

**Regulatory Reset  
for the  
National Transmission Corporation  
(TRANSCO)  
for  
2006 to 2010**

**ISSUES PAPER**

**ERC Case No. [     ]**

**September 10, 2004**

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**Republic of the Philippines**  
**Energy Regulatory Commission**

Pacific Center, San Miguel Avenue, Pasig City

**REGULATORY RESET**  
**for the**  
**NATIONAL TRANSMISSION CORPORATION**  
**(TRANSCO)**  
**for**  
**2006 to 2010**

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Pursuant to Section 43(f) of Republic Act No. 9136, otherwise known as the Electric Power Industry Reform Act of 2001, and Rule 15, Section 5(a) of the Implementing Rules and Regulations issued pursuant to that Act, the Energy Regulatory Commission (ERC) promulgated the Guidelines on the Methodology for Setting Transmission Wheeling Rates for 2003 to Around 2027 (ERC Case No. 2003–34, dated May 29, 2003, hereafter the ‘TWRG’).

Under Section 7.1.2 of the TWRG, the ERC must publish a Regulatory Reset Issues Paper to provide the ERC’s initial views on the issues to be discussed during the pending Regulatory Reset Process, and to specify the information required to be delivered by the National Transmission Corporation (TRANSCO) for the purposes of the Regulatory Reset Process and the time by which such information should be delivered. This Issues Paper fulfils these requirements.

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**for the**  
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## CHAPTER 1

### INTRODUCTION AND TIME TABLE

#### 1.1 Introduction

- 1.1.1 In May 2003, the Energy Regulatory Commission (ERC) adopted a Transmission Wheeling Rate Guideline (TWRG) which had been developed through a public consultation process during 2002 and early 2003 (see ERC Case No. 2003 – 34). The final TWRG dated May 29, 2003 outlines a performance base regulation (PBR) framework which imposes a revenue cap on the National Transmission Corporation's (TRANSCO's) revenue recovery from its customers, and adjusts TRANSCO's tariff rates accordingly. This TWRG is a PBR which the ERC has adopted as an alternative form of internationally-accepted rate-setting methodology under Section 43(f) of Republic Act No. 9136, otherwise known as the Electric Power Industry Reform Act of 2001 (EPIRA), and Rule 15, Section 5(a) of its Implementing Rules and Regulations (IRR).

#### 1.2 Purpose

- 1.2.1 The TWRG specifies that the ERC publish an Issues Paper to commence the regulatory reset process. This Issues Paper fulfils this requirement and presents additional information which should be used to guide TRANSCO in preparing its filing for a new revenue cap under Article IV of the TWRG for the Second Regulatory Period commencing January 1, 2006. The Issues Paper also provides additional guidance to the Independent expert who shall be appointed to assist and advise the ERC during the regulatory reset process.
- 1.2.2 By notice of this Issues Paper the ERC requires that TRANSCO submit its filing for a regulatory reset review including all data, reports, forecasts and information required by the TWRG for this process, to the ERC no later than August 31, 2005. Should it be possible, the ERC encourages TRANSCO to provide the relevant filings in advance of this date to facilitate an early resolution of the issues and outcomes required under the TWRG.

#### 1.3 Background

- 1.3.1 The following paragraphs outline in broad terms the elements of the alternative rate-setting methodology for TRANSCO which the ERC has adopted, which can be broadly defined as a performance-based price-control regime, and is described in more detail in the TWRG.
- 1.3.2 The alternative rate-setting methodology which has been adopted by the ERC is one which is based on a revenue cap over an initial three (3) year

regulatory period followed by subsequent five (5) year regulatory periods commencing January 1, 2003. The revenue cap for the second and subsequent regulatory periods shall be based on a regulatory reset (or review) which shall conclude prior to the commencement of the first 5 year regulatory period. This reset shall lock in place the prime regulatory parameters for the remainder of the second regulatory period, which cannot be re-opened unless particular triggers are met. The revenue cap shall be based on recovery of the forecast efficient costs of the delivery of electricity transmission services over the regulatory period. Note the revenue cap does not cover the costs of electricity distribution or the costs of electricity supply (i.e. cost of energy) or the costs of electricity generation.

- 1.3.3 Efficient costs require consideration of efficient operating and maintenance costs, a return of efficiently deployed capital (i.e. depreciation of efficiently deployed assets over their economic life, where regulated transmission network assets are grouped into like asset categories), and a return on efficiently deployed capital (i.e. a regulatory cost of capital times the written down value of the regulated asset base). Here the regulatory asset base should be established from a rolled-forward asset base without inflation, plus prudent capital expenditure, less depreciation and less sold (for example sub-transmission) or retired or written-off assets. The starting point can be a revalued asset base, optimized for capacity over a reasonable planning horizon, and configured on existing easements and rights of way. The revenues thus derived shall be smoothed to avoid rate shock over the regulatory period. Note that sub-transmission assets sold by TRANSCO shall be valued at their revenue potential, and be considered as a disposal of regulated assets.
- 1.3.4 The forecast revenue requirement over the five (5) years period will then be converted to a smoothed revenue cap. This revenue cap will be allowed to adjust automatically as external economy wide factors change. The primary adjustment factor will be the Consumer Price Index (CPI). There will be an additional adjustment applied based on the US\$ to Peso exchange rate when particular triggers are met. In the normal course of economic development, such triggers are unlikely to be met, and the exchange rate adjustment is not likely to apply. Note that the Incremental Currency Exchange Rate Adjustment (ICERA) style automatic exchange rate adjustment mechanisms currently in existence will not continue for the transmission network assets under this new methodology. Exchange rate adjustments shall only be applicable when certain triggers have been met.
- 1.3.5 The tariff setting processes will be undertaken annually to ensure the sum of the regulated indicative prices derived from the total of the individual tariff revenues plus assigned revenues from related businesses, are less than the specified revenue cap. Tariff changes year by year will be subject to side constraints recognizing the need for slow changes in tariff levels for

customers to remove any emerging cross subsidies due to capital expenditure programs. An over and under recovery process shall be adopted to ensure the revenue cap is not breached. Consideration to issues such as the definition of customer segments, the approach to tariff structure and other tariff issues shall be considered at each major reset process and in particular for the reset for the second regulatory period triggered by this Issues Paper.

- 1.3.6 There shall be a transition period during the first regulatory period from January 1, 2003 to December 31, 2005, in which the ERC shall require TRANSCO, to prepare its financial and operational systems so that the necessary information can be gathered and reviewed that will allow a price control reset to occur before the end of the first regulatory period. During this transition period the ERC shall impose a simplified revenue cap arrangement, to ease the transition to the new PBR arrangements.

### **1.4 ERC's Role and Functions**

- 1.4.1 The ERC's role in the revenue reset process for TRANSCO is spelt out in considerable detail in the TWRG. The public and interested industry participants are encouraged to read this document, which is on the public record, in order to become familiar with the broad PBR methodology which the ERC has adopted.
- 1.4.2 The processes and time frames which ERC shall adopt for the regulatory reset process for TRANSCO are described in the TWRG and in some instances will be adjusted according to the description in this Issues Paper.

### **1.5 Consultation During Regulatory Reset Process**

- 1.5.1 The ERC is committed to public consultation on the next steps in the development of the PBR framework for TRANSCO.
- 1.5.2 The TWRG specifies a regulatory reset process over a period of approximately eighteen (18) months leading to the commencement of the Second Regulatory Period from January 1 2006, and includes two primary periods of public consultation.
- 1.5.3 In simple terms the reset process is as follows:
- (a) Issues Paper published by the ERC followed by public consultation;
  - (b) Data gathering and analysis period by the ERC with assistance of Independent Expert;
  - (c) Draft determination published by the ERC followed by public consultation;
  - (d) Final determination by the ERC of TRANSCO's revenue cap.

- 1.5.4 The following paragraphs outline changes to time frames within the TRWG on the regulatory reset process and the reasons why such changes are necessary.

## 1.6 Reset Timetable

- 1.6.1 Article VII of the TWRG sets out the time frames within which various activities are required to be performed during the regulatory reset process. In the normal course of events the ERC would endeavour to comply with the time table it has imposed upon itself to provide regulatory certainty to the electricity industry and to consumers.
- 1.6.2 In a letter dated August 10, 2004 TRANSCO requested *“that the Commission move the deadline for the submission of the Initial Revaluation Report four (4) months prior to the start of the Second Regulatory Period.”* TRANSCO indicated that the reasons for the extension related to the fact that TRANSCO was required to follow *“the process and time prescriptions in the new Government Procurement Law in looking for eligible contractors. And it is because of the procedures and time prescriptions that [TRANSCO was] experiencing substantial delay in meeting the TWRG deadline. [TRANSCO’s] first call for bids was a failure because not one interested bidder passed the eligibility requirements. As such, [TRANSCO was] going through the second call for bids. [TRANSCO] expect that [it was] going to be delayed by at least four (4) months.”*
- 1.6.3 Section 4.6.2 of the Transmission Wheeling Rate Guidelines (TWRG) provides that the Initial Re-valuation Report (including the detail of the updated record of assets) to be provided by the Independent Expert should be available eleven (11) months prior to the commencement of the Second Regulatory Period. TRANSCO requested that this deadline be moved to four (4) months prior to the commencement of the Second Regulatory Period. This amounts to an extension of the deadline for the delivery of this report and its supporting information by a period of seven (7) months. The ERC also notes that this request is being submitted under Section 13.2.1 of the TWRG.
- 1.6.4 The ERC finds the need to meet the new Government Procurement Law provides a valid reason for granting the extension requested, and thus provides notice that TRANSCO’s deadline for delivering the Initial Re-valuation Report (including the detail of the updated record of assets) is extended to August 31, 2005.
- 1.6.5 Prior to the granting of this extension, the timetable provided in the TWRG for the regulatory reset process to set the revenue cap details for the Second Regulatory Period, provided the ERC with an eight (8) month period to conclude its detailed financial and performance analysis, publish a draft determination, undertake a number of public consultation sessions, and finalize its determination on the revenue cap for the Second

Regulatory Period. The remaining three (3) months was set aside to allow the process under Article VI of the TWRG to occur, which would validate and adjust rates for the first year of the Second Regulatory Period.

1.6.6 The ERC believes that this timetable is still required to allow it to facilitate a valid determination and provide reasonable opportunity for public consultation on the revenue cap for the Second Regulatory Period.

1.6.7 As such under Section 1.9 of the TWRG, in a letter dated August 16, 2004, the ERC sought TRANSCO's agreement for minor amendments to the TWRG which are summarized as follows:

- (a) The processes required to be undertaken by the ERC for the regulatory reset by Article VII of the TWRG shall continue to apply. However, the time frames and deadlines specified for certain events within the TWRG for this regulatory reset process are all moved accordingly to match the extension granted by the ERC to TRANSCO. Thus the time frames for primary regulatory reset events are hereby modified as follows:
  - (i) Independent Expert Reports on capital expenditure forecasts, operating & maintenance expenditure forecasts, weighted average cost of capital, and the Initial Revaluation Report (see Section 7.1.5 of the TWRG), and other reports as may be required by the ERC such as on the regulatory and financial modelling or service quality measures & targets, are all extended to August 31, 2005;
  - (ii) The draft determination will be published by the ERC not later than October 31, 2005;
  - (iii) The written submissions of the public on the said draft will be entertained until December 31, 2005;
  - (iv) The public hearings will be held between January 1, 2006 and February 28, 2006 at specific dates and times to be determined by the ERC; and
  - (v) The final determination will be published by the ERC no later than April 30, 2006.
- (b) The revenue cap provisions of the First Regulatory Period would be carried forward and applied during the annual validation and adjustments of tariff rates under Article VI which is scheduled to occur between October 1, 2005 and December 31, 2005. The effect of this amendment to the TWRG will be to require tariff rates to be set under a revenue cap where the X factor is equal to zero.
- (c) Once the ERC makes its final determination of the revenue cap provisions of the Second Regulatory Period, the ERC shall undertake an additional process for the annual validation and

adjustment of tariff rates under Article VI between May 1, 2006 and July 31, 2006. During this process, the X factor which has been determined by the ERC for the Second Regulatory Period would then be imposed to set the revenue cap for the full first year of the Second Regulatory Period. Tariff rates for the last five months of 2006 would then vary as allowed by the Open Access Transmission Service (OATS) Rules, in order to achieve the revenue cap on a forecast basis.

- (d) When reviewing the proposed tariff rates during this additional annual validation and adjustment of tariff rates under Article VI between May 1, 2006 and July 31, 2006, the ERC may need to apply a different side constraint factor under Section 6.4 of the TWRG, other than it might have set for the normal application of the time frames of the TWRG. The level of the side constraint (both for the additional tariff rate adjustment and for the normal timetable for the remaining years of the Second Regulatory Period) shall be determined from the analysis during the regulatory reset process as described in point 1.6.7(a) above.

1.6.8 In a letter dated August 30, 2004, TRANSCO agreed to these changes to the time frames and application of Article VI of the TWRG, with an additional point, which the ERC found acceptable with modification, as follows:

- (a) In the event that TRANSCO meets the required submissions in point 1.6.7 (a) above, ahead of the August 31 deadline, to the greatest extent possible all the succeeding undertakings in the revised time frames for the primary regulatory reset events will be advanced at least by the same period of time.

1.6.9 As such the ERC will now move forward using the amended time frames as provided above. To the greatest extent possible, TRANSCO is encouraged to have the Independent Expert available to assist the ERC at a date earlier than is allowed in the amended schedule so as to allow a possible reversion to the original schedule. Where this is possible, earlier processes and decisions will be possible under the TWRG.

## **1.7 Submissions and Hearings**

1.7.1 Having made the amendments as listed above the timetable for the public consultation shall, to the greatest extent possible adhere to the following timetable.

- Issues Paper posted September 17, 2004;
- Initial written submissions on Issues Paper close October 4, 2004;
- Initial Public Consultation on October 25, 2004 (to seek initial public feedback);

- Draft TRANSCO reset Determination published before October 31, 2005;
- Second written submissions on Draft Determination close December 31, 2005;
- Subsequent Public Consultations during January and February 2006;
- Final TRANSCO reset Determination published before April 30, 2006;

1.7.2 Any person with an interest in this matter and wanting to participate in the initial public consultation must become a party of record by formally making such request in writing to the ERC, including a clear statement of the person's interest and their address for all correspondence, within fifteen (15) days from the date of this Issues Paper.

1.7.3 For the initial public consultations, all parties of record shall file any comments, questions, suggested modifications to data sources, and any other issues pertaining to this Issues Paper in writing not later than October 4, 2004. Any written submissions to the ERC in this case shall include six (6) paper copies and two (2) soft (electronic) copies provided in two (2) diskettes. The ERC shall publish such submissions on its web site by October 11, 2004. Any party filing written comments shall on the same day as the filing is made at ERC serve all parties of record in the case.

1.7.4 The ERC hereby sets this matter for initial public consultation at 9:00 am, on October 25, 2003. Although this consultation is open to public viewing, only parties of record who have filed written comments will be allowed to participate in the initial discussions. Should there be time towards the end of the public consultation for verbal comments from other persons who have an interest in the proceedings shall be allowed by the Commissioner in charge of public consultation. Parties of record are not required to have an attorney present but are strongly encouraged to have technical experts present with knowledge of accounting, finance, economics and pricing issues.

## **1.8 Issues for Discussion**

1.8.1 The ERC raises specific detailed issues throughout the remainder of this document. The areas where specific comment is sought from interested parties are indicated as a separate paragraph using the phrase "the ERC seeks ....".

**CHAPTER 2**  
**REGULATORY ASSET BASE**

**2.1 Establishing the Opening Regulatory Asset Base**

- 2.1.1 Section 4.6 of the TWRG outlines the primary requirements of the asset valuation which is required to be undertaken to assist with the regulatory reset process for TRANSCO. The following paragraphs discuss the various aspects of this revaluation methodology required by the ERC and the data breakdown required to assist in both the regulatory reset and the annual verification and adjustment of tariff rates.
- 2.1.2 In its application for verification and adjustment of tariff rates dated November 25, 2003, TRANSCO in effect allocated the revenue recovery of the MAR to its three primary transmission networks, that is Luzon, Mindanao, and Visayas, based on its estimates of the written down asset value of the assets in these networks as at December 2003. This had an impact on TRANSCO's application to breach the side constraint provided under Section 6.4 of the TWRG, for the Visayas network. In order to further examine the issues raised by the revenue recovery allocation requested by TRANSCO, the ERC requires that the asset valuation information provided by TRANSCO under Section 4.6 of the TWRG also be broken down into the following groupings:
- (a) Luzon grid, excluding inter-island interconnection assets;
  - (b) Visayas grid, excluding all inter-island interconnection assets;
  - (c) Mindanao grid, excluding all inter-island interconnection assets;  
and
  - (d) All inter-island interconnection assets.
- 2.1.3 The ERC requires that the interconnection assets thus isolated should include those transmission lines which are on land but support the submarine (or over-water) island interconnection, back to the primary substation which controls the flow of electricity to each side of that interconnection. The primary substation assets used for interconnection should be grouped with the interconnection assets. The ERC shall seek the advice of the Independent Expert to define the separation point between the interconnection assets and the other primary grid assets.
- 2.1.4 The ERC seeks comment on the separation points between the interconnection and grid assets.
- 2.1.5 The ERC is contemplating using this additional breakdown of asset value information in a manner which is described in paragraph 8.9 below.

## **2.2 Revaluation Principles – Optimised Replacement Cost**

- 2.2.1 In Section 4.6.3 the ERC has specified that the revaluation of TRANSCO’s assets should be undertaken using an optimised replacement cost methodology. Section 4.6.4 provides further guidance on how the revaluation of assets could proceed for various asset categories. It is possible that the revaluation will proceed using predominantly the indexation or absolute valuation by replacement cost techniques. These techniques are essentially similar to the “replacement and reproduction” cost as used in the Guidelines for Assessment of Machinery, Department Order No. 22-73, dated June 18, 1973, by the Department of Finance. The term “nearest equivalent model” used in Department Order No. 22-73 is also similar to the concept of absolute valuation using modern equivalent asset analysis.
- 2.2.2 The primary differences in revaluation methodology from Department Order No. 22-73, sought by the ERC for the revenue reset for TRANSCO relate to the following primary issues:
- (a) The Independent Expert should reassess whether more definitive labor and/or materials indices are available for transmission assets which are installed in the Philippines, than are mandated by Department Order No. 22-73;
  - (b) The Independent Expert should reassess whether the current procurement policies for major asset categories used by TRANSCO are reasonable for use as the replacement assets given current equipment availability, and revalue those asset categories using the prices of the current equipment, recognizing that such equipment may not be listed within Department Order No. 22-73;
  - (c) The Independent Expert should identify where modern equivalent asset analysis is required for particular asset categories, in its report and explain why such a modern equivalent asset should be used for revaluation purposes;
  - (d) The Independent Expert should identify where assets are purchased overseas, convert the exchange rate for the country of purchase into a US\$/Peso equivalent exchange rate using quarterly data sourced from Bangko Sentral ng Philipinas, and separately report the US\$ purchase value and the equivalent Peso value and the US\$/Peso exchange rate used to provide the two valuations; and
  - (e) The Independent Expert should identify the preferred economic lives of each primary asset class to be used for regulatory pricing purposes, provide a comparison against the asset lives currently used by TRANSCO for financial purposes, and where there is a difference between these explain why the preferred economic lives

better reflect the economics of the use of transmission assets within the Philippines.

- 2.2.3 On the issue of the economic life of transmission assets, the ERC notes that various government policies on asset lives for taxation or financial reporting or other purposes, may not be appropriate for the revenue reset process for TRANSCO, which seeks to use an economic life appropriate for price setting purposes. For example if the asset life used is too short, prices to current users of the transmission network will be paying higher prices for these use of these asset than otherwise might be justified were a longer life used (one which say is more representative of the economic life of the asset).
- 2.2.4 The ERC seeks comment on the revaluation techniques to be used for TRANSCO assets.
- 2.2.5 The ERC requires that should the Independent Expert require further guidance from the ERC on asset revaluation techniques, that these issues which need clarification be filed with the ERC and be placed on the record before the Independent Expert commences its detailed revaluation work.

### **2.3 Asset Categories “j”**

- 2.3.1 Section 4.6.5 of the TWRG specifies the Asset Categories “j” which TRANSCO and the Independent Expert should use to revalue the transmission assets. The ERC requires the following additions to this list to ensure there is transparency of the assets which underlie the services provide by TRANSCO:
  - (a) Include point (ix) Land used for Transmission Lines in point (a);
  - (b) Include point (x) Land used for Substations in point (b);
  - (c) Include point (vi) Land used for Communications Plant in point (c);
  - (d) Include point (v) Land used for Systems Operation in point (d); and
  - (e) Note that for point (v) Land used for Non-network Assets in point (e) covers all land value not previously attributed to other asset categories.
- 2.3.2 Appendix A provides the asset category reporting templates to be delivered to the ERC. This template should be used to provide the data on both revalued cost and the historical cost of the various asset categories. It should also be used to provide the written down value of both the revalued cost and the historical cost of the various asset categories to their current age to December 31 2004, or weighted average age, as the case may be.
- 2.3.3 The ERC seeks comment on whether the breakdown of asset categories in Section 4.6.7 of the TWRG and as augmented by the additions above are sufficient to enable the ERC to effectively analyse the asset valuation of TRANSCO.

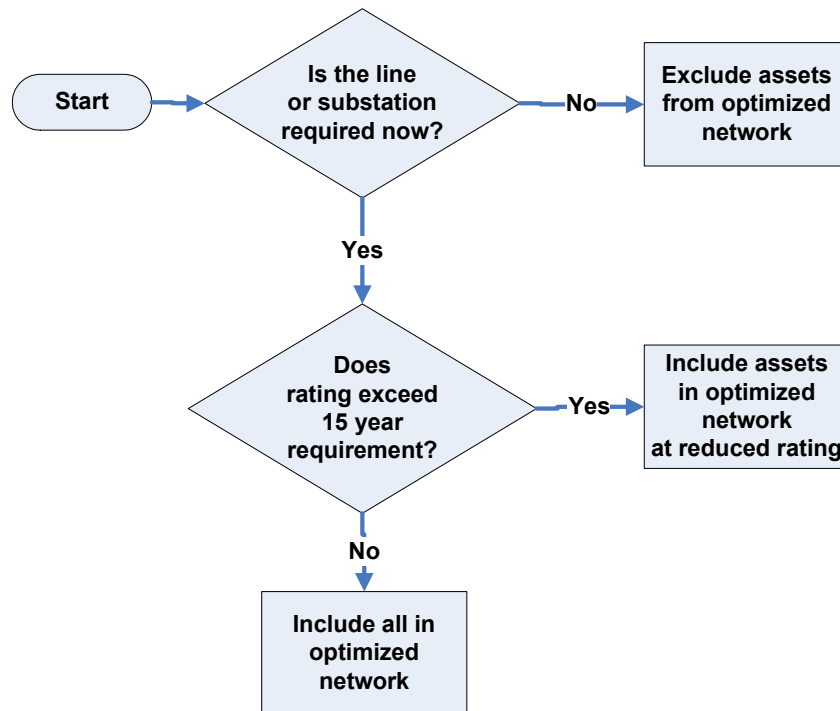
**2.4 Optimization During Revaluation**

2.4.1 The ERC has indicated in Section 4.6.6 of the TWRG that it prefers the use of an optimisation methodology to be overlaid on the asset valuation for the TRANSCO assets. The following additional guidance is provided to the TRANSCO and the Independent Expert on how this optimisation should be undertaken for the TRANSCO asset base to be used as the opening RAB for the second regulatory period.

2.4.2 There are two aspects to the optimisation process:

- (a) Optimisation of the network configuration (eg: network security, level of redundancy, statutory requirements for certain assets, network safety);
- (b) Optimisation of the network alignment (ie: a brownfield approach is specified by Section 4.6.6 (c) of the TWRG, where existing connection points and alignments are assumed to remain in place); and
- (c) Optimisation of the installed assets (eg: review of over design, over capacity, inappropriate design).

2.4.3 The Figure 2.1 outlines the decision process required by the ERC on the inclusion or exclusion of existing assets into the RAB for pricing purposes.



**Figure 2.1 : Base Optimization Flow Chart**

2.4.4 The basic steps in the optimization process are as follows:

- (a) Review TRANSCO's network planning criteria to determine whether they are in accordance with "good electricity industry practice". Any optimization carried out on the network configuration or assets must meet current good practice planning criteria. Optimization which has the potential to breach current good practice planning criteria should not be pursued.
- (b) Review the design criteria for the primary existing network assets to determine if they are in accordance with good practice for the location and application of those assets. If the design criteria result in the assets being over-designed compared to good practice they should be optimized down in value to good practice.
- (c) Review operating criteria, practices and performance as required to ensure that operating constraints are considered as part of the optimization process.
- (d) Review the forecast load, generation and interconnector power flows for the nominated planning horizon (here 15 years under Section 4.6.6 (b) of the TWRG). The selection of the period must also take into consideration that most transmission assets can only be installed in relatively large blocks.
- (e) Review asset ratings and optimize if necessary.
- (f) Carry out network studies of optimized network to ensure the optimized network and its configuration meets the required levels of service and quality and good practice.

2.4.5 The ERC does not believe the optimization process should occur in the manner of a "greenfield" study, but rather it should use "brownfield" techniques. Thus where the transmission network has evolved with result that there are now two transmission lines running in parallel, one of an earlier vintage and (possibly) lower voltage level, and the later line with higher voltage and more modern equipment, the two lines would not be optimized to one, but rather the two lines would be revalued at the voltage levels they currently serve. Provided only that the initial investment met reasonable planning guidelines at that time. The ERC seeks comment on this approach.

2.4.6 The ERC seeks comment on whether the 15 years planning horizon is reasonable, and on the proposed optimization process provided above. The ERC understands that the Department of Energy (DoE) prepares the Transmission Development Plan (TDP) using a 10 year forecast period, and that this is assisted by information provided by TRANSCO. It is possible that a reasonable planning horizon of 10 years to match the TDP would also be sufficient for the assessment of optimized assets for inclusion in the RAB. The ERC notes that in other respects there are

differences in the objectives of the TDP and the capital expenditure forecasts required for rate setting purposes, and as such while there should be a relationship to the TDP, the forecasts required by the ERC may differ in other respects.

- 2.4.7 The ERC also seeks comment on the engineering standards, planning guidelines or other benchmarks which could be used to define “good electricity industry practice” in the Philippines.
- 2.4.8 The ERC seeks comment on other issues which might be raised by the optimization process or the methodologies to be employed.
- 2.4.9 In its consideration of recent applications by TRANSCO for approval of various capital expenditure projects, the ERC has become concerned over the apparent lack of a centralized industry input and consideration of both transmission and generation investment planning. Rule 3, Section 4 (c) of the Implementing Rules and Regulations provides “the ERC shall review and approve any plan for the expansion or improvement of transmission facilities submitted by TRANSCO or its Buyer or Concessionaire with due regard to the TDP”. The ERC believes that in order to fulfil this role efficiently and for the betterment of the electricity sector and consumers, it needs additional detailed input from both the System Operator, TRANSCO and generators. In overseas jurisdictions, an independent System Operator works with all industry participants to define the investment needs of the transmission network. These investment needs are tested against potential generator investment to ensure that transmission and generation investment are coordinated to provide the lowest efficient cost in electricity delivery to consumers.
- 2.4.10 The ERC seeks comment on how it could facilitate better industry coordination and input to these transmission investment decisions, and improve its examination of transmission network capital expenditure approval. Such processes could be via the regulatory reset process, but the ERC suggests such examination needs to occur at least annually, and to link with the reset process provided by the TWRG.

## **2.5 Historical and Revalued Asset Base**

- 2.5.1 In undertaking a forward estimate of the corporate income tax payable each year during the second regulatory period (see Section 4.12 of the TWRG), the information on depreciated historical cost of the assets will be required as at December 31 2004. This value will be used in a calculation of a rolled forward historical cost asset base in order to determine an estimate of the depreciation of each asset category on an historical cost basis, in order to work out an estimate of the forecast taxable income for TRANSCO for each forecast year.

2.5.2 The ERC seeks comment on the requirement for TRANSCO to deliver both the historical cost and the revalued cost of its assets broken down into the asset categories specified in Section 4.6.5 of the TWRG.

## **2.6 Rolled Forward Asset Base**

2.6.1 The Initial Re-valuation Report to be provided by the Independent Expert will provide the optimised replacement cost of the TRANSCO asset which are commissioned and in service at December 31, 2004. In order to move this value forward to December 31, 2005 (the day prior to the start of the second regulatory period), the techniques in Section 4.6.10 of the TWRG shall be used.

2.6.2 In particular this requires the ERC to adopt the “actual or budgeted capital expenditure of the Regulated Entity” for the 12 month period of 2005. It further requires the ERC to assess whether these expenditures are “reasonable” and “if they had been in existence as at the date of the Initial Re-valuation” would have been included in the regulatory asset base. The ERC shall request the Independent Expert to review the 2005 capital expenditure program of TRANSCO (including those prior years for larger projects which are underway but not yet commissioned) using the optimisation principles previously discussed and to be used for the initial asset base revaluation as at December 31, 2004.

2.6.3 Section 4.6.10 also requires the ERC to review those assets existing at December 31, 2004, which are subsequently sold in the 2005 year (predominantly associated with sale of sub-transmission assets to Distribution Utilities. Where and if those assets which are disposed of are sold for a value less than the optimized depreciated replacement cost, the net value shall be retained within the RAB as a separate regulatory asset to be depreciated over its remaining life as if it had remained in the TRANSCO’s ownership. Such treatment provides regulatory certainty for TRANSCO but ensure transfer to sub-transmission assets to Distribution Utilities at their revenue potential.

2.6.4 The ERC seeks comment on these issues to do with the initial roll forward of the RAB for TRANSCO to December 31 2005. Comment on treatment of the asset value for sub-transmission assets once sold and transferred to the Distribution Utility is not call for at this time as it does not relate to the revenue reset for TRANSCO.

2.6.5 Section 4.7.2 of the TWRG indicates how the regulatory asset base shall be rolled-forward as a forecast from January 1, 2006 to December 31, 2010. The ERC seeks comment on issues which may arise in application of the methodology defined by this methodology.

## **2.7 Working Capital Requirement**

2.7.1 Section 4.5.7 of the TWRG sets out the building block analysis which shall be used to determined the annual revenue requirement for TRANSCO each

year for the of the Second Regulatory Period. This analysis includes an amount called working capital, which will be included in TRANSCO's revenue requirement to compensate it for the delay between those cash flows entering its business from customers and those leaving its business to suppliers. Such level of working capital should be set at a level which is reasonable for an efficient organisation working as an electricity transmission company.

2.7.2 The TWRG specifies that the working capital should be set at a proportion of the forecast operating & maintenance expenditure less bad debts, the ERC has yet to specify an acceptable proportion which could be used for the forecast period. Methodologies which could be used to set this proportion include:

- (a) Benchmarking against other electricity transmission companies in other jurisdictions;
- (b) Benchmarking against other Philippine companies in the utility sector, either in the electricity or telecommunications or water sectors;
- (c) Undertaking a specific lead-lag study of TRANSCO over a 12 month period (note this could be expensive and time consuming depending the level of detail at which the study is performed);
- (d) Set at a theoretical level for an efficient company, say 30 days of sales revenue;
- (e) Other methodologies which may be relevant.

2.7.3 The ERC seeks comment on how it should set the allowed proportion of working capital to be included in the annual revenue requirement for TRANSCO, and which is compatible with the building block methodology being employed for the forecast period.

## **2.8 Construction Work In Progress**

2.8.1 The construction work in progress (CWIP) adjustment process occurs in two places within the analysis of TRANSCO's annual revenue requirement for the Second Regulatory Period. CWIP is added to both:

- (f) The opening RAB to accommodate the cost of investment lag between the commencement of the design phase for a particular electricity transmission project (or group of assets) and the commissioning of those assets; and
- (g) The actual or budgeted capital expenditure during the year 2005, approved by the ERC for inclusion in the roll-forward to the opening RAB at December 31, 2005.

2.8.2 Section 4.6.9 of the TWRG suggests ways in which the CWIP might be estimated. These include:

- (a) Uniformly escalating the optimized depreciated replacement cost of the revalued assets by a constant factor; or
- (b) Directly estimating the investment cost for specific past projects and adding this cost to the optimized depreciated replacement cost of the revalued assets; or
- (c) Other methodologies.

2.8.3 The ERC recognizes that the simplicity of a single escalation factor to all asset categories may be offset by perceived inaccuracy of an allowance of recovery of this reasonable investment cost. Issues which need to be considered include whether:

- (a) one factor for all assets categories is sufficient;
- (a) one factor for transmission line and one for substations would be sufficient;
- (b) over what time frames do the average transmission line and average substation investment occur, prior to commissioning;
- (c) the discount rate used to estimate the CWIP factor should be the regulatory WACC or just the estimated cost of debt;
- (d) there is an average capital expenditure profile which should be used to estimate the cost of investment prior to commissioning.

2.8.4 The ERC notes that the building block methodology provides compensation for the time-value-of-money in the forecast period, so an additional CWIP for capital expenditures during this period is not required.

2.8.5 The ERC seeks comment on how it should set the value or escalation factor for the CWIP to be used in both the initial revaluation and the single year roll-forward to the opening RAB.

## **2.9 Use of Independent Expert and Appraisal Company**

2.9.1 Section 4.6.2 of the TWRG provides for two approaches for TRANSCO to revalue its asset base for regulatory purposes. In either approach the ERC is seeking the assistance of an Independent Expert with experience in electricity transmissions networks (both in revaluation, design, installation and analysis of the operation of such networks) that the revaluation is reasonable and employs the principles it had adopted in the TWRG. This is required because of the forward looking nature of the performance based regulation for TRANSCO that the ERC has a preference to adopt, and because the ERC itself requires advice on the outcomes of such revaluation.

2.9.2 While Section 4.6.2 (a) of the TWRG allows for TRANSCO to have an independent appraisal company to undertake the revaluation work, the ERC would then need to appoint its own Independent Expert to review and advise it on the outcomes of the revaluation. At this point the ERC would

prefer to follow the approach outlines in Section 4.6.2 (b) and have TRANSCO retain the services of an Accredited Independent Expert which could both undertake the revaluation and advise the ERC on any points of methodology or approach which would allow the principles the ERC has adopted in the TWRG to be employed in a reasonable manner.

- 2.9.3 In its letter dated February 24, 2004, TRANSCO indicates that adopting the approach in Section 4.6.2 (b) of the TWRG, “may prove to be complicated as the asset boundaries and actual asset transfers from NPC to TRANSCO are yet to be finalized.” The ERC notes that under Section 2.3.1 (b) of the TWRG, TRANSCO was to have notified the ERC by July 30, 2004, if its was not in a position to have “reliable records of the assets which it uses in the provision of Regulated Transmission Services and such records include all of the information required to enable those assets to be revalued in accordance with Section 4.6” of the TWRG. As the ERC has not received such notice the ERC can only assume TRANSCO’s earlier reservations on the availability of information no longer apply.
- 2.9.4 The ERC requests that should TRANSCO believe it is not in a position to support a revaluation of its assets in accordance with the TWRG that it notify the ERC as soon as possible, and in any event no later than September 30, 2004.
- 2.9.5 The ERC notes that in order to get the requisite skills and experience to undertake a revaluation as outlined in the TWRG and to have an independent sign-off of the valuation by a registered Philippine appraisal company, TRANSCO is likely to have to find an Independent Expert which is comprised of a local appraisal company and an offshore engineering firm with the required skills and expertise in revaluing transmission assets under similar performance based regulatory arrangements in other jurisdictions. Such approach could be undertaken in a contract / sub-contract arrangement, a joint venture, a partnership or another commercial arrangement. The ERC encourages TRANSCO to complete its process of seeking a list of suitable independent experts as soon as possible, so that the ERC can review the list and determine an Independent Expert that is acceptable to it under Section 14.2.5 of the TWRG.

## **2.10 Data Requirements**

- 2.10.1 The data requirements for asset valuation have been documented in Article VI of the TWRG dated May 29, 2003. Additional guidance to TRANSCO and to an Independent Expert which may be appointed pursuant to Article XIV of the TWRG, are provided in this Chapter 3. The ERC notes the Independent Expert may need access to more detailed and different information to fulfil its responsibilities and that TRANSCO should endeavour to meet the information and data needs of the Independent Expert wherever possible. The ERC seeks comments on any additional

issues which relate to the asset valuation for the purposes of the regulatory reset of TRANSCO.

## CHAPTER 3

### CAPITAL EXPENDITURE FORECASTS

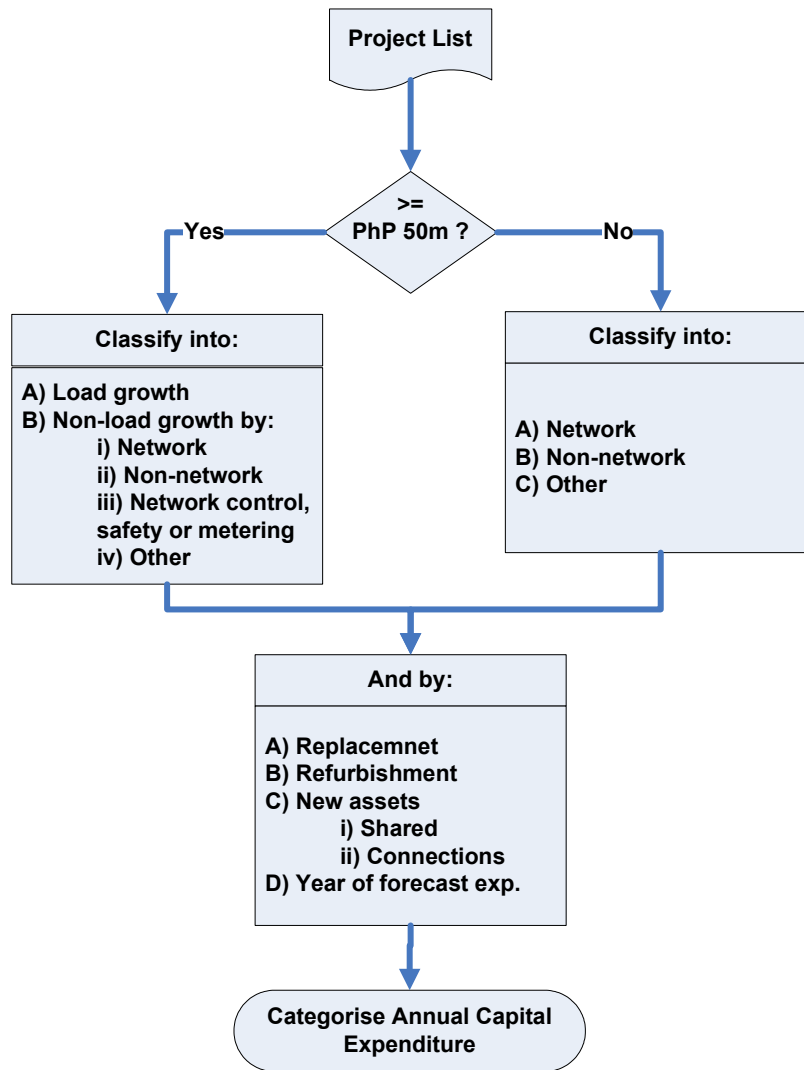
#### 3.1 General Basis of Capital Expenditure Forecasts

- 3.1.1 Section 4.10 of the TWRG outlines the data requirements on the capital expenditure forecasts that TRANSCO must deliver to the ERC. These forecasts are to be based on the economically efficient capital expenditure requirements to meet the forecast demand over the Second Regulatory Period. In particular the economic efficiency of the forecasts should be judged against the general principles provided in Section 4.4.1 of the TWRG, and the declaration of policy in Section 2 of the EPIRA.
- 3.1.2 Section 4.10.4 of the TWRG also provides for the ERC to rely on an Independent Expert to review the capital expenditure forecasts and its supporting documentation. The Independent Expert is to assess the capital expenditure forecasts to ensure they are:
- (a) Represented fairly in discrete projects where required;
  - (b) Based on best available prices obtainable from international markets;
  - (c) Reasonably efficient from design and implementation point of view;
  - (d) Sufficient to support forecast growth in customer connections, co-incident peak demand and energy delivered;
  - (e) Sufficient to allow the regulated entity to achieve or exceed the applicable target levels of performance specified by the ERC.
- 3.1.3 In judging whether the forecast capital expenditure is reasonably efficient from a design and implementation point of view, the ERC requires that the Independent Expert use similar principles and approaches as is required for optimization and revaluation of the RAB. Specifically the processes outlined in paragraphs 3.4 above and in Figure 3.1 above should be employed to ensure the forecast capital expenditure program is reasonably efficient, and hence could be recommended by the Independent Expert for inclusion into the rolled-forward asset base which underpins the building block analysis and hence TRANSCO's revenue requirement.

#### 3.2 Capital Expenditure Forecast Process & Justification

- 3.2.1 TRANSCO is required to document and justify the major capital expenditure projects that it plans to undertake. Major projects are defined in Section 4.10.1 of the TWRG where the capital expenditure for that project is greater than or equal to PhP50million. In order to provide an overview of

the prime reasons for each major project, the projects are classified into groups as provided in Figure 3.1.



**Figure 3.1 : Project Classification**

3.2.2 The ERC seeks comments on the classifications to be used to assist summarization of TRANSCO’s capital expenditure.

**3.3 Actual Capital Expenditure for 2000 to 2004**

3.3.1 TRANSCO is required to provide the historical capital expenditure information for the period 2000 to 2004 inclusive, noting that the time table for delivery is part way into the 2005 year.

**3.4 Capital Expenditure Forecast Categorisation**

3.4.1 TRANSCO is required to provide its capital expenditure forecast broken down into the same asset categories required for the opening revalued RAB.

The categories are outlined in Section 4.6.5 of the TWRG and additional categories are required as per paragraph 3.3 of this Issues Paper.

- 3.4.2 Appendix B provides the templates for the capital expenditure forecasts which need to be delivered by TRANSCO to the ERC. One of the prime deliverables is the summary sheet of the total capital expenditures in nominal peso. See also Figure B.1 which summarizes the calculation flow.
- 3.4.3 The ERC seeks comment on the proposed approach to estimating, reviewing and approving efficient capital expenditure forecasts, and on the templates by which the forecasts need to be delivered.

### **3.5 Isolation of CPI and Foreign Exchange Impacts**

- 3.5.1 The ERC needs the capital expenditure forecasts broken down to isolate the CPI from the Philippines and USA, and the Peso/US\$ exchange rate from the capital expenditures because in modelling the MAR these forecast assumptions need to be dynamically modelled. In addition these forecasts are also used as potential trigger points for the reassessment of the X factor or for the reopening of the previous regulatory settings.
- 3.5.2 The ERC seeks comment on the methodology to convert forecast US\$ purchases into Peso amounts and application of the Philippines and US CPI, to provide a forecast of the landed cost in peso.
- 3.5.3 The ERC seeks comment on reasonable settings for the forecasts of the CPI from the Philippines and USA, and the Peso/US\$ exchange rate over the Second Regulatory Period.

### **3.6 Asset Lives for Forecast Capital Expenditure**

- 3.6.1 The asset lives the ERC shall use for the roll-forward RAB analysis shall be the same for each asset category as is used for the revalued opening asset base. The Independent Expert is to provide advice to the ERC on the economic life of each asset category to assist in the calculation of the optimised depreciated replacement cost of the RAB at the end of each year of the Second Regulatory Period. The asset life for regulatory purposes should be the Independent Expert's current estimate of the economically efficient life of that asset category, based on their design and condition monitoring experience and the reasonable balance between operating & maintenance expenditure and life-time replacement expenditure.

### **3.7 Data Requirements**

- 3.7.1 The data requirements for capital expenditure forecasts have been documented in Article VI of the TWRG dated May 29, 2003. Additional guidance to TRANSCO and to an Independent Expert which may be appointed pursuant to Article XIV of the TWRG, are provided in this Chapter 4. The ERC notes the Independent Expert may need access to more detailed and different information to fulfil its responsibilities and that TRANSCO should endeavour to meet the information and data needs of the

Independent Expert wherever possible. The ERC seeks comments on any additional issues which relate to the capital expenditure forecasts for the purposes of the regulatory reset of TRANSCO.

## CHAPTER 4

### OPERATING & MAINTENANCE EXPENDITURE FORECASTS

#### 4.1 General Basis of Operating & Maintenance Expenditure Forecasts

- 4.1.1 Section 4.11 of the TWRG outlines the data requirements for the operating & maintenance expenditure forecasts that TRANSCO must deliver to the ERC. These forecasts need to be accompanied by a justification against each expenditure category (see below) as to why the forecast expenditures are necessary, and are of reasonable magnitude, for example by benchmarking to other transmission companies or distribution utilities. Improvements in efficiency over the Second Regulatory Period should be demonstrated by the forecasts. In particular the magnitude of the forecasts should be judged against the general principles provided in Section 4.4.1 of the TWRG, and the declaration of policy in Section 2 of the EPIRA.
- 4.1.2 Section 4.11.4 of the TWRG also provides for the ERC to rely on an Independent Expert to review the operating & maintenance expenditure forecasts and its supporting documentation. The Independent Expert is to assess the operating & maintenance expenditure forecasts to ensure they are:
- (a) Reasonably efficient (against similar benchmarks);
  - (b) Sufficient to support forecast growth in customer connections, coincident peak demand and energy delivered;
  - (c) Sufficient to allow the regulated entity to achieve or exceed the applicable target levels of performance specified by the ERC; and
  - (d) Reasonable with respect to recovery of bad debts and a strategy for improving debt collections is provided.

#### 4.2 Operating & Maintenance Expenditure Forecast Categorisation

- 4.2.1 TRANSCO is required to provide its operating & maintenance expenditure forecast broken down into the expenditure categories provided in Section 4.11.1 of the TWRG.
- 4.2.2 Given the complexity of analyzing expenditures which are of low materiality, The ERC shall not require detailed review of the “Other” operating & maintenance expenditure category, provided the level of this expenditure is less than 5% of the total forecast operating & maintenance expenditure in any forecast year.
- 4.2.3 Appendix C provides the templates for the operating & maintenance expenditure forecasts which need to be delivered by TRANSCO to the ERC. One of the prime deliverables is the summary sheet of the total operating &

maintenance expenditures in nominal peso. See also Figure C.1 which summarizes the calculation flow.

- 4.2.4 The ERC seeks comment on the proposed approach to estimating, reviewing and approving efficient operating & maintenance expenditure forecasts, and on the templates by which the forecasts need to be delivered.

### **4.3 Isolation of CPI and Foreign Exchange Impacts**

- 4.3.1 The ERC needs the operating & maintenance expenditure forecasts broken down to isolate the CPI from the Philippines and USA, and the Peso/US\$ exchange rate from the operating & maintenance expenditures because in modelling the MAR these forecast assumptions need to dynamically modelled. In addition there forecasts are also used a potential trigger points for the reassessment of the X factor or for the reopening of the previous regulatory settings.
- 4.3.2 The ERC seeks comment on the methodology to convert forecast US\$ purchases into Peso amounts and application of the Philippines and US CPI, to provide a forecast of the landed cost in peso.
- 4.3.3 The ERC seeks comment on reasonable settings for the forecasts of the CPI from the Philippines and USA, and the Peso/US\$ exchange rate over the Second Regulatory Period.

## CHAPTER 5

### INCOME TAX AND OTHER TAXES, LEVIES AND DUTIES

#### 5.1 General Comments on Tax Issues

- 5.1.1 The TWRG has been set up to provide regulatory certainty to TRANSCO and the potential new Concessionaire who would either own or manage TRANSCO. As the privatization process has not yet been finalized, there are a number of uncertainties surrounding the treatment of corporate income tax and other taxes, levies and duties which the ERC should apply in its administration of transmission rates under the TWRG.
- 5.1.2 The primary assumption the ERC has taken in developing the TWRG is that the regulatory arrangements set the revenue cap for the combined TRANSCO/Concessionaire irrespective of the eventual commercial arrangements set out in the Concession Agreement and in the Franchise Agreement when, and if, this is provided or altered by Congress.
- 5.1.3 In this sense whether the assets are owned by TRANSCO or the Concessionaire, or whether the revenues are collected by either organization, the ERC shall treat them as the one related entity for regulatory purposes. The effect of this is that the structure of the Concession Agreement does not alter the amount of reasonable costs that can be recovered from customers receiving the Regulated Transmission Services.
- 5.1.4 There is one particular uncertainty which the ERC needs to consider in its analysis of reasonable costs leading up to the Second Regulatory Period. At present the TWRG assumes the TRANSCO / Concessionaire will be paying a franchise tax and corporate income tax to the Philippines government. To a certain extent this will depend on the outcomes of Congress' consideration of the Franchise arrangement for TRANSCO and/or the Concessionaire, and the outcomes of the privatization process, as determined in the Concession Agreement.
- 5.1.5 Where TRANSCO and/or the Concessionaire is exempt from various corporate income tax, or other taxes, levies and duties (including franchise tax) due to either the eventual franchise arrangements or the eventual concession arrangements, these should also be excluded from the forecast costs provided to the ERC.

#### 5.2 Isolation of Tax Impacts (Other than Corporate Income Tax)

- 5.2.1 Section 4.11.2 of the TWRG requires TRANSCO to separately identify both historical and forecast payments of taxes, levies and duties (other than corporate income tax). Where these can be separately identified they should also categorised on the same basis as the operating & maintenance

expenditure forecasts. The historical and forecast payments of taxes, levies and duties (other than corporate income tax) must not include any double counting of payments. Justification of the magnitude of the forecast payments of taxes, levies and duties (other than corporate income tax) should also be provided. Where TRANSCO is exempt from various taxes, levies and duties (other than corporate income tax) due to either its franchise arrangements or the eventual concession arrangements, these should also be excluded from the forecasts provided to the ERC.

- 5.2.2 The primary issue for the ERC in examining taxes, levies and duties (other than corporate income tax), is the franchise tax position of TRANSCO and/or the Concessionaire to be carried into the Second Regulatory Period. In particular where TRANSCO has been legally separated from the National Power Corporation (NPC) and the transmission assets have been transferred to it, which entity holds the Franchise and whether by the Second Regulatory Period a franchise tax is required to be paid;
- 5.2.3 The templates for reporting tax payments (other than corporate income tax) are provided in Appendix C. It includes historical information on tax payments (other than corporate income tax) and in particular franchise tax. To the extent possible, TRANSCO must be able to prove to the ERC that these taxes have been paid.
- 5.2.4 The ERC seeks comment on the types of tax payments (other than corporate income tax) that should be reported, whether the template proposed in Appendix C is reasonable and how such taxes should be forecast.

### **5.3 Historical payments of Corporate Income Tax**

- 5.3.1 In Section 4.12.4 of the TWRG, an income tax adjustment is undertaken to ensure that any difference between the recovery of corporate income tax and the amount actually paid to the Bureau of Internal Revenue, is adjusted within the revenues allowed to be recovered by TRANSCO. The adjustment seeks to correct any difference from actual income tax payments in the following regulatory period, including the impact of the time-value-of-money. For example, in the case of excess recovery of corporate income tax, the excess is returned to consumers through a lower uniform TRANSCO revenue requirement over the following regulatory period.
- 5.3.2 To achieve this calculation, the ERC requires TRANSCO to separately identify historical payments of income taxes. Section 4.12.5 requires TRANSCO to verify such payments by returns from the Bureau of Internal Revenue and documented evidence of payment from Authorized Agent Banks. Where TRANSCO cannot verify these payments, the ERC will assume TRANSCO has made zero income tax payments.
- 5.3.3 The primary issues for the ERC in examining the corporate income tax position of TRANSCO to be carried into the second regulatory period, relate to whether:

- (a) TRANSCO has been legally separated from the National Power Corporation (NPC), and whether from that date corporate income tax is required to be paid;
  - (b) TRANSCO and/or the Concessionaire will be required to pay corporate income tax during the Second Regulatory Period;
  - (c) TRANSCO has paid tax (and assuming this can be reasonably isolated from the related NPC activities), and TRANSCO is in a position to have its payments certified by an independent external auditor as required under Section 4.12.5 (b);
  - (d) Any income tax losses should be carried forward by TRANSCO into the Second Regulatory Period; and
  - (e) The ERC should assume the income tax to be paid by TRANSCO and/or the Concessionaire should be assumed to be zero for the Second Regulatory period, rather than assume TRANSCO and/or the Concessionaire will pay corporate income tax as if it were a private corporation or was owned or run by a private concessionaire.
- 5.3.4 The ERC seeks comment on the amount of income tax to be included in the income tax adjustment calculation. Note that comments should be restricted to the application of the TWRG provisions as the ERC has already determined that the recovery of corporate income tax adjusted for the actual corporate income tax paid, is a reasonable cost which should be recovered by TRANSCO and/or the Concessionaire and this methodology forms part of an alternative form of internationally-accepted rate-setting methodology (see Section 43(f) of the EPIRA and Rule 15, Section 5(a) of the IRR).

#### **5.4 Data Requirements**

- 5.4.1 The data template requirements for tax payments (other than corporate tax payments) are outlined in Appendix C. The data template requirements for corporate tax payments are outlined in Appendix D. The requirement to provide justification for the level of tax payments, and verification of actual payments is provided above and in Section 4.11.6 and 4.12.5 of the TWRG.

## CHAPTER 6

### WEIGHTED AVERAGE COST OF CAPITAL

#### 6.1 Overview

- 6.1.1 The weighted average cost of capital (WACC) to be used for regulatory purposes is estimated using the approach outlined in Section 4.9 of the TWRG. The regulatory WACC to be used for the purposes of setting the revenue cap for TRANSCO, is designed to be an estimate of a reasonable industry average WACC which is set in a manner to encourage investment in electricity transmission assets without being excessive.
- 6.1.2 It is extremely important to recognize that the Return on Rate Base (RORB) and the WACC are NOT comparable financial measures. RORB is the result of the comparing a net revenue measurement against the asset base employed and can be classified as a financial statement measurement, while the WACC is a measure of the cost of debt and cost of equity required to fund the business and can be classified as a cash flow measurement.
- 6.1.3 This Chapter explores the values of the variables which comprise the WACC using market input variables as at July 30, 2004.

#### 6.2 Locked Parameters

- 6.1.4 In determining the WACC methodology under the TWRG, the ERC has set a number of the variables used in the calculation of WACC at levels which represent estimates of average or good financial industry practice for financially viable companies. The general reasons for this approach are provided in the TWRG, but in general relate to the difficulty in undertaking a statistically valid measure of these values in the Philippines market place, which as a relatively immature and small market, have yet to show the trading liquidity which would improve the statistical measures. For the Second Regulatory Period these set values are:
- (a) Market Risk Premium is set to 0.06 (or 6.0% pa).
  - (b) 50% funding by Debt and 50% funding by equity, resulting in a Debt / Equity ratio of 1.0 or Debt / (Debt + Equity) and Equity / (Debt + Equity) ratios of 2.0.

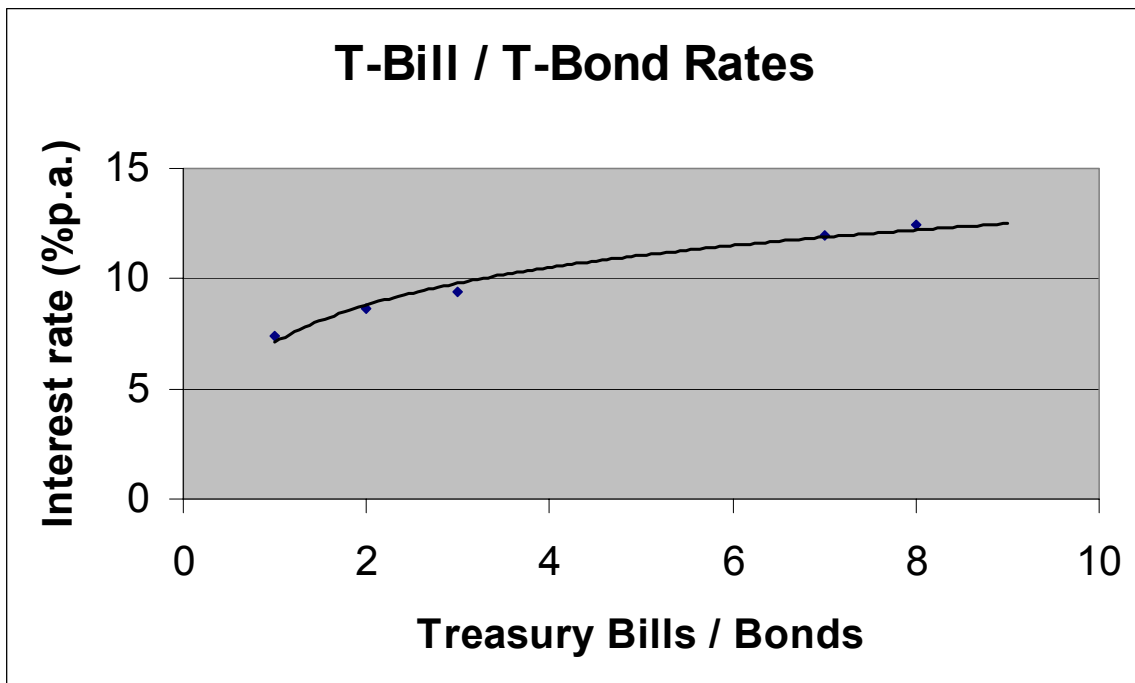
#### 6.2 Estimate of Risk Free Rate in the Philippines

- 6.2.1 The discussion in Section 4.9.5 provides some comments on the approach to measure the risk free rate in the Philippines. Two measures are briefly explored here. Firstly the return on a Philippines peso Treasury Bond resulting from the auction process undertaken by government. Secondly the return on a long dated USA treasury bill plus the yield difference

between peso and US\$ bills available within the Philippines. The following paragraphs explore each outcome.

**6.3 Direct Measure of Risk Free Rate in the Philippines**

6.3.1 Information on the yield of the 10 year Philippines Treasury Bond suggests the yield resulting from the auction process during June 2004 nominal yield of 12.42% pa., as sourced from the National Statistics Office of the Philippines (NSO). The Treasury Bond auction process may not provide a yield which represents a yield that would be available from a highly liquid secondary financial market outside of the government auction process. As such the yield may not necessarily be a good representation of the returns expected from a long-term liquid risk-free investment by debt providers in the Philippines. However, given a “normal yield curve” (ie a slowly rising yield curve with a similar shape to Figure 6.1) is operative in the Philippines at this point, the risk free rate which is estimated from other techniques should lie close to but above this rate.



**Figure 6.1 : Yield curve for Philippine Treasury Bills and Bonds for June 2004**

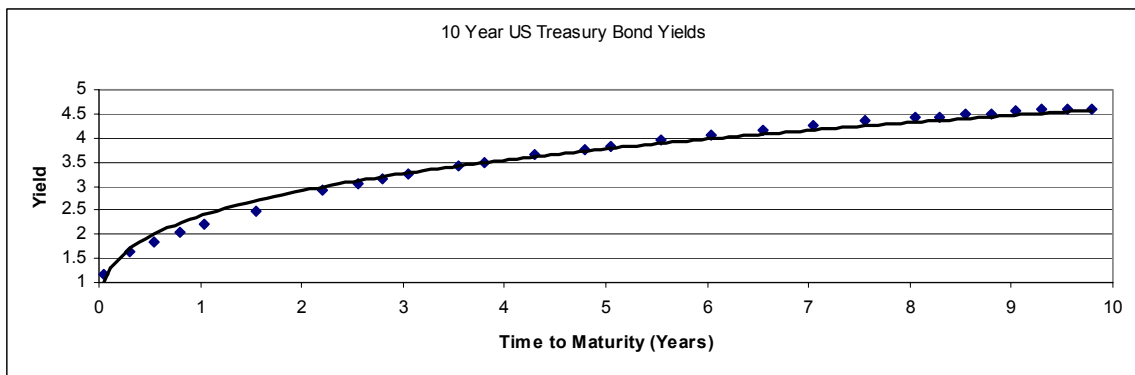
**6.4 In-Direct Measure of Risk Free Rate in the Philippines**

6.4.1 In order to apply the high-liquidity risk-free rate from the USA in the Philippines, the estimate needs to remove the USA inflation effects and add back the Philippines inflation effects. Also the estimate needs to add a yield premium associated with investing in the Philippines rather than in the USA. This country risk premium (CRP) can be best measured through the yields offered on US\$ bonds in the Philippines and US\$ bonds in the

USA for the same duration, maturity and exercise date. Reasonable liquidity in both markets is also required. This difference represents the risks of investing in the Philippines, rather than investing in another market with perceived lower risks, in this case suggested to be the USA. This measure excludes foreign exchange risk. The following paragraphs isolate estimates of this data.

**6.5 Risk Free Rate in the USA**

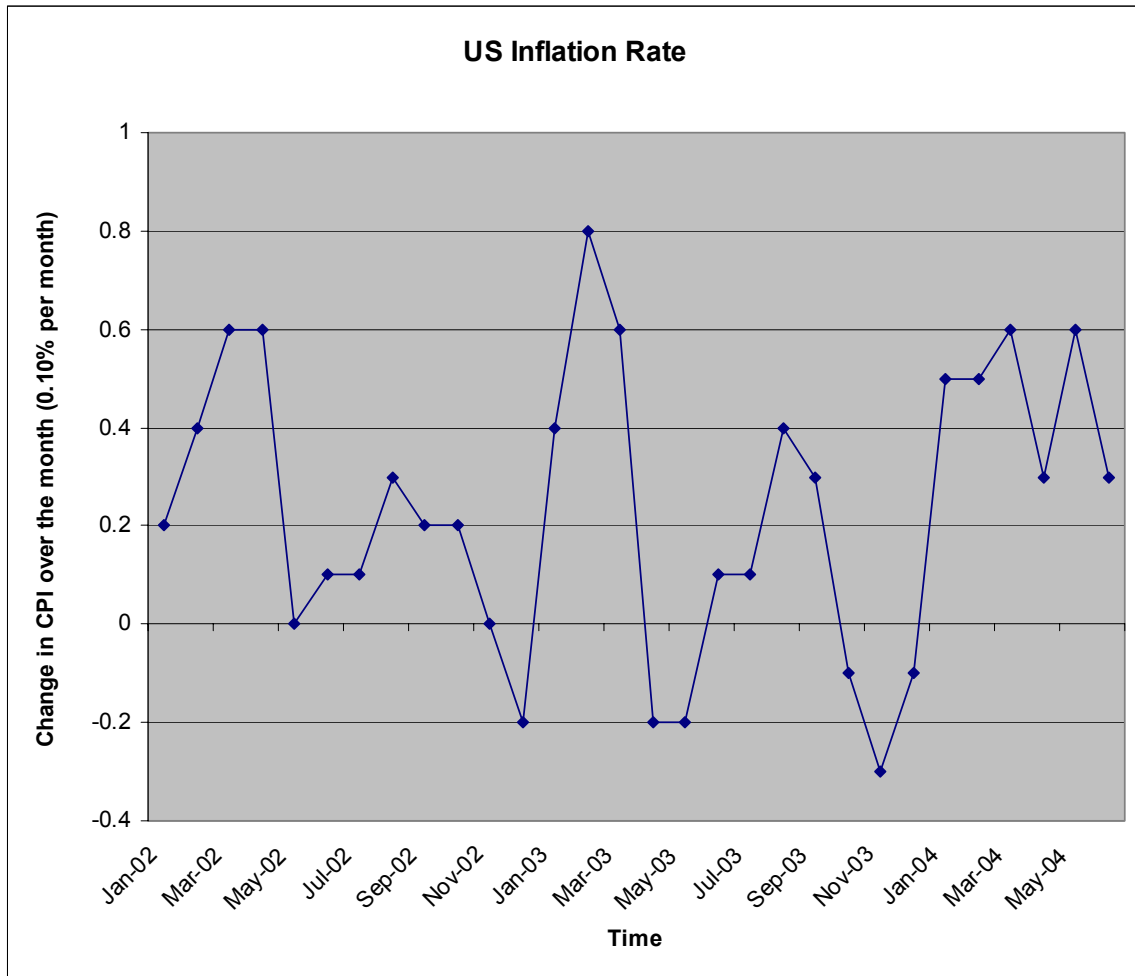
6.5.1 Data was drawn from the Bloomberg financial data service on the yields of 10 year treasury bills of various durations, as at July 15, 2004. The results in Figure 6.2 show a normal yield curve with an ultimate nominal yield of between 4.6% and 4.7% pa.



**Figure 6.2 : Yields of US 10Year T-Bills**

**6.6 CPI in the USA**

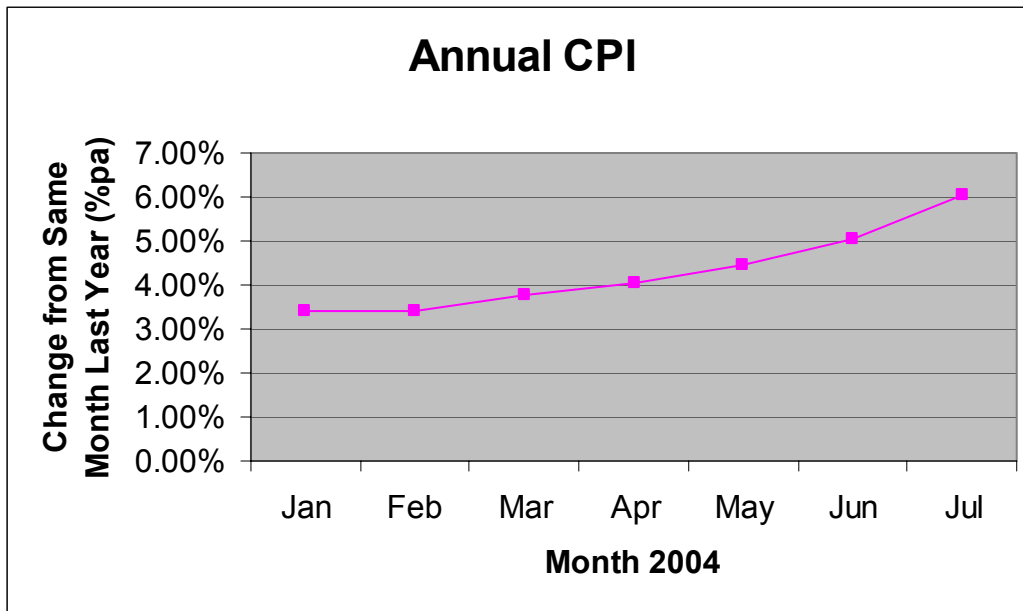
6.6.1 This nominal yield includes US inflation. Data on the USA inflation rate was also sourced from the US Department of Labor – Bureau of Statistics, for All Items, US Cities average, non-seasonally adjusted. Figure 6.3 shows that the monthly inflation rate using data between January 2002 and June 2004 has an average of 0.237% per month. Compounding to twelve months this suggests an average inflation rate of 2.88% pa.



**Figure 6.3 : USA Inflation Rate (0.10% change per month)**

**6.7 CPI in the Philippines**

6.7.1 Information on the consumer price index (CPI) on the Philippines sourced from the National Statistics Office of the Philippines (NSO) indicates that the average inflation rate over the last six months has been steadily climbing and ranges from 3.2%pa to around 6.0%pa. Figure 6.4 provides the source data used in this estimate. Assuming the latest data is representative of data in the future, an inflation rate of 6.0% pa appears reasonable.



**Figure 6.4 : Philippines Inflation Rate (% pa)**

## 6.8 Philippines Country Risk Premium

- 6.8.1 US\$ denominated bank bills are on offer in the Philippines. Using retail data advertised in the business section of the Philippine Star dated July 8, 2004, and comparing this to US\$ denominated retail investments advertised by the Bank of America (Checking & Savings) data on August 13, 2004, for dates of similar maturity, an estimate of the CRP lie between 2.2%pa and 2.5%pa. The comparison of the yield differences for US\$ denominated retail investments is provided in Figure 6.5. While each data set is not particularly comparable given the differences in bond liquidity, market size and date differences, it does provide an approximate range for the CRP, for initial discussions on WACC parameter values. It should also be noted that this data is for retail non-government investments rather than T-bills, and as such the CRP estimate may differ from those estimated using other techniques or data sources.

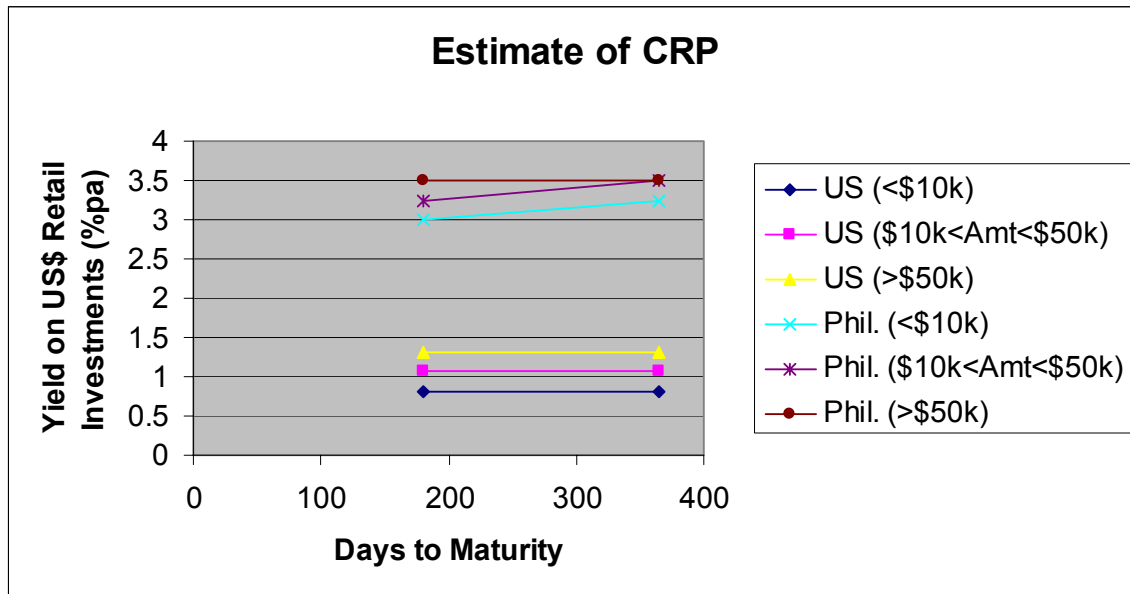


Figure 6.5 : Philippines CRP (% pa)

6.8.2 An estimate of the risk free rate in the Philippines is thus possible from the following formula:

$$rf = (1+r_{USA}) / (1+CPI_{USA}) \times (1+CPI_{Phil}) \times (1+CRP) - 1$$

Where:

$$r_{USA} = 0.046 \text{ to } 0.047$$

$$CPI_{USA} = 0.0288$$

$$C_{Phil} = 0.06, \text{ and}$$

$$CRP = 0.022 \text{ to } 0.025$$

Thus the estimate of the risk free rate in the Philippines using offshore measures is between 10.1%pa and 10.6%pa.

## 6.9 Review Direct and In-Direct Measure of Philippines Risk Free Rate

6.9.1 The measure achieved by an in-direct measure of the risk free rate suggests a range from 10.1% to 10.6%pa. The direct measure suggests a risk free rate of about 12.4%pa. The measures are not particularly consistent, and can be influenced by a number of measurement and timing differences. The ERC is inclined to discount the direct measure and use a value from the lower quartile of the range estimated using an in-direct measure of the risk free rate. The ERC has concerns over the lower liquidity seen from the 10 Year Philippines T-Bond and believes to lack of a secondary market. The risk free rate measure is trying to isolate the yield for a liquid

market which is directly accessible by investors. Thus without committing to a value for the risk free rate, the ERC shall use a range of values derived from an in-direct measure which lie between 10.1% to 10.6% pa for the discussion in this Issues Paper.

6.9.2 The ERC seeks comment on the input values, data source alternatives, the formula and the approach to estimate the risk free rate in the Philippines.

### 6.10 Measurement of Benchmark Equity Betas

6.10.1 A review of Bloomberg data on electricity transmission companies suggests there are not many traded in the markets and hence the statistics on the equity beta are not particularly accurate. Table 6.1 suggests a mean of the delivered asset beta of between 0.23 and 0.76 with a mean of 0.47. This is after application of the formula in Section 4.9.8 of the TWRG.

Business	Market Capitalisation (millions)	Net Debt (millions)	Gearing (D/E)	Effective Tax Rate	Equity Beta	Asset Beta
<b>Transmission</b>						
<b>Columbia</b>						
INTERCONEXION ELECTRICA SA	1,493,332	1,870,056	125%	48%	0.96	0.43
<b>Spain</b>						
RED ELECTRICA DE ESPANA	1,845	1,945	105%	34%	0.47	0.23
<b>Brazil</b>						
CIA DE TRANSMISSAO DE ENERGI	1,792	97	5%	20%	0.80	0.76
<b>Transmission Mean</b>			<b>79%</b>		<b>0.74</b>	<b>0.47</b>
<b>Transmission Median</b>			<b>105%</b>		<b>0.80</b>	<b>0.43</b>

**Table 6.1 : Overseas Transmission Company Equity and Asset Betas**

6.10.2 Information from overseas jurisdictions suggests asset betas allowed by regulators for electricity transmission companies lie somewhere between 0.35 to 0.63. Table 6.2 shows the latest available data from overseas jurisdictions.

Price Determination/Regulated Entity	Regulator	Asset Beta	Equity Beta
Victoria Transmission Network Revenue Caps 2003 – 2008 - Powernet	ACCC	0.4	1.0
Snowy Mountains Hydro-Electric Authority Transmission Network Revenue Cap 1999/00 – 2003/04	ACCC	0.3-0.5 (0.4 mid-point)	0.75-1.25 (1.0 mid-point)
Draft Decision NSW and ACT Transmission Network Revenue Caps - TransGrid - 2004/05 - 2008/09	ACCC	0.4	1.0
Final Decision on National Grid Company	Ofgem	0.3 – 0.4 (draft)	1.0

Source:

- *Snowy Mountains Hydro-Electric Authority Transmission Network Revenue Cap 1999/00-2003/04, 7 February 2001, ACCC*

- *Decision Victorian Transmission Network Revenue Caps 2003-2008, 11 December 2002, ACCC*

- *Draft Decision NSW and ACT Transmission Network Revenue Caps - TransGrid 2004/05-2008/09, 28 April 2004, ACCC*

- *The transmission price control review of the National Grid Company from 2001 Transmission asset owner Final proposals – Ofgem, September 2000, to expire 2006.*

### **Table 6.2 : Overseas Regulatory Decisions on Asset Betas**

#### **6.11 De-Levering to Asset Beta**

6.11.1 In Table 6.1, the equity betas measured in overseas equity markets are de-levered using the formula in Section 4.9.8 of the TWRG. The D/E and effective tax rates are required for the overseas transmission companies (or countries) to calculate the asset betas. The range of asset betas is provided in Table 6.1.

#### **6.12 Selecting a TRANSCO Asset Beta**

6.12.1 Without committing to a decision on an appropriate asset beta for TRANSCO, the apparent range of asset beta to explore the WACC range which might be applicable for TRANSCO for the Second Regulatory Period is between approximately 0.40 and 0.54.

#### **6.13 Re-Levering to TRANSCO Equity Beta**

6.13.1 The formula in Section 4.9.7 of the TWRG is used to re-lever the asset beta to an equity beta for regulatory purposes using the D/E ratio of 50%:50% or 1.0. Thus the TRANSCO equity beta is assumed to lie between 0.80 and 1.08.

#### **6.14 Estimated Range of Return to Equity**

6.14.1 Using the formula in 4.9.4 of the TWRG and the data ranges above, the range of return to equity to be used for regulatory purposes lies between 14.9%pa and 17.1%pa (nominal). This is an estimate of the return equity investors would expect to receive for investing in an electricity transmission business in the Philippines.

#### **6.15 Estimated Range of Debt Margin**

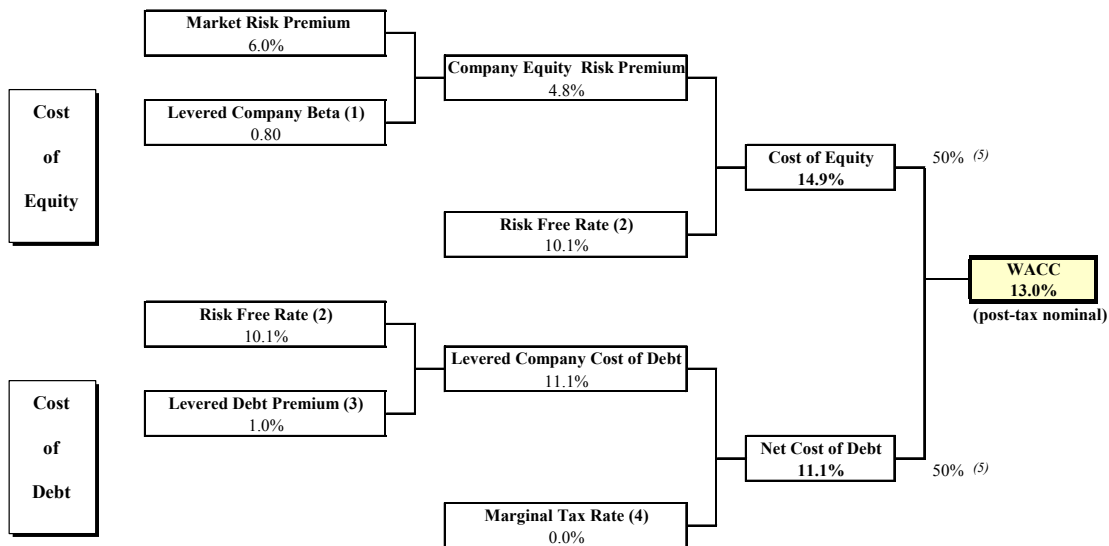
6.15.1 At present the ERC does not have reasonable data on the debt margin above the risk free rate that debt provider would expect for provision of debt to an electricity transmission business in the Philippines. For this Issues Paper the ERC makes the assumption that a large private company in the Philippines with a similar risk profile can access debt at a debt margin of between 1.0%pa and 1.5%pa above the risk free rate.

**6.16 Estimated Range of Return to Debt**

6.16.1 Using this range as the assumed debt margin in the Philippines, the cost of debt for an electricity transmission company in the Philippines lies between 11.1%pa and 12.1%pa (nominal) (see Section 4.9.10 of the TWRG).

**6.17 Estimated Range of WACC**

6.17.1 Using the above data and the formula in Section 4.9.3 of the TWRG, the estimate of the WACC to be used for regulatory purposes as at July 1, 2004 would lie within the range of 13.0%pa and 14.6%pa, post-tax nominal basis. The lower WACC value calculation is summarized in Figure 6.6 below.



**Figure 6.6 : Summary of Regulatory WACC Estimate (%pa post-tax nominal)**

**6.18 Comments on Data Sources and WACC Estimate**

6.18.1 As required by Section 4.9.11 of the TWRG the ERC seeks comment on the data sources and the methods of data development to arrive at an estimate of the regulatory WACC.

**6.19 Recalculation Point Using Market Data**

6.19.1 In a performance based regulatory (PBR) analysis, the regulator must undertake a forward looking projection of the Regulated Entity’s cash flow requirements to assist in setting the revenue cap for the coming regulatory period. It is not in the regulator’s skill set to forecast how debt and equity markets will measure the risks of any particular investment in any particular future period. Indeed this is difficult for the financial community with all the skills and experience that they have available.

- 6.19.2 Thus the regulator measures a WACC at one point in time using the most objective data available to it. This WACC is then assumed to apply at a constant rate into the future over the coming regulatory reset period. Obviously, the closer this “point-in-time” measurement is made to the commencement of the relevant regulatory period, the more likely it is to be representative of the beginning of the regulatory period of concern.
- 6.19.3 The ERC has undertaken this initial estimate of the WACC to be used for setting the TRANSCO revenue cap for the period from January 1, 2006, at the notional date of July 31, 2004. The majority of the input data for the WACC is sourced from around this date.
- 6.19.4 The ERC seeks comment on the date at which the market measures for inputs to the WACC calculation should be updated to develop a final view of the WACC to be applied for the whole of the Second Regulatory Period. This date should lie between the date of this Issues Paper and the ERC’s draft determination of the revenue cap for TRANSCO, which is now scheduled to occur by October 31, 2005.

## CHAPTER 7

### PERFORMANCE BASED REGULATION

#### 7.1 Performance Indices for Second Regulatory Period

7.1.1 In meeting its obligations under the Grid Code, TRANSCO has submitted its Statement of Compliance for its transmission and sub-transmission networks. Tables 7.1 and 7.2 summarise the transmission and sub-transmission network performance using available information for the five year period ending 2002.

TRANSMISSION PERFORMANCE INDICATORS						
<b>LUZON</b>		<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>
Number of Interruption Events	IE	124	116	122	100	85
System Average Interruption Frequency Index	SAIFI	4.38	2.45	2.48	3.82	1.92
Momentary Average Interruption Frequency Index	MAIFI	1.85	1.41	1.17	0.88	1.26
System Average Interruption Duration Index (minutes)	SAIDI	772.19	440.46	484.26	601.00	328.76
System Interruption Severity Index (minutes)	SISI	95.71	74.90	68.58	495.82	40.28
Frequency of Tripping per 100 ckt Km (trip/100ckt-km)	FOT	14	12	15	16	16
Average Outage Duration (minutes/trip)	AOD	182.59	571.77	267.10	366.09	140.63
<b>VISAYAS</b>		<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>
Number of Interruption Events	IE	n/a	n/a	106	177	246
System Average Interruption Frequency Index	SAIFI	n/a	n/a	5.37	9.59	8.50
Momentary Average Interruption Frequency Index	MAIFI	n/a	n/a	3.00	3.89	3.99
System Average Interruption Duration Index (minutes)	SAIDI	n/a	n/a	835.40	1,568.56	1,058.15
System Interruption Severity Index (minutes)	SISI	n/a	n/a	486.00	436.35	213.10
Frequency of Tripping per 100 ckt Km (trip/100ckt-km)	FOT	n/a	n/a	17	9	6
Average Outage Duration (minutes/trip)	AOD	n/a	n/a	180.34	161.16	251.21
<b>MINDANAO</b>		<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>
Number of Interruption Events	IE	8	7	43	13	16
System Average Interruption Frequency Index	SAIFI	2.56	2.13	5.44	1.73	1.63
Momentary Average Interruption Frequency Index	MAIFI	1.37	1.07	0.85	0.76	0.28
System Average Interruption Duration Index (minutes)	SAIDI	210.17	211.39	529.40	198.11	972.94
System Interruption Severity Index (minutes)	SISI	156.85	169.02	368.01	129.03	126.15
Frequency of Tripping per 100 ckt Km (trip/100ckt-km)	FOT	15	15	20	13	11
Average Outage Duration (minutes/trip)	AOD	170.84	539.28	468.34	323.99	192.22

Source: Transco, Statement of Compliance to Grid Code, Schedule B, Volume 2, GSC-PGC-009

**Table 7.1 : Summary of the Transmission Network Performance**

- 7.1.2 As can be seen there are differences in performance measured for the transmission and the sub-transmission networks.
- 7.1.3 To assist the ERC in its ongoing analysis of the network performance, TRANSCO is required to deliver the same information to the ERC for the 2003 year by September 30, 2004, and for 2004 by March 31, 2005.

<b>SUB-TRANSMISSION PERFORMANCE INDICATORS</b>						
<b>LUZON</b>		<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>
Number of Interruption Events	IE	3,898	3,013	2,658	2,431	2,309
System Average Interruption Frequency Index	SAIFI	15.88	11.69	11.57	14.10	14.74
Momentary Average Interruption Frequency Index	MAIFI	15.02	13.56	11.50	13.18	12.67
System Average Interruption Duration Index (minutes)	SAIDI	3,499.43	2,493.20	2,971.03	2,975.35	3,164.61
System Interruption Severity Index (minutes)	SISI	1,605.20	1,495.93	1,440.50	1,647.33	1,237.24
Frequency of Tripping per 100 ckt Km (trip/100ckt-km)	FOT	n/a	n/a	n/a	n/a	n/a
Average Outage Duration (minutes/trip)	AOD	n/a	n/a	n/a	n/a	n/a
<b>VISAYAS</b>		<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>
Number of Interruption Events	IE	n/a	n/a	835	511	636
System Average Interruption Frequency Index	SAIFI	n/a	n/a	39.94	45.73	60.67
Momentary Average Interruption Frequency Index	MAIFI	n/a	n/a	26.19	22.71	27.74
System Average Interruption Duration Index (minutes)	SAIDI	n/a	n/a	9,267.64	11,303.46	13,859.04
System Interruption Severity Index (minutes)	SISI	n/a	n/a	1,361.61	814.48	987.50
Frequency of Tripping per 100 ckt Km (trip/100ckt-km)	FOT	n/a	n/a	n/a	n/a	n/a
Average Outage Duration (minutes/trip)	AOD	n/a	n/a	n/a	n/a	n/a
<b>MINDANAO</b>		<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>
Number of Interruption Events	IE	776	734	697	891	950
System Average Interruption Frequency Index	SAIFI	10.18	10.10	13.61	9.38	10.54
Momentary Average Interruption Frequency Index	MAIFI	6.62	6.58	6.46	8.70	8.08
System Average Interruption Duration Index (minutes)	SAIDI	1,591.63	1,730.58	2,730.00	2,090.26	3,469.34
System Interruption Severity Index (minutes)	SISI	1,062.26	1,095.37	1,795.45	2,038.65	1,735.54
Frequency of Tripping per 100 ckt Km (trip/100ckt-km)	FOT	n/a	n/a	n/a	n/a	n/a
Average Outage Duration (minutes/trip)	AOD	n/a	n/a	n/a	n/a	n/a

Source: Transco, Statement of Compliance to Grid Code, Schedule B, Volume 2, GSC-PGC-009

**Table 7.2 : Summary of the Sub-Transmission Network Performance**

7.1.4 Without limiting its options for using additional indices to develop a PBR in the future, the ERC is considering limiting the indices it requires for PBR performance indicators under Section 8.1.1 of the TWRG to the following:

- (a) Number of Interruption Events;
- (b) Average System Interruption Frequency Index (ASIFI);
- (c) Momentary Average Interruption Frequency Index (MAIFI);
- (d) Average System Interruption Duration Index (ASIDI);
- (e) System Interrupt Severity Index (SISI);
- (f) Number of frequency limit violations;
- (g) Number of voltage limit violations;
- (h) System losses.

7.1.5 While TRANSCO has measured the performance information for each of the Luzon, Visayas and Mindanao grids separately, under Appendix B of the TWRG, TRANSCO is required to report separately to performance of the ‘sub-sea or inter-island’ interconnectors. Where TRANSCO is able to report their performance separately, TRANSCO should deliver this information to the ERC by September 30, 2004 for the five year period to 2002. This information should include a summary by each interconnector. TRANSCO is also required to deliver the same information to the ERC for

the 2003 year by September 30, 2004, and for 2004 by March 31, 2005. Where this information is not readily available, the ERC requires that by January 1 2005, TRANSCO begin to monitor and collate this performance information separately.

- 7.1.6 The ERC notes that the SIDI and AOD are not presented for the sub-transmission networks. TRANSCO is asked to indicate to the ERC why it has not developed these statistics. If the data is available, TRANSCO should deliver these indices to the ERC by September 30, 2004 for the five year period to 2002. TRANSCO is also required to deliver the same information to the ERC for the 2003 year by September 30, 2004, and for 2004 by March 31, 2005.
- 7.1.7 The ERC further notes that it has been working on Guidelines for the Application and Approval of Caps on the Recoverable Rate of Distribution System Loss. Clause 3.4.2 of the Grid Code requires that the ERC undertake a similar process for the transmission networks to set caps on Technical and Non-Technical Losses. The ERC will need to coordinate the development of these caps and any additional reward or penalty arrangements under Section 8.2 of the TWRG.
- 7.1.8 The ERC seeks comments on the performance measures which should form part of the Performance Incentive Scheme under Section 8.2 of the TWRG.

## **7.2 Determination of Performance Targets**

- 7.2.1 Clause 10.4.2 of the Grid Code indicates that the “initial targets shall be set to the mean value of the particular Grid’s reliability performance for the last five (5) year. The upper and lower cut-off points shall be set at plus or minus one ( $\pm 1$ ) standard deviation from the mean value.”
- 7.2.2 While these performance targets are set for monitoring performance under the Grid Code, other targets might also be appropriate for development of a performance reward/penalty mechanism for TRANSCO under the PBR.
- 7.2.3 [TRANSCO is required to deliver the complete statistics for the summary in Table 7.2 and to provide the year-by-year plus and minus one (1) standard deviation of the data, by September 30, 2004. TRANSCO is also required to deliver the same information to the ERC for the 2003 year by September 30, 2004, and for 2004 by March 31, 2005. ]
- 7.2.4 ERC seeks comment on the possible target(s) it should use in developing a PBR for TRANSCO.

## **7.3 Determination of Reward / Penalty Targets**

- 7.3.1 ERC seeks comment on the possible target(s) it should use in developing a PBR for TRANSCO.
- 7.3.2 There could be various approaches to target(s) which the ERC could use in a PBR. The following examples suggest some alternative approaches:

- (a) Provided TRANSCO operates its network within the plus and minus one (1) standard deviation of the mean for the data to 2002, it does not receive a reward or penalty. If the performance falls below one (1) standard deviation below the mean, TRANSCO is penalised some of its allowed revenue for the following year in the revenue cap verification and tariff adjustment process under Article VI. Likewise, where there is an improvement to above one (1) standard deviation above the mean, a reward is provided.
- (b) As in a) but with limits set at plus and minus one half (1/2) standard deviation of the mean.
- (c) Provided TRANSCO operates its network within the plus one half (1/2) and minus one (1) standard deviation of the mean for the data to 2002, it does not receive a reward or penalty. If the performance falls below one (1) standard deviation below the mean, TRANSCO is penalised some of its allowed revenue for the following year in the revenue cap verification and tariff adjustment process under Article VI. Likewise, where there is an improvement to above one half (1/2) standard deviation above the mean, a reward is provided.
- (d) Provided TRANSCO operates its network within the plus and minus one half (1/2) standard deviation of the mean for the data to 2002, it does not receive a reward or penalty. If the performance falls below one half (1/2) but less than one (1) standard deviation below the mean, TRANSCO is penalised at 'one penalty rate' and some of its allowed revenue for the following year in the revenue cap verification and tariff adjustment process under Article VI. If the performance falls below one (1) standard deviation below the mean, TRANSCO is penalised at a 'second higher penalty rate'. Likewise, where there is an improvement to above one half (1/2) but less than one (1) standard deviation above the mean, a reward at 'one reward rate' is provided. An improvement to above one (1) standard deviation above the mean, a reward at 'second higher reward rate' is provided.
- (e) An approach which recognizes the differences in performance between the different transmission networks and allows bias rewards by network to focus near-term investment effort.
- (f) Some measure which equates capital expenditure level and performance improvement so that more efficient investment for more significant reward for improvement allows a focus on low performance network areas.
- (g) An amalgamated index constructed from the primary measures in paragraph 7.4 above. This recognizes that many faults are outside the control of TRANSCO and relate to externalities which are not

affected by additional operating & maintenance or capital expenditures. This index would show lower volatility than the individual indices. The reward and penalty limits might then be able to be brought closer together to achieve a more consistent reward or penalty.

- (h) Monitoring might occur monthly, quarterly, bi-annually or annually. The frequency of measurement will also impact the mechanism by which the reward or penalty is rebated or paid.

7.3.3 Note that while the limits would be initially measure in a proportion of the standard deviation of the mean of the available statistics, ERC would require the limits to be fixed in numerical terms so there is no ambiguity to the target(s) which had been set. The ERC also intends to develop separate guidelines to ensure the performance measures are measured between networks in a similar manner, are reported to the ERC on a regular basis and with a standard format (both in hard copy and soft copy form), and are linked to credible national and international engineering standards for transmission networks.

7.3.4 The ERC seeks comment on the target(s) and/or limits which could be used for PBR purposes. Also there may be situations where certain escape clauses are necessary to avoid undue impact on additional investment or excessive reward. Suggestions on such mechanisms would be useful in the discussion of the approaches which the ERC might eventually adopt.

#### **7.4 Reward / Penalty Mechanism for Performance**

7.4.1 Section 8.2 of the TWRG sets limits on the Performance Incentive Scheme that the ERC can adopt for TRANSCO. This limit has been adopted so that the perceptions of the new Concessionaire and of customers on the impact of the PBR can managed. It is important that and penalty is not set so high that TRANSCO and/or the new Concessionaire is not financially crippled, and that rewards are not so unrealistically high then customers are severely disadvantaged.

7.4.2 Within the limits imposed by Section 8.2 of the TWRG, the ERC seeks comments on the level of reward and penalty which it might consider. Also the detail of how the PBR mechanism might work, recognizing it should either:

- (a) Alter tariff rates at the normal annual verification of the revenue cap and adjustment of tariff rates under Article VI of the TWRG; or
- (b) Provide rebate / surcharge on a customer invoice on a monthly, quarterly, bi-annual or annual basis, where direct customer, by region or by Grid mechanisms are developed under Section 8.2 of the TWRG.

**CHAPTER 8**

**ANNUAL VERIFICATION AND ADJUSTMENT OF TARIFF RATES**

**8.1 Background**

- 8.1.1 Article VI of the TWRG provides for a revenue cap validation and a tariff rate adjustment to the revenue cap, for the coming year of the regulatory period.
- 8.1.2 On November 25, 2003 TRANSCO filed its annual verification of its revenue cap and its adjustment of tariff rates (ERC Case No. 2003-551). While the ERC was able to verify the compliance with the revenue cap and to set the new revenue cap for 2004, the ERC was unable to approve a number of other prayers.
- 8.1.3 In summary TRANSCO filed for:
  - (a) A revenue cap of PhP 25,321 million for the Regulatory Year commencing January 1, 2004;
  - (b) The application of three customer segments under the TWRG and the OATS Rules (at that stage in draft form before the ERC), to allow separate Power Delivery Service (PDS) Charges to Luzon, Visayas and Mindanao ;
  - (c) Different Loss Factors than were previously approved, and requested those new Loss Factors in Table 8.1 below;

<b>System Losses per Grid</b>	<b>Approved Loss Factors</b>	<b>New Loss Factors</b>
Luzon	2.98%	3.52%
Visayas	3.67%	4.73%
Mindanao	4.35%	4.92%

**Table 8.1 : Loss Factors requested by TRANSCO**

The ERC assumes these new Loss Factors are applied for adjust the billing determinant meter readings used for the purposes of forward forecasting of the revenue recovery from each customer segment and for load and generation customers. It is unclear where else these Loss Factors might be used.

- (d) Approval to exceed the Side Constraints in Section 6.4 of the TWRG, by applying for a revenue increase from the Visayas customer segment of 17.42% for the year, compared to a constraint of 12.57% per segment.

- 8.1.4 In parallel to this consideration, TRANSCO had filed its OATS Rules which amongst other things spelt out the transmission services and their billing determinants in Module F of the OATS (ERC Case No. 2002-253). There were a number of quite significant changes from the existing arrangements for charging customers that existed under the unbundling decision by the ERC (refer ERC Case No. 2001-901). Without providing all details of the OATS filing, the primary issues which impact customer billing and are related to the application of Article VI of the TWRG are as follows:
- (a) A move to the following service charges:
    - (i) Power Delivery Service Charge;
    - (ii) Connection Charge;
    - (iii) System Operator Charge;
    - (iv) Metering Service Provider Charge;
    - (v) Ancillary Services Charge;
    - (vi) Cross-Subsidy Charge.
  - (b) These service charges are charged to both Load Customers and to Generation Customers (this is a major shift away from the previous practice of charging only Load Customers, and while this would appear to provide better economic pricing signals to all customers, has been a significant part of the discussion in ERC Case No. 2002-253.
  - (c) The outcome of the application of the billing determinant calculations in Module F of the OATS is that TRANSCO is not requesting the approval of specific constant 'rate' from each customer segment and for each service, but rather seeks approval for 'monthly revenue recovery' from the primary services delivered to each customer segment, which allows it to recover the overall cap. For example, under TRANSCO's original filing, the 'indicative rate' applied for Power Delivery Service to Load Customers will recover one twelfth (1/12) of the 50% revenue recovery for this service from this customer segment every month. As the load (in kW) for each take-off point will vary month-by-month, the 'effective or indicative rate' applied to each customer billing determinant varies for any particular month of the year, both on a forecast basis for approval purposes, and in real time as the charging for the year unfolds.
  - (d) It is unclear to the ERC whether there is an existing, legally-enforceable mechanism in place to allow generators to recover the charges that TRANSCO will apply to them under the OATS Rules, from their contracted and un-contracted customers. While the

charging principles TRANSCO is seeking to move towards potentially have merit in a restructured electricity industry, some additional regulatory and legal consideration needs to be made to how such recovery mechanism might work, and the economic benefit and impact which comes from the changes requested by TRANSCO. This has led to a number of filings for reconsideration under the TWRG and the OATS Rules which are briefly discussed below as they impact the administration of the TWRG and the current revenue reset process for TRANSCO.

- 8.1.5 There were a number of implicit assumptions in TRANSCO's TWRG filing of November 25, 2003, which were identified through detailed analysis of the calculations underlying the filing. One of these was that it sought to allocate the revenue recovery for the PDS charge between its three customer segments of Luzon, Visayas and Mindanao in proportion to the written down asset base from these three grids, as at approximately December 2003. This led directly to breaching of the side constraint for the Visayas.
- 8.1.6 In its Order of December 22, 2003, the ERC accepted the 2004 revenue cap analysis, rejected three customer segments and imposed two (that is Luzon combined with Visayas, and Mindanao), deferred the change to Loss Factors and deferred the application to breach the side constraint, until further public consultation could occur on the issues arising from such changes and their interaction with the OATS Rules.
- 8.1.7 The effect of only approving two customer segments is to keep the continuation of the Power Delivery Charges the same for Luzon and Mindanao, which matches the ERC's decision on the Transmission Delivery Charges in its Order of September 20, 2002.

## **8.2 TRANSCO's Motions for Reconsideration**

- 8.2.1 On March 4, 2004, TRANSCO filed a Motion for Reconsideration on the ERC's Order of December 22, 2003, which is covered in summary form by the following:
- (a) The 2-customer segmentation provided by the ERC runs counter to the mandate of R.A.9136 for the removal of cross-subsidies even as side constraints provided herein are thereby rendered nugatory with the unilateral non-application / consideration of the other factors / variables of the side constraints formulae, particularly the  $FQ_{k,t} / AQ_{k,t-1}$ , as approved and promulgated by the ERC under the TWRG.
  - (b) The requirement to file wheeling rates, ostensibly for the approval of the ERC is inconsistent with the revenue cap, principle / regulation as established under the TWRG approved by the ERC.

(c) The fifteen (15) day period required to submit the proposed wheeling rates upon promulgation of the OATS Rules is insufficient.

- 8.2.2 The ERC in its decisions must clearly balance the various provisions of the EPIRA, which in some instances act counter to each other, and hence cannot be categorically applied in a particular instance. It does this by reference to the policy declarations in Section 2 of the EPIRA, and through its own declaration of principles to assist in meeting the policy declarations in the EPIRA, which are provided in Section 4.4.1 of the TWRG.
- 8.2.3 Where Section 2(b) of the EPIRA requires the ERC to “ensure the ... affordability of the supply of electric power” and Section 2(c) requires “transparent and reasonable prices” and 2(f) requires ERC to “protect the public interest as it is affected by the rates” and Section 74 requires the removal of cross subsidies albeit with an ability to respond to “a material adverse effect”, the ERC must balance competing requirements under the EPIRA. Section 74 recognises that removing the initial cross subsidies between grids and/or between classes of customers, and within a grid will take time in order to reduce the material adverse effects on some customer classes.
- 8.2.4 The TWRG side constraint is a mechanism which recognizes the public interest impact of changes in tariff rates to eliminate cross subsidies. The objective is to allow the change in rates to occur but over a time-frame which is controlled by the cap on the level of adjustment. At present this is set to CWI plus 2% pa.
- 8.2.5 The ERC notes that the initial settings it has approved under the Intra-Regional Grid Cross Subsidy Charges (IRGCS, both load and energy) in its Order of September 20, 2002, are only about one and a half years into the full three year adjustment program. In addition these IRGCS operate outside the revenue cap imposed by the TWRG. The IRGCS were calculated based on the asset values which supported the unbundling of TRANSCO’s rates in this Order. The asset values were effectively 2000 year values. As such, the ERC has not received sufficient information from TRANSCO to differentiate between the IRGCS and additional rebalancing of Power Delivery Charges that TRANSCO is seeking in Visayas.
- 8.2.6 One issue which needs to be addressed in the second regulatory period, is that as TRANSCO is continually investing in network infrastructure, the cost base for each customer segment will continue to change. As the measurement of the asset values only occurs on a periodic basis, the development and measurement of new cross subsidy values will also only be available to the ERC on a periodic basis. It would appear that there will

need to be continuing emphasis on removal of inter-grid and intra-grid cross subsidies over time as required by Section 36 of the EPIRA.

- 8.2.7 In its Order of xyz z 2004, the ERC deferred the consideration of amending the side constraint from the CWI plus 2%pa value and the debate of filing rates versus filing “effective or indicative rates” till the revenue reset process. The ERC accepted that TRANSCO could extend the period by which it was required to submit PDS charges be extended from fifteen (15) to forty-five (45) days after the promulgation of the OATS.
- 8.2.8 The ERC notes that due to the various issues arising out of its consideration of the OATS Rules, the following issues have been resolved in its Decision docketed on February 19, 2004 (ERC Case No. 2002-253):
- (a) The ERC has authorized TRANSCO to implement the MAR allocation (Module F(AI) with 100% allocated to Load Customers and 0% allocated to Generator Customers.
  - (b) The ERC approved Annex II, Module F: Connection Charges in its entirety, but TRANSCO was not authorized to implement the Connection Charges, until such time as TRANSCO is authorized to implement an approved Connection Charging Policy (this policy is scheduled for public consultation before the end of 2004). Effectively this implies that the MAR for Power Delivery Service will include the Connection Charges portion until authorization on the latter is granted.
- 8.2.9 On March 5, 2004, TRANSCO filed a Motion for Reconsideration of the ERC’s Order dated February 11, 2004 and on a Comment from Meralco dated April 2, 2004. In its Order dated July 8, 2004, the ERC denied TRANSCO’s Motion for Reconsideration, reaffirming a PDS Charge allocation of 100% to Load Customers and 0% to Generator Customers, and the need for additional public consultation on the supplemental documentation on the Connection Charges provisions of the OATS Rules.
- 8.2.10 In the ERC’s view this Order of July 8, 2004 (Docketed on July 26, 2004), means that the OATS Rules are effectively [promulgated] and looks forward to TRANSCO implementing the changes to PDS and other charges which were required under the revenue cap for 2004. The ERC shall publish the effective outcomes of these changes once TRANSCO submits its summary of “effective or indicative rates” for the 2004 period.

### **8.3 Outstanding Issue 1 – Customer Segmentation**

- 8.3.1 TRANSCO has sought to use three customer segments under the TWRG (and effectively under the OATS Rules). TRANSCO’s reasons for this are many, but a primary issue appears to be the desire to charge different ‘effective or indicative rates’ for Visayas transmission customers compared to Luzon transmission customers. TRANSCO’s reason for this

is that since 2000 its capital expenditure program has been weighted towards investment in the Visayas, and as such the additional asset base value in this grid suggests higher charges are warranted to ensure removal of cross subsidies, particularly from the Luzon grid.

- 8.3.2 The ERC notes that under the OATS Rules, TRANSCO is treating Load Customers as being separate from Generation Customers. Does this imply these are two different customer segments? Should this classification of customer also constitute a different dimension of the definition of customer segment? What are the ramifications for the definitions of “customer” and “customer segment” in both the TWRG and OATS Rules?
- 8.3.3 The ERC seeks comment on the definition of customer segment under the TWRG (and its impact on the application of the OATS Rules) and in particular on whether three segments of Luzon, Visayas and Mindanao should be adopted for the purposes of Article VI of the TWRG and/or the application of the OATS Rules.
- 8.3.4 The ERC also seeks comment on how frequently TRANSCO can request a change to the definition of customer segment. Should this only occur at each regulatory reset under the public consultation process required by the TWRG, or should this be allowed to occur annually, or under a periodic application.

#### **8.4 Outstanding Issue 2 – Revenue Recovery by Segment**

- 8.4.1 The ERC has noted that in the analysis of ‘effective or indicative rates’ TRANSCO supplied with its filing (see paragraph 8.1.3 (d), 8.2.1 (a) and 8.2.2 through 8.2.6 above) were based the revenue recovery per Customer Segment (or grid in this case) on the written down asset value for each grid, and that in doing so it breached the allowed side-constraint of CWI plus 2% pa.
- 8.4.2 Revenue recovery between customer segments could be in proportion to one or more of the following:
- (a) Written-down asset value;
  - (b) Peak non-coincident load (MW);
  - (c) Peak coincident load (MW);
  - (d) Energy consumption (MWh);
  - (e) Averages of the above by connection, region or grid;
  - (f) Nodal price by connection; or
  - (g) Other allocators
- 8.4.3 The ERC seeks comment on the type(s) of revenue recovery allocation it should authorize to recover PDS Charges between customer segments (excluding the issue of between Generation and Load Customers).

8.4.4 The ERC seeks comment on the frequency at which allocation mechanism or driver can be changed, either annually, at the major revenue resets for TRANSCO, on an application basis.

8.4.5 The ERC seeks comment on whether the method and type of allocation of revenue recovery to customer segment should be enshrined in regulation by inclusion as an amendment to either the TWRG or the OATS Rules. .

### **8.5 Outstanding Issue 3 – Connection Services**

8.5.1 TRANSCO is seeking to initiate the Connection Service Charge. In order to do this under the OATS Rules, TRANSCO must have available the ODRC of each connection for each customer it will charge for these assets.

8.5.2 In its Order of July 8, 2004, the ERC required that TRANSCO subject its detailed Connection Policy to an ERC public consultation process, before such time that these provisions could be implemented.

8.5.3 In addition, the ERC requires that TRANSCO demonstrate it has the necessary ODRC information on all customer connections, and that each customer can receive an exact definition of the assets which are the subject of this charge. Likewise, TRANSCO must provide a tabulation by customer connection of the subsidiary parameters, such as SMRR and LMRR (see Clause F(AII) 3.5 of the OATS), and RCCA for each customer connection and COC and the level of OC.

### **8.6 Outstanding Issue 4 – Side Constraints**

8.6.1 The ERC seeks comments on the use of side constraints in Section 6.4 of the TWRG to allow transition of revenue recovery (and associated ‘effective or indicative’ charges) from any customer segment to transition over time and a capped value.

8.6.2 The ERC is particularly interested in whether the constraint of 2% pa it has imposed in Section 6.4.1 of the TWRG needs to be amended for the second regulatory period. This constraint could be:

- (a) Constant over the whole regulatory period;
- (b) A different but fixed value for each year of the regulatory period;  
or
- (c) Defined by a secondary parameter which has an objective measure which could be applied each year of the Second Regulatory Period.

8.6.3 The ERC seeks comment on the side constraints to be used for the Second Regulatory Period.

### **8.7 Outstanding Issue 6 – MAR Allocation between Generators and Loads**

8.7.1 In its application on the OATS filed on August 16, 2002, TRANSCO requested the ERC to approve its position on the allocation of revenue recovery for the Power Delivery Service (PDS) Charge under the OATS.

TRANSCO had requested 50% of the revenues be recovered from generators and 50% from loads. The prior arrangement resulting from the ERC's Order (ERC Case No. 2001-901) dated September 20, 2002 on the unbundling of the Transmission Delivery Charge, had 100% of the revenue recovery for the equivalent service being charged to loads. In its Order (ERC Case No. 2002-253) of February 11, 2004, the ERC rejected this request and while in concept approved a mechanism which could allocate this revenue recovery to two charges, one to generators and one to loads, set the allocation to generators to 0% and for loads to 100%.

8.7.2 In its Motion for Reconsideration filed on March 5, 2004, TRANSCO requested the ERC to reconsider its position on the allocation of the revenue recovery, and cited various economic arguments to support its position. In its Order dated July 8, 2004, the ERC confirmed its preference to retain recovery of 0% from generators and 100% from loads and cited counter economic and commercial arguments as to why a strong transmission pricing signal to generators may not be appropriate. However the ERC did not rule out a change to this position, given appropriate and timely filing of information and analysis which TRANSCO believes supports its position and could be placed on the record and debated by the public.

8.7.3 To this end the ERC notes the following issues:

- (a) The investment cycle for mid-range and base-load generators assumes a long plant life, (say) of between 20 to 35 years. Once the investment is committed, there is little opportunity to re-site the generator in an economically efficient manner, particularly for coal-fired generators. Thus locational pricing signals, if any, need to be certain and consistent over long periods, and can be small, in order to have a large impact on the economics of the investment decision.
- (b) It is unclear to the ERC whether the current legal and regulatory framework will allow generators to recover all of the charges imposed upon them. Ultimately, the consumers of electricity must fully support the efficient costs of the electricity industry, including transmission costs, in order for viable industry to develop. A direct charge to loads may be more efficient from an industry administration and efficiency point of view, than a partial recovery from generators.
- (c) Once the WESM is in operation, it is unclear whether generators would be able to fully recover a PDS charge imposed by TRANSCO. This may lead to financial non-financial viability for some existing generators which may not be appropriate.
- (d) A charge for PDS to existing generators, whose investment is sunk, does not appear to lead to improved economic efficiency.

- (e) It is unclear whether existing generator contracts with the supply arms of distribution utilities or with end users will support some form of pass through of a PDS charge on generators.
- (f) A charge for PDS for new generators which have yet to site their plant would appear to have a positive impact on economic efficiency, provided the charges lead to reduction in transmission constraints in the short-to-mid term. It should be noted that TRANSCO's attitude to removal of existing or identified transmission constraints through appropriate transmission investment has probably a stronger and more immediate impact on network efficiency than through positioning a generator on the high demand side of a constraint. However, the decision over whether a transmission investment or a generation investment is more economically efficient in the long-run should be made to determine the best approach for the Philippines electricity network.
- (g) Where there is a specific regulatory framework to allow pass through of PDS from generators to suppliers and/or end users, then the benefits of a locational PDS charge to generators appears to be reduced, albeit the methodology used by generators (or the specific regulatory framework) may lead to more economically efficient recovery from a different group of suppliers and/or end users.
- (h) It is possible that allocations other than 50% PDS charge recovery from generators might be workable.

8.7.4 The ERC seeks views from all stakeholders on the issues raised above, and on additional issues which arise from TRANSCO's desire to increase the allocation of revenue recovery from generators, and reduce the revenue recovery from loads.

## **8.8 System Losses -**

8.8.1 TRANSCO should provide additional information to support its contention that the ERC should approve the Loss Factors proposed in paragraph 8.1.3 (c) above. The ERC notes its decision to authorize TRANSCO to amend Clause F(AIV)5.3 of the OATS Rules so that System Losses are calculated over a twelve (12) month period rather than a twenty-four (24) month period (see Decision Docketed on February 19, 2004 on ERC Case No. 2002-253).

8.8.2 The ERC requires that TRANSCO also provides to the ERC a description and sample calculation of how TRANSCO will use the data for its analysis and submissions to the ERC under Article VI of the TWRG. Also how it will use this data in the preparation of bills and invoices under the OATS Rules. In this regard, the ERC notes that Clause F(AIV)5 of the OATS Rules does not indicate how TRANSCO will apply the Loss Factor into charges it will apply to customers.

- 8.8.3 There is a relationship between the information TRANSCO will deliver under Article VIII of the TWRG relating to service performance (see also paragraph 7.1 above). TRANSCO should outline how its application to the ERC for amended Loss Factors relates to the service performance information it is required to deliver for the purposes of the regulatory reset process. Such outline should describe the relationship to technical losses, administrative losses (ie: bad debts) and pilferage losses.
- 8.8.4 The ERC is also seeking comments on how these approved Loss Factors relate to the PBR provisions in Section 8.2 of the TWRG (see further in Chapter 7 above), bearing in mind the need to comply with existing law on loss recovery.
- 8.8.5 Under the unbundled charge arrangements, TRANSCO grosses up its billing determinants for the approved Loss Factors before applying these rates to customer measurements of the billing determinants. The ERC notes that in setting up the opening revenue cap for TRANSCO for the 2003 year, the ERC included the revenues earned through loss adjustments within the revenue cap.
- 8.8.6 There are two schools of thought over the recovery of losses in electricity networks, particularly where a generator market is developed. One school of thought provides that the costs of the losses is borne by the generators so any additional revenue captured by the industry for losses should be passed to generators to compensate them for the additional fuel costs they incur. A second school of thought says the transmission and distribution companies should be encouraged to reduce losses they seek to recover from paying customers, particularly where these losses are to some extent controllable by the network business. This is particularly relevant to losses seen from pilferage and from bad debt collection. The Pilferage Act seeks to address the latter school of thought.
- 8.8.7 One option for a PBR on losses relating to pilferage and/or bad debts is that TRANSCO could have part of its revenue cap subject to full pass-through provided the pilferage losses are at or below acceptable levels. Where levels are above this, the revenue is foregone under the PBR arrangements. Other options are possible.
- 8.8.8 The ERC seeks comment on how the existing law on pilferage can work in a coordinated manner with the PBR and revenue cap arrangements.

### **8.9 Other Issues for Consideration**

- 8.9.1 The ERC seeks comment on any other issues which TRANSCO or industry participants or the public believe are relevant to the verification of the revenue cap and adjustment of tariff rates under Article VI of the TWRG.

**CHAPTER 9  
AMENDMENTS TO THE TWRG**

**9.1 Correction of Typographical Errors**

9.1.1 In administering the TWRG, the ERC has noted a number of minor typographical errors or omissions, which when corrected would clarify the regulatory intent of the TWRG. Table 9.1 summarizes these minor amendments which the ERC suggest be undertaken in the TWRG.

Section of Transmission Wheeling Rate Guidelines	Amendment
Section 5.12.1(b)	Replace "the Regulatory Year" with "the Regulatory Years".
Section 6.2.1(g)	Insert at the end after "ERC" the words "(being rates that the ERC is satisfied comply (or are likely to comply) with the requirements of these Guidelines and the OATS Rules), pending which the Regulated Entity must continue to apply its existing rates".
Section 6.5.1(b)	Replace "27 September 2002" with "26 September 2002".
Section 9.2.5	Insert at the end after "the next Regulatory Period" the words ", to the extent the Net Efficiency Adjustment provisions the subject of this Article IX continue into that subsequent Regulatory Period".
Section 12.3.3	Insert after "Business Days" (where first occurring) the word "of".
Section 12.5.2(b) (where first occurring)	Replace "0.15" (where twice occurring) with "-0.15".
Section 12.5.2(b) (where second occurring)	Replace "0.08" (where twice occurring) with "-0.08".
Section 12.8.1	Insert after "would" the words "but for that disposal".
Section 12.8.2(a)	Insert after "would" the words "but for that disposal".
Section 12.8.3	Insert after "would" the words "but for that disposal".
Section 12.8.4(a)	Insert after "would" the words "but for that disposal".

**Table 9.1 : Amendments to the TWRG for Typographical Errors and Minor Omissions**

**9.2 Suggested Word Changes to Section 14.2.9**

- 9.2.1 The ERC notes an administrative difficulty in application of Section 14.2.9 of the TWRG. Here the section indicates that “*if the ERC engages such a consultant, the reasonable costs of that consultant must, if so required by the ERC, be reimbursed to the ERC by the Regulated Entity.*” Changes to the words to provide that “*if the ERC engages such a consultant, or requires the Regulated Entity to engage such a consultant to undertake work on the ERC’s behalf, the reasonable costs of that consultant must be borne by the Regulated Entity, if so required by the ERC, and be either reimbursed to the ERC by the Regulated Entity, or paid directly to the consultant, as the contract may require.*” would assist in more rapid setting up the contractual arrangements between TRANSCO, the consultant and ERC.

**9.3 Comments Sought**


- 9.3.1 The ERC seeks comment on minor changes to fix typographical errors or omissions or clarify intent within the TWRG. It should be noted that the ERC is not seeking comments on substantive changes to the internationally-accepted rate-setting methodology that it has adopted by promulgation of the TWRG.

Pasig City, Philippines, / / /

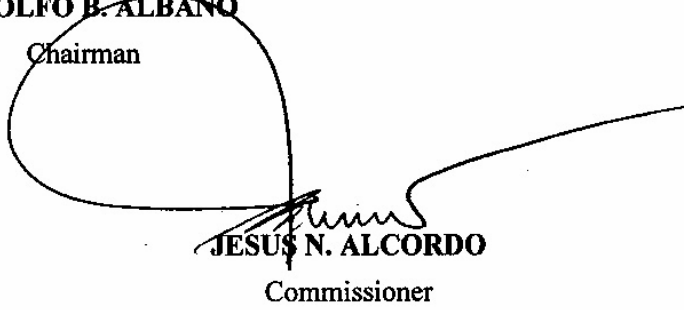
10



**RODOLFO B. ALBANO**  
Chairman



**OLIVER B. BUTALID**  
Commissioner



**JESUS N. ALCORDO**  
Commissioner

APPENDIX A

ASSET BASE DATA TEMPLATES

For the purposes of 4.6.5 of the TWRG the following template should be utilized to provide the summary of the opening revalued regulatory asset base as at December 31, 2004. The worksheets which feed this template need to show the individual projects and the grouped asset values, the categorization of project types, the justification by project, and the estimation process to get from the US\$ and Peso costs through to the total Peso costs, as required by Figure 3.1, in paragraph 3.1 above.

REGULATORY ASSET BASE for TRANSCO - Expressed in Peso											
Asset Category	Historical Cost of Regulatory Asset Base					Replacement Cost (or Revalued Cost) of Regulatory Asset Base					
	Historic Cost	Accumulated Historic Cost Depreciation	Depreciated Historic Cost	Weighted Average Age of Asset Category	Weighted Average Asset Life for Tax Purposes	Replacement Cost	Optimized Replacement Cost	Accumulated Optimised Replacement Cost Depreciation	Depreciated Optimized Replacement Cost	Weighted Average Age of Asset Category	Weighted Average Asset Life for Regulatory Purposes
<b>(a) Transmission Lines</b>											
i Buildings, civil works and establishment											
ii Towers and associated lines											
iii Poles and associated lines											
iv Underground cables											
v Sub-sea cables											
vi Easements owned by the Regulated Entity											
vii Other											
viii Spares											
ix Land used for transmission lines											
<b>Sub-total Transmission Lines</b>											
<b>(b) Substation Components</b>											
i Buildings, civil works and establishment											
ii Transformers (power)											
iii Circuit breakers											
iv Instrument Transformers											
v Meters and protection											
vi Reactors											
vii Buswork											
viii Other											
ix Spares											
x Land used for substations											
<b>Sub-total Substation Components</b>											
<b>(c) Communication Plant</b>											
i Buildings, civil works and establishment											
ii Communications plant and infrastructure											
iii Ancillary infrastructure											
iv Other											
v Spares											
vi Land used for communications plant											
<b>Sub-total Communications Plant</b>											
<b>(d) System Operations</b>											
i Buildings, civil works and establishment											
ii Control room and control infrastructure											
iii Ancillary infrastructure											
iv Other											
v Land used for systems operations											
<b>Sub-total Systems Operations</b>											
<b>(e) Non-Network Assets</b>											
i Computers and office equipment											
ii Plant, tools and equipment											
iii Furniture and fittings											
iv Commercial buildings											
v Land (all remaining land)											
vi Other											
<b>Sub-total Non-Network Assets</b>											
<b>Allocated Overheads Capitalized</b>											
<b>Total Capital Expenditure</b>											
Exchange Rate Assumption for Forecast Period (peso/US\$ at end year)											
Philippines Consumer Price Index Change Assumption (% pa over year)											
USA Consumer Price Index Change Assumption (% pa over year)											

Sheet A.1 : Opening Regulatory Asset Base.

APPENDIX B

CAPITAL EXPENDITURE FORECAST TEMPLATES

For the purposes of 4.10 of the TWRG the following templates should be utilized to provide summaries of the capital expenditure forecasts to the ERC. The templates are assumed to link according to Figure B.1.

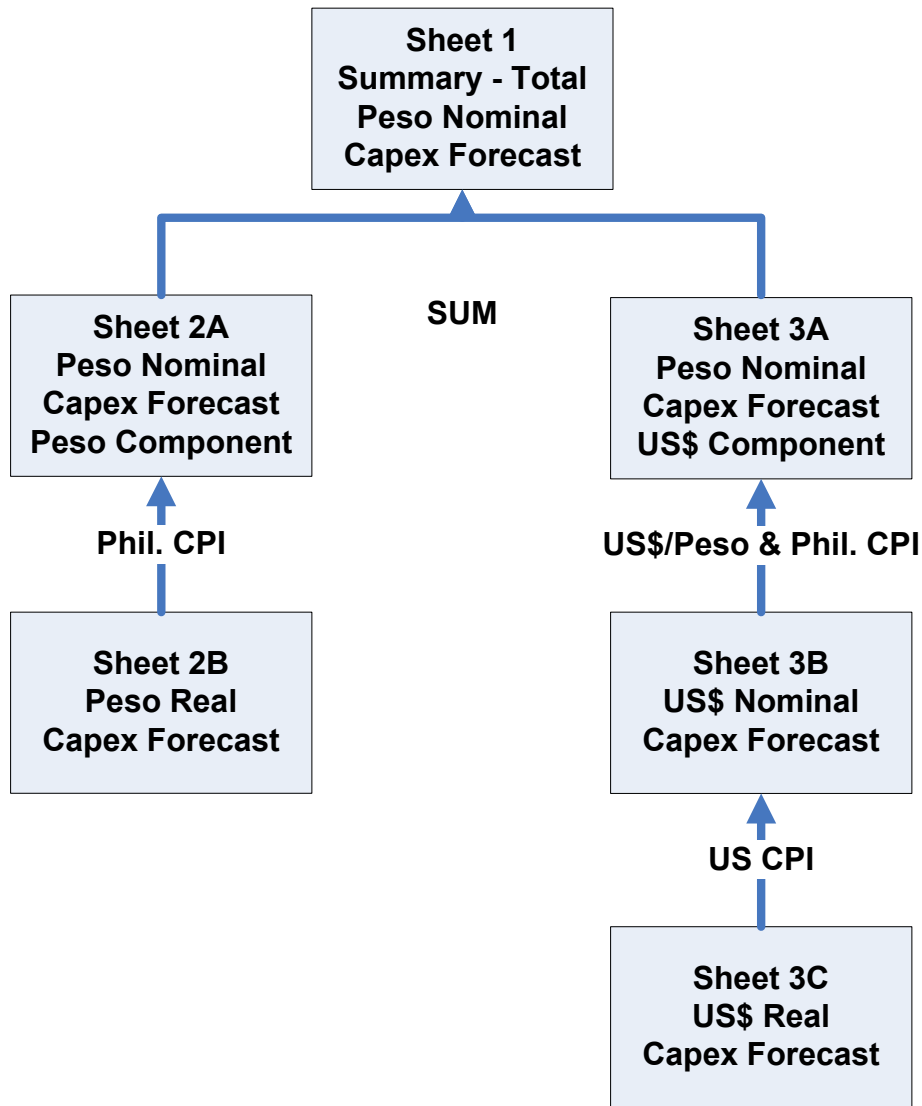


Figure B.1 : Development of Capital Expenditure Forecast Summary

## Regulatory Reset Issues Paper

TOTAL CAPITAL EXPENDITURE for TRANSCO - Expressed in Peso											
Asset Category	Actual (peso, nominal in peso of reporting year)					Budget (peso, nominal)	Forecast (peso, nominal in peso of reporting year)				
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>(a) Transmission Lines</b>											
i Buildings, civil works and establishment											
ii Towers and associated lines											
iii Poles and associated lines											
iv Underground cables											
v Sub-sea cables											
vi Easements owned by the Regulated Entity											
vii Other											
viii Spares											
ix Land used for transmission lines											
<b>Sub-total Transmission Lines</b>											
<b>(b) Substation Components</b>											
i Buildings, civil works and establishment											
ii Transformers (power)											
iii Circuit breakers											
iv Instrument Transformers											
v Meters and protection											
vi Reactors											
vii Buswork											
viii Other											
ix Spares											
x Land used for substations											
<b>Sub-total Substation Components</b>											
<b>(c) Communication Plant</b>											
i Buildings, civil works and establishment											
ii Communications plant and infrastructure											
iii Ancillary infrastructure											
iv Other											
v Spares											
vi Land used for communications plant											
<b>Sub-total Communications Plant</b>											
<b>(d) System Operations</b>											
i Buildings, civil works and establishment											
ii Control room and control infrastructure											
iii Ancillary infrastructure											
iv Other											
v Land used for systems operations											
<b>Sub-total Systems Operations</b>											
<b>(e) Non-Network Assets</b>											
i Computers and office equipment											
ii Plant, tools and equipment											
iii Furniture and fittings											
iv Commercial buildings											
v Land (all remaining land)											
vi Other											
<b>Sub-total Non-Network Assets</b>											
<b>Allocated Overheads Capitalized</b>											
<b>Total Capital Expenditure</b>											
<b>Exchange Rate Assumption for Forecast Period (peso/US\$ at end year)</b>											
<b>Philippines Consumer Price Index Change Assumption (% pa over year)</b>											
<b>USA Consumer Price Index Change Assumption (% pa over year)</b>											

### Sheet B.1 : Capital Expenditure Forecast Summary.

## Regulatory Reset Issues Paper

PESO CAPITAL EXPENDITURE for TRANSCO											
Asset Category	Actual (peso, nominal in peso of reporting year)					Forecast (peso, nominal in peso of reporting year)					
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>(a) Transmission Lines</b>											
i Buildings, civil works and establishment											
ii Towers and associated lines											
iii Poles and associated lines											
iv Underground cables											
v Sub-sea cables											
vi Easements owned by the Regulated Entity											
vii Other											
viii Spares											
ix Land used for transmission lines											
<b>Sub-total Transmission Lines</b>											
<b>(b) Substation Components</b>											
i Buildings, civil works and establishment											
ii Transformers (power)											
iii Circuit breakers											
iv Instrument Transformers											
v Meters and protection											
vi Reactors											
vii Buswork											
viii Other											
ix Spares											
x Land used for substations											
<b>Sub-total Substation Components</b>											
<b>(c) Communication Plant</b>											
i Buildings, civil works and establishment											
ii Communications plant and infrastructure											
iii Ancillary infrastructure											
iv Other											
v Spares											
vi Land used for communications plant											
<b>Sub-total Communications Plant</b>											
<b>(d) System Operations</b>											
i Buildings, civil works and establishment											
ii Control room and control infrastructure											
iii Ancillary infrastructure											
iv Other											
v Land used for systems operations											
<b>Sub-total Systems Operations</b>											
<b>(e) Non-Network Assets</b>											
i Computers and office equipment											
ii Plant, tools and equipment											
iii Furniture and fittings											
iv Commercial buildings											
v Land (all remaining land)											
vi Other											
<b>Sub-total Non-Network Assets</b>											
<b>Allocated Overheads Capitalized</b>											
<b>Total Capital Expenditure</b>											
<b>Philippines Consumer Price Index Change Assumption (% pa over year)</b>											

**Sheet B.2A : Nominal Capital Expenditure Forecast Estimates for Peso Expenditure.**

## Regulatory Reset Issues Paper

PESO CAPITAL EXPENDITURE for TRANSCO											
Asset Category	Actual (peso, nominal in peso of reporting year)					Forecast (peso, real in peso of January 1, 2005)					
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>(a) Transmission Lines</b>											
i Buildings, civil works and establishment											
ii Towers and associated lines											
iii Poles and associated lines											
iv Underground cables											
v Sub-sea cables											
vi Easements owned by the Regulated Entity											
vii Other											
viii Spares											
ix Land used for transmission lines											
<b>Sub-total Transmission Lines</b>											
<b>(b) Substation Components</b>											
i Buildings, civil works and establishment											
ii Transformers (power)											
iii Circuit breakers											
iv Instrument Transformers											
v Meters and protection											
vi Reactors											
vii Buswork											
viii Other											
ix Spares											
x Land used for substations											
<b>Sub-total Substation Components</b>											
<b>(c) Communication Plant</b>											
i Buildings, civil works and establishment											
ii Communications plant and infrastructure											
iii Ancillary infrastructure											
iv Other											
v Spares											
vi Land used for communications plant											
<b>Sub-total Communications Plant</b>											
<b>(d) System Operations</b>											
i Buildings, civil works and establishment											
ii Control room and control infrastructure											
iii Ancillary infrastructure											
iv Other											
v Land used for systems operations											
<b>Sub-total Systems Operations</b>											
<b>(e) Non-Network Assets</b>											
i Computers and office equipment											
ii Plant, tools and equipment											
iii Furniture and fittings											
iv Commercial buildings											
v Land (all remaining land)											
vi Other											
<b>Sub-total Non-Network Assets</b>											
<b>Allocated Overheads Capitalized</b>											
<b>Total Capital Expenditure</b>											

**Sheet B.2B : Real Capital Expenditure Forecast Estimates for Peso Expenditure.**

## Regulatory Reset Issues Paper

US\$ CAPITAL EXPENDITURE for TRANSCO - Expressed in Peso											
Asset Category	Actual (peso, nominal in peso of reporting year)					Forecast (peso, nominal in peso of reporting year)					
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>(a) Transmission Lines</b>											
i Buildings, civil works and establishment											
ii Towers and associated lines											
iii Poles and associated lines											
iv Underground cables											
v Sub-sea cables											
vi Easements owned by the Regulated Entity											
vii Other											
viii Spares											
ix Land used for transmission lines											
<b>Sub-total Transmission Lines</b>											
<b>(b) Substation Components</b>											
i Buildings, civil works and establishment											
ii Transformers (power)											
iii Circuit breakers											
iv Instrument Transformers											
v Meters and protection											
vi Reactors											
vii Buswork											
viii Other											
ix Spares											
x Land used for substations											
<b>Sub-total Substation Components</b>											
<b>(c) Communication Plant</b>											
i Buildings, civil works and establishment											
ii Communications plant and infrastructure											
iii Ancillary infrastructure											
iv Other											
v Spares											
vi Land used for communications plant											
<b>Sub-total Communications Plant</b>											
<b>(d) System Operations</b>											
i Buildings, civil works and establishment											
ii Control room and control infrastructure											
iii Ancillary infrastructure											
iv Other											
v Land used for systems operations											
<b>Sub-total Systems Operations</b>											
<b>(e) Non-Network Assets</b>											
i Computers and office equipment											
ii Plant, tools and equipment											
iii Furniture and fittings											
iv Commercial buildings											
v Land (all remaining land)											
vi Other											
<b>Sub-total Non-Network Assets</b>											
<b>Allocated Overheads Capitalized</b>											
<b>Total Capital Expenditure</b>											
<b>Exchange Rate Assumption for Forecast Period (peso/US\$ at end year)</b>											

**Sheet B.3A : Nominal Peso Capital Expenditure Forecast Estimates for US\$ Expenditure.**

## Regulatory Reset Issues Paper

US\$ CAPITAL EXPENDITURE for TRANSCO - Expressed in Nominal US\$											
Asset Category	Actual (US\$, nominal in US\$ of reporting year)					Forecast (US\$, nominal in US\$ of reporting year)					
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>(a) Transmission Lines</b>											
i Buildings, civil works and establishment											
ii Towers and associated lines											
iii Poles and associated lines											
iv Underground cables											
v Sub-sea cables											
vi Easements owned by the Regulated Entity											
vii Other											
viii Spares											
ix Land used for transmission lines											
<b>Sub-total Transmission Lines</b>											
<b>(b) Substation Components</b>											
i Buildings, civil works and establishment											
ii Transformers (power)											
iii Circuit breakers											
iv Instrument Transformers											
v Meters and protection											
vi Reactors											
vii Buswork											
viii Other											
ix Spares											
x Land used for substations											
<b>Sub-total Substation Components</b>											
<b>(c) Communication Plant</b>											
i Buildings, civil works and establishment											
ii Communications plant and infrastructure											
iii Ancillary infrastructure											
iv Other											
v Spares											
vi Land used for communications plant											
<b>Sub-total Communications Plant</b>											
<b>(d) System Operations</b>											
i Buildings, civil works and establishment											
ii Control room and control infrastructure											
iii Ancillary infrastructure											
iv Other											
v Land used for systems operations											
<b>Sub-total Systems Operations</b>											
<b>(e) Non-Network Assets</b>											
i Computers and office equipment											
ii Plant, tools and equipment											
iii Furniture and fittings											
iv Commercial buildings											
v Land (all remaining land)											
vi Other											
<b>Sub-total Non-Network Assets</b>											
<b>Allocated Overheads Capitalized</b>											
<b>Total Capital Expenditure</b>											
<b>USA Consumer Price Index Change Assumption (% pa over year)</b>											

**Sheet B.3B : Nominal US\$ Capital Expenditure Forecast Estimates for US\$ Expenditure.**

## Regulatory Reset Issues Paper

US\$ CAPITAL EXPENDITURE for TRANSCO - Expressed in Real US\$											
Asset Category	Actual (US\$, real in US\$ of reporting year)					Forecast (US\$, real in US\$ of January 1, 2005)					
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>(a) Transmission Lines</b>											
i											
ii											
iii											
iv											
v											
vi											
vii											
viii											
ix											
<b>Sub-total Transmission Lines</b>											
<b>(b) Substation Components</b>											
i											
ii											
iii											
iv											
v											
vi											
vii											
viii											
ix											
x											
<b>Sub-total Substation Components</b>											
<b>(c) Communication Plant</b>											
i											
ii											
iii											
iv											
v											
vi											
<b>Sub-total Communications Plant</b>											
<b>(d) System Operations</b>											
i											
ii											
iii											
iv											
v											
<b>Sub-total Systems Operations</b>											
<b>(e) Non-Network Assets</b>											
i											
ii											
iii											
iv											
v											
vi											
<b>Sub-total Non-Network Assets</b>											
<b>Allocated Overheads Capitalized</b>											
<b>Total Capital Expenditure</b>											

**Sheet B.3C : Real US\$ Capital Expenditure Forecast Estimates for US\$ Expenditure.**

APPENDIX C

OPERATING & MAINTENANCE EXPENDITURE FORECAST TEMPLATES

For the purposes of 4.11.1 of the TWRG the following templates should be utilized to provide summaries of the operating and maintenance expenditure forecasts to the ERC. The templates are assumed to link according to Figure C.1.

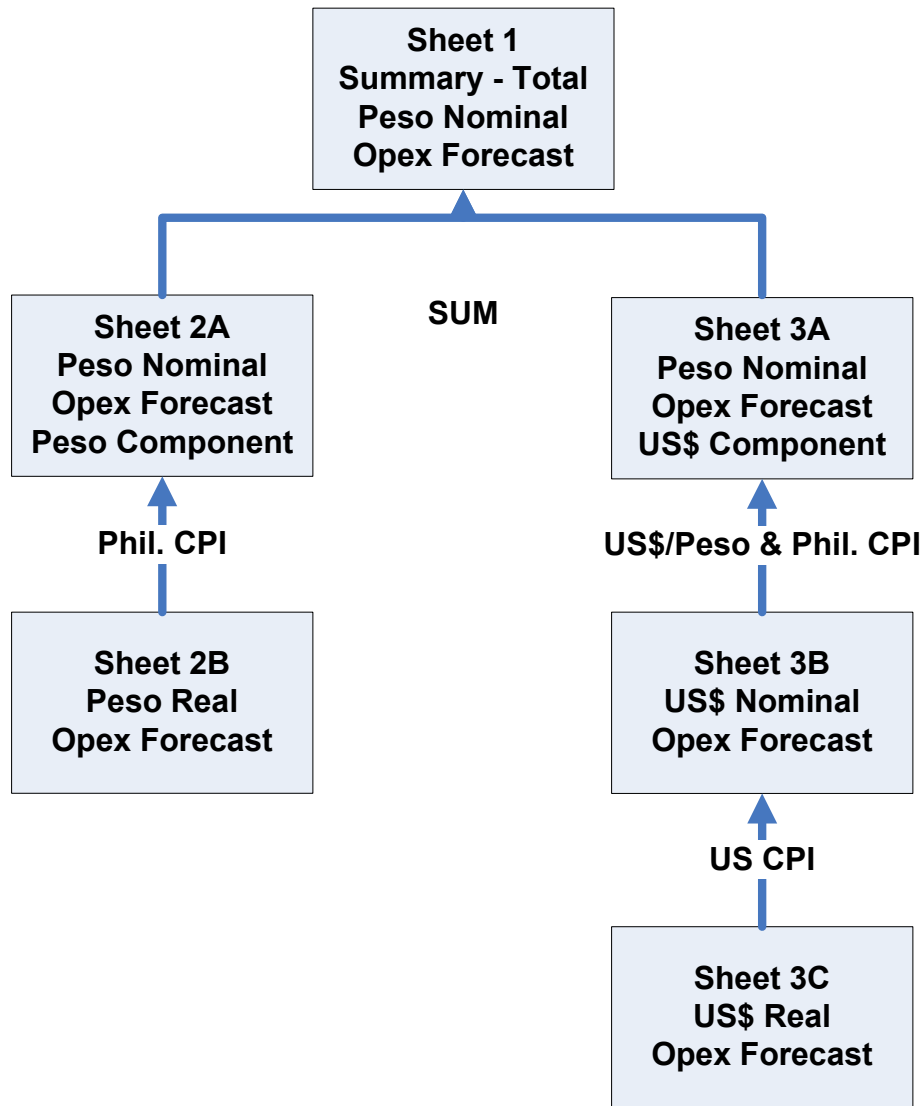


Figure C.1 : Development of Operating & Maintenance Expenditure Forecast Summary

## Regulatory Reset Issues Paper

TOTAL OPERATING & MAINTENANCE EXPENDITURE for TRANSCO								
Opex Category and Sub-category	Actual (peso, nominal in peso of reporting year)		Budget (peso, nominal)	Forecast (peso, nominal in peso of reporting year)				
	2003	2004	2005	2006	2007	2008	2009	2010
<b>Payroll</b>								
Network operations supervision and engineering staff								
Network operations other staff								
Network planning supervision and engineering staff								
Systems Operations supervision and engineering staff								
Administration, human resources, finance, corporate and regulatory staff								
Easements owned by the Regulated Entity								
<b>Sub-total Payroll</b>								
<b>Network Related</b>								
Network operations								
Network maintenance								
Plant & equipment insurance								
System operations								
WESM compliance (excluding any expenses incurred as the Market Operator)								
<b>Sub-total Network Related</b>								
<b>Non-network Related</b>								
Bad debts								
Internal & external audit functions								
Regulatory liaison & compliance								
Corporate & central office								
IT licenses, operations & maintenance								
Lease payments (buildings, vehicles, furniture & fittings and other)								
Net foreign exchange (either loss or gain)								
Property maintenance								
Property insurance								
Other								
<b>Sub-total Non-network Related</b>								
<b>Total Operating &amp; Maintenance Expenditure</b>								
<b>Exchange Rate Assumption for Forecast Period (peso/US\$ at end year)</b>								
<b>Philippines Consumer Price Index Change Assumption (% pa over year)</b>								
<b>USA Consumer Price Index Change Assumption (% pa over year)</b>								

### Sheet C.1 : Operating & Maintenance Expenditure Forecast Summary

PESO OPERATING & MAINTENANCE EXPENDITURE for TRANSCO								
Opex Category and Sub-category	Actual (peso, nominal in peso of reporting year)		Budget (peso, nominal)	Forecast (peso, nominal in peso of reporting year)				
	2003	2004	2005	2006	2007	2008	2009	2010
<b>Payroll</b>								
Network operations supervision and engineering staff								
Network operations other staff								
Network planning supervision and engineering staff								
Systems Operations supervision and engineering staff								
Administration, human resources, finance, corporate and regulatory staff								
Easements owned by the Regulated Entity								
<b>Sub-total Payroll</b>								
<b>Network Related</b>								
Network operations								
Network maintenance								
Plant & equipment insurance								
System operations								
WESM compliance (excluding any expenses incurred as the Market Operator)								
<b>Sub-total Network Related</b>								
<b>Non-network Related</b>								
Bad debts								
Internal & external audit functions								
Regulatory liaison & compliance								
Corporate & central office								
IT licenses, operations & maintenance								
Lease payments (buildings, vehicles, furniture & fittings and other)								
Net foreign exchange (either loss or gain)								
Property maintenance								
Property insurance								
Other								
<b>Sub-total Non-network Related</b>								
<b>Total Operating &amp; Maintenance Expenditure</b>								
<b>Philippines Consumer Price Index Change Assumption (% pa over year)</b>								

### Sheet C.2A : Nominal Peso Operating & Maintenance Expenditure Forecast Estimates for Peso Expenditure.

## Regulatory Reset Issues Paper

PESO OPERATING & MAINTENANCE EXPENDITURE for TRANSCO								
Opex Category and Sub-category	2003	2004	Budget	Forecast (peso, real as at December 31, 2005)				
			(peso, nominal)	2005	2006	2007	2008	2009
<b>Payroll</b>								
Network operations supervision and engineering staff								
Network operations other staff								
Network planning supervision and engineering staff								
Systems Operations supervision and engineering staff								
Administration, human resources, finance, corporate and regulatory staff								
Easements owned by the Regulated Entity								
<b>Sub-total Payroll</b>								
<b>Network Related</b>								
Network operations								
Network maintenance								
Plant & equipment insurance								
System operations								
WESM compliance (excluding any expenses incurred as the Market Operator)								
<b>Sub-total Network Related</b>								
<b>Non-network Related</b>								
Bad debts								
Internal & external audit functions								
Regulatory liaison & compliance								
Corporate & central office								
IT licenses, operations & maintenance								
Lease payments (buildings, vehicles, furniture & fittings and other)								
Net foreign exchange (either loss or gain)								
Property maintenance								
Property insurance								
Other								
<b>Sub-total Non-network Related</b>								
<b>Total Operating &amp; Maintenance Expenditure</b>								

**Sheet C.2B : Real Peso Operating & Maintenance Expenditure Forecast Estimates for Peso Expenditure.**

US\$ OPERATING & MAINTENANCE EXPENDITURE for TRANSCO - Expressed in Peso									
Opex Category and Sub-category	Actual (peso, nominal in peso of reporting year)		Budget	Forecast (peso, nominal in peso of reporting year)					
	2003	2004	(peso, nominal)	2005	2006	2007	2008	2009	2010
<b>Payroll</b>									
Network operations supervision and engineering staff									
Network operations other staff									
Network planning supervision and engineering staff									
Systems Operations supervision and engineering staff									
Administration, human resources, finance, corporate and regulatory staff									
Easements owned by the Regulated Entity									
<b>Sub-total Payroll</b>									
<b>Network Related</b>									
Network operations									
Network maintenance									
Plant & equipment insurance									
System operations									
WESM compliance (excluding any expenses incurred as the Market Operator)									
<b>Sub-total Network Related</b>									
<b>Non-network Related</b>									
Bad debts									
Internal & external audit functions									
Regulatory liaison & compliance									
Corporate & central office									
IT licenses, operations & maintenance									
Lease payments (buildings, vehicles, furniture & fittings and other)									
Net foreign exchange (either loss or gain)									
Property maintenance									
Property insurance									
Other									
<b>Sub-total Non-network Related</b>									
<b>Total Operating &amp; Maintenance Expenditure</b>									
<b>Exchange Rate Assumption for Actual or Forecast Period (peso/US\$ at end year)</b>									

**Sheet C.3A : Nominal Peso Operating & Maintenance Expenditure Forecast Estimates for US\$ Expenditure.**

## Regulatory Reset Issues Paper

Opex Category and Sub-category	US\$ OPERATING & MAINTENANCE EXPENDITURE for TRANSCO - Expressed in Nominal US\$							
	Actual (US\$, nominal in US\$ of reporting year)		Budget (US\$, nominal)	Forecast (US\$, nominal US\$ in the reporting year)				
	2003	2004	2005	2006	2007	2008	2009	2010
<b>Payroll</b>								
Network operations supervision and engineering staff								
Network operations other staff								
Network planning supervision and engineering staff								
Systems Operations supervision and engineering staff								
Administration, human resources, finance, corporate and regulatory staff								
Easements owned by the Regulated Entity								
<b>Sub-total Payroll</b>								
<b>Network Related</b>								
Network operations								
Network maintenance								
Plant & equipment insurance								
System operations								
WESM compliance (excluding any expenses incurred as the Market Operator)								
<b>Sub-total Network Related</b>								
<b>Non-network Related</b>								
Bad debts								
Internal & external audit functions								
Regulatory liaison & compliance								
Corporate & central office								
IT licenses, operations & maintenance								
Lease payments (buildings, vehicles, furniture & fittings and other)								
Net foreign exchange (either loss or gain)								
Property maintenance								
Property insurance								
Other								
<b>Sub-total Non-network Related</b>								
<b>Total Operating &amp; Maintenance Expenditure</b>								
<b>USA Consumer Price Index Change Assumption (% pa over year)</b>								

### Sheet C.3B : Nominal US\$ Operating & Maintenance Expenditure Forecast Estimates for US\$ Expenditure.

Opex Category and Sub-category	US\$ OPERATING & MAINTENANCE EXPENDITURE for TRANSCO - Expressed in Real US\$							
			Budget (US\$, real)	Forecast (US\$, real US\$ as at December 31, 2005)				
	2003	2004	2005	2006	2007	2008	2009	2010
<b>Payroll</b>								
Network operations supervision and engineering staff								
Network operations other staff								
Network planning supervision and engineering staff								
Systems Operations supervision and engineering staff								
Administration, human resources, finance, corporate and regulatory staff								
Easements owned by the Regulated Entity								
<b>Sub-total Payroll</b>								
<b>Network Related</b>								
Network operations								
Network maintenance								
Plant & equipment insurance								
System operations								
WESM compliance (excluding any expenses incurred as the Market Operator)								
<b>Sub-total Network Related</b>								
<b>Non-network Related</b>								
Bad debts								
Internal & external audit functions								
Regulatory liaison & compliance								
Corporate & central office								
IT licenses, operations & maintenance								
Lease payments (buildings, vehicles, furniture & fittings and other)								
Net foreign exchange (either loss or gain)								
Property maintenance								
Property insurance								
Other								
<b>Sub-total Non-network Related</b>								
<b>Total Operating &amp; Maintenance Expenditure</b>								

### Sheet C.3C : Real US\$ Operating & Maintenance Expenditure Forecast Estimates for US\$ Expenditure.

APPENDIX D

OPEX-RELATED TAX COST FORECAST TEMPLATES

For the purposes of Section 4.11.2 of the TWRG the following templates should be utilized to provide summaries of the operating & maintenance expenditure (opex) related tax cost forecasts to the ERC, based on a categorization of these taxes into the same categories of opex which give rise to them. The templates are assumed to link according to Figure D.1.

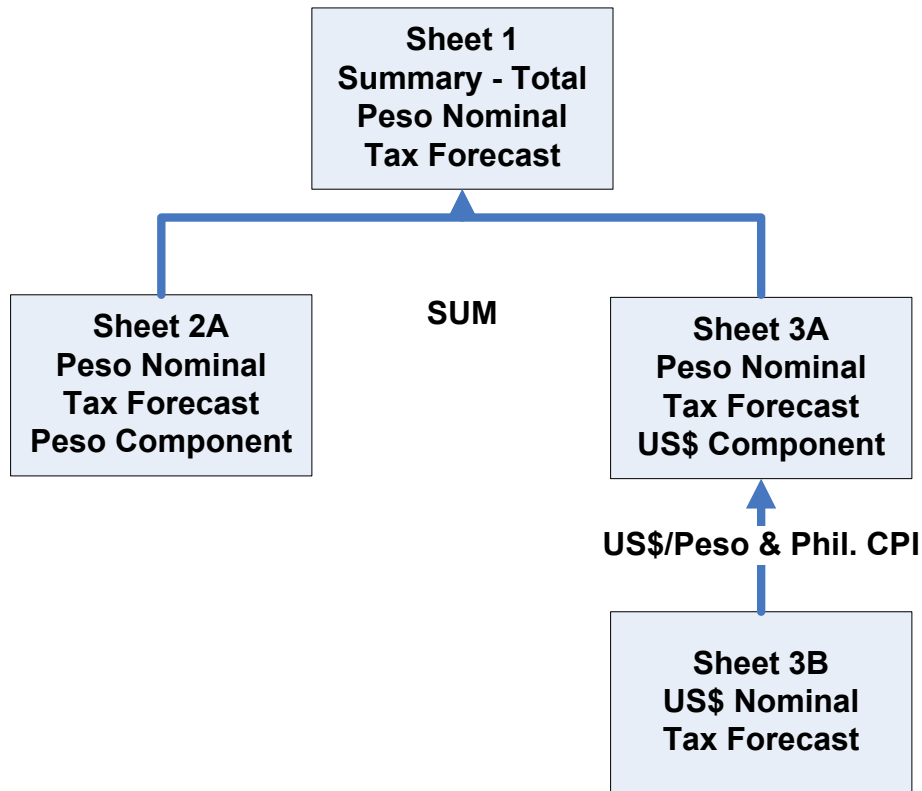


Figure D.1 : Development of Opex-Related Tax Cost Forecast Summary

## Regulatory Reset Issues Paper

Tax Related Category or Sub-category	TOTAL TAX PAYMENTS for TRANSCO (Other than corporate income tax)								
	Actual (peso, nominal in peso of reporting year)		Budget (peso, nominal)	Forecast (peso, nominal in peso of reporting year)					
	2003	2004	2005	2006	2007	2008	2009	2010	
<b>Payroll</b>									
Network operations supervision and engineering staff									
Network operations other staff									
Network planning supervision and engineering staff									
Systems Operations supervision and engineering staff									
Administration, human resources, finance, corporate and regulatory staff									
Easements owned by the Regulated Entity									
<b>Sub-total Payroll</b>									
<b>Network Related</b>									
Network operations									
Network maintenance									
Plant & equipment insurance									
System operations									
WESM compliance (excluding any expenses incurred as the Market Operator)									
<b>Sub-total Network Related</b>									
<b>Non-network Related</b>									
Bad debts									
Internal & external audit functions									
Regulatory liaison & compliance									
Corporate & central office									
IT licenses, operations & maintenance									
Lease payments (buildings, vehicles, furniture & fittings and other)									
Net foreign exchange (either loss or gain)									
Property maintenance									
Property insurance									
Other									
<b>Sub-total Non-network Related</b>									
<b>Residual Uncategorized Taxes, Levies and Duties</b>									
Franchise tax									
Remaining taxes, levies and duties									
<b>Sub-total Residual Uncategorized Taxes, Levies and Duties</b>									
<b>Total Taxes, levies and duties (other than corporate income tax)</b>									
<b>Exchange Rate Assumption for Forecast Period (peso/US\$ at end year)</b>									
<b>Philippines Consumer Price Index Change Assumption (% pa over year)</b>									
<b>USA Consumer Price Index Change Assumption (% pa over year)</b>									

### Sheet D.1 : Total Opex-Related Tax Cost Forecast Summary

Tax Related Category or Sub-category	PESO TAX PAYMENTS for TRANSCO (Other than corporate income tax)								
	Actual (peso, nominal in peso of reporting year)		Budget (peso, nominal)	Forecast (peso, nominal in peso of reporting year)					
	2003	2004	2005	2006	2007	2008	2009	2010	
<b>Payroll</b>									
Network operations supervision and engineering staff									
Network operations other staff									
Network planning supervision and engineering staff									
Systems Operations supervision and engineering staff									
Administration, human resources, finance, corporate and regulatory staff									
Easements owned by the Regulated Entity									
<b>Sub-total Payroll</b>									
<b>Network Related</b>									
Network operations									
Network maintenance									
Plant & equipment insurance									
System operations									
WESM compliance (excluding any expenses incurred as the Market Operator)									
<b>Sub-total Network Related</b>									
<b>Non-network Related</b>									
Bad debts									
Internal & external audit functions									
Regulatory liaison & compliance									
Corporate & central office									
IT licenses, operations & maintenance									
Lease payments (buildings, vehicles, furniture & fittings and other)									
Net foreign exchange (either loss or gain)									
Property maintenance									
Property insurance									
Other									
<b>Sub-total Non-network Related</b>									
<b>Residual Uncategorized Taxes, Levies and Duties</b>									
Franchise tax									
Remaining taxes, levies and duties									
<b>Sub-total Residual Uncategorized Taxes, Levies and Duties</b>									
<b>Total Taxes, levies and duties (other than corporate income tax)</b>									

### Sheet D.2A : Nominal Peso Opex-Related Tax Cost Forecast Estimates for Peso Payments.

## Regulatory Reset Issues Paper

US\$ TAX PAYMENTS for TRANSCO (Other than corporate income tax) - Expressed in Peso								
Tax Related Category or Sub-category	Actual (peso, nominal in peso of reporting year)		Budget (peso, nominal)	Forecast (peso, nominal in peso of reporting year)				
	2003	2004	2005	2006	2007	2008	2009	2010
<b>Payroll</b>								
Network operations supervision and engineering staff								
Network operations other staff								
Network planning supervision and engineering staff								
Systems Operations supervision and engineering staff								
Administration, human resources, finance, corporate and regulatory staff								
Easements owned by the Regulated Entity								
<b>Sub-total Payroll</b>								
<b>Network Related</b>								
Network operations								
Network maintenance								
Plant & equipment insurance								
System operations								
WESM compliance (excluding any expenses incurred as the Market Operator)								
<b>Sub-total Network Related</b>								
<b>Non-network Related</b>								
Bad debts								
Internal & external audit functions								
Regulatory liaison & compliance								
Corporate & central office								
IT licenses, operations & maintenance								
Lease payments (buildings, vehicles, furniture & fittings and other)								
Net foreign exchange (either loss or gain)								
Property maintenance								
Property insurance								
Other								
<b>Sub-total Non-network Related</b>								
<b>Residual Uncategorized Taxes, Levies and Duties</b>								
Franchise tax								
Remaining taxes, levies and duties								
<b>Sub-total Residual Uncategorized Taxes, Levies and Duties</b>								
<b>Total Taxes, levies and duties (other than corporate income tax)</b>								
<b>Exchange Rate Assumption for Actual or Forecast Period (peso/US\$ at end year)</b>								

**Sheet D.3A : Nominal Peso Opex-Related Tax Cost Forecast Estimates for US\$ Expenditure.**

## Regulatory Reset Issues Paper

Tax Related Category or Sub-category	US\$ TAX PAYMENTS for TRANSCO (Other than corporate income tax) - Expressed in US\$								
	Actual (peso, nominal in peso of reporting year)		Budget (US\$, nominal)	Forecast (US\$, nominal US\$ in the reporting year)					
	2003	2004	2005	2006	2007	2008	2009	2010	
<b>Payroll</b>									
Network operations supervision and engineering staff									
Network operations other staff									
Network planning supervision and engineering staff									
Systems Operations supervision and engineering staff									
Administration, human resources, finance, corporate and regulatory staff									
Easements owned by the Regulated Entity									
<b>Sub-total Payroll</b>									
<b>Network Related</b>									
Network operations									
Network maintenance									
Plant & equipment insurance									
System operations									
WESM compliance (excluding any expenses incurred as the Market Operator)									
<b>Sub-total Network Related</b>									
<b>Non-network Related</b>									
Bad debts									
Internal & external audit functions									
Regulatory liaison & compliance									
Corporate & central office									
IT licenses, operations & maintenance									
Lease payments (buildings, vehicles, furniture & fittings and other)									
Net foreign exchange (either loss or gain)									
Property maintenance									
Property insurance									
Other									
<b>Sub-total Non-network Related</b>									
<b>Residual Uncategorized Taxes, Levies and Duties</b>									
Franchise tax									
Remaining taxes, levies and duties									
<b>Sub-total Residual Uncategorized Taxes, Levies and Duties</b>									
<b>Total Taxes, levies and duties (other than corporate income tax)</b>									
<b>USA Consumer Price Index Change Assumption (% pa over year)</b>									

**Sheet D.3B : Nominal US\$ Opex-Related Tax Cost Forecast Estimates for US\$ Expenditure.**

**APPENDIX E  
CORPORATE INCOME TAX TEMPLATES**

For the purposes of Section 4.12.5 of the TWRG the following template should be utilized to provide a summary of the actual corporate income tax related cost incurred by TRANSCO.

TOTAL ACTUAL CORPORATE INCOME TAX PAYMENTS for TRANSCO									
Year	Actual (peso, nominal in peso of reporting year)		Budget (peso, nominal)	Forecast (peso, nominal in peso of reporting year)					
	2003	2004	2005	2006	2007	2008	2009	2010	
Corporate Income Tax									

**Sheet E.1 : Actual Corporate Income Tax Costs.**