



*P.O BOX 429, NUKU'ALOFA, Tel: (676) 21-400 Fax: (676) 23-047 Email: [afernando@tongapower.to](mailto:afernando@tongapower.to)*

17 June 2013

Lord Dalgety  
Electricity Commission  
Tu'atakilangi  
Nuku'alofa

Dear Lord Dalgety

### **Compliance Reporting for the Month of June 2013**

In accordance with the reporting requirements of the Electricity Concession Contract and in response to your request for additional information as specified in the suggested MOU dated May, 2012, TPL submits the following reports for the month of June, 2013.

1. System Loss Report – May, 2013
2. Reliability Measures – May, 2013
3. Monthly Outage Events – May, 2013

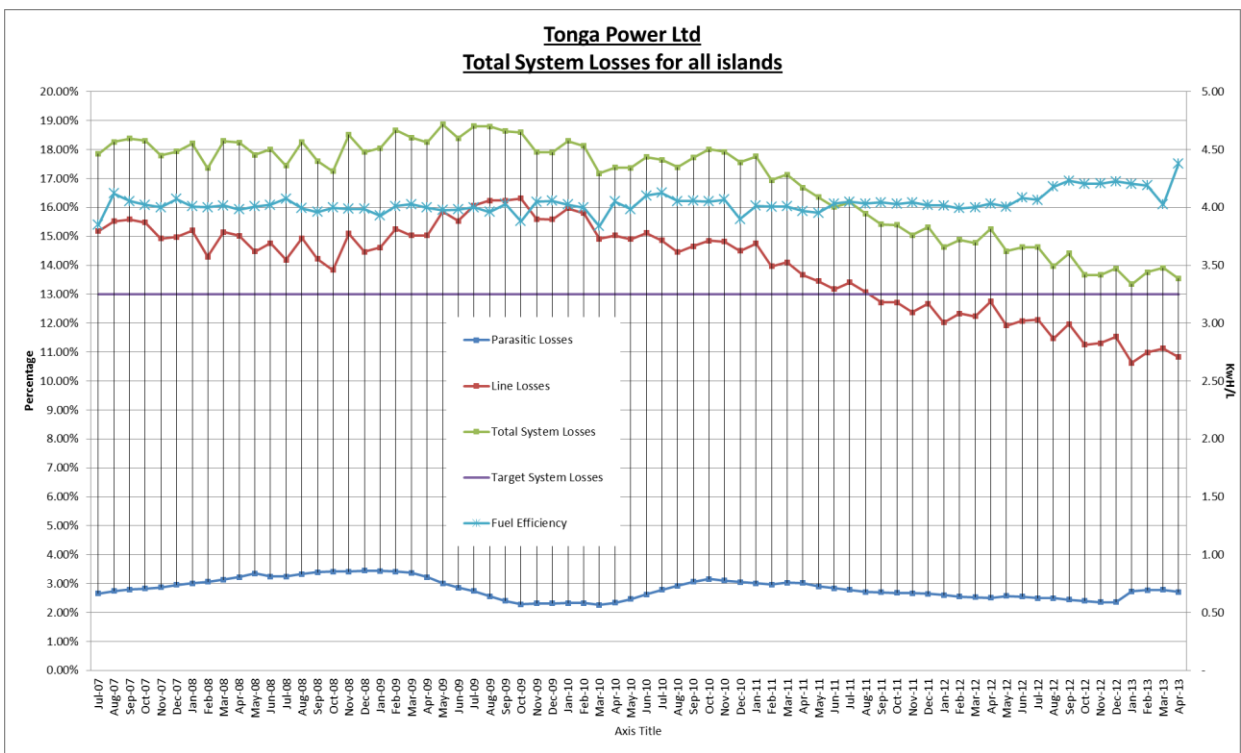
The above report items are described in detail below.

#### **1. System Loss Report**

The following graph illustrates that the past 12 months moving average (smoothed) of systems losses for all four islands for the period July 2007 – April 2013. The graph indicates that the total losses for all four islands have slightly decreased from 13.91% (March, 2013) to 13.54% (April, 2013). However, on a real time basis (disregarding 12 months moving average), total systems losses have increased from 12.01% (March, 2013) to 16.54% (April, 2013) as all islands' real time losses have significantly increased except in Eua. Whilst Tongatapu 12 months moving average losses have significantly decreased from 13.78% (March, 2013) to 13.46% (April, 2013), Vava'u, Ha'apai and 'Eua moving average losses have slightly increased.

Fuel efficiency for all four islands has increased from 4.03 Kwh/litre (March, 2013) to 4.38 Kwh/litre (April, 2013). As can be seen from the graphs below, the improved efficiency is more a catch up from last month's reading.

Please refer to the attached excel file 'System Loss Report May 2013' for further details.



## 2. Reliability Measures

SAIDI minutes (measuring average total duration of interruption per connected customer) for the month of May, 2013 have significantly decreased from 339.33 (April, 2013) to 122.31 (May, 2013) minutes (see the table below).

| Reliability Measures      |         |         |         |  |       |                           |         |         |                           |       |         |         |         |
|---------------------------|---------|---------|---------|--|-------|---------------------------|---------|---------|---------------------------|-------|---------|---------|---------|
| SAIDI Monthly Performance |         |         |         |  |       | CAIDI Monthly Performance |         |         | SAIFI Monthly Performance |       |         |         |         |
| Month                     | 2010/11 | 2011/12 | 2012/13 |  | Month | 2010/11                   | 2011/12 | 2012/13 |                           | Month | 2010/11 | 2011/12 | 2012/13 |
| Jul                       | 7.74    | 4.74    | 638.62  |  | Jul   | 60.7                      | 143.09  | 90.44   |                           | Jul   | 0.13    | 0.03    | 7.06    |
| Aug                       | 935.29  | 4.51    | 57.31   |  | Aug   | 443.33                    | 161.45  | 148.47  |                           | Aug   | 2.11    | 0.03    | 0.39    |
| Sep                       | 933.55  | 59.19   | 5.66    |  | Sep   | 477.69                    | 649.6   | 92.61   |                           | Sep   | 1.95    | 0.09    | 0.06    |
| Oct                       | 9.35    | 253.89  | 16.05   |  | Oct   | 64.33                     | 243.63  | 11.23   |                           | Oct   | 0.15    | 1.04    | 1.43    |
| Nov                       | 4.35    | 25.49   | 150.73  |  | Nov   | 123.68                    | 69.34   | 62.32   |                           | Nov   | 0.04    | 0.37    | 2.42    |
| Dec                       | 20.42   | 115.19  | 74.28   |  | Dec   | 19.48                     | 358.97  | 33.78   |                           | Dec   | 1.05    | 0.32    | 2.2     |
| Jan                       | 984.8   | 622.62  | 177.39  |  | Jan   | 889.45                    | 280.26  | 114.76  |                           | Jan   | 1.11    | 2.22    | 1.55    |
| Feb                       | 162.32  | 3010.76 | 282.85  |  | Feb   | 131.96                    | 412.1   | 363.77  |                           | Feb   | 1.23    | 7.31    | 0.78    |
| Mar                       | 296.37  | 23.32   | 134.9   |  | Mar   | 219.53                    | 55.81   | 62.17   |                           | Mar   | 1.35    | 0.42    | 2.17    |
| Apr                       | 157.89  | 336.9   | 339.33  |  | Apr   | 63.18                     | 219.97  | 190.62  |                           | Apr   | 2.5     | 1.53    | 1.78    |
| May                       | 8.22    | 294.55  | 122.31  |  | May   | 222.5                     | 98.59   | 31.29   |                           | May   | 0.04    | 2.99    | 3.91    |
| Jun                       | 62.22   | 14.72   |         |  | Jun   | 387.96                    | 66.45   |         |                           | Jun   | 0.16    | 0.22    |         |

The major HV faults contributed to the SAIDI minutes for the May, 2013 were described below:

| Report_Date | Fault_Description                   | Repair_Comment   | No_of_Customers_Off |
|-------------|-------------------------------------|--|---------------------|
| 9/05/2013   | Power off                           | Problem from the feeder generators   | 15300               |
| 20/05/2013  | The whole of Tongatapu shut down    | Generation problems  | 15300               |
| 21/05/2013  | Power off to the whole of Tongatapu | Generation problems  | 15300               |
| 3/05/2013   | Drop feeder 1                       | FEEDER 1 DROP DOWN   | 5021                |
| 9/05/2013   | Close feeder 1                      | Open feeder 1 from the generation.   | 5021                |
| 9/05/2013   | Drop feeder 1                       | Feeder 1 drop so they fix power line   | 1489                |
| 3/05/2013   | Broken conductor                    | They just connect the conductor than resaq the line and than they connect power line.<br>Power shut down from Pea to Vaotu'u and Tokomololo to Makapaeo. | 600                 |
| 9/05/2013   | Burnt DDO fuse stick                | Spark so they replace fuse stick on Inline fuse for Red phase [ off from Taufaahau rd to Pelehake at Malapo ]  | 300                 |

CAIDI minutes (measuring average total duration of interruption per interrupted customer) for the month of April 2013 have also decreased significantly from 190.62 minutes (April, 2013) to 31.29 (May, 2013) minutes.

SAIFI (measuring average number of interruptions per customer); however, has however, increased from 1.78 (April, 2013) to 3.91 (May, 2013). Refer to the table above.

### 3. Monthly Outage Events

| Unplanned Outage Events | Jul-12     | Aug-12     | Sep-12     | Oct-12     | Nov-12     | Dec-12     | Jan-13     | Feb-13     | Mar-13      | Apr-13     | May-13     |
|-------------------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|------------|------------|
| Generator problem       | 0          | 2          | 0          | 2          | 2          | 2          | 3          | 1          | 3           | 2          | 8          |
| HV Lines                | 8          | 12         | 15         | 11         | 11         | 12         | 9          | 42         | 5           | 9          | 14         |
| HV Transformer          | 10         | 9          | 12         | 6          | 2          | 4          | 6          | 16         | 7           | 3          | 10         |
| HV Pole                 | 2          | 0          | 1          | 0          | 4          | 2          | 1          | 1          | 2           | 4          | 4          |
| LV Lines                | 37         | 22         | 28         | 34         | 34         | 12         | 61         | 69         | 68          | 35         | 39         |
| Service lines           | 238        | 238        | 340        | 255        | 291        | 301        | 235        | 354        | 569         | 328        | 443        |
| Customer premises       | 173        | 190        | 209        | 192        | 244        | 201        | 234        | 221        | 360         | 220        | 284        |
| Street Lights           | 27         | 26         | 15         | 15         | 221        | 217        | 224        | 155        | 36          | 34         | 23         |
| Meter                   | 3          | 8          | 7          | 6          | 1          | 5          | 3          | 6          | 9           | 4          | 3          |
| <b>Total</b>            | <b>498</b> | <b>507</b> | <b>627</b> | <b>521</b> | <b>810</b> | <b>756</b> | <b>776</b> | <b>865</b> | <b>1059</b> | <b>639</b> | <b>828</b> |

There were total of 828 unplanned fault events for the month of May, 2013 affecting 59,754 customers. As per the table above, the number of fault events has increased from 639 events in April, 2013 to 828 events in May, 2013. The faults were mostly constitutes of customer (284 faults) and service lines (443 faults). In May, 2013, both service line and customer premises faults have increased due to adverse weather conditions. Most of the customer services faults include fuses at the service line tap off point for a premise. Street lights faults have decreased slightly.

Should you have any queries with the information provided, please do not hesitate to contact me.

Yours Faithfully,  
Ajith Fernando  
Risk & Compliance Manager  
Tonga Power Limited

Attachments:

- System Loss Report May 2013
- Reliability Measures May 2013
- Faults Events May 2013