



Transco Capex/Opex Review

REVIEW OF TRANSCO'S CAPITAL EXPENDITURE FORECASTS

- Final Report
- 23 August 2005



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1. Executive Summary

Sinclair Knight Merz has been commissioned by LECG Ltd to assist the National Transmission Corporation (TransCo) in the preparation of forecasts of capital expenditure and operating and maintenance expenditure as part of TransCo's submission to the Energy Regulatory Commission (ERC) for the current regulatory re-set. This report covers capital expenditure only.

This is an internal report to LECG Ltd and their client The National Transmission Corporation (TransCo) to assist in the preparation of the five year capital expenditure (Capex) forecast as part of TransCo's submission to the Energy Regulatory Commission (ERC).

SKM would like to thank TransCo personnel for their assistance in reviewing the capital expenditure forecast, quick response to requests for information, and preparing this report.

The capex forecast, following revisions by SKM, is as shown in the table below:

■ **Table 1 – TransCo capex 2003 – 2010**

Year	2003	2004	2005	2006	2007	2008	2009	2010
	Actual ¹ (real adjusted)		Budget	Forecast				
Million USD	41.7	34.7	50.5	116.0	161.6	79.9	41.8	34.3
Million PhP	3,563.1	6,594.9	3,587.6	4,539.6	6,117.6	4,788.5	2,662.0	2,489.6
Total M USD equiv	105.3	152.5	114.6	197.0	270.9	165.4	89.3	78.7
Total M PhP equiv	5,898.4	8,540.4	6,416.9	11,032.9	15,168.1	9,260.9	5,000.2	4,408.0

Note: Figures are real (2005). All years assume 56 PnP / USD exchange rate, and local and Philippines inflation targets per Dept of Budget and Management.

Overall, SKM considers the revised capex forecast is reasonable, in particular:

- Represented fairly in discrete projects.
- Based on best available prices obtainable from international markets.
- Reasonably efficient from design and implementation points of view.
- Sufficient to support forecast growth in customer connections, coincident peak demand and energy delivered.
- Sufficient to allow TransCo to achieve or exceed the target levels of performance.

¹ Actual (nominal) total PhP equivalent amounts for 2003 and 04 were 5,521.4 & 8,241.2 respectively .



2. Introduction

Sinclair Knight Merz has been commissioned by LECG Ltd to assist The National Transmission Corporation (TransCo) in the preparation of forecasts of capital expenditure and operating and maintenance expenditure as part of TransCo's submission to the Energy Regulatory Commission (ERC) for the current regulatory re-set.

This report focuses on the capital expenditure forecast.

The Transmission Wheeling Rate Guidelines (TWRG) require the capital expenditure (Capex) forecast to be provided in a format defined in ERC's Issue Paper (September 10, 2004). SKM's brief is to assist TransCo to articulate why the Capex forecast is necessary and reasonable or to prepare revised forecasts that meet these criteria.

Specifically, SKM is required to comment on whether the Capex forecasts are:

- a) Represented fairly in discrete projects.
- b) Based on best available prices obtainable from international markets.
- c) Reasonably efficient from design and implementation points of view.
- d) Sufficient to support forecast growth in customer connections, coincident peak demand and energy delivered.
- e) Sufficient to allow TransCo to achieve or exceed the target levels of performance.

2.1 Methodology

In reviewing and revising the capex forecast for 2005 to 2010 SKM has:

- reviewed the planning criteria and application of these criteria in developing the projects in the Transmission Development Plan and Capex forecast
- reviewed the costing methodology and costs of a sample of projects included in the forecast
- reviewed overheads and other costs included in the forecast
- recommended changes to the capex forecast where the TransCo draft did not meet the requirements of the TWRG or Issues Paper (which were accepted by TransCo).
- Revised the capex forecast to effect these recommendations



SKM reviewed the following sources of information in the preparation and review of the capex forecast:

- Interviews and data provided by TransCo personnel
- ERC Requirements as set out in the TWRG and Issues Paper
- Transmission Development Plan 2005 – 2014
- Capex forecast prepared by TransCo 2005 – 2010
- Project Feasibility Studies
- Demand Forecasts
- Dept of Budget and Management Macroeconomic and Fiscal targets
- Project cost estimates
- Various internal documents, including network planning and financial records



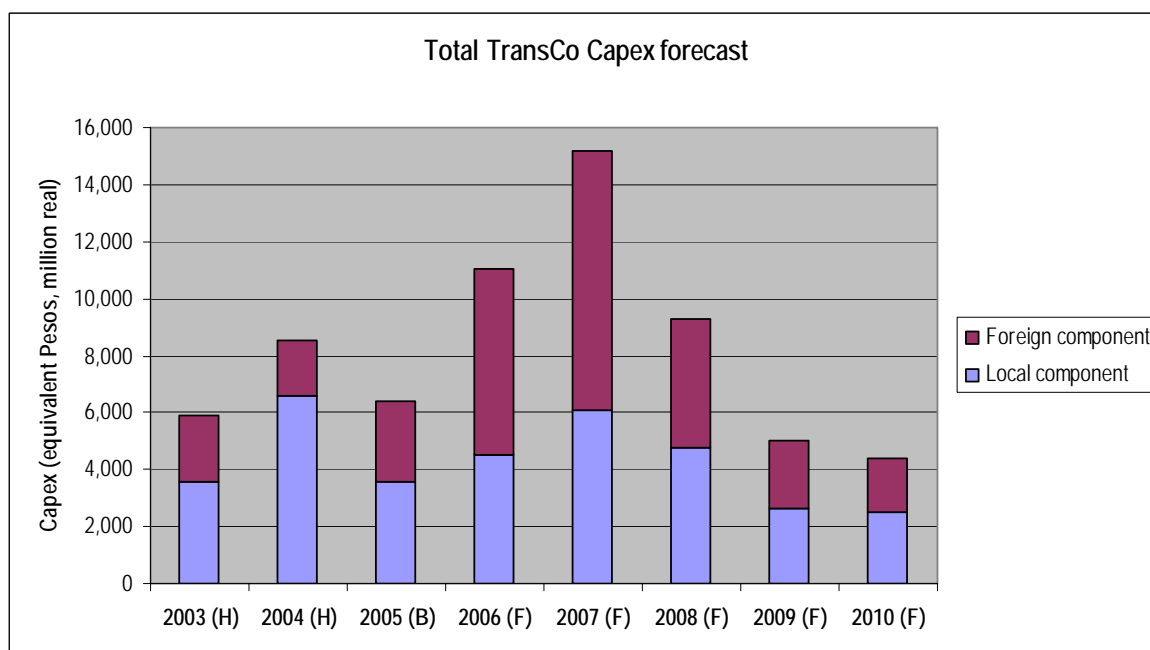
3. Recent Trends

Historical and forecast capital expenditure by TransCo is shown in the table below:

■ **Table 2 – TransCo capex 2003 – 2010**

Year	2003	2004	2005	2006	2007	2008	2009	2010
	Actual ² (real adjusted)		Budget	Forecast				
Million USD	41.7	34.7	50.5	116.0	161.6	79.9	41.8	34.3
Million PhP	3,563.1	6,594.9	3,587.6	4,539.6	6,117.6	4,788.5	2,662.0	2,489.6
Total M USD equiv	105.3	152.5	114.6	197.0	270.9	165.4	89.3	78.7
Total M PhP equiv	5,898.4	8,540.4	6,416.9	11,032.9	15,168.1	9,260.9	5,000.2	4,408.0

Note: Figures are real (2005). All years assume 56 PnP / USD exchange rate, and local and Philippines inflation targets per Dept of Budget and Management.



History prior to 2003 is not readily available as TransCo was part of NPC which included generation and other functions not readily separable. Average capex for the period 2005 – 2010 is 18% higher than the 2003 – 04 average, though this is not a sufficient period of historical data on which to make assumptions, and also partially reflects an assumed relaxation of capital constraints on TransCo from 2007 when a concessionaire will assume funding of projects.

² Actual (nominal) total PhP equivalent amounts for 2003 and 04 were 5,521.4 & 8,241.2 respectively.



4. Capex Forecast

SKM was provided with a capex forecast prepared by TransCo, summarised in the table below:

■ Table 3 – Original TransCo (nominal) Capex forecast

Original TransCo (nominal)	2005	2006	2007	2008	2009	2010	Total
USD	50.5	116.2	151.8	62.6	-	-	381.2
Pesos	4,366.4	6,619.9	9,171.3	8,164.6	4,522.1	3,365.1	36,209.4
Total USD	128.5	234.5	315.5	208.4	80.8	60.1	1,027.8
Total Pesos	7,195.7	13,129.2	17,670.7	11,672.2	4,522.1	3,365.1	57,554.9

In discussions with TransCo personnel, SKM made the following adjustments to the Transco forecast:

- Converted from nominal to real in order to provide reporting format required in issues paper
- Interest during construction removed from projects
- Timing of some projects revised (delayed) to reflect revised (conservative) demand forecasts in Luzon.
- Capitalised overheads were adjusted to incorporate planned increases in wages (see separate opex report)
- Provision for transmission line easement costs was included, based on the expected costs arising from litigation currently before the courts.
- Asset categories were changed to match the format specified in the TWRG and Issues paper.

The revised forecast is shown below, in real terms as required by TWRG and nominal terms for comparison with the original forecast:

■ Table 4 – Revised (real) Capex forecast

Revised (real)	2005	2006	2007	2008	2009	2010	Total
USD	50.5	116.0	161.6	79.9	41.8	34.3	484.0
Pesos	3,587.6	4,539.6	6,117.6	4,788.5	2,662.0	2,489.6	24,184.7
Total USD	114.6	197.0	270.9	165.4	89.3	78.7	915.8
Total Pesos	6,416.9	11,032.9	15,168.1	9,260.9	5,000.2	4,408.0	51,287.0



■ **Table 5 – Revised (nominal) Capex forecast**

Revised (nominal)	2005	2006	2007	2008	2009	2010	Total
USD	50.5	118.7	169.5	85.8	45.9	38.6	509.0
Pesos	3,587.6	4,766.5	6,680.4	5,438.2	3,144.1	3,058.1	26,674.8
Total USD	114.6	203.9	288.8	182.9	102.1	93.2	985.3
Total Pesos	6,416.9	11,415.7	16,170.5	10,240.4	5,715.0	5,218.0	55,176.5

Overall, the revised forecast is 4.1% lower than the original forecast (equivalent nominal), principally due to the removal of interest during construction and deferral of a number of projects.

In addition to the numerical capex forecast prepared by SKM, project summary sheets are being prepared by TransCo to provide other information required in the TWRG. Drafts of only a few of these documents were available for review at the time this report was prepared, but the format provided satisfies the information requirements specified in the TWRG for projects > P 50 million.

The final capital forecast to be provided to ERC should include:

- Covering memo outlining assumptions (financial and others, such as demand forecast)
- Summary spreadsheets as outlined in Appendix B of the Issues Paper
- Individual project details, including the Project Details summaries being prepared by TransCo Network Planning, and individual project capex forecasts in ERC format prepared by SKM.
- For the purposes of the ERC pricing determination, it is of little consequence whether projects are to be implemented by TransCo or the Concessionaire, hence SKM recommends projects be included in a single group, rather than split by TransCo / Concessionaire as per the original TransCo capex forecast. Details of who it likely to implement each project are included on the header for each project in the individual SKM capex budget spreadsheets.



4.1 Breakdown of capex forecast

■ Table 6 Breakdown of capex forecast (2005 real) by project type

Capex Type	Project Status	Region	Total Equivalent PnP (million)	% of Total	
Network Projects	Ongoing	All	1,086.9		
		Luzon	7,447.6		
		Mindanao	5,968.0		
		Visayas	12,088.2		
	Ongoing Total			26,590.7	52%
	New	Luzon	4,644.7		
		Mindanao	6,337.8		
		Visayas	2,077.7		
	New Total			13,060.2	25%
	O&M	Mindanao	North Luzon	1,417.7	
South Luzon			646.0		
Visayas			1,079.0		
			867.0		
O&M Total			4,009.7	8%	
Network Projects Total			43,660.5	85%	
Network Control Safety & Metering projects	New	All	25.3		
		System Operations	822.9		
New Total			848.2		
Network Control Safety & Metering projects Total			848.2	2%	
Non-network projects	New	Eng	182.6		
		HO	1,508.4		
New Total			1,691.0		
Non-network projects Total			1,691.0	3%	
Capitalised overheads	All	All	5,087.2		
All Total			5,087.2		
Capitalised overheads Total			5,087.2	10%	
Grand Total			51,287.0	100%	

In general, there is nothing highlighted by this breakdown of capex that SKM would consider unreasonable. Capitalised overheads are discussed in further detail later in this report.

Capitalised O&M costs at the upper end of what SKM would consider reasonable, but given TransCo's historical practices and manning levels, are not considered to be out of keeping with past practice. Some of these issues are discussed in the separate Operating Cost forecast review report.



A further breakdown by driver (growth, non-growth) is shown below:

■ **Table 7 - Breakdown of capex forecast (2005 real) by project driver**

Capex Type	Driver	Project Status	Total	% of Total
Network Projects	Load growth	Ongoing	25,503.8	
		New	12,518.6	
	Load growth Total		38,022.4	74%
	Non-growth	Ongoing	1,086.9	
		New	541.5	
		O&M	4,009.7	
	Non-growth Total		5,638.1	11%
Network Projects Total			43,660.5	85%
Network Control Safety & Metering projects	Non-growth	New	848.2	
Network Control Safety & Metering projects Total			848.2	2%
Non-network projects	Non-growth	New	1,691.0	
Non-network projects Total			1,691.0	3%
Capitalised overheads	Non-growth	All	5,087.2	
Capitalised overheads Total			5,087.2	10%
Grand Total			51,287.0	100%

This analysis shows the capex program is principally driven by load growth, with other components (non growth, overheads) no larger than around 10%. This indicates the main driver for the capex program is meeting increasing demand and performance targets.



5. Review of Forecasts

In preparing the revised forecast, SKM undertook the following review of projects and the capex forecast as a whole.

5.1 Represented fairly in discrete projects

SKM has found no evidence that projects have been split to fall below the 50 million pesos threshold stipulated in the TWRG for detailed project disclosure. SKM considers TransCo has fairly represented the capital works forecast in complete projects, and there has been no attempt to split large projects into smaller components to avoid the ERC reporting threshold of PhP 50 million.

Of the total capital expenditure over the period 2005 – 2010, 99% is included in projects > PhP 50 million, indicating the capital forecast is overwhelmingly made up of large projects above the ERC threshold.

5.2 Project Estimates

Project cost estimates were reviewed for a number of substation and transmission line projects, against SKM's knowledge of costs of transmission projects in other countries, and in particular the "modern equivalent asset" rates determined as part of the recent asset revaluation.

A sample of substation and transmission line project cost estimates were reviewed, covering some 65% of the total new network projects included in the capex forecast. The projects reviewed were:

- New Binga substation
- New Calbayog substation
- Bunawan substation expansion
- Pulangi (Maramag) substation
- New Polanco SS
- Tomonton CTS
- Talisay CTS
- Tomonton SS
- Luzon substation upgrade project 1
- Binga – San Manual transmission line
- Wright – Calbayog transmission line
- Abaga – Kirahon transmission line
- Mamarag (Pulangi) - Bunawan transmission line



- Kirahon - Maramag (Pulangi) transmission line
- Aurora - Polanco transmission line
- Talisay - Tomonton transmission line
- Bacolod - Talisay transmission line
- San Juan - Tomonton transmission line

The review found:

- Transmission line cost estimates in the capex forecast were around 4% higher on average than the MEA rates would value those assets
- Substation cost estimates in the capex forecast were around 13% higher on average than the MEA rates would value those assets

These figures are considered within a reasonable margin of error, and also reflect the more detailed level of estimate prepared by TransCo. Given that a proportion TransCo's ongoing development projects are "brownfield" developments, these costs are considered reasonable. SKM would typically apply loadings of 25% - 50% to standard greenfield costs for brownfield projects.

5.3 Design Efficiency

In producing an Optimised Depreciated Replacement Cost valuation, SKM reviewed substation designs, feeder configurations and transmission voltage levels. Optimisation, to remove any excess capacity or over-design, amounted to approximately 3.5% of the total network replacement cost. This indicates that the network design is reasonably efficient.

A number of specific proposed projects were reviewed to provide comfort that the historical efficiency reflected in the optimisation results was being carried forward in future project designs. A sample of projects included in the forecast were selected, and the designs were reviewed and found to be reasonable and not "over-designed" or "gold plated".

TransCo's practice to date has been to apply a 30 year life to network elements generally, and program asset replacement on the age of an asset exceeding this nominal life. In the asset valuation, expected typical asset lives have been mostly extended beyond 30 years. The replacement of aged assets is not driven by age itself but by the asset condition, performance and the costs of maintenance.

Each replacement project should be individually justified on these bases. The overall level of replacement assets included in the forecast is 4.2 billion pesos over 2005 – 2010, or an average of



697 million pesos pa. This is below the level of 5.0 billion pesos 2005 – 2010 modelled by SKM³ using the extended asset lives determined from the separate asset valuation study, indicating replacement of assets included in the capex forecast is not excessive.

5.4 Capital prudence and efficiency

Project needs were discussed with transmission planning department, who demonstrated load flow analysis results used to determine project needs and as inputs to the transmission development plan.

Planning criteria in the TDP reviewed and considered reasonable, and likely to become more stringent in the future (eg move to full N-1 or higher in the future).

5.4.1 Overheads

TransCo's capex forecast includes an amount of capitalised overheads, as shown in the table below.

■ **Table 8 – Original TransCo (nominal) Capex forecast**

Million Pesos (real)	2005	2006	2007	2008	2009	2010
Site & Project Management	134.6	190.2	184.3	158.9	7.7	2.4
Engineering	206.6	228.3	533.7	570.2	674.4	699.8
Head office & Admin	84.4	119.1	278.4	297.5	351.8	365.1
Projects	217.8	307.7	236.3	197.0	9.7	2.5
Total capitalised overheads	643.3	845.2	1,232.7	1,223.6	1,043.5	1,069.7
Total capex forecast	6,416.9	11,022.5	15,112.3	9,167.4	4,910.2	4,361.9
Overheads %	10%	8%	8%	13%	21%	25%

With other transmission businesses SKM has worked with it is not uncommon for a proportion of overheads to be capitalised or included in capitalised labour / wages component of capital projects. The scope of SKM's review did not, however, include a review of Philippines accounting standards and requirements, so SKM is unaware of any specific requirements regarding capitalisation of overheads and whether this treatment is in keeping with any such requirements.

The current level of capitalised overheads is within the range SKM would expect, typically 5 – 15% of total capex. The allocation of the engineering group to capex is considered reasonable given its role in the planning and execution of capital projects. Likewise head office and admin allocation to capital (mostly 0%, with a few groups 50 – 70% such as finance and contracts) has been reviewed and is considered reasonable. The increase in overheads in the latter years of the forecast represents the proposed increases in real wages foreshadowed. SKM's separate opex report reviews these increases in detail.

³ See separate report on TransCo Aged Asset Replacement Projection expenditure, SKM 2005



5.5 Growth Forecasts

Revised growth forecasts were discussed with TransCo Corporate Planning personnel. TransCo's forecasting methodology includes a mix of econometric and trend based forecasting techniques, combined with forecasts provided with distribution companies. There was only a brief discussion of these methodologies, but this indicated TransCo's forecasting techniques are reasonable.

The original demand forecast and the alternate (more conservative) forecast for used to modify the capital works forecast are compared in the Table below.

■ **Table 9 – Comparison of Demand Forecasts (MW)**

Year	TDP 2005 (DOE - Macro)	DOE DDP 2004	TRANSCO Conservative forecast used for Capex budget
2005	7,343	7,045	6,443
2006	7,964	7,493	6,747
2007	8,635	7,977	7,014
2008	9,372	8,497	7,290
2009	10,171	9,057	7,574
2010	11,018	9,665	7,866
2011	11,917	10,310	8,149
2012	12,871	11,057	8,437
2013	13,884	11,854	8,728
2014	14,959	12,509	9,025

SKM understands from discussions with TransCo the reason for these differences is a higher than expected Luzon demand from DoE (approximately 75% of total TransCo demand), based on higher than expected demand projections provided by the local distribution authority Meralco. These distribution forecasts have since been revised down, and SKM understands the unofficial draft of the new DoE forecast is now very close to the TransCo conservative forecast shown above. In light of this, SKM recommends the capex forecast be based on the TransCo conservative load forecast.

Timing of individual projects was adjusted to reflect the revised (conservative), Luzon forecasts (supported by draft DOE revised forecast). In practice, there has been little impact on project timing overall, as project timing is already constrained by TransCo's ability to implement projects.



In consultation with TransCo Transmission Planning staff, the timing of the following projects were adjusted:

■ **Table 10 – Project timing revision as a result of demand forecast change**

Project	Original end date	Revised end date	Deferral (years)
LUZON SUBSTATION EXPANSION - 2	2008	2009	1
LUZON SUBSTATION EXPANSION PROJECTS - 3	2009	2011	2
Binga-San Manuel 230kV TL Proj.	2008	2010	2
Luzon S/S Expansion Proj-1	2008	2010	2

The impact on the capex forecast of these changes is shown below:

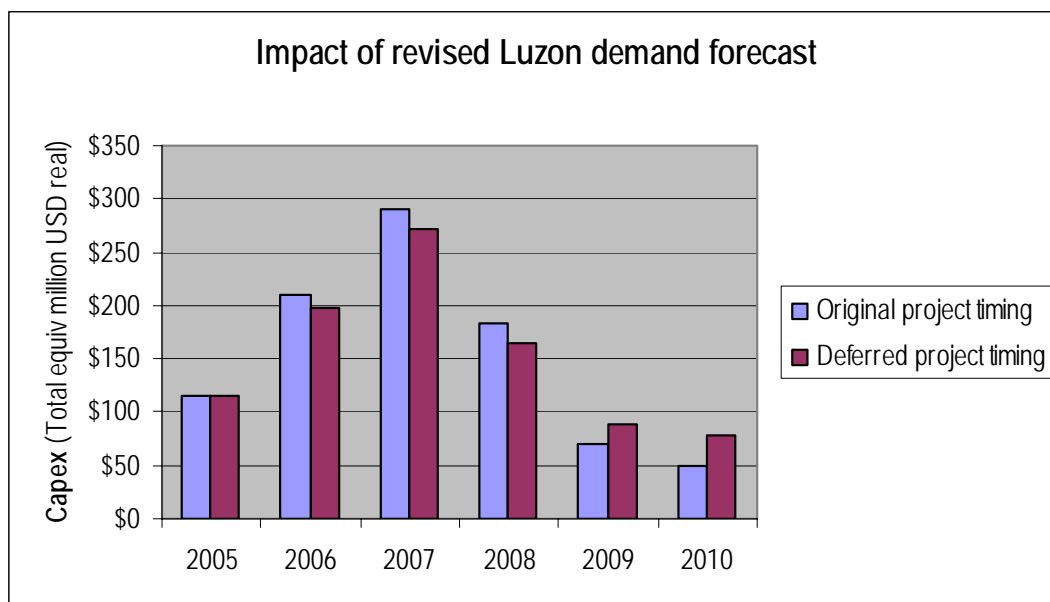
■ **Table 11 – Capex forecast (real) – with deferred projects (final)**

Revised (nominal)	2005	2006	2007	2008	2009	2010	Total
USD	50.5	116.0	161.6	79.9	41.8	34.3	484.0
Pesos	3,587.6	4,539.6	6,117.6	4,788.5	2,662.0	2,489.6	24,184.7
Total USD	114.6	197.0	270.9	165.4	89.3	78.7	915.8
Total Pesos	6,416.9	11,032.9	15,168.1	9,260.9	5,000.2	4,408.0	51,287.0

■ **Table 12 – Capex forecast (real) – with original project timing**

Revised (nominal)	2005	2006	2007	2008	2009	2010	Total
USD	50.5	125.6	177.4	95.0	26.7	11.6	486.8
Pesos	3,596.4	4,720.9	6,371.5	4,994.5	2,441.0	2,151.0	24,275.3
Total USD	114.7	209.9	291.1	184.2	70.3	50.0	920.3
Total Pesos	6,425.7	11,752.4	16,304.3	10,317.0	3,937.9	2,797.9	51,535.1

The overall impact of the deferrals is a reduction of 0.5% in the overall capex forecast, though the “time value” impact of these deferrals will be marginally greater. The changes are shown in the chart below.



5.6 Target Levels of Performance

A summary TransCo's recent historical reliability performance is shown in the table below.

■ Table 13 – Original TransCo (nominal) Capex forecast

Table 5: TransCo's Historical Reliability Performance

Performance Indicators		Year			
		2001	2002	2003	2004
Unserved Energy (GWh)		54.06	42.84	39.95	27.47
Transmission	SAIFI	1.31	1.05	0.77	0.76
	SAIDI (mins)	177.67	342.27	115.05	94.94
Sub-transmission	SAIFI	5.12	5.86	4.98	2.87
	SAIDI (mins)	1014.04	1240.47	1238.53	474.31
Frequency Limit Compliance (%)		99.98101	99.86911	99.94365	99.96453
Voltage Limit Compliance (%)		70.74715	85.42783	90.44265	90.77524

Reliability targets have not yet been set by the ERC. This suggests that the methodology to be used to set targets for the next regulatory period will be based on the average performance over the last five years (as per Philippine Grid Code). TransCo officers have calculated the following targets using the methodology described in the section 10.4.2 of the Philippine Grid Code:



■ **Table 14 – Original TransCo (nominal) Capex forecast**

Table 6: Reliability Targets

Performance Indicators		Targets for Philippine System	
		Lower	Upper
Transmission	SAIFI	0.71	1.56
	SAIDI (mins)	85.17	279.51
Sub-transmission	SAIFI	3.63	5.87
	SAIDI (mins)	707.94	1362.96
Frequency Limit Compliance (%)	Luzon	99.90131	99.99656
	Visayas	97.48735	99.97597
	Mindanao	99.73636	99.94452
Voltage Limit Compliance (%)	Luzon	70.09699	92.02393
	Visayas	98.53432	100.0
	Mindanao	97.43117	99.41015

These targets represent a continuation of the present performance levels. Hence current planning practices should continue to meet these “status quo” targets, and thus capex forecast is considered adequate to meet required performance levels.

The impact of individual projects on these reliability indicators is in practice difficult if not impossible to accurately quantify. Because of this limitation, high level planning criteria (eg “N-1”) together with targeted reliability projects in areas or types of equipment with poor reliability are the best means of incorporating performance standards into the capex plan.

In this regard, TransCo’s planned projects is considered reasonable, as they are based on a continuation of existing planning criteria, with some targeted reliability projects also included



6. Capex/Opex Trade-off

The TransCo network is considered to be relatively young with a weighted average age of approximately 14 years. SKM has developed a replacement/refurbishment capital budget projection from the age profile data gained in the recent valuation. The replacement/refurbishment report is attached as Appendix C to this report.

This replacement projection is a desktop study of expected numbers of assets reaching the end of their economic lifetimes and requiring replacement. It assumes standard lifetimes for each asset class, rather than using condition based assessment. In this regard the timing of some replacements may not be optimal, but the overall trend and level of replacements required is considered reasonably accurate over the medium – long term.

The modelling carried out for this study indicates that the replacement expenditure required over the next five years is approximately PhP 5 billion for the transmission network and approximately PhP 7 billion for the subtransmission network. By comparison, the capex forecast indicates PhP 4.7 billion of transmission replacement assets from 2005-2010, indicating an appropriate level of replacement is included in the forecast.

It is reasonable to expect that the operating and maintenance requirements of a network will increase as the system ages. In previous projects, SKM has modelled the opex versus age relationship for various asset types. In these models, it has been assumed that the relationship between opex and age follows an exponential equation. The true relationship will depend on the environment, utilisation, mix of assets and many other variables.

It is difficult to translate these curves from one business to another. However, SKM has good knowledge of the mix of assets which make up the TransCo asset base. Despite reservations, a weighted mix of opex/age curves generated for other businesses has been applied to the known mix of TransCo assets. This analysis suggests that if a similar business with a similar set of assets and with a weighted average age of 14 years was operated in Australia, then the expected operating and maintenance expenditure would be approximately 1.25% of the replacement cost of the asset. This is a little below the current level of opex for TransCo (1.9%). The difference could well result from the onerous tropical conditions which reduce expected asset lives and the high rates of vegetation growth. The lack of N-1 capacity will also make access to assets for maintenance more difficult and expensive.

This same analysis suggests that, as the system ages further, additional opex equal to approximately 0.05% of RC will be required for each additional year of aging. This is an attempt to quantify the trade-off between capital expenditure and operating and maintenance expenditure. There is no



apparent allowance in the opex forecast for additional resources to cope with any real increase in the asset age.

Capex – opex trade-off modelling indicates there are few if any current opportunities for TransCo to cost effectively reduce opex through additional capex, and hence TransCo's capex forecast is considered reasonable in this regard.



Appendix A Capex Forecast Spreadsheets



Appendix B Capex Forecast in ERC Format

Appendix C Summary Capex Forecast by project

The following is a summary of capex by project used as the basis for the capex forecast presented in this report

Project Name	2005	2006	2007	2008	2009	2010	2005	2006	2007	2008	2009	2010
	Million USD	Million USD	Million USD	Million USD	Million USD	Million USD	million Pesos	million Pesos	million Pesos	million Pesos	million Pesos	million Pesos
Abaga-Kirahon 230kV TL Project	-	14.4	21.2	-	-	-	26.5	263.1	467.4	49.1	8.4	3.0
Allocated overheads - Interest During Construction	-	-	-	-	-	-	-	-	-	-	-	-
Aurora-Polanco(Dipolog) 138kV TL Proj (Turnkey)	-	-	1.4	9.8	1.4	-	3.1	34.0	121.1	151.8	161.3	6.3
Batangas Trans. Reinf. Project	1.0	6.7	5.1	1.0	-	-	110.4	201.7	143.2	80.6	0.8	0.2
Bauang-San Esteban L2 Stringing Project	-	-	-	-	-	-	23.1	48.1	45.2	55.4	1.2	0.4
Biñan-Dasmariñas T/L Upgrading	-	-	-	-	-	-	86.2	20.9	19.9	21.7	0.8	0.8
Biñan-Sucacat 230kV Line Upgrade	-	0.5	3.8	0.5	-	-	3.6	39.4	155.8	28.1	3.1	2.2
Binga-San Manuel 230kV TL Proj.	-	-	-	9.2	6.8	3.9	-	-	8.0	157.8	143.3	124.1
Bohol Backbone Project	-	-	-	-	-	-	-	-	-	20.0	22.9	68.1
Bunawan S/S	-	-	-	-	-	-	13.4	1.0	14.2	15.3	-	-
Calaca II Asso. T/L	-	-	-	-	-	-	1.0	1.0	0.9	0.1	0.4	0.1
Capitalised O&M expenses - Concessionaire1	-	-	-	-	-	-	-	-	42.7	55.0	36.8	31.8
Capitalised O&M expenses - Concessionaire2	-	-	-	-	-	-	-	-	38.6	49.7	73.6	63.6
Capitalised O&M expenses - Concessionaire3	-	-	-	-	-	-	-	-	75.3	97.0	41.2	35.6
Capitalised O&M expenses - Concessionaire4	-	-	-	-	-	-	-	-	132.8	163.6	64.9	56.1
Capitalised O&M expenses - TransCo1	-	-	-	-	-	-	161.1	146.3	60.0	43.7	36.8	31.8
Capitalised O&M expenses - TransCo2	-	-	-	-	-	-	326.3	296.3	54.2	39.5	73.6	63.6
Capitalised O&M expenses - TransCo3	-	-	-	-	-	-	188.1	170.8	105.5	76.9	41.1	35.6
Capitalised O&M expenses - TransCo4	-	-	-	-	-	-	295.1	268.0	186.3	129.8	64.9	56.1
Casecnan (Manablon) Hydro Asso. TL	-	-	-	-	-	-	11.3	5.5	8.1	7.5	7.2	1.7
Cebu III Transmission	-	-	-	-	-	-	30.8	79.7	77.8	21.3	1.7	0.8
Cebu-Mactan Interconnection Proj.(Turnkey)	11.8	6.0	4.4	1.4	-	-	22.5	17.8	14.9	5.4	0.4	0.8
Cebu-Negros Interconnection Uprating (Turnkey)	-	6.3	27.5	8.5	-	-	31.3	206.7	226.6	109.2	6.9	3.0
Dasmariñas-Rosario 230KV T/L Project	-	-	0.8	2.9	0.4	-	-	8.2	21.3	147.0	29.5	0.8

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Project Name	2005	2006	2007	2008	2009	2010	2005	2006	2007	2008	2009	2010
	Million USD	Million USD	Million USD	Million USD	Million USD	Million USD	million Pesos	million Pesos	million Pesos	million Pesos	million Pesos	million Pesos
Gen.Santos- Tacurong-Nuling Trans.Reinf.Proj.	-	6.2	5.7	-	-	-	16.9	153.2	126.8	30.8	3.8	1.5
Head Office (excl MSG) - Transco	-	-	-	-	-	-	232.1	323.4	158.2	75.3	17.7	16.7
Kirahon-Pulangui 230KV Transmission Backbone (Stage 2)	-	-	-	8.1	11.9	-	3.2	30.5	186.8	269.8	95.3	10.4
Lahar-Affected T/L Relocation Project	-	-	-	-	-	-	3.4	2.5	2.2	0.4	-	-
Leyte-Bohol Int.Proj.(Stage2)	-	-	-	-	-	-	39.5	13.6	7.7	4.1	0.8	0.1
Leyte-Cebu Exp/Uprating Proj.	27.7	17.9	-	-	-	-	628.3	4.6	3.9	3.9	-	-
Leyte-Cebu HVAC Interc. Project-Stage1	-	-	-	-	-	-	4.3	2.9	3.0	0.9	0.4	0.4
Leyte-Luzon HVAC Interc. Project	-	-	-	-	-	-	5.8	1.9	1.8	0.9	0.8	0.3
Leyte-Samar Reinf. 69/138kV Project	0.5	-	-	-	-	-	27.7	88.4	6.3	5.0	0.1	0.1
Luzon Cluster C S/S Exp. Project	-	-	-	-	-	-	8.4	6.9	6.8	6.7	3.5	-
Luzon PCB Replacement Project	-	-	-	-	-	0.8	-	-	-	0.3	0.3	8.7
Luzon S/S Expansion Proj-1	-	-	-	-	8.3	19.3	-	-	-	9.9	98.9	221.2
Luzon substation expansion - 2	-	-	-	-	-	-	-	-	-	-	0.2	0.2
Luzon substation expansion projects - 3	-	-	-	-	-	-	-	-	-	-	-	-
Luzon subtransmission equipment upgrade	-	-	-	-	-	-	-	-	-	-	0.3	0.3
Luzon sub-transmission line/equipment replacement	-	-	-	-	-	-	-	-	-	-	0.6	0.6
Luzon Transmission Equipment Upgrade	-	-	4.6	10.8	-	-	-	1.4	52.0	124.7	-	-
Luzon(North) Subtransmission Project-1&2	-	-	-	-	-	-	0.5	0.5	0.5	0.3	-	-
Luzon(North) T/L Upgrading Projects-1	-	27.0	10.7	2.1	-	-	40.1	324.9	416.1	406.8	93.5	4.5
Luzon-mindoro interconnection project	-	-	-	-	-	-	-	-	-	-	-	1.6
Maco Substation	-	-	-	-	-	-	37.8	15.5	26.8	24.1	-	-
Metering Services Group	2.2	1.2	-	-	-	-	76.7	29.5	12.0	6.6	12.8	12.3
MEXICO-BALINTAWAK RECONDUCTORING	-	-	-	-	-	-	-	-	-	-	-	1.4
Mindanao Mobile Transformer Project Project	-	-	-	-	4.5	-	-	-	-	-	-	-
Mindanao Reliability Compliance (N-1) Project 1	-	-	-	-	-	-	-	-	-	-	-	-
Mindanao S/S Expansion - 2005	-	10.9	1.1	-	-	-	1.1	4.3	54.5	-	-	-
Mindanao S/S Expansion Project	-	-	-	-	-	-	9.6	6.4	3.6	3.4	-	-
Mindanao Subtransmission Projects-I	-	-	-	-	-	-	2.3	2.3	3.2	2.2	0.9	0.1

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Project Name	2005 Million USD	2006 Million USD	2007 Million USD	2008 Million USD	2009 Million USD	2010 Million USD	2005 million Pesos	2006 million Pesos	2007 million Pesos	2008 million Pesos	2009 million Pesos	2010 million Pesos
Naga-Tayabas T/L Rehab Project	-	-	-	-	-	-	10.6	2.7	1.9	1.4	-	-
Natural Gas Ilijan Asso T/L	-	-	-	-	-	-	3.5	1.0	0.3	0.1	0.1	-
Negros III Transmission	0.1	-	-	-	-	-	15.7	-	-	-	-	-
Negros IV 138kV Transmission Project	-	-	-	-	-	-	5.4	1.0	0.9	0.4	0.2	0.1
Negros V Transmission Project	-	-	-	-	-	-	4.9	34.2	39.4	40.0	12.1	-
Negros-Panay Interconnection Uprating (Turnkey)	-	-	33.1	9.2	-	-	9.2	28.5	194.7	119.3	7.1	10.7
Network Control Centre Projects	-	-	-	-	-	-	25.3	-	-	-	-	-
New Gamu 230 KV SS Project	-	-	1.0	0.1	-	-	-	29.6	58.5	10.7	-	-
New Naga S/S Project	-	-	-	-	-	4.0	-	-	-	6.4	18.6	79.0
Northern Panay Backbone Project	-	1.5	9.3	4.6	-	-	5.2	44.6	211.3	140.1	27.2	4.7
Northwestern EHV	-	-	-	-	-	-	24.8	10.5	5.7	1.9	0.6	0.4
Others not in the TDP	-	-	-	-	-	-	21.2	39.8	34.0	30.7	28.5	26.9
Pagbilao Coal T/L	-	-	-	-	-	-	108.2	5.7	1.4	1.3	1.3	1.2
Panay IV Transmission	-	-	-	-	-	-	27.9	13.2	11.0	17.3	0.3	0.2
Panay-Boracay Interconnection Project	-	-	-	-	-	-	5.1	105.7	36.0	0.1	-	-
Power Circuit Breaker Replacement Program - Mindanao	-	-	-	-	5.6	3.0	-	-	-	20.4	56.0	25.5
Power Circuit Breaker Replacement Project - Visayas	-	-	-	-	2.9	2.9	-	-	-	6.9	41.2	20.6
Pulangui-Bunawan 230kV T/L Proj.(Turnkey) (Stage 1)	-	10.5	15.5	0.4	-	-	7.7	296.9	378.4	58.5	13.8	5.4
Reliability Compliance Project I - Mindanao	-	-	-	-	-	-	-	-	-	14.7	27.6	66.2
San Francisco 138kV S/S Project (New)	-	-	-	-	-	-	3.2	22.7	61.8	9.0	-	-
SAN JOSE 500 KV RECONFIGURATION	-	-	-	-	-	-	-	-	-	-	-	1.4
SAN JOSE-BALINTAWAK T/L UPGRADE	-	-	-	-	-	-	-	-	-	-	-	0.5
San Roque Asso. T/L & S/S	0.9	0.2	0.7	-	-	-	6.1	9.3	9.9	16.1	-	-
Southern Panay Backbone T/L Project	-	-	-	-	-	-	-	-	-	0.8	1.6	53.6
Sucat-Sta Mesa-Balintawak	-	-	-	-	-	-	7.8	4.8	3.3	3.2	0.4	0.1
System Operations - TransCo	0.9	0.2	-	-	-	-	155.2	119.8	52.0	51.8	16.4	14.2
T/L & S/S Proj- Package 1 & 2	3.3	1.4	-	-	-	-	9.4	5.9	2.9	0.9	-	-
Tacurong-Nuling 138 kV Transmission Line Project	-	-	-	-	-	-	-	-	-	0.8	1.6	43.8

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Project Name	2005	2006	2007	2008	2009	2010	2005	2006	2007	2008	2009	2010
	Million USD	Million USD	Million USD	Million USD	Million USD	Million USD	million Pesos	million Pesos	million Pesos	million Pesos	million Pesos	million Pesos
Tap Hermosa-Balintawak	-	0.1	0.2	-	-	-	-	5.4	9.0	-	-	-
Visayas Capacitor Project 1	-	-	2.4	0.3	-	-	-	-	17.3	8.4	0.8	-
Voltage Improvement Project - 1	-	-	2.3	5.5	-	-	-	0.7	16.6	65.7	-	-
Voltage improvement project-2	-	-	-	-	-	0.3	-	-	-	0.1	0.1	3.2
Warehousing of Mind. Stockyards	-	-	-	-	-	-	1.5	0.2	-	-	-	-
WB TGRl - Luzon S/S Reinf Project	0.3	-	-	-	-	-	11.4	-	-	-	-	-
Wright-Calbayog 138kV T/L Proj.(Turnkey)	-	1.5	6.2	0.9	-	-	11.6	63.9	186.4	55.4	9.3	4.0
Zamboanga City Area 138kV T/L Project	1.7	3.3	4.5	4.6	-	-	44.6	144.6	144.7	110.8	0.3	0.1
Allocated overheads - Engineering	-	-	-	-	-	-	206.6	228.3	533.7	570.2	674.4	699.8
Allocated overheads - Admin	-	-	-	-	-	-	84.4	119.1	278.4	297.5	351.8	365.1
Allocated overheads - Site Management & Projects	-	-	-	-	-	-	134.6	190.2	184.3	158.9	7.7	2.4
Provision for land use costs from pending litigation	-	-	-	-	-	-	165.0	190.5	201.5	189.3	177.8	162.8
Total all projects	50.5	116.0	161.6	79.9	41.8	34.3	3,587.6	4,539.6	5,766.9	4,510.8	2,627.9	2,458.8