Expenditure forecasting methodology

Appendix 7

Tasmanian Networks Pty Ltd

Transend Networks Pty Ltd

Table of contents

1 Purpose and structure of this document

Transend Networks Pty Ltd (Transend) owns and operates the electricity transmission network in Tasmania. Our core business is providing safe, reliable and efficient electricity transmission and telecommunication services in a national market.

In 2014 we will submit two revenue proposals to the Australian Energy Regulator (AER): a transitional Revenue Proposal in January 2014 and a full Revenue Proposal in May 2014. These proposals will be used to establish the regulated (or 'prescribed'[1]) revenue for the Tasmanian electricity transmission network from 1 July 2014.

From 1 July 2014 Transend will merge with Aurora's distribution business, creating TasNetworks. Consequently, TasNetworks will become the Tasmanian transmission network service provider from 1 July 2014, and will manage the revenue proposal process from that point.

This document proposes our methodologies to forecast prescribed capital expenditure and operating expenditure for the forthcoming regulatory control period. It provides early notification of the methodologies we intend to adopt in our Revenue Proposals, and satisfies requirements under the National Electricity Rules (the Rules).

We do not expect our forecasting methodologies to change prior to lodging our Revenue Proposals. However, the AER is presently finalising a number of documents under its 'Better Regulation' program. The AER's final forecast expenditure assessment guideline, framework and approach paper, and any regulatory information notice or order requirements may impact on the forecasting methodologies outlined in this paper. The rationale for any changes to our forecasting methodologies will be explained in the full Revenue Proposal lodged in May 2014.

The primary purpose of this document is to engage with the AER on our expenditure forecasting methodologies and to support the AER's assessment of our expenditure forecasts. The document is also available to interested stakeholders to assist them to better understand our revenue proposal.

The remainder of this document is structured as follows:

- Sections 2 and 3 describe our proposed capital and operating expenditure forecasting methodologies respectively.
- Section 4 sets out brief closing comments.

[1] As defined under the National Electricity Rules (the Rules).

2 Transend's capital expenditure forecasting methodology

2.1 Capital expenditure categories

Our forecast capital expenditure will be presented with reference to well accepted categories of capital expenditure and the categories of transmission services to which the forecast capital expenditure relates[2].

Figure 2.1 below provides a pictorial overview of the expenditure categories.

Figure 2.1 Transend's capital expenditure categories

<table>
<tr><td colspan="9">Total Capital Expenditure</td></tr>
<tr><td colspan="7">Network</td><td colspan="2">Non-network</td></tr>
<tr><td colspan="3">Development</td><td colspan="4">Renewal/enhancement</td><td colspan="2">Support the business</td></tr>
<tr><td>Augmentation</td><td>Connection</td><td>Land and easements</td><td>Asset renewal/ enhancement</td><td>Physical security/ compliance</td><td>Inventory/ spares</td><td>Operational support systems</td><td>Information technology</td><td>Business support</td></tr>
</table>

Table 2.1 provides descriptions of our categories of capital expenditure and the categories of prescribed transmission services to which they relate.

[2] As required by Schedule S6A.1.1(1) of the Rules.

Table 2.1 Categories of capital expenditure

Investment type	Category	Definition	Prescribed transmission services
Network			
Development	Augmentation	Works to enlarge the system or to increase its capability to transmit electricity, as defined in the National Electricity Law	TUOS services
	Connection	Works to either establish new prescribed connections or to modify existing prescribed connections	Exit services
	Land and easements	Land and easement acquisitions for future prescribed transmission system augmentations or connections	TUOS, exit and common transmission services
Renewal / enhancement	Asset renewal/enhancement	Works to replace or refurbish prescribed transmission system assets to maintain reliability and quality of supply	TUOS, entry, exit and common transmission services
	Physical security/compliance	Works to improve the physical security of transmission system assets and/or compliance with technical, safety, environmental and other relevant obligations	TUOS, entry, exit and common transmission services
	Inventory/spares	Transmission system assets acquired to enable timely response to asset failures in accordance with the network performance requirements and good electricity industry practice	Common transmission services
	Operational support systems	Works required to create or replace operational information technology (IT) support systems, required for efficient operation of the transmission system	Common transmission services
Non-network			
Support the business	Information technology	Works to develop and maintain corporate IT capacity and to improve the functionality of IT systems to support business needs in line with good electricity industry practice	Common transmission services
	Business support	Works to procure, replace or upgrade non-transmission system assets including land, buildings, vehicles and minor assets in line with business needs	Common transmission services

We will ensure that the capital expenditure forecast includes only capital expenditure that has been properly allocated to prescribed transmission services[3] in accordance with the principles and policies set out in our Cost Allocation Methodology as approved by the AER[4]. In addition, our forecast of required capital expenditure will not include any amounts relating to a project that is included as a contingent project[5].

[3] In accordance with the requirements of clause 6A.6.7(b)(2) of the Rules.
[4] Transend, Cost Allocation Methodology (TNM-GS-809-0751), Issue 3.0, April 2008.
See: http://www.transend.com.au/ournetworks/electricity/regulation/
[5] As defined under clause 6A.8.1(b) of the Rules.

2.2 Overview of capital expenditure forecasting methodology

Capital investment in the Tasmanian transmission system (transmission network, prescribed connection and supporting business assets) is driven by a range of factors which can be broadly summarised as:

- load and generation changes, including changes in generation patterns or changes in connection arrangements which require increases in the capacity or security of the network to transmit electricity in accordance with national and Tasmanian rules and regulations;
- other factors leading to unacceptable reliability or quality of supply;
- market benefit opportunities;
- unacceptable condition or reliability of assets, including network and business support system assets;
- changed physical security, technical, safety, environmental or other compliance obligations; and
- efficiency improvement opportunities.

Customer and consumer considerations influence these factors. Our capital expenditure forecasting methodology comprises the following broad steps[6]:

- potential issues are identified where a capital investment solution may address the identified issue (referred to as 'needs analysis');
- a range of potential conceptual solutions are developed;
- technical and economic impacts and benefits are analysed;
- potential solutions and impacts are discussed with affected customers, including the Tasmanian distribution business, and non-network solutions or preferences are sought;
- potential solutions and the timing of implementation are developed, project cost estimates are produced and preferred solutions are selected on the basis of the most positive net present value;
- preferred solutions are confirmed as projects or programs of work, or contingent projects, with further customer consultation where applicable, and included in the capital works program;
- projects in the capital works program and operating and maintenance work plan are considered together to optimise cost (combining projects into programs of work), and timing (customer constraints, network availability, delivery priority); and
- forecast costs are determined for each project in $June 2014 terms. This is done by applying a probability weighting, cost estimation risk factor, real labour and material escalation, productivity factor and consumer price index (CPI) escalation to the base project estimates established in $June 2012 terms.

Our capital expenditure forecasting and investment processes are supported by a sound governance framework.

We work with our customers to provide opportunities for their needs and priorities to be reflected in our expenditure plans. We value the feedback we receive and regard customer engagement as an iterative component of our forecasting methodology.

We are building on our experience with customers to broaden our engagement with other consumers. Our approach to consumer engagement continues to improve.

[6] Note that not all steps are applicable to all three capital expenditure investment types listed in Table 2.1 and the specific detail of the methodology differs across the investment types.

2.3 Needs analysis

2.3.1 Network development

As noted in Table 2.1, network development expenditure includes the augmentation, connections and land and easement categories.

To identify the potential need to develop the network we undertake the following activities to determine future network constraints, deficiencies, emerging issues and market benefit opportunities:

- production of state and connection point load forecasts[7];
- analysis of real time system performance (including load flows and system security);
- modelling of system performance for the intact transmission system[8] and during and after contingent events (including load flows and system security for a range of load and generation scenarios);
- assessment of the adequacy of the network's performance and capacity to meet future obligations (needs identified);
- liaison with load and generation customers to understand their requirements and priorities, and to determine if these require solutions;
- development of medium and long term visions for the network, including modelling of retirement of aged and poor condition assets. These long and medium term visions for the network are documented in our Grid Vision and specific network development strategies; and
- consideration of long-term requirements in assessing development of solutions to short-term network constraints, and also identifying future strategic land and easement requirements.

2.3.2 Network renewal and enhancement

As noted in Table 2.1, network renewal/enhancement expenditure includes investment for asset renewal, physical security and compliance, inventory and spares, and operational support systems.

To identify the potential need for network asset replacement or enhancement investment we use our asset management framework and systems. Details of our asset management framework and systems are provided in our Transmission System Management Plan.

Asset renewal investment needs relate to sustaining the reliable, safe and secure provision of transmission services. Ensuring that transmission system assets comply with relevant technical, safety and environmental obligations may also lead to an investment need. The key asset renewal investment needs that influence the performance of the transmission system are:

- asset condition and risk;
- asset performance;
- load and generation customer needs and priorities
- spares availability and product support;
- technical obsolescence;
- physical security;
- technical, safety and environmental compliance; and

[7] For the state level forecast we produce high, medium and low forecast demand scenarios. AEMO is continuing to develop its state and connection point demand forecasting capability. We are continuing to work with AEMO in its development of a demand forecast methodology applicable to the Tasmanian jurisdiction from 2014.
[8] An intact transmission system is a transmission system from which no network element has been removed for maintenance, replacement or repair.

- operational support systems required for efficient operation of the transmission system.

We have comprehensive condition assessment and performance monitoring regimes in place that provide a detailed understanding of the condition and performance of our assets.

The availability of spare assets and parts, together with adequate product support from manufacturers has a significant impact on transmission system performance, particularly in the event of asset failure. Renewal driven by technical obsolescence is particularly relevant to secondary systems and communications assets, due to issues encountered when interfacing new equipment with existing equipment, the ability to source spares and gaining manufacturer support.

To maintain the functionality of network control and asset management systems, and enable efficiencies in the management of network assets, investment in the development and improvement of operational IT support systems may be needed.

2.3.3 Non-network

As noted in Table 2.1, non-network investment includes the (business support) IT and other business support categories. Non-network capital expenditure is comprised principally of corporate IT systems, general assets (such as motor vehicles, tools and equipment, and furniture) and minor assets to support the business.

Corporate IT system investment needs are determined in accordance with the priorities for information technology identified in the company's IT plan. This plan provides the framework for the efficient development and operation of the business systems and supporting facilities required to facilitate efficient overall management of the business.

Investment requirements for general and minor assets are largely driven by the economic life cycles of those assets.

2.4 Solutions identification

2.4.1 Network

To address an identified need, potential network and non-network solutions are identified, scoped and high level cost estimates prepared to enable the net present value of each viable alternative option to be analysed and assessed.

Where transmission system needs are identified, both network and non-network prospective solutions are analysed. Typical solutions considered include the application of network control schemes, transmission system reconfiguration, demand-side management, procurement of network support services, and distribution and transmission system renewal and augmentation. We work closely with the Tasmanian distribution business to ensure that both transmission and distribution solutions are assessed. In addition, potential solutions must accord with a range of regulatory requirements, including the minimum Tasmanian network performance requirements[9]. Other customers' input is also sought at this point.

We have also introduced an asset risk management system which provides a best practice approach to asset renewal decisions. A condition based risk management methodology is being implemented to provide us with improved capability to identify the optimal timing for asset replacement and optimise the trade-off between operating and capital expenditure. At this stage we apply the methodology to power transformers and intend to cover more asset classes over time.

If the preferred solution to meet an identified need is to develop the transmission system, a project is initiated. The initiation process includes the preparation of a project definition document and the registration of the project in the works planning and works prioritisation tools. As part of this process, the project is fully

[9] As specified in section 5 of the Electricity Supply Industry (Network Performance Requirements) Regulations 2007. The performance requirements of these regulations are scheduled to be amended prior to us submitting our 2014–19 Revenue Proposal.

scoped, optimised and justified through consultation with key stakeholders, including affected customers, to ensure the optimum project definition is developed. The optimisation process includes an assessment of the works program to identify any other projects that could be cost-effectively undertaken concurrently.

We seek input and participation from affected customers in developing our proposed network asset renewal and enhancement solutions to ensure alignment of customer expectations and plans. Proposed large renewal/enhancement capital works are identified in our Annual Planning Report.

For potential capital expenditure projects identified in our forecast program, completed project definition forms together with sufficient supporting information are provided to allow costing for each project to be estimated. For transmission system augmentation projects, we select the option that satisfies the Regulatory Investment Test for Transmission (RIT-T), and undertake consultation in accordance with this test (if the augmentation cost of any credible option exceeds $5 million). We also consult with our customers, including annually publishing information about emerging network issues and possible solutions in the Annual Planning Report.

Amongst other things, the Annual Planning Report summarises the performance of the transmission and distribution networks, the existing and potential future issues for the networks, and the potential network and non-network solutions to the issues. The Annual Planning Report invites customers and other industry stakeholders to provide feedback and other potential solutions to issues. We explain the key features of this report at forums across Tasmania.

2.4.2 Non-network

Capital expenditure on non-network assets generally reflects the economic life cycles of each asset type, together with investment to respond to changing technologies and business needs. IT system investment solutions are determined with reference to our IT system development plans, which provide for the development of the business systems and supporting facilities to enable efficient overall management of the business.

Forecasts of capital expenditure requirements for non IT assets generally reflect bottom-up assessments, having regard to the economic life cycles of non-network general assets and minor assets.

2.5 Contingent projects

The capital expenditure forecasting methodology identifies projects that meet the definition of contingent projects[10]: those projects where the scope, timing and cost are uncertain, that are highly dependent on particular triggers eventuating and have a cost of greater than $30 million. For example, the trigger might be a substantial increase in forecast demand in a certain geographical region, requiring a new prescribed connection site.

2.6 Program management

We consider the interaction between projects and optimise the program for cost and timing factors. This includes combining projects into programs of work and ensuring timing best balances customer constraints, network availability, and delivery priority. We also optimise delivery of the capital program with the operating and maintenance plan.

2.7 Cost analysis

We have a cost estimating process, specified in Transend's (Network) Project Estimating Manual. In that process, market cost data is applied to defined project scopes. As a proposed project proceeds through its life-cycle, the estimated cost becomes increasingly certain.

[10] In accordance with clause 6A.8.1 of the Rules.

To forecast project cash flows, we have developed S-curves that model the cash flow of generic project types that are representative of the projects typically undertaken. The generic project types vary in size, total duration, regulatory asset class composition, component cost breakdown and outage/activity duration. The S–curves reflect efficient project delivery for a well-planned generic project type and are based on our recent experience.

Traditionally, we have made best estimates of future project costs, and then applied a contingency to each project to allow for unforeseen cost increases. Applying a contingency for each project invariably gives rise to an excessive contingency amount at an aggregated program level. To address the shortcomings of this approach, we adopt a systematic risk-based evaluation. Such an approach is well recognised in industries with large project management experience.

Our forecasting methodology recognises cost estimation risk across the portfolio of projects. Cost estimation risk analysis is based on a statistical approach to evaluating the uncertainties associated with project cost estimates. Our forecasting methodology recognises cost estimation risk for different types of projects and across the entire portfolio of projects.

2.8 Key variables and assumptions

The following are key variables and assumptions that are expected to underpin our capital expenditure forecasts.

- We will assess the state and connection point peak demand forecasts, together with existing and forecast generation to identify emerging issues in the transmission system.
- Our asset management plans and strategies inform the forecast scope of efficient renewal/enhancement expenditure. We will manage the transmission system and supporting business assets to deliver operational and capital efficiency outcomes.
- We will meet our compliance obligations, including those relating to reliability requirements, physical security, safety, environment and other matters. The impact of known regulatory changes, such as changes to the Tasmanian Electricity Supply Industry (Network Performance Requirements) Regulations 2007, on our future capital expenditure requirements will be reflected in the expenditure forecasts.
- Our project cost estimates are supported by well-documented project scopes and good estimating practices that reflect efficient costs and therefore provide a reasonable basis for projecting future capital expenditure costs.
- We will apply an estimate of forecast labour and non-labour escalation rates and inflation for the forthcoming regulatory control period, and these will be applied in the forecasting methodology in the manner described in section 2.8.5.
- We will provide a forecast productivity improvement factor and cost savings (including capital expenditure synergies that are expected to arise from the merger of Transend and Aurora's network businesses) which assume that our operating environment, including external factors beyond our control, will be conducive to achieving the anticipated improvements.

These assumptions are discussed further below.

2.8.1 Forecast Demand and Generation

Some development needs and the optimal timing of solutions are sensitive to rates of load growth in different areas of Tasmania. Transend, the Tasmanian distributor and AEMO all undertake load forecasts, and given the inherent uncertainty of forecasting a range of variables into the future, there is some divergence in these forecasts.

We work with our customers and AEMO to understand inputs and assumptions to predict future load across the state. We will assess the sensitivity of our capital program to load forecasts and provide a probability weighted forecast of prescribed transmission projects affected by different peak demand forecasts.

Our 2013 Annual Planning Report indicates that with Basslink imports, there is adequate generation capability to meet forecast Tasmanian maximum demand to beyond 2028. We have received enquiries from a small number of wind farm developers. We have also worked with our generation customers to understand the prospect of changed generator operating regimes and/or retirement of generation plant. We will assess the sensitivity of our capital program to generating patterns and provide a probability weighted forecast of any prescribed transmission projects affected by different generation scenarios.

2.8.2 Asset Management Planning and Strategies

Our asset management planning meets good electricity industry practice that results in efficient outcomes. Where applicable, the plans consider the needs and preferences of directly affected customers. We will provide evidence of independent review and validation of our asset management planning and strategies.

2.8.3 Compliance obligations

We must meet a range of compliance obligations. In particular, our Revenue Proposal will be based on a works program planned to meet the requirements specified in the Rules and the Tasmanian Electricity Supply Industry (Network Performance Requirements) Regulations 2007. Our proposal will be prepared on the basis of compliance with existing obligations and known changes to these obligations.

2.8.4 Project scopes and cost estimates

We prepare project definitions and supporting information for each project included in the future capital expenditure program, to allow estimation of future project costs. The project scopes and estimates are based on reasonable assumptions about future requirements, given the best information available to us at the time.

We will engage an independent engineering consultant to conduct an assessment of our project cost estimates and estimating risk factor.

2.8.5 Application of escalation rates

We assign specific project estimate types to individual projects. These estimate types are broken down into three key components being procurement, installation and land.

Each of these three key components is further broken down into detailed cost items such as raw materials (eg aluminium, copper), civil construction (eg concrete, transport) and external and internal labour.

The detailed cost items consist of specific inputs. For example, the aluminium cost item consists entirely of aluminium, whereas the concrete cost item consists of 20 per cent crude oil and 80 per cent construction costs.

The forecast expenditure for each individual project is based on the application of the real escalation factors to the relevant input cost components as defined by the estimate type assigned to the project.

Our Revenue Proposal will provide detailed information on the estimate types and the breakdown to detailed cost items, and the individual inputs and their percentage contribution to the cost items.

2.8.6 Forecast productivity improvement factor and cost savings

Our forecast will reflect the expected capital expenditure efficiency gains arising from, amongst other things, the merger of Transend and Aurora. Details of these expected gains will be provided in our Revenue Proposal.

3 Transend's operating expenditure forecasting methodology

3.1 Categorisation of operating expenditure

We will prepare forecasts of operating expenditure by reference to well accepted categories[11]. We anticipate that total operating expenditure will be separated into 'Controllable operating expenditure' and 'Other operating expenditure'. Controllable operating expenditure includes:

- direct operating and maintenance expenditure, which comprises costs directly attributable to maintaining and operating the transmission system; and
- other controllable expenditure, which comprises the costs of activities and services not directly related to maintaining or operating the system, but that provide necessary support functions.

Other operating expenditure consists of network support costs associated with the payment for non-system alternatives to system augmentations, insurance and self-insurance, and benchmark debt raising cost allowances.

Figure 3.1 below provides a pictorial overview of the expenditure categories.

Figure 3.1 Transend's operating expenditure categories

<table>
<tr><td colspan="8">Total Operating Expenditure</td></tr>
<tr><td colspan="5">Controllable Operating Expenditure</td><td colspan="3">Other Operating Expenditure</td></tr>
<tr><td colspan="3">Direct Operating & Maintenance</td><td colspan="2">Other Controllable</td><td colspan="2">Other</td><td>Benchmark Allowances</td></tr>
<tr><td>Field Operations & Maintenance</td><td>Transmission Services</td><td>Transmission Operations</td><td>Corporate</td><td>Asset Management</td><td>Network Support</td><td>Insurance & Self-insurance</td><td>Debt Raising</td></tr>
</table>

Table 3.1 provides descriptions of our operating expenditure categories and the categories of prescribed transmission services to which they relate[12].

These operating expenditure categories are the same as those used in our present revenue determination except for insurance which will be categorised as Other operating expenditure, in line with its treatment for Efficiency Benefit Sharing Scheme (EBSS) purposes in the current 2009–14 regulatory period.

[11] In accordance with schedule S6A.1.2(1) of the Rules.
[12] As required by schedule S6A.1.2(1) of the Rules.

Table 3.1 Categories of operating expenditure

Expenditure type	Category	Definition	Prescribed transmission services
Controllable Operating Expenditure			
Direct operating and maintenance	Field operations and maintenance	Includes all field-based operations and maintenance functions (planned, condition assessment and corrective). The field maintenance category includes the following sub-categories—substations, protection and control, operational communications, transmission lines and easements.	Exit, entry, TUOS and common transmission services
	Transmission services	Includes the functions associated with providing engineering and asset services, management of field operating and maintenance contracts, environment and safety management, asset condition monitoring and analysis, works planning and coordination.	Exit, entry, TUOS and common transmission services
	Transmission operations	Includes the functions of managing the real-time operation of the Tasmanian power system. This includes planned outage security analysis, power system incident analysis, assessment of power system technical envelope, formation of limit equations for AEMO, preparation of switching sheets, coordination of field switching activities and technical support for the network operations and control system.	Exit, entry, TUOS and common transmission services
Other controllable	Asset management	Includes the functions of operational activities that support the development and ongoing management of transmission system assets. This includes asset strategy, customer management, grid planning, project initiation, regulation and compliance, and system modelling and planning.	Exit, entry, TUOS and common transmission services
	Corporate	Includes the functions of accounting, administration, audit, business planning, corporate governance, corporate IT, facilities management, finance, human resources, legal, office of chief executive officer and company secretary, and public relations.	Common transmission services
Other			
Other operating expenditure	Network support	Payment for cost-effective alternatives to transmission system augmentation.	TUOS
	Insurance	Insurance premiums	Common transmission services
	Self-insurance	Self-insurance allowance	Common transmission services
	Debt raising	Benchmark debt raising allowance.	Common transmission services

We will ensure that the operating expenditure forecast includes only operating expenditure that has been properly allocated to prescribed transmission services in accordance with the principles and policies set out in our *Cost Allocation Methodology* approved by the AER[13].

Our forecast of required operating expenditure will not include any amounts relating to a project that is included as a contingent project[14].

3.2 Overview of operating expenditure forecasting methodology

In broad terms, our operating expenditure forecasting methodology follows the approach adopted by the AER in its recent revenue cap decisions. In particular, under the operating expenditure forecasting methodology:

- the audited 2012–13 total prescribed operating expenditure will be used as a starting point for projecting future Controllable operating expenditure requirements; and
- Other prescribed operating expenditure (network support, insurance premiums, self-insurance and debt raising costs) requirements will be forecast separately.

The methodology comprises the following three steps.

Step 1 Derive the Controllable operating expenditure forecast as follows:

(a) commence with actual Controllable operating costs for the 2012–13 base-year;

(b) deduct non-recurrent operating expenditure items and any other categories of expenditure which are not reflective of future expenditure requirements and should therefore be subject to a zero-based (bottom-up) forecast;

(c) add the forecast cost of scope changes in the years that such expenditure is expected to be required;

(d) scale up the sub-total annually by using applicable growth factors which reflect the increase in operating expenditure requirements driven by growth of the business;

(e) add to that scaled-up sub-total the forecast non-recurrent operating expenditure for the items deducted in step (b) (using zero-based cost estimates) for each year of the forthcoming period;

(f) scale up the total obtained in step (e) annually by using applicable labour and non-labour escalation factors, and forecast CPI to derive the unadjusted forecast of Controllable operating expenditure for the forthcoming regulatory period in $June 2014; and

(g) Reduce the total obtained in step (f) by an annual productivity target to derive the productivity-adjusted forecast of Controllable operating expenditure, including synergy benefits from the merger of Transend and Aurora's network businesses for the forthcoming regulatory period.

[13] In accordance with the requirements of clause 6A.6.6(b)(2) of the Rules. Transend, Cost Allocation Methodology (TNM-GS-809-0751), Issue 3.0, April 2008. See: http://www.transend.com.au/ournetworks/electricity/regulation/

[14] Under clause 6A.8.1(b) of the Rules.

Step 2 Derive the Other operating expenditure forecast in $June 2014 as follows:

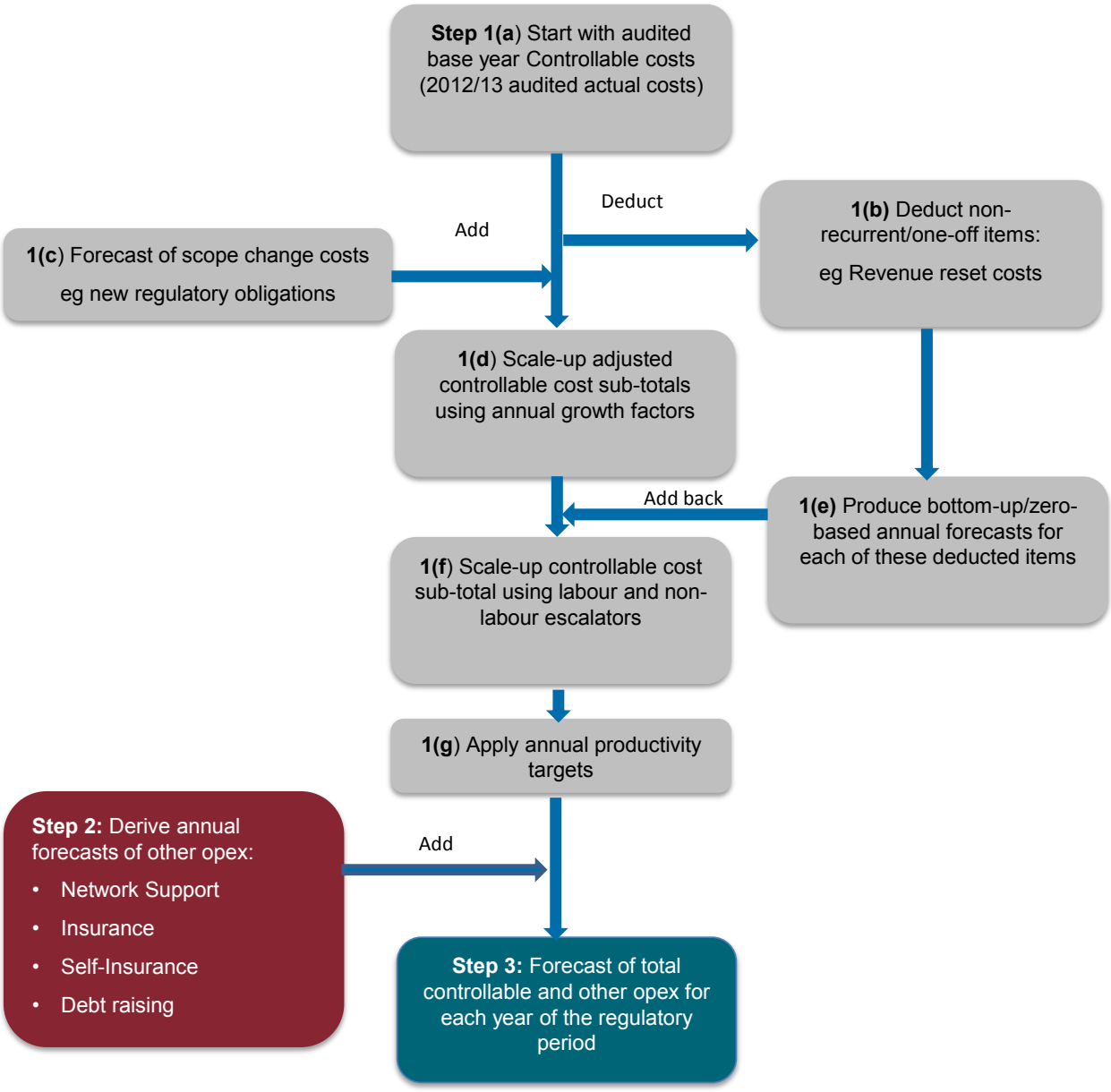
Forecasts of each of the four elements (namely network support, insurance premiums, self-insurance and debt raising costs) will be developed by adopting a separate forecasting approach, appropriate for each element. Where applicable, the forecasts of these costs will reflect any synergy benefits arising from the merger of Transend and Aurora's network businesses.

Step 3 Derive the operating expenditure forecast in $June 2014 as follows:

Controllable operating expenditure and Other operating expenditure annual forecasts will be summed to provide the total operating cost forecast for each year of the forthcoming regulatory period.

A pictorial overview of the development of Transend's forecast operating expenditure using the forecasting methodology is illustrated in Figure 3.2.

Figure 3.2 Transend's proposed operating expenditure forecasting methodology



Our operating expenditure forecasting, budgeting and delivery processes are supported by a sound governance framework.

We work with our customers to provide opportunities for their needs and priorities to be reflected in our expenditure plans—our prospective productivity targets reflect feedback from customers and other consumers regarding the need to continue reducing our operating cost base, even in the face of increasing obligations.

3.3 Key variables and assumptions

The following are key variables and assumptions that are expected to underpin our operating expenditure forecasts.

- We will provide evidence to demonstrate that 2012–13 base-year Controllable costs are efficient, and therefore provide a reasonable basis for projecting future operating expenditure requirements.
- We will assess the cost impact of asset growth on operating expenditure, and the assessed growth factor will be applied in the manner described in section 3.2.
- We will provide an estimate of labour and non-labour operating expenditure input escalation rates for the forthcoming regulatory control period, and these will be applied in the forecasting methodology in the manner described in section 3.2.
- We will provide a forecast productivity improvement factor and cost savings (including operating expenditure synergies that are expected to arise from the merger of Transend and Aurora's network businesses), which assume that our operating environment, including external factors beyond our control, will be conducive to achieving the anticipated improvements.
- Our asset management plans and strategies inform the forecast scope of efficient field operations and maintenance expenditure.
- The impact of known regulatory changes, such as the AER's Better Regulation program, on our future operating expenditure requirements will be reflected in the expenditure forecasts.

Further information on the efficient base year, asset growth scaling factors and labour and non-labour escalation rates is provided below.

3.3.1 Efficient base year

The 2012–13 financial year will be the base year for determining the recurrent expenditure component of the Controllable operating expenditure forecast. This will be the most recent financial year for which audited financial accounts are available.

Our proposed forecasting methodology is consistent with regulatory best practice and reflects the approach adopted by the AER in recent decisions. The financial incentive to minimise operating expenditure, and the operation of the Efficiency Benefit Sharing Scheme, provide reasonable assurance that the base year expenditure is efficient.

It is instructive to benchmark our operating expenditure against our own past performance and our peers. We expect that benchmarking studies will support the view that our 2012–13 financial year is an appropriate basis from which to forecast Controllable operating expenditure.

3.3.2 Asset growth scaling factors

As already noted, it is appropriate for our operating expenditure forecast to take into account the cost impact of a growing transmission system. In broad terms an increase in the size of our network creates a growing demand for operating and maintenance services.

As noted in recent AER decisions, asset growth does not result in a one-for-one increase in operating expenditure. This is because transmission businesses are able to realise the benefits of economies of scale, where marginal costs are lower than average costs. The extent of scale economies differs across expenditure categories. We will use available evidence, along with our experience and judgement in developing estimates of the growth scaling factors for each expenditure category.

3.3.3 Labour and non-labour escalation rates

Labour escalation

Labour costs have a significant influence on our operating expenditure. We will engage an independent economic forecaster to provide forecasts of real unit labour cost movements for the purpose of preparing the Revenue Proposal.

Non-labour escalation

Non labour operating components will be assumed to increase in line with the CPI.

4 Closing comments

This document has provided an overview of the methodologies that we propose to use to prepare the forecasts of our operating and capital expenditure that will form part of our Revenue Proposal for the regulatory control period commencing on 1 July 2014. This document was prepared in accordance with clause 6A.10.1B and clause 11.58.4(n) of the Rules.

We consider that the forecasting methodologies set out in this submission will deliver expenditure forecasts that comply with the Rules requirements and provide a reasonable forecast of efficient costs to operate and maintain Tasmania's transmission system. Our Revenue Proposal will set out expenditure forecasts based on these methodologies.

We welcome feedback on these methodologies from any interested party.

Appendix 1

Rules requirements

The "Economic Regulation of Network Service Providers" rule change determination made by the AEMC on 29 November 2012 introduced a requirement for each TNSP to notify the AER of the methodologies that the TNSP proposes to use to forecast its operating and capital expenditure. In particular, clause 6A.10.1B of the Rules states:

"Notification of approach to forecasting expenditure

(a) A Transmission Network Service Provider must inform the AER of the methodology it proposes to use to prepare the forecasts of operating expenditure and capital expenditure that form part of its Revenue Proposal.

(b) A Transmission Network Service Provider must submit the information referred to in paragraph (a):

1. at least 24 months before the expiry of a revenue determination that applies to the Transmission Network Service Provider; or

2. if no revenue determination applies to the Transmission Network Service Provider, within 3 months after being required to do so by the AER."

In relation to point (b)1 above, transitional arrangements in the Rules require us to submit our forecasting methodology by 30 November 2013.

The Rules do not provide any specific guidance on the information that TNSPs should provide to satisfy this provision. In scoping this document, therefore, it was instructive to revisit the development of the rule and the AEMC's reasoning to support its introduction. In particular, the AEMC initially concluded that the AER should develop a standard forecasting methodology that should be adopted by each network service provider[15]:

> "In the draft rule determination the Commission introduced a requirement for the AER to develop a standard expenditure forecasting methodology. The AER would determine at the framework and approach stage how the methodology should be applied by a specific NSP which it would be required to include in their regulatory proposals, in addition to any differing approach they may take. This was determined on the basis that it would facilitate engagement on the expenditure forecasting methodologies adopted by NSPs as well as enable the AER to compare information from NSPs on a similar basis. The AER is strongly supportive of the draft rule whereas NSPs are strongly opposed to the imposition of forecasting methodologies to address the problems raised. However, there is agreement that early engagement on expenditure models is desirable."

In its final determination, however, the AEMC concluded that responsibility for forecasting should remain with each NSP, and that the AER should also provide guidelines on how it intends to assess the expenditure forecasts[16]:

> "The Commission accepts that responsibility for developing a NSP's proposal should remain with the NSP. This includes the development of an expenditure forecast in a manner that the NSP views as appropriate. It is the AER's role to assess the NSP's proposal using any tools it views as appropriate. Nevertheless, it remains important for the AER to receive information which enables it to effectively assess a NSP's proposal and be aware of how the NSP plans to forecast its expenditure."

[15] AEMC, Rule Determination, National Electricity Amendment (Economic Regulation of Network Service Providers) Rule 2012; National Gas Amendment (Price and Revenue Regulation of Gas Services) Rule 2012, 29 November 2012, page 108.

[16] Ibid, page 109.

In addition, the AEMC reiterated its view that early engagement on the TNSP's expenditure forecasting methodologies is a central purpose of the Rule requirement. The AEMC also noted the importance of early engagement on the AER's information requirements to assess the expenditure forecasts[17]:

> "The Commission remains of the view that early engagement on expenditure models is desirable. This view is shared by NSPs in submissions. The ENA has proposed an alternative to the Commission's approach in the draft rule determination - that NSPs advise the AER of their forecasting methodologies at the framework and approach stage."
>
> […]
>
> "The Commission is reluctant to formalise a requirement for engagement. However, expenditure models are an integral component in the assessment process such that mandating a minimum requirement for engagement provides a starting point in this important area. Therefore, the Commission's final rule determination is to adopt the ENA's proposal that NSPs will be required to advise the AER of its approach to expenditure forecasting.
>
> That is, the NSP and the AER will engage on the information requirements for the AER's assessment models, as well as how the NSP approaches expenditure forecasting.
>
> The Commission views the early engagement with NSPs, as well as broader industry engagement in developing the guidelines, as beneficial. It will potentially save time and effort for both parties once the regulatory process has commenced."

On the basis of the information set out above, it is clear that the purpose of clause 6A.10.1B is to encourage early engagement between the AER and the TNSP, and to assist the AER in its assessment of the TNSP's Revenue Proposal. Transend also notes that clauses SA6.1.1(2) and SA6.1.2(2) of the Rules require a Revenue Proposal to contain information relating to the methodology used for developing the capital and operating expenditure forecasts respectively. Therefore, it would be reasonable to interpret clause 6A.10.1B as requiring us to provide the AER with an early draft of the expenditure forecasting methodology that will be provided in our Revenue Proposal in May 2014.

AER's Better Regulation Reform Program

In preparing this submission, we have carefully considered the likely implications of the AER's guidelines that are currently being developed as part of the AER's better regulation reform program.

In July 2013, the AER published its draft Consumer Engagement Guideline, which sets out the AER's expectations in relation to consumer engagement. We recognise that assisting consumers to better understand the regulatory process, including the proposed methodologies to forecast expenditure, will provide better regulatory outcomes. Therefore, we intend to provide this submission to the AER and a range of other stakeholders. For example, we intend to explain the forecasting methodology to consumers to assist them in better understanding our Revenue Proposal.

In August 2013, the AER also published its draft Expenditure Forecast Assessment Guideline, which explains the AER's approach to assessing whether a TNSP's expenditure forecasts satisfy the Rules requirements, and the information the AER requires for the purpose of that assessment.

The AER's explanatory statement that accompanied the draft Expenditure Forecast Assessment Guideline made the following observations regarding the AER's assessment of a TNSP's forecasting methodology[18]:

> "We will assess the methodology the NSP utilises to derive its expenditure forecasts, including assumptions, inputs and models. Similar to the governance framework review (see section 4.4.3), we will assess whether the NSP's methodology is a reasonable basis for developing expenditure forecasts that reasonably reflect the Rules criteria.

[17] Ibid, page 110.

[18] AER, Better Regulation, Draft Expenditure Forecast Assessment Guidelines for electricity transmission and distribution, August 2013, page 48.

> We expect NSPs to justify and explain how their forecasting methodology results in a prudent and efficient forecast, so if a methodology (or aspects of it) do not appear reasonable, we will require further justification from the NSP. If we are not satisfied with further justification, we will adjust the methodology such that it is a reasonable basis for developing expenditure forecasts that reasonably reflect the Rules criteria. This is similar, for example, to our past assessments of the probabilistic models that some TNSPs used to develop augex forecasts. We assessed the model and generally found it to be reasonable. On the other hand, we did not consider inputs to the model such as the demand forecast or certain economic scenarios to be reasonable in some cases. We therefore made adjustments to those particular inputs to the model.
>
> We consider a good expenditure forecasting methodology should reflect the principles set out in section 4.5 and result in forecast expenditure that is accurate and unbiased."

The AER's principles that are referred to in the above excerpt are:

- Validity;
- Accuracy and reliability;
- Robustness;
- Transparency;
- Parsimony; and
- Fit for purpose.

In developing the forecasting methodology presented in this submission, we have had regard to the AER's principles in its draft guideline, and the AER's accompanying commentary in its draft explanatory statement.