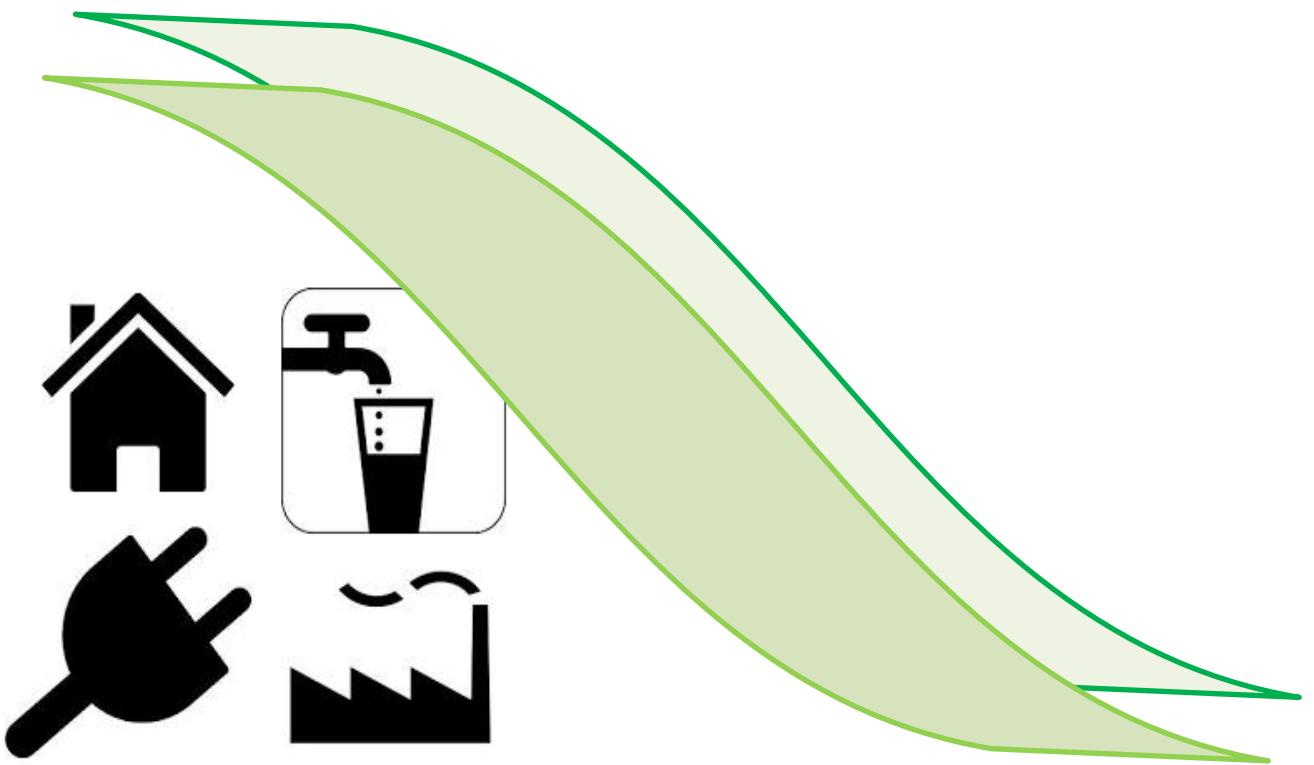


**Utilities
Regulatory
Authority**

Electricity Fact Sheet

2014 – 2019

September 2020



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1 Introduction

The Utilities Regulatory Authority (the ‘Authority’) was established under the URA Act no. 11 of 2007 (as amended) as the economic and technical regulator for electricity and water services in Vanuatu. The Authority is pleased to present this updated ‘Electricity Fact Sheet’ (EFS) providing electricity statistical information/data via charts and graphs in Vanuatu, particularly for the four concession areas of Port Vila, Luganville¹, Malekula (Lakatoro) and Tanna (Lenakel) in which the two main utilities, UNELCO² and VUI³ are operating. The EFS is provided as part of the Authority’s functions under Section 12(1)(c) of the Authority’s Act.

Data presented in this report is consolidated for all concession areas. For specific data of the electricity market presented in this EFS corresponding to a particular concession area, the reader is referred to the appendices at the end of the EFS. This EFS is an update and replaces the previously issued EFS of October 2019.

The Vanuatu Utilities Infrastructure (VUI) signed a Concession Agreement with the Vanuatu Government in June 2019 granting it the exclusive right to operate the Concessions of Luganville and Port Olry as a Concessionaire. Other concession areas included in the Concession Deed include the mini grid sites of Sola and Mosina in Vanua Lava Island, the Talise Hydro on Maewo Island and the three bio-fuel sites on Ambae Island. Any other Concession areas excluded in this Deed may be granted subsequently by the Vanuatu Government at its discretion. Thus, for any new concession areas granted to a utility, subsequent updates of the EFS will reflect accordingly. Additionally, as at 14th July 2020, the UNELCO’s concession contract for Tanna Island and Malekula Island expired. To date, operations of these systems in interim is administered by the Government of Vanuatu.

The EFS is updated on an annual basis with the recent year’s data (2019) added to show electricity statistics and the trend thereof for the past six years. It further provides to readers the developments within the electricity concession areas in Vanuatu.

2 Executive Summary

Overall, the electricity developments in the Concession areas are affected by the following changes in 2019 from the previous year (2018):

- ❖ Available electricity generation sources in Vanuatu is comprised of diesel, copra oil, hydro, wind and solar in 2019;
- ❖ Overall generation installed capacity increased by 1.77 MW in 2019, a 5.8 % increment;

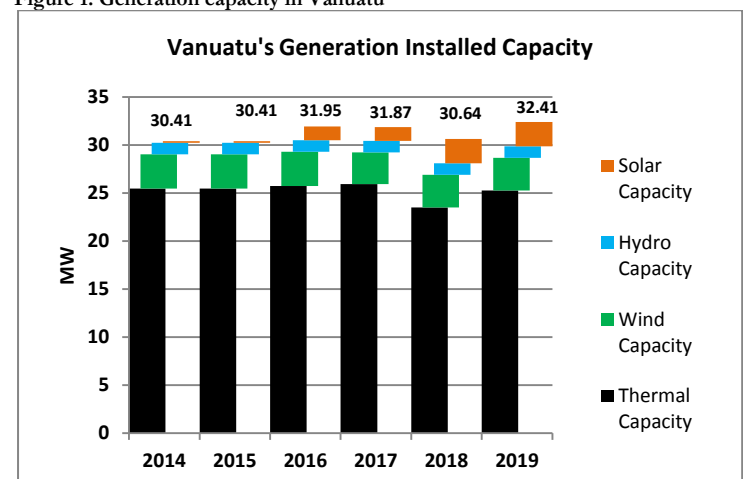
- ❖ Consolidated peak demand decreased slightly by 0.36% in 2019.
- ❖ Gross electricity generation decreased by 2.23 GWh in 2019, a 2.8% decrease from preceding year;
- ❖ The renewable penetration escalates by 19% in 2019.
- ❖ The overall diesel consumption increased by 82,898 litres in 2019 and copra oil litres consumed in generation increased by 101,905 litres since 2018;
- ❖ The quantity of electricity users continue to consistently increase with approximately 864⁴ new additional customers in 2019 throughout all the concession areas;
- ❖ The electricity network length increased in all concession areas except Malekula in 2019, showing commitment from respective utilities to continue extending grid services to unserved areas. Overall LV network increased by 1.5% and HV network decreased by 0.2%.
- ❖ The number of planned outages in 2019 increased by 8.7% while unplanned outages decreased by 27% compared to 2018.

It is believed that the EFS will communicate to interested readers useful information about the electricity market within the electricity concession areas of Vanuatu.

3 Generation installed capacity in Vanuatu

Figure 1 shows the total installed capacity of the available generation resources in Vanuatu throughout the concession areas. Refer to Appendix 13.1 for details of each concession areas.

Figure 1: Generation capacity in Vanuatu



Source: UNELCO & VUI Regulatory Reports

The overall generation capacity recorded consecutive decreases in 2017 and 2018 by 0.08 and 1.23 MW respectively but in 2019 there has been an increase by 1.77 MW when compared to 2018. Details of changes by type of generation source demonstrates stagnant solar capacity, hydro capacity and wind

¹ Inclusive of Port Olry operations commencing 2016

² Union Electrique du Vanuatu Limited (operating in Port Vila (1986), Malekula (2000) & Tanna (2000))

³ Vanuatu Utilities and Infrastructure Limited (operating in Santo, Luganville (2011))

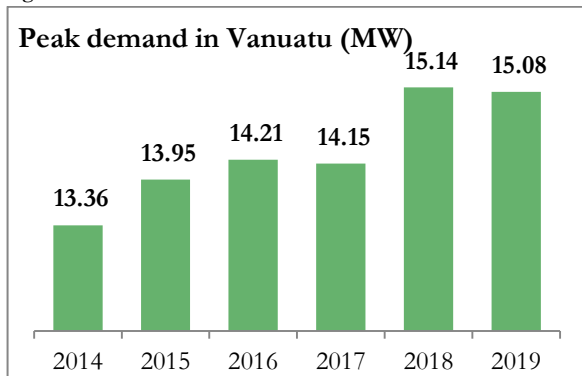
⁴ Net figure when we sum the number of new customers and those customers leaving the network

capacity. The stagnant capacity of renewable energy, caused the thermal generation capacity to increase in 2019 by 1.76 MW in the Port Vila thermal power stations.

The current generation data provided is for Port Vila, Tanna, Malekula, Luganville and Port Olry only. New concession areas (mini grids in particular), will be reflected in future EFS when they are operational and the required data becomes available.

4 Peak demand in Vanuatu

Figure 2: Peak demand in Vanuatu

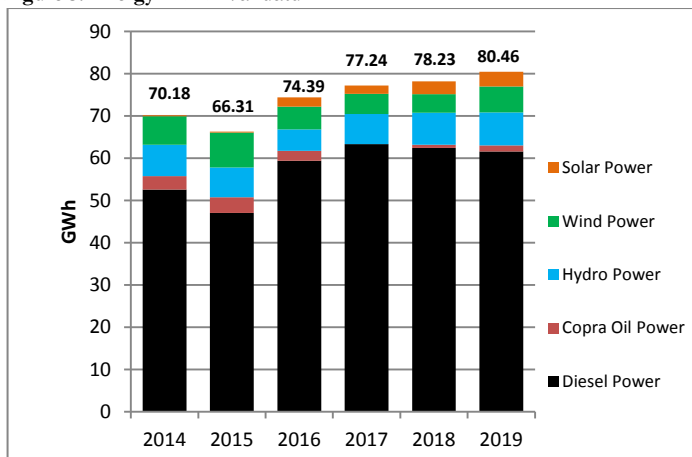


Source: UNELCO & VUI Regulatory Reports

Overall peak demand in Vanuatu has recorded the highest increase ever in 2018 (15.14 MW) but decreased by 0.4% in 2019 to 15.08 MW. The Luganville concession peak demand continues to grow consistently since 2017, whilst the Port Vila concession peak demand had decreased in 2019 by 1.60%. For peak demand reported by concession area, refer to Appendix 13.2 for corresponding years.

5 Energy mix in Vanuatu

Figure 3: Energy Mix in Vanuatu



Source: UNELCO & VUI Regulatory Reports

Figure 3 illustrates the consolidated energy mix in Vanuatu for all concession areas operated by UNELCO and VUI. Energy from thermal source continued to dominate the share of the energy mix in 2019 similar to past years. Averaged Diesel generation contributed 76.6%, followed by hydro contributions of 9.7%, while wind contributed 7.7%, Solar 4.3% and Copra Oil

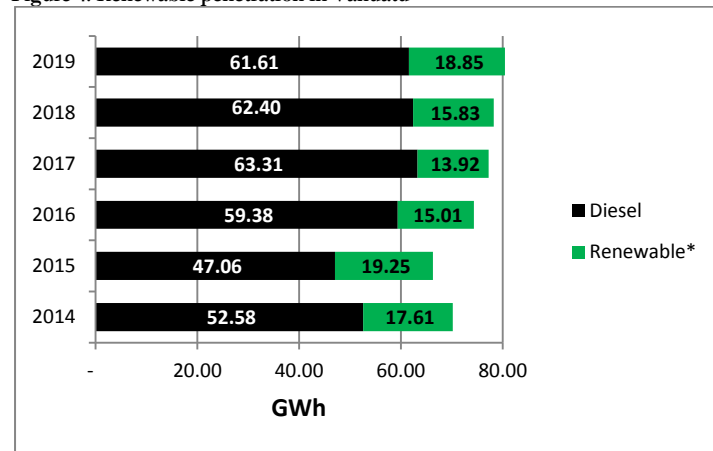
1.8% in 2019. The solar contributions include Government Solar Farms at both Meteo Complex and Parliament House Complex.

Comparing the evolution from 2018-2019, Wind production increased by 40.9%; solar production increased by 13.5%; and hydro by 2.2%. The diesel generation on the other hand decreased by 1.27%. Utilities, specifically UNELCO have recommended the use of Copra oil for energy production in 2018 with a total output of 794 MWh, an increase by 82% in 2019.

Refer to Appendix 13.3 which provides total energy mix and Appendix 13.4 detailing the energy mix provided by concession areas.

6 Renewable penetration in Vanuatu

Figure 4: Renewable penetration in Vanuatu



* Renewable is inclusive of electricity from Copra oil, Solar, Wind & Hydro
Source: UNELCO and VUI Annual Technical Reports

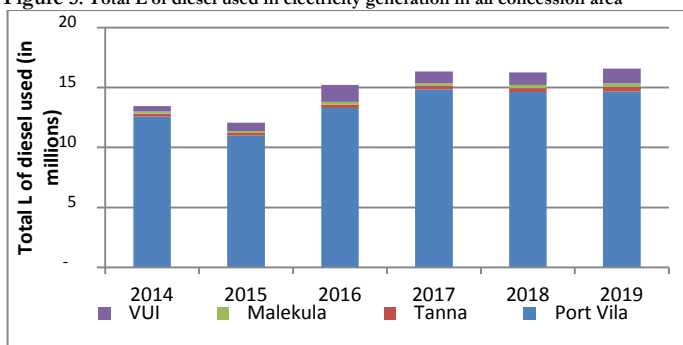
Renewable penetration increased by 19.06 % in 2019 from 2018. The increase stems from the inclusion of the Kawene Solar farm and increase in production from wind farm, solar, hydro and copra-oil usage in 2019.

7 Litres (L) of diesel and copra oil used in electricity production

Figure 5 shows the total Litres (l) of diesel used in all concession areas for electricity production. The overall quantity of litres of diesel consumed for electricity generation throughout the concessions increased by 2% in 2019 from 2018.

By concession area, litres of diesel consumed in Port Vila concession increased by 0.2% while the other three concession areas also reported increase as follows, Luganville by 17.8%, Malekula by 17% and Tanna by 16.9%. The increase in diesel consumption was primarily due to increase in demand in all concession areas.

Figure 5: Total L of diesel used in electricity generation in all concession area

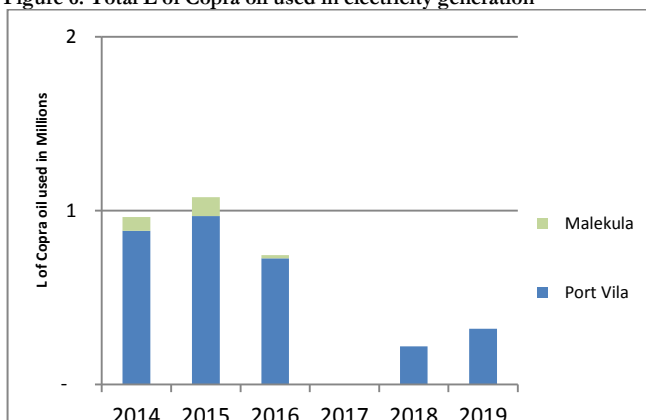


Source: UNELCO monthly tariff submission and Luganville concession reports

Appendix 13.5 provides in detail litres of diesel consumed by each concession area.

Figure 6 conveys the total litres of copra oil used annually in the corresponding years. Copra oil is still limitedly used for electricity production in the concessions of Port Vila and Malekula only.

Figure 6: Total L of Copra oil used in electricity generation



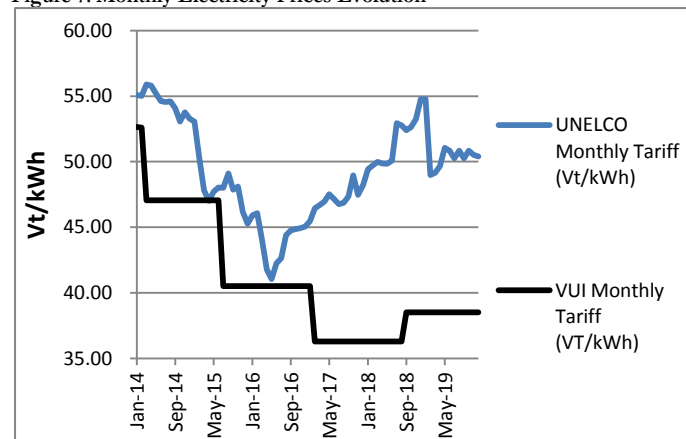
Source: UNELCO monthly tariff submission

Copra oil is not efficient as diesel, meaning one litre of copra oil cannot produce similar outcome as one litre of diesel. That said, there are cases whereby the diesel cost / litre exceeds the copra oil cost / litre which results in copra oil becoming more cost-effective to use even when its efficiency is also taken into consideration. In 2017, no litres of copra oil were consumed in Port Vila or Malekula. Appendix 13.6 presents the liters of copra oil used.

For the UNELCO concessions, the quantity of diesel and copra oil utilized monthly for electricity generation is used to compute the monthly electricity prices. This is due to the fact that the quantity of fuel used in generation is highly in correlation with the electricity demand given the significant reliance on fossil fuel for baseload generation.

8 Electricity Prices

Figure 7: Monthly Electricity Prices Evolution



Source: UNELCO monthly tariff submission and Luganville concession reports

Electricity prices charged in the UNELCO concessions are adjusted monthly to transfer the changes in diesel cost and other major cost drivers – material cost, labour cost etc – to the consumers, such costs which are beyond the utility’s control and are controlled by the market. In the Luganville Concession electricity tariffs are revised on an annual basis to cater for changes in the major cost drivers (specifically diesel cost). Nonetheless, given the increase in electricity consumption and stagnant hydro capacity, this may change as the reliance on diesel may exceed hydro’s production.

The Electricity Comparison Report⁵ issued by the Authority can be accessed via the Authority’s website annually outlining the electricity prices around the pacific region.

9 Electricity users and use in Vanuatu

Table 1 provides the categorization of electricity users to convey the number of electricity users and their respective consumptions.

Table 1: User Classifications Details

User Classification	Details
Industrial	Private High Voltage Users, Government High Voltage Users, Port Vila Water Usage
Commercial	Business Users
Non-Commercial	Small Domestic Customers, Prepaid Users, Other Low Voltage Users, Government Low Voltage
Others	Street Lights/Sports Field, Energy not invoice (utility’s office usage, utility’s employee and installations)

⁵<http://www.ura.gov.vu/attachments/article/97/Electricity%20Price%20Comparison%20Report%20-%20Pacific%20Area%20August%202020.pdf>

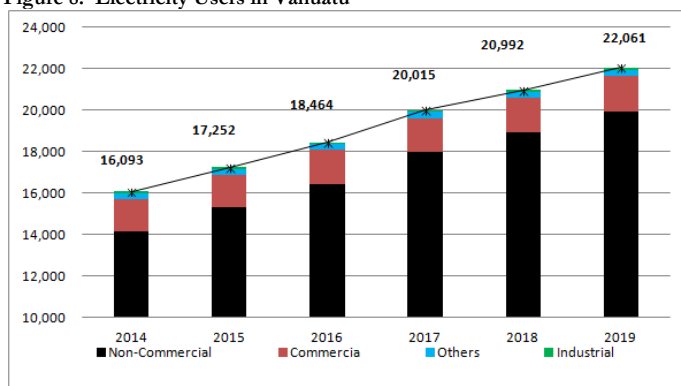
Subsections 9.1 and 9.2 presents data per the user classifications as defined in Table 1 above. Note that number of utility employees is captured including the connections for water usage in Port Vila.

Refer to appendixes 13.7 and 13.8 detailing the user count by classifications referred to in Table 1 reported by concession areas including the user energy consumption in kWh.

9.1 Electricity users in Vanuatu

Figure 8 presents the trend in user numbers throughout the reporting years with 2019 as the latest year added. The user numbers are reported as at 31st December of the respective years. The user numbers correspond to electricity meters installed to provide electricity access to users.

Figure 8: Electricity Users in Vanuatu



Source: UNELCO and VUI Annual Technical Reports

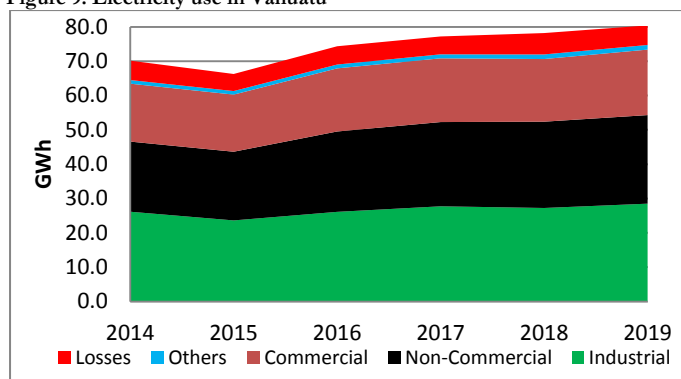
Electricity users in Vanuatu continue to grow consistently, particularly for the ‘Non-Commercial’ users which comprises residential users. The number of ‘Non-Commercial’ users increased by 5% in 2019 and ‘Commercial’ users by 2.8% while the ‘Industrial’ users decreased by 5% and ‘Others’ a significant decrease by 58%. The most notable change in customer number is observed in the ‘Non-Commercial’ users (residential customers) with approximately close to 1,000 new additional customers in all concession areas and a significant reduction in ‘Others’ category by 170 customers.

Even though the Global Partnership on Output-Based Aid (GPOBA) financed by the World Bank subsidising customer connection cost ceased at the end of 2018, customer numbers continue to show increase. UNELCO has in place a similar scheme on reduced connection cost offered to its potential subscribers. For purposes of tariff-making, the reduced cost is embedded into the tariff (as utility Investments).

9.2 Electricity usage in Vanuatu

Figure 9 shows the growth in electricity usage by major user classification. In 2019, ‘Commercial’ and ‘Industrial’ users’ consumption increased by 4.6% followed by ‘Non-Commercial’ users by 2.6% and ‘Others’ by 0.4%.

Figure 9: Electricity use in Vanuatu



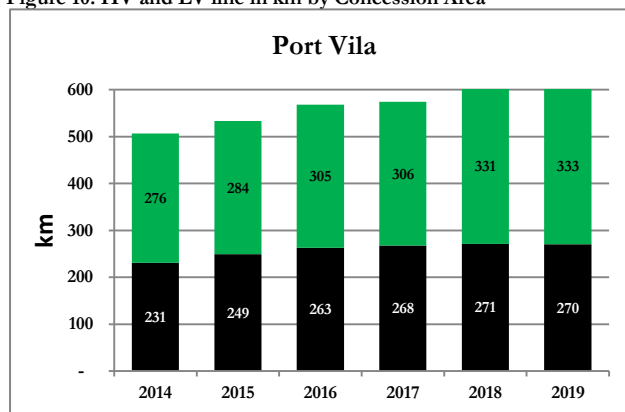
Source: UNELCO and VUI Annual Technical Reports

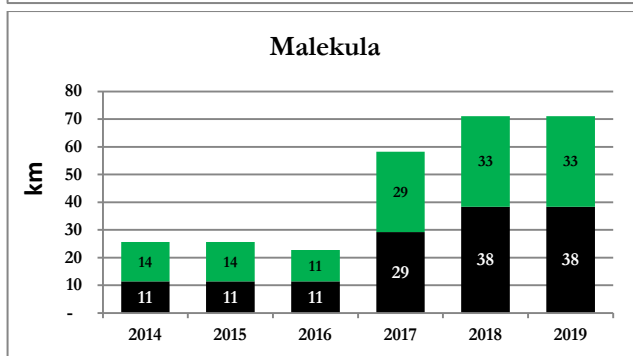
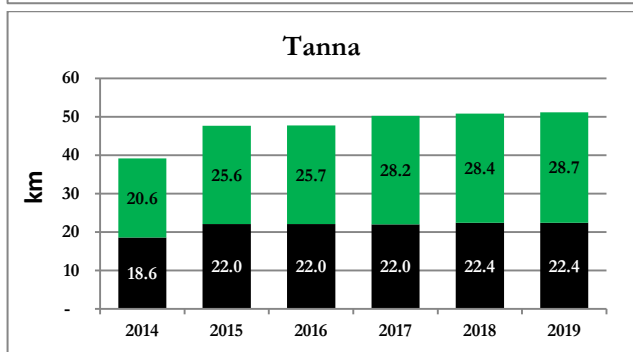
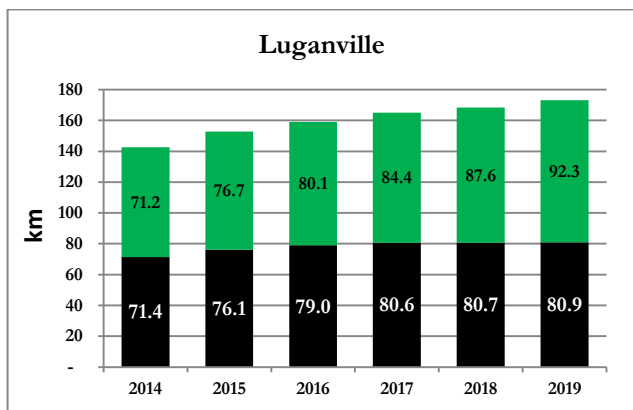
Losses depicted in figure 9 represents power losses in generation plant auxiliaries’, transmission and distribution losses and possible, energy theft. In the first issue of the EFS published in October of 2017, losses were inclusive of electricity consumed by utilities’ employees, office usage, installations and water consumption for Port Vila. For subsequent EFS issues thereafter including this current one, losses are more properly reclassified.

10 Electricity network length by concession area

Figure 10 represents the length of Low Voltage (LV) and High Voltage (HV) electricity lines in the four concession areas. It should be considered that the sum of the lengths of the HV and LV lines does not cover the electricity network on ground as there are some parts of the network whereby the LV and HV lines run in parallel on the same poles. The network length presented covers both the overhead and underground lines.

Figure 10: HV and LV line in km by Concession Area





■ Low Voltage ■ High Voltage

Source: UNELCO and VUI Technical Reports

The HV lines are used to connect/link generation sources and for transmission of electricity from the generating sources to the distribution transformers. LV lines run from the distribution transformers to the customers' respective meters. (HV lines are set at 5.5KV, 20KV and 33kV while LV lines distribute electricity rated at 230 V single phase and 380 V, three phase).

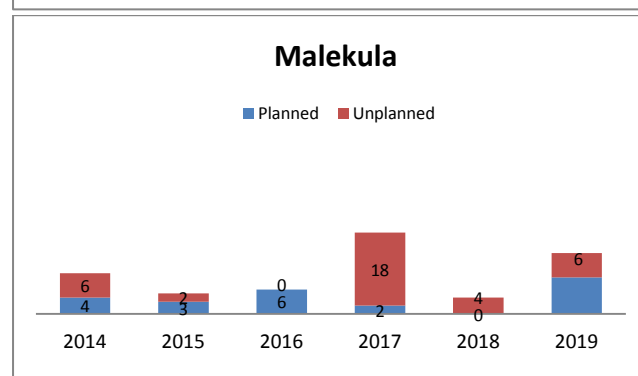
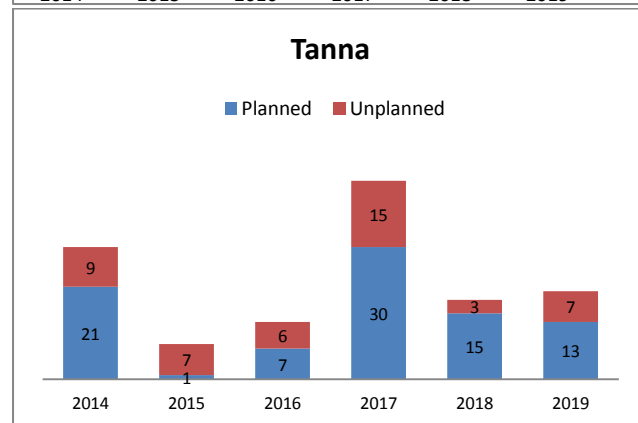
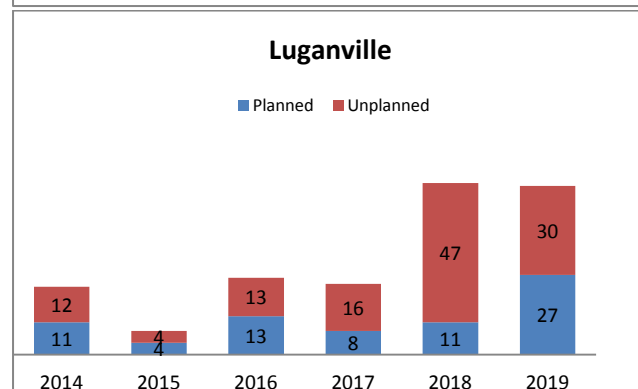
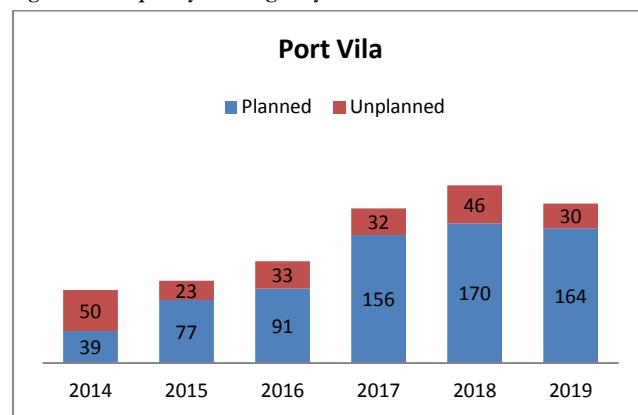
Major network changes undertaken by the two utilities in 2019 are briefly provided below:

- ❖ In Luganville Santo, there was an overall increase in network length in 2019. Respectively, an increase of 5.3% in the LV lines and 0.29% in the HV lines.
- ❖ In Tanna and Efate, increase is noted only for the LV lines by 1.1% and 0.7% respectively. In Port Vila, however, a decrease was noted for its HV lines by 0.4% in 2019.
- ❖ The least development in electricity network length notable is for Malekula with no network extension to its LV or its HV lines.

11 Reliability and outages of electric system by concession areas

11.1 Number of Outages (Planned and Unplanned) by concession areas

Figure 11: Frequency of outages by concession areas



Source: UNELCO and VUI Technical Reports

Figure 11 is showing the number/frequency of outages in the concession areas with 2019 data added. 'Planned outages' are planned by utilities, purposely to allow utility in conducting maintenance works, network upgrades and connecting extensions to the electricity network. The date, time and period of time electricity service is unavailable to customers is usually communicated beforehand to customers via various communication means (e.g. radio, newspaper etc) for customers' awareness and preparation towards such time.

Unplanned outages are interruptions of electricity supply to customers that are caused by technical faults, vandalism, and force majeure acts to the electricity network. The graphs show that there was drop in the number of unplanned outages in the Efate and Luganville networks, which overall contributes to a 27% decrease in all four networks.

11.2 Reliability of system by concession area

The below abbreviations are useful in interpreting Table 2 below regarding the average number of times (frequency) and duration of planned and unplanned outages a customer experiences annually throughout the various concession areas. Higher values indicate that a customer encounters more interruption in electricity services

N/A – Not Available

SAIFI – (System Average Interruption Frequency Index) is a measure of the number of times the average utility customer experiences an outage

SAIDI – (System Average Interruption Duration Index) is the average outage duration for each customer served reported in minutes.

Table 2: SAIFI and SAIDI by Concession Area

Years	Planned/ Unplanned/All	Port Vila		Luganville		Tanna		Malekula	
		SAIFI	SAIDI	SAIFI	SAIDI	SAIFI	SAIDI	SAIFI	SAIDI
2014	Planned	0.3	35.8	1.4	325.1	3.1	422.9	0.7	45.0
	Unplanned	10.8	241.5	12.0	40.0	7.2	115.0	6.0	309.0
	All	11.1	277.3	13.4	365.1	10.2	537.9	6.7	354.0
2015	Planned	1.2	130.1	0.5	135.6	0.1	4.4	1.0	170.0
	Unplanned	6.0	94.0	6.8	241.4	4.0	49.9	2.0	45.0
	All	7.1	224.1	7.3	377.0	4.1	54.3	3.0	215.0
2016	Planned	1.9	232.2	0.8	219.1	1.0	66.8	0.5	118.0
	Unplanned	4.7	129.5	12.1	495.8	4.2	28.4	-	-
	All	6.6	361.7	12.8	714.9	5.2	95.2	0.5	118.0
2017	Planned	3.4	414.1	0.5	218.1	4.8	1,870.6	2.0	180.0
	Unplanned	4.8	391.8	13.3	466.4	10.3	275.8	16.0	316.0
	All	8.2	805.9	13.8	684.5	15.1	2,146.4	18.0	496.0
2018	Planned	1.1	296.3	1.5	731.6	1.2	90.7	-	-
	Unplanned	3.6	150.3	30.7	637.5	1.0	20.0	173.1	5.8
	All	4.7	446.6	32.2	1,369.1	2.2	110.7	173.1	5.8
2019	Planned	2.3	411.1	3.6	1,087.9	0.7	48.0	0.8	76.5
	Unplanned	3.0	214.0	22.2	471.1	3.3	58.3	5.9	190.5
	All	5.3	625.1	25.9	1,559.0	4.0	106.3	6.7	267.0

Source: UNELCO and VUI Annual Technical Reports

11.3 Customer complaint by concession

Table 3: Customer complaints received by the Utility

	2014	2015	2016	2017	2018	2019
Port Vila	214	183	190	215	111	63
Tanna	0	5	5	5	0	1
Malekula	0	0	0	1	1	1
Luganville	0	0	1	0	1	2

Source: UNELCO and VUI Regulatory Reports

The data in table 3 is annually updated by the utility and referred to the Authority. It represents customer complaints directly received by the utility.

Customer complaints are more pronounced in the Port Vila concession area reflecting its large customer base. The Authority issued a Commission Order⁶ in 2015 (with amendments) to strengthen its Customer Complaint and Dispute Resolution process and procedures which provide an out of court alternative complaint and dispute resolution. Furthermore in the beginning of 2018, the Authority inaugurated its Luganville North Branch Office as an avenue now available to customers in Luganville and northern part of Vanuatu to lodge their complaints in relation to regulated services challenges and complaints they may encounter.

Table 4: Customer complaints received by the Authority

	2014	2015	2016	2017	2018	2019
Port Vila	214	183	190	215	111	63
Tanna	0	5	5	5	0	0
Malekula	0	0	0	1	1	0
Luganville	0	0	1	0	1	2

Table 4 provides the number of customer complaints received by the Authority. While electricity customers approach the Authority for assistance, queries and complaints, the data provided in table 4 above is narrowed down to represent complaints that come about as a result of oversight by the utility.

While the Authority lacks representation on ground in Tanna and Malekula, customers usually have the opportunity to formally lodge their complaints when the Authority's technical team are inspecting the utility network and consultations organised by the Authority. This is a matter that the Authority established Consumer Advocacy Group will also note it is future activities.

⁶ <http://ura.gov.vu/index.php/services/commission-publications>

12 Closing remarks

We hope that the information presented in the EFS is of value to interested readers keen in knowing about and understanding changes regarding the electricity service and market in Vanuatu in the four (4) concession areas. We welcome any suggestions from readers to enhance the details and facts about the electricity service and market in this EFS to enhance future reporting of the EFS.

Thank you!



About the Utilities Regulatory Authority ('Authority')

The Authority is the independent economic regulator for water and electricity services in Vanuatu, established by the URA Act no. 11 of 2007 with amendments.

As part of its functions, the Commission is monitoring the provision of electricity and water by utility companies and public services, promoting access and the long term interest of the customers and communicating to consumers' matters relating to the utilities.

Please call us if you have any question on (678) 23335 or visit our office at the Office of the Utilities Regulatory Authority, VNPF Compound, Corner Pierre Lamy & Andre Ballande Street, Port Vila, Vanuatu.

Website: <http://www.ura.gov.vu>

13 Appendixes

13.1 Generation Capacity by Concession Area

Port Vila		Unit	2014	2015	2016	2017	2018	2019
Thermal Capacity	kW	21.83	21.83	21.83	21.83	19.04	20.80	
Wind Capacity	kW	3.58	3.58	3.58	3.30	3.40	3.40	
Solar Capacity	kW	0.09	0.08	1.36	1.36	2.45	2.45	
Total	kW	25.49	25.49	26.76	26.49	24.89	26.66	
Malekula		Unit	2014	2015	2016	2017	2018	2019
Thermal Capacity	kW	0.39	0.39	0.61	0.67	0.69	0.69	
Wind Capacity	kW	-	-	-	-	-	-	
Solar Capacity	kW	0.02	0.02	0.02	0.02	0.02	0.02	
Total	kW	0.41	0.41	0.63	0.69	0.71	0.71	
Tanna		Unit	2014	2015	2016	2017	2018	2019
Thermal Capacity	kW	0.39	0.39	0.39	0.49*	0.69	0.69	
Wind Capacity	kW	-	-	-	-	-	-	
Solar Capacity	kW	0.02	0.03	0.03	0.03	0.03	0.03	
Total	kW	0.41	0.43	0.43	0.53	0.72	0.72	
Luganville		Unit	2014	2015	2016	2017	2018	2019
Thermal Capacity	kW	2.85	2.85	2.89	2.93	3.08	3.08	
Hydro Capacity	kW	1.20	1.20	1.20	1.20	1.20	1.20	
Solar Capacity	kW	0.04	0.04	0.04	0.04	0.04	0.04	
Total	kW	4.09	4.09	4.13	4.17	4.32	4.32	

Port Olry Installed Capacity is added with Luganville data commencing 2016

* Updated accordingly per UNELCO technical reports

13.2 Peak Demand by Concession Area

Peak Demand								
Port Vila	MW	11.42	11.73	11.85	11.85	12.60	12.40	
Luganville	MW	1.61	1.85	1.93	1.84	2.06	2.21	
Malekula	MW	0.17	0.19	0.22	0.25	0.26	0.25	
Tanna	MW	0.16	0.18	0.20	0.21	0.22	0.22	
Peak Demand in Vanuatu		13.36	13.95	14.21	14.15	15.14	15.08	

13.3 Energy Mix in Vanuatu

	Unit	2014	2015	2016	2017	2018	2019
Diesel Power	GWh	52.58	47.06	59.38	63.31	62.40	61.61
Copra Oil Power	GWh	3.22	3.68	2.40	-	0.79	1.44
Hydro Power	GWh	7.38	7.07	5.05	7.13	7.61	7.78
Wind Power	GWh	6.79	8.27	5.42	4.77	4.37	6.16
Solar Power	GWh	0.22	0.24	2.13	2.02	3.05	3.46
Total	GWh	70.19	66.31	74.39	77.24	78.23	80.46

13.4 Generation Mix by Concession Area

Port Vila	Unit	2014	2015	2016	2017	2018	2019
Diesel Power	GWh	49.73	43.61	52.83	58.23	56.80	55.09
Copra Oil Power	GWh	3.04	3.42	2.37	-	0.79	1.44
Wind Power	GWh	6.79	8.27	5.42	4.77	4.37	6.16
Solar Power	GWh	0.11	0.11	0.87	0.85	1.90	2.41
IPP Solar Power	GWh	-	-	1.13	1.06	1.03	0.93
Total	GWh	59.67	55.41	62.61	64.91	64.90	66.04
Malekula	Unit	2014	2015	2016	2017	2018	2019
Diesel Power	GWh	0.52	0.43	0.67	0.79	0.90	1.02
Copra Oil Power	GWh	0.18	0.26	0.04	-	-	-
Solar Power	GWh	0.03	0.03	0.03	0.03	0.03	0.03
Total	GWh	0.73	0.72	0.74	0.82	0.93	1.05
Tanna	Unit	2014	2015	2016	2017	2018	2019
Diesel Power	GWh	0.76	0.66	0.87	0.99	1.16	1.35
Solar Power	GWh	0.03	0.04	0.04	0.04	0.03	0.04
Total	GWh	0.79	0.70	0.91	1.03	1.19	1.39
Luganville	Unit	2014	2015	2016	2017	2018	2019
Diesel Power	GWh	1.57	2.37	5.01	3.30	3.55	4.15
Hydro Power	GWh	7.38	7.07	5.05	7.13	7.61	7.78
Solar Power	GWh	0.04	0.06	0.06	0.05	0.05	0.05
Total	GWh	8.99	9.49	10.12	10.48	11.21	11.98

Luganville data is inclusive of Port Olry commencing 2016

13.5 Total Litres of Diesel Utilized in Generation by Concession Area

Diesel Oil used in Gen.	2014	2015	2016	2017	2018	2019
Port Vila	12,585,632	11,010,356	13,298,663	14,841,676	14,632,400	14,667,513
Tanna	232,842	200,600	264,450	290,740	327,725	382,997
Malekula	186,878	159,800	234,905	232,591	256,420	299,921
UNELCO	13,005,352	11,370,756	13,798,018	15,365,007	15,216,545	15,350,431
VUI	464,235	688,857	1,426,685	976,259	1,047,748	1,234,456
Total Liters	13,469,587	12,059,613	15,224,703	16,341,266	16,264,293	16,584,887

Luganville data is inclusive of Port Olry commencing 2016

13.6 Total Litres of Copra Oil Utilized in Generation by Concession Area

Copra Oil used in gen.	Unit	2014	2015	2016	2017	2018	2019
Port Vila	L	883,380	968,036	726,111	-	217,968	319,873
Malekula	L	79,840	109,847	16,992	-	-	-
TOTAL	L	963,220	1,077,883	743,103	-	217,968	319,873

13.7 Customer number by User Classification by Concession Area

Table 1 (page 5) of the EFS should be referred to be better informed about the data reported in the table below. It provides the number customer groups combined under the major electricity users.

Port Vila		Unit	2014	2015	2016	2017	2018	2019
Non-Commercial	No.		10,619	11,250	12,030	12,736	13,264	13,908
Commercial	No.		1,192	1,167	1,211	1,215	1,211	1,241
Industrial*	No.		73	72	76	77	77	78
Others**	No.		180	176	173	187	177	180
Total	No.		12,064	12,665	13,490	14,215	14,729	15,407
Malekula		Unit	2014	2015	2016	2017	2018	2019
Non-Commercial	No.		539	557	585	940	1,063	1,168
Commercial	No.		26	23	24	25	26	29
Industrial	No.		-	-	-	-	-	-
Others**	No.		9	16	16	14	8	6
Total	No.		574	596	625	979	1,097	1,203
Tanna		Unit	2014	2015	2016	2017	2018	2019
Non-Commercial	No.		934	1,161	1,235	1,352	1,416	1,476
Commercial	No.		23	21	21	24	23	25
Industrial	No.		-	-	-	-	-	-
Others**	No.		9	9	9	9	9	9
Total	No.		966	1,191	1,265	1,385	1,448	1,510
Luganville		Unit	2014	2015	2016	2017	2018	2019
Non-Commercial	No.		2,061	2,340	2,604	2,946	3,198	3,382
Commercial	No.		337	364	372	382	400	411
Industrial	No.		16	18	20	19	21	22
Others**	No.		75	78	88	89	99	126
Total	No.		2,489	2,800	3,084	3,436	3,718	3,941

* 'Industrial' user number in Port Vila is inclusive of electricity connections utilized for water pump stations

** 'Others' for all concession areas captures utilities' employee numbers

13.8 Customer Energy Consumption by Major User Classification by Concession Area

Table 1 (page 5) of the EFS should be referred to be better informed about the data reported in the table below. It provides customer consumption but combined under the major electricity users.

Port Vila		Unit	2014	2015	2016	2017	2018	
Non-Commercial	GWh		17.33	16.95	19.79	20.54	21.01	21.07
Commercial	GWh		13.33	12.87	14.38	14.61	14.20	14.85
Industrial**	GWh		23.83	21.20	23.38	25.18	24.58	25.14
Other*	GWh		0.78	0.76	0.77	0.80	0.75	0.77
Total	GWh		55.27	51.78	58.32	61.13	60.54	61.84
Losses	GWh		4.40	3.63	4.29	3.78	4.36	4.20
Malekula		Unit	2014	2015	2016	2017	2018	2019
Non-Commercial	GWh		0.43	0.42	0.44	0.46	0.45	0.53
Commercial	GWh		0.21	0.19	0.19	0.22	0.24	0.24
Industrial	GWh		-	-	-	-	-	-
Other*	GWh		0.01	0.02	0.02	0.02	0.02	0.02
Total	GWh		0.65	0.63	0.65	0.70	0.70	0.79
Losses	GWh		0.08	0.09	0.09	0.12	0.23	0.27
Tanna		Unit	2014	2015	2016	2017	2018	
Non-Commercial	GWh		0.43	0.39	0.53	0.59	0.67	0.80
Commercial	GWh		0.25	0.21	0.25	0.28	0.32	0.36
Industrial	GWh		-	-	-	-	-	-
Other*	GWh		0.02	0.02	0.02	0.02	0.02	0.02
Total	GWh		0.70	0.61	0.80	0.90	1.01	1.18
Losses	GWh		0.09	0.08	0.11	0.13	0.18	0.22
Luganville		Unit	2014	2015	2016	2017	2018	
Non-Commercial	GWh		2.25	2.25	2.64	2.95	3.02	3.40
Commercial	GWh		3.08	3.37	3.56	3.45	3.49	3.63
Industrial	GWh		2.36	2.46	2.77	2.59	2.69	3.40
Other*	GWh		0.24	0.25	0.31	0.32	0.55	0.54
Total	GWh		7.93	8.32	9.29	9.31	9.75	10.97
Losses	GWh		1.07	1.18	0.83	1.17	1.46	1.01

* 'Industrial' user number in Port Vila is inclusive of electricity connections utilized for water pump stations

** 'Others' for all concession areas captures utilities' employee numbers