7 OPERATING AND MAINTENANCE EXPENDITURE

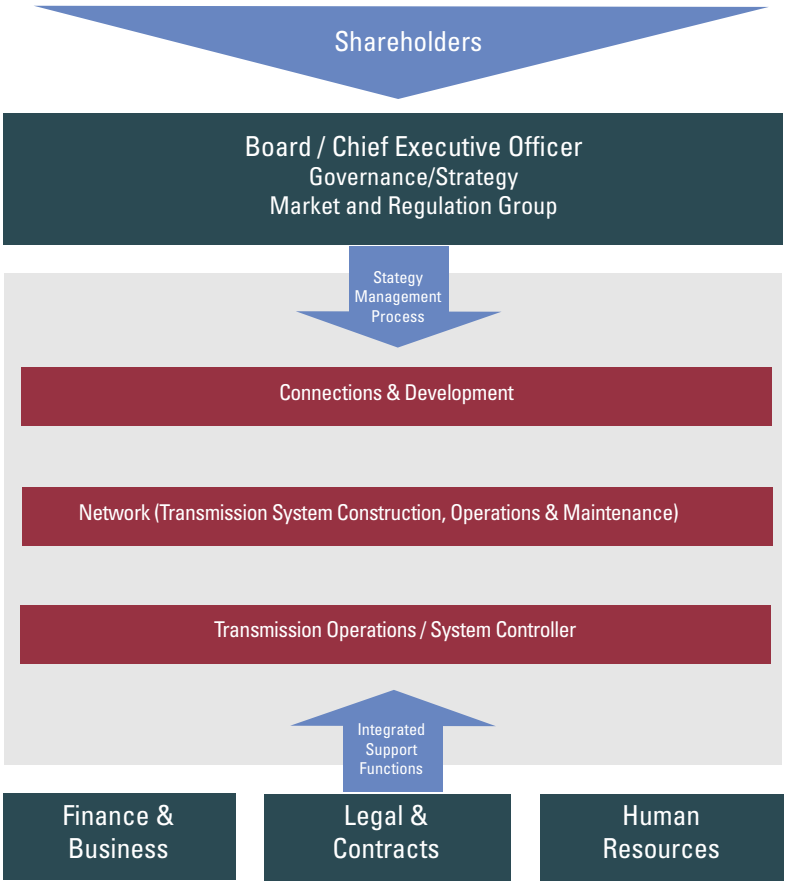
7.1 Introduction

This chapter sets out Transend's estimates of operating and maintenance (O&M) expenditure for the forthcoming regulatory period.

All costs are presented in 2002-03 dollar terms.

Transend's business structure, as illustrated in Figure 7.1, mirrors the company's business processes. Transend's three core business functions are supported by the corporate and generic business support activities that one would expect to find in any business.

Figure 7.1: Transend's business structure



Transend's approach to forecasting O&M expenditure is based on a detailed analysis of the key cost drivers for each of the three core business functions – Connections & Development, Network and Transmission Operations. In turn, these core functions establish the resource requirements for the business support and corporate functions.

This forecasting approach provides a robust 'bottom-up' assessment of future costs, rather than relying on recent cost performance as a forecasting tool.

Transend's forecasting approach provides an opportunity to examine the challenges facing the business in the forthcoming regulatory period:

- preparing the company for NEM entry
- effective participation in the NEM environment
- meeting future demand for Transend's services, including new connection enquiries from customers
- aligning asset management techniques with industry best practice
- improving service performance
- ensuring O&M and capital expenditures are combined to minimise total life-cycle costs
- delivering efficiency gains, in terms of improved performance and increased output.

Of these challenges, NEM entry is the most pervasive. From Transend's perspective, it will necessitate three types of change to the company's operations:

- new systems to interface with NEMMCO
- new regulatory issues and responsibilities
- new costs associated with the transfer of system control to NEMMCO.

Each of these three changes is discussed in turn.

New systems will be needed for:

- wholesale energy metering, which will need to comply with Code requirements and interface with NEMMCO's systems
- the pricing regime, which will need to align with the NEM transmission pricing regime
- data collection and monitoring, which is required to meet the Commission's framework for service standards
- the automated System Protection Scheme, which is required to lessen the risk of system instability or overloading during high network transfers after NEM entry
- new obligations or regulatory measures, which could require TNSPs to be more responsive to the wholesale generation market[1]
- network limit equations, which must be developed and maintained.

Participation in the NEM will also require Transend to manage a number of new regulatory issues and responsibilities, including:

- more extensive regulatory reporting, with Transend having to report to both the Tasmanian Energy Regulator and to the Commission
- responding to trading and regulatory issues associated with operating in the NEM

[1] This point was highlighted in a recent speech by Allan Fels in which he argued that transmission networks 'need incentives to operate in a manner that takes account of the networks' influence on the energy market itself'.

- participating in various forums on possible changes in industry structure, including the potential development of a central planning authority for the NEM or a 'national TNSP'
- liaising with NEMMCO to provide information needed for operating the system, coordinating outages and facilitating future planning.

In addition to these system and regulatory requirements, NEM entry will also create new costs for Transend as a TNSP. In particular:

- transfer of the System Controller function to NEMMCO will require the functions of the local system operator to be transferred to Transend in its role as TNSP.
- more of Transend's overhead costs will be allocated to its TNSP function, with its new local system operator capacity. There will be no recovery of overheads from the System Controller, which will dissappear as a separate entity.

In addition to these high-level impacts on Transend's business, NEM entry will bring more work to Transend's core functions. These demands are factored into Transend's O&M expenditure forecasts. Against the backdrop of NEM entry, the remainder of this chapter is structured as follows:

- Section 7.2 presents a detailed analysis of Transend's O&M expenditure forecasts for the three core functions and business support activities, including:
  - a description of each function
  - past efficiency gains and achievements
  - drivers for change
  - O&M expenditure requirements
  - scope for future efficiency gains.

  Section 7.2 concludes with a summary of Transend's total O&M expenditure forecasts.
- Section 7.3 benchmarks Transend's O&M expenditure forecasts with other TNSPs for the forthcoming regulatory period.
- Section 7.4 provides concluding remarks.

7.2 O&M expenditure forecasts

O&M expenditure forecasts are provided for each of three core business functions — Connections & Development, Network and Transmission Operations. The corporate resources needed to support these core functions are subsequently presented.

7.2.1 Connections & Development Group

Connections & Development Group — functions and activities

The Connections & Development Group manages a range of customer-relationship and system development issues. These functions can be categorised as:

- customer management:
  - customer-relationship management, including new entry and exit enquiries
  - negotiating customer and network support contracts

    - pricing and billing for customers
    - overseeing metering arrangements
    - managing customer and general public EMF enquires
    - regulatory and contract reporting
    - Tasmanian Electricity Code and transmission licence compliance.
- system performance:
    - preparing the *Annual Planning Review* (APR)
    - determining the impact of new and modified connections on system performance
    - managing quality of supply monitoring.
- project development:
    - identifying options for project development
    - consulting with stakeholders
    - obtaining planning and regulatory approvals for development projects
    - preparing project briefs
    - managing EMF and town-planning issues.

Connections & Development Group — past achievements

The scope of work undertaken by the Connections & Development Group has significantly increased since the last pricing determination. During this period:

- the number of connection enquiries and applications assessed grew from three in 1999 to 24 in 2002
- the number of connection agreements managed by Transend grew from two in 1999 to eight in 2002
- the process for network augmentation changed significantly, with more emphasis on public consultation and exploring non-network solutions.

This increase in output was achieved through a mix of additional resources and efficiency gains.

Connections & Development Group — drivers for change

There are five principal business drivers over the forthcoming regulatory period that will affect the Connections & Development Group's future activities and costs:

- NEM entry
- transfer of the System Controller
- Basslink
- new generation
- vesting contracts.

The impact of each of these drivers is summarised in Table 7.1.

Table 7.1: Drivers for change — Connections & Development Group (C&D)

Issues	Impacts
Driver: NEM entry	

• Introduction of:
  • a wholesale energy market
  • customer contestability.
	• Participation in the inter-regional planning committee and interconnections options working group.
	• NEMMCO's *Statement of Opportunities* will require C&D input.

• Transend must satisfy the requirements of the National Electricity Code.	• Inter-company metering will be upgraded to comply with the Code as part of the capex program. Additional resources are needed for ongoing management of this system, and interface with NEMMCO and customers on metering issues. • Limit equations for system planning will require maintenance and updating.
Driver: Transfer of System Controller	
• Some system security and planning functions will transfer from the Tasmanian System Controller to NEMMCO, but residual functions will be retained by Transend as TNSP	• C&D will take future responsibility for some planning functions currently undertaken by the System Controller (e.g. annual *Planning Statement*).
Driver: Basslink	
• Operation of Basslink creates additional risks for quality of supply.	• Monitoring of quality of supply will be developed through the capital and O&M expenditure programs. Ongoing management of this program will be required before and after Basslink.
• Increased energy flows through the network will require a system protection scheme (SPS) to be installed.	• Operation of the SPS will require management of contracts for the interruption of load and generation.
Driver: New generation	
• Access to new markets and renewable energy certificates is stimulating new generation developments, particularly wind generation.	• Managing the increased number of connection enquiries and applications, particularly for new generation. • Increased complexity of system analysis to address intermittent nature of wind generation. • More connection agreements with generators and customers.

Driver: Vesting contracts	
Issues	Impact
• Unwinding of vesting contracts may lead more customers to contract with Transend directly as prices become more transparent.	• Increased negotiation of customer contracts.

Connections & Development Group — forecast expenditure

Table 7.2 summarises Transend's O&M expenditure forecasts for the Connections & Development Group. The expenditure forecasts comprise the following cost items:

- $0.5 m per annum from 2005-06 as a result of the transfer of planning functions from the System Controller. This cost forecast compares favourably with the System Controller's costs for this activity, which are estimated to be $0.7m per annum.

  The Connection & Development Group's lower cost forecast reflects potential efficiencies in combining the System Controller planning functions with those currently undertaken by the Connections & Development Group.

- Increases in Transend's Quality of Supply monitoring program. This program started in 2002-03 and will continue to 2008-09. These costs peak at $0.4m per annum in 2004-05 and 2005-06 and then reduce to $50,000 per annum.

- Ongoing management of inter-company metering from 2005-06 onwards.

The O&M expenditure forecasts exclude the costs arising from processing connection applications. These costs will be recovered directly from project proponents on an avoided cost basis. This is further discussed in Appendix 1.

Table 7.2: Transend's forecast of Connections & Development's O&M expenditure January 2004 to 2008-09 (in 2002-03 $m)

	Jan to Jun 2004	2004-05	2005-06	2006-07	2007-08	2008-09
Connections & Development	1.9	4.1	4.5	3.6	3.6	3.6

Connections & Development Group — scope for efficiency gains

In assessing the Connections & Development Group's O&M expenditure forecasts, Transend has considered the scope for delivering efficiency improvements. One area where improvements can be made is in relation to accelerating the external regulatory approval process for development proposals. This can be achieved by working with regulators to streamline their requirements, and by facilitating the adoption of network security standards. Transend's better understanding of the regulatory approval processes should also help deliver efficiency improvements.

Further efficiency gains are also expected from the following initiatives:

- Development and improvement of internal systems.
- Improvements in estimation techniques.
- Better management of connection enquiries through improved policies and documentation.
- Improved processes to ensure the timely calculation of transmission prices.

Transend's expenditure forecasts in Table 7.2 incorporate the cost savings associated with these expected efficiency gains. The O&M expenditure forecasts also assume that NECA and the Commission will soon resolve the outstanding pricing issues for network connections and augmentations. Without this important advance, it is likely that the actual costs of the Connections & Development Group will be higher than forecast.

7.2.2 Network Group

Network Group — functions and activities

The Network Group focuses primarily on providing transmission services. This involves two major functional areas:[2]

- network strategy, performance and compliance:
  - overseeing occupational health and safety, environment and quality management systems
  - managing network management policies, strategies, and procedures to meet Transend's obligations under the transmission licence[3]; customer connection agreements; applicable acts, codes and legislation
  - benchmarking costs, service performance and working practices to ensure alignment with industry best practice
  - measuring and analysing asset and system performance
  - internal and external reporting of asset and system performance
  - administering and maintaining Transend's Asset Management Information System.
- service delivery:
  - operating and maintaining Transend's assets in the field: transmission lines, substations, protection and control assets[4]
  - managing easements for transmission lines (including vegetation management)
  - coordination and management of outage planning activities.

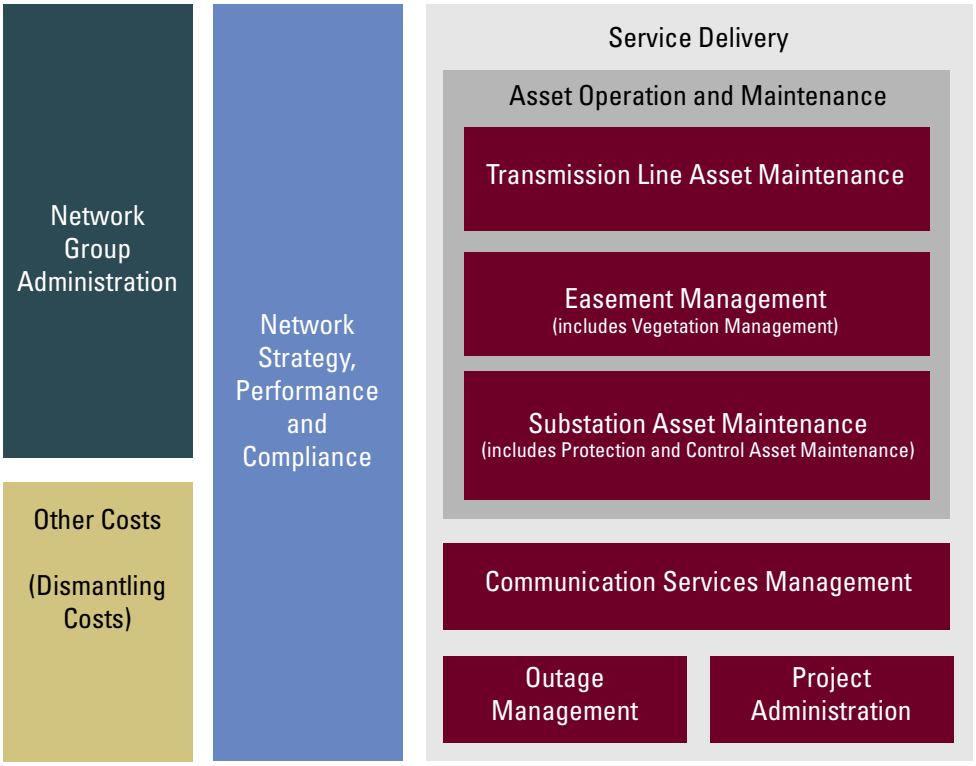
Figure 7.2 shows the major building blocks of the Network Group's expenditure for the forthcoming revenue period. The service delivery function makes up most of the operating and maintenance expenditure of the Network Group.

[2] In the current (pre-NEM) environment, the transmission network operations function also falls under the Network Group. However, in preparing this revenue application, Transend has separated these costs from the Network Group and included them with the 'Transmission Operations' function.

[3] Transend has an obligation under its licence to prepare plans for Asset Management, Vegetation Management, Service and Compliance. Transend is obliged to follow the strategies in these plans and monitor its performance against the plans.

[4] Transend does not own communication network needed for transmission protection, remote monitoring and control, and operational data and voice communication. Transend purchases the necessary communication services.

Figure 7.2: Network Group's expenditure building blocks



Network Group – past achievements

The Network Group has adopted a number of initiatives to align its functions and activities with industry best practice. This has led to an increase in the Group's scope of activities, and improvements in the way they are carried out. These improvements include:

- the development and deployment of an environment management system accredited to ISO14001
- the formal adoption and implementation of a robust asset management process, including:
  - enhancements to asset management strategies, policies, design and construction standards
  - improvements to asset condition assessment programs, and completion of the first round of condition assessment of protection assets and major substation asset classes
  - improvements to maintenance practices and processes to embrace industry best practice
- the application of techniques to increase asset utilisation, such as the use of dynamic real time ratings for transmission lines (which reduce transfer constraints through transmission lines by operating them in a variable rating mode)
- the better application of data collection technologies and information systems, including implementation of a wayleave agreement management system using Geospatial media
- the coordination and integration of maintenance tasks on a transmission bay or circuit basis to improve outage management.

In many instances, these initiatives will need further development and management effort to deliver the full potential benefits.

Network Group – drivers for change

The principal changes in the forthcoming regulatory period will be driven by:

- NEM entry
- changing regulatory, community and market environments, including on-going changes to codes and legislation
- alignment with industry best practice
- increasing service provider costs
- driving existing assets 'harder'
- implementing new asset- and information-management technologies
- improving service performance.

Details of the impact of these drivers for change are presented in Table 7.3.

Table 7.3: Drivers for change — Network Group

Driver: NEM entry	
Issues	Impact
• Changes in outage management as a result of NEM entry.	• New outage-handling systems and processes required after NEM entry. • Increased coordination and liaison requirements. • More robust outage-management tracking systems.

• Access to plant (to take outages):
  • more difficult for particular periods of the year
  • available only for shorter periods.
	• Increased risk management and management of work plans.
	• More works undertaken on weekends and outside normal working hours.

Driver: Changing regulatory, community and market environments	
Issues	Impact
• Increased focus on monitoring performance and reporting to regulatory bodies and customers.	• Improved data collection systems and processes. • Increased workload in data management, preparation, and analysis of performance reports.
• Increased scope of compliance activities for occupational health and safety, and for environment management systems.	• Increased training and awareness for Transend employees, contractors and public. • More thorough reviews of contractor management plans.
• Introduction of new codes, e.g. National Electricity Network Safety Code.	• Deployment and maintenance of a comprehensive safety management system.
• Increased security awareness.	• Increased requirement for site audits. • Increased operating and maintenance costs associated with new security systems.
• More stringent environment and land owner requirements.	• Enhancements to asset maintenance practices to meet land owner requirements.
• Need to provide circuit rating and other information to NEMMCO, other Code participants and market.	• Increased management of systems and processes for handling of circuit ratings and other required information.
Driver: Industry best practice	
Issues	Impact
• Aligning asset maintenance practices with best industry practices.	• Refinements to condition assessment practices for some assets. • Introducing condition assessment for some assets for the first time.
• Ensuring Transend's asset management strategies are continually refined and maintained.	• Resourcing to maximise benefits of participation in benchmarking studies. • Improving processes to allow the incorporation of staged refinements to strategies.
Driver: Increasing service provider costs	
Issues	Impact
• Aligning provision of communication services with Tasmanian market rates for these services.	• Increases in communications costs.

Driver: Driving existing assets 'harder'	
Issues	Impact
• Maintaining transmission line assets beyond their expected technical life (where this is more cost effective than constructing new lines).	• Improved condition assessment programs. • More comprehensive maintenance practices to reduce risks with aged transmission assets.
• Reducing transfer constraints and meeting market demands.	• Increased costs of operating and maintaining infrastructure that supports dynamic operation of circuits. • More frequent condition assessment.
• New system protection scheme required to enable the network to meet the system peak demand (under maximum flow conditions after NEM entry).	• Increased scope in communication services to enable the system protection scheme to operate.
Driver: New asset- and information-management technologies	
Issues	Impact
• Introduction of new technology solutions to replace obsolete technology.	• Higher costs of training and skills retention for specialised technologies.
• Need for formal system-based management of asset information.	• Increased rigour in running the asset management information system.
Driver: Improving service performance	
Issues	Impact
• Rising number of human errors in Transend's operation and maintenance, affecting service performance.	• Improvements in processes, documentation and training. • More rigour in contractor audits and quality assurance.

In addition to these drivers, the Network Group's O&M costs will increase in the forthcoming regulatory period as a result of two other factors:

- Refinements to Transend's capitalisation policy, to align with the Commission's recent regulatory decisions, mean that certain activities are now expensed rather than capitalised.
- Implementation of development plans for north-east and southern Tasmania leads to 'abnormal' O&M costs for dismantling redundant transmission circuits and associated assets.

Network Group - forecast expenditure

Transend has adopted a very rigorous approach to forecasting its requirements for O&M expenditure in the forthcoming regulatory period. Analysis of Transend's external and internal environment over the coming regulatory period was considered, particularly with regard to Transend's contracting environment. Reviews of asset management strategies and asset condition were also undertaken, based on Transend's understanding of industry best practice.

The review led to the development of a robust 'function by function' and 'asset by asset' works plan. This review of functions and activities shows that there is a need to increase the Network Group's O&M expenditure. Transend's expenditure plans have been staged so that both the O&M and capital works can be delivered in the most efficient manner.

The Network Group's forecast O&M expenditure for the forthcoming regulatory period is summarised in Table 7.4.

Table 7.4: Transend's forecasts of Network Group expenditure January 2004 to 2008-09 (in 2002-03 $m)

	Jan to Jun 2004	2004-05	2005-06	2006-07	2007-08	2008-09
Network strategy, performance and compliance	0.7	1.5	1.4	1.6	1.6	1.7
Service Delivery[1]	8.3	17.0	17.2	17.2	17.1	17.2
Network Group administration	0.6	1.1	1.1	1.1	1.1	1.1
Network Group Costs	**9.6**	**19.6**	**19.7**	**19.9**	**19.7**	**20.0**
Dismantling[2]	--	1.9	1.0	1.9	--	--
Total	**9.6**	**21.5**	**20.7**	**21.8**	**19.7**	**20.0**

[1] Includes communication services and some categories of expenditure previously classified as capital expenditure.

• Transend does not own the communications network in Tasmania, therefore, the company must procure these services.

• Due to refinements in Transend's capitalisation policy to align with the Commission's recent regulatory decisions, certain programs of works are now expensed rather than capitalised. Activities that fall under this category include power transformer mid-life overhauls, replacement of transformer bushings, and corrosion repairs on substation steel structures.

[2] Dismantling costs are listed separately because they are an abnormal O&M expense.

Network Group — scope for efficiency gains

In forecasting O&M expenditure for the Network Group, Transend has considered the scope for improving efficiency. Principally, Transend believes that operations can be made more efficient by:

- more effective application of documented asset management strategies, practices and procedures
- better management of contractor performance
- implementing an integrated management system for occupational health and safety, environment and quality
- integrating Transend's databases, systems and reports relating to performance and incident reporting
- implementing a robust asset management information system (AMIS)
- standardising systems and procedures.

These gains in efficiency are reflected in the O&M expenditure forecasts for the Network Group shown in Table 7.4.

7.2.3 Transmission Operations Group

Transmission Operations Group — functions and activities

Transend's existing network operations group acts as an agent for the Tasmanian System Controller. The Group's present functions include:

- real-time operation of the transmission system (24 hour, seven days a week control room)
- oversight of the network monitoring and control system.

In the lead-up to NEM entry, a new operational group will be created, incorporating the functions of the existing network operations group and the new functions required for operations in the NEM. This group is to be known as the Transmission Operations Group.

A substantial proportion of the costs of the activities to be undertaken by the Transmission Operations Group is presently recouped through a service contract with the System Controller. NEM entry will significantly affect both the costs of transmission operations and the cost recovery mechanism. The principal change is that some aspects of the system controller function for which Transend is now responsible will, as a consequence of NEM entry, transfer to NEMMCO.

In future, for NEMMCO to operate the Tasmanian electricity system as part of the NEM, Transend will need to fund upgraded communication systems and contingency arrangements. Transend expects that its licence will require it (as TNSP) to retain a backup system security capability in Tasmania in case communication systems fail or emergencies arise on the mainland.

Discussions with NEMMCO have also indicated that it is likely that Transend will be required to maintain a system control role for the 110 kV system and lower voltages.

In addition to the present transmission operations activities, noted above, Transend's Transmission Operations Group will be responsible for:

- developing and maintaining network models and limit equations
- interfacing with NEMMCO on operational issues, including integrating operation of the network, outage planning and managing market impacts.

Transmission Operations Group — past efficiency gains

Efficiencies have been gained by:

- outsourcing key functions, including communication services
- automating substations
- using skills and knowledge of shift operators, and rotating these staff through the outage planning area, to achieve more effective outage planning.

Transmission Operations Group — drivers for change

Presently, the costs of operating the transmission system are allocated between Transend's responsibilities as TNSP and as System Controller. Therefore, while ring-fencing is in place between these two roles, the System Controller's share of the costs is recovered directly from Code participants through System Controller fees.

When the System Controller entity no longer exists, the costs of Transend's residual system control responsibilities will revert entirely to the TNSP. The impact of this change is that the transmission company will bear the full burden of network operations costs, post-NEM entry. Tasmanian customers will still be charged by 'Transend' for this service, but the charge will be from the TNSP portion of Transend, rather than the System Controller.

The principal drivers for change over the forthcoming regulatory period are:

- preparing Transend for NEM Entry
- transfer of System Controller
- new TNSP responsibilities for local operation and for Tasmanian power system security competence
- Basslink and participation in the NEM.

The impact of each of these drivers is summarised in Table 7.5.

Table 7.5: Drivers for change — Transmissions Operations Group

Issues	Impact
Driver: Preparing for NEM entry	
• New tasks and responsibilities.	• Development of network models. • Development of limit equations. • Establishment of communications and contingency arrangements.
Driver: Transfer of System Controller	
• Loss of System Controller's contribution to control room and overheads.	• Meeting the full amount of control room costs.
Driver: Local operator role and power system security	
• NEMMCO unlikely to operate most assets at or below 110 kV.	• TNSP takes on system control function for 110 kV network and below.
• Provision of ongoing power security for Tasmania.	• TNSP required to maintain Transend's capability to manage power system security (condition of licence).
Driver: Basslink and participation in the NEM	
• Interface with NEMMCO.	• Outage planning. • Maintaining network limit equations. • Maintaining communication systems. • Maintaining contingency arrangements.
• Market systems.	• Provision of market information to NEMMCO.
• Managing market impacts.	• Implementing systems to monitor transmission impacts on pool prices.
• Maximising the capability of the transmission system.	• Ensuring that the system protection scheme (SPS) operates effectively and is updated to reflect network changes.

Transmission Operations Group — forecast expenditure

Table 7.6 shows the forecast total Transmission Operations Group costs (gross costs) and net costs, after allowing for revenue contributions from the System Controller. It shows that gross costs for the Transmission Operations Group are relatively stable before NEM entry and decrease slightly after NEM entry.

NEM entry brings a 'step change' in the allocation of system operations cost entirely to the transmission business and an increase in NEM-related costs.

The transfer of the System Controller, and NEM entry, will lead to costs increasing in 2004-05 and 2005-06. However, costs will then decrease in 2006-07 and stabilise, as functions move from the operations area to NEMMCO. The cost forecasts also anticipate efficiencies in network outage planning through the use of limit equations.

Table 7.6: Transend forecast of Transmission Operations Group expenditure January 2004 to 2008-09 (in 2002-03 $m)

	Jan to Jun 2004	2004-05	2005-06	2006-07	2007-08	2008-09
Transmissions operations (gross)	2.4	4.7	4.6	4.3	4.3	4.3
Transmissions operations (net)	1.6	2.7	4.6	4.3	4.3	4.3

Transmission Operations Group — scope for efficiency gains

In forecasting O&M expenditure for the Transmission Operations Group, Transend has considered the scope for improving efficiency. Although the future operating environment remains unclear, some potential areas for future efficiency gains are listed below.

- Effective utilisation of the new Network Operations and Control System (NOCS) should streamline transmission operations. The NOCS has been purpose designed to meet Transend's and NEMMCO's operational needs, and replaces the existing legacy system inherited from Hydro Tasmania.
- Exploring opportunities to obtain a licence for an existing 'market impacts' information system used by another TNSP, rather than creating an entirely new system.
- Working closely with NEMMCO to develop working practices for effective liaison between the entities.
- Developing limit equations. This work will require significant resources in the establishment phase, but over the longer term should help to streamline the planning and management of outages.

7.2.4 Corporate Group

Corporate Group — functions and activities

The Corporate Group in Transend covers:

- Office of the CEO, including board and governance, company secretary and public and government relations
- Market & Regulation Group (a new group, which will be established formally in the 2003-04 financial year)
- Finance & Business, including insurance and information technology
- Legal & Contracts
- Human Resources.

The Finance & Business area incurs the largest component of corporate costs. In contrast to some company structures, Finance & Business provides a wide range of support services to Transend, including administration, Information Technology (IT) and Information Management. Other TNSPs may be structured differently, thereby making functional cost comparisons problematic.

Corporate Group — past efficiency gains

Primarily the establishment of new company systems and procedures has driven Corporate Group costs since the company was formed in 1998. A number of legacy IT systems were carried over from the integrated HEC. These inherited systems are gradually being replaced by Transend-specific systems. These systems include:

- Payroll
- Financial information
- Records management
- Internet, intranet and network.

Processes and procedures required modification from those used by the integrated Hydro (1,588 staff in 1998) to meet the needs of Transend (115 staff in 2002). These changes have been achieved within Transend's modest corporate budget.

Corporate Group — drivers for change

Principal drivers for change over the forthcoming regulatory period are:

- NEM entry and participation
- transfer of System Controller
- market and regulation activities
- insurance.

The impact of each of these drivers is summarised in Table 7.7.

Table 7.7: Drivers for change — Corporate Group

Driver: NEM entry and participation	
Issues	Impact
• Preparing the company for NEM entry. • Active participation in the NEM.	• Ongoing participation in a range of NEM forums.
Driver: Transfer of System Controller	
Issues	Impact
• Loss of System Controller's contribution to overheads.	• Full amount of corporate costs to be recovered by TNSP.
Driver: Market and regulation activities	
Issues	Impact
• Continuing evolution of market and regulatory arrangements and creation of a dedicated group.	• Increased resource requirements.
Driver: Insurance	
Issues	Impact
• Changing insurance environment.	• Potential increased costs of insurance.

Transend's Corporate Group expenditure requirements are summarised in Table 7.8. This table shows that corporate expenditure is forecast to increase slightly in real terms from 2003-04 to 2008-09. Some of the areas leading to increased expenditure are briefly discussed.

Insurance

Transend's insurance costs increased significantly in 2002–03, and are expected to rise again in the future. Transend (and its predecessor HEC) has a successful history of negotiating low insurance costs in London. However, the insurance industry has been changing over recent years, and was dramatically influenced by world events in 2001. Insurance premiums are rising rapidly, and the joint insurance arrangements of Hydro, Transend, and Aurora put in place at disaggregation in 1998 are no longer appropriate.

Transend expects that insurance costs will continue to rise substantially over the regulatory period. However, the difficulty in forecasting insurance costs, and the fact that these costs are largely outside Transend's control, suggests that an innovative regulatory approach is needed.

Transend proposes that for revenue-setting purposes, insurance costs are assumed to be constant over the regulatory period. However, Transend will be entitled to adjust for actual insurance costs, subject to verification by the Commission. This approach will manage insurance risk to the benefit of Transend and its customers, and is discussed further in Appendix 1.

Transend has not included an amount to compensate for uninsured risks borne by Transend that are not compensated through the WACC, and which cannot be insured cost effectively. Instead, Transend would like to discuss with the Commission whether these events can be satisfactorily covered by pass-through provisions. If this is not possible, then Transend reserves the right to request an allowance to cover these uninsured risks.

Market & Regulation Group

This group will be responsible for overseeing Transend's regulatory strategies and policies — tasks that are presently undertaken by a range of areas in Transend. The intention is to consolidate these activities in the Market & Regulation Group in the 2003-04 financial year.[5]

The Market & Regulation function will oversee a range of policy and implementation issues associated with Basslink and Tasmania joining the NEM, and management of revenue resetting. After coordinating preparations for NEM entry, the Market & Regulation Group will develop the company's position on a range of NEM issues and will interface with the Commission and other regulatory bodies.

Neither the scope nor the volume of work required for market and regulatory activities was known at the time of Transend's previous regulatory determination in 1999. The coordination of these activities has therefore been achieved at the expense of shareholder returns for years 2001-02 and 2002-03.

The Tasmanian Energy Regulator acknowledges that the revenue allowed in the past may not have made sufficient allowance for O&M costs[6] and Transend considers that redress for this expenditure should be considered as part of this regulatory determination. This issue is discussed in more detail in Chapter 3 of this submission.

It should be noted that Transend's corporate costs are partly re-charged as overheads on unregulated services and the System Controller function, and partly re-charged to capital expenditure. Therefore, only corporate costs net of these re-charges are included in Transend's revenue requirements. This information is provided in Table 7.8.

[5] To allow costs to be compared, Transend has allocated the relevant costs, presently being incurred in other areas of Transend, to the Market & Regulation Group.

[6] Letter from Andrew Reeves, Regulator to Transend, 3 February 2003

Corporate Group — forecast expenditure

Table 7.8: Transend forecasts of net corporate expenditure January 2004 to 2008-09 (in 2002-03 $m)

	Jan to Jun 2004	2004-05	2005-06	2006-07	2007-08	2008-09
Corporate (gross)	4.0	7.1	7.5	7.9	8.1	7.8
Corporate (net)	2.7	4.7	6.3	6.7	6.9	6.6

Table 7.8 shows a step increase in *net* Corporate Group costs after 2004-05, despite the modest increases in total corporate costs. This increase in net corporate costs arises because Transend will not be able to recharge overheads to the System Controller from 2005-06 onwards, but will still incur the overheads.

Corporate Group – scope for efficiency gains

Transend's forecasts of Corporate Group expenditure have also considered the scope for efficiency gains and cost reductions. A number of areas have been identified where business processes, and thus corporate services, can be improved. Most of these efficiencies result from more information being more easily accessed, through:

- better understanding of business work flows
- more effective use of existing information systems
- creation of an IT network designed for Transend's needs (with domain separation from Hydro Tasmania and Aurora).

However, the company's demand for corporate services is expected to continue to grow over the forthcoming regulatory period. This growth in output will substantially cancel out the cost reductions from efficiency improvements.

7.2.5 Other costs

Grid Support costs

In the forthcoming regulatory period Transend expects to start incurring Grid Support charges. Grid Support can be used to enable plant outages or to defer transmission augmentations. These costs arise when Transend asks a generator to change its generation output, or where Transend pays customers for demand-side management.

Transend has had difficulties in arranging planned outages to complete projects. It is expected that future negotiations are likely to lead to high Grid Support costs. In part, this reflects the increasingly commercial focus of generators as Tasmania enters the NEM, and a clearer understanding of the opportunity cost of changing generator output.

It is also likely that increasing pressure on TNSPs to plan maintenance outages to minimise the impact on the market and system security will lead to higher Grid Support costs. As these Grid Support costs are highly uncertain, Transend proposes that the costs be included as a pass-through item. This proposed approach:

- avoids exposing Transend to the risk of unexpectedly high Grid Support costs, which may be precipitated in part by wholesale generation market conditions that are outside Transend's control
- protects customers from paying for expenditure that may not be incurred.

This treatment of Grid Support costs is outlined further in Appendix 1.

Equity raising costs

Transend has included an allowance for benchmarked equity raising costs, after the precedent established in the Commission's revenue decisions for ElectraNet and SPI PowerNet.

Energy metering

At the time of writing this submission, whether or not wholesale energy metering will be a declared service has not been decided. Whether Transend will be the 'responsible person' for metering installations is also undecided.

Because of this uncertainty, no costs have been included in this submission to cover these activities. Transend will make a supplementary submission to the Commission once these decisions are made and the cost implications are determined.

7.2.6 Summary of Transend's O&M expenditure forecasts

This section summarises Transend's O&M expenditure forecasts for the forthcoming regulatory period. Table 7.9 presents Transend's total O&M expenditure between January 2004 and 2008-09.

Table 7.9: Transend's forecast of total O&M expenditure January 2004 to 2008-09 (in 2002-03 $m)

	Jan to Jun 2004	2004-05	2005-06	2006-07	2007-08	2008-09
Connections & Development	1.9	4.1	4.5	3.6	3.6	3.6
Network	9.6	19.6	19.7	19.9	19.7	20.0
Transmissions Operations	1.6	2.7	4.6	4.3	4.3	4.3
Corporate	2.7	4.7	6.3	6.7	6.9	6.6
Sub Total	**15.7**	**31.0**	**35.0**	**34.5**	**34.4**	**34.6**
Dismantling	--	1.9	1.0	1.9	--	--
Equity raising	0.3	0.6	0.6	0.6	0.6	0.6
Total[1]	**16.0**	**33.4**	**36.5**	**36.9**	**35.0**	**35.2**
Grid Support	To be determined on annual basis[2]					

[1] *Additions are not exact, due to rounding.*

[2] *Grid Support adjustment determined in accordance with formula in Appendix 1.*

The O&M expenditure (excluding financing costs) for 2003-04 is an increase of $5.9 million in real terms over the forecast O&M expenditure for 2002-03. Requirements for NEM entry and asset management account for most of this increase. Analysis of the key cost drivers shows that the increase is justified.

7.3 Comparisons with other TNSPs

Section 7.2 provides a bottom-up assessment of Transend's O&M expenditure requirements. This is a robust forecasting approach, especially as Transend's operating environment will change substantially during the forthcoming regulatory period.

Notwithstanding Transend' strong preference for bottom-up forecasting, Transend also recognises the importance of benchmarking costs in the context of determining regulated revenue.

Chapter 1 presented analysis conducted by Benchmark Economics. This analysis suggested that Transend's total costs, including O&M costs, are low compared to its Australian peers.

In comparing these costs, Benchmark Economics argued that it was essential to take account of factors that influence relative performance, especially economies of scale and network business conditions. Benchmark Economics also suggested that the low cost performance provided some explanation of the relatively poor service performance – in effect costs and service had been traded-off.

To some extent, the conclusions from Benchmark Economics contrasted with the ITOMS benchmarking study, which tended to show Transend as an average performer. Transend commissioned PEG to examine the ITOMS benchmarks in the context of the Commission's revenue determination.

An important conclusion from PEG's study was that some of the normalisations applied in ITOMS tended to exacerbate cost differences rather than ameliorate the real variations in business conditions that are beyond company control. PEG also cautioned against the use of benchmarks that are *partial indicators*, in that they focus on only some aspects of cost (such as maintenance expenditure) rather than on composite cost measures.

The analyses by Benchmark Economics and PEG are highly instructive in benchmarking Transend's expenditure plans in the forthcoming regulatory period. In particular, they suggest that costs may need to increase to address lower-than-average service performances.

These results concur with Transend's own understanding of the way the business should develop in the forthcoming regulatory period. In particular, initiatives aimed at improving long-term service performance are now being developed and implemented.

Transend is also aware of the regulatory interest in benchmarking results. In its ElectraNet decision, the Commission compared costs between TNSPs by using a range of measures: line length, number of substations, the value of the asset base, the peak demand met, and the energy transported by the transmission system.

In our view, there is no doubt that these are all dimensions of a TNSP's output. However, as partial indicators the measures do not take account of either economies of scale or business conditions — crucial issues when comparing companies of different sizes and operating environments.

In its ElectraNet decision, the Commission noted that it considered opex/line-length and opex/asset base, while having some limitations, to be more useful than other benchmarks. However the Commission also questioned the usefulness of cost ratios or partial indicators as a measure of efficiency:

> … the fact that some of these ratios are higher than others does not, of itself, suggest that ElectraNet's efficiency is lower than those of other TNSPs.[7]

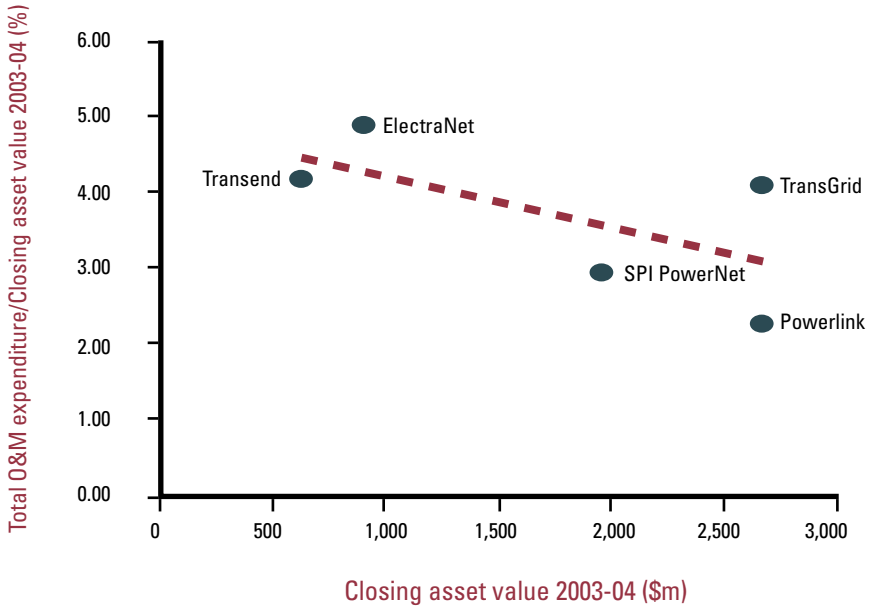
For example, the ratio of O&M expenditure to the asset base may reflect more than just the efficiency of maintaining the asset base. Older networks face not only higher maintenance costs but also depreciated asset values; with an increased numerator and a lower denominator, the outcome will be a relatively higher O&M expenditure/asset ratio. In contrast, the newer networks will have lower maintenance but relatively higher asset values, and hence, a relatively lower ratio.

Operating scale can also influence relative levels of O&M expenditure to assets. Figure 7.3 shows Transend's total O&M expenditure to asset value. Transend's data is plotted against 2003-04 data for other TNSPs, provided in the Commission decision for ElectraNet. This plot presents the scale of operations (measured as the asset base) on one axis and the relative cost of maintaining it (measured as opex/assets) on the other.

On the basis that economies of scale in transmission are a linear function of scale, Figure 7.3 shows that, even allowing for its forecast increase in O&M expenditure, Transend remains a relatively good cost performer.

[7] *South Australian Transmission Network Revenue Cap 2003-2007/08: Decision, p. 7*

Figure 7.3: Ratio analysis of Transend compared to other TNSPs



Total O&M expenditure excludes financing costs, Grid Support and abnormal items.
O&M expenditure is expressed in 2001-02 dollars, consistent with the Commission's data.

We note that the Commission has argued that total O&M expenditure to line length is a more useful cost comparator than some other measures. As more of Transend's expenditure is for maintaining substations rather than lines, it would be difficult to agree with such a view.

7.4 Conclusions

This chapter presents a detailed analysis of Transend's O&M expenditure forecasts for the forthcoming regulatory period. For each business area, there is a high-level description of the key functional activities; the efficiency gains and achievements to date; and the drivers for change in the forthcoming regulatory period. The analysis concludes in each case with an O&M expenditure forecast that anticipates the challenges ahead and the opportunities for further efficiency improvements.

In contrast to other TNSPs, the forthcoming regulatory period will bring unprecedented changes to Transend's business. NEM entry means substantive change in terms of the demands on the transmission system and the cost structure of Transend's business. In a number of respects it will require the TNSP to undertake new functions or activities; the prospective local operator function is a case in point. As a result of this change, Transend as TNSP will bear the full burden of network operations costs and a full allocation of corporate overheads.

In other respects, NEM entry will also affect the scale of activity. For example, forecasts for Connection & Development O&M expenditure reflect the increasing number of connections and development enquiries. Transend must have sufficient resources to help ensure that the potential benefits of the new trading opportunities between Tasmania and other participating jurisdictions will be realised.

Transend has critically examined its own performance in the current regulatory period, and identified areas where it can be further improved. The overall performance of Transend's system still lags behind other TNSPs to some extent, while the condition and configuration of its assets tend to drive O&M expenditure higher. A concerted effort to learn from the best practice techniques adopted by TNSPs in Australia and internationally is already bearing fruit.

Expenditure comparisons with other TNSPs are always problematic because of the difficulty of 'normalising' data to take account of legitimate differences between the businesses. However, taking due account of economies of scale, Transend is shown to be a good performer against the 'O&M expenditure' to 'asset value' ratio.

Transend's view is that comparing the O&M expenditure of TNSPs lends support to the veracity of Transend's bottom-up forecasts as presented in this chapter. However, the bottom-up forecasts remain fully justified and should be the primary basis for determining Transend's O&M expenditure allowance. The expenditure programs that underpin these forecasts are crucial to the successful operation of the transmission business in the forthcoming regulatory period.