Options for Energy Security in the small island states of the Pacific

PECC Seminar2 on Marine Resources: Oceans as a Source of Renewable Energy

Hawaii, USA

March 26-28, 2012

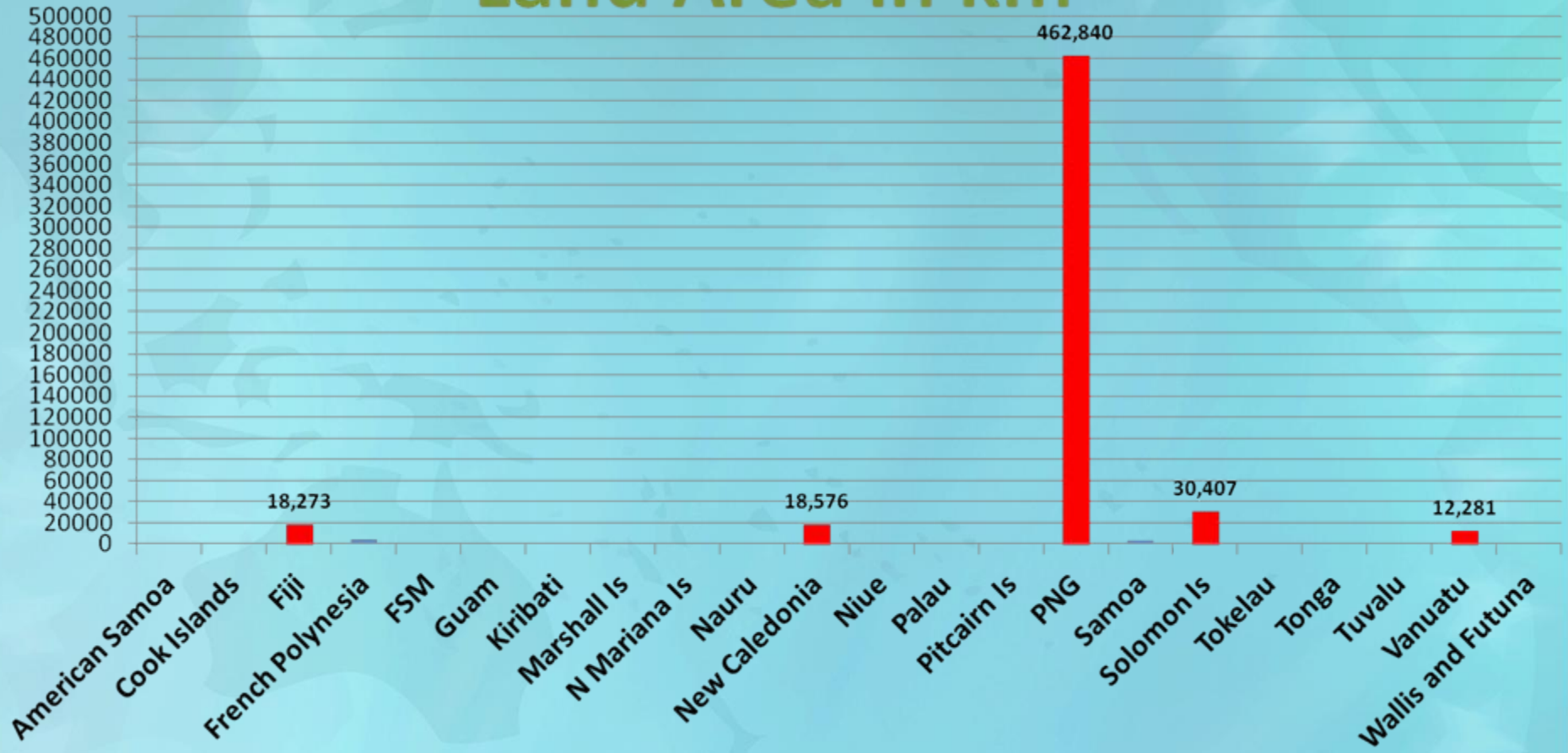
The Context

- **Unique characteristics of the region**
  - Pacific ocean covers approx. 36% of the earths surface, and 22 Pacific island countries and territories (PICTs) are dispersed across a large part of it.
  - Land area range from 5 sq. Km (Pitcairn Is) to 462,840 sq. km (PNG)
  - Populations range from approx 70 (Pitcairn Is) and 1,165 (Tokelau) to approx 6.8 million (PNG)
  - Accounts for more than 50% of the world's languages
  - Tyranny of distance
  - Extremely high unit cost of service

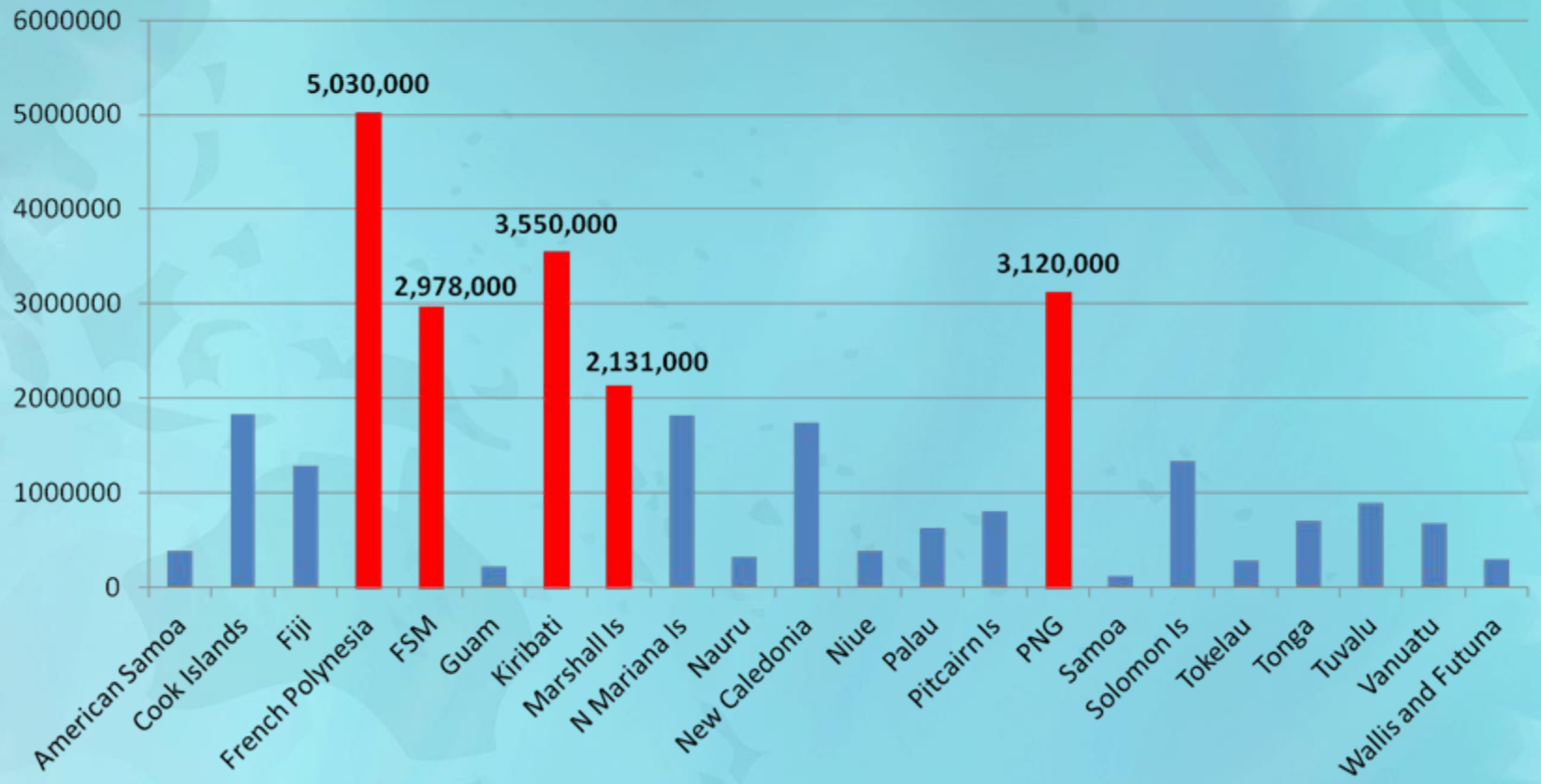
The Context

- Only 1.8% of the total Pacific islands region is land – 98.2 % is ocean.

Land Area in km²



EEZ in km²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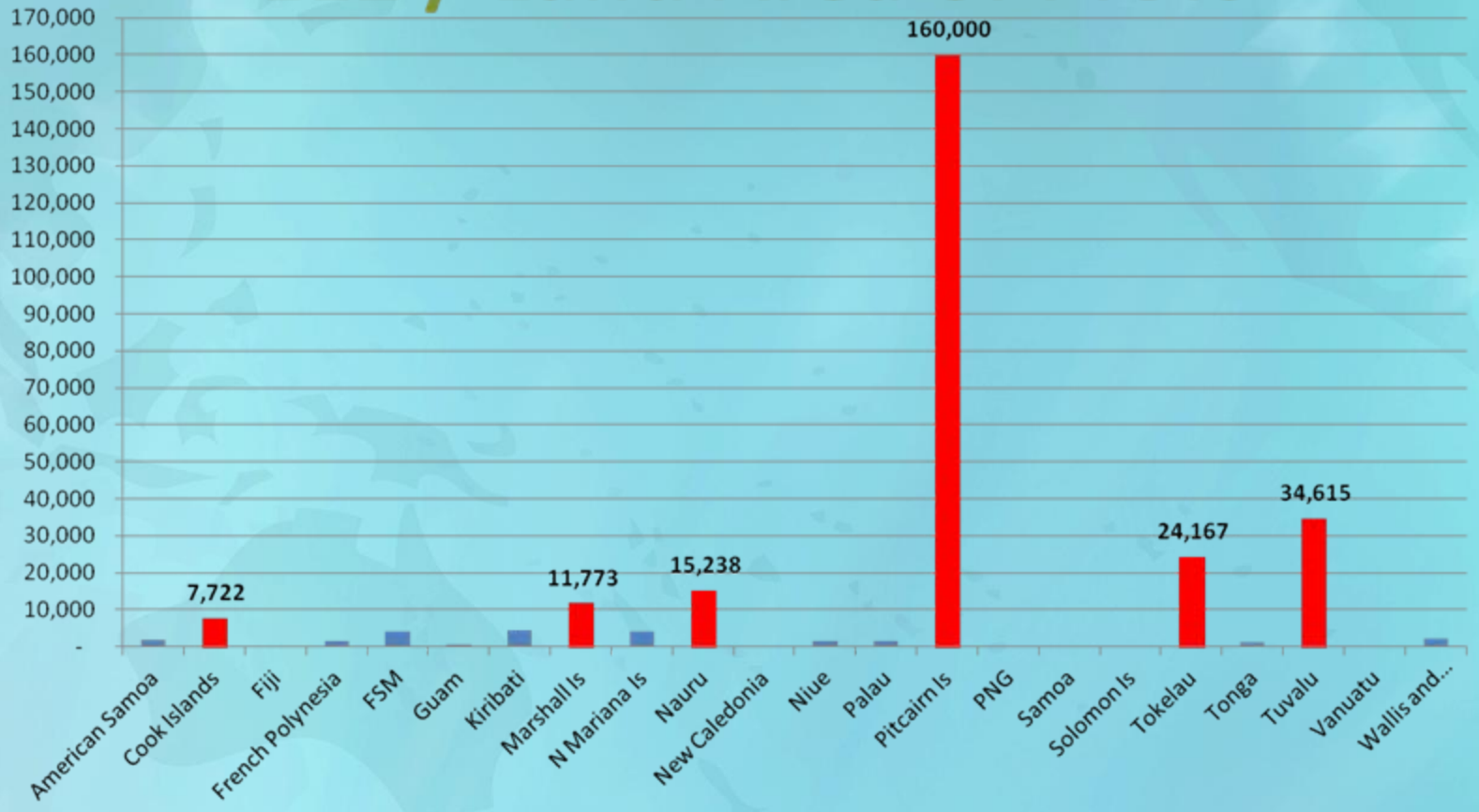
American Samoa
Cook Islands
Fiji
French Polynesia
FSM
Guam
Kiribati
Marshall Is
N Mariana Is
Nauru
New Caledonia
Niue
Palau
Pitcairn Is
PNG
Samoa
Solomon Is
Tokelau
Tonga
Tuvalu
Vanuatu
Wallis and Futuna

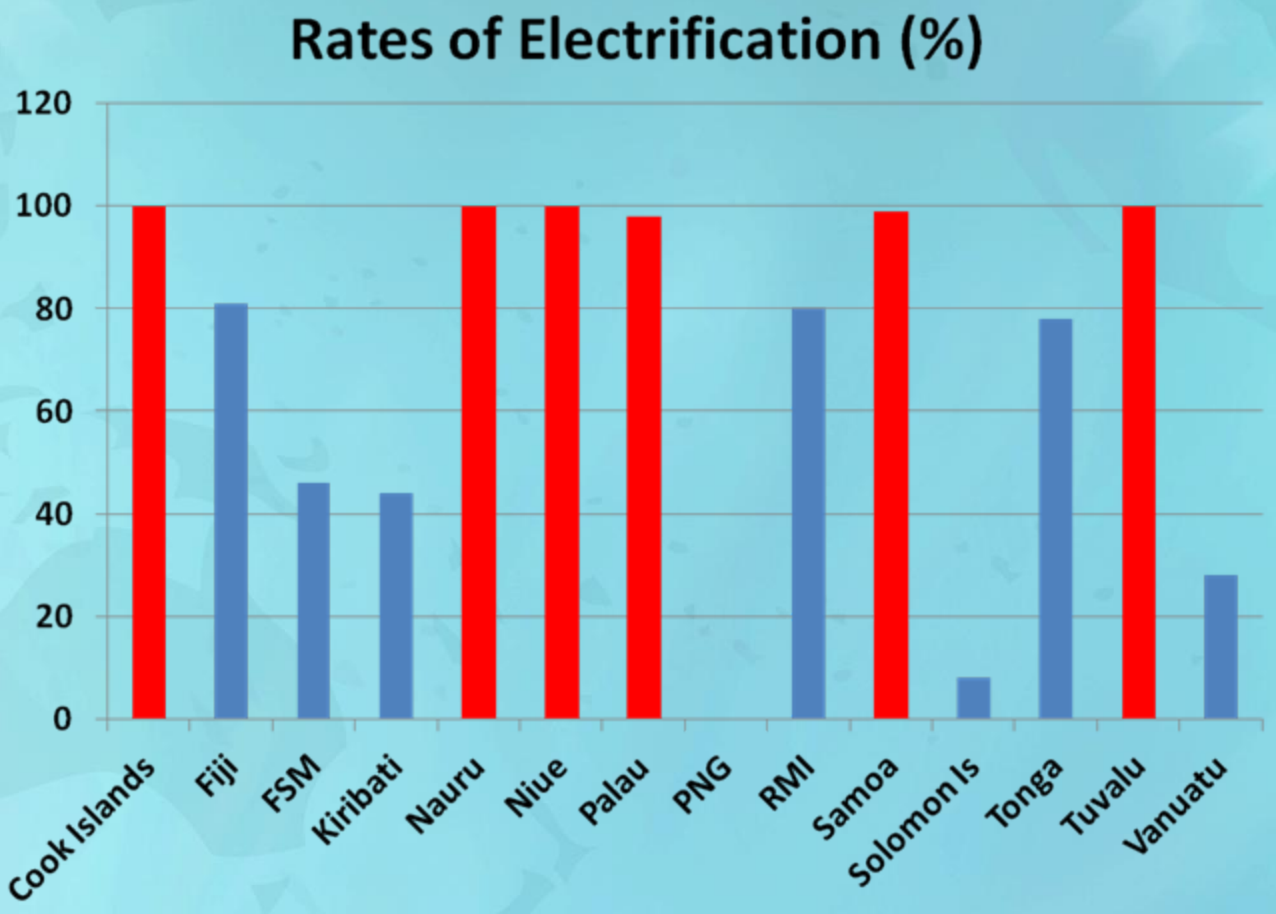
EEZ / Land Area of PICTs



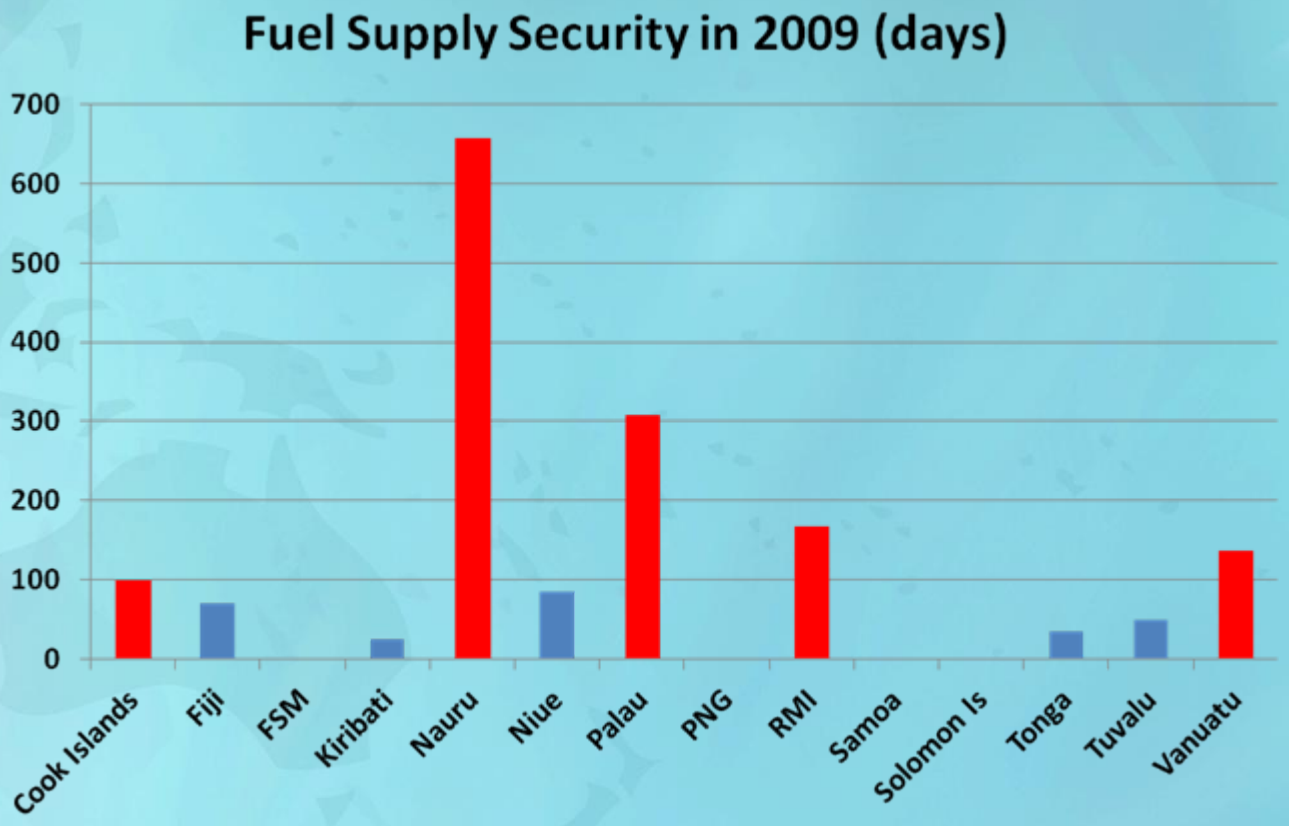
Characteristics of the Energy Sector of the region

- PNG is an oil exporter, everyone else imports fuel
- Fossil fuel accounts for about 95% of the region's commercial energy needs

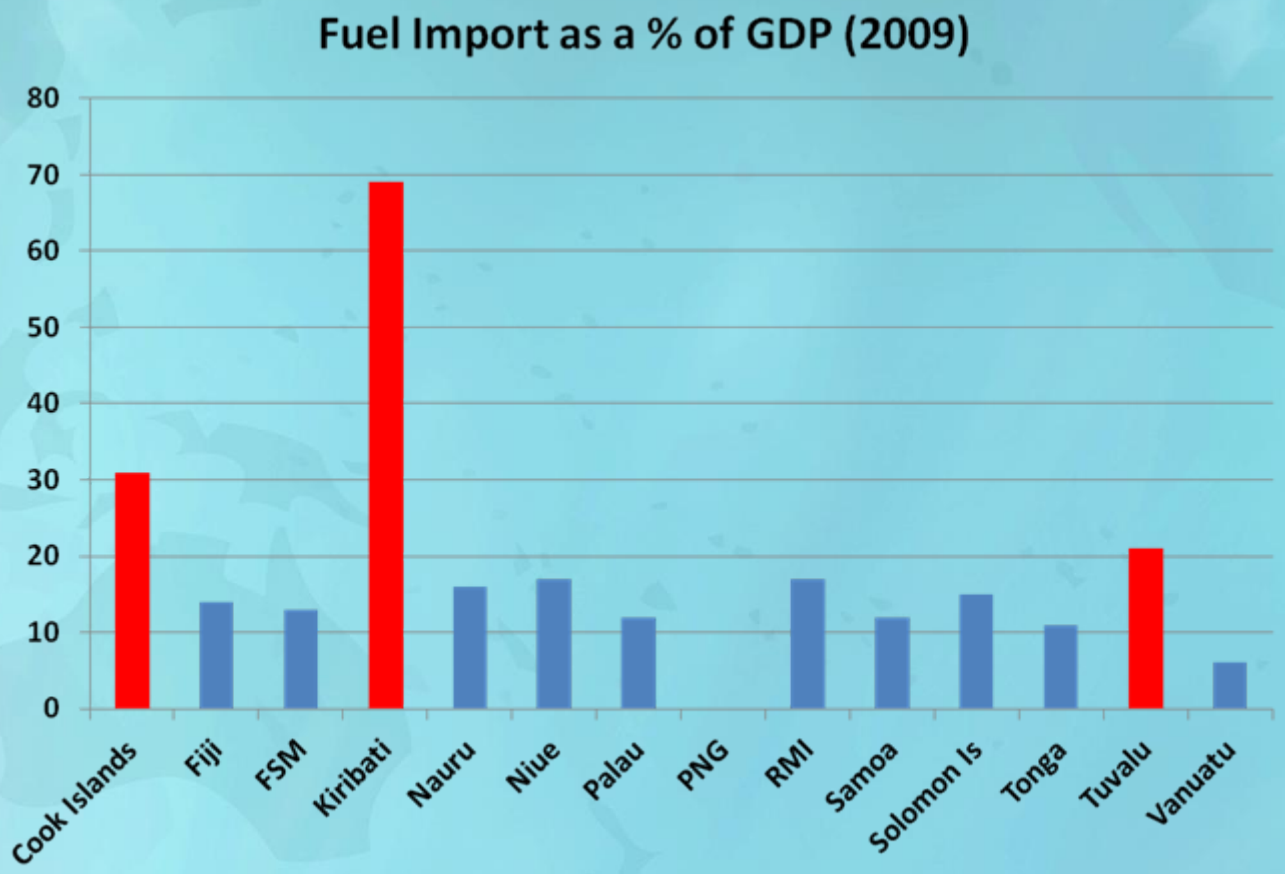
Access to Energy



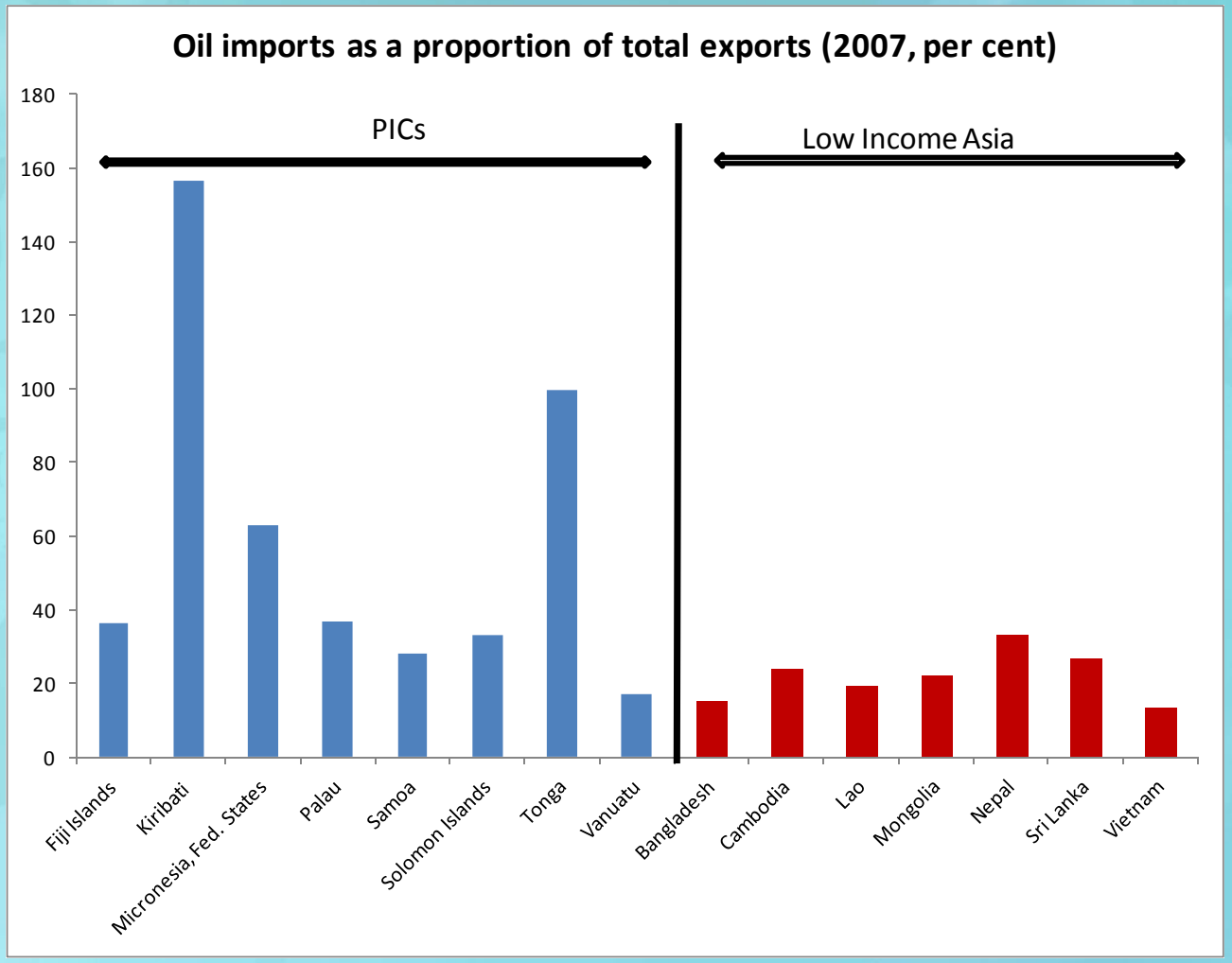
Access to Energy



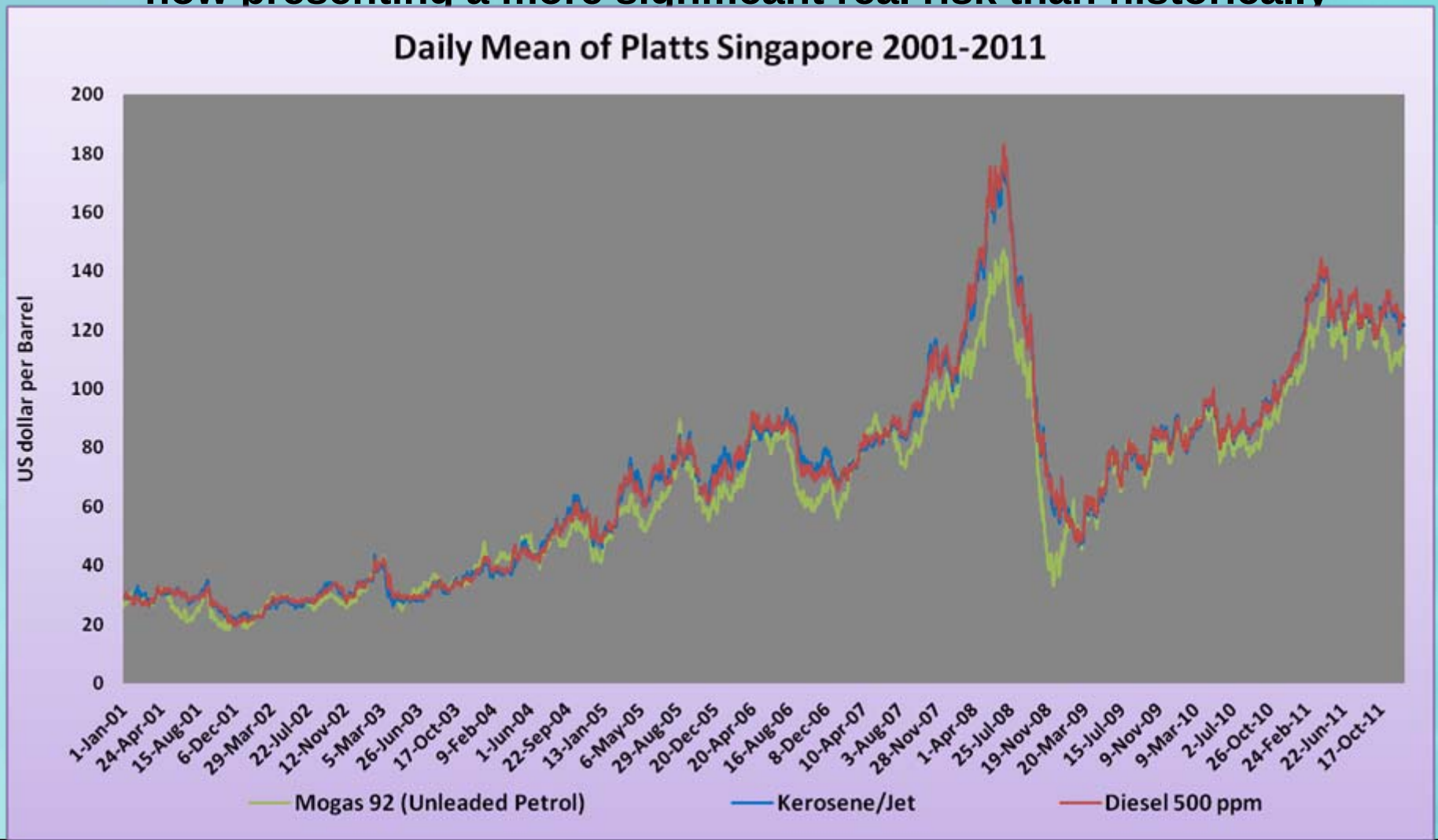
Affordability of Energy



Affordability of Energy



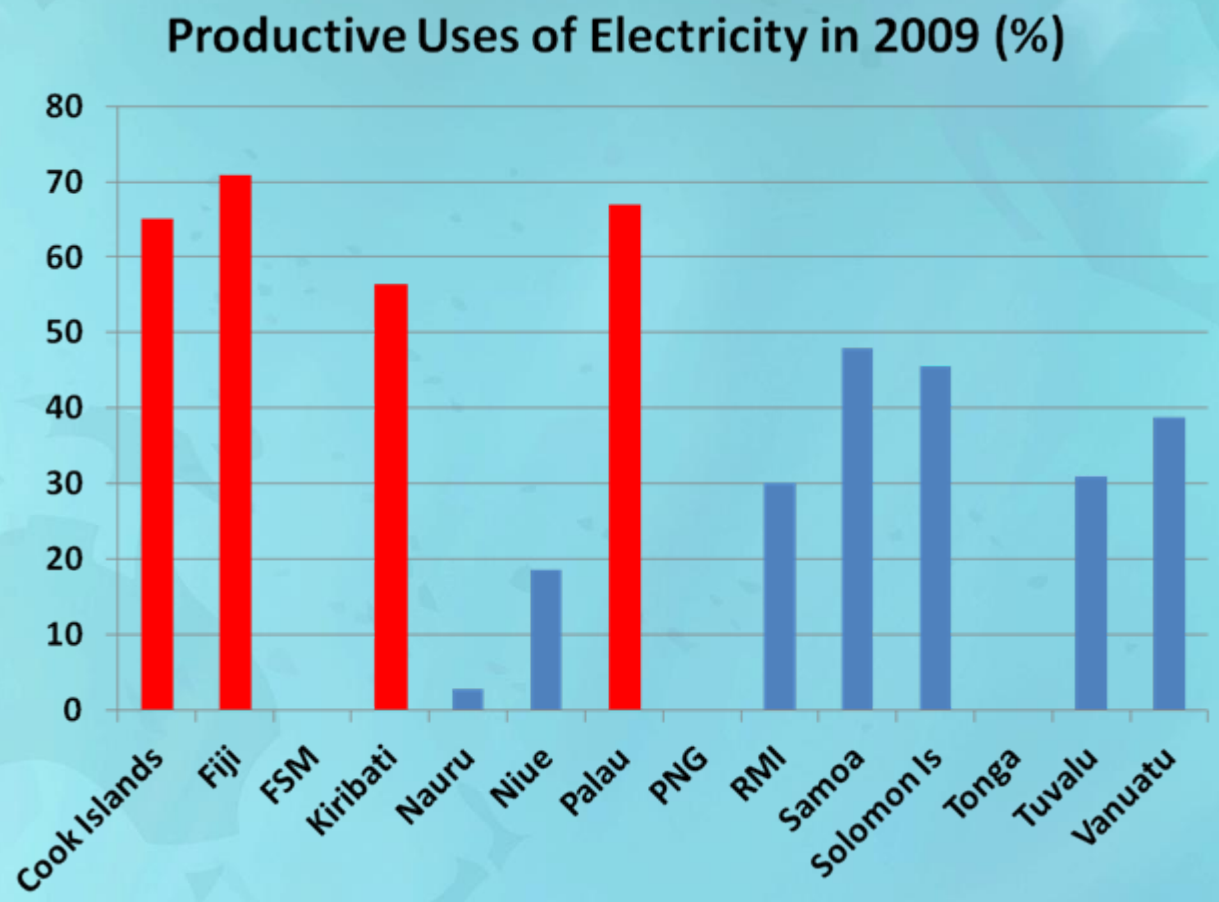
Oil Price volatility has increased dramatically over the last ten years, now presenting a more significant real risk than historically



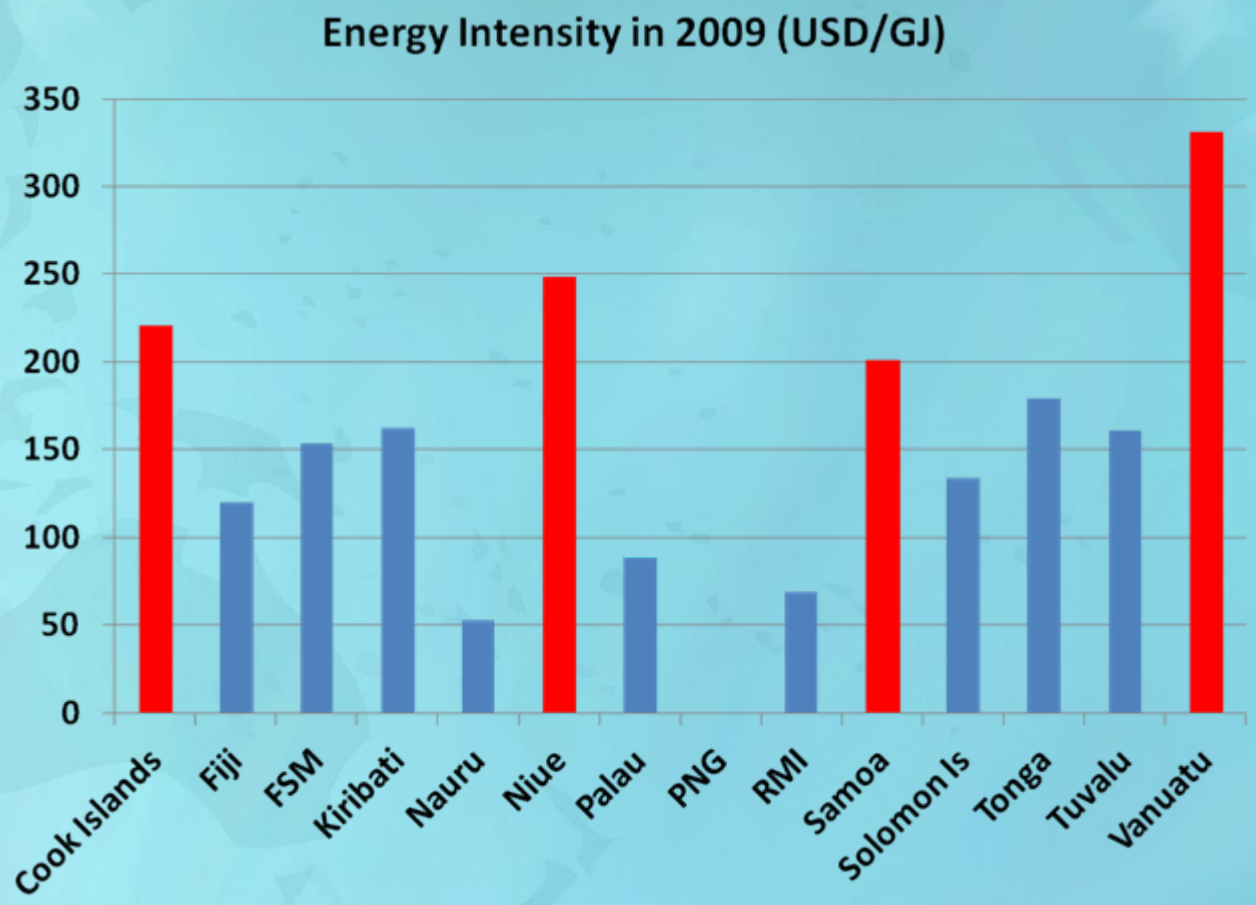
High Oil Prices and Impacts on PICTs

- Fiji's imports increased by almost 25% in 2008 due to the higher cost of petroleum.
- Inflation rates in Kiribati and RMI soared in 2008 by 18.6% and 17.5% respectively.
- Fiji's inflation rose to 7.7% in 2008 – highest since 1990
- The value of the RMI Compact Trust Fund and the Kiribati Revenue Equalizer Trust Fund declined by an estimated 20% in 2008.
- In 2009, Fiji's economy contracted by 2.5%, Palau by 3% while the Solomon Is and Tonga were each .4%

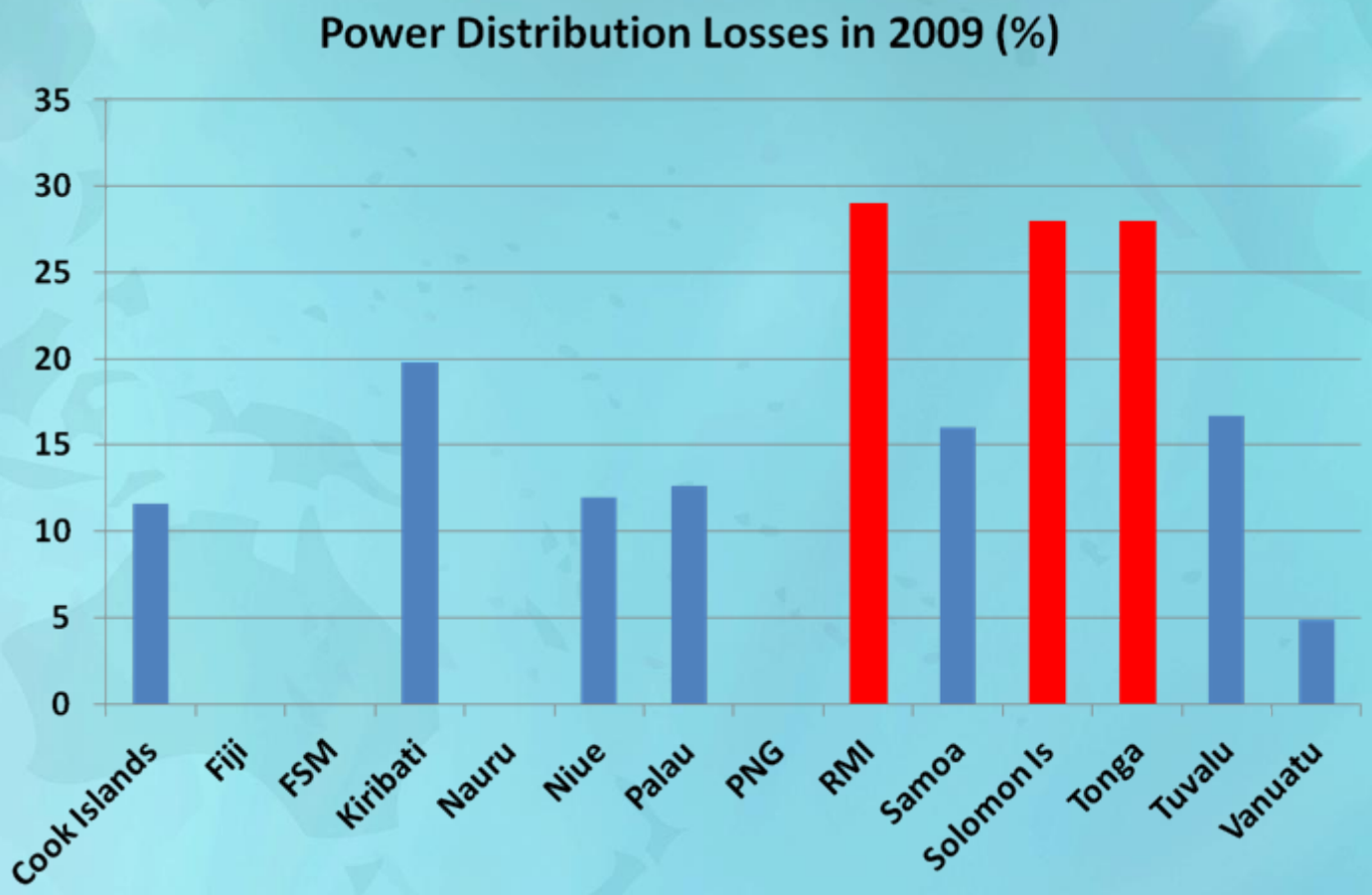
Productive Uses of Energy



Productive Uses of Energy



Productive Uses of Energy



Name of Power Utility	Unaccounted losses (%)	Power Station Losses (%)	Technical Loses (%)	Non-Technical Losses (%)	System Losses (%)	Total (%)
Chuuk State Power Utility	5.72	3.84	7.71	16.06	23.77	33.33
Pohnpei State Power Utility	1.94	5.12	5.94	5.66	11.60	18.66
Kosrae State Power Authority	2.58	4.98	5.91	3.27	9.18	16.74
Yap State Power Utility	7.59	7.43	6.38	4.05	10.43	25.45
Marshall Energy Company	0.67	8.45	6.41	11.35	17.76	26.88
Palau Public Utilities	0.76	6.51	7.57	4.27	11.84	19.11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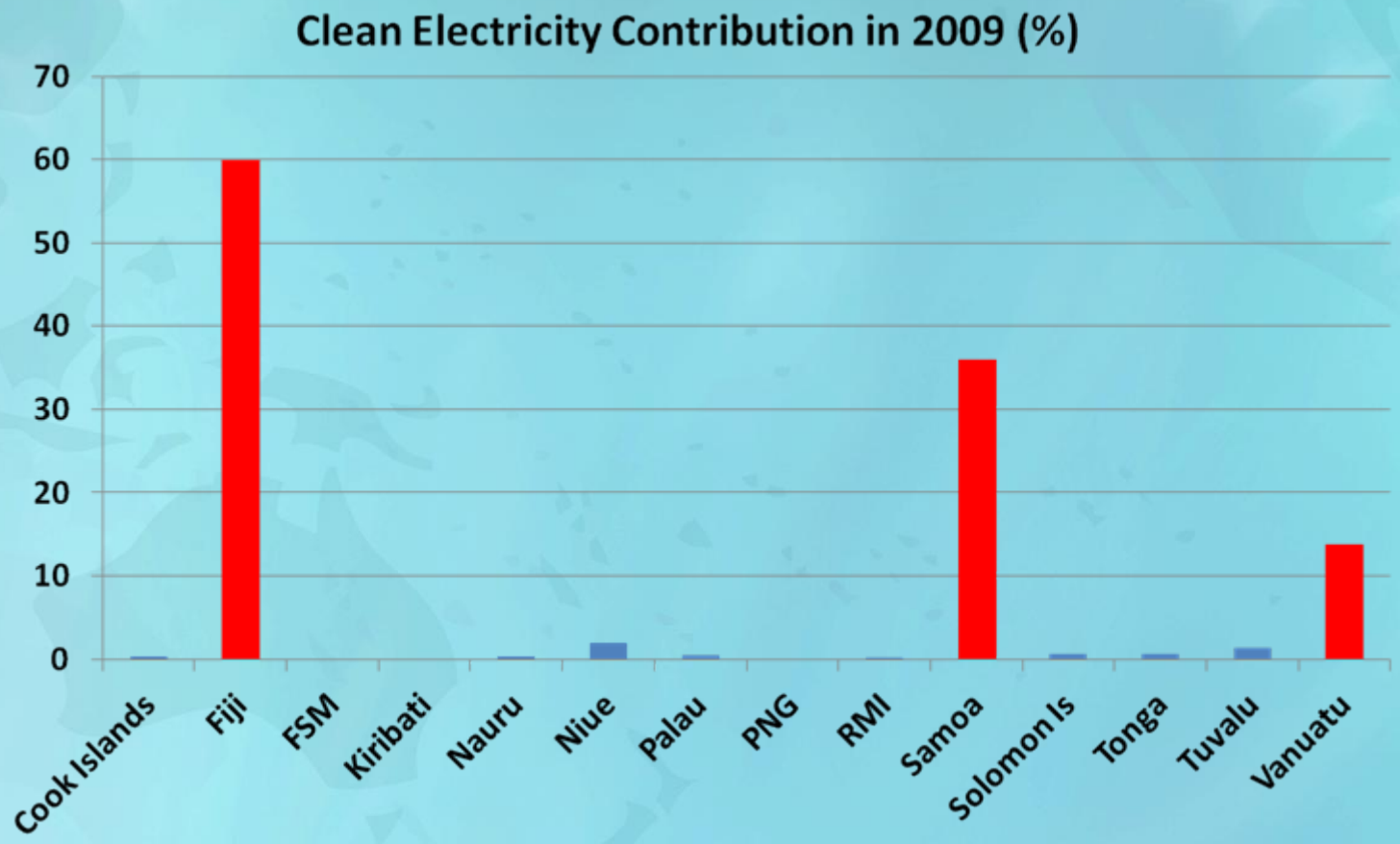
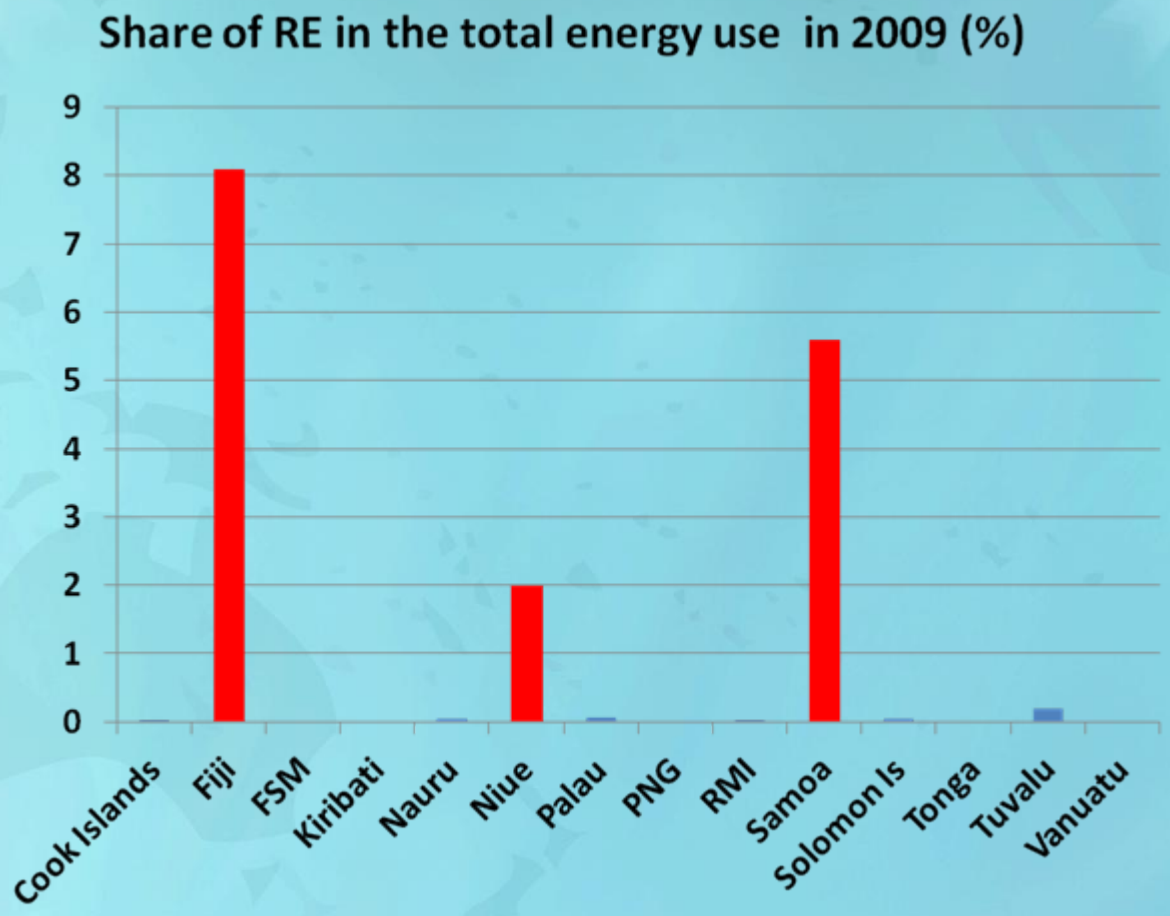
PETERSON


150

Clean Energy



Clean Energy



Country	% Share of RE (2009)	Key milestone in the commitment to RE	RE Target
Cooks Is		CIREC (2010)	50/15 – 100/20
Fiji	60	Monasavu Hydro (1978)	90% by 2015
FSM	0	GEM (2010)	20% by 2020
Kiribati	0	KSEC (1980s)	
Nauru	.31		50% by 2015
Niue	2		
Palau	.39	GEM (2010)	20% by 2020
PNG	0		
RMI	.18	GEM (2010)	20% by 2020
Samoa	36	Afulilo Hydro (1993)	20% by 2030
Solomon Is	.64	Tina Hydro – 14 MW (2015)	
Tonga	.64	1 MW PV (2012)	50% by 2012
Tokelau		NZAID funded PV (2012)	90% by 2012
Tuvalu	1.4	EUEF II (110 kW of grid	100% by 2020

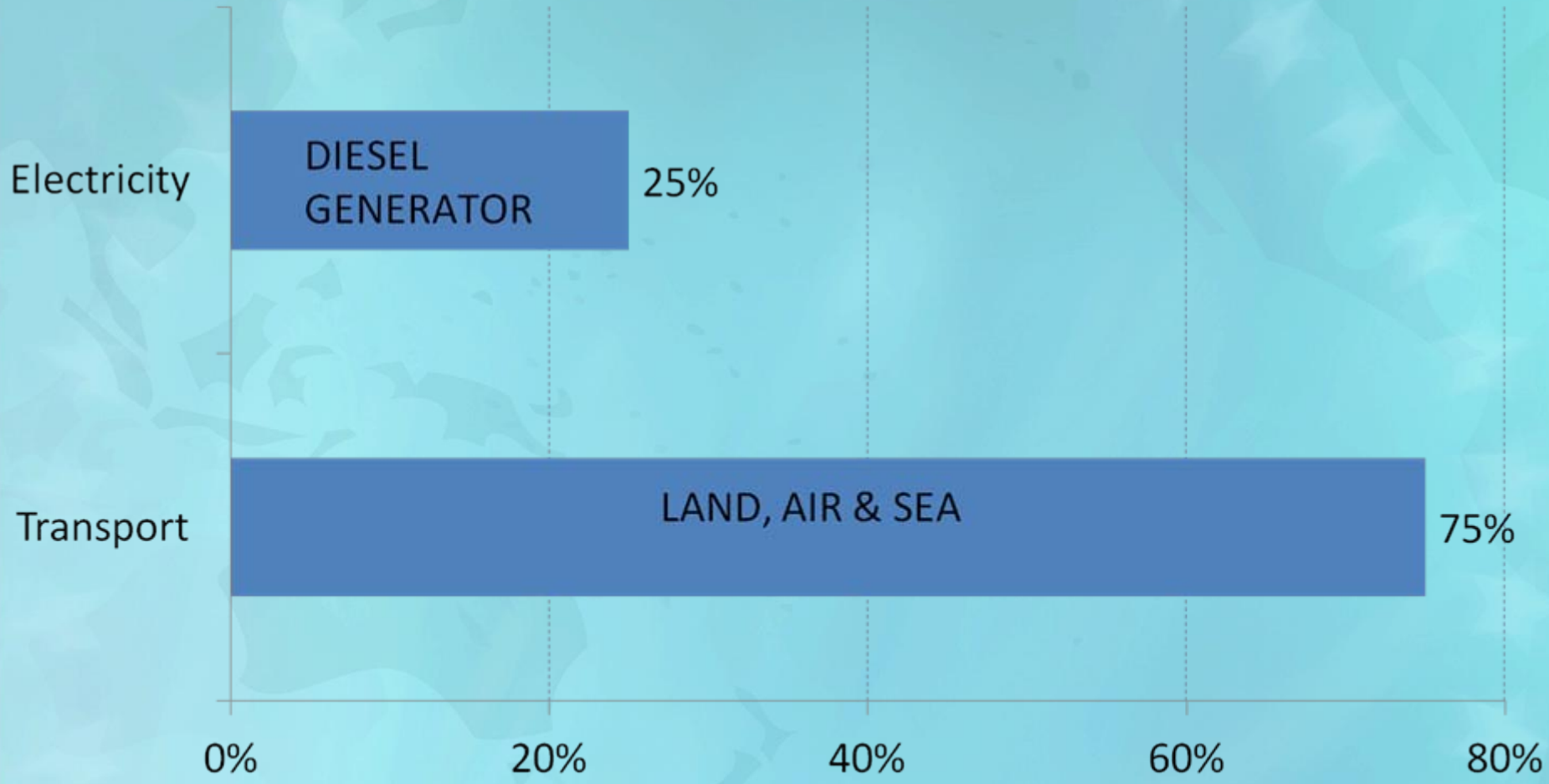
A "Whole-of-Sector" Approach to Energy Development in the Pacific Islands

Purpose

To mitigate the economic vulnerability of Pacific island nations to increasing oil prices and oil price volatility through a "Whole-of-Sector" energy development approach that seeks to balance:

- **Desires for increased access to secure, reliable, affordable, and high quality energy services;**
- **Ability to capture gains from increasing energy efficiency;**
- **Potential for increasing the share of renewables in the overall energy mix; and**
- **Potential gains from more efficient in petroleum procurement and supply chain management.**

Petroleum Fuel end-use in PICs



A "Many Partners One Team" Approach to Energy Development in the Pacific Islands

Many Partners, One Team

What it is!

- all the stakeholders working in or contributing to the sector (energy) recognise themselves as partners to develop and benefit from the sector;
- they see their individual plans as integral parts of a larger and more comprehensive plan for the sector;
- they see their investments and resources including funds as part and parcel of the total resources that is invested into the sector,
- the M & E indicators for their individual plans is part and partial of the overall M&E framework,

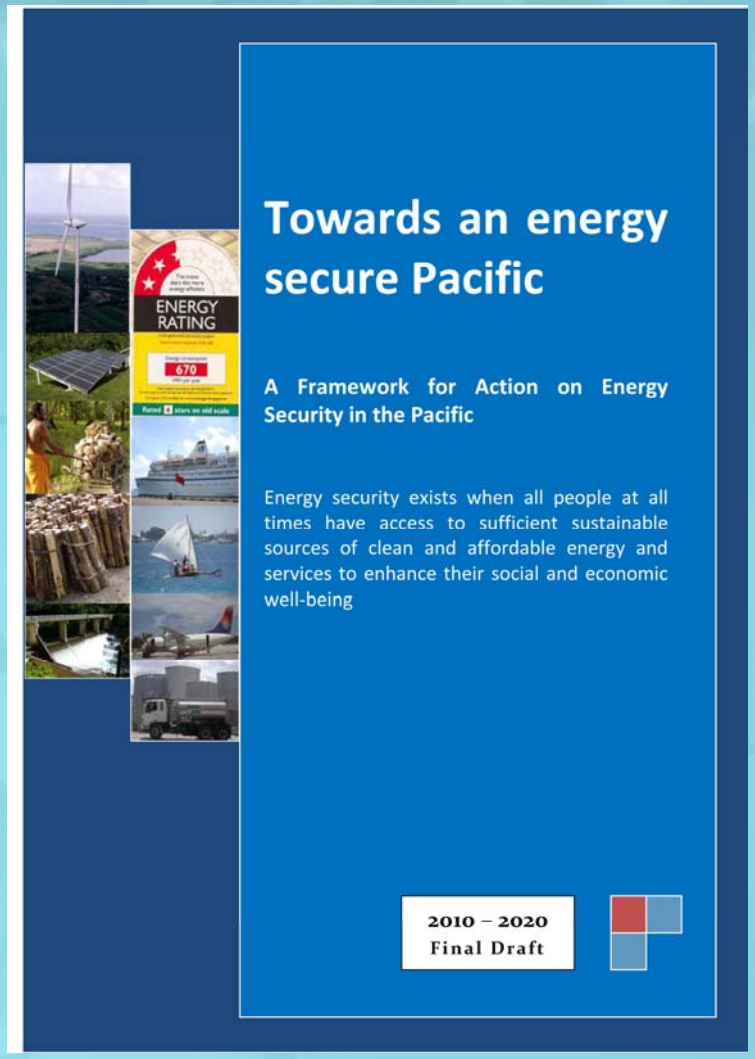
Many Partners, One Team
What it is!

- as a result, they see themselves as part of 'one team' working in many areas for a common vision,
- the implementation plan recognises the role and contributions of each stakeholder, and the contributions and resources they bring in to the sector, and provides a mechanism that would track these contributions against agreed milestones, and
- the combined inputs and outputs of every stakeholder at country level or in the region can be captured, monitored, evaluated and reported against coverage and outcome indicators

Many Partners, One Team
What it is not!

- about having one entity controlling other stakeholders working in or contributing to the sector

- about pooling of all resources for the sector, human or financial into one organisation.


ENERGY RATING
670
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

2011 Forum Leaders Communiqué

Leaders agreed on the value of developing credible whole of sector plans such as **"energy road maps"** and structures to improve energy security, **reduce dependency on fossil fuel** for electricity generation and improve **access to electricity**. Leaders expressed support for the development of effective **management of fuel supply risks**, meeting energy **efficiency targets** including expanding the existing electrical appliance **energy efficiency standards and labelling** programme to help realize significant energy savings.

Balanced Approach - Roadmaps

- Tonga
- Cook IS
- Vanuatu

PREREQUISITIES FOR IMPROVING ENERGY SECURITY IN THE PACIFIC ISLANDS	STATUS
Political Commitments	Excellent
National Energy Policy	Excellent
Fiscal and Financial Instruments	Need more
Understanding the RE & EE potentials	Still a lot of work to be done
Understanding the costs of Energy Policies, Roadmaps & RE targets	Still a lot of work to be done
Institutional restructuring	Needs strengthening
Growth in RE faster than diesel	Still a lot of work to be done
Improved Efficiency	Still a lot of work to be done
Financial Commitments	Still very much donor dependent

Thank You!