18 September 2012

Lord Dalgety
Electricity Commission
Tu’atakilangi
Nuku’alofa

Dear Lord Dalgety

**Compliance Reporting for the Month of September**

In accordance with the reporting requirements of the 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 September 2012.

1. Kwh Generation and billed
2. Capex update
3. RAV update
4. Efficiency standards
5. Reliability measures
6. Monthly faults events
7. Tariff review proposal
8. Annual report and
9. Financial statements

Additional reporting items:

10. Non-tariff charges

The above report items are described in detail below.

**1. Kwh Generation & Billed**

The graph below shows the total Kwh generated and billed for the period 2006-2012. During this period, the total Kwh generated reduced by about 4% (from Kwh 54.7million in 2006 to Kwh 52.4million in 2012) whilst Kwh billed did not change significantly (only reduced by 0.2%) indicating system losses have reduced. In fact, for this period, the system losses have reduced by about 22% (from Kwh 9.8million in 2006 to Kwh 7.6million in 2012) whilst parasitic losses reduced by about 5%. The graph below clearly shows that Unaccounted for Energy (UFE) which constitutes of technical and non-technical losses has decreased significantly.
The graph below shows the comparison of Kwh generated/billed between the month of July 2012/13 and the average (monthly) in the year 2011/12. In the month of July this year, Kwh generated has decreased by about 4.6% from last year’s monthly average (from Kwh 4.3million to 4.1million). However, total losses have increased by about 4.6% from 0.6million kWh to 0.7million kWh for the same period.

Note: The above graphs show overall Kwh generation and billed data for the all four islands. The individual island Kwh generation & billed information can be found in the attached file: Fuel-Gen-Billed Update Aug 2012.

2. CAPEX Update

A detailed capex reconciliation report for the year 2011/12 was prepared and sent to EC along with the last month’s compliance reports. However, TPL still have not received a confirmation from EC indicating that 2011/12 capex expenditures have been approved.

May 2012 Draft MOU requires capex update to be sent on a quarterly basis from 2012/13 onwards. Therefore, the next quarterly capex update will be sent to EC in October 2012.

Action point to EC: EC to send a confirmation to TPL stating that the capex expenditure for the year 2011/12 have been approved.
Also, in accordance with the May 2012 Draft MOU, TPL is requested to send an annual capex proposal for the year 2012/13 by November 2012. However, TPL prefer to send the Board approved capex proposal at the beginning of the financial year (i.e. in the month of July every year). Our records indicate that TPL has sent its overall capex/opex budget for the year 2012/13 to EC already in July. The copy of the generation & distribution capex proposal is attached with this report for approval by EC.

**Action point to EC:** EC to provide approval for the annual capex proposal for the year 2012/13.

3. **Regulatory Asset Value (RAV) Update**

The RAV update for the year 2011/12 was also sent to EC as part of last month’s compliance reports. As the capex summary report is updated, the RAV summary is also updated at the same time to show the new RAV balance. In accordance with the suggestions of the May 2012 Draft MOU, the RAV balance is reported to the EC on a quarterly basis along with the capex summary. Therefore, next quarterly RAV update will be sent to the EC in October 2012.

4. **Efficiency Standards**

![Fuel Efficiency Targets (Weighted Average) - Jul 2011 - Jul 2012](image)

The above graph shows that the overall weighted average fuel efficiency standards have been under-achieved for the past 12 months. TPL endeavour to achieve the fuel efficiency target of 4.1% by the year 2015. The adverse variation to target is a result of the generation mix during periods of major overhaul and also to an extent due to the effects of cyclones on supply/demand balances.

There are a number of Renewable Energy Projects under development that will increase the fuel efficiency standards by 2018. The projects include:

- 500 kW of Solar in Vava’u - MASDAR
- 500 kW of Solar in Tongatapu - JICA
- SDG – Facilitation of Embedded Generation by TPL
- Outer Islands Project – ADB (Assume Solar)
- 1 or 1.8 MW Wind in Tongatapu
The following graph illustrates the past 12 months moving average (smoothed) of systems losses for all four islands for the period Jul 2007 – Jul 2012.

The following unsmoothed graph was prepared for the last 12 months. It shows the cyclic nature of losses, reflecting billing cycles. TPL monitors unaccounted for energy (UFE) on the basis of a twelve month rolling average.

The above graph shows that even though the overall system losses are averaging at 14.7% for the last 12 months, there have been significant increases of systems losses during months of October-2011, January-2012 and April-2012. It was also noted that the system losses have increased to about 16% in the months of June and July 2012 from only 10% in May 2012. However the rolling average trend is still slightly downward over time.

- 400 kW Woodwaste – ‘Eua
- 900 kW Woodwaste - Tongatapu
There are a number of Network Improvement Projects under development that will decrease the system losses by 2015. The projects include:

- Tonga Village Network Upgrade Project – Tongatapu, NZ Aid
- Proposed Nuku’alofa LV upgrades (replacing old insulators and conductors)
- Disconnection/reconnection process reengineering
- Prepay metering
- Upgrade the Tonga Power Limited Grids And Prepare the Utility for Operations with Renewable Energy Plants – Tongatapu, World Bank
- Advance Metering Infrastructure Development – TPL (this will enable TPL to target reduction of line losses in a number of ways such as decreasing the night time peak load)
- Meter replacement program that reduces faulty readings, tampering and theft, and that eventually enables maintaining accuracy of billing database.

5. Reliability Measures

The above graph illustrates that SAIDI minutes have slightly increased from 56.93 minutes in July to 57.31 minutes in August 2012.

Events affecting SAIDI losses for the month of July 2012 were:

- One major event on Vaini feeder: HV pole vs car accident near prison caused Vaini feeder off and as a result power off Vaini to outwards distributions.
- One event on Vaini feeder: planned shutdown to install a new transformer at Atele Stadium causing power off Vaini to Pea.
- One major event: Feeder One, HV pole vs car caused fault and loss of power to a part of the line, Tokomolo to Liahona.
- Two events on the Hihifo Rd causing part Feeder one loss due to HV line connectors burning off.

Action point to TPL: TPL investigate why total losses have increased in January and April 2012 significantly, the impact of billing and meter reading cycles on the trend, what remedial actions are available for TPL to prevent it occurring in the future.
Events affecting SAIDI losses for the month of August 2012 were:

- A few minor planned shutdowns for the Village Network Project
- One event – HV pole vs car

The total SAIDI minutes lost year-to-date is shown below.

![Planned and Unplanned SAIDI TOTAL YTD](image)

Note: All SAIDI, SAIFI and CAIDI information and related graphs can be found in the attached file: Monthly System Outage Report August 2012.

6. Monthly Faults Events

![Unplanned Outage Events Comparision Jul-Aug 2012](image)

The above graph shows that the faults events were somewhat similar between July and August 2012 months proving similar SAIDI losses for both months.

Note: All four islands faults events information can be found in the attached file: Monthly Faults Events Report August 2012.
7. Tariff Review

TPL has initiated a review of its cost structures and tariff options. Thus work is on-going, requiring significant amount of information to be gathered and analysed. Meanwhile a World Bank sponsored tariff review is underway, at this stage TPL is uncertain as to the level of information that will be provided to us.


The Annual report will be submitted to the TPL Board in October. The attached draft financial statements (subject to the external audit) are being made available to the EC this month. The audit will also include a review of the regulatory reports, as prescribed in the Concession Contract and agreed with the EC.

Additional Reporting Items:

9. Non-tariff Charges

TPL’s existing non-tariff charges are now uploaded on the TPL Website. A copy is attached for EC with this report.

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:
- Fuel–Gen-Billed Update Aug 2012
- Fault Events Aug 2012
- Reliability Measures Graphs Aug 2012
- Reliability Report Aug 2012
- TPL Non-Tariff Fee Structure
- Generation Capex Proposal – 2012/13
- Distribution Capex Proposal – 2012/13
- Draft Financial Statements - 2011/12