

**Utilities
Regulatory
Authority**

Comparative Report

Pacific Region Electricity Bills

July 2014



Letter from the CEO

In September 2013, the URA Staff prepared and released its first “Electricity Bills Comparison Report” for the Pacific region. It is a challenging but useful exercise to gather, compile and organize current energy pricing data so as to achieve meaningful comparisons of electricity prices in the Pacific island countries. Further the information could be used to observe trends, major factors influencing electricity prices, etc... Our first report was generally well-received with positive feedback from Government officials, development agencies and utilities encouraging us to make this report a periodic feature.

Based on comments received we have attempted some changes. This time the report is designed from the consumer standpoint, computing the total bill the consumer pays, including the costs related to energy use, fixed charges and all applicable taxes. In contrast, most studies are performed from the utility perspective, capturing average cost of generation and variable costs but not reflecting the total price paid by the customers. In this second edition we include an additional chapter measuring the tariffs evolution over time. The aim is to track the impact of regulatory programs including subsidy regime, energy infrastructure development, renewables contribution and efficiency efforts across region, and measure their combined impact on ultimate consumer bills. We have also flagged the component of diesel in the generation mix for each utility, to provide some reference point for their ranking in the cost index.

To achieve current bill comparisons we have used the spot exchange rates in June 2014, while the trend in rankings is only meaningful by holding exchange rates constant at the last report levels.

Other factors significantly impacting prices, such as customer mix, local labour rates, distance from urban centres etc are identified but not quantified in the bill comparisons

Other relevant factors such as the quality and availability of service are not within the scope of the study. We understand that prices are a function of the quality and reliability of service demanded in the monopoly electricity market and particularly in this region where lack of accessibility is a primary concern. Also, embedded in price comparisons are the subsidies to low income, small users, imposed through specific government policies. These are often achieved thru cross-subsidies, and vary for each jurisdiction. This implies further move away from cost based tariff comparisons.

I hope that this report is of some value to anyone interested in the electricity pricing in the Pacific Island region, and take this opportunity to thank all the professionals involved, the regulatory agencies and electricity companies who assisted our URA team in gathering the data.

I welcome any suggestions to improve on this analysis and comparison Report

Sincerely,

Hasso Bhatia, PhD

CEO

Utility Regulatory Authority of Vanuatu

Contents

Contents	3
1. Introduction.....	4
1.1 Purpose of this paper.....	4
1.2 Structure of this paper	4
1.3 Useful links	4
2. Methodology.....	5
2.1 Scope.....	5
2.2 “Typical” customer bills	5
2.3 Foreign currencies exchange rate	6
2.4 Taxes and government subsidies.....	7
3. Electricity price comparison and analysis	8
3.1 Small domestic consumers	8
3.2 Domestic consumer category	9
3.3 Business consumer category	10
3.4 Factors that impact electricity costs.....	12
3.4.1 The generation mix.....	12
3.4.2 Countries characteristics	13
3.4.3 Other key determinants.....	13
4. Electricity price evolution over time.....	15
4.1 Small domestic consumers price evolution	15
4.2 Domestic consumers price evolution.....	16
4.3 Business consumers price evolution.....	17
4.4 Factors that impact electricity price over time.....	18
5. Conclusions	19

List of tables and Figures

Figure 1: Comparison of bills paid by "Small domestic consumers" across the Pacific region.....	8
Figure 2: Vanuatu vs. Pacific avg. – Bill breakdown comparison for “Small domestic consumers”	8
Figure 3: Comparison of bills paid by "Domestic consumer" across the Pacific region.....	9
Figure 4: Vanuatu vs. Pacific avg. – Bill breakdown comparison for “Domestic consumers”.....	10
Figure 5: Comparison of bills paid by "Business consumers" across the Pacific region.....	11
Figure 6: Vanuatu vs. Pacific avg. – Bill breakdown comparison for “Business consumers”.....	11

1. Introduction

1.1 Purpose of this paper

The aim of this paper is to provide a comparison of electricity prices paid by customers in Vanuatu with different countries across the Pacific region. Data is based on publicly available information on electricity rates for different utilities, and includes all applicable taxes and fees.

This report uses a methodology that compares the total cost of electricity for certain given levels of consumption and by major customer categories. This avoids differences in average levels of consumption and customer mix when comparing average electricity prices across countries.

Quality of service, availability, and reliability of service also vary widely between electricity suppliers across the Pacific. These factors have not been considered in this report.

1.2 Structure of this paper

This paper is structured into the following sections:

- Chapter 2, **'Methodology'**, describes the approach used to compare the cost of electricity services across the Pacific region.
- Chapter 3, **'Electricity price comparison and analysis'**, provides a comparison of electricity bills across the Pacific region and gives summary conclusions.
- Chapter 4, **'Electricity price evolution'**, shows how the tariffs have changed and trends in energy prices across the region since Sept 2013, time of our last release.

1.3 Useful links

Readers of this report may find it useful to consult the following sources:

- Fiji Electricity Authority: www.fea.com.fj
- Palau Public Utilities Corporation: <http://www.ppuc.com>
- American Samoa Power Authority: <http://www.aspower.com>
- PNG Power Ltd.: <http://www.pngpower.com.pg>
- EEC New-Caledonia: <http://www.eec.nc/>
- Tuvalu Electricity Corporation: <http://www.tectuvalu.tv>
- Republic of Kiribati Island report series: www.climate.gov.ki
- Rep – 5 : <http://www.rep5.eu>
- Marshalls Energy Company: <http://mecrmi.net>
- Cook Islands energy provider: www.teaponga.com
- Tonga Power Ltd.: <http://www.tongapower.to>
- FSM-Chuuck Public Utilities Corp.: <http://www.cpuc.fm>
- Guam Power Authority: <http://guampowerauthority.com>
- Vanuatu: www.ura.gov.vu

2. Methodology

This section describes the methodology used to compare electricity costs in this report. Each utility included in this survey charges different prices for different categories of customer, and for different levels of consumption. Typical pricing structures include a mixture of monthly fixed charges, and per-kWh charges, as well as any applicable taxes and other fees. This report is based on a comparison of bills, using three typical customer consumption levels.

This report only compares these “typical” bills across different utilities in the Pacific Region: there is no detailed examination of factors such as quality, availability, or reliability of service. These factors vary widely across different electricity suppliers, and should be taken into account when considering different price levels. Another factor that influences the cost of electricity is the method of generation. Each utility has a different mix of generation sources, which heavily influences the cost of electricity. Generation methods are not compared in this report.

2.1 Scope

Information from utilities in 24 different islands and states in the Pacific region has been collected and reviewed. Tariff information published by regulating agencies or the utilities was used to calculate customer bills based on typical consumption levels for three different types of customer. All applicable taxes and fees were included, representing the total price of electricity to customers in each country.

2.2 “Typical” customer bills

In order to compare between electricity suppliers using different customer categories and tariff structures, “typical” bills for three customer categories have been estimated. These represent three main customer categories in Vanuatu:

- “Small domestic customers” are households that only use small amounts of electricity. There are over 7,000 customers of this type in Vanuatu, with an average consumption of approximately 60kWh per month;
- “Domestic customers” are non-commercial customers that have moderate electricity consumption. There are approximately 5,000 customers of this type in Vanuatu, with an average consumption of approximately 300 kWh per month;
- “Business customers” are commercial and industrial customers. There are approximately 1,000 customers of this type in Vanuatu. Consumption levels vary widely, so for this analysis we have assumed a “typical” consumption level to be 10MWh (10,000kWh) per month, on a 100kVA connection. As certain countries monitor the actual demand and charge the consumers based on their monthly peak load instead of subscribed capacity, to make comparable analysis we assumed that the consumer will use a constant load of 100kVA and be charged accordingly. For customers of this size, the connection could be either low voltage or high voltage. The costs of both options are shown for Vanuatu although customers would be HV, but connections in other countries are assumed to be low voltage three-phase connection in a 190v to 415v voltage range depending on the country. High voltage tariffs were excluded from the scope of our study as they are structured in a more complex way, with different rates for day/night consumption, making comparisons more difficult.

The characteristics of each “typical” customer category used in this report are summarized in the table below:

Table 1: Typical customer bill definitions

Small domestic customer		
Consumption per month	60	kWh
Subscribed capacity	1.1	kVA
Other low voltage		
Consumption per month	300	kWh
Subscribed capacity	3.3	kVA
Business customer		
Consumption per month	10,000	kWh
Subscribed capacity	100	kVA
Power factor conversion		
Cos phi	0.85	

As some energy suppliers use kW instead of kVA to calculate the fixed charge billed for subscribed capacity, we used an average power factor rate of $|\cos \varphi|=0.85$ to convert kW into kVA.

Whenever there was an option allowing customers to choose between different offers and rates, we picked the cheapest comparable option according to our selection criteria. Note that none of these customer categories have access to different day and night rates, which simplified the comparison by avoiding the need to estimate the spread of load across day/night hours.

2.3 Foreign currencies exchange rate

Among the electricity suppliers included in this comparison, there are sixteen nations and ten different currencies. The fluctuation of currencies varies the results of the tariff comparison. Since this exercise is about comparing the cost of electricity at a given point in time, and across time, a spot exchange rate has been used from a single source to convert all foreign currencies into Vatu, at the date of finalization of this report on July 21st 2014. In order to avoid currencies fluctuation impact and make our 2014 analysis comparable to the previous release, billing amounts collected from the previous release have been adjusted based on current exchange rates. Countries’ respective rankings were kept identical though.

Table 2: Exchange rates as of 10th September 2013

Country	Exchange rate 1Fx = VUV	Exchange rate 1Fx = USD
Fiji	50.44	0.540
Palau	93.40	1.000
American Samoa	93.40	1.000
Western Samoa	40.16	0.430
PNG	38.29	0.410
New-Caledonia	1.03	0.011
Kiribati	87.80	0.940
Tuvalu	87.80	0.940
Niue	81.26	0.870
Nauru	87.80	0.940
Marshall Islands	93.40	1.000
Solomon Islands	13.08	0.140
Tonga	50.44	0.540
Cook Islands	81.26	0.870
FSM - Chuck	93.40	1.000
FSM - Kosrae	93.40	1.000
FSM - Pohnpei	93.40	1.000
FSM - Yap Island	93.40	1.000
FSM - Falalop	93.40	1.000
Saipan	93.40	1.000
Saipan	93.40	1.000
Guam	93.40	0.011
Tahiti	1.03	0.010
Vanuatu UNELCO	1.00	0.010
Vanuatu VUI	1.00	0.010

2.4 Taxes and government subsidies

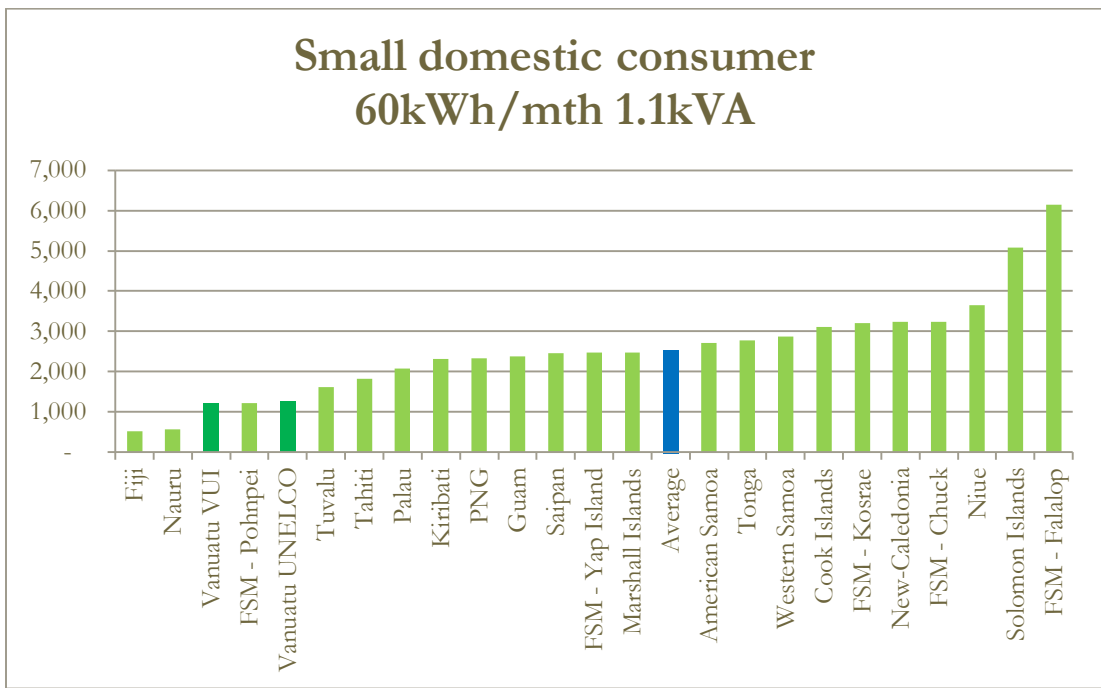
Taxes and government subsidies on the price of electricity are factors that electricity suppliers have no control over other than to include them on customer bills. In order to compare electricity costs from a customer standpoint, all applicable taxes, fees and charges included on an electricity bill are included in our analysis.

3. Electricity price comparison and analysis

3.1 Small domestic consumers

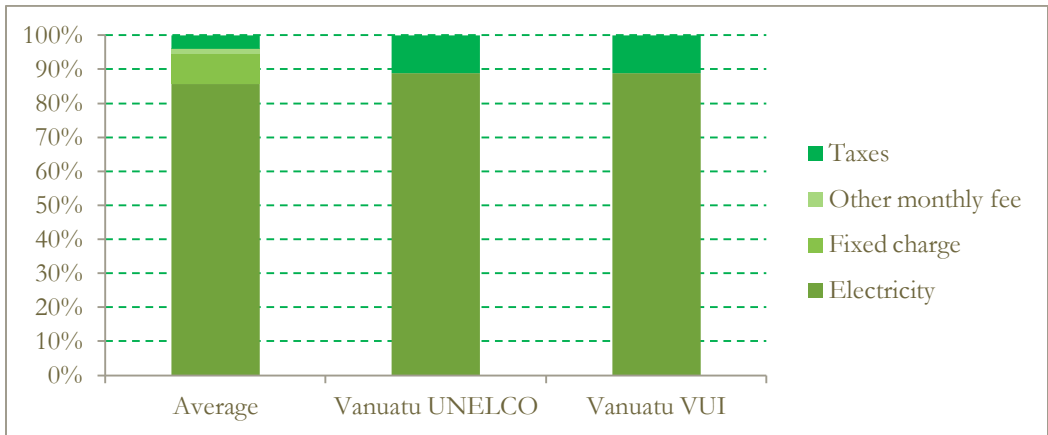
The following chart shows the total bill for monthly consumption of 60kWh on a 5A connection for the sample of 24 electricity companies across the Pacific region.

Figure 1: Comparison of bills paid by "Small domestic consumers" across the Pacific region



The electricity costs for the “small domestic customer” category in Vanuatu are among the cheapest in the Pacific region, with VUI and UNELCO ranking respectively 3rd and 5th cheapest out of the 24 utilities in the sample. The typical bill paid for these customers in Vanuatu is VUV 1,207 for VUI customers, and VUV 1,253 for UNELCO customers, based on May 2014 prices. This compares to an average bill of VUV 2,533 for the Pacific area. VUI is 53% below the Pacific average, and UNELCO is 52% below the Pacific average.

Figure 2: Vanuatu vs. Pacific avg. – Bill breakdown comparison for “Small domestic consumers”



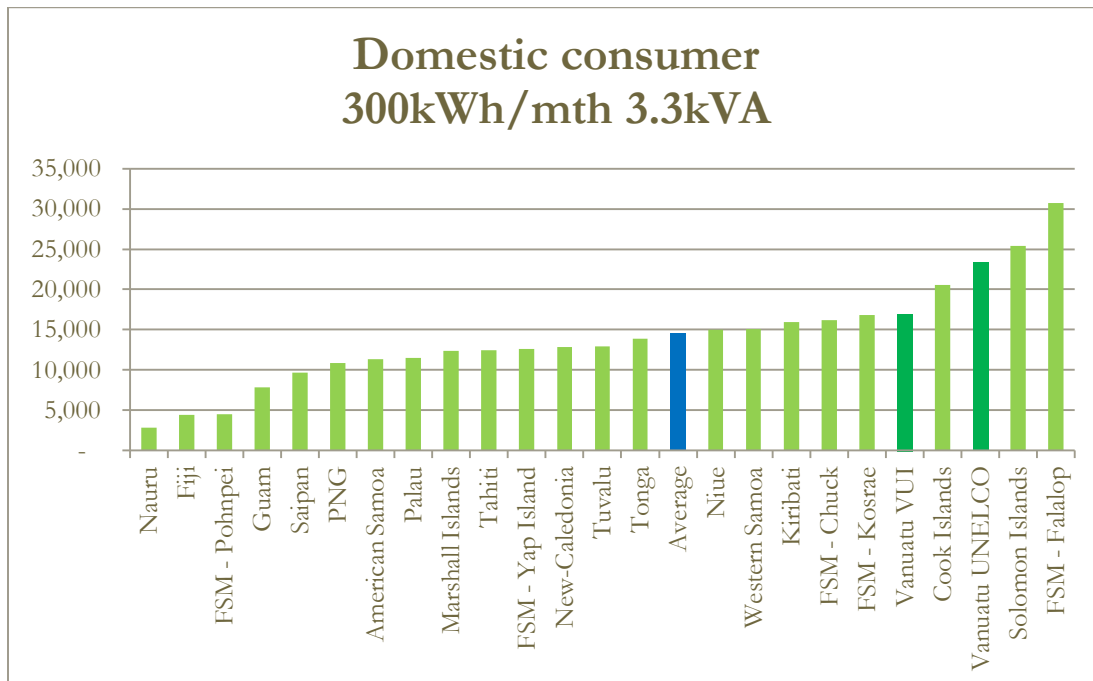
The comparison between Vanuatu and the Pacific area shows that a higher proportion of the electricity bill is made up of Government taxes in Vanuatu. This consists of 12.5% VAT charged on all electricity bills, compared to a Pacific average of 4% tax.

There are no fixed charges for this particular consumer category in Vanuatu, compared with of 8.7% fixed charges and other fees on average across the Pacific.

3.2 Domestic consumer category

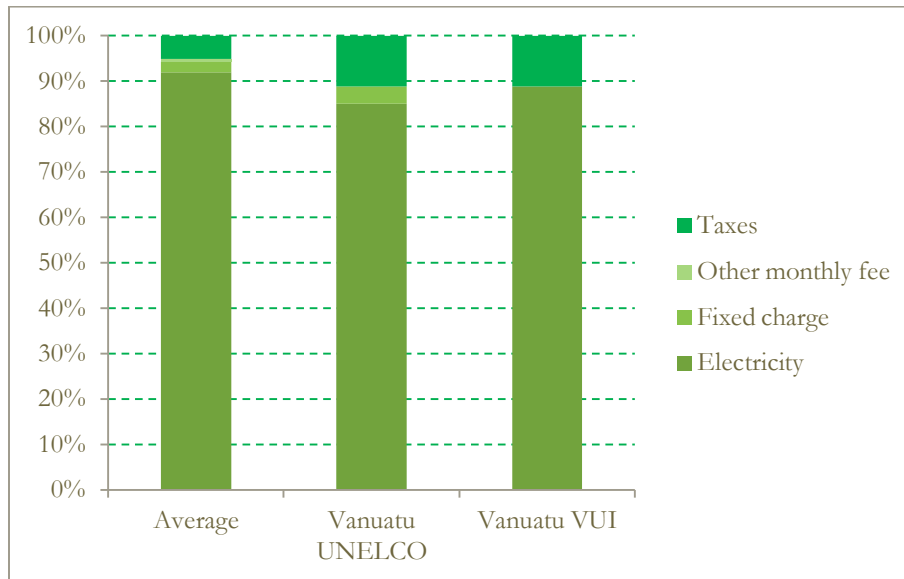
The following chart shows the total bill for monthly consumption of 300kWh on a 15A connection for the sample of 24 electricity companies across the Pacific region.

Figure 3: Comparison of bills paid by "Domestic consumer" across the Pacific region



The electricity costs for the “Domestic consumer” category in Vanuatu are among the most expensive in the Pacific region, with UNELCO and VUI ranking respectively 3rd and 5th most expensive out of the 24 utilities in the sample. The typical bill paid for these customers in Vanuatu is VUV 23,319 for UNELCO customers, and VUV 16,998 for VUI customers, based on May 2014 prices. This compares to an average bill of VUV 14,494 for the Pacific area. UNELCO is 63% above the Pacific average, and VUI is 19% above the Pacific average.

Figure 4: Vanuatu vs. Pacific avg. – Bill breakdown comparison for “Domestic consumers”



The comparison between Vanuatu and the Pacific area shows that a higher proportion of the electricity bill is made up of Government taxes. This consists of 12.5% VAT charged on all electricity bills, compared to a Pacific average of 5% tax.

In Vanuatu, there are fixed charges for UNELCO customers of 3.9% of the total bill, while there are no fixed charges for VUI customers. This is compared to an average fixed charge of 2.4% across the Pacific region.

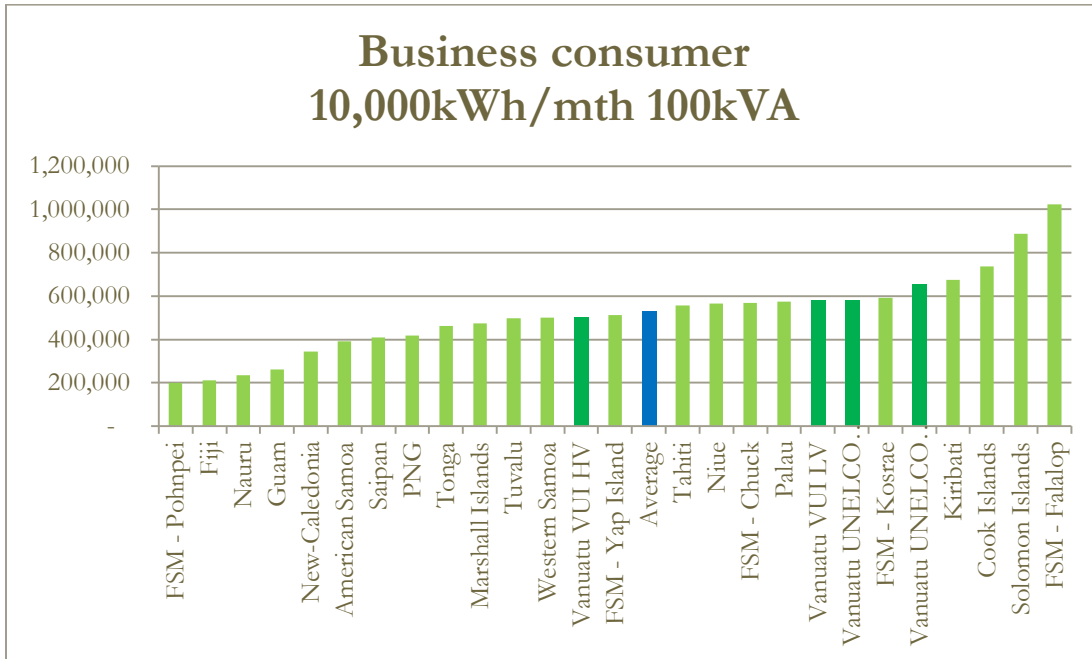
3.3 Business consumer category

The following chart shows the total bill for a commercial customer with monthly consumption of 10,000kWh on a 100kVA connection for the sample of electricity companies across the Pacific region.

Businesses with this level of consumption have an option to have a high voltage connection. For the purposes of this comparison, it is assumed that the customers have a low voltage connection. There is a difference in the tariffs for this type of customers in Vanuatu: there is a specific low voltage business tariff for UNELCO, which includes a fixed monthly charge whereas VUI business customers requesting low voltage connection are charged the same progressive tariff as domestic customers with no fixed charge.

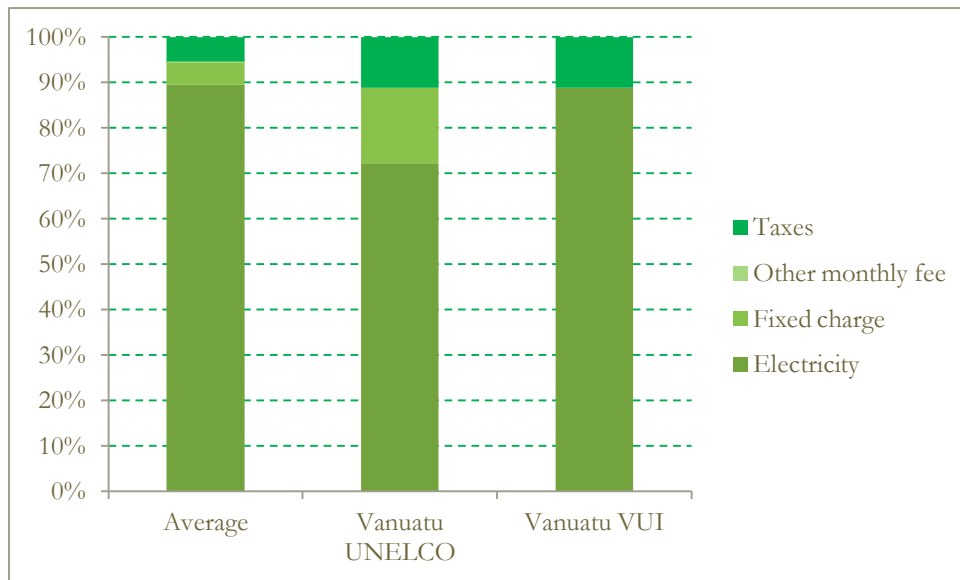
The bills for high voltage customers with the same connection and consumption are also provided for UNELCO and VUI as customers with similar consumption patterns would be on HV connection.

Figure 5: Comparison of bills paid by "Business consumers" across the Pacific region



The electricity costs for the “business customer” category in Vanuatu are lower than regional average for HV connection for VUI and higher than regional average for LV connection. UNELCO’s tariffs are higher than the regional average for both types of connection. The typical bill paid for HV customers in Vanuatu is VUV 503,061 for VUI customers, and VUV 583,706 for UNELCO HV customers, based on May 2014 prices, assuming a low voltage connection. This compares to an average bill of VUV 529,112 for the Pacific area. UNELCO is 10% above the Pacific average while VUI stands 5% below the Pacific average.

Figure 6: Vanuatu vs. Pacific avg. – Bill breakdown comparison for “Business consumers”



The comparison between Vanuatu and the Pacific area shows that a higher proportion of the electricity bill is made up of Government taxes in Vanuatu. This consists of 12.5% VAT charged on all electricity bills, compared to a Pacific average of 5% tax.

In Vanuatu, there are fixed charges for UNELCO customers of 16.6% of the total bill. There are no fixed charges for VUI customers. This is compared to an average fixed charge of 4.7% across the Pacific region. For high voltage customers in Vanuatu, the monthly fixed charge represents approximately 23% of the bill for both UNELCO and VUI customers.

3.4 Factors that impact electricity costs

3.4.1 The generation mix

The available technologies making up the generation mix and the proportion of diesel based generation are both impacting the price paid by the consumers for electricity services. Diesel and fuel based generation are amongst the most expensive ways of generating power. The following table shows respective countries reliance on diesel based generation.

Country	Generation capacity in MW	Diesel contribution %
American Samoa	54	98%
Cook Islands	10	100%
Fiji	245	49%
Federated states of Micronesia	28	90%
Guam	552	100%
Kiribati	5	52%
Marshall Islands	17	90%
Nauru	4	100%
New-Caledonia	499	73%
Niue	1	100%
Palau	28	98%
PNG	700	77%
Saipan	105	100%
Solomon Islands	36	45%
Tahiti	186	74%
Tonga	12	98%
Tuvalu	3	100%
Vanuatu UNELCO *	24	71%
Vanuatu VUI *	4	21%
Western Samoa	41	64%

* In Vanuatu, the two service providers operate separate networks in different islands. The numbers shown in above table reflect the operators' respective energy mix.

3.4.2 Countries characteristics

Besides the energy mix and diesel contribution, several country-specific characteristics affect final prices of energy. We have highlighted the following factors for the reader's consideration:

- Country's isolation and distance from mainland (impacts the need for redundancy, cost of logistic and time lag on repairs)
- Geographical dispersion of the county (where islands spread over long distances and are not interconnected, each independent system has incompressible fixed costs and limited economy of scale potential.
- Availability of natural resources and alternatives to fuel based electricity generation
- Customer density and mix of residential, commercial and industrial users (affects system load factor, network development and operations costs, system losses, billings etc).
- Local labor rates, availability of skilled labor and social policies.
- Country's exposure to natural disasters and associated risk mitigation/prevention costs.

3.4.3 Other key determinants

This study has only reviewed the differences between customer bills for different electricity utilities in the Pacific, it has not considered or compared factors that can impact the reliability of electricity systems. These include:

- Reliability measures such as System Average Interruption Duration Index (SAIDI) or System Average Interruption Frequency Index (SAIFI), which indicate how reliable an electricity network is for its customers
- Availability measures, as some electricity networks in the Pacific do not provide electricity 24 hours a day, 7 days a week
- Quality measures such as voltage or frequency range
- Ownership and cost-recovery, as the prices charged by some state-owned utilities across the Pacific do not cover the full costs of production.
- Aid donation and subsidization, as the impact of aid donation and subsidies will vary across the region, and will have an impact on costs.

The following table provides examples in the Pacific where these factors have an impact on electricity prices:

Country	Observations
Nauru	Electricity is provided in blocks of 4 hours. The reliability of equipment has improved recently so that the Nauru Utilities Authority (NUA) is almost capable of delivering a 24-hour service. However, until adequate demand management strategies and user-pays systems are in place, the cost in fuel for 24-hour operation is beyond Nauru's resources.
Fiji	Fiji generates 50% of its electricity through hydro-electric power stations. The Fiji Electricity Authority (FEA) incurred significant non-commercial obligation (NCO) costs each year when supplying subsidised electricity to rural Viti Levu and the whole of Vanua Levu and Ovalau. These totally \$25m in 2012. Although the Public Enterprises Act requires the Fijian government to reimburse the NCO costs to FEA, these have apparently not been refunded. Instead the government has accepted that FEA's non-commercial contribution to social and community services through its electricity subsidies is to be recognised as its annual dividend to the government.
FSM-Pohnpei	The power tariff in Pohnpei consists of (i) base tariff to cover all operating and maintenance expenditure, and (ii) automatically adjusted fuel surcharge which covers fuel expenditure. The base tariff is insufficient to cover routine maintenance costs and has not been increased since 1994.
Vanuatu	In Vanuatu a cross-subsidy mechanism designed to support access to electricity services for modest households impacts the consumer bills. The consumer in the "Small domestic" category are paying low subsidised rates in the first tranche 0-60kWh. Domestic consumers to the contrary are paying a higher price per kWh as a result. The cross-subsidization is more pronounced for UNELCO consumers.

4. Electricity price evolution over time

The following section focuses on electricity tariffs evolution across the region since the last release of our comparative report in September 2013.

4.1 Small domestic consumers price evolution

In the Small domestic consumer category, prices in the region have increased in average by 1% over the period. Although the ranking has not varied much, we can observe significant drops in tariffs in Vanuatu for VUI (-12%), in Tuvalu (-7%) and Saipan (-6%). In opposition, tariffs for electricity have increased in the Federated States of Micronesia for both Kosrae and Chuck islands (+10%), the Western Samoa (+5%) and the Solomon Islands (+5%) as illustrated in the table below.

Small domestic consumers						
Country	Average bill 2014	Ranking 2014	Average bill 2013	Ranking 2013	Tariff variation	Ranking evolution
Fiji	520	1	520	1	0%	0
Nauru	564	2	564	2	0%	0
Vanuatu VUI	1,207	3	1,369	5	-12%	2
FSM - Pohnpei	1,216	4	1,216	4	0%	0
Vanuatu UNELCO	1,253	5	1,247	3	1%	-2
Tuvalu	1,617	6	1,742	6	-7%	0
Tahiti	1,819	7	1,873	7	-3%	0
Palau	2,084	8	2,000	8	4%	0
Kiribati	2,318	9	2,318	9	0%	0
PNG	2,333	10	2,333	10	0%	0
Guam	2,386	11	2,365	11	1%	0
Saipan	2,465	12	2,628	14	-6%	2
FSM - Yap Island	2,481	13	2,481	12	0%	-1
Marshall Islands	2,483	14	2,483	13	0%	-1
Average	2,533		2,507		1%	
American Samoa	2,713	15	2,646	15	3%	0
Tonga	2,776	16	2,786	17	0%	1
Western Samoa	2,874	17	2,738	16	5%	-1
Cook Islands	3,113	18	3,113	18	0%	0
FSM - Kosrae	3,203	19	2,909	19	10%	0
New-Caledonia	3,238	20	3,238	21	0%	1
FSM - Chuck	3,240	21	2,957	20	10%	-1
Niue	3,657	22	3,657	22	0%	0
Solomon Islands	5,087	23	4,856	23	5%	0
FSM - Falalop	6,136	24	6,136	24	0%	0

4.2 Domestic consumers price evolution

The Domestic consumers' categories have registered significant variations over the period, however the major increase in tariffs observed in Palau (+16%), Western Samoa (+10%) and the Federated States of Micronesia in Kosrae and Chuck islands (+10%), were balanced by decrease in tariffs observed in Vanuatu for VUI (-12%), Saipan (-5%) and Tuvalu (-4%). It results in a steady increase of the regional average by 1%. Bills variations are in line with the trends observed in the Small domestic consumer categories, thus reflecting a proportional imputation of additional costs or savings resulting in tariff changes across all domestic categories.

Domestic consumers						
Country	Average bill 2014	Ranking 2014	Average bill 2013	Ranking 2013	Tariff variation	Ranking evolution
Nauru	2,818	1	2,818	1	0%	0
Fiji	4,440	2	4,440	2	0%	0
FSM - Pohnpei	4,511	3	4,511	3	0%	0
Guam	7,822	4	8,087	4	-3%	0
Saipan	9,712	5	10,267	6	-5%	1
PNG	10,901	6	10,901	7	0%	1
American Samoa	11,324	7	10,986	8	3%	1
Palau	11,537	8	9,910	5	16%	-3
Marshall Islands	12,415	9	12,415	9	0%	0
Tahiti	12,441	10	12,609	11	-1%	1
FSM - Yap Island	12,596	11	12,596	10	0%	-1
New-Caledonia	12,819	12	12,819	12	0%	0
Tuvalu	12,938	13	13,505	13	-4%	0
Tonga	13,879	14	13,928	15	0%	1
Average	14,494		13,854		5%	
Niue	15,033	15	15,033	16	0%	1
Western Samoa	15,046	16	13,690	14	10%	-2
Kiribati	15,935	17	15,935	19	0%	2
FSM - Chuck	16,199	18	14,787	17	10%	-1
FSM - Kosrae	16,798	19	15,229	18	10%	-1
Vanuatu VUI	16,998	20	19,277	20	-12%	0
Cook Islands	20,586	21	20,586	21	0%	0
Vanuatu UNELCO	23,319	22	23,196	22	1%	0
Solomon Islands	25,435	23	24,282	23	5%	0
FSM - Falalop	30,679	24	30,679	24	0%	0

4.3 Business consumers price evolution

Tariffs for electricity charged on Business users across the region dropped by 1% in average over the period. In several instances the structures of the tariffs have been adjusted along with fuel compensation variables reflecting higher diesel prices. The average energy bill for business users increased in the Western Samoa (10%), Federated States of Micronesia-Kosrae (9%) and Palau (4%), while the tariffs dropped in significantly in Vanuatu for VUI (-12%) and Guam (-8%), as shown on the following table:

Business consumers						
Country	Average bill 2014	Ranking 2014	Average bill 2013	Ranking 2013	Tariff variation	Ranking evolution
FSM - Pohnpei	199,572	1	199,572	1	0%	0
Fiji	212,418	2	212,418	2	0%	0
Nauru	234,854	3	234,854	3	0%	0
Guam	260,301	4	282,016	4	-8%	0
New-Caledonia	344,051	5	344,051	5	0%	0
American Samoa	391,197	6	379,933	6	3%	0
Saipan	410,269	7	408,936	7	0%	0
PNG	416,558	8	416,558	8	0%	0
Tonga	462,649	9	464,263	10	0%	1
Marshall Islands	473,239	10	473,239	11	0%	1
Tuvalu	497,364	11	516,240	12	-4%	1
Western Samoa	501,523	12	456,341	9	10%	-3
Vanuatu VUI HV	503,061	13	570,499	18	-12%	5
FSM - Yap Island	512,749	14	512,749	13	0%	-1
Average	516,437		521,508		-1%	
Tahiti	557,293	15	577,466	20	-3%	5
Niue	566,775	16	566,775	14	0%	-2
FSM - Chuck	569,492	17	541,935	15	5%	-2
Palau	575,421	18	551,324	17	4%	-1
Vanuatu VUI LV	582,015	19	660,037	22	-12%	3
Vanuatu UNELCO HV	583,706	20	580,641	19	1%	-1
FSM - Kosrae	591,558	21	543,112	16	9%	-5
Vanuatu UNELCO LV	657,495	22	654,030	21	1%	-1
Kiribati	676,029	23	676,029	23	0%	0
Cook Islands	737,628	24	737,628	24	0%	0
Solomon Islands	887,507	25	882,630	25	1%	0
FSM - Falalop	1,022,637	26	1,115,943	26	-8%	0

4.4 Factors that impact electricity price over time

In the Pacific region, most of the generation capacity is diesel powered. It makes fuel cost the main variable impacting the price of electricity, although all countries are not passing these fluctuations on their customers at the same pace.

In addition, despite keeping the exchange rates constant using spot exchange rates to recalculate the corresponding bills from last publication in order to avoid distortions in the comparison of average electricity bills, such fluctuations are only partly neutralized as the costs related to imported fuels and materials are impacted by currency fluctuations and fully reflected in the current tariffs used to calculate the bills. The lack of details in the proportion of operating costs being impacted by currency variations introduces a bias in subsequent analysis.

It is however informative to observe the fluctuation of the bills across the customer categories to determine whether these variables are impacting each country and customer category with the same magnitude.

5. Conclusions

Based on the comparison of customer bills, the overall picture for Vanuatu is mixed, with significant differences in the relative position depending on customer category:

- Small domestic customers in Vanuatu are charged significantly less than the regional average
- Other low voltage customers in Vanuatu are charged significantly more than the regional average
- Business customers in Vanuatu are now divided geographically between concessions with VUI charging below or average pacific rates and UNELCO charging higher prices based on the type of connection.

In general, we observe that the cross-subsidy between large and small customers in Vanuatu is more pronounced than in other parts of the Pacific region.

As a result of recent electricity tariffs adjustment for VUI, the spread between the average bills for comparable customer categories has been accentuated between the two operators.

With the introduction of a section measuring the evolution of average bills for comparable customer categories over time, the URA tries to highlight the trends observed in the energy market and provide substantial information and indicators to measure the impact of combined efforts to improve the regulatory environment, the generation and distribution efficiency, the energy mix and also the stability in fossil fuel prices used for electricity generation across the region.

We thank all the persons involved with the regulatory agencies and utility companies across the region who helped us to compile the information necessary to achieve this report.

Annexe I. Electricity bill breakdown

Country	Fiji	Palau	American Samoa	Western Samoa	PNG	New-Caledonia	Kiribati	Tuvalu	Niue	Nauru	Marshall Islands	Solomon Islands
Small domestic consumer												
Average use per month	60 kWh											
Amperage	1.1 kVa											
Electricity in VUV	520	1,939	2,153	2,554	1,547	1,987	2,107	1,607	2,438	527	2,342	5,087
Fixed charge in VUV	-	-	560	-	574	420	-	-	1,219	-	-	-
Other monthly fee in VUV	-	-	-	-	-	614	-	-	-	-	-	-
Taxes in VUV	-	145	-	319	212	217	211	10	-	37	141	-
Estimated bill in VUV	520	2,084	2,713	2,874	2,333	3,238	2,318	1,617	3,657	564	2,483	5,087
Domestic consumer												
Average use per month	300 kWh											
Amperage	3.3 kVa											
Electricity in VUV	4,115	10,732	10,764	13,374	9,336	9,937	14,486	12,599	13,814	2,634	11,712	25,435
Fixed charge in VUV	-	-	560	-	574	1,260	-	-	1,219	-	-	-
Other monthly fee in VUV	-	-	-	-	-	614	-	-	-	-	-	-
Taxes in VUV	325	805	-	1,672	991	1,008	1,449	340	-	184	703	-
Estimated bill in VUV	4,440	11,537	11,324	15,046	10,901	12,819	15,935	12,938	15,033	2,818	12,415	25,435
Business consumer												
Average use per month	30000 kWh											
Amperage	100 kVa											
Electricity in VUV	188,984	534,248	351,502	445,798	378,000	226,131	614,572	482,878	565,556	219,490	446,452	887,507
Fixed charge in VUV	-	1,027	39,695	-	689	88,853	-	-	1,219	-	-	-
Other monthly fee in VUV	-	-	-	-	-	719	-	-	-	-	-	-
Taxes in VUV	23,434	40,146	-	55,725	37,869	28,349	61,457	14,486	-	15,364	26,787	-
Estimated bill in VUV	212,418	575,421	391,197	501,523	416,558	344,051	676,029	497,364	566,775	234,854	473,239	887,507

Country	Tonga	Cook Islands	FSM - Chuck	FSM - Kosrae	FSM - Pohnpei	FSM - Yap Island	FSM - Falalop	Saipan	Guam	Tahiti	Vanuatu UNELCO HV	Vanuatu VUI HV
Small domestic consumer												
Average use per month	60 kWh											
Amperage	1.1 kVa											
Electricity in VUV	2,776	2,779	3,086	3,050	785	2,130	6,136	1,812	1,359	1,206	1,114	1,073
Fixed charge in VUV	-	-	-	-	-	-	-	-	-	-	-	-
Other monthly fee in VUV	-	-	-	-	-	-	-	-	-	-	-	-
Taxes in VUV	-	-	-	-	-	-	-	-	-	-	-	-
Estimated bill in VUV	2,864	2,864	2,864	2,864	2,864	2,864	2,864	2,864	2,864	2,864	2,864	2,864
Domestic consumer												
Average use per month	300 kWh											
Amperage	3.3 kVa											
Electricity in VUV	13,879	18,381	15,428	15,998	3,923	11,762	30,679	9,058	6,795	9,358	19,827	15,109
Fixed charge in VUV	-	-	0	-	374	234	-	654	1,027	1,258	901	-
Other monthly fee in VUV	-	-	-	-	-	-	-	-	-	1,233	-	-
Taxes in VUV	-	2,206	771	800	215	600	-	-	-	592	2,591	1,889
Estimated bill in VUV	13,879	20,586	16,199	16,798	4,511	12,596	30,679	9,712	7,822	12,441	23,319	16,998
Business consumer												
Average use per month	30000 kWh											
Amperage	100 kVa											
Electricity in VUV	462,649	658,190	542,374	563,389	112,080	487,866	1,022,637	409,335	249,097	457,809	382,300	329,490
Fixed charge in VUV	-	406	-	-	75,654	467	-	934	11,203	31,849	136,550	117,675
Other monthly fee in VUV	-	-	-	-	2,335	-	-	-	-	41,096	-	-
Taxes in VUV	-	79,032	27,119	28,169	9,503	24,417	-	-	-	26,538	64,856	55,896
Estimated bill in VUV	462,649	737,628	569,492	591,558	199,572	512,749	1,022,637	410,269	260,301	557,293	583,706	503,061

Utilities Regulatory Authority

Vanuatu

You can access the Pacific Region Electricity Bills Comparison Report 2014 on our website www.ura.gov.vu, or by contacting us by telephone (+678) 23335, email: breuben@ura.gov.vu or regular mail at Comparative Report “Electricity price – Pacific area” Utilities Regulatory Authority, PMB 9093, Port Vila, Vanuatu.