



# Energy Transition Pathways for the 2030 Agenda SDG 7 Roadmap for Tonga



*The shaded areas of the map indicate ESCAP members and associate members.\**

The Economic and Social Commission for Asia and the Pacific (ESCAP) serves as the United Nations' regional hub, promoting cooperation among countries to achieve inclusive and sustainable development. The largest regional intergovernmental platform with 53 member States and 9 associate members, ESCAP has emerged as a strong regional think-tank offering countries sound analytical products that shed insight into the evolving economic, social and environmental dynamics of the region. The Commission's strategic focus is to deliver on the 2030 Agenda for Sustainable Development, which it does by reinforcing and deepening regional cooperation and integration to advance connectivity, financial cooperation and market integration. The research and analysis undertaken by ESCAP, coupled with its policy advisory services, capacity building and technical assistance to governments aims to support countries' sustainable and inclusive development ambitions.

*\*The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.*

# Energy Transition Pathways for the 2030 Agenda

## SDG7 Roadmap for Tonga



*Developed using National Expert SDG7 Tool for Energy Planning (NEXSTEP)*  
December 2020

# Energy Transition Pathways for the 2030 Agenda

## SDG7 Roadmap for Tonga

United Nations publication  
Copyright © United Nations 2021  
All rights reserved  
ST/ESCAP/2946

### Photo Credits:

Cover image (vector): Freepik; Chapter 1: balein/shutterstock(94408579); Chapter 2: violetkaipa/shutterstock(180765836); Chapter 3: SUWIT NGAOKAEW/shutterstock(263362964); Chapter 4: phive2015/iStock(541577404); Chapter 5: shutterstock\_250363594; Chapter 6: Vasin Lee/shutterstock(247533223); Chapter 7: imacoconut/iStock(586163548); Chapter 8: aydinmutlu/iStock(586073426); Chapter 10: Jaruek Chairak/shutterstock(266159090).

This publication may be reproduced in whole or in part for educational or non-profit purposes without special permission from the copyright holder, provided that the source is acknowledged. The ESCAP Publications Office would appreciate receiving a copy of any publication that uses this publication as a source.

Use may not be made of this publication for resale or any other commercial purpose whatsoever without prior permission. Applications for such permission, with a statement of the purpose and extent of reproduction, should be addressed to the Secretary of the Publications Board, United Nations, New York.

# Foreword:

## ESCAP

The Kingdom of Tonga has been working to develop its energy sector in line with the targets set out in SDG7. As an island nation, energy is a critical input to the wellbeing and economy of the country, underpinning its trade, transport and services.

Tonga's Sustainable Development Goal 7 Road Map highlights that good progress has been made on many of the targets of SDG7. It underscores that continued progress will be assisted by an integrated policy framework. The Road Map is intended to play this role in helping Tonga achieve its SDG and NDC targets by providing a matrix of technological options and enabling policy measures. Its scenarios have been developed using national data and take into account existing energy policies and strategies, together with the NDC. It offers recommended technology solutions

and policy options for reducing emissions, saving energy, lowering costs and improving access for all.

It is hoped that the analysis in the Road Map will help the Government of Tonga to make an informed decision to develop and implement a set of policies to achieve SDG 7 by 2030 and deliver on its NDC.

Tonga is among the first countries in the region to develop an SDG7 road map. This experience will help other countries in the region looking to understand how they can realize increased ambition on sustainable energy.

ESCAP is committed to continue to support Tonga and all its member States in delivering a secure, resilient and sustainable energy future as it builds back better from COVID-19.

**Hongpeng Liu**

Director, Energy Division, ESCAP

# Foreword: Tonga

It is my pleasure to provide the foreword for this, the first Report on the Tonga Energy Roadmap 2010-2020. This Roadmap for achieving Sustainable Development Goal 7 (SDG 7) presents a detailed assessment aimed at helping the country to reach a clean and green energy future and in particular achieve its national energy targets under NDC and TERM Plus. It details a range of technical opportunities and policy options for reducing emissions, saving energy and lowering costs. The Roadmap offers an opportunity to leverage a least-cost sustainable energy development pathway, and to direct the investment savings to other critical sectors. The National Expert SDG Tool for Energy Planning (NEXSTEP) will enable policymakers to make informed policy decisions to support the achievement of the SDG7 targets as well as emission reduction targets (NDCs).

From the Government of Tonga's perspective, the development of the Roadmap has required unprecedented access to government ministries and one of the state-owned enterprises (Tonga Power Limited) by the country's development partners to enable them to clearly identify the underlying problems and, therefore, identify

optimum and targeted solutions. This has not always been an easy process, as it has stretched the resources and capacity of some of the government entities. Hard questions have also had to be asked in relation to the adequacy of government processes in areas of governance, effectiveness, transparency and accountability.

Energy is a fundamental building block for the Kingdom in its social and economic development, and in enhancing the livelihood and wellbeing of all Tongans. It affects all businesses and every household. Accessible, affordable and sustainable electricity that is environmentally responsible and commercially viable is a high priority. My Government recognizes the importance of having dependable, accessible and reasonably-priced power as a key catalyst for sustainable economic growth. Achievement of these goals is crucial to achieving the Government's primary target of "poverty alleviation", including 100% accessibility to electricity.

I commend this Roadmap and the information it contains and hope that its impacts will benefit all.

'Ofa atu

**Mr. Paula Ma'u**

CEO for Ministry of MEIDECC

January, 2021

# Acknowledgements

The preparation of this report was conducted by the Energy Division of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) in collaboration with Murdoch University, Australia and the Department of Energy of Tonga under the Ministry of Meteorology, Energy Information, Disaster Management, Environment, Climate Change and Communications (MEIDECC).

The principal authors and contributors of the report were Anis Zaman, Saif Saahil and Charlotte Yong. A significant contribution to the overall work was from Tevita Tukunga, Director of the Department of Energy, Tonga; 'Eliate Laulaupea'alu, Sione Tausinga and Samiuela Matakaiongo.

The review and valuable suggestions were provided by Hongpeng Liu, Director of the Energy Division, ESCAP, Michael Williamson, Section Chief of the Energy Division, ESCAP and David Ferrari, Economic Affairs Officer, Energy Division, ESCAP.

Robert Oliver edited the manuscript. The cover and design layout were created by Xiao Dong. Administrative and secretariat support was provided by Prachakporn Sophon, Sarinna Sunkphayung, Nawaporn Sunkpho and Thiraya Tangkawattana.



# Abbreviations and acronyms

BAU	business-as-usual	MCDA	Multi-Criteria Decision Analysis
BESS	battery energy storage system	MEIDECC	Ministry of Meteorology, Energy Information, Disaster management, Environment, Climate Change and Communications
CBA	cost benefit analysis		
CFL	compact fluorescent light		
CNO	coconut oil	MEPS	minimum energy performance standard
CO <sub>2</sub>	carbon dioxide	MJ	megajoule
CPS	current policy scenario	MTF	Multi-Tier Framework
CTCN	Climate Technology Centre and Network	MW	megawatt
EC	European Commission	MWh	megawatt-hour
EE	energy efficiency	NDC	nationally determined contributions
ESCAP	United Nations Economic and Social Commission for Asia and the Pacific	NEXSTEP	National Expert SDG Tool for Energy Planning
EV	electric vehicle	NREL	National Renewable Energy Laboratory
GDP	gross domestic product	OIREP	Outer Island Renewable Energy Project
GEF	Global Environment Facility		
GHG	greenhouse gas	PCREEE	Pacific Centre for Renewable Energy and Energy Efficiency
ICS	improved cooking stove	PIREP	Pacific Islands Renewable Energy Project
IPCC	Intergovernmental Panel on Climate Change	PP	power plant
IRENA	International Renewable Energy Agency	PV	photovoltaic
IRR	Internal Rate of Return	RE	renewable energy
INAP2	Joint National Action Plan on	SDG	Sustainable Development Goal

预览已结束，完整报告链接和二维码如下：

[https://www.yunbaogao.cn/report/index/report?reportId=5\\_474](https://www.yunbaogao.cn/report/index/report?reportId=5_474)

