
  - Leftover food
  - Any organic waste
- Biogas converted to electricity via a generator
- Electricity fed into the grid
- Outflow is treated and used as fertilizer

PIU BIOGAS ELECTRIFICATION PROJECT







SPREP
Secretariat of the Pacific Regional Environment Programme

UNDP 50 YEARS
Empowered lives. Resilient nations.


Supported by FINSE
SPREP and UNDP for the government of Samoa

IMPRESS Project

Improving the Performance and Reliability of Renewable Energy Power Systems in Samoa

Overall objective – To improve the sustainable and cost-effective utilization of indigenous renewable energy resources for energy production in Samoa

IMPRESS

Renewable Energy Division
MNRE

Project Overview and Background

- Pro-Doc Signing was held on the 2nd August 2017
- Project Total Budget – USD 6,075,828 million with USD 46million co-financing by the Government of Samoa
- Funding Source – Global Environment Facility (GEF)
- Implementing Partner – MNRE
- Implementing Agency – UNDP
- Project timeframe – 2017 – 2022 (5 years)
- 5 components

IMPRESS

Renewable Energy Division
MNRE

Challenges

- Lengthy Procurement process
- Technical Capacity of the Project Team to carry out some of the technical and financial aspects of the project components

IMPRESS

Renewable Energy Division
MNRE

Energy Efficient Transport

- Greenhouse Gas Abatement (GHGA) through Energy Efficiency (EE) and Biofuel Applications in the Land Transport Sector
- Italy and Austria provided funds through the IUCN
- 3 components
  I. Motorised Transport (LTA)
  II. Non motorised Transport (LTA)
  III. Biodiesel production (SROS & STEC)


Biodiesel

Potential Project Ideas

- Waste to Energy (WTE)
  - Reduce waste
  - Alleviates landfill problems
  - Generate clean energy
- Geothermal
  - Expensive drilling and testing
  - Cheaper long-term energy costs
- Wave Energy
  - New technology to Samoa

Renewable Energy Division

MNRE

Policy Challenges

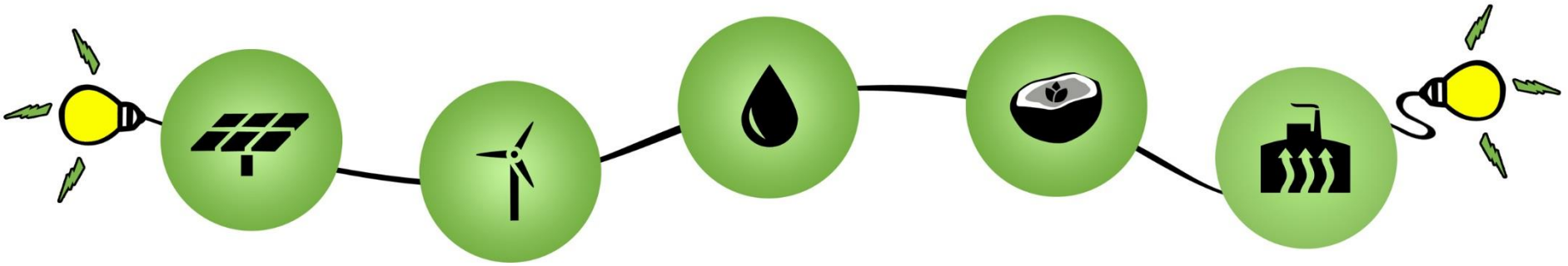
- Political support is crucial
- Public consultations to gauge the support of the wider community
- Capacity to implement and monitor
- Intra-ministry conflicts on who to regulate
- Lengthy legal clearance processes

Renewable Energy Division
MNRE

Policy Opportunities

- Provides a platform for everyone to be treated fairly through consultations with all parties involved e.g. distinguish between multimillion IPP companies and smaller community projects which are grid-connected
- Drives the achievement of national priorities e.g. INDC target
- Ensures the national objectives and targets are aligned with international commitments

"Save Our Environment, Use Clean Renewable Energy and Be Energy Efficient"



https://youtu.be/6e14G0vVWHk

Renewable Energy Division

MNRE

Faafetai lava!

Thank you for your attention!