INDICATORS FOR THE FRAMEWORK FOR ACTION ON ENERGY SECURITY IN THE PACIFIC

FINAL REPORT

GERHARD ZIEROTH, ENERGY CONSULTANT, MARCH 3, 2011

Background

In response to a 2009 review of the Pacific regional energy programme and through consultation with Pacific Islands Countries and Territories (PICT), and stakeholders the *Framework for Action on Energy Security in the Pacific (FAESP) was developed* to replace the Pacific Islands Energy Policy of 2004. The FAESP puts forth a vision of an Energy Secure Pacific where 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. Pacific Islands Leaders at their annual Summit endorsed the FAESP in August 2010.

An implementation plan (IP) for the FAESP was drafted in June 2010 and was reviewed in regional consultation meetings in December 2010 and in February 2011. The IP, and associated energy security indicators that the FAESP is to be measured against, are to be submitted for endorsement by Energy Officials and Energy Ministers from the PICT at a meeting that is planned for Noumea on 4-8 April 2011. It is expected that over the next couple of years, energy sector investments in PICTS will amount to several hundred million US$. Measuring the impacts of such a substantial investment seems highly desirable within a structured Monitoring and Evaluation Framework that covers the region.

A consultant was hired under the European Union Energy Initiative Partnership Dialogue Facility (EUEI PDF) to support SPC in the development of energy security indicators and to construct a baseline for six countries i.e. Niue, Marshall Islands, Samoa, Solomon Islands, Tonga and Tuvalu. This document contains the results of the consultant's work and the outcomes of a stakeholder consultation workshop held in February 2011. The indicators and the sample baseline were presented to the Energy Ministers in Noumea to seek endorsement for the suggested indicators to become the basis of a regional monitoring and evaluation framework.

Consultation Workshop February 16, 2011

SPC's Economic Development Division hosted a regional consultation workshop on February 16, 2011. The objective of the consultations was to develop an agreed framework of indicators through a multi-stakeholder dialogue between representatives of PICT, Regional Organizations and Development Partners. The workshop was attended by more than 30 participants and included representatives from Cook Islands, Samoa, Solomon Islands and Tonga. The CROP agencies PIFS, SPC, SREP, USP, PPA were represented together with the development partner agencies ADB, AusAid, the New Zealand Aid Programme, EU, REEEP, UNDP and World Bank. A list of workshop participants is attached to this report as Annex 1.

During the consultations a draft set of indicators was presented by the consultant and thoroughly discussed by all participants[1]. In a constructive dialogue, the draft indicators were modified and refined to reflect the views and requirements of the various stakeholders. Stakeholders agreed to support the construction of the baseline for the selected six countries through sharing of data and information.

[1] The initial list of indicators was based on a review of existing literature, an assessment of data availability. In particular the publication ENERGYINDICATORS FOR SUSTAINABLE DEVELOPMENT: GUIDELINES AND METHODOLOGIES, IAEA 2005 has been reviewed

Indicator Definition

It was agreed in the consultation workshop to use indicators that follow the OECD/DAC definition according to which an indicator is: **"A quantitative or qualitative factor or variable that provides a simple and reliable means to measure achievement, to reflect changes connected to an intervention, or to help assess the performance of a development actor".** As the Energy Security Indicators are supposed to measure the overall impacts of interventions by multiple donors it was also agreed to follow DAC interpretation where indicators can have either a qualitative or quantitative target value. A typical example at macro level would be electrification rate defined as the percentage of the population connected to a utility grid. With ongoing and pipelined projects in the area of rural electrification, the electrification rate is expected to increase (in those countries that do not already have a 100% electrification rate) The FAESP indicator would allow measuring the performance of a country's energy sector interventions on an aggregate basis (the sum of all impacts for a given country). The values for performance indicators can also be aggregated upwards to measure the progress by the entire region.

Some of the indicators suggested are unambiguous **measures of progress**; they clearly distinguish between desirable and undesirable outcomes and developments. Social and environmental indicators fall into this category, as they measure progress in equity and environmental quality. Other indicators are not designed to distinguish between 'good' and 'bad' but rather **describe and give an indication of an aspect of energy use**. Energy intensity for instance falls into this category. Increase in energy intensity of the entire economy or an individual sector may indicate trends towards industrialization, whereas falling intensity could be caused by developments in the service sector. I.e. such indicators need to be read in the context of a particular economy. However, indicators taken together and in context, allowing for inherent differences between the regional countries, provide an acceptable measure of a country's energy system and its change over time.

A third category of indicators is purely **qualitative** in nature and can only be transformed into numerical values by scoring. For such qualitative indicators (e.g. the state of energy sector regulation) both a qualitative brief description and a scoring are presented. It is important to note that the indicators are not intended to be used as 'league tables' to rank PICT. Rather they are intended to measure PICT and regional progress towards energy security and the achievement of the objectives of the FAESP.

Data Acquisition and Processing

Most of the quantitative indicators listed below could not be directly extracted from existing data and/or information such as statistics yearbooks or databases. Indicators used to construct the baseline were collected and processed using the following methodology:

- Step 1: Collection of raw data from within SPC
- Step 2: Review of sources and identification of gaps
- Step 3: Request to countries and stakeholders to assist in filling data gaps
- Step 4: Storage of all relevant data
- Step 5: Compilation of primary data sets in excel together with sources and assessment of data quality (check of plausibility and consistency)
- Step 6: Compilation of baseline indicator table for each of the six countries.

All data used have been cross-checked for quality and plausibility. Weak data have been flagged in the annexed excel sheet containing the primary data sets.

Data Availability, Accuracy and Limitations

Workshop participants acknowledged the difficulties to obtain timely and accurate data. It was agreed to use **2009 as a baseline year** wherever possible. Most data to construct a 2009 baseline proved to be obtainable, and workshop participants have actively participated in compilation of data and information. Some data gaps still exist and for some data points estimates or values dating prior to 2009 were used as proxies. Thus, there is room to improve the quality of the baseline through updating, further verification and cross checking.

It was noted in this context that 2008 data should be avoided, as they are not necessarily very representative due to a spike and the collapse of commodity prices in the wake of a global financial crisis. It was agreed that for each indicator, the consultant would provide a brief guide to indicator interpretation together an assessment of reliability, limitations and accuracy.

With respect to the indicator 'Carbon Footprint' it was agreed that the carbon content of fossil fuels would be used. At a later stage these indicative carbon data can be replaced by data from national reporting following the UNFCC method. It was also agreed that the indicator that tracks energy sector funding would not refer to a 2009 baseline but provide a snapshot of the current (2011) energy portfolios held by relevant development partners. This indicator would then be updated annually as completed projects and investments drop off and new ones emerge.

Energy expenditure data must be considered as weak as none of the Census or Household Income and Expenditure Surveys available has clear and unambiguous figures.

The 2002 ADB power utility benchmarking study used SAIDI[2] as an availability indicator. SAIDI was also suggested as a PRIF power sector indicator. For the sake of harmonization, the FAESP indicators should therefore use SAIDI too, provided the ongoing PPA benchmarking exercise decides to use the indicator.

The indicators below are considered a **workable compromise between comprehensiveness and data acquisition efforts**. It was suggested to view the energy security indicators as a dynamic and flexible tool. No monitoring framework or set of energy indicators can be final and definitive. To be useful, indicators must evolve over time and improve to fit country specific conditions, priorities abilities and resources. Annex 1 contains the baseline indicators for the six countries selected. The sheets provide energy security profiles for the individual countries.

[2] The System Average Interruption Duration Index (SAIDI) is commonly used as a reliability indicator by electric power utilities. SAIDI is the average outage duration for each customer served.

Table of Indicators

No	Indicator	Unit	Description	Reliability, Accuracy, Limitations	Data sources	Formula
			Access to Energy			
1	Electrification Rate	%	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	Indicator reliable and accurate as long as utilities provide statistics on number of total accounts.	Utility records, Census data	Residential utility accounts/(Total Population/Household Size)
2	Access to Small Scale Power rural	%	Tracks share of rural households with access to basic electrification (solar, pico hydro, small wind, community grid).	Indicator reliable and accurate for government-controlled projects. Possible underestimates as private sector outlets also distribute equipment.	Energy administration statistics, HIES surveys, micro surveys	Households with access to non utility electricity /(Total Population/Household Size)
3	Access to Modern Energy rural	%	Tracks share of rural households with access to modern cooking and lighting. Covers all forms of energy other than traditional biomass	Data for indicator may not always be available from HIES of Census surveys. Mostly measures the share of households using kerosene for cooking and lighting.	Energy administration statistics, HIES surveys, micro surveys	Rural households with access to lighting and modern cooking fuels stand alone electricity /(Total Rural Population/Household Size)
4	Access to Modern Energy urban	%	Tracks share of urban households with access to modern cooking and lighting	Data for indicator may not always be available from HIES of Census surveys. Mostly measures the share of households using kerosene for cooking and lighting.	Energy administration statistics, HIES surveys, micro surveys	Rural households with access to lighting and modern cooking fuels stand alone electricity /(Total Rural Population/Household Size)

Affordability						
5	Macro-Economic Affordability	Index	The indicator tracks fuel imports as a percentage of GDP. The higher the figure, the more vulnerable an economy is towards world market price volatility	The indicator is reliable and accurate as long as fuel import data are available. GDP data point normally published by IMF. Its improvement is not necessarily related to energy sector performance but to economic growth in general. (Alternative: Fuel imports as % of total imports)	IMF GDP data, IMF Commodity price data	Value Fuel Imports/GDP in current US$
6	Electricity Tariff	US$/kWh	Average tariffs for year (all tariff categories i.e. residential, commercial, industrial) Requires averaging over year as tariffs in most PICT are adjusted several times in a year	Reliable and accurate indicator that reflects the affordability of electricity for household, businesses and industrial consumers. Useful for a comparison of countries. Tariff structures however, vary widely across the region.	Utility tariffs reported via PPA	Average tariff for year in the respective tariff categories
7	Electricity Lifeline	%	Relation between average tariff and lifeline tariff if a lifeline tariff exists	Reliable and accurate indicator, which is relevant to assess the protection that low income households enjoy through cross subsidies.	Utility tariffs reported via PPA	Lifeline Tariff US$/kWh/ Average Electricity Tariff US$/kWh (%)
8	Household Energy Expenditure Load	%	Average household expenditure for energy per year as percentage of average household income	Indicator is not very accurate as it is based on sample surveys (HIES) that often suffer from understating of incomes and other errors. Indicator is more reliable if based on energy focussed micro surveys and case studies. HIES designs need improvement to more accurately bring out energy relevant data	Census data, HIES surveys, case studies	Energy expenditure/average household income

Efficiency and Productivity						
9	Energy Intensity	US$/ GJ	Tracks the GDP $ generated by the use of a GJ of energy. Indicator is widely used to compare economies	Accuracy can be compromised by errors and gaps in national energy statistics. Changes in indicator are not a reliable sign of improvements in energy sector performance	IMF GDP data, National energy statistics	GDP (US$) /(Annual petroleum product consumption + non fossil electricity (US$/GJ)
11	Productive Power Use	%	Tracks the share of commercial and industrial use of electricity in total supply	Indicator reliable and accurate. Has some limitations as smaller businesses may use power under domestic tariff (if lower than commercial tariff)	Utility billing records	Commercial electricity billed/total electricity billed
Environmental Quality						
12	Carbon Footprint	tons CO2	Tracks total GHD emissions using embedded carbon as a measure (not UNFCC method)	Provides reliable indication of contribution to global GHD emissions and demonstrates the miniscule contribution that PICts make with regard to global GHD production.	National statistics	sum (all energy sector GHG emissions)
13	Diesel Fuel Quality	ppm S	Assesses the standard for sulphur content of diesel fuel in ppm sulphur	Reliable and accurate indicator which provides information on local emission levels	National Governments	10 ppm = 3; 50 ppm=2; 500 ppm plus = 1
Leadership, governance, coordination						
14	Status of Energy Administration	Score	Assess the status the energy administration has in respective country	Indicator does not measure an administrations performance, but the priority a national government gives to its energy sector. Might be better described in qualitative terms	National Governments	Energy Ministry = 3; Energy Department = 2; Energy Office = 1
15	Energy Legislation	Score	Assess the status the of energy sector legislation in respective country	Measures only the formal legal framework, not the level of enforcement. Might be better described in qualitative terms	National Governments	Updated Energy Act = 3; Adopted Energy Policy = 2; Subsector Act or Policy = 1

16	Co-ordination and consultation	Score	Tracks outcome of regional or subregional events	'Soft' indicator, which aims to measure how, decisions and directions given at regional or subregional events translate into practical action at national level. Might be better described in qualitative terms	National Governments	Meetings lead to relevant national action = 1; No action = 0
Energy Planning, Policy Regulation						
17	Energy Planning Status	Score	Assesses the state/quality of Energy Planning. Distinguishes between integrated planning and subsector (i.e. power, petroleum) planning	'Soft' indicator, which aims to measure if and how energy planning is performed at national level. Does not measure how planning translate into practical action and/or investments. Might be better described in qualitative terms	National Government Reports, Presentation of plan	Whole of Energy Sector Plan/Roadmap operational with M&E framework = 3; Subsector Plan operational with M&E framework = 2; Energy Sector Plans under preparation = 1
18	Energy Sector Regulation	Score	Assesses State of Energy Sector Regulation	Useful to provide a measure of progress towards regulator independent from government or regulated entities	National Governments, Energy Sector Legislation	Independent Whole of Energy Sector Regulator established = 3; Whole of Energy Sector Regulator established = 2; Subsector Regulator established = 1
19	Enabling Framework for Private Sector Participation	Score	Assesses progress towards enabling framework for private sector participation	Reliable and accurate in measuring the legal framework. Does not measure actual investment from private sector parties	National Governments, Energy Sector Legislation	Standard Power Purchase and Petroleum Supply Agreements operational = 3: Standard Agreements for subsector operational = 2; Standard Agreements under preparation = 1
20	Private Sector Contribution	%	Tracks share of electricity produced by Independent Power Producers under power purchase agreement	Accurate and reliable indicator which describes the physical contribution private sector operators make to a countries electricity supply	Utility records reported via PPA	Total annual kWh supplied by IPP/Total kWh send out

Energy Production and Supply						
21	Fuel Supply Security	Days	Measures the number of days a country can keep operating in case of a petroleum product supply interruption.	Reliable indicator widely used to measure the resilience/vulnerability of a country in the event of an energy crisis. Accuracy is limited as the indicator assumes that all storage is full when a supply interruption occurs. Also uses the total storage volume and total demand, not individual products	Petroleum import statistics, Petroleum companies information	Size of total petroleum storage (m3)/Average petroleum product consumption per day
22	Fuel Supply Diversity	%	Measures share of locally produced fuel (biofuel or fossil) as percentage of total supply	Only relevant for countries with fossil fuel production and/or a local biofuel industry. Reliable and accurate if volumes are reported correctly	Petroleum import statistics, Local production companies information	Quantity of locally produced fuels (t)/Total imports + local production (t)
23	Fuel Supply Chain Arrangements	Score	Assesses control of countries over fuel supply chain.	Qualitative indicator which describes supply routes, procurement methods and regulation	Petroleum import statistics, Petroleum companies information	Joint procurement scheme operational = 2; Participation in preparation of joint procurement arrangements = 1
Renewable Energy						
24	Renewable energy share	%	Measures share of renewable energy as percentage of total supply for a given year	Reliable and accurate for utilities. National totals may not be as accurate as output of stand-alone systems are normally not measured or even counted and rely on educated guesses	National statistics, utility records	Quantity of RE (GJ)/Total Supply of Energy (GJ)

25	Renewable Resource Knowledge	Score	Assesses the quality of knowledge of national renewable energy potential	Qualitative but important indicator. Knowledge of resources and commercial potential of relevant RE is a precondition for integrated planning and efficient allocation of investment resources.	National governments, Development Partners, Regional Organisations	Comprehensive assessment of all RE resources including cost for each source = 3; Comprehensive physical assessment of all RE resources = 2; Resource assessments fragmentary under way = 1
26	Least Cost RE Development Plan	Score	Assesses if data and information on RE have been translated into a least cost development plan that gives priority to the most economical RE resource or application	Qualitative indicator that builds on indicator 26. The existence of a least cost development plan does not mean that the plan is being followed. Assessments at the level of individual projects are necessary to prove this	National governments, Development Partners, Regional Organisations	Least Cost Development Plan Operational = 2; Least Cost Development Plan under Preparation = 1
Energy Conversion						
27	Generation Efficiency	kWh/l	Measures the annual average fuel conversion efficiency for diesel generation	Reliable and accurate indicator. May become distorted when renewable energy generation is not separated	Utility records via PPA	kWh send out/litre of fuel used
28	Distribution Losses	%	Compares the amount of kWh sold with the amount of kWh send out from the power station	Reliable and accurate if utilities keep good records. Accuracy may be distorted if unmetered supply (for example street lighting) exists.	Utility records via PPA	kWh send out - kWh sold/kWh send out
29	Lost Supply (SAIDI)	hours	Tracks Electricity Outage time (hours of lost supply per customer per year)	Internationally used indicator for utility performance. Reliable and accurate if data are available	Utility records/benchmarking via PPA	Sum of all customer interruption duration/total number of all customers
30	Clean Electricity Contribution	%	Measures share of renewable energies as percentage of total electricity supply	Reliable and accurate indicator sometimes also used as a target for utilities	Utility records via PPA	Quantity of RE kWh injected into system/Total Supply of kWh send out

End-use Energy Consumption						
31	Retail Fuel Prices	US$/l US$/kg	Tracks retail and wholesale fuel prices for petroleum products (diesel, petrol, MPK, LPG)	Data available from Pacific Fuel Price monitor. Reliability and accuracy depends on reporting quality by countries. Data for LPG often missing	National records, SPC fuel price monitoring	Average fuel price per year
32	Legislative Framework	Score	Assesses progress towards a comprehensive legislative framework for import of end use devises	Qualitative indicator which does not measure enforcement of legislation	National Records	Comprehensive framework covering transport, appliances, buildings = 3; Legislative for one subsector operational= 2; Preparation of frameworks under way = 1
33	Appliance Labelling	Score	Assesses state of appliance labelling	Qualitative indicator which does not measure enforcement of legislation	National governments, Development Partners, Regional Organisations	Compulsory Appliance Labelling Operational = 2; Appliance Labelling under preparation = 1
34	Availability of National Energy Balance	Score	Assesses availability of national key energy data to SPC data management unit and other regional stakeholders	Full energy balance data rarely available for PICT. Indicator measures work towards establishing such energy balances	National Records, Utility Records	Comprehensive data sets covering energy input conversion and end use available 6 months after end of reporting year = 3; Partial data set available within 6 months = 2; Partial data set available within 12 months = 1

Financing, Monitoring & Evaluation						
35	Energy Portfolio	US$	Tracks the flow of funding into the regions energy sector	Indicator is not developed for 2009 baseline but provides a current (2011) snapshot of the active portfolios of relevant stakeholders. In order to be meaningful this indicator needs to be up-dated on an annual basis as old projects drop off and new ones come on line.	Grant and loan commitments active in a given year	Grant aid commitments + Loan commitments
36	Availability of Financing Information	Score	Assesses availability of national energy financing information to SPC and other regional stakeholders	Qualitative indicator	National Records, Utility Records	Comprehensive set of information covering petroleum, utility and government financing = 3; Partial information set available within 6 months = 2; Partial information set available within 12 months = 1
37	Monitoring Framework	Score	Assesses if there is a national energy sector M&E framework in place	Qualitative indicator	Energy administration	M&E framework in place = 1 No M&E framework = 0

Conclusions and Recommendations

From the data acquisition efforts in February 2011 it can be concluded that no central repository of relevant energy security data currently exists. Neither the energy administrations in the selected countries nor regional organizations such as SPC, PPA or PIFS are able to share sufficient data to quickly construct reliable and accurate energy security profiles. Data are scattered, unavailable or are simply not disclosed. Nevertheless the attempt to construct a first set of energy security indicators and demonstrate a 2009 baseline for six countries has yielded a meaningful and nearly comprehensive result. This was achieved through data queries using multiple channels.

SPC as the new lead coordinating agency for energy could make a major contribution to energy sector development in the Pacific by further developing and maintaining a regional energy database. Lack of accurate and reliable data have frustrated policy, planning and monitoring efforts since the 80ies. As a central repository of accessible energy data SPC could support energy sector planning exercises across the region and help PICTs to save considerable time and effort in repeated data collection.

At present the agreed energy security indicator set covers the four dimension of sustainable development that aims to improve quality of life in a way that can be sustained, socially, economically and environmentally, supported by the institutional structure of the country. Institutional aspects, however important, are qualitative and are therefore not readily quantified as indicators. They should nevertheless be retained, as a sound institutional structure is essential for a reliable and efficient energy system including effective energy sector data management.

In the following some specific recommendations are listed:

- Data gaps that are flagged in the raw data spreadsheet should be filled in as soon as new data become available (particularly with respect to petroleum sector data);
- Data collection points should be firmly established in co-operation with the national energy administrations **and** the respective statistics offices;
- Reporting procedures should be established together with time lines;
- After endorsement by the Energy Ministers a final version of the energy security will emerge and it is recommended to construct profiles for all PICT accordingly;
- Data on household energy expenditure is scanty and not readily available from census reports or Household Income and Expenditure Surveys. It is recommended to re-design future surveys to produce meaningful data for energy in co-operation with statistics offices and the SPC statistics department.

Annex 1: 2009 Baseline indicators for selected countries

Country		Niue			
No	**Indicator**	**Unit**	**Value/Description**		
Access to Energy					
1	Electrification Rate	%	100		
2	Access to Small Scale Power	%	n.a.		
3	Access to Modern Energy rural	%	100		
4	Access to Modern Energy urban	%	100		
Affordability					
5	Macro-Economic Affordability	% GDP	16.63%		
6	Electricity Tariff	US$/kWh	1-100 kWh	US$/kWh	0.32
			101-300	US$/kWh	0.38
			>301	US$/kWh	0.45
7	Electricity Lifeline	%	83.3		
8	Household Energy Expenditure Load	%	n.a.		
Efficiency and Productivity					
9	Energy Intensity	US$/GJ	610		
11	Productive Power Use	%	22		
Environmental Quality					
12	Carbon Footprint	Gg CO_2	5.51		
13	Diesel Fuel Quality	ppm S	10		
Leadership, governance, coordination					
14	Status of Energy Administration	Qualitative	National Energy Policy developed 2005, approved by Cabinet, energy office function partly executed by General Manager of power utility (Score:1)		
15	Energy Legislation	Qualitative	No comprehensive energy sector legislation, no plans to introduce such legislation (Score: 0)		
16	Co-ordination and consultation	Qualitative	Niue actively participates in regional activities, utility member of PPA (Score: 2)		
Energy Planning, Policy Regulation					
17	Energy Planning Status	Qualitative	Strategic Action Plan Developed with National Energy Policy, no long term development plan for power utility (Score:1)		
18	Energy Sector Regulation	Qualitative	Electricity tariff regulation through Cabinet, fuel prices not regulated, and government undertakes price tests for fuel supply (Score:0)		

19	Enabling Framework for Private Sector Participation	Qualitative	Fuel supply contract with private company, no general framework for private sector participation (Score:0)
20	Private Sector Contribution	% kWh	No framework for IPP. No policy statements on private sector participation. Power sector extremely small. Niue participates however, in a GEF/UNEP project that aims at promoting privately owned distributed generation (net metering) (Score:0)
Energy Production and Supply			
21	Fuel Supply Security	Days	84
22	Fuel Supply Diversity	%	0
23	Fuel Supply Chain Arrangements	Score	REEF Bulk Fuels (RBF) in tanktainers on cargo ships currently supplies petroleum fuel to Niue from New Zealand. Niue used to have a small port facility in the main port of Alofi that was supplied by LCT from Fiji. The three tanks were destroyed by cyclone Heta in 2004. As part of the tanktainer supply arrangement a small terminal (Amanau) was built (built by RBF but paid for and owned by the Government) to allow the petroleum products to be transferred from the isotainers into the terminal tanks and the isotainers returned to New Zealand to minimise the isotainer rental costs (Score:0)
Renewable Energy			
24	Renewable energy share	%	2%
25	Renewable Resource Knowledge	Qualitative	Reliable data on solar and wind regime. Empirical data on economic performance of PV systems and solar water heaters from various installations (Score:3)
26	Least Cost RE Development Plan	Score	No least cost development plan in place, solar PV preferred over wind due to land acquisition issues (Score:0)
Energy Conversion			
27	Generation Efficiency	kWh/l	3.42
28	Distribution Losses	%	12
29	Lost Supply (SAIDI)	hours	592
30	Clean Electricity Contribution	%	2%

<table>
<tr><td colspan="7">End-use Energy Consumption</td></tr>
<tr><td rowspan="5">31</td><td rowspan="5">Retail Fuel Prices</td><td rowspan="5">US$/l
US$/kg</td><td></td><td></td><td>Retail</td><td>Wholesale</td></tr>
<tr><td>- Diesel</td><td>US$/l</td><td>1.69</td><td>1.48</td></tr>
<tr><td>- Petrol</td><td>US$/l</td><td>1.69</td><td>1.42</td></tr>
<tr><td>- MPK</td><td>US$/l</td><td>n.a.</td><td>1.67</td></tr>
<tr><td>- LPG</td><td>US$/kg</td><td>4.61</td><td>3.8</td></tr>
<tr><td>32</td><td>Legislative Framework</td><td>Qualitative</td><td colspan="4">No legislative framework regulating energy efficiency, Demand side management mentioned in energy policy (Score:0)</td></tr>
<tr><td>33</td><td>Appliance Labelling</td><td>Qualitative</td><td colspan="4">No compulsory appliance labelling. Imports from New Zealand, most products sold have labels due to requirements in New Zealand (Score:0)</td></tr>
<tr><td>34</td><td>Availability of National Energy Balance</td><td>Qualitative</td><td colspan="4">Data fragmented, reporting irregular (Score:0)</td></tr>
<tr><td colspan="7">Financing, Monitoring & Evaluation</td></tr>
<tr><td>35</td><td>Energy Portfolio</td><td>US$</td><td colspan="4">5,459,433</td></tr>
<tr><td>36</td><td>Availability of Financing Information</td><td>Qualitative</td><td colspan="4">Comprehensive set of information on funding activities available (Score:3)</td></tr>
<tr><td>37</td><td>Monitoring Framework</td><td>Qualitative</td><td colspan="4">Systematic monitoring of EU/EDF 9 activities, reports available. No general monitoring framework for energy sector. (Score:1)</td></tr>
</table>

Country		Republic of Marshall Islands			
No	**Indicator**	**Unit**	**Value/Description**		
Access to Energy					
1	Electrification Rate	%	80		
2	Access to Small Scale Power	%	31		
3	Access to Modern Energy rural	%	62		
4	Access to Modern Energy urban	%	100		
Affordability					
5	Macro-Economic Affordability	% GDP	16.63%		
6	Electricity Tariff	US$/kWh	Commercial	US$/kWh	0.39
			Residential	US$/kWh	0.33
			Lifeline < 500 kWh	US$/kWh	0.31
7	Electricity Lifeline	%	90.29%		
8	Household Energy Expenditure Load	%	n.a.		
Efficiency and Productivity					
9	Energy Intensity	US$/GJ	69		
11	Productive Power Use	%	30%		
Environmental Quality					
12	Carbon Footprint	Gg CO_2	155.56		
13	Diesel Fuel Quality	ppm S	500		
Leadership, governance, coordination					
14	Status of Energy Administration	Qualitative	National Energy Policy and Strategic Action Plan developed 2008, approved by Cabinet in 2009, energy office staffed by one person (Score:1)		
15	Energy Legislation	Qualitative	No comprehensive energy sector legislation, no plans to introduce such legislation (Score: 0)		
16	Co-ordination and consultation	Qualitative	RMI actively participates in regional activities, utility member of PPA (Score: 2)		
Energy Planning, Policy Regulation					
17	Energy Planning Status	Qualitative	Strategic Action Plan Developed with National Energy Policy, no long term development plan for power utility (Score:1)		
18	Energy Sector Regulation	Qualitative	Electricity tariff regulation through Cabinet, tariff adjustments irregular, fuel prices not regulated		

19	Enabling Framework for Private Sector Participation	Qualitative	Marshall Islands Energy (MEC) is sole supplier of electricity including rural solar home systems, No general framework for private sector participation (Score:0)			
20	Private Sector Contribution	% kWh	0			
Energy Production and Supply						
21	Fuel Supply Security	Days	167.8			
22	Fuel Supply Diversity	%	0.05%			
23	Fuel Supply Chain Arrangements	Score	RMI is receiving its petroleum supply from three separate supply routes. MEC import diesel from Korea for use in power generation and for on sale to commercial businesses, marine bunker fuel and retail service stations. About half its diesel demand is for power generation with the balance bunker and commercial sales. Mobil imports product on LCTs from Guam. Pacific International is a more recent entrant to the petroleum market in RMI. Reef Bulk Fuels (RBF) using isotainers delivered on the Reef Shipping cargo vessels is supplying Pacific International. (Score:0)			
Renewable Energy						
24	Renewable energy share	%	0.02%			
25	Renewable Resource Knowledge	Qualitative	Empirical data on physical and economic performance of PV systems no other reliable resource data (Score:1)			
26	Least Cost RE Development Plan	Score	No least cost development plan in place, however, Energy Policy and Strategic Action Plan accompanied by 8 priority projects (Score:0)			
Energy Conversion						
27	Generation Efficiency	kWh/l	4.08			
28	Distribution Losses	%	29%			
29	Lost Supply (SAIDI)	hours	592			
30	Clean Electricity Contribution	%	0.18%			
End-use Energy Consumption						
31	Retail Fuel Prices	US$/l US$/kg			Retail	Wholesale
			- Diesel	US$/l	1.48	0.47
			- Petrol	US$/l	1.39	1.00
			- MPK	US$/l	n.a.	1.00
			- LPG	US$/kg	n.a.	n.a
32	Legislative Framework	Qualitative	No legislative framework regulating energy efficiency. Demand side management mentioned in energy policy (Score:0)			
33	Appliance Labelling	Qualitative	No compulsory appliance labelling (Score:0)			

34	Availability of National Energy Balance	Qualitative	Data fragmented, reporting irregular (Score:0)
Financing, Monitoring & Evaluation			
35	Energy Portfolio	US$	10,741,100
36	Availability of Financing Information	Qualitative	Comprehensive set of information on funding activities available (Score:3)
37	Monitoring Framework	Qualitative	Systematic monitoring of EU/EDF 9 activities, reports available. No general monitoring framework for energy sector. (Score:1)

Country		Samoa			
No	**Indicator**	**Unit**	**Value/Description**		
Access to Energy					
1	Electrification Rate	%	99%		
2	Access to Small Scale Power	%	1%		
3	Access to Modern Energy rural	%	100		
4	Access to Modern Energy urban	%	100		
Affordability					
5	Macro-Economic Affordability	% GDP	12.20%		
6	Electricity Tariff	US$/kWh	Lifeline	US$/kWh	0.476
			>50 kWh	US$/kWh	0.524
7	Electricity Lifeline	%	95.28%		
8	Household Energy Expenditure Load	%	n.a.		
Efficiency and Productivity					
9	Energy Intensity	US$/GJ	201		
11	Productive Power Use	%	48.02%		
Environmental Quality					
12	Carbon Footprint	Gg CO_2	175.40		
13	Diesel Fuel Quality	ppm S	500		
Leadership, governance, coordination					
14	Status of Energy Administration	Qualitative	National Energy Policy and Strategic Action Plan developed 2006, approved by Cabinet in 2007 with four focal areas (Planning/Management, Renewable Energies, Electricity and Petroleum) and contains a renewable energy target of 20% by 2020. Energy unit part of Finance Ministry, staffed by one senior officer person (Score:2)		
15	Energy Legislation	Qualitative	Electricity Act of 1980 and amendment of 2001 mandate power utility to generate and distribute electricity. No comprehensive energy sector legislation, no plans to introduce such legislation (Score: 0)		
16	Co-ordination and consultation	Qualitative	Samoa actively participates in regional activities, hosts regional organization SPREP, utility member of PPA (Score: 2)		

Energy Planning, Policy Regulation			
17	Energy Planning Status	Qualitative	Strategic Action Plan Developed with National Energy Policy, Long term development plan for power utility developed under ADB loan (Score:2)
18	Energy Sector Regulation	Qualitative	Electricity tariff regulation through Cabinet, fuel prices regulated by Ministry of Finance pricing template, The Price Control Board which operates under the Ministry of Commerce, Industry and Labour (MCIL), sets LPG ceiling price range (Score:2)
19	Enabling Framework for Private Sector Participation	Qualitative	EPC is sole supplier of electricity, No general framework for private sector participation (Score:0)
20	Private Sector Contribution	% kWh	0
Energy Production and Supply			
21	Fuel Supply Security	Days	n.a.
22	Fuel Supply Diversity	%	0.01%
23	Fuel Supply Chain Arrangements	Score	Samoa's petroleum imports are solely supplied by Exxon Mobil and distributed by Petroleum Products Supplies (PPS). In 1998 the Government of Samoa took control over supply and pricing arrangements by owning all the petroleum storage facilities. Procurement by competitive tendering every 5 years. Arrangement allows the control of domestic petroleum prices to be reflective of international market prices. LPG imports and by BOC Gas and ORIGIN Gas which are international firms with part local ownership.
Renewable Energy			
24	Renewable energy share	%	5.6%
25	Renewable Resource Knowledge	Qualitative	Reliable wind and solar and hydro data available, some empirical data on feasibility of coconut oil as diesel substitute, economic analysis of biofuel option available (Score:2)
26	Least Cost RE Development Plan	Score	Elements of least cost development plan available, plan not yet fully developed option (Score:0)
Energy Conversion			
27	Generation Efficiency	kWh/l	3.80
28	Distribution Losses	%	16.02%
29	Lost Supply (SAIDI)	hours	592
30	Clean Electricity Contribution	%	36%

End-use Energy Consumption						
31	Retail Fuel Prices	US$/l US$/kg			Retail	Wholesale
			- Diesel	US$/l	1.12	0.90
			- Petrol	US$/l	1.12	0.89
			- MPK	US$/l	1.03	0.82
			- LPG	US$/kg	n.a.	n.a.
32	Legislative Framework	Qualitative	No legislative framework regulating energy efficiency. Demand side management mentioned in energy policy (Score:0)			
33	Appliance Labelling	Qualitative	No compulsory appliance labelling. Samoa recently participated in sub-regional planning study on labelling. Imports mostly from New Zealand and Australia, most products sold have labels due to requirements in these countries (Score:1)			
34	Availability of National Energy Balance	Qualitative	Energy Balance available and considered as important planning tool for energy administration (Score:1)			
Financing, Monitoring & Evaluation						
35	Energy Portfolio	US$	104,668,600			
36	Availability of Financing Information	Qualitative	Comprehensive set of information on funding activities available (Score:3)			
37	Monitoring Framework	Qualitative	Comprehensive monitoring and evaluation framework in place for ADB supported power sector expansion project. (Score:1)			

Country		Solomon Islands			
No	**Indicator**	**Unit**	**Value/Description**		
Access to Energy					
1	Electrification Rate	%	7.6%		
2	Access to Small Scale Power	%	1%		
3	Access to Modern Energy rural	%	87.9%		
4	Access to Modern Energy urban	%	100%		
Affordability					
5	Macro-Economic Affordability	% GDP	15.05%		
6	Electricity Tariff	US$/kWh	Base Component	US$/kWh	0.48
			Fuel Component	US$/kWh	0.09
			Total Tariff	US$/kWh	0.58
7	Electricity Lifeline	%	n.a.		
8	Household Energy Expenditure Load	%	9.9%		
Efficiency and Productivity					
9	Energy Intensity	US$/GJ	134		
11	Productive Power Use	%	45.60%		
Environmental Quality					
12	Carbon Footprint	Gg CO_2	346		
13	Diesel Fuel Quality	ppm S	500		
Leadership, governance, coordination					
14	Status of Energy Administration	Qualitative	National Energy Policy and Strategic Action Plan developed 2006, approved by Cabinet in 2007. Energy Department staffed with 5 professionals part of Ministry of Mines, Energy and Rural Electrification (MMERE).(Score:2)		
15	Energy Legislation	Qualitative	Comprehensive review of legislative framework performed in 2006 including Electricity Act, Foreign Investment Act, Petroleum Act, Price Control Act, Consumer Protection Act, Land and Titles Act, River Waters Act, Provincial Government Act). Modernization of legislation outlined but not implemented. (Score: 0)		
16	Co-ordination and consultation	Qualitative	Solomon Island actively participates in regional activities, utility member of PPA (Score: 2)		

Energy Planning, Policy Regulation			
17	Energy Planning Status	Qualitative	Strategic Action Plan Developed with National Energy Policy, Elements of long term development plan for power utility under consideration in the framework of World Bank and ADB supported power sector projects (Score:2)
18	Energy Sector Regulation	Qualitative	Electricity tariff regulation Ministry of Mines, Energy and Rural Electrification (MMERE) based on tariff study of 2007, fuel prices regulated by pricing template under the Price Control Act. Assistance in fuel price verification through SPC. (Score:2)
19	Enabling Framework for Private Sector Participation	Qualitative	SIEA is sole supplier of electricity, No general framework for private sector participation. Small PPAs for two small Honiara producers, Several IPP proposals in the past, currently a major hydro project under development intended as IPP (Score:1)
20	Private Sector Contribution	% kWh	0
Energy Production and Supply			
21	Fuel Supply Security	Days	n.a.
22	Fuel Supply Diversity	%	0.05%
23	Fuel Supply Chain Arrangements	Qualitative	Solomon Islands are supplied fuel by two companies Markwarth and South Pacific Oil Limited (SPOL) that purchase fuel from Exxon Asia Pacific in Singapore. Both companies have separate supply arrangement with Exxon Mobil Asia Pacific. SPOL purchased the assets of Shell when they sold out of the Solomon Islands (and other Pacific Islands) in 2006. Markwarth purchased the assets of Exxon Mobil when they sold out of Solomon Islands about 10 years ago. Markwarth has the dominant position supplying just over 60% of the market.
Renewable Energy			
24	Renewable energy share	%	0.04%
25	Renewable Resource Knowledge	Qualitative	Indicative biomass, solar and hydro data available, some empirical data on feasibility of coconut oil as diesel substitute, hydro studies under way, economic analysis of biofuel option available (Score:2)
26	Least Cost RE Development Plan	Score	Elements of least cost development plan available, plan not yet fully developed option (Score:0)
Energy Conversion			
27	Generation Efficiency	kWh/l	3.85
28	Distribution Losses	%	28%
29	Lost Supply (SAIDI)	hours	592

30	Clean Electricity Contribution	%	0.64%			
End-use Energy Consumption						
31	Retail Fuel Prices	US$/l US$/kg			Retail	Wholesale
			- Diesel	US$/l	0.98	0.77
			- Petrol	US$/l	0.97	0.75
			- MPK	US$/l	0.88	0.73
			- LPG	US$/kg	n.a.	n.a.
32	Legislative Framework	Qualitative	No legislative framework regulating energy efficiency. Demand side management mentioned in energy policy (Score:0)			
33	Appliance Labelling	Qualitative	No compulsory appliance labelling. Samoa recently participated in sub-regional planning study on labelling. Imports mostly from New Zealand and Australia, most products sold have labels due to requirements in these countries (Score:1)			
34	Availability of National Energy Balance	Qualitative	Energy Balance available and considered as important planning tool for energy administration (Score:1)			
Financing, Monitoring & Evaluation						
35	Energy Portfolio	US$	80,423,600			
36	Availability of Financing Information	Qualitative	Comprehensive set of information on funding activities available (Score:3)			
37	Monitoring Framework	Qualitative	No comprehensive monitoring and evaluation framework in place (Score:0)			

Country		Tonga			
No	**Indicator**	**Unit**	**Value/Description**		
Access to Energy					
1	Electrification Rate	%	78.1%		
2	Access to Small Scale Power	%	7.9%		
3	Access to Modern Energy rural	%	95%		
4	Access to Modern Energy urban	%	100%		
Affordability					
5	Macro-Economic Affordability	% GDP	10.86%		
6	Electricity Tariff	US$/kWh	Tongatapu	US$/kWh	0.362
			Vava'u	US$/kWh	0.372
			Ha'apai, Eua	US$/kWh	0.337
7	Electricity Lifeline	%	n.a.		
8	Household Energy Expenditure Load	%	11%		
Efficiency and Productivity					
9	Energy Intensity	US$/GJ	179		
11	Productive Power Use	%	n.a.		
Environmental Quality					
12	Carbon Footprint	Gg CO_2	122		
13	Diesel Fuel Quality	ppm S	5000		
Leadership, governance, coordination					
14	Status of Energy Administration	Qualitative	Energy Planning Unit attached to the Ministry of Lands, Survey and Natural Resources. Staffed with 4 professionals. Mostly occupied with off-grid electrification through solar systems. Agreement with the Renewable Energy and Energy Efficiency Partnership (REEEP), aiming to strengthen the regulatory capacity of the Unit and to further the implementation of the Renewable Energy Bill and draft an energy efficiency policy. Co-ordination of Tonga Energy Road Map currently through a team attached to Prime Ministers Office, TERM team actively maintains communication and information exchange through dedicated web site (Score:2)		

15	Energy Legislation	Qualitative	Electricity Act 2007 provides the governance framework for the electricity sector in Tonga, outlines the role of the Electricity Commission in regulating the generation and selling of electricity, and establishes the role of the concession contract/agreement in delivering electricity. Act provides the authority for the Ministry of Finance (MOF) to be a party of the concession contract between the Commission and the Concessionaire. In 2008, a Renewable Energy Bill was sponsored by the Ministry of Lands to promote the utilization of renewable energy in Tonga. The Bill which only covers off-grid renewable energy applications such as solar home systems deployed in the outer islands has not been signed into law to date. (Score: 2)
16	Co-ordination and consultation	Qualitative	Tonga actively participates in regional activities, utility member of PPA (Score: 2)
Energy Planning, Policy Regulation			
17	Energy Planning Status	Qualitative	Tonga with assistance from World Bank has developed the Tonga Energy Road Map (TERM) that essentially is an integrated strategic action plan for the entire energy sector. It covers fuel, power, on and off grid renewable energy as well as energy conservation. (Score:3)
18	Energy Sector Regulation	Qualitative	Electricity tariff regulation through independent regulator (Electricity Commission) Concession agreement between Ministry of Finance and Tonga Power Limited (TPL) outlines utility's operations in comprehensive detail, including how tariffs are calculated. Tonga Competent Authority (TCA) regulates fuel prices for diesel petrol and household kerosene by pricing template with support from SPC. Jetfuel not regulated. (Score:3)
19	Enabling Framework for Private Sector Participation	Qualitative	No standard power purchase agreement in place. Regulator (Electricity Commission) reviews draft PPA between IPP and TPL, to ensure: The technical viability of the generation system; the financial viability of the IPP (financial projections, bank references, evidence of "paid-up equity") the qualification and expertise of IPP management and key staff; and the reasonableness of the price proposed to be charged. The price would be determined with assistance from the Commission's Strategic Advisors and Regulatory Auditors. (Score:2)
20	Private Sector Contribution	% kWh	0
Energy Production and Supply			
21	Fuel Supply Security	Days	34.31

22	Fuel Supply Diversity	%	0%			
23	Fuel Supply Chain Arrangements	Qualitative	Two companies, Pacific Energy and Total supply Tonga. Pacific Energy dominates the market with approximately 85% market share. Recently a local company (Uliti) has begun supplying to the Ha'apai group of islands. Total entered the market in 2006 when they purchased Shell's Pacific Islands business. The largest single consumer is the Tonga Power that uses diesel for electricity generation. Jet fuel volumes are not regulated. Products include petrol, diesel and kerosene. Tonga is supplied through import on international tankers (MR or medium range tankers) to Fiji and then Local Coastal Tanker (LCT) to Tonga. The facilities in Tonga are not currently suitable for direct import on MR vessels.			
Renewable Energy						
24	Renewable energy share	%	0.0%			
25	Renewable Resource Knowledge	Qualitative	Indicative data on wind, solar, landfill gas and biomass compiled in the framework of the Tonga Energy Road Map. Investment grade data not yet available (exept for solar PV) some data on feasibility of coconut oil as diesel substitute, economic analysis of renewable options available (Score:2)			
26	Least Cost RE Development Plan	Score	TERM aims to supply 50% of electricity from renewable sources by 2012 and established least cost development plan for whole sector, elements of least cost development plan for renewable energy available from TERM preparation (Score:1)			
Energy Conversion						
27	Generation Efficiency	kWh/l	3.85			
28	Distribution Losses	%	28%			
29	Lost Supply (SAIDI)	hours	592			
30	Clean Electricity Contribution	%	0.64%			
End-use Energy Consumption						
31	Retail Fuel Prices	US$/l US$/kg			Retail	Wholesale
			- Diesel	US$/l	0.98	0.77
			- Petrol	US$/l	0.97	0.75
			- MPK	US$/l	0.88	0.73
			- LPG	US$/kg	n.a.	n.a.
32	Legislative Framework	Qualitative	No legislative framework for energy efficiency yet. REEEP support for the the development of an Energy Efficiency Policy that is expected to transform into an Energy Efficiency Bill and a regulatory framework for energy efficiency in Tonga. (Score:0)			

33	Appliance Labelling	Qualitative	No compulsory appliance labelling. Tonga recently participated in sub-regional planning study on labelling. Imports mostly from New Zealand and Australia, most products sold have labels due to requirements in these countries (Score:1)
34	Availability of National Energy Balance	Qualitative	No energy balance available, construction of energy balance requires demand site surveys (Score:0)
Financing, Monitoring & Evaluation			
35	Energy Portfolio	US$	18,501,100
36	Availability of Financing Information	Qualitative	Comprehensive set of information on funding activities available (Score:3)
37	Monitoring Framework	Qualitative	TERM includes comprehensive monitoring and evaluation framework (Score:1)

Country		Tuvalu				
No	**Indicator**	**Unit**	**Value/Description**			
Access to Energy						
1	Electrification Rate	%	100%			
2	Access to Small Scale Power	%	n.a.			
3	Access to Modern Energy rural	%	100%			
4	Access to Modern Energy urban	%	100%			
Affordability						
5	Macro-Economic Affordability	% GDP	20.71%			
6	Electricity Tariff	US$/kWh	Location		Fogafale	Outstations
			Lifeline <50 kWh	US$/kWh	0.238	0.230
			51-100 kWh	US$/kWh	0.309	0.301
			>100 kWh	US$/kWh	0.444	0.444
			Commercial	US$/kWh	0.444	0.444
7	Electricity Lifeline	%	66.3%			
8	Household Energy Expenditure Load	%	5.79%			
Efficiency and Productivity						
9	Energy Intensity	US$/GJ	161			
11	Productive Power Use	%	31%			
Environmental Quality						
12	Carbon Footprint	Gg CO_2	11.83			
13	Diesel Fuel Quality	ppm S	5000			
Leadership, governance, coordination						
14	Status of Energy Administration	Qualitative	A comprehensive National Energy Policy Framework has been established by the Ministry of Works and Energy (approved by Cabinet in 2006) covering the next 15 years. Strategies aimed to ensure “adequate, secure and cost effective supply”, “efficient utilisation of energy” and “minimisation of negative impacts of energy production, conversion, utilisation and consumption upon the environment. Rudimentary energy administration staffed by one professional. (Score:1)			

15	Energy Legislation	Qualitative	No comprehensive energy sector legislation. Tuvalu Electricity Corporation is an incorporated entity under the Tuvalu Electricity Corporation Act. Under the Act TEC has the "sole and exclusive right to supply electricity for sale within any supply area" Where TEC is unable to provide a reasonable supply of electricity (Section 6.2 of the Act) arrangements may be made for a licence to supply to be issued to a third party. Fuel prices not regulated. (Score:1)
16	Co-ordination and consultation	Qualitative	Tuvalu actively participates in regional activities, utility member of PPA (Score: 2)
Energy Planning, Policy Regulation			
17	Energy Planning Status	Qualitative	Energy policy of 2006 has an associated strategic action plan but no government funding for implementation No long term power sector development plan (Score:1)
18	Energy Sector Regulation	Qualitative	Electricity tariff regulation by Cabinet, which approves (or rejects) tariff adjustment proposals made by TEC. Independent tariff study in 2007 formed basis for subsequent tariff adjustments (Score: 1).
19	Enabling Framework for Private Sector Participation	Qualitative	No framework for IPP. No policy statements on private sector participation. Power sector extremely small. Tuvalu participates however, in a GEF/UNEP project that aims at promoting privately owned distributed generation (net metering) (Score: 0)
20	Private Sector Contribution	% kWh	0
Energy Production and Supply			
21	Fuel Supply Security	Days	48.71
22	Fuel Supply Diversity	%	0%
23	Fuel Supply Chain Arrangements	Qualitative	Pacific Energy acquired BP's Tuvalu assets in 2010 and is the dominant supplier and key player in procurement. PE have storage facility (300,000 litres) and a terminal in Funafuti. Government has no control over supply chain. There is some room for bulk procurement, as government does own 2 diesel tanks (300,000 litres) funded by Japan at Tuvalu Electricity Corporation (TEC). Pacific energy supplies Tuvalu fuel on a Local Coastal Tanker via Fiji. Jet fuel is imported on Isotainer via New Zealand (Score 1)
Renewable Energy			
24	Renewable energy share	%	0.2%

25	Renewable Resource Knowledge	Qualitative	Indicative data on wind for (Funafuti) and solar available, some data on feasibility of biogas from piggeries and coconut oil as diesel substitute, empirical data of performance of solar systems available from two 40 kW installations in Funafuti and Vaitupu, economic analysis of grid connected PV available (Score:1)
26	Least Cost RE Development Plan	Score	No least cost development plan for renewable energies, some elements in place (Score:0)
Energy Conversion			
27	Generation Efficiency	kWh/l	3.50
28	Distribution Losses	%	16.66%
29	Lost Supply (SAIDI)	hours	592
30	Clean Electricity Contribution	%	1.4%
End-use Energy Consumption			
31	Retail Fuel Prices	US$/l US$/kg	
32	Legislative Framework	Qualitative	No legislative framework regulating energy efficiency. Demand side management mentioned in energy policy (Score:0)
33	Appliance Labelling	Qualitative	No compulsory appliance labelling. Imports mostly from New Zealand and Australia, some products sold have labels due to requirements in these countries (Score:0)
34	Availability of National Energy Balance	Qualitative	Energy Balance not available (Score:0)
Financing, Monitoring & Evaluation			
35	Energy Portfolio	US$	5,548,183
36	Availability of Financing Information	Qualitative	Comprehensive set of information on funding activities available (Score:3)
37	Monitoring Framework	Qualitative	No framework for monitoring and evaluation framework (Score:0)