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European Union Pacific Technical and Vocational Education and Training on Sustainable Energy and Climate Change Adaptation Project

TONGA NATIONAL CERTIFICATE ON SUSTAINABLE ENERGY (NCSE) L1 AND L2.

PCREEE-DOE JOINT MINI GRIDS TRAINING
28-29 APRIL 2021: NEIAFU VAVAU



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BACKGROUND

- The Pacific Centre for Renewable Energy and Energy Efficiency (PCREEE) was established in April 2017 as a regional vehicle with special focus on private sector to be the driver of regional sustainable development efforts.
- PacTVET is a 7 years 2.6 € regional project funded by EU and implemented by SPC and USP for 15 PICs including Tonga.
- Development of RQs in Resilience(CCA&DRR) and Sustainable Energy- Certificate Levels 1 to 4 on the Pacific Qualifications Framework (PQF) in Sustainable Energy. (EQAP)



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BACKGROUND

- August 2019, The PacTVET Technical Task Force approved for Tonga adopt the SE Regional Qualification L1-L4 and Contextualized to Registered under the TNQAB's Framework as a National Qualification.
- The DoE – MEIDECC in collaborations with the PCREEE, TNQAB, TIST and Ministry of Education able to successfully developed the NCSE L1 and L2 and registered as the first Tonga National Qualification on Sustainable Energy (NCSE) L1 and L2 approved by TNQA's Board.
- DoE – MEIDECC, PCREEE and TNQAB are now working on the development of the NCSE L3 and L4



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OBJECTIVES:

- RAISE AWARENESS OF THE TONGA ENERGY SECTOR, ITS FUTURE DEVELOPMENT AND NATIONAL TARGETS.
- BACKGROUND OF THE NCSE L1 AND L2
- FUTURE EMPLOYMENT AND BUSINESS OPPORTUNITIES
- FORMAL PROCESS FOR ACCREDITATION BY TNQAB.



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Comparison TERM and TERMPlus Objectives

TERM objectives/goals: 2010-2020

Reduced vulnerability to oil price shocks, reducing price and price fluctuation

Reduced dependence on fossil fuels

Increased share of electricity generated from renewable sources to 50%

Increased access to electricity

Reduced transmission and distribution losses to below 9%

TERMPlus objectives/goals: 2021-2035

Reduce total amount of diesel imports in 2035 by 10% compared to 2015

Increase security of supply (e.g. days of storage capacity)

70% electricity generation from renewable source

Limit growth in oil consumption to 1% per year on average for the period 2021-2035

Maintain line losses at under 9%



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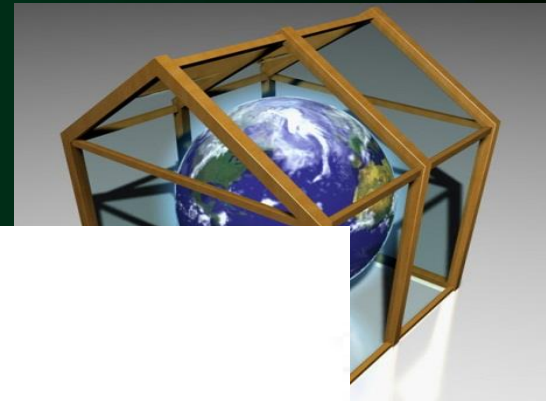
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1. TONGA RENEWABLE ENERGY INVESTMENTS





T'U'UANGA NGA AHI SENOLEITA MAU'ANGA IVI ALAFAKAFO'OU 'I TONGA

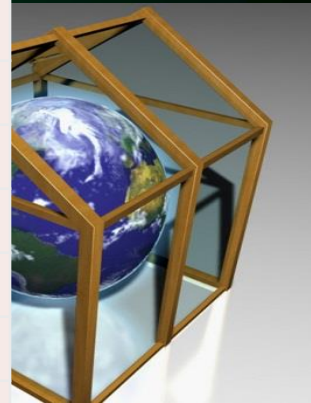


RENEWABLE ENERGY ROAD MAP





Island	Project Location	Capacity(MW)	USD
Tongatapu	Niutoua-Wind	1.3	20m
	Vaini MATA'OE LA'A-Solar	1	15M
	Matatoa-Solar	2	30M
	MAAMAMAI -Solar Farm	1.32	5 M
Vava'u	Taumu'aloto-Solar	0.42	8M
	Ofu, Hunga, 'Otea, Falevai, Kapa		3.8M
Ha'apai	Pangai-Solar	0.55	6M
	Ahanga-Wind	0.011	0.4M
	Nomuka	0.1	0.7
	Uiha	0.1	0.7
	Ha'ano	0.1	0.7
	Ha'afeva	0.06	0.5
	Tungua	0.058	0.5
	O'ua	0.084	0.8
	Kotu	0.069	0.6
	Mo'unga'one	0.035	0.4
Eua	Ohonua-Solar	0.2	0.75
Niutoputapu		0.15	1
Niuafo'ou		0.25	1.5
Off-grid	Off-grid	0.8	10
Total		8.607	106.35





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DOE – PCREEE - PACTVET JOINT AWARENESS AND DEVELOPMENT



2019

2020

2020



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TNQAB SCHOOL VISITS OCTOBER 2020

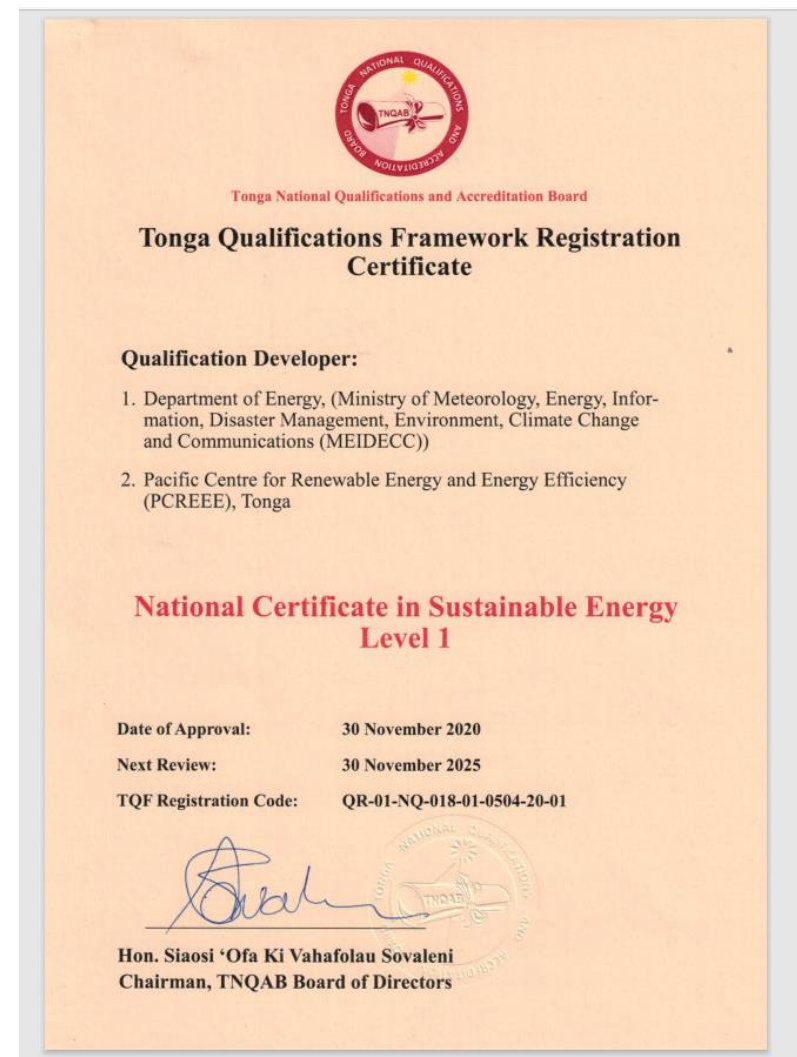


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2. NCSE L1 AND L2:

- 30TH NOVEMBER 2020, TONGA NATIONAL QUALIFICATION BOARD'S BOARD APPROVED FOR REGISTRATION OF THE TONGA NATIONAL CERTIFICATE ON SUSTAINABLE ENERGY L1 AND L2 AS NATIONAL QUALIFICATIONS.
- 4TH DECEMBER 2020, HON. POHIVA TUI'ONETOA (PRIME MINISTER OF TONGA) INAUGURATED THE NCSE L1 AND L2 IN LONGOMAPU VAVA'U.
- THE NCSE L1 AND L2 ARE NOW AVAILABLE TO TECHNICAL INSTITUTION AND TVET PROVIDERS TO DELIVER UPON ACCREDITATION APPROVAL FROM TNQAB.
- THE NCSE L1 AND L2 ARE RECOGNIZED NATIONAL, REGIONAL AND INTERNATIONAL.





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INAUGURATION OF THE NCSE L1 AND L2 BY THE PRIME MINISTER 4TH DEC 2020, LONGOMAPU VAVA'U



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	appropriate technology to convey information effectively, use appropriate cultural protocols to facilitate discussions and resolve conflicts if needed.		
Qualification Components	This qualification consists of the following units of competency:		
	Unit Code	Unit Title	Credit value
	NS039-01	Fundamental workplace communication skills	6
	NS040-01	Apply basic workplace health and safety procedures for SE	3

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	NS041-02	Participate in a Team towards an Objective	4
	NS042-02	Collect, Present and Apply Workplace Information	4
	NS043-01	Basic Tools, Equipment and Materials used in Renewable Energy Technology (RET) and Energy Efficiency (EE)	6
	NS044-01	Describe and explain energy sources	5
	NS045-01	Promoting sustainable energy practices in the Pacific Island communities	8
	NS046-01	Perform workplace calculations for the energy sector	4

NCSE LI AND L2' UNIT STANDARDS

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This qualification consists of the following units of competency:

Unit Code	Unit Title	Credit value
NS 041-02	Participate in a Team towards an Objective	4
NS 042-02	Collect, Present and Apply Workplace Information	4
NS 047-02	Identify and use appropriate Cultural Protocols for Tonga	6
NS 048-02	Describe and Explain basic Renewable Energy Technologies (RETs) and Energy Saving Practices	7
NS 049-02	Provide basic Sustainable Energy Solutions for reduction in residential, commercial and industrial premises	7
NS 050-02	Apply tools, equipment, materials relevant to tasks in RETs and Energy Efficiency Practices	8
NS 051-03	Promote and Contribute to Energy Efficiency	4

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RE industry specific competencies

- ▶ Airconditioning and Refrigeration
- ▶ Solar Power
- ▶ Wind Power
- ▶ Biomass Power
- ▶ Biogas Power
- ▶ Hydro Power
- ▶ Energy Efficiency
- ▶ Energy Auditing



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CHALLENGES ON THE INDUSTRY AND PRIVATE SECTOR

- Lack of **formal trainings** and **national qualifications** are available locally.
- Lack of **Human Resources** with right expertise that has recognized at Regional and International level on SE planning, designing, installations, monitoring and evaluating and energy auditing.
- Lack of **RE technicians** are available on ground for daily maintenance. E.g. outer islands solars.
- Private Sectors could not compete with the foreign companies in bidding for RE projects due to lack of **capacity buildings** on how to prepare a competitive bidding document, including understanding of the donor procurement requirements.



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PROJECT PROGRESS



TIME CONSTRAINT IS OUR ONLY FEAR:

- 1. PCREEE IS NOW COMMITTING TO FUND THE DEVELOPMENT OF THE NCSE L3 AND L4**
- 2. PCREEE WILL FUND INSTRUCTORS TO DELIVER THE NCSE L1 AND L2.**
- 3. PCREEE AND DOE CONTINUES TO ASSIST SECONDARY SCHOOL TVET PROVIDERS TO OFFER THE SE QUALIFICATION.**





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SUPPORT FROM THE MINISTRY OF EDUCATION AND TRAINING.

The Development of the SE National
Qualification Team, 2nd meeting with the
Hon. Minister of Education and Training





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INFORMAL TRAININGS ON SE..





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THANK YOU
QUESTIONS?

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POST COMPULSORY EDUCATION AND TRAINING (PCET)

TNQAB Act (2016 Revised Edition):

Means education and training offered to and for students :

- a) Aged **19** years or more;
- b) Who are not attending secondary school; or
- c) Who are not attending an institution owned and maintained by a religious society for the purpose of theological training

TONGA QUALIFICATIONS FRAMEWORK			
LEVEL	QUALIFICATION TITLE		
10			Doctoral degree
9			Master's degree
8	Postgraduate certificate	Postgraduate diploma	Bachelor's degree with Honours
7	Graduate certificate	Graduate diploma	Bachelor's degree
6		Advanced diploma	
5		Diploma	
4	Certificate		
3	Certificate		
2	Certificate		
1	Certificate		

