

Regional Overview of Energy Situation in the Pacific Island Countries (PICs)

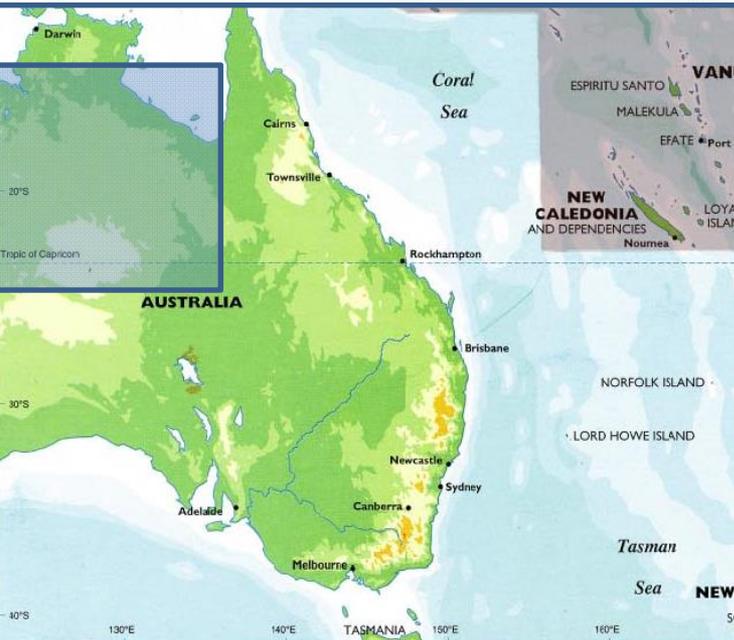
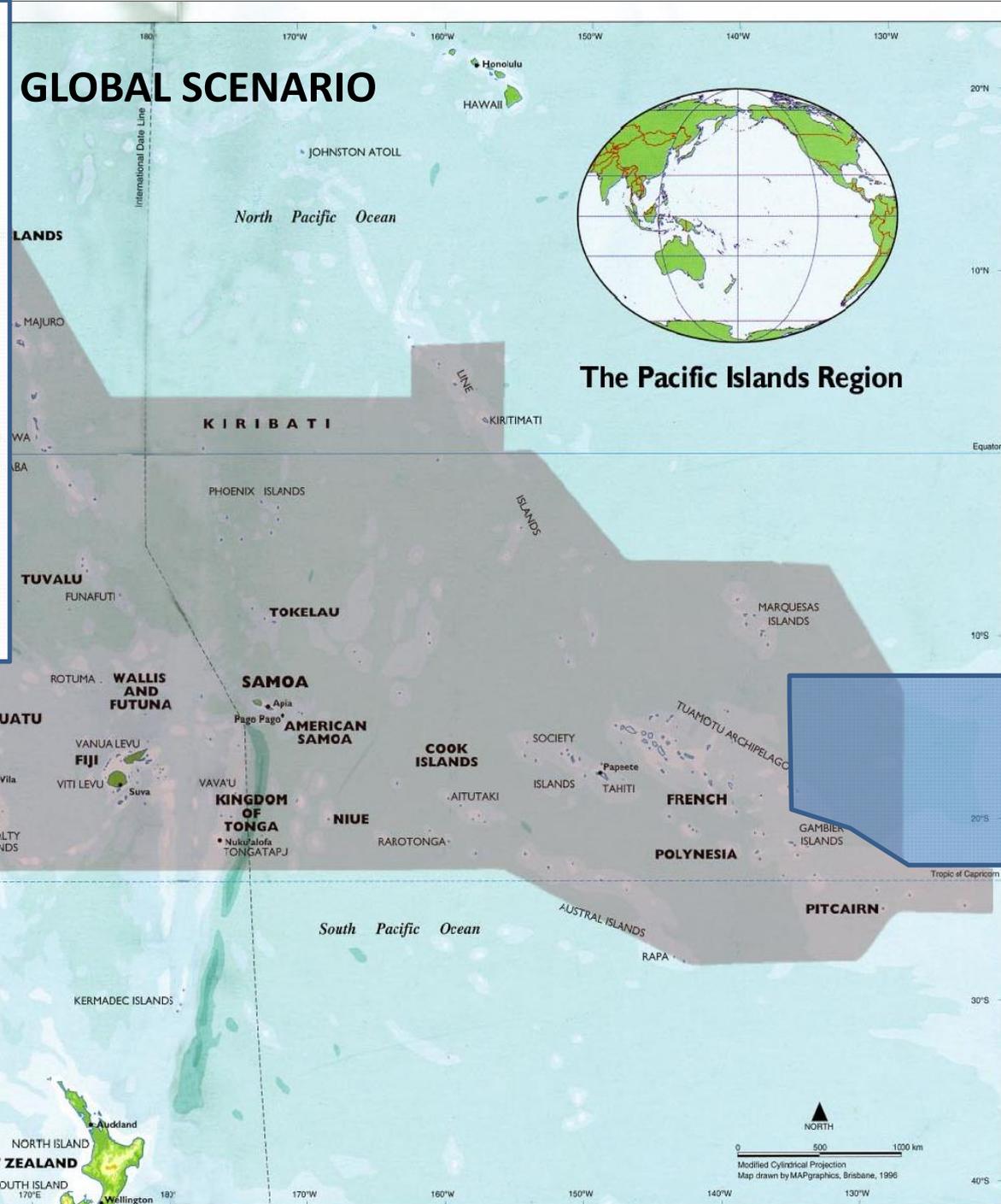
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Secretariat of the Pacific Community

Content

- The PICs - Our geography and location
- The challenges we face
- Our guidance to energy security
 - FAESP Framework
- Our Energy Situation to date

1. All PICs put together contribute to 0.4% of the total global land mass.
2. Population of the PICs is roughly around 0.15% of the total global population.
3. PICs are scattered over 165.2 million km² in the Pacific Ocean which accounts for 44% of the worlds ocean.

GLOBAL SCENARIO

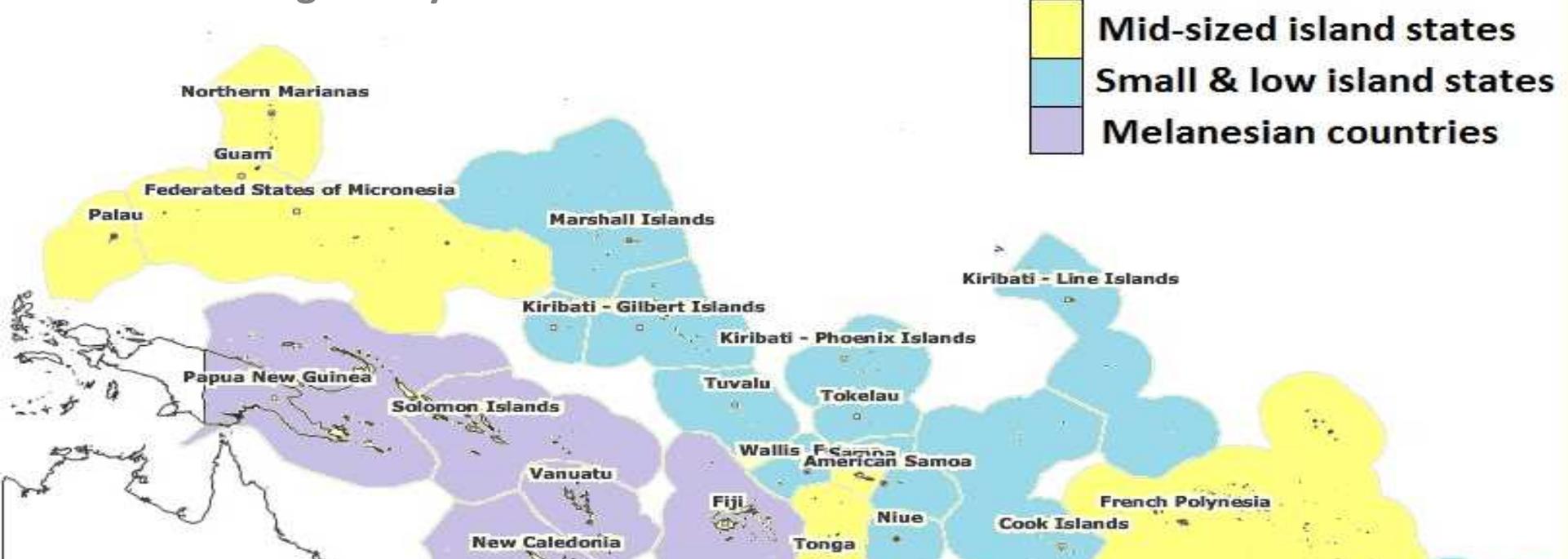


Cultural Sub-Regions



2010 estimates	22PICs	Melanesian	Polynesian	Micronesian
Land Area	553.52 thousand Km ²	98.0%	1.4%	0.6%
EEZ	2.98 mil Km ²	27.4%	37.2%	35.4%
Population	9.8 million	87.8%	6.7%	5.5%
Urban Population	2.2 million	18.7%	37.6%	66.6%
Population density	18	16	83	171
GDP per capita	\$US3,891	US\$2,713	US\$13,058	US\$11,489

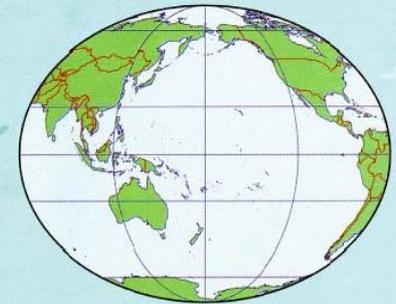
Cultural Sub-Regions by size and resources



	Mid-sized island states
	Small & low island states
	Melanesian countries

Melanesian Countries	Polynesian & Micronesian countries	
	Mid-sized island states	Small & low island states
<ul style="list-style-type: none"> • Large, mountainous and mainly volcanic islands. • Have considerable natural resources: fertile soils, large forests, and mineral deposits • Rural and agricultural (about 85% of the people live in rural areas; • Cultural and social diversity. More than 100 dialects are spoken in PNG, Solomon Islands and Vanuatu 	<ul style="list-style-type: none"> • have limited land resources, little or no commercial forests, and no commercial mineral deposits. • Few tradable natural resources and virtually no manufacturing industry • Many of these islands enjoy a high standard of living from foreign assistance and remittances from expatriate island communities 	<ul style="list-style-type: none"> • Land and soil poor • Natural resources are mostly limited to the ocean • The most vulnerable places on Earth to the adverse impacts of climate change and sea level rise. • Key problems: shore erosion, vulnerability to storms and droughts, fresh water scarcity, ground water pollution, solid waste disposal

THE CHALLENGES WE FACE IN THE REGION



The Pacific Islands Region

Isolated markets

Narrow range of resources

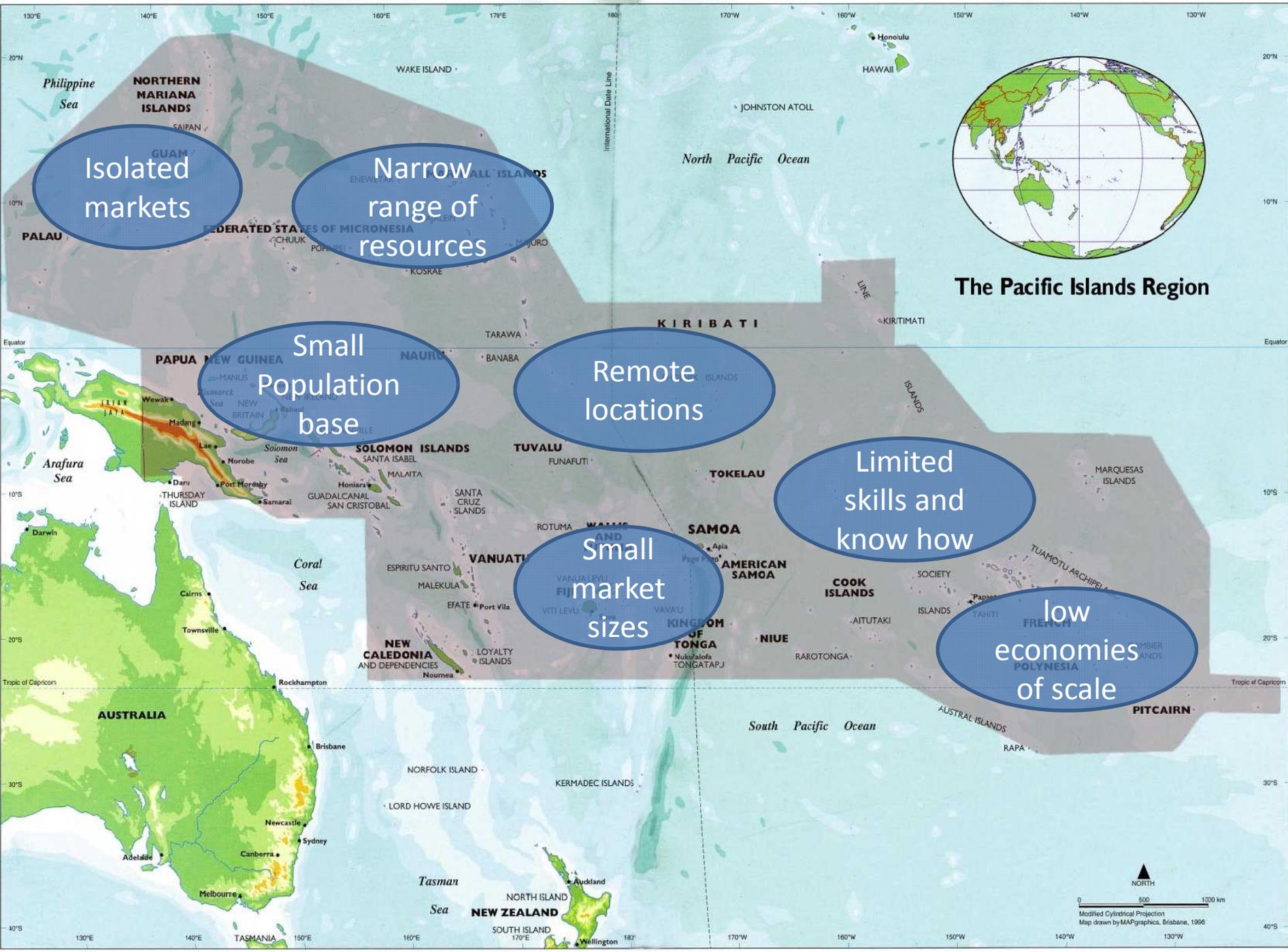
Small Population base

Remote locations

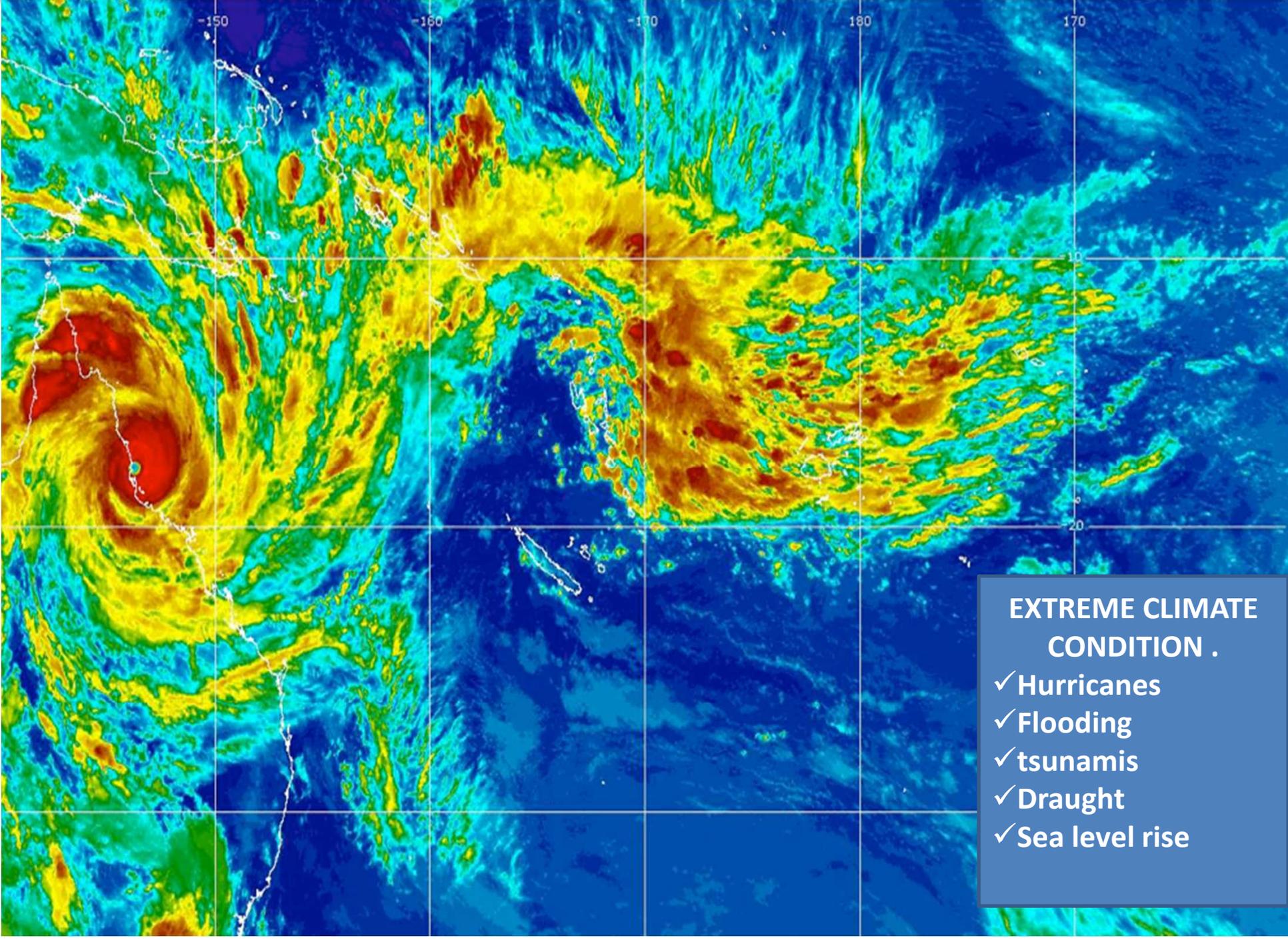
Limited skills and know how

Small market sizes

low economies of scale



NORTH
0 500 1000 km
Modified Cylindrical Projection
Map drawn by MAPgraphics, Brisbane, 1996



**EXTREME CLIMATE
CONDITION .**

- ✓ Hurricanes
- ✓ Flooding
- ✓ tsunamis
- ✓ Draught
- ✓ Sea level rise

Our guidance to energy security FAESP Framework

Framework for Action on Energy Security in the Pacific

Towards an energy secure Pacific

A Framework for Action on Energy
Security in the Pacific

Energy security exists when all people at all times have access to sufficient sustainable sources of clean and affordable energy and services to enhance their social and economic well-being

2010 – 2020
Final Draft



“Energy security exists when all people at all times have access to sufficient sustainable sources of clean and affordable energy and services to enhance their social and economic well-being”

BENEFICIARIES

Pacific Island countries and territories

VISION

An energy secure Pacific

POLICY LEVEL

GOAL

Secured supply, efficient production and use of energy for sustainable development

OUTCOMES

Access to clean and affordable energy

Optimal and productive use of energy

Themes

1. Leadership, governance, coordination & partnerships
2. Capacity development, planning, policy and regulatory frameworks
3. Energy production and supply
4. Energy conversion
5. End-use energy consumption
6. Energy data and information
7. Financing, monitoring and evaluation

IMPLEMENTATION

LEVEL many partners, one team, one plan

Targets, skills, capacity, incentives, education & awareness, supply side management, demand side management, resource assessment, monitoring & evaluation, and management modalities

FACILITATING MECHANISMS

REGIONAL

- Policy analysis
- Economic analysis
- Resource mobilisation
- Environmental analysis
- Regional standards
- Data / Statistics
- Financing

- Coordination
- Research
- Gender & equity
- HR development

NATIONAL

- Legislative / regulatory / subsidies
- National policies
- Costed implementation plans linked to national budget processes
- Data / statistics
- Studies and reports

- Roles of national institutions
- Public private partnership
- Gender & equity
- Capacity building and HR development
- Collaboration and development partners

Application of FAESP

IPESP Implementation Plan 2010 - 2015

FAESP Baseline Security Indicators

Theme 1: Leadership, Governance, Coordination and Partnerships

Expected outcome

Strong leadership, governance, effective multi-sectoral coordination and partnerships for an energy secure Pacific

Long-term objective

A regional implementation plan (involving all key energy-sector stakeholders) that is established and implemented in an effective and coordinated manner to achieve greater energy security

Key priorities

- Regional and sub-regional coordination
- Commitment of development partners to energy sector development
- Regional and sub-regional energy initiatives and other programmes relating to climate change, gender issues, socio-economic issues and health
- Strategic engagement with international organisations

Targets and milestones

- A regional and sub-regional mechanism to improve coordination of implementation of energy initiatives established
- Improved regional response and assistance to support the implementation of PICT energy policies and plans /roadmaps
- Strengthened integration for regional and sub-regional energy initiatives with climate change, gender, socio-economic and health initiatives
- Well coordinated strategic engagement with international organizations.

Key Priorities	Regional Activities	Impacts Indicator /Measurement ¹	Timeframe					Indicative Costs (USD) ²	Lead Implementing Partners	Target Recipients
			2011	2012	2013	2014	2015			
Regional and sub-regional coordination	Convene and rationalise regional reporting and policy direction meetings (PPA Annual Conference, triennial energy officials and ministers meetings and regional projects steering committee meetings including representation from NWM)	Improved status of Energy Administration (Measure the priority a national government gives to its energy sector). (Improved status should include gender perspective)						1,000,000	<ul style="list-style-type: none"> PIFS (PEC) PPA (Annual Conference and Benchmarking) SPC (REM, PEMM and North REP) SPREP (PIGGAREP) USP (KOICA) 	All
Regional and sub-regional energy initiatives and other programmes relating	Convene regular meetings of the PEDG and PEAG to coordinate technical assistance, facilitate the whole-of-sector approach	Improved co-ordination and consultation (Measure how, decisions and directions given at regional or subregional events translate into)						150,000	SPC	All

KIRIBATI ENERGY SECURITY INDICATORS 2009 (DRAFT)

No	Indicator	Unit	Description	Data sources	Formula	Narration
Access to Energy						
1	Electrification Rate (%)	87% urban area 4% - rural area	Tracks share of households actually connected to a utility grid. Widely used indicator but not relevant for all PICTs as some have already 100% electrification	2005 Census Report	Residential utility accounts/(Total Population/Household Size)	The electrification rate is calculated separately for urban areas (South Tarawa and Kiritimati) while rural area consist of all outer islands including North Tarawa.
2	Access to Small Scale Power rural (%)	48%	Tracks share of rural households with access to basic electrification (solar, pico hydro, small wind, community grid).	2005 Census Report	Households with access to non utility electricity/(Total Population/Household Size)	Basic electrification includes solar PV systems, small generator diesel gen-sets
3	Access to Modern Energy rural (%)	52% - lighting	Tracks share of rural households with access to modern cooking and lighting. Covers all forms of energy other than traditional biomass	2005 - Census Report	Rural households with access to lighting and modern cooking fuels stand alone electricity/(Total Rural Population/Household Size)	Includes solar PV, gen-sets, and PUB connections (North Tarawa and islands connected to PUB generator gen-set
4	Access to Modern Energy urban (%)	93% - lighting	Tracks share of urban households with access to - modern cooking and lighting	2005 - Census Report	Rural households with access to lighting and modern cooking fuels stand alone electricity/(Total Rural Population/Household Size)	Include solar PV home systems, gen-set and PUB connections in South Tarawa and Kiritimati
Affordability						

Our Energy Situation to date

A stock of the Legislative and Policy process in the countries.

Planning and Coordination

	Energy Sector Act	Policy/Road map	Energy Institutions
Cook Islands	Yes	Yes (4)	Office of the Energy Commissioner (OPM) http://www.pmooffice.gov.ck
Fiji	No	Yes (2)	Energy Department - www.fdoe.gov
FSM	No	Yes (2, 5)	National Energy Office
Kiribati	No	Yes (2)	Energy Planning Office - http://mpwu.gov.ki/
Nauru	No	Yes (1,2)	Energy Unit
Niue	No	Yes (2)	Ministry of Infrastructure
Palau	Yes	Yes (2, 5)	Energy Office http://www.palauenergyoffice.com/?page_id=2
PNG	No	No	Energy Division
RMI	No	Yes (2, 5)	Energy Planning Division
Samoa	No	Yes (3)	Energy Policy Coordination and Management Division http://www.mof.gov.ws/
Solomon Is.	No	Yes (2,5)	Energy Division
Tonga	No	Yes (1), (2)	Energy Department
Tuvalu	No	Yes (2,4)	Energy Unit
Vanuatu	No	Yes (1)	Energy Department

Petroleum sector

	Petroleum Act	National Fuel Supply Contract	Price Control Act
Cook Islands	Yes	No	Yes
Fiji	Yes	No	Yes
FSM	Yes	Yes	No
Kiribati	Yes	Yes	Yes
Nauru	Yes	No	Yes
Niue	Yes	Yes	Yes
Palau	Yes	No	No
PNG	Yes	No	Yes
RMI	No	No	Yes
Samoa	Yes	Yes	Yes
Solomon Islands	Yes	Yes	Yes
Tonga	Yes	Yes	Yes
Tuvalu	Yes	No	Yes
Vanuatu	Yes	No	No

Power Sector

	Electricity Act	Fuel Supply Contract	Feed In Tariff
Cook Islands	Yes	Yes	No
Fiji	Yes	Yes	Yes
FSM	Yes	NA	Yes
Kiribati	Yes	NA	No
Nauru	Yes	NA	No
Niue	Yes	NA	No
Palau	Yes	Yes	Yes
PNG	Yes	Yes	Yes
RMI	No	Yes	No
Samoa	Yes	Yes	Yes
Solomon Islands	Yes	Yes	Yes
Tonga	Yes	Yes	Yes
Tuvalu	Yes	No	No
Vanuatu	Yes	Yes	Yes

Renewable Energy Sector

	Renewable Act	Policy Targets		Net Metering Act/Policy
Cook Islands	No	Yes	100% of inhabited islands by 2020	Yes
Fiji	No	Yes	81% by 2020	No
FSM	No	Yes	10% by 2020 (urban area) 50% by 2020 (rural areas)	No
Kiribati	No	Yes	45% by 2025 (Tarawa) 60% by 2025 (Kiritimati)	No
Nauru	No	Yes	50% by 2020	No
Niue	No	Yes	100% by 2020	No
Palau	No	Yes	20% by 2020	Yes
PNG	No	Yes	50% by 2030 (GHG reduction)	No
RMI	No	Yes	20% by 2020	No
Samoa	No	Yes	10% by 2016	No
Solomon Is.	No	Yes	50% by 2015	No
Tonga	Yes	Yes	50% by 2020	Yes
Tuvalu	No	Yes	100% by 2020	No
Vanuatu	No	Yes	65% by 2020	Yes

Monetary Policies

	CKI	FIJ	FSM	KIR	NAU	NIU	PA L	PN G	RMI	SA M	SOL	TO N	TU V	VAN
Lifelines Tariff	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes
Energy Loans	No	Yes	No	No	No	No	Yes	No	No	No	No	No	No	No
Petroleum pricing control	Yes	Yes	No	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes	Yes	No
Electricity tariff control	Yes	Yes	No	No	No	No	No	Yes	No	Yes	No	Yes	No	Yes
Freight levy to outer islands	Yes	Yes	No	Yes	NA	NA	No	Yes	No	NA	Yes	No	Yes	No

Fiscal Incentives

Exemption/Reduced on Import/Excise Duty														
	CKI	FIJ	FSM	KIR	NAU	NIU	PAL	PNG	RMI	SAM	SOL	TON	TUV	VAN
Diesel for power generation exemption	Yes	No	No	Yes	Yes	Yes	Yes	ND	Yes	Yes	No	Yes	Yes	Yes
Diesel for biofuel or Coconut Oil production	NA	Yes	NA	NA	NA	NA	NA	ND	NA	No	No	NA	NA	No
Renewable Energy Technologies	No	ND	Yes	No	No	Yes	No	Yes						
Energy efficient (energy star) rated appliances	No	Yes	No	No	No	No	No	No	Yes	No	No	No	No	No
Efficient vehicles (increased seat capacity and lower fuel cylinder capacity)	Yes	Yes	No	Yes	Yes	Yes	No	No	No	Yes	No	Yes	No	No
Fuel efficient vehicles (LPG and hybrid cars)	No	Yes	No											
Kerosene for household use	NA	Yes	No	Yes	No	NA	No	Yes	NA	No	No	Yes	Yes	No
Aviation fuel	Yes	No	No	No	Yes	Yes	No	No	No	No	No	Yes	Yes	Yes

Fiscal Incentives

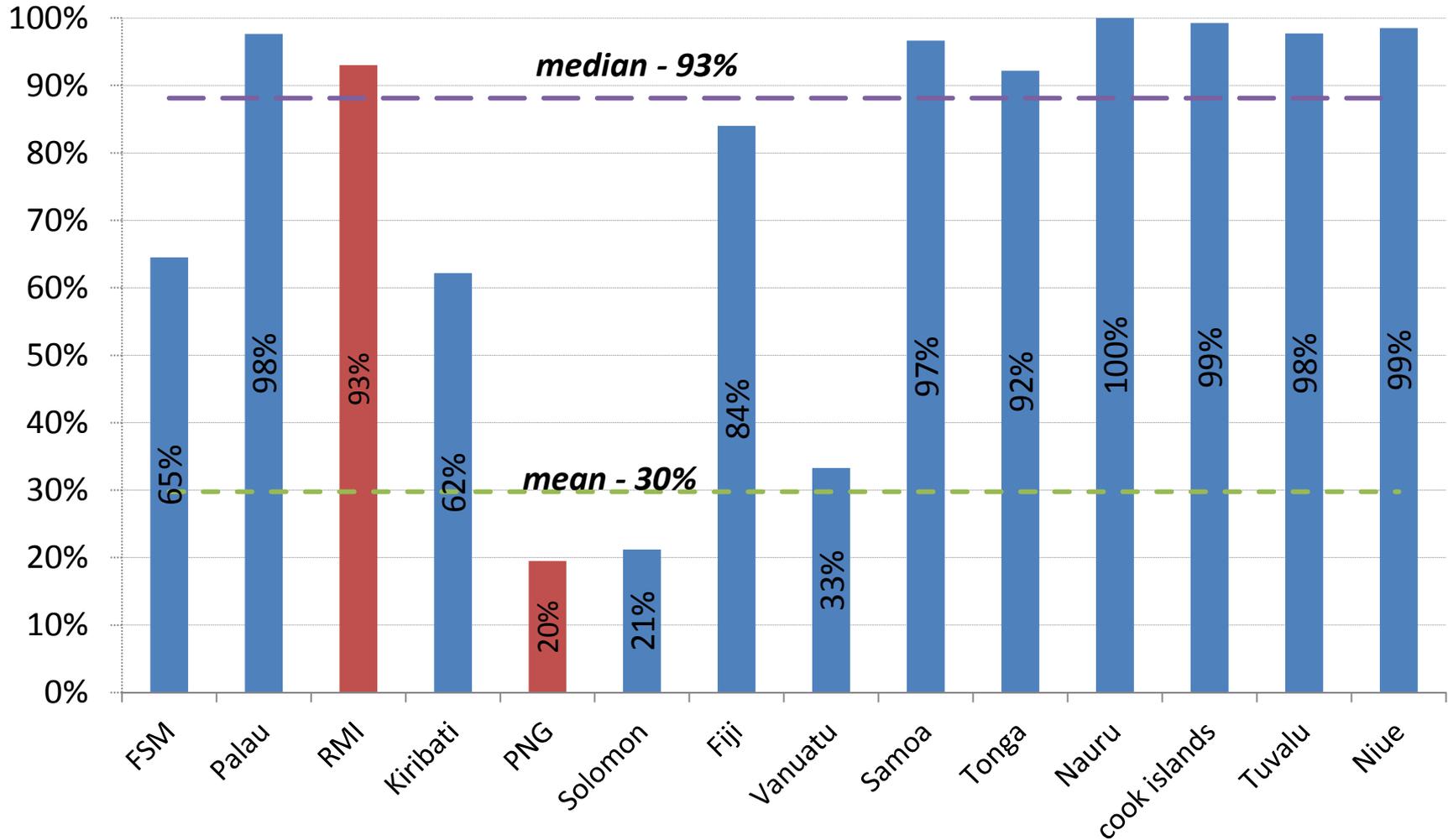
Exemption on tax (VAT ,Consumption Tax, VAGST, Service Tax)														
	CKI	FIJ	FSM	KIR	NAU	NIU	PAL	PNG	RM I	SA M	SO L	TO N	TU V	VAN
Electricity cost	Yes	No	No	No	NA	No	No	ND	Yes	No	No	No	No	No
RESCOs (biofuel, solar etc)	NA	Yes	No	No	NA	NA	No	No	No	No	No	No	No	No
Kerosene for households	NA	Yes	No	Yes	NA	NA	No	Yes	No	No	No	Yes	No	No
Aviation Fuel		No	No	No	NA	Yes	No	ND	No	No	No	Yes	No	No
LPG		No	No	No	NA	No	No	ND	Yes	No	No	No	No	No
Mogas (petrol, gasoline) and ADO		No	No	No	NA	No	No	ND	No	No	No	No	No	No

NA – Not Applicable

ND – No Data

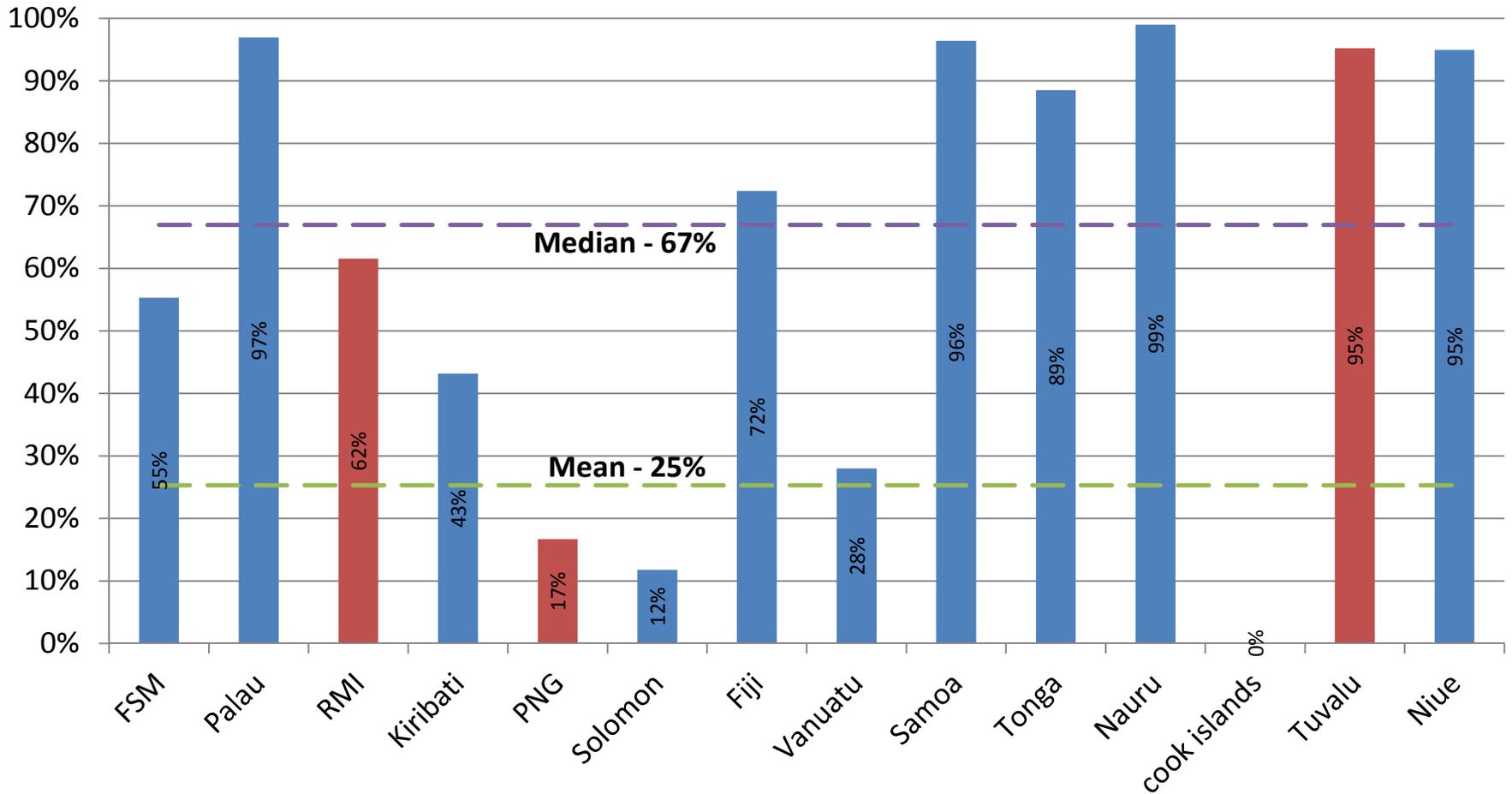
Some Energy Indicator Comparison

Electrification level



- estimates from other sources - DHS, HIES, Energy Office estimates.
- Latest census records (2009-2012)

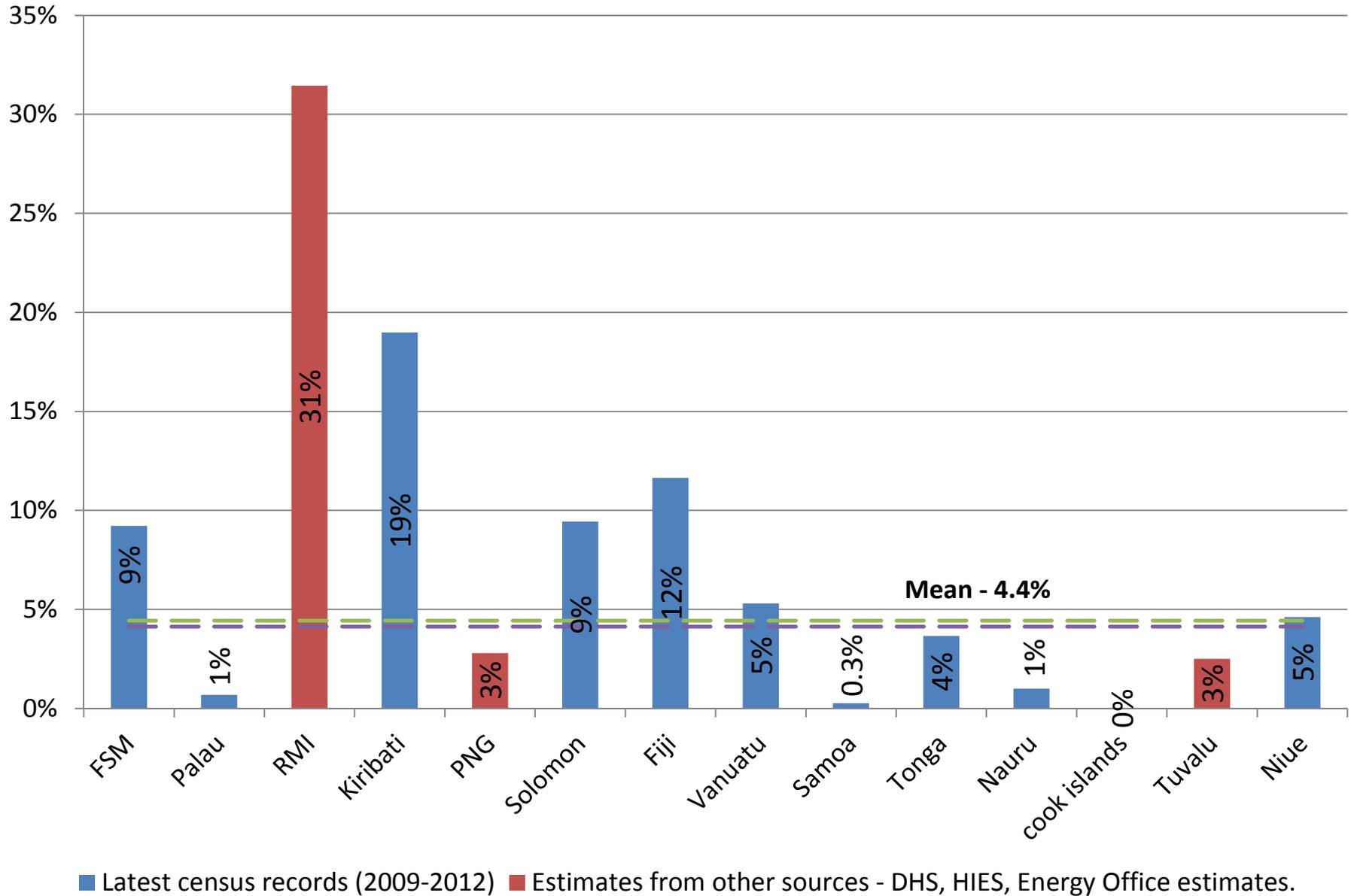
Grid Connected Electrification



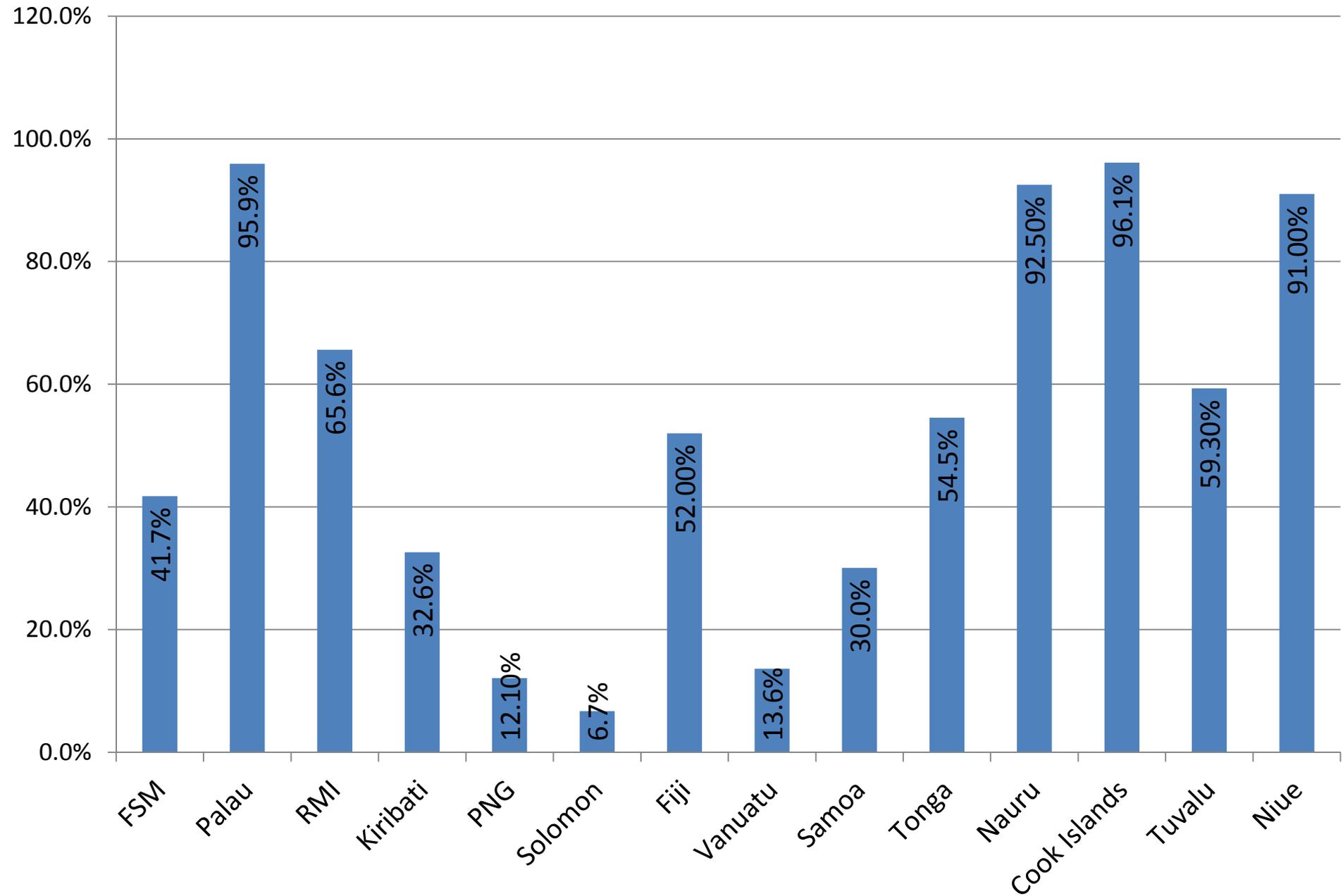
■ Estimates from other sources - DHS, HIES, Energy Office estimates.

■ Latest census records (2009-2012)

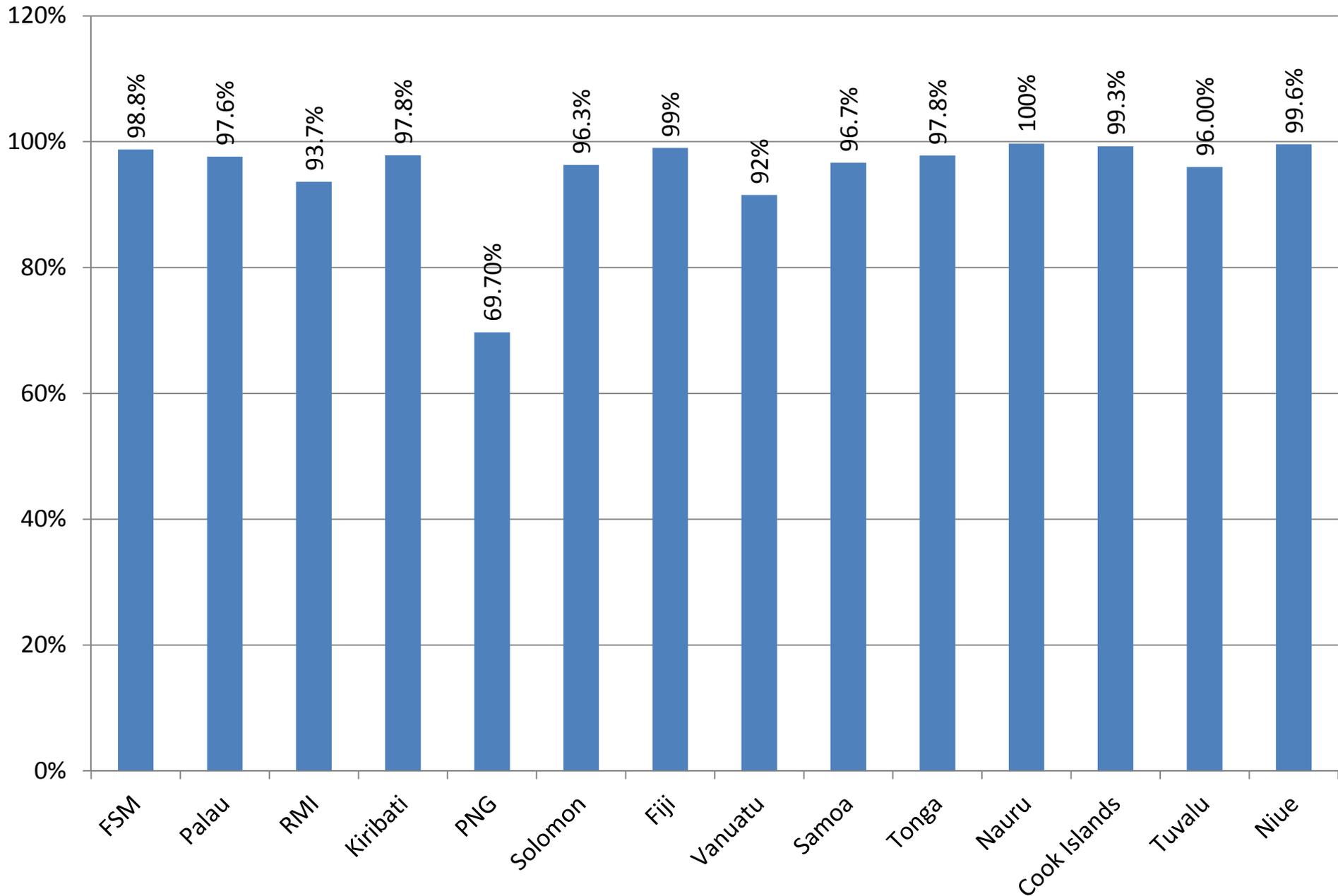
Off-grid electrification



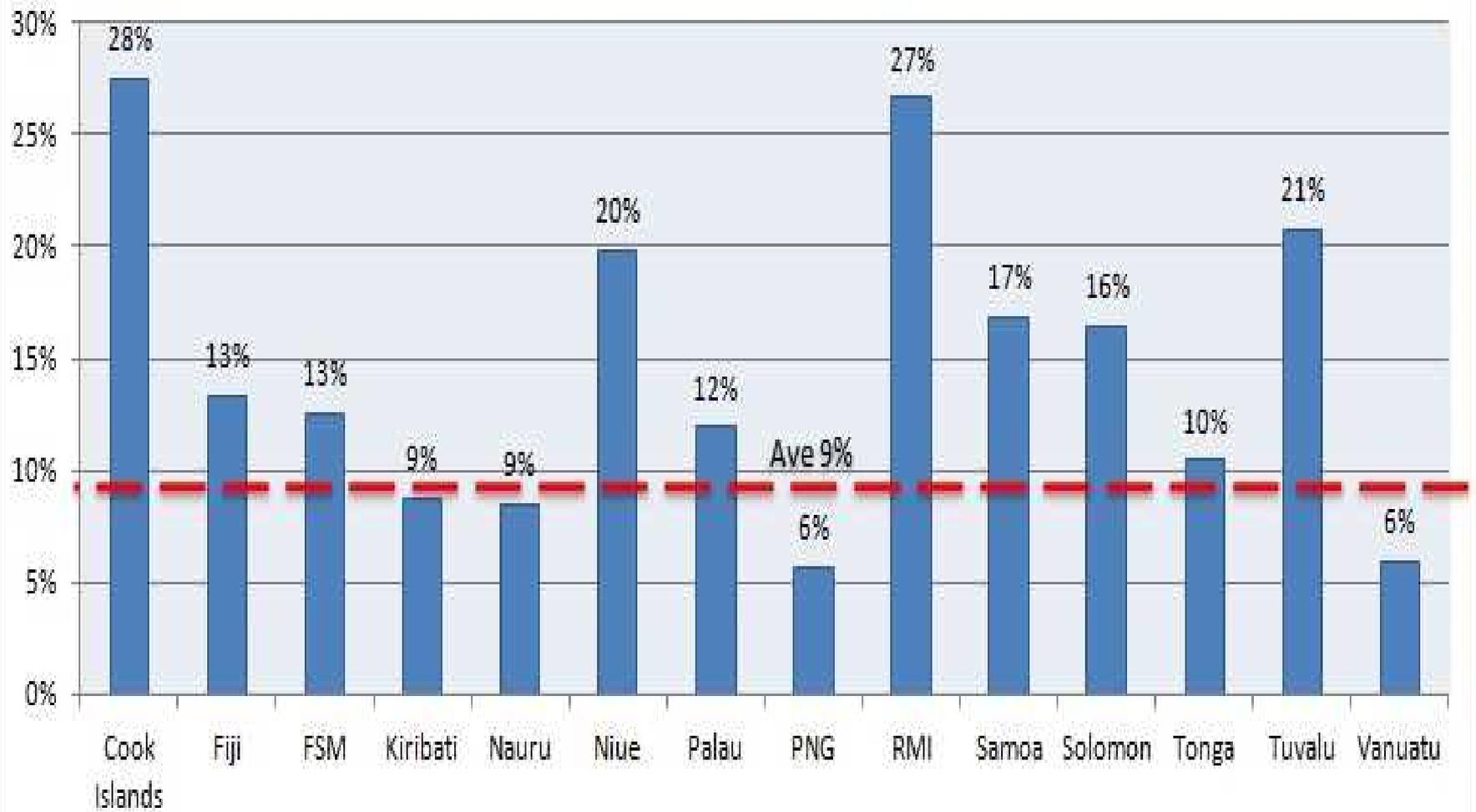
HH Access to Modern Cooking - National



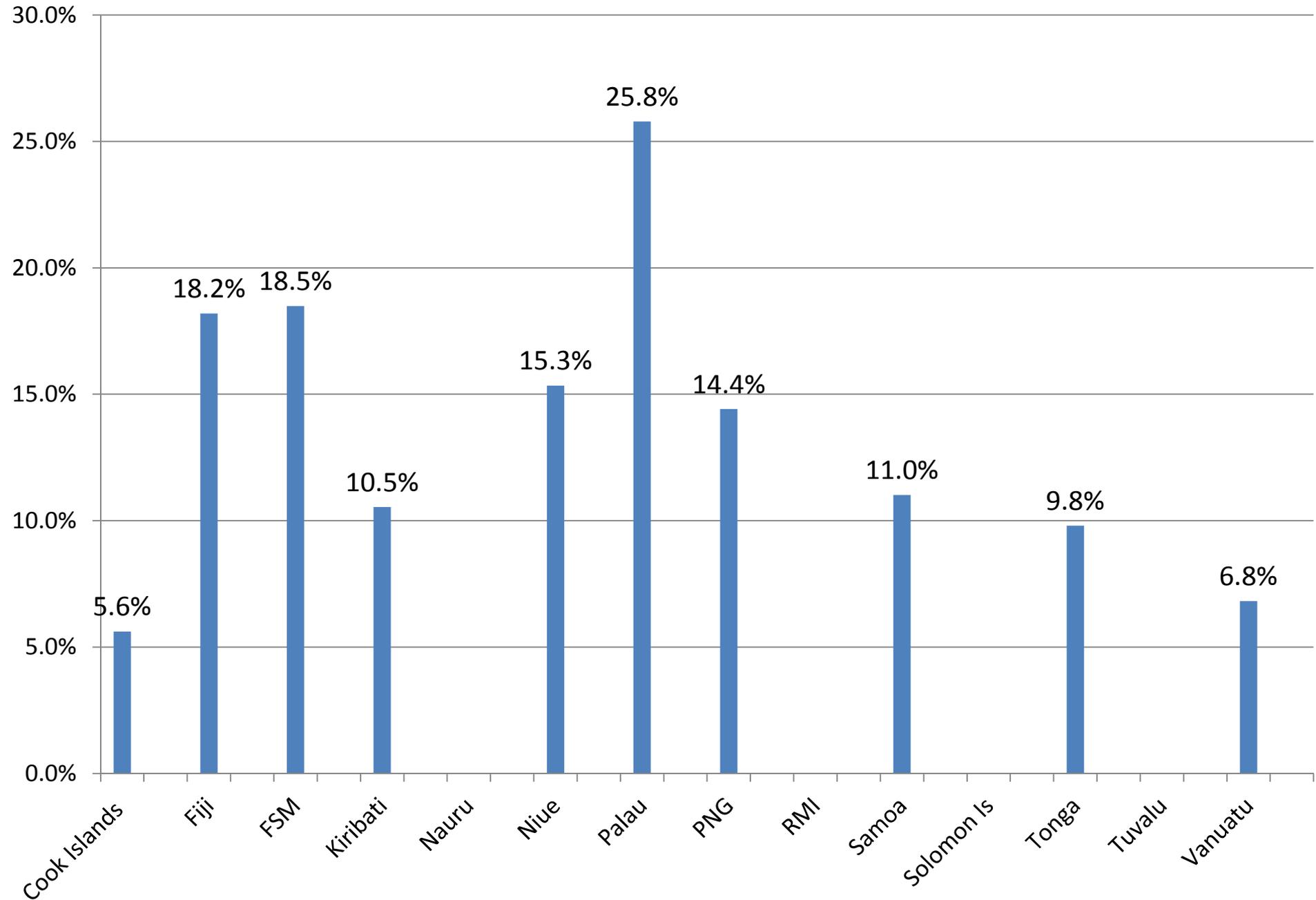
HH Access to Modern Lighting - National



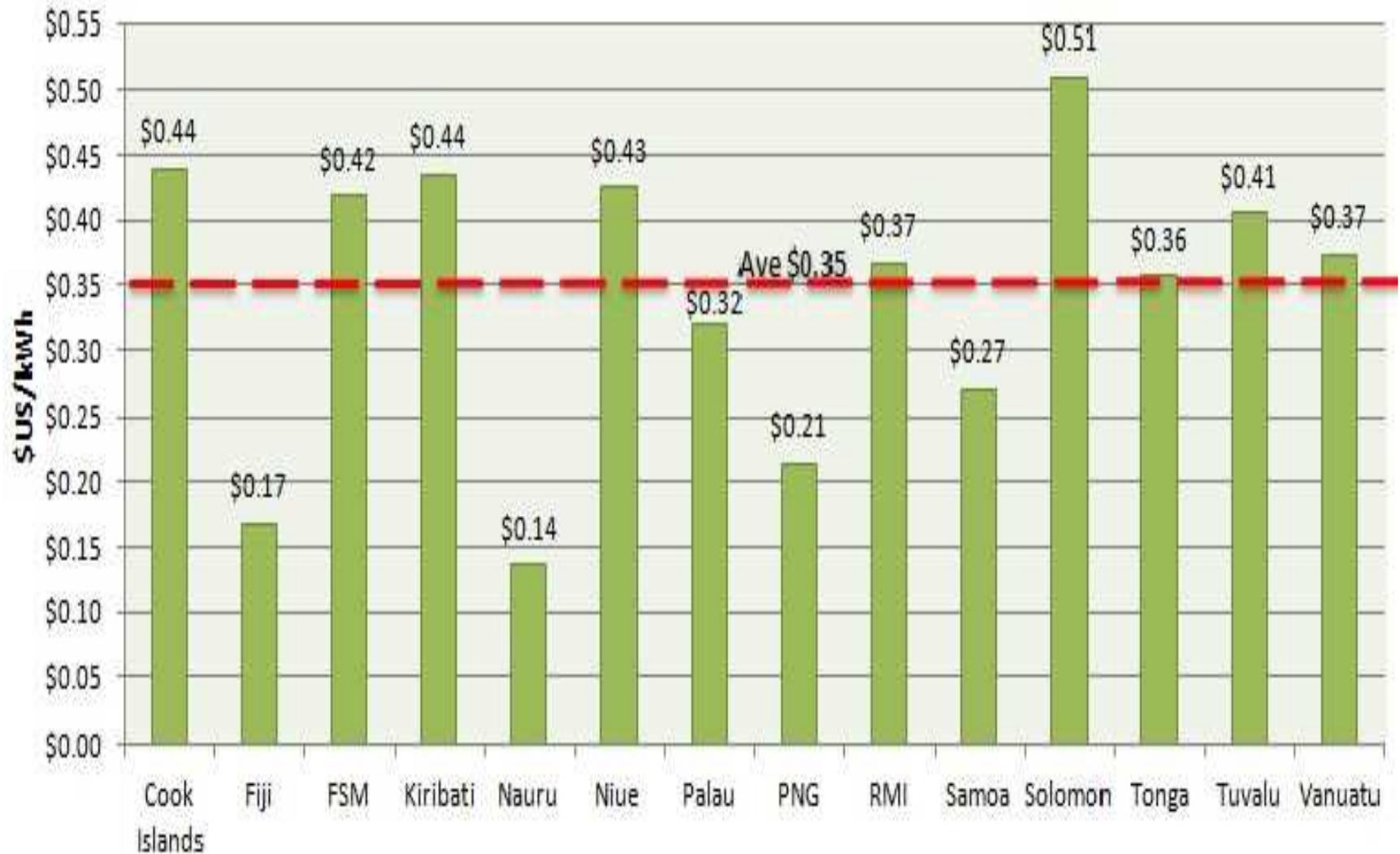
Macro-Economic Affordability - 2009



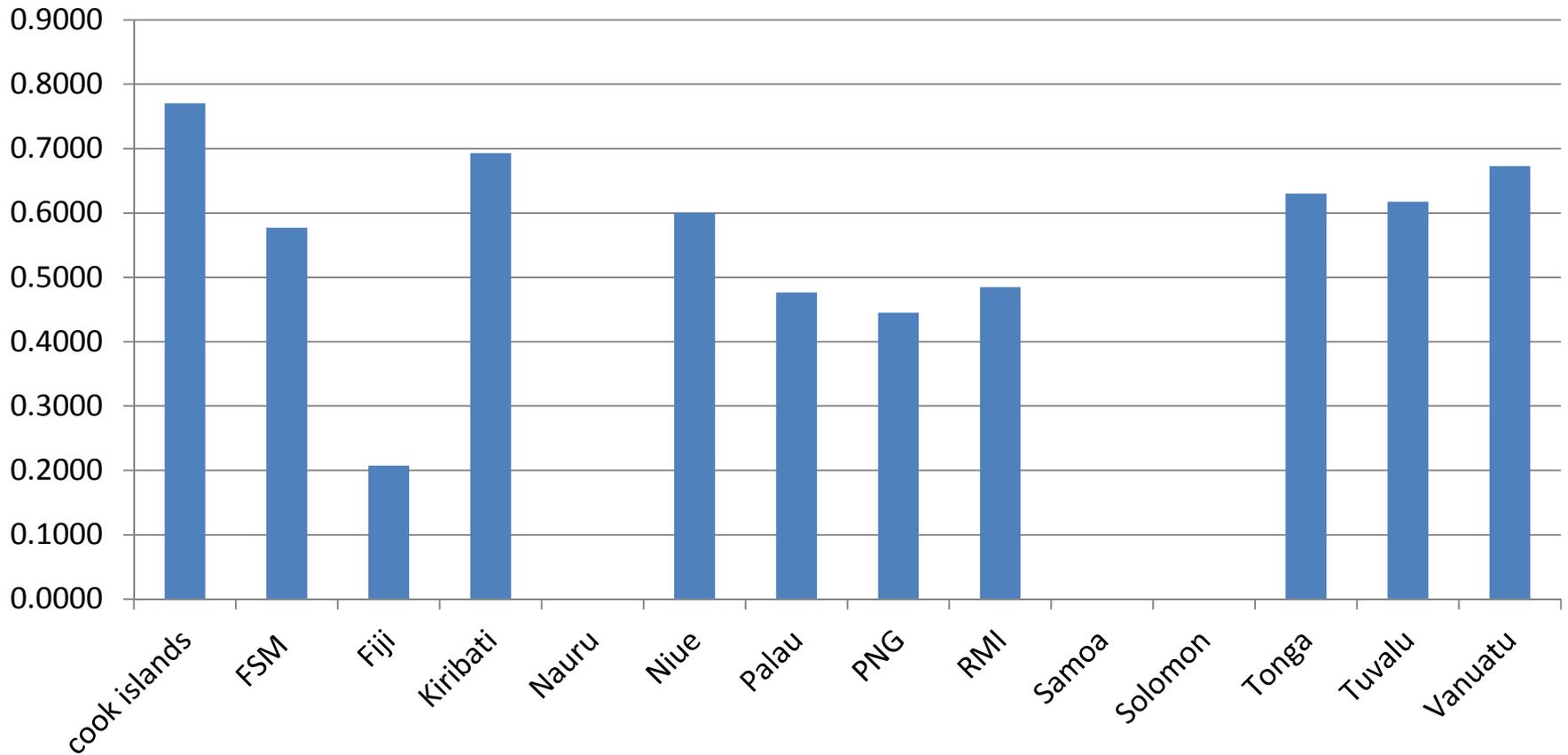
Macro-economic affordability - 2011



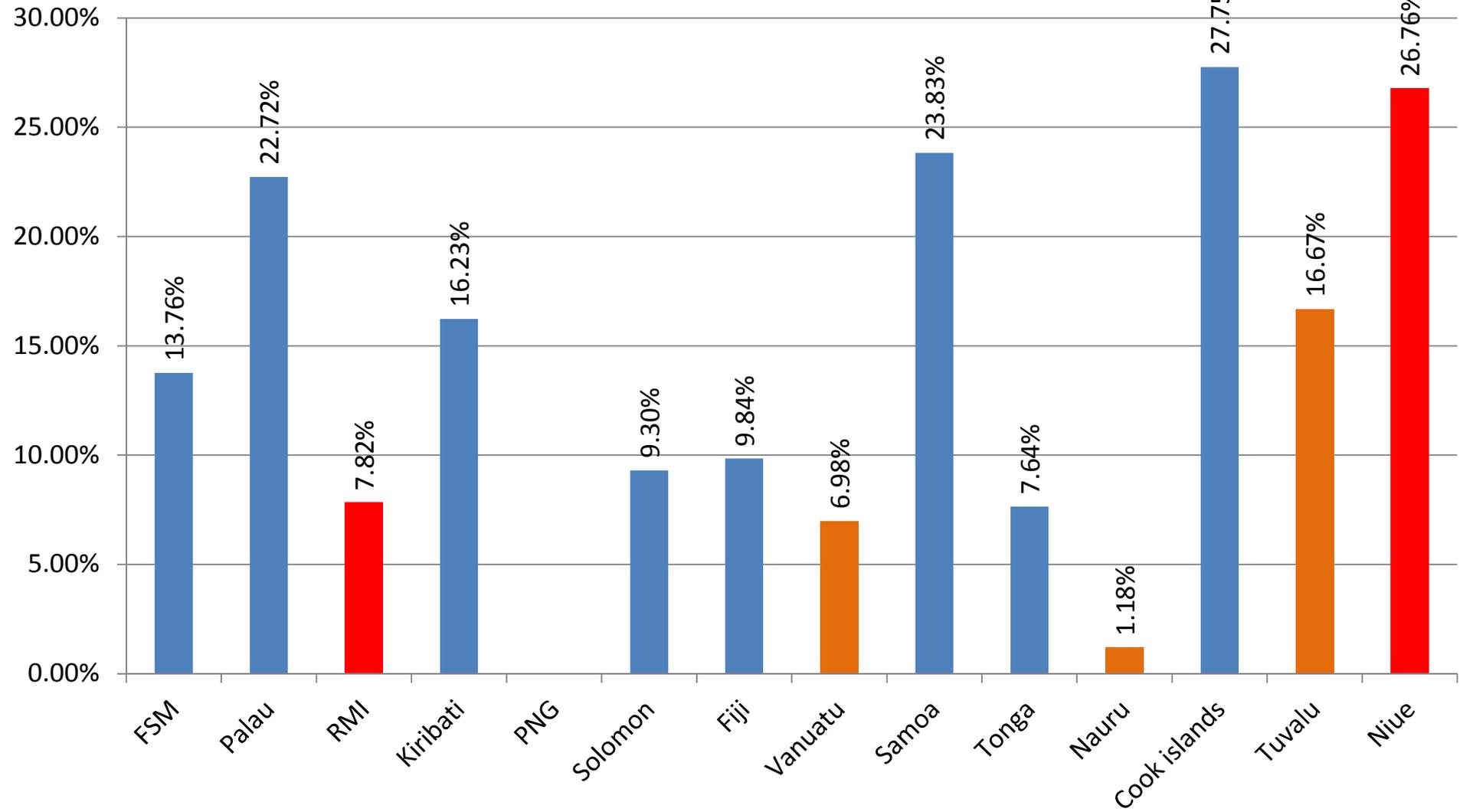
Average Electricity Tariff in PICs - 2009



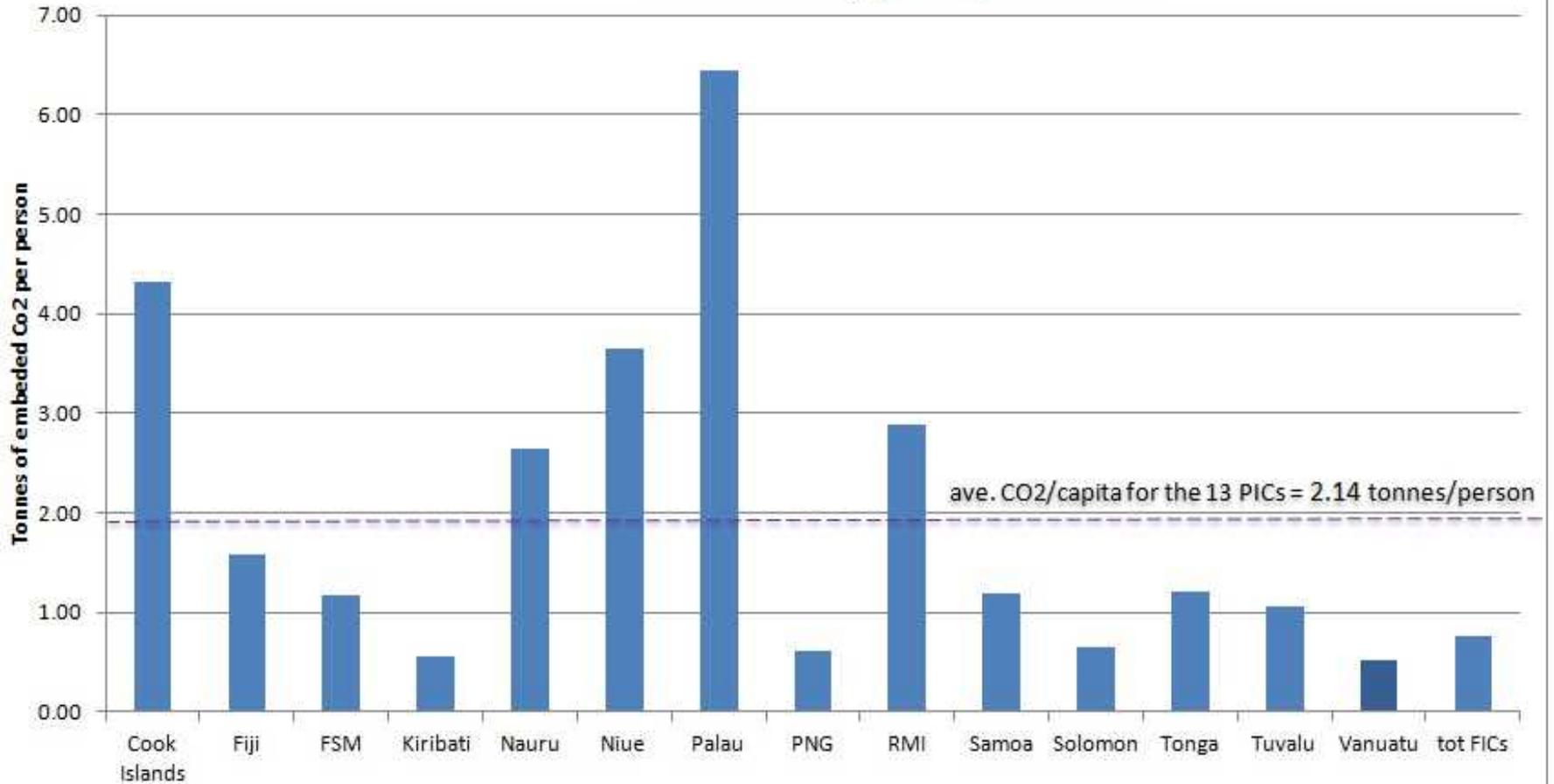
Average Electricity Tariff in PICs - 2011



Household Energy Expenditure

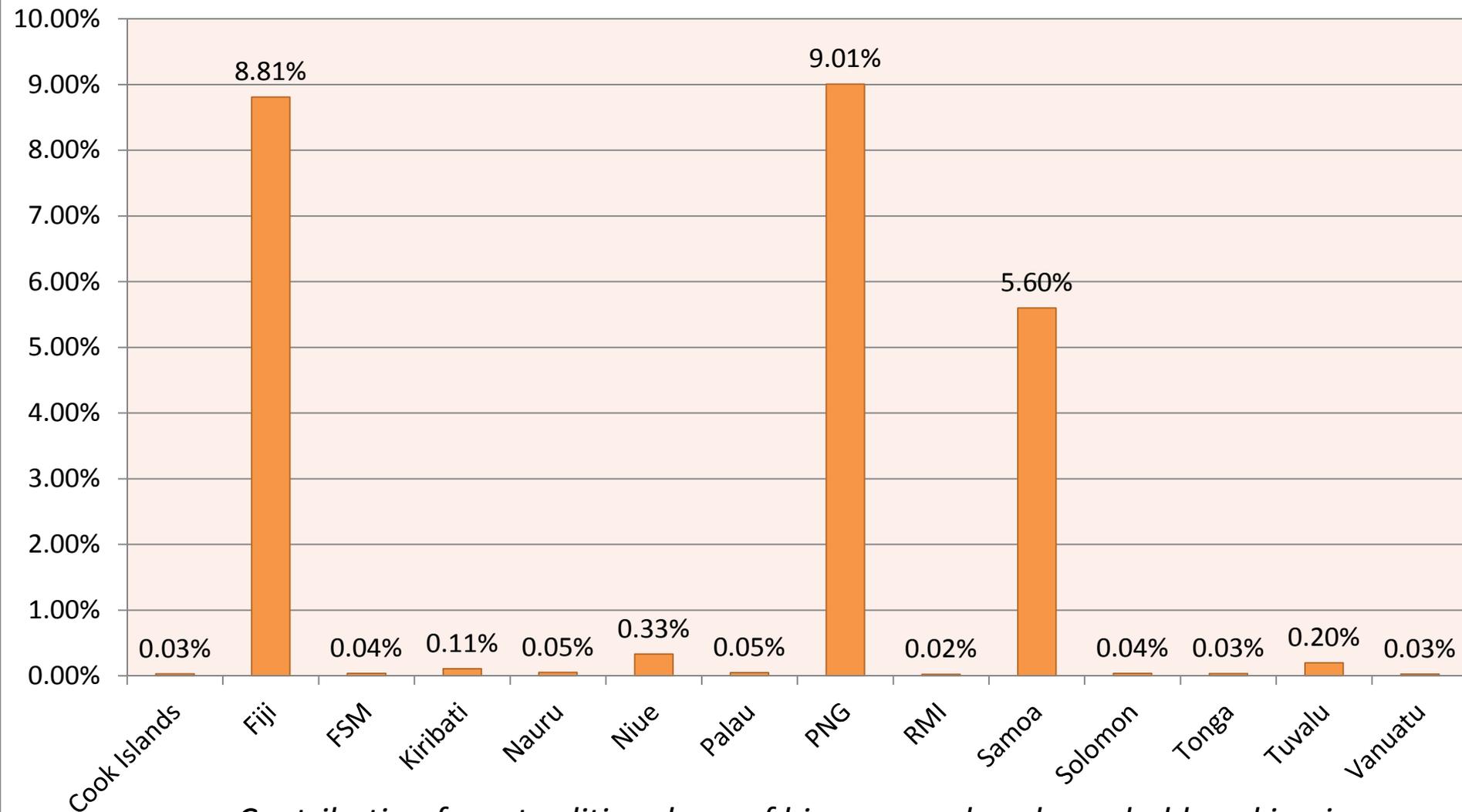


Emebed CO₂ per Capita - 2009



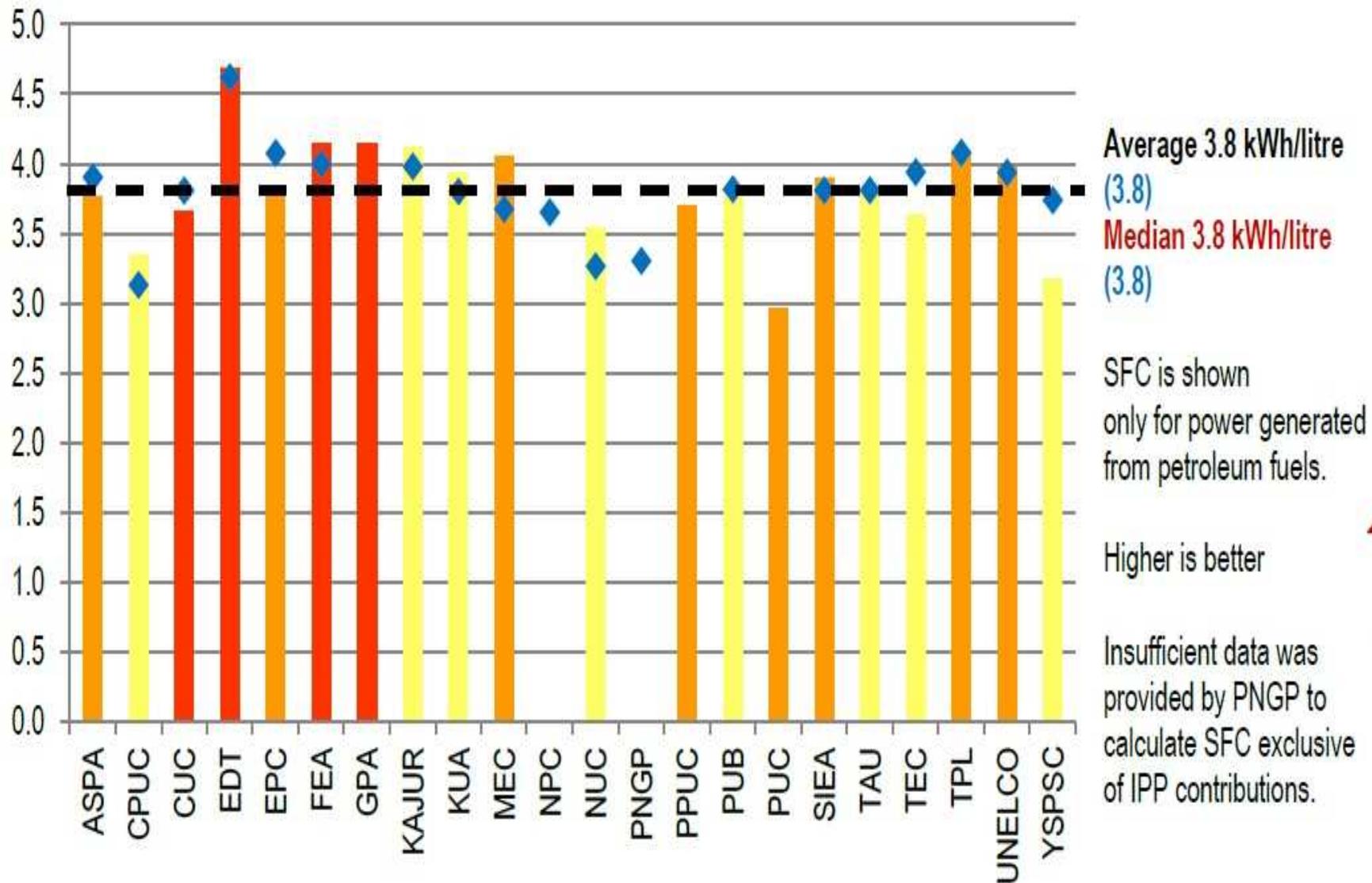
Emebed CO₂ is calculated from the main fuel types consumed in the PICs - Diesel, Motor gasoline, dual purpose kerosene and cooking gas (LPG)

Renewable energy share - 2009

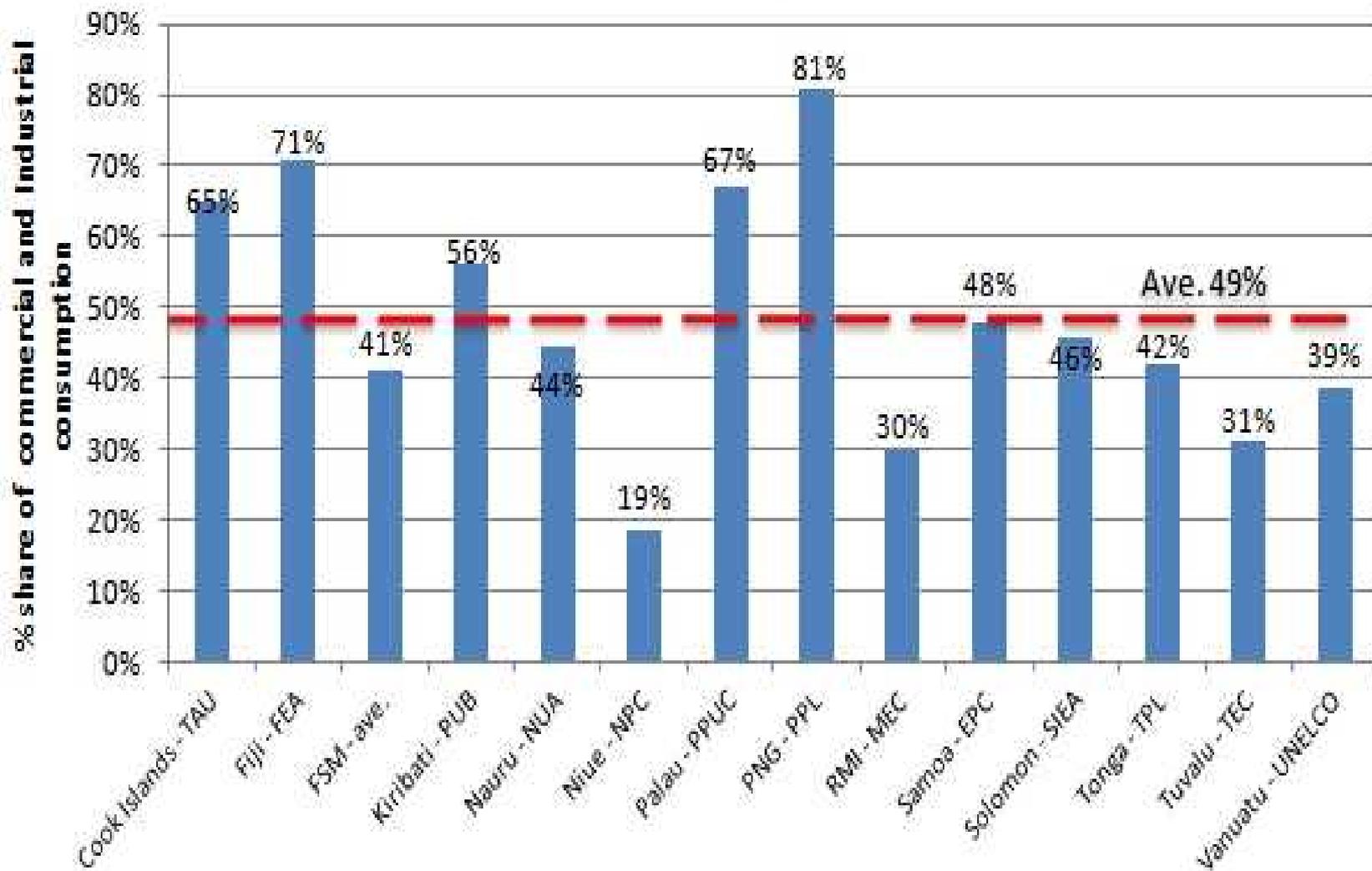


Contribution from traditional use of biomass such as household cooking is excluded in analysis

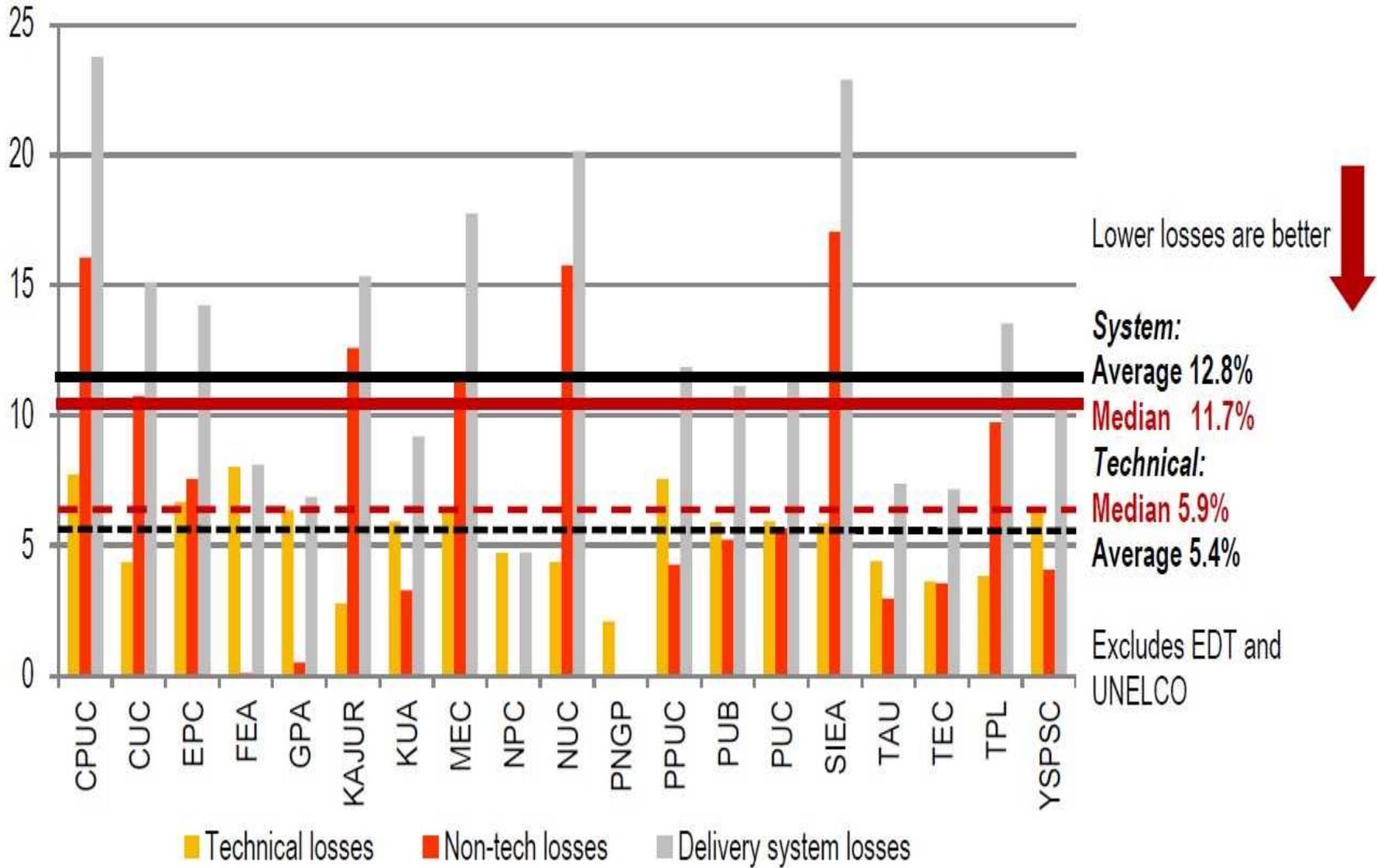
Specific Fuel Consumption in 2011 (2010) (kWh/litre)



Productive Power Use - 2009

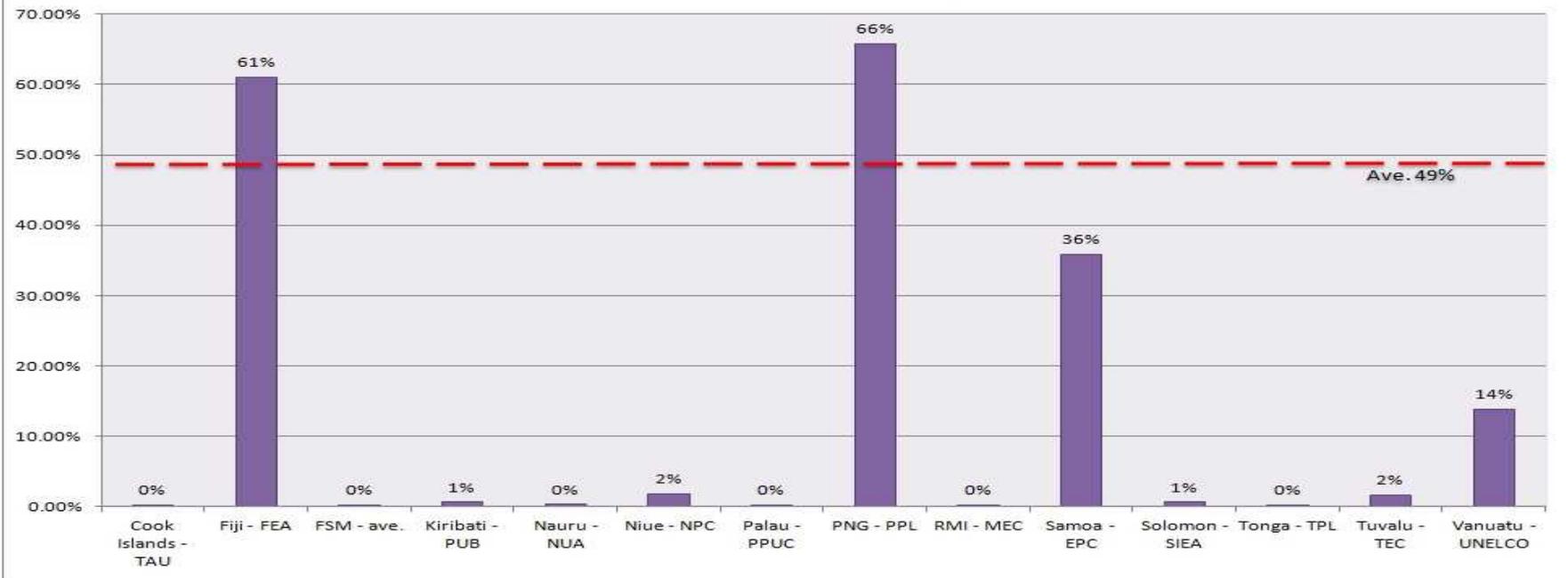


Losses for 19 Pacific Utilities Reported by KEMA (2009-2010 Operations (%))

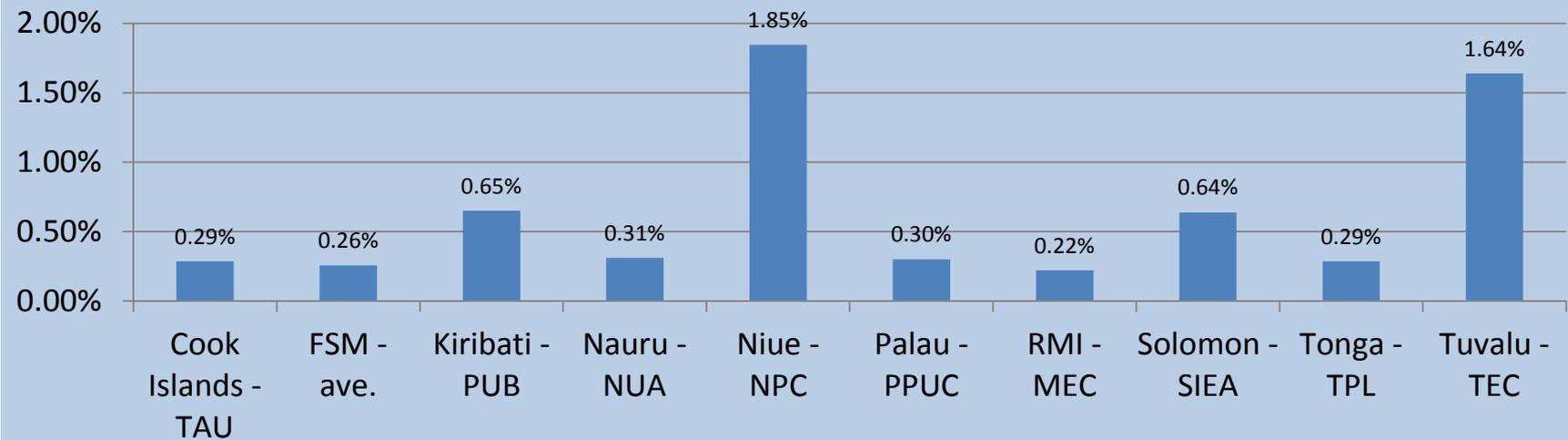


Source : 2011 PPA Benchmarking

Clean Electricity Contribution - 2009

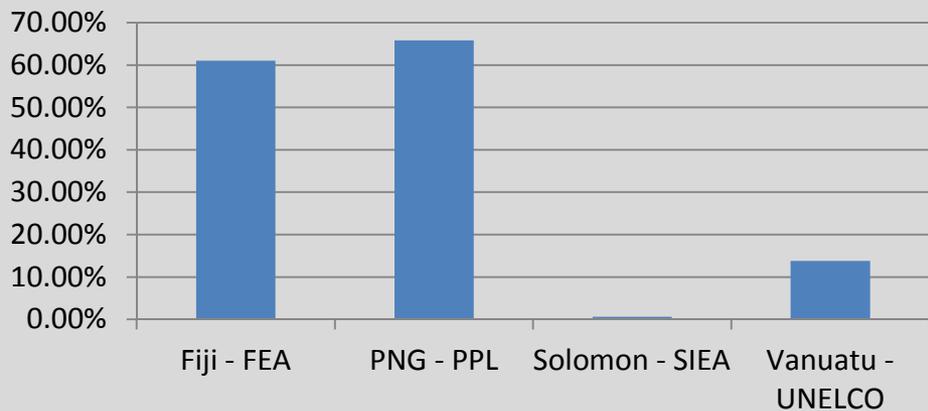


Clean Electricity Contribution

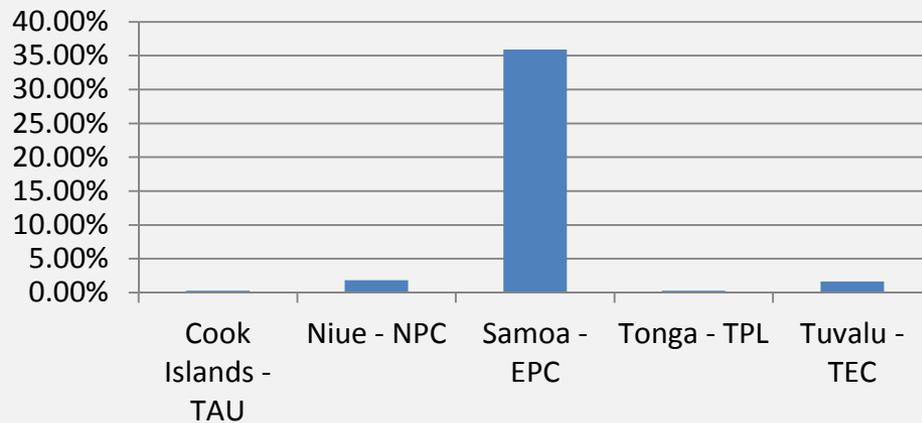


Excluding - Fiji, PNG, Samoa & Vanuatu

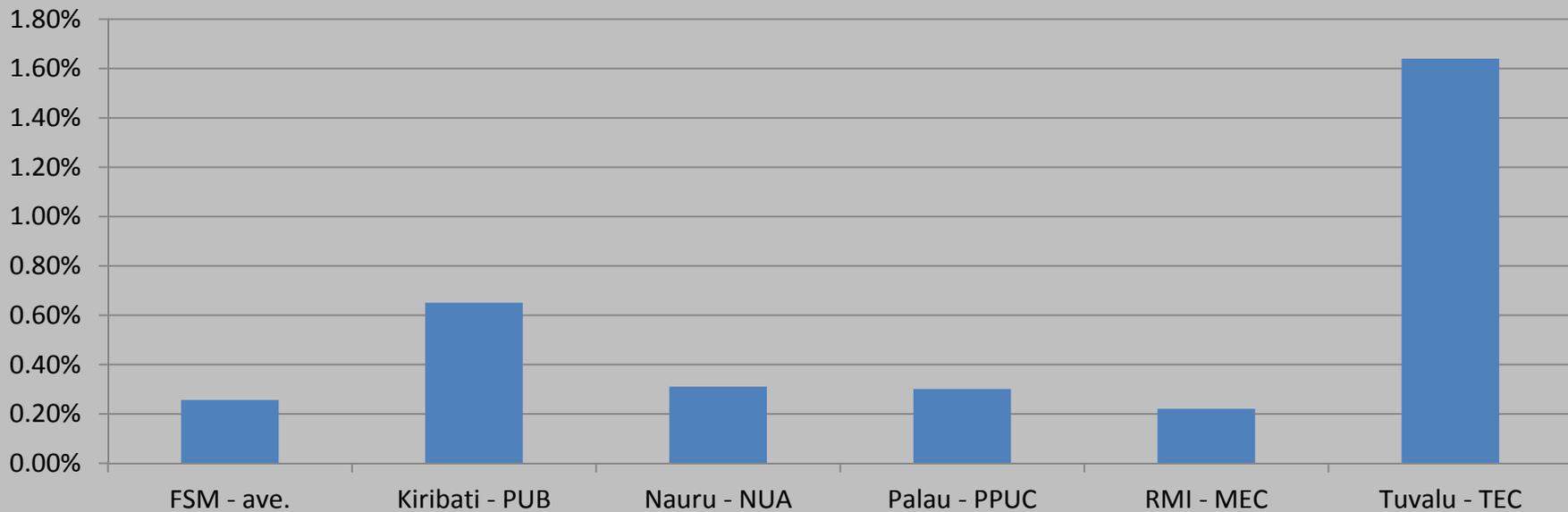
Clean Electricity Contribution - Melanesian countries



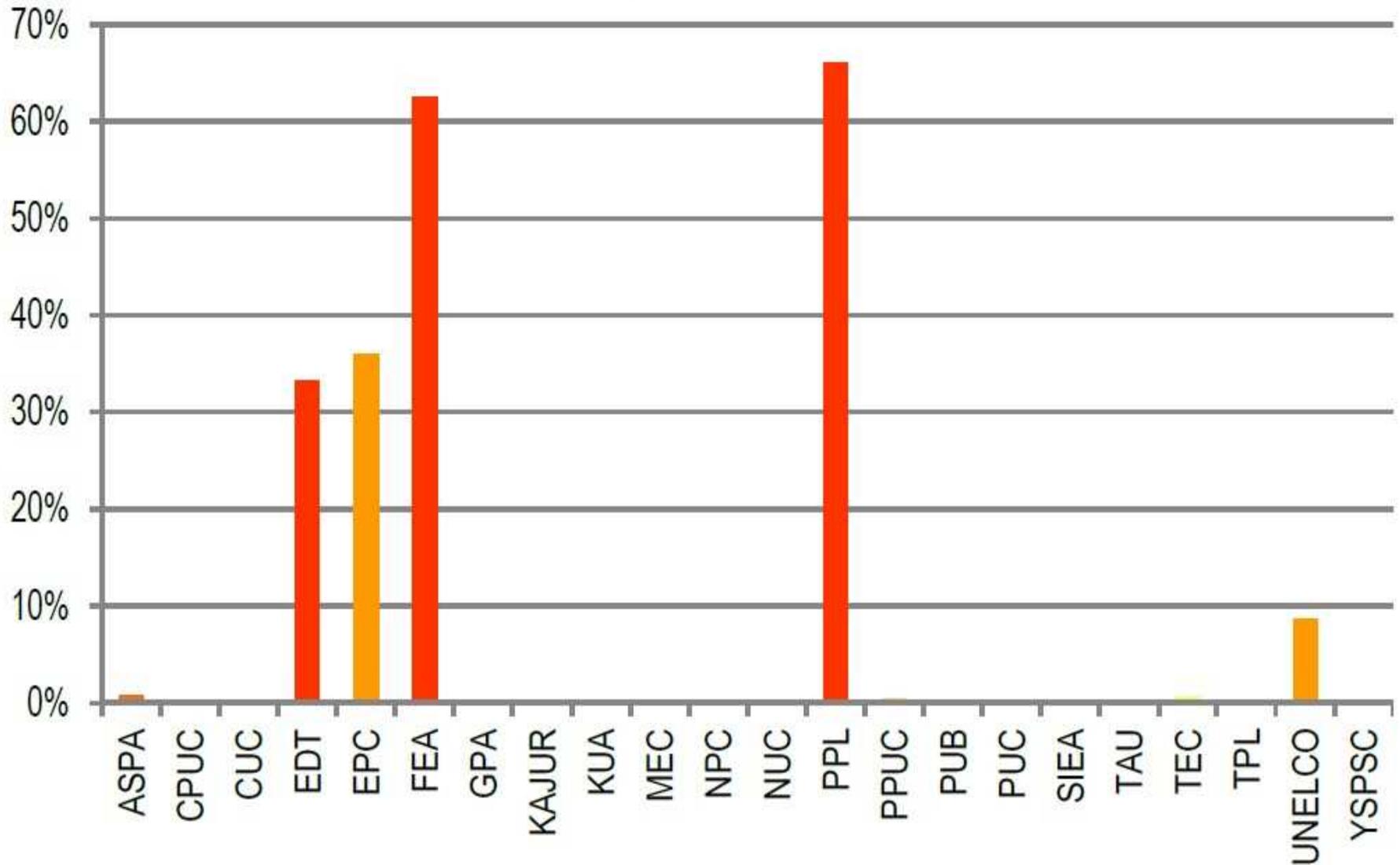
Clean Electricity Contribution - Polynesian Countries



Clean Electricity Contribution - Micronesian countries

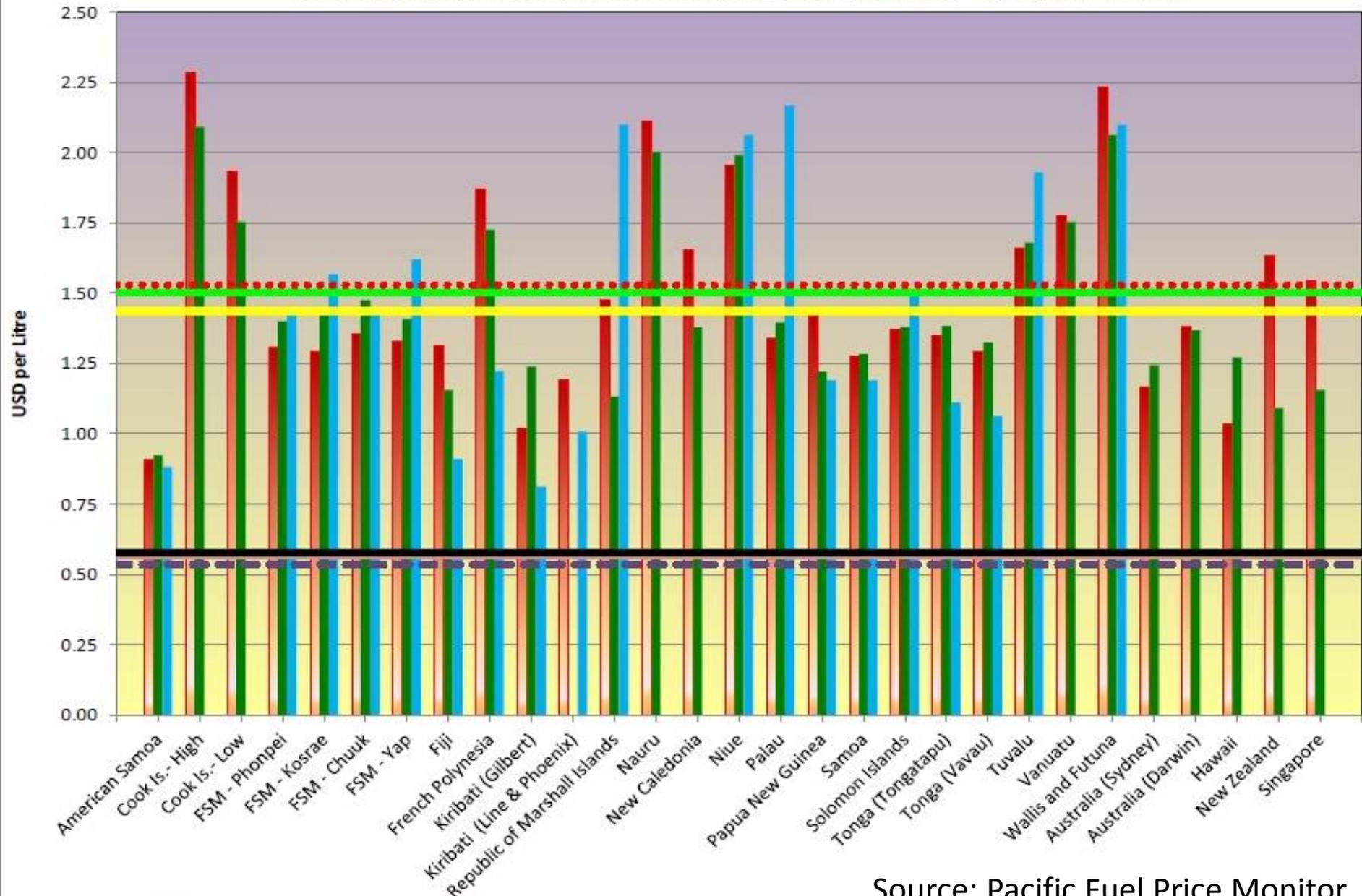


Clean electricity contribution 2011

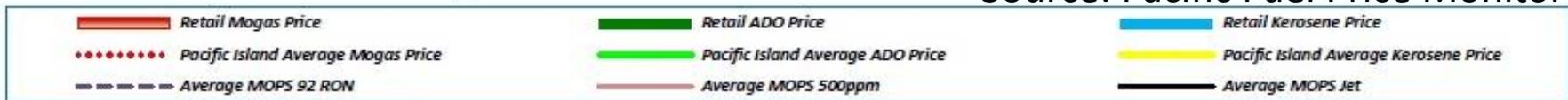


Source: 2011 PP Benchmarking report

Average Retail Fuel Prices including Tax and Duty - Quarter 4 2014



Source: Pacific Fuel Price Monitor



Thank You