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2 July, 2018

Paula Tupou  
Electricity Commission  
Tu'atakilangi  
Nuku'alofa

Dear Paula

### PROGRESS REPORT for May 2018

1. In Conforming to the reporting obligations set forth in Paragraph 5 of Schedule 13 of the 2015 Regulatory Addendum, Tonga Power Limited qua Concessionaire do now provide a **Progress Report** in respect to the month of **May 2018**. I apologise for the delay in sending this to your office but we have other end of month obligation to the Ministry of Public Enterprises (Final Business Plan due Friday 29<sup>th</sup> June 2018).

### 2. SYSTEM LOSS

System Losses for the month of April 2018 were as follows: -

MONTH	TONGA	TBU	VV	HP	'EUA
April 2018	9.58%	9.39%	10.99%	6.10%	7.04%

System Losses for April 2018 includes Parasitic losses of 3.12% and Line Losses of 6.46%. The Combined figure is below the Reset Target for 2017-18 of 11.0%. Appendix 1 hereto comprises Graphs going back 12 months to show results for Tonga as a whole and each of the four separate island grids. The decline in system losses is largely attributed to the significant decrease in consumption.

### 3. DIESEL GENERATION FUEL EFFICIENCY

The Regulatory Addendum requires a weighted average for Tonga as a whole of not less than 4 kWh/litre and Tonga Power Limited has exceeded this target in the month of April 2018. The actual result is 4.40kWh/litre, which is an increase from 4.16kWh last month (note this figure includes energy generated from Renewables).

Appendix 2 hereto comprises bar graphs going back 12 months to show results for Tonga as a whole and each of the four separate island grids.

#### 4. SYSTEM RELIABILITY

There are no service standards for reliability imposed upon Tonga Power in the 2015 Regulatory Addendum. However for 2017-18, the Concessionaire has set itself the following TARGETS, namely :-

SAIDI <sup>1</sup>	-	1,080 minutes per annum
CAIDI <sup>2</sup>	-	870 minutes per annum
SAIFI <sup>3</sup>	-	14

Appendix 3 hereto gives details of TPL's present and recent past performance for system reliability.

#### 5. FAULTS/OUTAGES

The table below shows a comparison between 2017-2018 and 2016-2017 for Tonga as a whole. The decrease in the February & March data is largely attributed to the TC GITA Recovery Work. We still see the impact of the aftermath of TC GITA in the April statistics which has gone up significantly however for the month of May, the trend has dropped since recovery works and upgrades are near completion.

Month	2016-17	2017-18 Faults	2017-18 Outages
July	364	257	5
August	376	335	5
September	312	261	3
October	338	245	3
November	346	309	5
December	363	306	5
January	317	327	5
February	581	240	6
March	406	143	3
April	344	791	2
May	604	372	1
June	268		
<b>TOTAL</b>	<b>4,619</b>	<b>3,586</b>	<b>43</b>

<sup>1</sup> SAIDI: System Average duration of Interruption per Connected Customer.

<sup>2</sup> CAIDI: Average total duration of Interruption per Interrupted Customer.

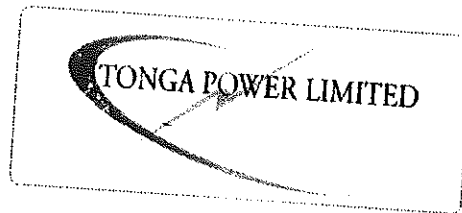
<sup>3</sup> SAIFI: Average number of Interruptions per Customer.

Appendix 4 gives details of each planned outage and unplanned fault events.

Yours faithfully,



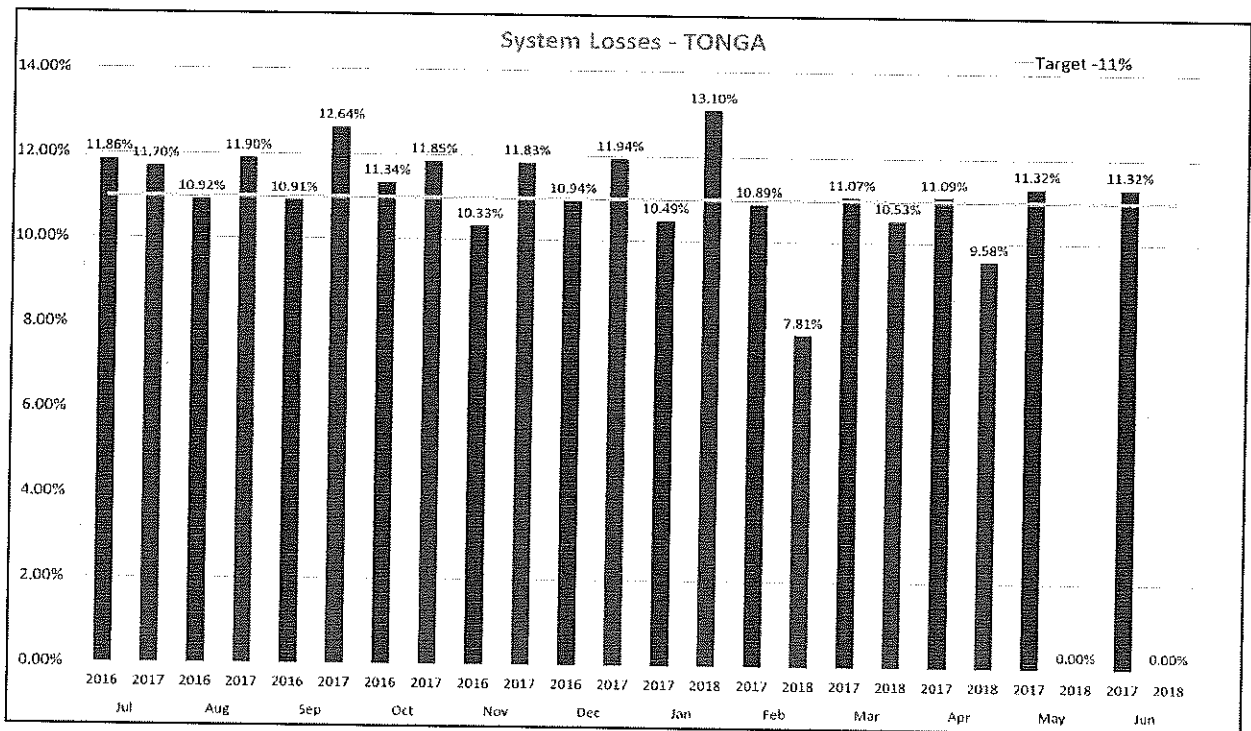
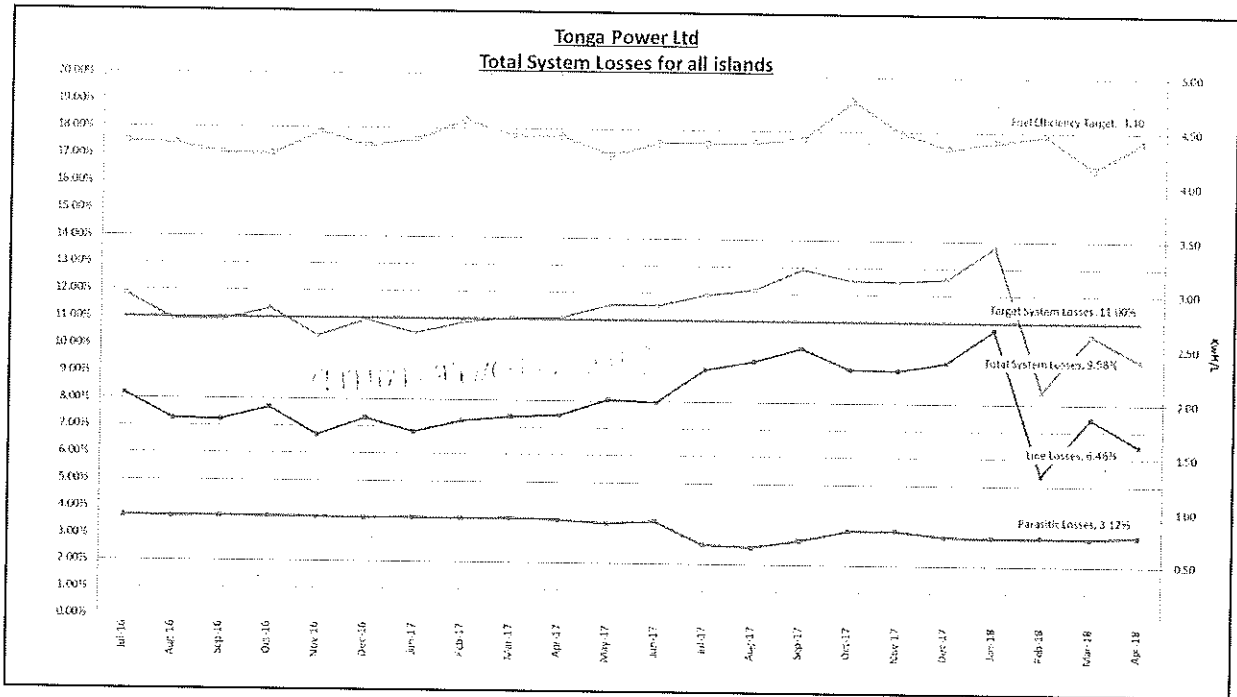
Ms. Sosefina S Maileseni  
Risk and Compliance Manager  
Tonga Power Limited

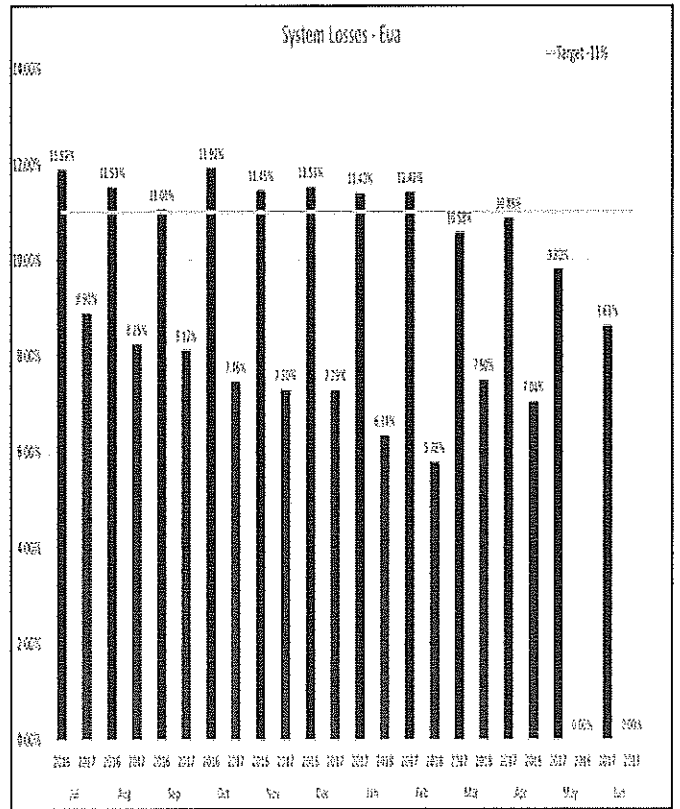
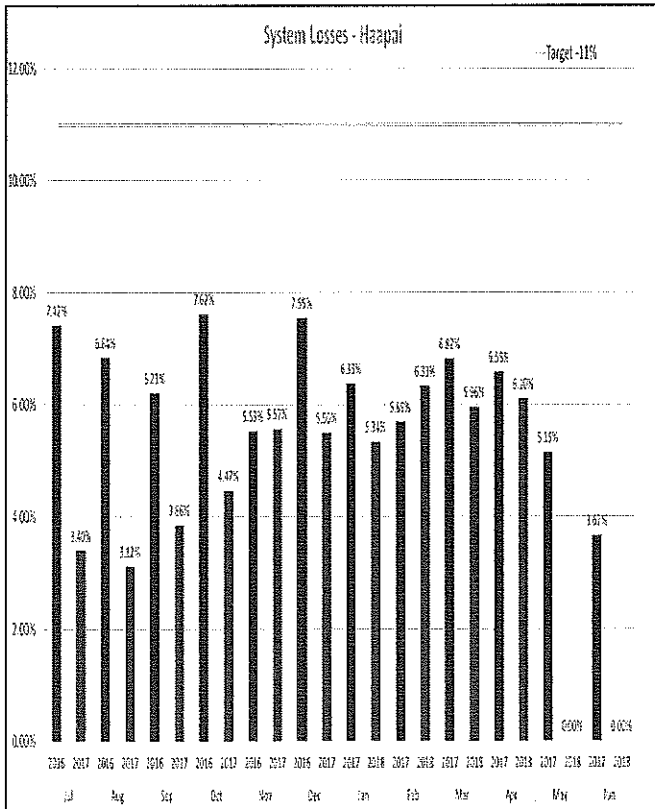
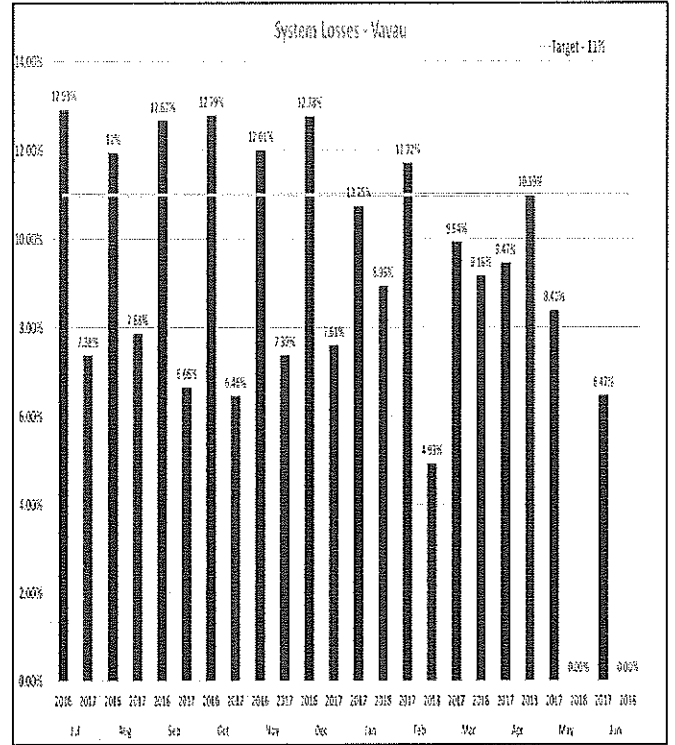
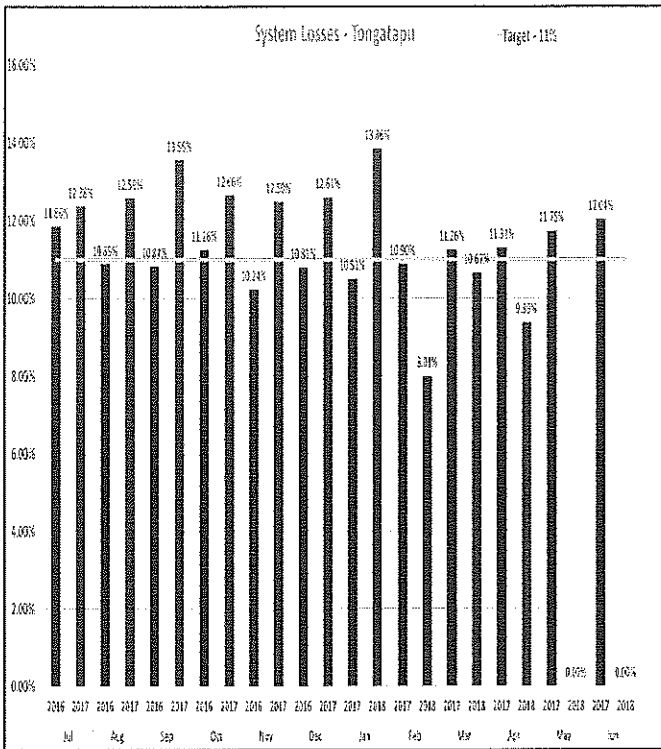


Cc: Mr. Robert Matthews, CEO of TPL

# APPENDIX - 1:

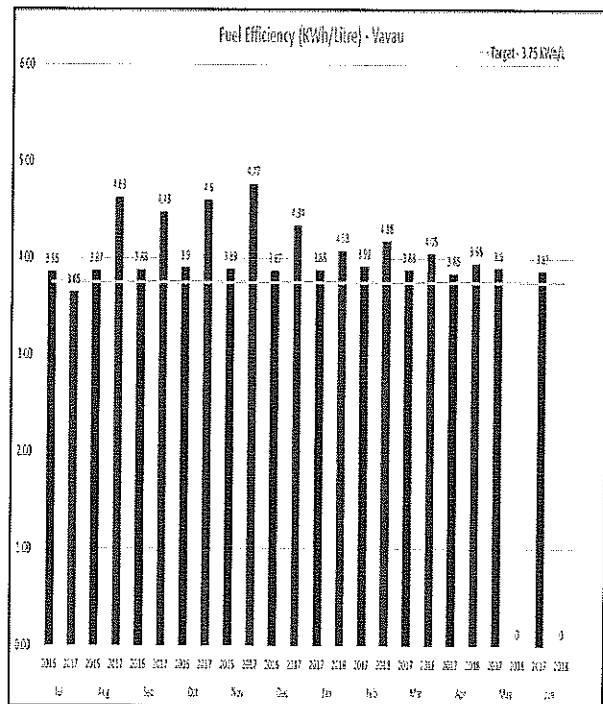
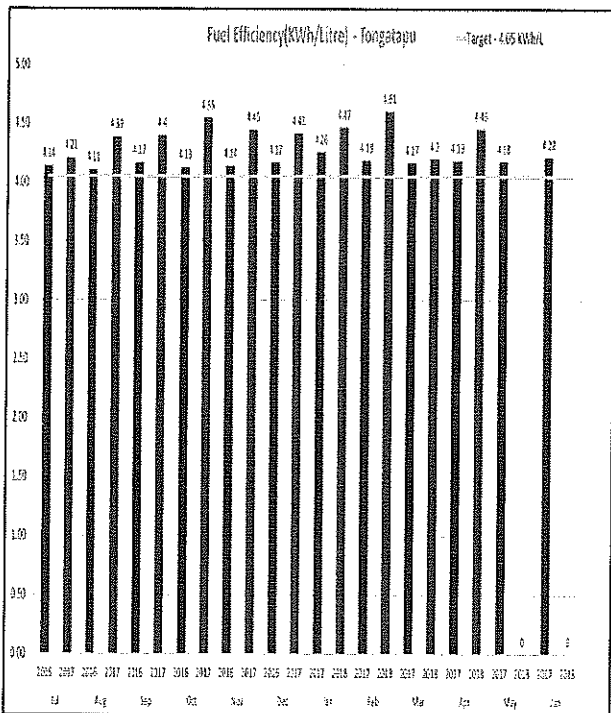
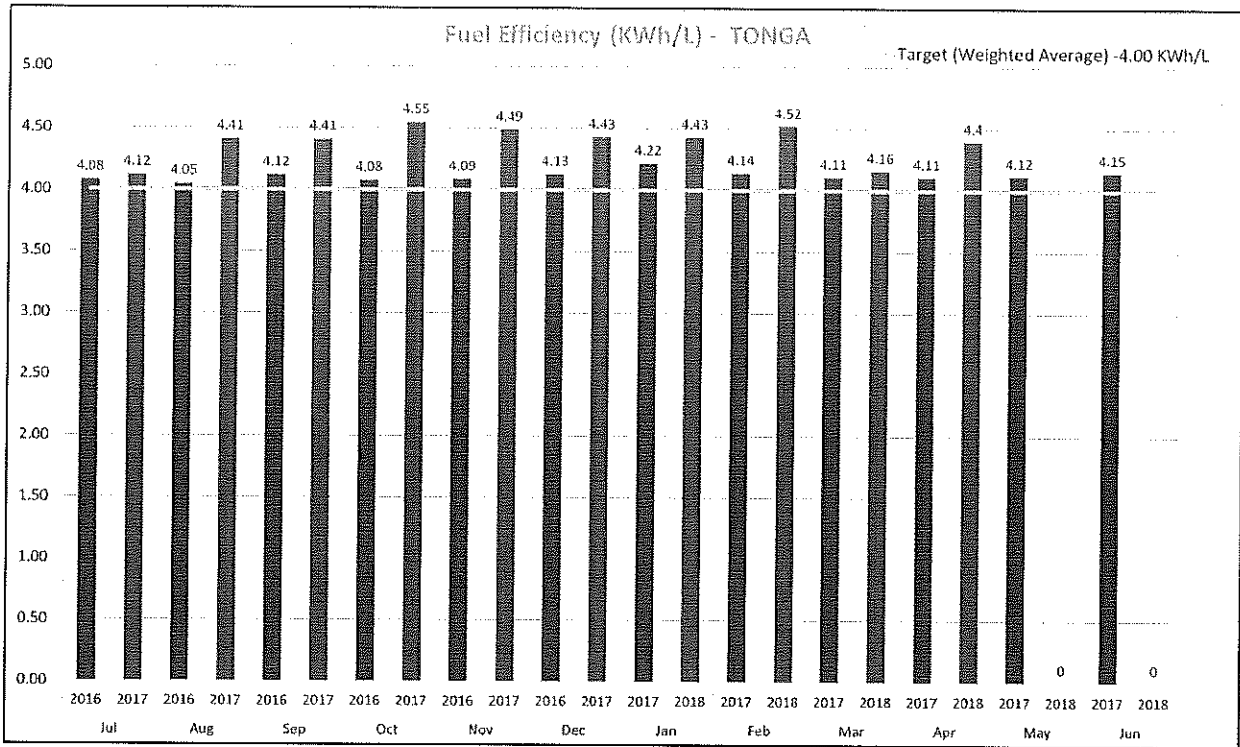
# SYSTEM LOSS GRAPHS

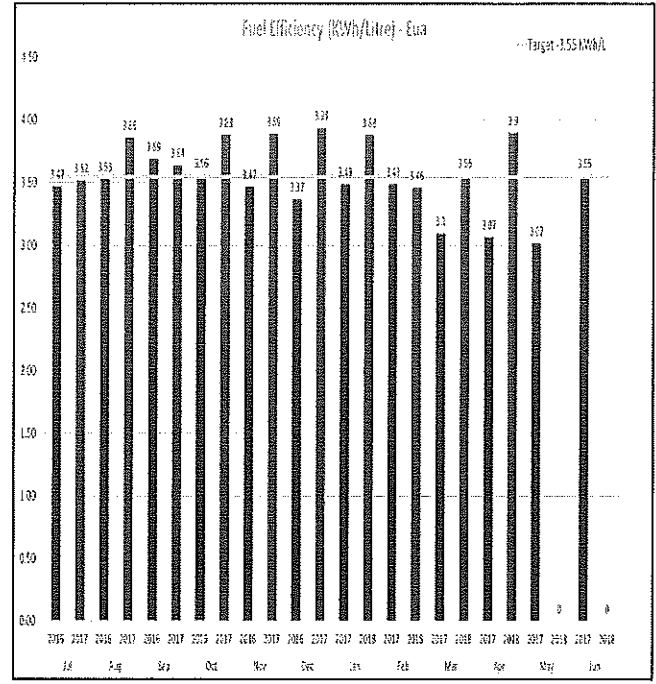
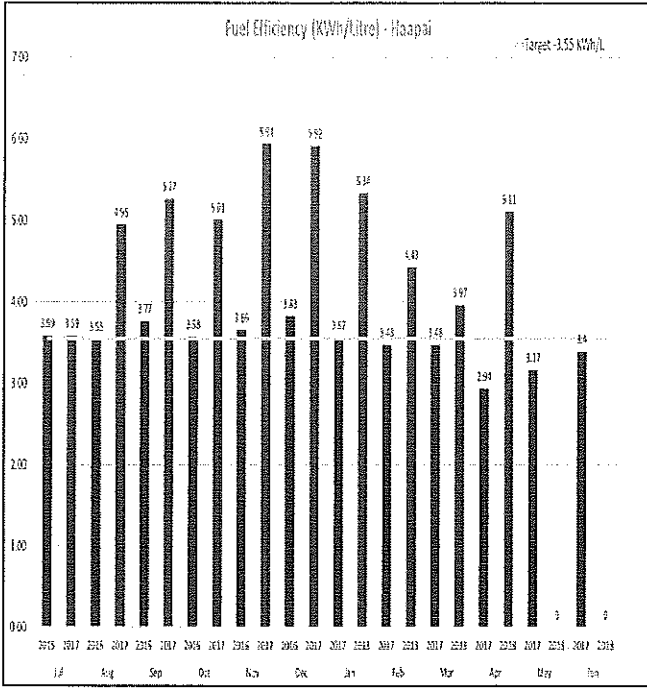




# APPENDIX – 2:

# DIESEL GENERATION FUEL EFFICIENCY





APPENDIX – 3:

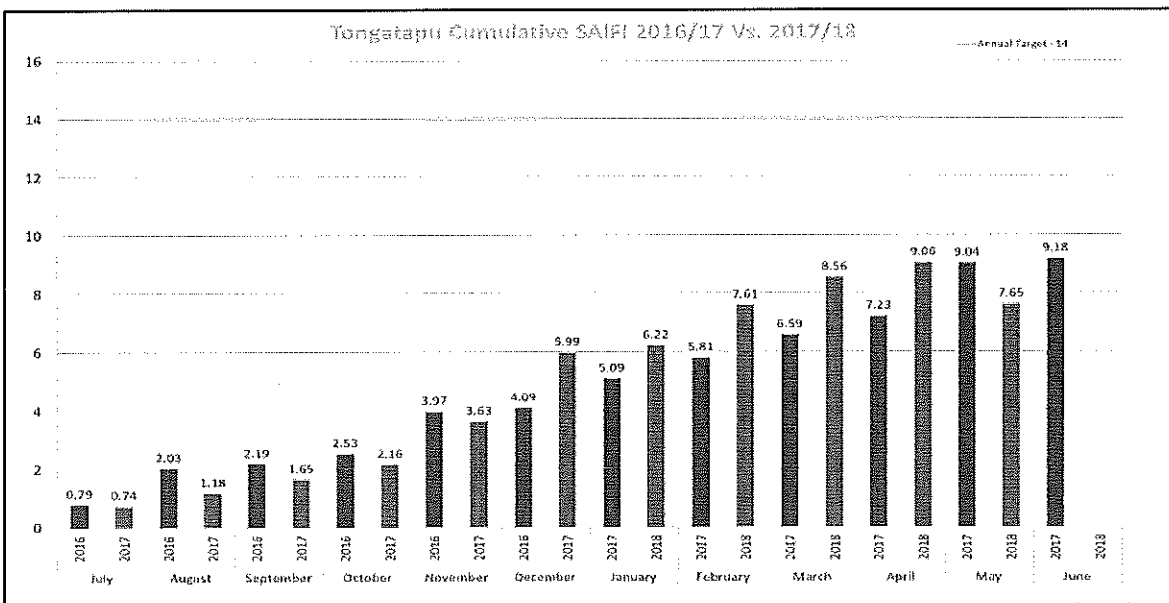
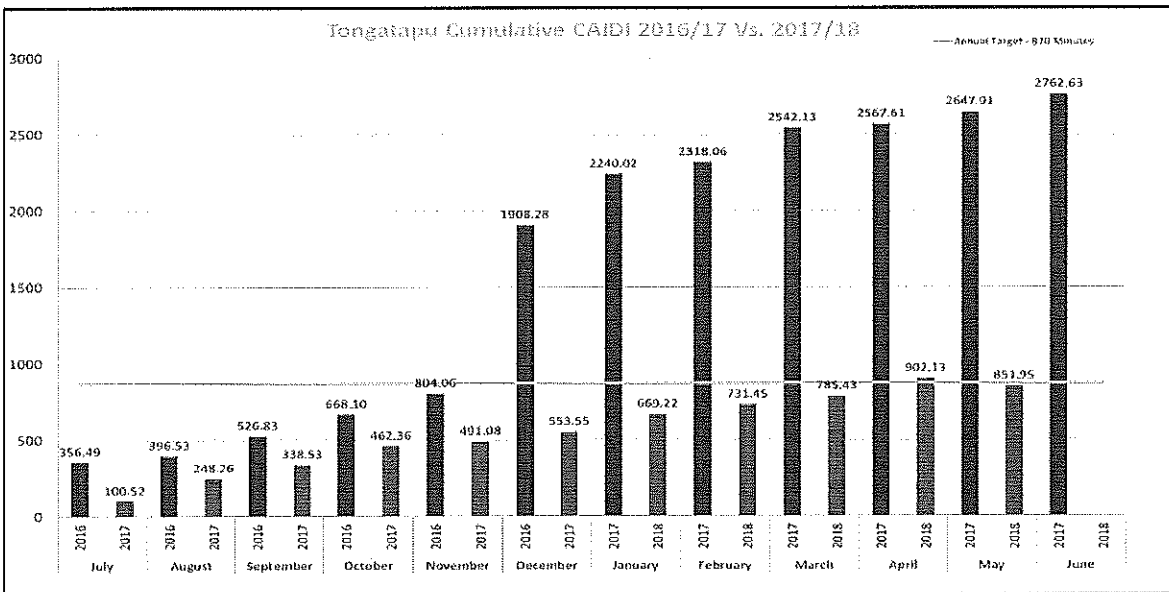
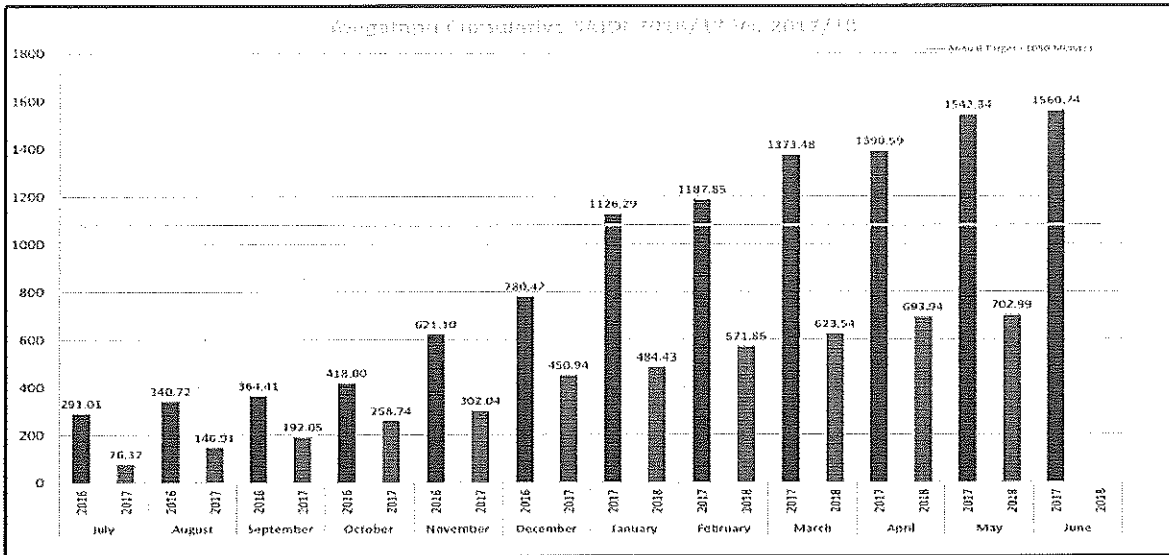
SYSTEM RELIABILITY

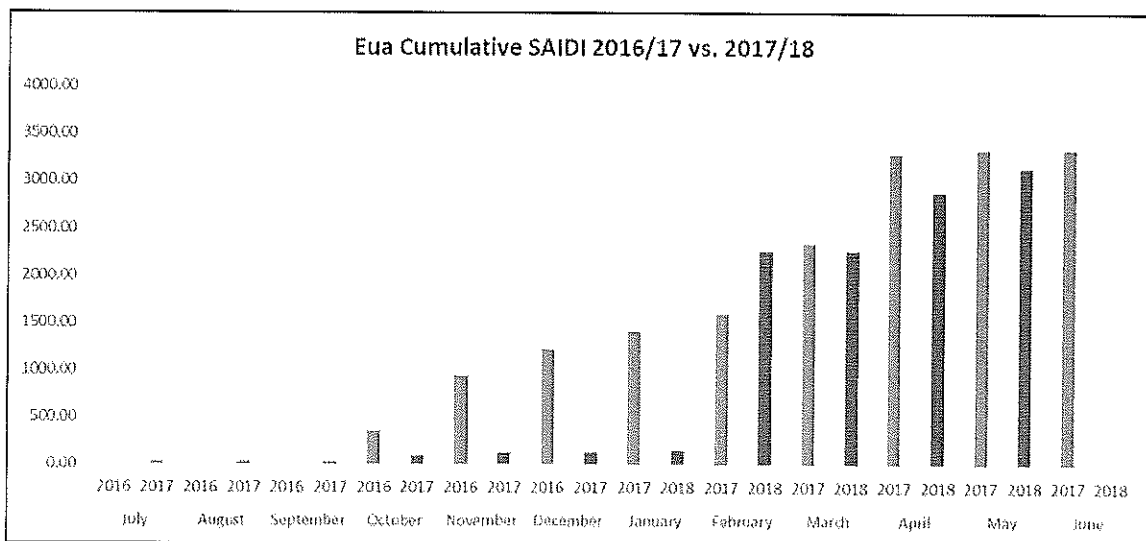
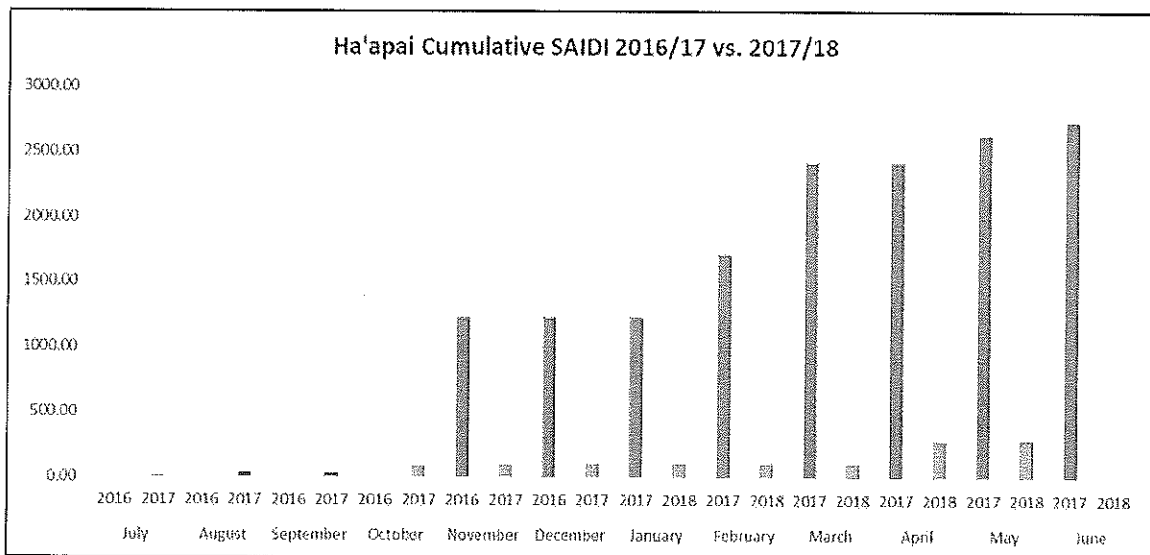
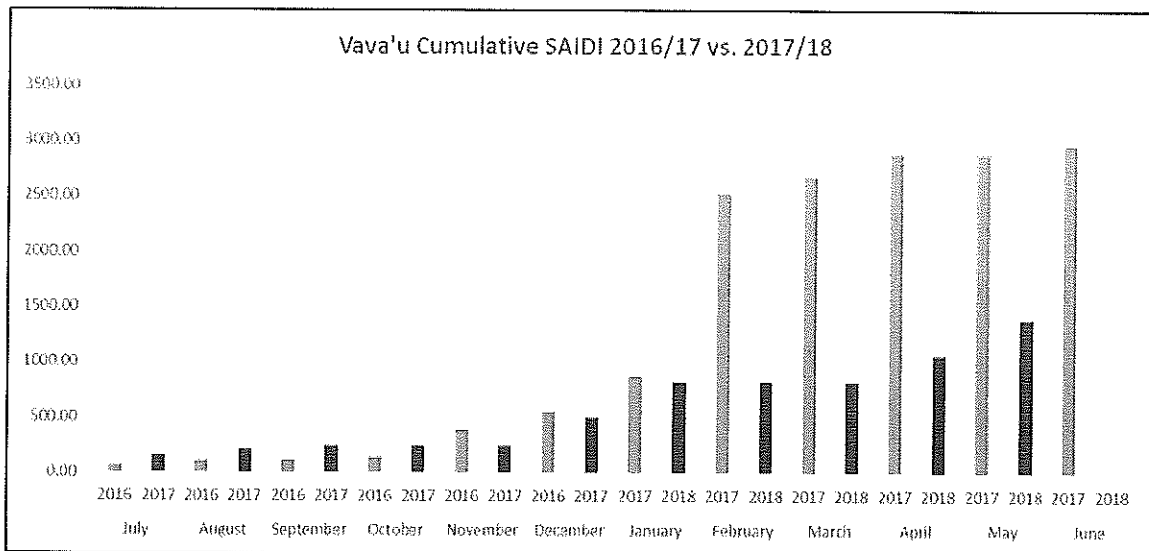
SAIDI Monthly Performance (Minutes)					CAIDI Monthly Performance (Minutes)				SAIFI Monthly Performance					
Month	2014/15	2015/16	2016/17	2017/18	Month	2014/15	2015/16	2016/17	2017/18	Month	2014/15	2015/16	2016/17	2017/18
Jul	171.37	17.28	291.01	76.37	Jul	106.45	12.78	356.49	100.51	Jul	1.61	1.35	0.787	0.741
Aug	161.75	151.91	49.71	70.55	Aug	113.076	74.97	40.03	147.74	Aug	1.37	2.027	1.242	0.44
Sep	167.93	98.08	23.68	45.14	Sep	95.58	44.54	130.3	90.26	Sep	1.76	2.202	0.158	0.469
Oct	83.2	54.7	53.59	66.69	Oct	74.58	22.74	141.27	123.83	Oct	1.12	2.405	0.345	0.507
Nov	123.66	15.55	203.1	43.3	Nov	190.511	31.481	135.97	28.87	Nov	0.649	2.367	1.44	1.47
Dec	28.04	9.56	159.32	148.9	Dec	43.97	165.29	1104.21	62.47	Dec	0.638	0.058	0.17	2.358
Jan	190.24	66.96	345.87	33.49	Jan	36.24	22.85	331.74	115.66	Jan	5.25	2.931	1.004	0.236
Feb	77.52	100.53	61.56	87.43	Feb	42.54	36.4	78.038	62.23	Feb	1.82	2.763	0.72	1.389
Mar	10.12	626.23	185.63	51.68	Mar	33.29	420.09	224.07	53.97	Mar	0.304	1.323	0.78	0.95
Apr	26.04	44.28	17.11	70.39	Apr	35.09	76.32	25.48	116.7	Apr	0.743	0.58	0.632	0.498
May	51.1	47.39	151.75	9.05	May	34.75	257.8	80.29	120.499	May	1.47	0.141	1.813	0.036
Jun	34.35	76.53	18.4		Jun	169.56	80.8	114.72		Jun	0.203	0.629	0.143	
<b>Total</b>	<b>1125.32</b>	<b>1309</b>	<b>1560.73</b>	<b>702.99</b>	<b>Total</b>	<b>980.637</b>	<b>1246.061</b>	<b>2762.608</b>	<b>1022.739</b>	<b>Total</b>	<b>16.937</b>	<b>18.776</b>	<b>9.234</b>	<b>9.094</b>

Major HV Fault for May 2018

Report Date	No. of Customers Off	Fault Description	Repair Comment
19/05/2018	450	SHUT DOWN	SHUT DOWN FROM Mailetaha to Pea
05/05/2018	60	Power shut down to Hahake	power shut down from Lapaha to Niutoua. Note - Talafou to Niutoua only I.v. lines. Iiven use by Aus. Aid generators except Nukuleka their was off for both H.V. and I.v. lines. - by K.Palu
05/05/2018	42	POWER OFF	BLOWN PHASE YELLOW N ON TRANSFORMER 1X200A REPLACE IT WITH 1X200A A-250V B-250V C-251V
30/05/2018	40	power off	phase red burnt, repairs load the phase with wire test: 244V, 242V, 243V
30/05/2018	38	power off	Power partly off due to NH001 63A link blown - Phase Red so they replace it then test power line. Materials: 1 x NH001 63A link Test After=241V
29/05/2018	32	partly off	Power partly off due to 100A NH001 link blown - Phase Yellow so they replace it then test power line. Materials: 1 x 100A NH001 Test After=243V
04/05/2018	30	PARTLY OFF	PARTLY OFF DUE TO 1 X 200 SO THE REPLACE IT WITH 1 X 160A TEST = 240V, 239V, 238V
26/05/2018	24	partly off again	HRC 125 fuse burnt materials: link 100A x 1 test after: 242V power off again at: 20:45
26/05/2018	24	power off	partly off due to fuse blown HRC 160 LV line from transformer so the repair replaced HRC then test material used: HRC 160 x 1 test after - 242v
25/05/2018	21	power off	phase blue's terminal burnt materials: 1 fuse holder, link 63A nh100 x 1 test after: 241V
21/05/2018	19	power off	LV phase blue on transformer blown materials: link 63A x 1 test after: 241V, 241V, 242V
02/05/2018	18	power off	materials: IPC 16/95 x 1 test: 241V
11/05/2018	15	power off	1 x 2 A DDO fuse blown so they replace it with DDO 1 x 2A
13/05/2018	15	power off	1 x 6A fuse blown, replace it with 1 x 6A fuse link
31/05/2018	15	partly off	phase loose connection reconnect with IPC 16-95 x 1 test result - 241v 240v 241v







# APPENDIX – 4:        DETAILS OF PLANNED OUTAGES AND UNPLANNED FAULT EVENTS

May 2018

Planned/Unplanned Outage Events	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	2016/17	2017/18	
Generator problem	0	0	1	0	0	0	0	1	1	0	2	0	0	0	1	1	0	1	0	2	0	0	0	0	6	4
HV Lines	9	5	15	13	12	14	9	14	12	24	18	18	8	15	41	11	21	3	10	17	24	8	11	0	191	142
HV/DV Transformer	11	7	11	11	5	13	2	6	15	13	7	7	15	13	22	5	17	1	12	15	18	10	5	0	140	101
HV Pole	3	1	4	4	0	0	11	1	2	1	0	1	0	2	0	1	0	1	7	3	3	3	0	0	30	18
LV Lines	79	58	69	59	50	63	60	41	57	48	72	52	70	40	146	40	76	33	52	194	182	86	45	0	958	714
Service lines	96	78	95	112	99	85	89	85	204	141	98	117	75	121	200	114	164	60	137	301	216	120	96	0	1470	1344
Customer premises	142	110	157	134	124	93	142	96	228	82	164	108	146	136	166	71	126	47	119	254	160	133	110	0	1684	1364
Street Lights	21	0	19	0	20	0	22	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	107	0
Meter	3	3	3	7	2	4	3	5	2	5	4	3	3	5	6	3	1	1	6	9	6	4	1	0	40	49
<b>Total</b>	<b>364</b>	<b>262</b>	<b>376</b>	<b>340</b>	<b>312</b>	<b>272</b>	<b>338</b>	<b>248</b>	<b>345</b>	<b>315</b>	<b>353</b>	<b>308</b>	<b>317</b>	<b>332</b>	<b>581</b>	<b>246</b>	<b>416</b>	<b>146</b>	<b>244</b>	<b>793</b>	<b>611</b>	<b>374</b>	<b>268</b>	<b>0</b>	<b>4626</b>	<b>3686</b>

