

## Feedback on the Instruction 8: Fuel Tariff

### 1. Shorter Forecast Horizon for Fuel Adjustments

TPL believes the Independent Consultant (IC) agrees with the proposed justification of smoothing fuel tariff over a longer period rather than a short period in order to avoid steep increases/decreases of electricity prices to consumers.

### 2. Shorter Forecast Horizon for kWh Billed (Demand)

IC proposed the following formula to be included in the Concession Contract.

$$kWhbilled_m = (1 + \text{monthly growth})^{3.5} * \frac{1}{6} \sum_{t=m-1}^{m-6} kWhbilled_t$$

However, we were not able to comprehend why the monthly growth needed to be inflated by a factor of 3.5 to estimate the next month's demand for kWh Billed.

Currently, we are using 6 months moving average (MA) forecasting technique to estimate the next month's demand. This is why we set the 'monthly growth' factor to ZERO. Establishing a growth factor (%) on top of the MA technique may overestimate the next month's demand. MA method is a simple forecasting technique. If necessary, TPL could also use an autoregressive or any other complex forecasting technique to estimate the next 12 months' demand. However, we believe that this is not necessary because frequent 'wash-up' process replaces the forecast figures with the actual demand figures whenever a fuel-tariff review is applied next time around in the future.

Therefore, we still propose to continue with the current method with an additional change of using past 12 months MA to estimate the next month's kWh billed value instead of using past 6 months MA. We believe it is appropriate to use past 12 months MA to estimate the future 12 months kWh billed to smooth out the tariff increase/decrease over the next 12 months period.

There was a syntax error in the formula which is now corrected as shown below.

#### Solution

(b) Forecast kWh of electricity billed,  $kWh\ billed_m$ , for the months in the next **12 months period** ~~tariff period~~, calculated as,

$$kWhbilled_m = kWhbilled_{m-12} * (1 + \text{annual growth})$$

$$kWhbilled_m = (1 + \text{monthly growth}_m) * \frac{1}{12} \sum_{t=m-1}^{t=m-12} kWhbilled_t$$

Where monthly growth is a reasonable estimate of the monthly growth in demand for electricity derived from the annual growth.

### 3. Use of bad Debt in the Fuel Model

This has been already resolved.

### 4. Incorporating Fuel Savings from 'Free' RE Generation on Fuel Tariff

The formula proposed by TPL has been agreed by the IC. There were a few syntax errors in the formula which are now corrected as shown below.

#### Solution

The current practice that TPL uses to incorporate free solar and wind in the diesel fuel component is that the benefits from renewables (i.e. diesel fuel savings) are calculated outside the Fuel Model and brought into the model as a total amount to add to the running overs/unders balance. This ultimately reduces the diesel fuel component by means of fuel adjustment formula shown below. Fuel savings are passed through to the consumers smoothly through several months until the total payment due is becoming zero.

$$\text{Fuel Adjustment}_m = \frac{-NPV(\text{Fuel Savings}_{\text{values}})}{NPV(\text{kWhbilled}_{\text{values}})}$$

Where Values= Values (either Fuel Savings or kWhbilled) for the next 12 months (i.e. from m+1 to m+12)

It is TPL's intention to continue the current methodology as it is.

However, it should be noted that Fuel Savings that will be passed through to consumers using the above methodology is only applicable to TPL owned/governed RE plants (e.g. Maama Mai, Vaini etc.). For example, no fuel savings will be passed through to the consumers from the distributed generation (DG) RE plants which are not TPL owned. This is because, DG reduces TPL's electricity generation and as a result through the Fuel Model the allowable fuel cost is reduced accordingly.

TPL intends to keep DG systems outside the Concession Contract and these systems will be managed in accordance with a Power Purchase Agreement entered between the DG owner and TPL.

### 5. Incorporating Fuel Savings from 'Non-Free' RE Generation on Fuel Tariff

The methodology has been supported by the IC.

### 6. Adjustment of Fuel Tariff for Tariff Freeze or Government Subsidy

TPL agrees with the IC's proposal of keeping these items transparent to customers by showing government subsidy (or tariff freeze) on the customer's invoice.

### 7. Fuel Efficiency Targets in the ECC

The targets proposed by the IC is acceptable to TPL and the new formula suggested in IC's report will be used for reporting Fuel Efficiency effective from July, 2015.