



## *“EPC Renewable Energy Program”*

*PPA Conference, Apia, Jul 31 – Aug 4 2017*



*“The Power for the Nation”*

# VISION & MISSION

Long Term  
Vision

Vision 2025

- To be the cheapest electricity provider in the Pacific Region

Immediate  
Vision

- Clean energy sources for sustainable and affordable electricity supply for Samoa

Mission

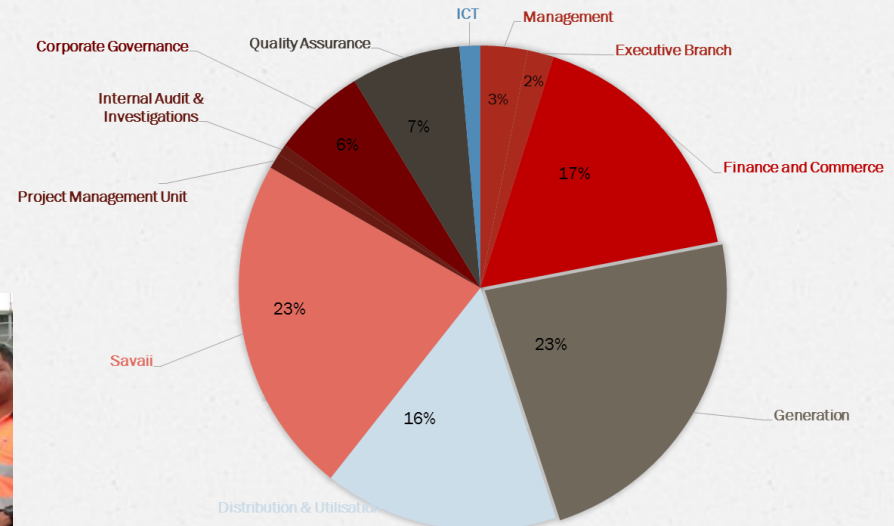
- To provide and maintain quality electricity services through innovative, sustainable and environmentally sound practices in developing renewable energy sources, generation and distribution infrastructure network, in partnership with customers and stakeholders, to support the development of Samoa”

## Brief Overview

- Established in 1972
- EPC Act 1980
- Electricity Act 2010
- Restructure in 2014
- 39,518 customers
- 100% RE Target



### Staff Count – 287 employees



## MANDATES

### Legislation Mandates

1. Public Bodies (Performance and Accountability) Act 2001
2. Public Finance Management Act 2001
3. Companies Act 2007
4. Labour and Employment Relations Act 2013
- 5 Occupational Safety and Health Act 2002
6. Diesel Power Station Act 1965
7. Taking of Lands Act 1964

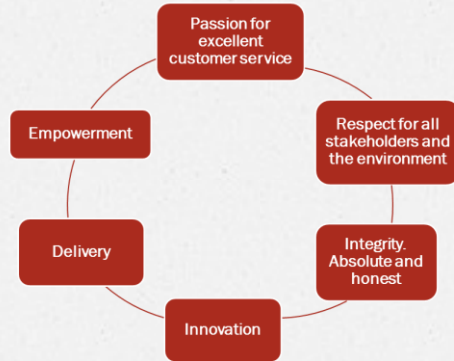
### Government Policy Mandates

1. Strategy for the Development of Samoa (SDS) 2017-2020
2. Energy Sector Policy
3. Community Service Obligation Policy 2007
4. Dividend Policy
5. Procurement Policy and Guidelines
6. Climate Change Programs

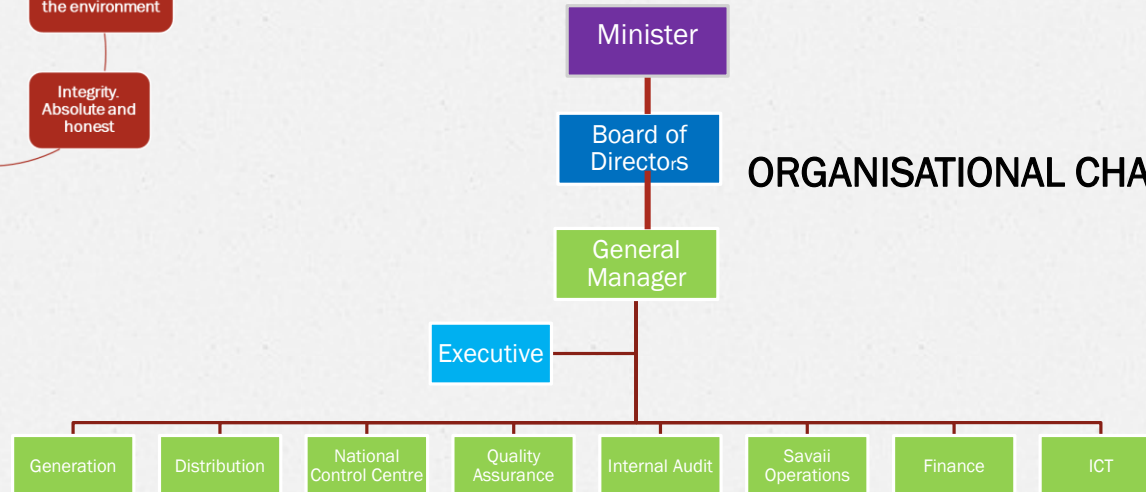
### Regulations Mandates

1. Rural Electrification, December 1988
2. AS.NZS 2000-3000 Wiring Regulation
3. Electric Power Corporation Practice Directions 1981

## VALUES



## ORGANISATIONAL CHART



"The Power for the Nation"



## Network Assets

### Upolu

- Trans line with voltage – 593,300 m
- Dist line with voltage – 598,110m
- LV with voltage – 2,201,000m
- Dist transformers – 736
- Street lights - 6905

### Savaii

- Trans line with voltage – 279,100m
- LV with voltage – 655,300m
- Dist transformers -181
- Street lights - 2101

### Apolima

- 8 Street lights

### Manono

- Dist line – 3800m
- Sub cable – 7600 m
- Street lights - 100

# Generation Mix

2017

	Power Plants	Type	Location	Capacity (MW)
1	Fiaga	Diesel	Upolu	23
2	Tanugamanono	Diesel	Upolu	3.5
3	Salelologa	Diesel	Savaii	3.5
4	Taelefaga	Hydro	Upolu	4
5	Lalomauga	Hydro	Upolu	3
6	Alaoa	Hydro	Upolu	1
7	Solar for Samoa RC	Solar	Upolu	1.5
8	Solar for Samoa Airport	Solar	Upolu	2.2
9	Green Power RC	Solar	Upolu	2.2
10	Green Power Airport	Solar	Upolu	2.5
11	Sun Pacific Energy	Solar	Upolu	2.2
12	Vaitele Solar	Solar	Upolu	0.25
13	Tanugamanono Solar	Solar	Upolu	0.15
14	Tuanaimato Solar	Solar	Upolu	0.204
15	EPC Race Course Solar	Solar	Upolu	2
16	Wind Turbine	Wind	Upolu	0.5
17	Apolima Solar	Solar	Apolima	0.0135
18	Salelologa Solar	Solar	Savaii	0.5

Power Plants	Type	Location	Capacity (MW)
Fale ole Fee	Hydro	Upolu	1.64
Samasoni	Hydro	Upolu	1.9

2018

Power Plants	Type	Location	Capacity (MW)
Tafitoala	Hydro	Upolu	0.46
Fuluasou	Hydro	Upolu	0.68
Faleata	Hydro	Savaii	0.16
Taelefaga 3rd Gen	Hydro	Upolu	2
Savaii Solar	Solar	Savaii	2

2019

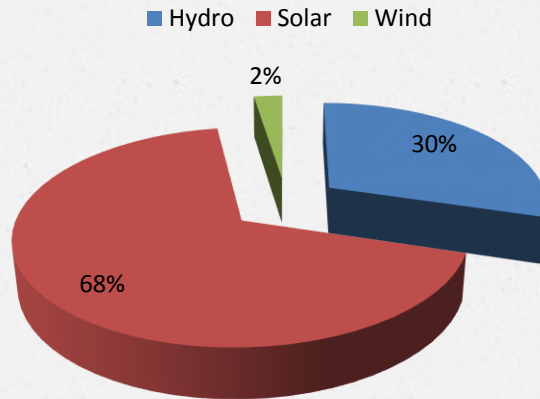
Power Plants	Type	Location	Capacity (MW)
Tafitoala	Hydro	Upolu	0.2
STEC	Biomass	Upolu	0.48

2020

Power Plants	Type	Location	Capacity
Pacific Ren Energy	Wind Farm	Upolu	7.5 MW

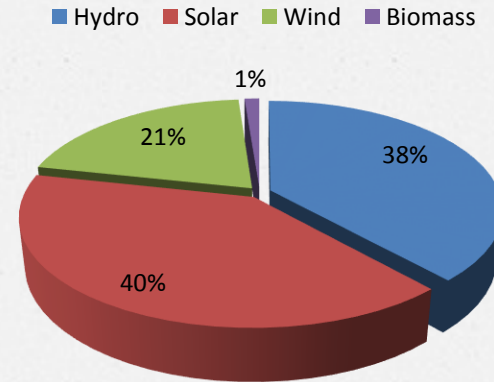
## Renewable Energy Generation Mix

Capacity (MW)



July 2017  
20.2175 MW

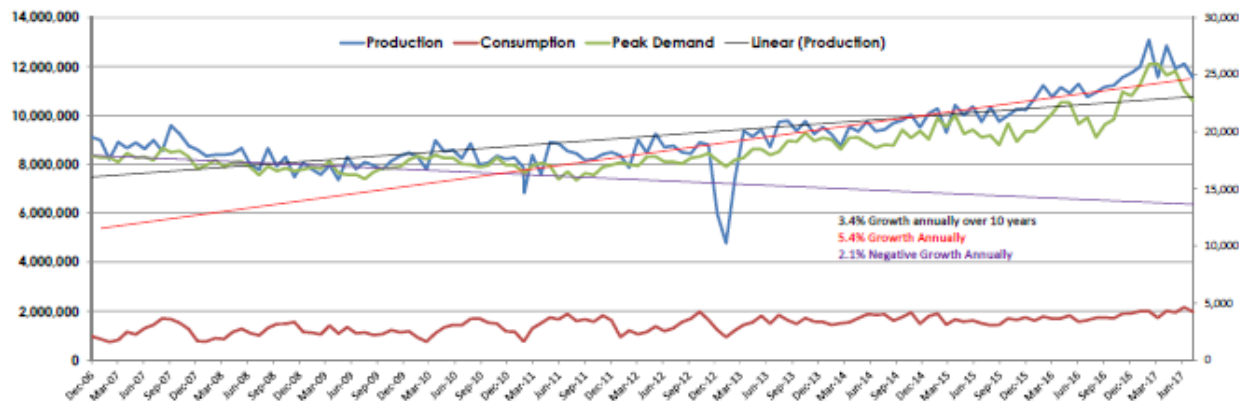
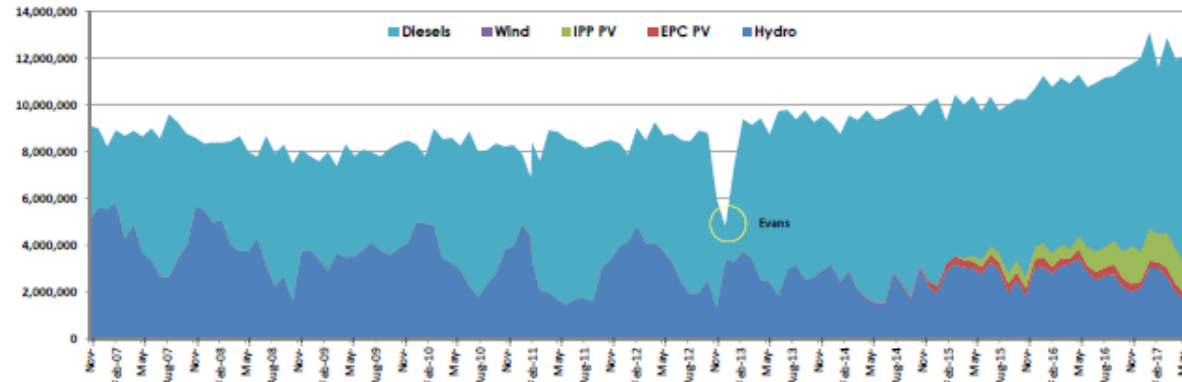
Capacity (MW)



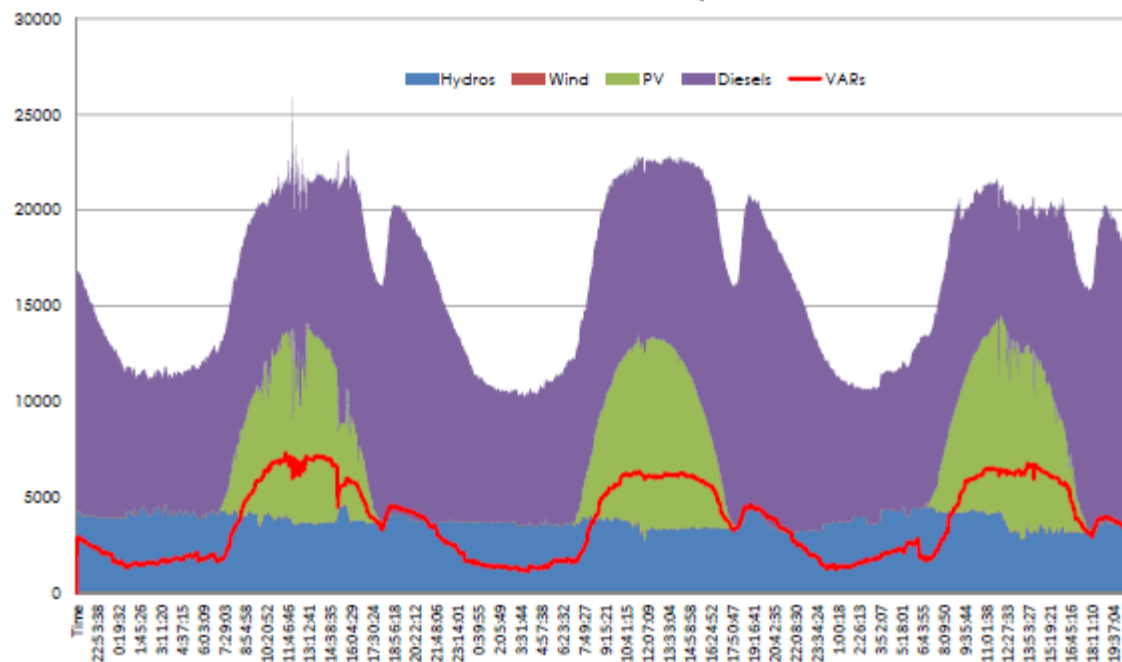
Dec 2020  
39.2375 MW



## EPC Production & Demand Profile



kW - Generation Mix July 9 to 11, 2017

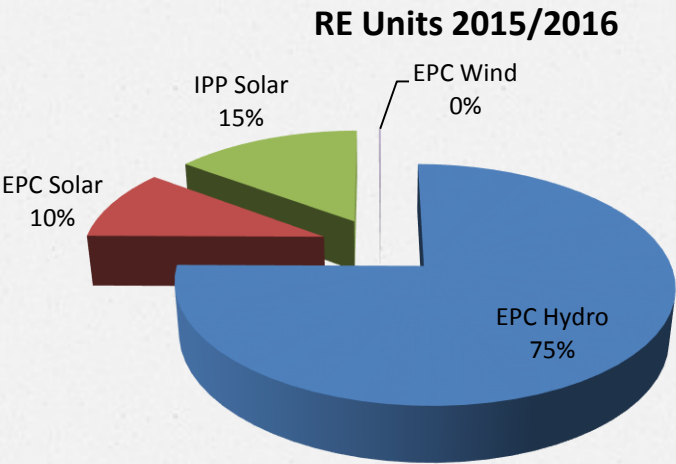


# Unit Production

Island / Source	FY 2015-2016		FY 2014 - 2015	
	kWh	Contribution %	kWh	Contribution %
Upolu Island				
Diesel	82,622,025	58%	84,853,938	64%
Hydro	34,502,645	24%	30,897,622	23%
Solar (EPC)	4,207,368	3%	3,359,578	3%
Solar (IPPs)	6,760,244	5%	662,147	0.5%
Wind	281,000	0%	178,700	0.1%
Upolu Total	128,373,282	91%	119,951,985	90.57%
Apolima Island				
Solar	11,054	0.01%	11,103	0.01%
Apolima Total	11,054	0.01%	11,103	0.01%
Savaii Island				
Diesel	12,839,182	9%	12,209,014	9%
Solar	407,700	0.29%	261,913	0.2%
Savaii Total	13,246,882	9%	12,470,927	9.42%
Grand Total	141,631,218	100%	132,434,015	100%



Fiaga Power Station

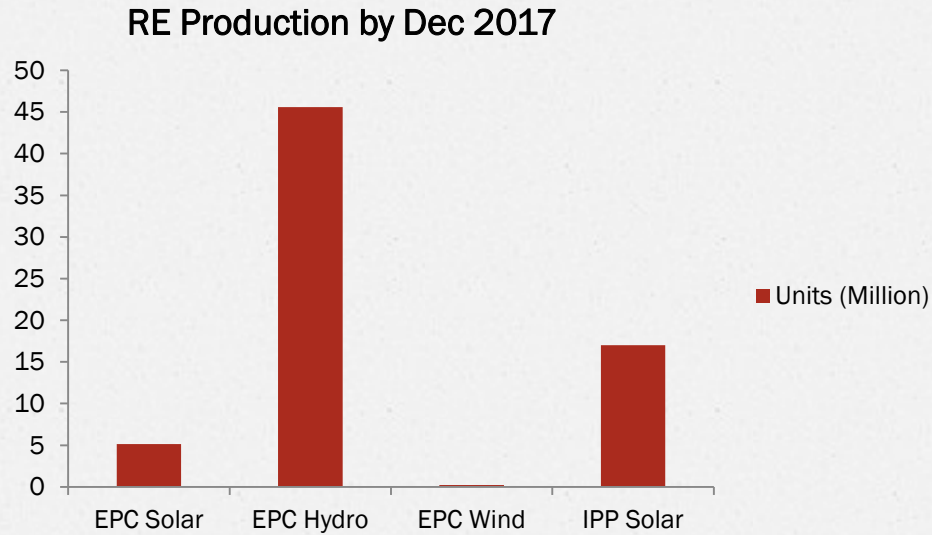


## Renewable Projects





## Climate Change Mitigation



67.94 mill Units

16.6 mill litres of Diesel

42,488 tonnes of reduced CO<sub>2</sub>

## Technical

- Stability Issues
- Solar – No Baseload
- Solar – Voltage Fluctuation
- Technical Skills

## Social

- Land Issues
- Environment
- Politics
- APs
- Short-sightedness

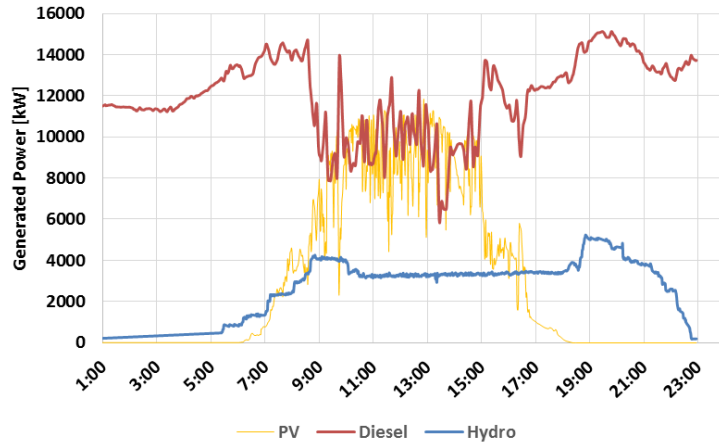


RE Challenges

## Government Level

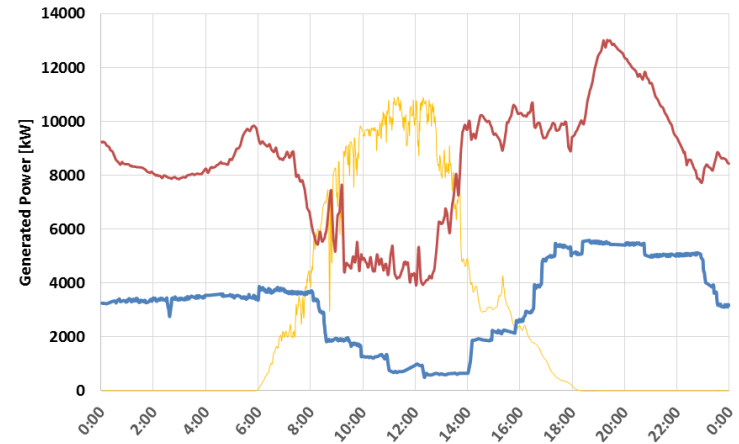
- Interagency issues
- Funding
- PPA approvals





## Weekday Operation

## Weekend Operation



## Solutions

### Battery Energy Storage System (BESS)/Smart Grid

- 7.5 MVA
- 6 MW
- 7.5 MWH



### Capacity Development Program



### SCADA Maximisation



## Looking to the Future

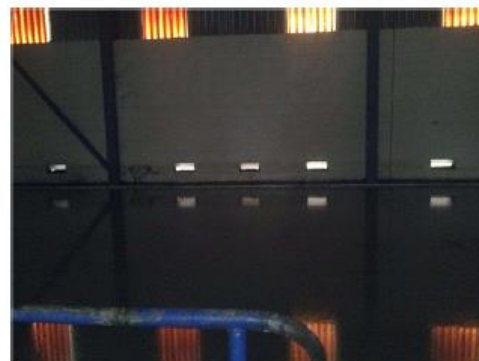
- o 860 kW, heat recycle generator at Fiaga Power Station
- o Converting Fiaga generators to run on LNG
- o Smart Meters
- o 2MW Hydro in Sili Savaii
  - o 8GWh per annum
- o Submarine Cable between Upolu and Savaii

## Natural Disasters



Samasoni Headpond





Samasoni  
Power Station

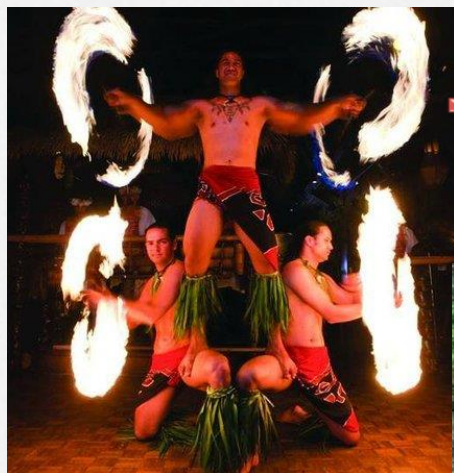


Samasoni Penstock



Distribution Network





THANK YOU

