SPI PowerNet Pty Ltd

AER Category Analysis Regulatory Information Notice

Regulatory Years 2009 to 2013

Basis of Preparation – Category Analysis

2009 – 2013 Regulatory Years

1. Overview

This Basis of Preparation document supports the preparation and reporting of the data presented in SPI PowerNet Pty Limited's ("SPI PowerNet") reports entitled 'TNSP Category Analysis data - Actual Information', 'TNSP Category Analysis data - Estimated Information', 'TNSP Category Analysis data - Consolidated Information' and 'Other Supporting Information' ("the Reports"). The Reports provide data solely for the use of the Australian Energy Regulator ("the AER") to perform category analysis benchmarking activities under the AER's Better Regulation program.

The ultimate Australian parent of SPI PowerNet is SP Australia Networks (Transmission) Ltd which is part of a listed stapled group trading as SP AusNet. SP AusNet comprises the Stapled Group of SP Australia Networks (Distribution) Ltd and its subsidiaries, SP Australia Networks (Transmission) Ltd and its subsidiaries, and SP Australia Networks (Finance) Trust. The Stapled Group is also referred to as the SP AusNet Group.

The Reports have been prepared in accordance with the 'Regulatory Information Notice issued under section Division 4 of Part 3 of the *National Electricity (Victoria) Law'* ("RIN") issued by the AER on 7 March 2014 and other authoritative pronouncements of the AER. Some of the data required in the reports is maintained by the Australian Energy Market Operator ("AEMO"). SPI PowerNet has confirmed with the AER that this information is not required to be provided. SPI PowerNet has identified in the Basis of Preparation below the data which is maintained by AEMO.

SPI PowerNet's regulatory year is the period 1 April to 31 March ("Regulatory Year"). Data included in the Reports has been provided for each Regulatory Year from 2009 through to 2013. All financial data included in the Reports is presented in thousands of Australian dollars, rounded to the nearest thousand dollar (unless otherwise stated). Non-financial data is stated as per the measures specified in the Reports.

The SP AusNet Group owns and operates 3 regulated networks – an electricity distribution network, a gas distribution network, and an electricity transmission network. Employees of the SP AusNet Group work across the 3 regulated networks and there are shared costs and overhead and other corporate costs that cannot be directly allocated to a particular network. These costs are proportioned amongst SP AusNet's 3 regulated networks based on a quarterly Activity Based Costing survey process completed by all cost centre managers and in accordance with SP AusNet's Cost Allocation Methodology

Materiality has been applied throughout the Reports and Basis of Preparation. Materiality is defined as information that if omitted, misstated or not disclosed has the potential, individually or collectively to influence the economic decisions of users.

In conformity with AER requirements, the preparation of the Reports requires the use of certain critical management estimates. For the purpose of preparing the reports, 'estimated information' is defined as

information presented in the Reports whose presentation is not materially dependent on information recorded in accounting records or other records used in the normal course of business, and whose presentation for the purpose of the RIN is contingent on judgments and assumptions for which there are valid alternatives, which could lead to a materially different presentation in the Reports.

'Actual Information' is defined as information materially dependent on information recorded in historical accounting records or other records used in the normal course of business, and whose presentation is not contingent on judgments and assumptions for which there are valid alternatives, which could lead to a materially different presentation.

Where estimated information has been presented, the circumstances and the basis for the estimate, including the approach used, assumptions made and reasons why the estimate is SPI PowerNet's best estimate have also been set out below. By definition, estimates seldom equal the related actual results and estimates have only been made for the purpose of disclosing the information requested. Considerations of the cost and efficiency of preparation, as well as the reliability and accuracy of data available, have been taken into account in determining the best methodology to determine the estimates.

To the extent applicable, the information reported has been prepared in a manner consistent with the policies and methodologies applied in preparing the Annual Regulatory Accounts. There were no changes in Accounting Policies in the 2009 to 2013 Regulatory Years which had a material impact on the information presented.

The preparation methodologies and information sources adopted in the preparation of the Reports are set out below. These methodologies and sources have been consistently applied and used for all Regulatory Years, unless otherwise stated.

Contents

2.1 Expenditure Summary

Capital Expenditure ("Capex") reported is the capital costs and capital construction costs of operating the network and relates to prescribed transmission services only.

Operating Expenditure ("Opex") reported is the costs of operating and maintaining the network (excluding all Capex) and relates to prescribed transmission services only.

Table 2.1.1 Prescribed Transmission Services Capex (as incurred) and Table 2.1.2 Prescribed Transmission Services Opex by Category

The information reported was prepared using Capex and Opex data extracted from the Financial System. The expenditure in the Capex and Opex categorisations in Table 2.1.1 and Table 2.1.2 is mutually exclusive and collectively exhaustive.

The expenditure reported for the following categories relate to direct costs only and excludes expenditure on overheads -

- Replacement expenditure;
- Connections;
- Non-network;
- Vegetation management; and
- Maintenance.

Augmentation expenditure has been 'blacked out' as the required network augmentation information is captured by AEMO.

Replacement Expenditure and Connections Capex were reported on a 'project close' basis and are consistent with the data provided in Templates 2.2 Repex and 2.4 Connections. Information reported in Table 2.1.1 is estimated information where the corresponding template information is considered estimated information.

Total Capex and Opex have been reported on an 'as incurred' basis. All expenditure has been presented in nominal dollars. The sum of each of the Capex and Opex line items in the Tables in 2.1 Expenditure Summary minus the 'balancing item' line equals the total Capex and Opex in all templates from 2.2 Repex to 2.8 Overheads.

The 'balancing items' represent the differences between total Capex and Opex reported in the AER Annual Regulatory Accounts and the respective Capex and Opex balances reported in Templates 2.2 Repex to 2.8 Overheads. The 'balancing items' include any differences arising due to the reporting of Capex on a basis other than 'as incurred' and also expenditure included in the Annual Regulatory Accounts which doesn't meet the definitions of data requested in the Category Analysis templates. The

'balancing items' are considered estimated information due to the estimated financial information included in calculating the templates which are being reconciled.

2.2 Repex

Replacement Expenditure ("Repex") is the non-demand driven Capex to replace an asset with its modern equivalent where the asset has reached the end of its economic life. Capex has a primary driver of replacement expenditure if the factor determining the expenditure is the existing asset's inability to efficiently maintain its service performance requirement.

Asset Failure (Repex) is the failure of an asset to perform its intended function safely and in compliance with jurisdictional regulations, not as a result of external impacts such as:

- extreme or atypical weather events; or
- third party interference, such as traffic accidents and vandalism; or
- wildlife interference, but only where the wildlife interference directly, clearly and unambiguously influenced asset performance; or
- vegetation interference, but only where the vegetation interference directly, clearly and unambiguously influenced asset performance.

It excludes planned interruptions.

Asset refurbishments/ life extension Capex is the non-demand driven Capex to restore an asset to its former functionality where the asset has reached the end of its economic life. The works undertaken must result in a material extension in the expected life of the asset.

The following definitions have been applied in the preparation of the data:

Circuit breaker	A switch that can open under fault current conditions to protect equipment and electrical circuits from damage.
Conductors	These assets have the primary function of transmitting power, above ground, within the transmission network. It excludes any assets that are included in any other asset category.
Current Transformers	Transformers used to measure current for protection or measurement purposes.
Field Devices	This includes old fashioned electromechanical relays and modern digital relays that incorporate many functions. This includes field devices such as relays, Remote Terminal Unit, Program Logic Controllers, Data storage, communication interfaces, and local master stations.
Gas Insulated Switchgear Unit	Enclosed gas insulated switchgear that may comprise circuit breakers, disconnectors, isolators, and other gas insulated components.
Isolators/disconnectors	Switches used to de-energise and isolate equipment or portions to the electrical network to allow service or maintenance to be undertaken.
Multiple circuit configuration	A multiple circuit configuration is a transmission line that includes more than one electrical circuit.
SCADA and Network	Replacement expenditure associated with SCADA and network control

Control and Protection systems replacement	hardware, software and associated IT systems. Includes replacement of protection and control systems and communication systems. This excludes all costs associated with SCADA and Network Control Expenditure that exist within gateway devices (routers, bridges etc.) at corporate offices. Protection systems has the meaning prescribed in the National Electricity Rules.
Single circuit configuration	A single circuit configuration is a transmission line that has one set of conductors that are operated as a single electrical circuit. However, for the purposes of this definition, where a line has been constructed as a multi-circuit line but operates as a single circuit line, it should be included as a multi-circuit line.
Substation power transformers	These are assets used to transform between voltage levels within segments of the network. This includes all its components such as the cooling systems and tap changing equipment. It excludes any assets that are included in any other asset group. For the avoidance of doubt, this does not include instrument transformers as defined in the National Electricity Rules.
Substation reactive plant	These are assets used to support the transfer of real power across the network. This includes reactors, synchronous condensers, shunt capacitors, static VAR compensators, dynamic VAR compensators. It excludes any assets that are included in any other asset group.
Substation switchbays	These are all assets used to provide switching within the substation and includes disconnect switches, circuit breakers, current transformers, voltage transformers and associated busbars and steelwork. It excludes any assets that are included in any other asset group.
SVCs (Static VAR compensators)	Has the meaning prescribed in the National Electricity Rules.
Transmission cables	These assets have the primary function of transmitting power, below ground, between segments of the network. This includes the material primarily used to transmit the power and cable ends, joints, terminations and associated hardware and equipment (e.g. surge diverters, etc.), cable tunnels, ducts, pipes, pits and pillars. It excludes any assets that are included in any other asset group.
Transmission towers	These are vertically oriented assets that provide load bearing structural support for conductors or other lines assets. This also includes associated transmission tower support structures, insulators, earthing, footings, where these are replaced in conjunction with a transmission tower replacement project. It excludes any assets that are included in any other asset group.
Transmission Tower Support Structures	These are horizontally oriented structures and their components that provide support for conductors or other line assets to be located on a transmission tower and provide adequate clearances. This expenditure relates to that which TNSPs incur when transmission tower support structures are replaced independently of the transmission tower they are located on. This includes tower section, arms, insulators, earthing. It excludes any assets that are included in any other asset group.

Voltage Transformers	Transformers used to measure voltage levels for protection or measurement purposes.

Table 2.2.1 – Replacement Expenditure, Volumes and Asset Failures by Asset Category

Replacement expenditure and volumes have been provided for the prescribed standardised asset categories. Where required, additional rows have been added to Table 2.2.1 to ensure all assets are captured.

Capex and associated non-financial information has been reported against the Regulatory Year on a 'project close' basis.

Financial Information

Expenditure reported relates to costs directly attributable to replacement/refurbishment of the asset and excludes expenditures on Overheads. All Capex has been presented in nominal dollars.

The sum of the asset group replacement expenditures is equal to the total replacement expenditure in Template 2.1 Expenditure Summary.

Preparation Methodology:

Financial information was sourced from the Financial System, Annual Regulatory Accounts and the supporting workings to the Annual Regulatory Accounts.

A list of commissioned Replacement and Refurbishment projects was compiled from the workings supporting Schedule 'Historic Additions by project category (prescribed, commissioned)' in the 2009 to 2013 Annual Regulatory Accounts. This financial information has been reported in Table 2.2.1 in the year of asset commissioning (on a 'project close' basis). Where projects were commissioned in stages (over the 5 year period reviewed), the reported year of completion reflects the last year in which an asset on the project was commissioned and the cumulative project costs have been reported in that year.

The compiled list of replacement and refurbishment projects (on a 'project close' basis) included all capitalised costs and was not disaggregated into asset categroies. To report direct costs only and categorise costs into the prescribed asset categories, the following process was undertaken.

To derive an estimate of the direct costs only, project reports generated on an 'as incurred basis' were used. These reports were sourced from the Annual Regulatory Account workings for all Regulatory Years and utilised information from the Financial System. The percentage of direct costs to total costs (on an 'as incurred' basis) was calculated across the 2009 to 2013 Regulatory Years for each relevant

(complete) project. This percentage was applied to the total costs of the project (on an 'as commissioned' basis) to derive an estimate of direct costs only.

To allocate expenditure into asset categories for all Regulatory Years, the 'as incurred' project report was used. This report allocated costs into the following categories – Secondary, Communications, Switchgear, Transformers, Reactive, Transmission Lines, Establishment, Network Switching Centre, Easements, Land and Non-system ("Financial Categories") - consistent with the Annual Regulatory Accounts. For each project, the percentage of total costs allocated into the above categories (on an 'as incurred' basis across the 2009 to 2013 Regulatory Years) was calculated. These percentages for each project were applied to the direct costs on the commissioned projects to disaggregate the total project Capex in the 'as commissioned' project report into asset categories.

For Financial Categories - Transmission Lines, Transformers, Switchgear, Communications and Reactive Plant, project business cases were reviewed by subject matter experts ("SMEs") in order to further disaggregate the costs into the prescribed asset categories. The quantity and type of assets replaced/refurbished by each project were analysed and matched against the AER asset category level.

Where a project replaced a single asset the project cost has been allocated directly to the relevant AER asset category. In some cases the replacement project included a number of assets across different AER categories and a method was required to allocate the project costs across more than one asset category. In these cases the asset costs stored in Maximo were used as a basis for allocating the project costs against the AER asset categories. The relative costs and quantities of each of the asset types included in the project were used to apportion the project costs across the relevant AER categories. The data provided is considered to be the best estimate Management can provide.

Estimated Information:

SPI PowerNet does not capture direct costs for replacement expenditure at the Asset Category level, therefore a methodology to estimate the direct costs and apportion these costs into the prescribed Asset Categories was developed – as discussed above. Information provided is considered Management's best estimate based on the information available.

Non-Financial Information

For each standardised asset category, 5 years of historical replacement volumes and cost data has been provided for the prescribed asset categories for assets currently in commission. The corresponding age profile of these assets has been provided in Template 4.1 Asset Profile.

Replacement life is the probability distribution function parameterized by the mean and standard deviation of the expected time to replace the assets in the asset category.

An asset's economic life is the estimated period after installation of the asset during which the asset will be capable of delivering the same effective service as it could at its installation date. The period of effective service needs to consider the life cycle costs between keeping the asset in commission and replacing it with its modern equivalent. Life cycle costs of the asset include those associated with the design, implementation, operations, maintenance, renewal and rehabilitation, depreciation and cost of finance.

Replacement volumes by asset group level (in Table 2.2.1) are equal to the applicable replacement volume data (in Table 2.2.2).

Preparation Methodology:

The majority of projects reviewed are refurbishment of existing assets including replacement of components of the asset, and not replacement of the complete asset. Rows have been added to capture asset refurbishments as distinct from complete asset replacements.

Where no physical replacement quantity could be extracted from the project records, the expenditure has been collected into a summary line for the Asset Group and identified as 'Refurbishment'.

For the Financial Categories - Establishment, Network Switching Centre, Secondary and Unallocated expenditure, the Capex has been collected into a summary line called "OTHER: UNCLASSIFIED REFURBISHMENT". This was required as these groups could not be allocated into the required asset categories based on the information available.

An example of a project allocation has been provided below:

Project X includes expenditure categorised in the financial data as: Communications $20,000, Switchgear $11,000,000, Establishment $3,000,000, Secondary $5,000,000 and Total $19.02M.

The project scope as described in the business case includes:

- The replacement of 5 air-blast 220kV Circuit Breakers ("CBs") (including current transformers ("CTs")) and the 6 CBs and CTs.
- Works to configure the 220kV switchyard to facilitate the future replacement of the No 1 220/66kV transformer.
- An extension and refurbishment of the rack and bus foundations.
- An upgrade of the station control and information system ("SCIMS").
- Upgrade of the fire service system and site security.
- The construction of a new control building. The dismantling of the present building is not part of the project.

In the AER template the project costs have been allocated as follows:

FINANCE CATEGORY	COST	PROJECT SCOPE OF WORK	AER CATEGORY
Switchgear	$11,000,000	Replacement of 5 air-blast 220kV CBs (including CTs) and 6 CBs and CTs	11 CBs 6 CVTs
Communications	$20,000	Upgrade of the station control and information system (SCIMS)	Communications Assets (SCADA GROUP) No quantity
Establishment	$3,000,000	Works to configure the 22kV switchyard to facilitate future replacement of No1 220/66kV transformer; Upgrade of the fire service system and site security; Construction of a new control building	OTHER: UNCLASSIFIED REFURBISHMENTS Does not correlate to any of the AER categories.
Secondary	$5,000,000	Upgrade of the station control and information system; Extension and refurbishment of the rack and bus foundations	OTHER: UNCLASSIFIED REFURBISHMENTS Items refurbished do not correlate to any of the AER categories.

Asset Failure data has been based on a list of Work Orders ("WO") extracted from the Maximo asset management system.

Work Orders are created in the asset management system when action is required to be performed on an asset. This includes routine inspections, maintenance activities, emergency work, unplanned work and corrective action. Each WO is connected to a specific asset in Maximo.

Maximo allows for a range of codes to be applied to each WO to identify the activities being conducted. The codes do not correlate exactly with the "Failure" definition provided by AER, however the data has been filtered based on a selection of codes that most closely align with the AER definition to produce an estimate of the failures during the period.

It has been assumed that a WO has been raised because an asset is not functioning correctly (and therefore constitutes a failure per the AER definition). A WO may result in the assets being repaired, reset or other action to restore function (without replacing the asset). A work order, however, does not provide this level of detail. It is therefore possible that a WO is raised but does not result in an asset being replaced. As a result there are instances where asset failures have been reported but there is no correlating 'replacement' expenditure.

Estimated Information:

All quantity data reported has an element of estimation in it due to the judgements made in order to match the SP AusNet asset categories with the categories required by AER.

The failure data provided is based on WO's associated with an asset. These WO's indicate that there has been a need for maintenance work, but do not indicate whether the asset (or part of the asset) has been replaced or whether some other activity has addressed the issue.

In some cases (e.g. lines assets where the WO may be associated with a span of conductor), the actual maintenance work may have been required on components associated with that span which may not necessarily be the conductor itself, however, based on the data available activities have been classified into the closest AER category.

Table 2.2.2 – Selected Asset Characteristics

The total volume of assets currently in commission and the replacement volumes of certain asset groups by specified aggregated metrics have been provided.

MVAr refers to reactive capacity.

Preparation Methodology:

Conductor material type:

Based on information contained in the Asset Management Strategy 'ASM 10-79 Transmission Line Conductors', the quantities reported in Template 4.1 Asset Age Profile were allocated into the required material type categories in Table 2.2.2 Volumes Currently in Commission.

Conductor material type for replaced assets was provided by the Transmission Line SME based on the details of the specific Transmission line replacement projects carried out in the current reporting period. The quantities replaced have been entered into the final year of the project ('project close' basis).

Substation reactive plant:

SPI PowerNet maintains a database of reactive plant and a report is run on a monthly basis which provides a summary of all the reactive plant in the network. This report has been used as the basis for completing the reactive plant section of Table 2.2.2.

The total MVAr for all Capacitor Bank, Reactive and CVS items has been included in the table. Project details have been reviewed to determine which plant items were replaced/refurbished during the period and the MVAr details of these plant items have been included in the replacement columns of Table 2.2.2. Where the project included refurbishment of assets, additional rows have been added to the table to distinguish refurbishment of assets from replacement. The MVAr for the refurbished assets has been reported, however the expenditure may relate to refurbishment of components of the asset such as radiators, platforms etc. which do not directly impact the MVAr of the asset.

Estimated Information:

The data included in Table 2.2.2 has been extracted directly from project documentation and the asset database information. Based on this, the information provided is considered 'actual information' as no estimation was required.

2.3 Augex

Table 2.3.1 — Augex asset data - Substations
Table 2.3.2 — Augex asset data - Lines
Table 2.3.3 — Augex data - total expenditure

The above tables have not been completed as the required network augmentation information is captured by AEMO.

2.4 Connections

Connections expenditure, connection rating and connection voltage have been reported for all Transmission Terminal Stations where complex connection projects have been installed. Data provided relates to prescribed connection services (as defined in the National Electricity Rules) only and excludes negotiated connection services and contestable works. AEMO connection projects have been excluded.

Expenditure reported is nominal direct Capex and excludes expenditure on Overheads and Capitalised Finance Charges. Capex and the associated non-financial information have been reported against the Regulatory Year on a 'project close' basis - i.e. against the year in which the project was completed.

Connection rating (MVA) is the normal cyclic rating and Connection voltage (KV) is the Nominal voltage.

Table 2.4.1 Expenditure on Connection Projects

Preparation Methodology:

Financial information was obtained from the Financial System for all Regulatory Years.

A Capex report by project was generated for the 2009 to 2013 Regulatory Years. Using this report and supplementary information from the Financial System, direct material costs and direct labour costs were calculated for each project. The direct material costs reported were adjusted to remove the 'Capital Purchases' general ledger account which, based on reviews of material balances, has been assumed to be 'Contracts' in nature.

For projects where expenditure was incurred in the 2009 Regulatory Year, an analysis was performed to determine whether additional project costs were incurred prior to this year (by running yearly project spend reports from the system). Where applicable, the additional direct material and direct labour costs incurred prior to the 2009 Regulatory Year (on projects completed from the 2009 Regulatory Year onwards) were included in the direct costs of the project.

An assessment of each project was performed (in the Project Management System) by a relevant SME to determine whether projects met the prescribed definitions of Connections Projects. The relevant projects and the associated Direct Labour and Direct Material costs were disclosed in Table 2.4.1.

Estimated Information:

The Direct Material costs reported are considered 'estimated information' due to the assumptions applied in adjusting the Financial System report to remove 'Contract' related amounts.

Information provided is considered Management's best estimate based on the information available.

Table 2.4.2 Description of Connection Projects

Preparation Methodology:

Information in relation to the Connection Voltage, Underground/Overhead and Year of Connection Project Completion was obtained from the Project Management, Stations Rating Systems and RADAR Engineering Enquiry System.

Information in relation to the Connections Rating for transformer connection projects, new switchyard bays and extensions, and protection changes and upgrades on feeders and lines were obtained as follows:

1. For transformer connection projects, the MVA rating of the transformer was used.
2. For new switchyard bays and extensions, the MVA rating of the bay was used.
3. In relation to projects involving customer (distribution business ("DB")) feeder(s) connections, protection changes and upgrades on DB feeders and lines, MVA ratings of the customer feeders are not known. As such, the maximum feeder ratings at the last connection point within the respective terminal stations have been provided, in accordance with additional guidance received from the AER. Since all connection projects are 3 phase projects, the current rating and connection voltage is multiplied by a factor of √3 (1.732) to determine the MVA value. Additionally, a power factor of 1 has been applied in the calculation of Connection Rating MVA. This is considered a reasonable assumption based on the nature of the projects.

Estimated Information:

Based on the assumptions outlined above, the data provided in relation to Connection Rating MVA is considered estimated information. The data provided is Management's best estimate based on the information available.

2.5 Non-network

Non-network expenditure reported relates to direct Opex and direct Capex costs only (i.e., only costs directly attributable to the prescribed expenditure categories) and excludes expenditures on Overheads. Capex and associated non-financial information has been reported against the Regulatory Year on an 'as incurred' basis. All Capex and Opex has been presented in nominal dollars.

Table 2.5.1 Non-network Expenditure

ICT and Communications Expenditure

Non-network IT & Communications Expenditure which is directly attributable to IT and communications assets including replacement, installation, operation, maintenance, licensing, and leasing costs at corporate offices has been reported. All costs associated with SCADA and Network Control Expenditure that exist beyond gateway devices have been excluded.

Expenditure reported has been allocated between 'Recurrent', 'Non-recurrent' and 'Client Devices Expenditure'.

Recurrent expenditure is all IT & communications expenditure that returns time after time, excluding any expenditure reported as Client Devices Expenditure. Temporally, expenditure that would be expected to be reasonably consistent from regulatory period to regulatory period would be recurrent expenditure.

Non Recurrent expenditure is all IT & Communications Expenditure that is not Recurrent expenditure excluding any expenditure reported under Client Devices Expenditure.

Client Devices Expenditure is expenditure related to a hardware device that accesses services made available by a server. Client Devices Expenditure includes hardware involved in providing desktop computers, laptops, tablets and thin client interfaces and handheld end user computing devices including smart phones, tablets and laptops.

Non-network IT & Communications Expenditure has been split between Capex and Opex.

Preparation Methodology:

Opex:

Using data extracted from the Financial System for the preparation of the Annual Regulatory Accounts, Total IT and Communications Expenditure was calculated. Expenditure reported relates to direct costs only. Expenditure for non-regulated services was excluded (the amount excluded was derived based on Activity Based Costing surveys from each of the relevant Regulatory Years). The total IT cost pool was

then allocated between recurrent and non-recurrent operating costs based on an assessment of the nature of expenditure (for example Consultancy costs are considered non-recurrent in nature). This assessment was performed by a suitable SME. There was no Opex attributable to Client Devices.

Capex:

Data was obtained from prior year Annual Regulatory Accounts and the supporting workings files. For each Regulatory Year, a list of projects and the associated financial information (excluding overheads) was extracted from the working files. An appropriate expert performed an assessment of the nature of each of the projects (recurrent expenditure, non-recurrent expenditure or client device expenditure) and based on this assessment, the expenditure was classified into the prescribed categorisations in Table 2.5.1.

Estimated Information:

Opex:

The allocation of Total IT and Communications expenditure between recurrent and non-recurrent expenditure was estimated based on judgement as to the nature of the expenses.

Capex:

The allocation of Total IT and Communications expenditure between recurrent, non-recurrent and client device expenditure was estimated based on judgement as to the nature of the projects in the 2009 to 2013 Regulatory Years.

Motor Vehicles

Motor Vehicle Expenditure is all expenditure directly attributable to motor vehicles including: purchase, replacement, operation and maintenance of motor vehicles assets registered for use on public roads, excluding mobile plant and equipment. It excludes expenditure on vehicles not generally moved large distances on public roads under their own power.

The following definitions have been applied to determine the categorisation of fleet vehicles:

Car	Cars are Motor Vehicles other than those that comply with the definition of Light commercial vehicle, Heavy commercial vehicle, or Elevated Work Platform.
Heavy Commercial Vehicle (HCV)	Heavy commercial vehicles (HCVs) are Motor Vehicles that are registered for use on public roads excluding Elevated Work Platform (HCVs) that: ➢ have a gross vehicle mass greater than 4.5 tonnes; or ➢ are articulated Vehicles; or ➢ are buses with a gross vehicle mass exceeding 4.5 tonnes.
Light Commercial	Light commercial vehicles (LCVs) are Motor Vehicles that are registered for use

Vehicle (LCV)	on public roads excluding Elevated Work Platforms that: ➢ are rigid trucks or load carrying vans or utilities having a gross vehicle mass greater than 1.5 tonnes but not exceeding 4.5 tonnes; or ➢ have cab-chassis construction, and a gross vehicle mass greater than 1.5 tonnes but not exceeding 4.5 tonnes; or ➢ are buses with a gross vehicle mass not exceeding 4.5 tonnes.
Elevated Work Platform (EWP - HCV)	Elevated Work Platform (EWP - HCV) are HCV's that have permanently attached elevating work platforms.
Elevated Work Platform (EWP - LCV)	Elevated Work Platform (EWP - LCV) are LCV's that have permanently attached elevating work platforms.
Motor Vehicle	Is any motor vehicle registered for use on public roads excluding motor vehicles not generally moved large distances on public roads under their own power (e.g. tractors, forklifts, backhoes, bobcats and any other road registered mobile plant).

Preparation Methodology:

Opex:

For each Regulatory Year a report was generated from the Fleet System showing the total Motor Vehicle expenditure. The report provides operating expenditure for each motor vehicle and specifies vehicle type. Vehicle types were aggregated into the prescribed categories in Table 2.5.1 to determine total Opex by vehicle type.

Using information from the Annual Regulatory Accounts, a calculation of the percentage of total Operating Expenditure incurred in relation to the provision of Prescribed Transmission Services ("PTS") was performed for all Regulatory Years. This percentage was applied to Motor Vehicle Opex to derive an estimate of PTS related Motor Vehicle Opex.

Capex:

Data was obtained from a motor vehicle report generated from the Fleet System. The report provided information in relation to the date company owned vehicles were purchased, the legal entity which purchased the vehicle, the purchase amount and the type of vehicle. Using this data, Motor Vehicle Capex was calculated for each Regulatory Year and allocated into the prescribed categorisations using the vehicle type information.

Using information from the Annual Regulatory Accounts, a calculation of the percentage of total Operating Expenditure incurred in relation to the provision of Prescribed Transmission Services ("PTS")

was performed for all Regulatory Years. This percentage was applied to Motor Vehicle Capex to derive an estimate of PTS related Motor Vehicle Capex.

Estimated Information:

Opex and Capex information provided is considered estimated information due to the application of an estimated PTS expenditure percentage to the Transmission business expenditure.

Buildings and Property Expenditure

Expenditure directly attributable to non-network buildings and property assets has been reported, including: the replacement, installation, operation and maintenance of non-network buildings, fittings and fixtures. It includes expenditure related to real chattels (e.g. interests in land such as a lease) but excludes expenditure related personal chattels (e.g. furniture).

Preparation Methodology:

Opex:

A detailed Income Statement report was extracted from the Financial System for the Buildings and Property cost centres for each Regulatory Year. An analysis was performed of the general ledger accounts in the Income Statement to determine whether the costs incurred were in accordance with the Buildings and Property definition prescribed by the AER. Expenditure not directly attributable to the replacement, installation, operation and maintenance of non-network buildings, fittings and fixtures was excluded. The relevant costs were summed for each Regulatory Year and reported in Table 2.5.1.

Capex:

Project reports were generated from the Financial System using the relevant Buildings and Property work codes and cost codes. The reports were reviewed and expenditure on projects which met the definition of Buildings and Property expenditure were summed and reported in Table 2.5.1.

Estimated Information:

Information presented for both Capex and Opex was extracted from financial records. As such, there is no estimated information in relation to Buildings and Property non-network expenditure.

Table 2.5.2 Annual Descriptor Metrics – IT & Communications Expenditure

Employee Numbers

Employee numbers are the average number of employees engaged in prescribed transmission services work over the year scaled for time spent on prescribed transmission services ("PTS") work. This metric does not include labour engaged under labour hire agreements.

Preparation Methodology:

A report showing the number of full time employees and equivalents (by month) was generated in the HR/Payroll System. This report included information in relation to the 2010 to 2013 Regulatory Years and provided Employee Numbers in total across all SP AusNet businesses.

Using Activity Based Costing ("ABC") surveys, the headcount report was allocated between the Distribution (Electricity and Gas) businesses and the Transmission business. The Transmission business headcount was further allocated into employees involved in PTS related work based on ABC survey information. The ABC Survey information is meant to capture the data of employees who do not work directly on projects. The information from ABC surveys has been applied to all employees in a cost centre, assuming that the survey results are applicable to employees who are directly involved in projects as well as those that are not directly involved in projects. The ABC surveys applied used information at 31 December of each Regulatory Year. The calculations performed derived an estimate of the average Employee Numbers for the 2010 to 2013 Regulatory Years.

In relation to the 2009 Regulatory Year, an equivalent report was unable to be generated due to a change in the Payroll/HR system. The number of employees for this Regulatory Year was calculated as the average headcount for the 2009 financial year (the average was calculated based on the headcount at 31 March 2008 and at 31 March 2009). This information was obtained from the historical records in the Payroll System. Percentage allocations were applied to disaggregate this headcount into the Distribution (Electricity and Gas) businesses and the Transmission business. The percentages applied were derived from the ABC surveys conducted in the 2010 year. This assumes time spent by employees on activities in the different SP AusNet businesses (Transmission, Electricity and Gas) were consistent between 2009 and 2010. This is considered a reasonable assumption as there are no significant fluctuations year on year (in total) in these allocations. The 2009 ABC Survey information was unable to be applied as the headcount report was not available in the required cost centre format (to which ABC Surveys are applied).

The average employee numbers for the Transmission business in the 2009 Regulatory Year was scaled for time spent on PTS work using the percentage of Operating Costs relating to PTS divided by the Total Operating Costs for the 2009 Regulatory Year. Information for this calculation was obtained from the Annual Regulatory Accounts.

Estimated Information:

It has been assumed that allocation based on information from the 31 December ABC surveys is consistent with the allocation at 31 March for each Regulatory Year. This is considered a reasonable assumption as operations have remained largely stable between March and December of each Regulatory Year.

The data reported is considered estimated information due to the assumptions involved in the percentage allocations as described above. The information provided is considered Management's best estimate based on the data available.

User Numbers

User numbers are defined as active IT system log in accounts scaled for prescribed transmission services use.

Preparation Methodology:

User numbers were estimated to be the same as Employee Numbers. Refer to discussion above in relation to the preparation methodology for Employee Numbers.

Estimated Information:

This information has been estimated as it is not separately captured. The data provided is considered Management's best estimate of the information required.

Client Devices

Device numbers are defined as the number of client devices scaled for prescribed transmission services use. Client Devices are hardware devices that accesses services made available by a server.

Preparation Methodology:

Information in relation to the number of Client Devices (excluding handheld devices) was obtained from a Service Catalogue Report created using billing information provided by the IT service management provider. The report provided the number of hardware devices owned by SP AusNet, on a monthly basis. An average of the monthly devices data was calculated for each Regulatory Year.

Information in relation to handheld devices was obtained from a fixed asset database. This report provided information on the devices as at 31 March 2013 and 31 March 2012. An estimate of the 2011 to 2009 years was performed by scaling back the number of devices in the 2012 Regulatory Year by the year on year growth in handheld devices between 2012 and 2013.

Information in relation to smartphones was obtained from a spreadsheet database maintained by SP AusNet's Telecommunications Coordinator (which utilises information from the Fixed Asset Register). The spreadsheet contains a list of the smart phones (and other devices, such as tablets and SIM cards) purchased, the dates on which the phones were purchased and the employee the device was purchased for. When the items are replaced/disposed, the spreadsheet notes this in a comments field. The number of devices purchased and still in service at the end of each reporting year was estimated using a combination of the Fixed Asset Register purchase dates, the number of records in the spreadsheet database and the comments field to arrive at the reported number. The spreadsheet database was not designed for external reporting purposes and has therefore has no built in reconciliations or consistency checks (because these are not required for the spreadsheet's current purpose). Whilst the methodology used is the best available, the smartphone numbers obtained are considered an estimate due to uncertainty about the accuracy of the data relied upon.

The three reports described above were summed to provide the total number of Client Devices across the SP AusNet businesses. Using the same percentages applied in allocating Employee Numbers, average Client Devices were split between the Distribution and Transmission businesses and the PTS percentage was applied to the Transmission Client Devices.

Estimated Information:

Client device information is considered estimated information due to estimates involved in deriving handheld devices and also smartphone numbers. Also, approximate percentages were applied to derive an estimate of the devices owned by SPI PowerNet in relation to PTS. An estimate was required as the information is not separately captured by the business. The calculation performed is considered Management's best estimate of the required information.

Table 2.5.3 Annual Descriptor Metrics – Motor Vehicles

Average Kilometres Travelled

Preparation Methodology:

Information was sourced from the Fleet System. For the 2013 Regulatory Year average kilometres travelled was obtained directly from the Fleet System.

For the 2009 to 2012 Regulatory Years the 'Average Kilometres Travelled' was estimated as actual information was not available. For these Regulatory Years, the total expenditure on fuel was calculated (for vehicles which met the prescribed definition of Motor Vehicles). Using the 2013 ratio of fuel expenditure to kilometres travelled, and taking into consideration the number of vehicles in the fleet, the 'Average Kilometres Travelled' was estimated for all vehicle types for the 2009 to 2012 Regulatory Years.

The average kilometers travelled per vehicle was scaled for PTS use. The percentage of PTS use that was applied was consistent with the 'Proportion of Total Fleet Expenditure Allocated as Regulatory Expenditure' as discussed below.

Estimated Information:

This information has been estimated as it is not separately captured. The data provided is considered Management's best estimate of the information required.

Number Purchased, Number Leased and Number in Fleet

Preparation Methodology:

For all Regulatory Years, information was sourced from motor vehicle reports generated from the Fleet System. The system reports were analysed and vehicles which did not meet the prescribed Motor Vehicle definition were excluded. Based on information in the reports, the 'Number Purchased', the 'Number Leased' and 'Number in Fleet' were calculated. There was a Fleet System change in 2011, however the historic data was migrated into the new system, as such the system change did not impact the reports generated.

The number of vehicles in the fleet purchased, the number of vehicles leased in the fleet and the number of vehicles in the fleet were scaled for PTS use. The percentage of PTS use that was applied was consistent with the 'Proportion of Total Fleet Expenditure Allocated as Regulatory Expenditure' as discussed below.

Estimated Information:

This information provided is considered estimated information due to the approximation of PTS use. The data provided is considered Management's best estimate of the information required.

Proportion of Total Fleet Expenditure Allocated as Regulatory Expenditure

Preparation Methodology:

The 'Proportion of Total Fleet Expenditure Allocated as Regulatory Expenditure' was calculated based on information contained in the Annual Regulatory Accounts. The percentage reported is the amount of Operating Costs relating to Prescribed Transmission Services divided by the total Operating Costs. This calculation was performed for each Regulatory Year.

Estimated Information:

The percentage reported is considered estimated information as it has been assumed that the proportion of 'Total Fleet Expenditure Allocated to Regulatory Expenditure' is consistent with the

proportion of Total Operating Expenditure Allocated to Regulatory Expenditure. The data provided is considered Management's best estimate of the information required.

2.6 Vegetation management

Vegetation management zones are segments of the transmission network distinguished from other vegetation management segments by material differences in recognised cost drivers.

An assessment of vegetation management zones has been performed taking into consideration areas where bushfire risk mitigation costs are imposed by legislation, regulation or ministerial order and areas of the network where other recognised drivers affect the costs of performing vegetation management work. The key driver of vegetation management costs across SP AusNet's businesses is the level of bushfire risk. The Transmission network vegetation management program does not separate high bush fire risk areas from low bushfire risk areas – as the vegetation management program is in accordance with the requirements of the Electrical Safety Regulations (for Transmission businesses). Based on this, one vegetation management zone has been identified in SPI PowerNet's network.

The Electrical Safety (Electric Line Clearance) Regulations impose a material cost on performing vegetation management works. The cost of compliance is consistent with the information reported in Table 2.6.2.

There are no self-imposed standards per SPI PowerNet's Vegetation Management program.

Table 2.6.1 – Descriptor Metrics by Zone

Route Line Length within Zone

Preparation Methodology:

The route line length is the aggregate length in kilometers of lines, measured as the length of each span between poles and/or towers, and where the length of each span is considered only once irrespective of how many circuits it contains. This is the distance between line segments and does not include vertical components such as line sag.

Information in relation to 'Route line length' was obtained from the Asset Management System for the 2013 Regulatory Year. Data was extracted from the equipment record together with the original creation date (assumed consistent with installation date) and asset disposal dates (where applicable). Based on these records, route line length was calculated for the 2013 Regulatory Year. For all other Regulatory Years, 'Route line length' was estimated to be consistent with the 2013 Regulatory Year data.

Estimated Information:

Refer to discussion above in relation to estimates and assumptions applied. The information provided is considered Management's best estimate based on the information available.

Number of Maintenance Spans

The 'Number of maintenance spans' is the total count of spans in the network that are subject to active vegetation management practices in the relevant Regulatory Year.

Preparation Methodology:

Information in relation to the total number of vegetation maintenance spans was sourced from work orders recorded in the Asset Management System (where each span is assigned to a work order).

Prior to the 2013 regulatory year, information was not recorded in the system in a consistent manner. Therefore, for the 2009 to 2012 Regulatory Years, the data was estimated by applying percentage reductions to the 2013 actual information. The percentages applied were derived by a relevant SME.

Estimated Information:

Refer to discussion above in relation to judgments and assumptions applied. The information provided was estimated based on expert knowledge and is considered the best estimate based on the information available.

Total Length of Maintenance Spans

Preparation Methodology:

The 'Total Length of Maintenance Spans' was calculated by dividing the total line length in kilometres (per Transmission network data extracted from the Asset Management System) by the total number of towers (per the Asset Management System) to derive an estimate of average kilometre line length for each tower. This average was multiplied by the number of maintenance spans to derive an estimate of 'Total Length of Maintenance Spans'.

Estimated Information:

The calculation performed assumes that there is one tower per maintenance span. Data provided is considered estimated information as it is not separately captured. This is considered the best estimate of the data requested.

Average Number of Trees per Maintenance Span

The 'Average number of trees per maintenance span' includes only trees that require active vegetation management to meet its vegetation management obligations during a 3 year cycle. It excludes trees that only require inspections and no other vegetation management activities required to comply with SPI PowerNet's vegetation management obligations.

Preparation Methodology:

The information provided was estimated based on expert knowledge and field experience managing vegetation around transmission assets. An estimate was required as the data requested is not captured in any form in existing systems or reports. This information is considered Management's best estimate. The data provided excludes information in relation to vegetation management of saplings (during a 3 year cycle) as this information is not able to be estimated.

Estimated Information:

Refer to discussion above in relation to estimates and assumptions applied. The information provided was estimated based on expert knowledge and is considered the best estimate based on the information available.

Length of Vegetation Corridors

A Vegetation corridor is a tract of land along which vegetation is maintained in order to form a passageway along the route of a power line or lines that is free of vegetation encroachment into the asset clearance space. This does not include portions of the corridor where no managed vegetation exists or where vegetation is not managed.

Preparation Methodology:

The 'Length of Vegetation Corridors' was calculated by using information from the Vegetation Management System. For each Regulatory Year, the total number of PT30, PT90, PT180 and PT365 vegetation maintenance spans was obtained (which represent maintenance spans which require vegetation maintenance in the next 12 months). This total was multiplied by the average length of a transmission span (as derived in the calculation of 'Total Length of Maintenance Spans') to provide an estimate of the 'Length of Vegetation Corridors'.

Estimated Information:

The data provided is considered estimated information as it is not separately captured. This is considered the best estimate of the information requested.

Average Width of Vegetation Corridors

The width of vegetation corridor is the total width of a vegetation corridor (the entire width of the tract of land along which vegetation is maintained).

Preparation Methodology:

The information provided has been estimated based on Transmission network data extracted from the Asset Management System. Using a sample of easement segments (where easement width information was available), the weighted average width per easement segment was calculated across the segment sample (weighted by route kilometers).

Estimated Information:

It has been assumed that the easement widths in the sample is representative of the easement widths of all segments. The data provided is considered estimated information as it is not separately captured. This is considered the best estimate of the information requested.

Average Frequency of Cutting Cycle

The cutting cycle is the average planned number of years (including fractions of years) between which cyclic vegetation maintenance is performed within vegetation management zones. It has been assumed that Cutting cycles are the same as Maintenance span cycles (the planned number of years (including fractions of years) between which cyclic vegetation maintenance is performed).

Preparation Methodology:

Information in relation to the average vegetation maintenance span cycles was obtained from the Vegetation Management system and also per the vegetation management plan whereby 3 patrols are conducted per annum.

Table 2.6.2 – Expenditure Metrics by Zone

Table 2.6.2 has been completed based on the one vegetation management zone identified above. Expenditure provided relates to direct costs, excluding overhead expenditure and has been presented in nominal dollars.

Preparation Methodology:

Vegetation Management expenditure is coded to specific project codes that align to various vegetation management functions and is posted to SPI PowerNet's general ledger and projects ledger. To populate Table 2.6.2, expenditure for each vegetation management project (in the 2009 to 2013 Regulatory Years) was extracted from the Financial System. This data extract was then subject to further analysis.

The information residing in Financial System does not align to the categories required in Table 2.6.2. A total amount for both 'Tree Trimming' and 'Vegetation Corridor Clearance' was allocated from the 'Mandatory Works' project codes extracted. The allocation between 'Tree Trimming' and 'Vegetation

Corridor Clearance' was based on an analysis of the suppliers of vegetation management services and the relative costs incurred against suppliers of tree trimming services compared to corridor clearance services for the regulatory years 2012 and 2013. SPI PowerNet have then applied this percentage consistently across 2009 to 2013.

'Inspection', 'Audit' and 'Contractor Liaison Expenditure' were derived from the 'Management Labour' project codes. The allocation of Management Labour to these three categories was based on the professional judgment of SME. The allocation was driven by an analysis of the time spent by employees involved in performing these activities.

The balance of costs (i.e. the difference between the total cost of the Financial System extract and the above categories) has been allocated to 'Other Vegetation Management Costs not Specified in Sheet'.

Estimated Information:

Due to the assumptions required to allocate expenditure from the project codes into the categories prescribed in Table 2.6.2, the information reported is considered estimated information. Data provided is considered Management's best estimate based on the information available.

Table 2.6.3 – Descriptor Metrics Across All Zones – Unplanned Vegetation Events

Unplanned vegetation events are system outages and fire starts caused by either vegetation grow-ins or vegetation blow-ins/fall-ins.

Number of Fire Starts Caused by Vegetation Grow-Ins (NSP Responsibility), Number of Fire Starts Caused by Blow-Ins and Fall-Ins (NSP Responsibility), Number of Outages Caused by Vegetation Grow-Ins (NSP Responsibility) and Number of Outages Caused by Blow-Ins and Fall-Ins (NSP Responsibility)

Preparation Methodology:

A review of information contained in the Incident Management System was performed. Based on this review, there have been no Fire Starts or Outages caused by vegetation grow-ins, blow-ins or fall-ins (SPI PowerNet responsibility) in the 2009 to 2013 Regulatory Years.

Number of Fire Starts Caused by Vegetation Grow-Ins (Other Party Responsibility), Number of Fire Starts Caused by Blow-Ins and Fall-Ins (Other Party Responsibility), Number of Outages Caused by Vegetation Grow-Ins (Other Party Responsibility) and Number of Outages Caused by Blow-Ins and Fall-Ins (Other Party Responsibility)

Preparation Methodology:

SPI PowerNet is responsible for all vegetation clearing in its network. Based on this, the above variables are not applicable and have been disclosed as zero.

2.7 Maintenance

Maintenance relates to operational repairs and maintenance of the transmission system, including testing, investigation, validation and correction costs not involving capital expenditure.

Table 2.7.1 – Descriptor Metrics for Routine and Non-Routine Maintenance

A 'Maintenance cycle' is the planned or actual duration between two consecutive maintenance works on an asset. An 'Inspection cycle' is the planned or actual duration between two consecutive inspections of an asset.

The 'Inspection cycle' and the 'Maintenance cycle' for each maintenance subcategory have been expressed as the number of years in the respective cycles. Where there are multiple inspection and maintenance activities, the cycle that reflects the highest cost activity has been reported.

Asset quantity information has been provided for the total number of assets (population) at the end of the respective Regulatory Years (for each asset category) and the number of assets inspected or maintained during the respective Regulatory Years (for each asset category).

Preparation Methodology:

Transmission Lines Maintenance

Asset Quantity at Year End

Data reported for 'Asset Quantity at Year End' was sourced from Template 4.1 Asset Age Profile.

For the 2013 Regulatory Year, 'Asset Quantity' was calculated as the cumulative sum of installed assets (the quantity currently in commission) for the categories - 'Transmission Towers', 'Transmission Towers Other and Support Structure', 'Conductors' and 'Transmission Cables'.

For the 2012 Regulatory Year, the total assets installed in the 2013 Regulatory Year (per Template 4.1 Asset Age Profile) were subtracted from the 2013 reported 'Asset Quantity' to derive the 2012 'Asset Quantity'. This process was followed for all required Regulatory Years and all Transmission Lines Maintenance categories.

Data provided is considered estimated information, based on assumptions and estimates included in preparing Template 4.1 Asset Age Profile.

Asset Quantity – Inspected/Maintained

Data was sourced from the Maximo Asset Management System. A report showing the number of work orders for lines maintenance was generated and filtered to show completed/closed work orders only. The relevant information was summed to derive the 'Asset Quantity Inspected/Maintained' for each Regulatory Year.

Maintenance and Inspection Cycle

In relation to 'Transmission Towers', 'Transmission Tower Support Structure', 'Conductors' and 'Transmission Cables', maintenance cycle and inspection cycle data was obtained from the SP AusNet internal policy document 'PG 02-01-02 Summary of Maintenance Intervals – Transmission Plant Guidance and Information PGI-MTCE INTERVALS-T'.

Substations Equipment and Property Maintenance

Asset Quantity at Year End

The number of 'Substation Switchbays' is based on the number of circuit breakers which have been determined using data from the Asset Management System (Maximo) and the SP AusNet internal policy document 'AMS 10-54: Circuit Breakers (Asset Management Strategy)' .

The number of 'Power Transformers' is based on information in the Asset Management System (Maximo) and SP AusNet's internal policy document 'AMS 10-67: Power Transformers and oil filled reactors' . The transformer data does not include any auxiliary transformers in transmission system. Single phase transformers have been counted as a single independent unit as all maintenance and asset records for these units are based on a single/unit asset in Maximo.

The number of 'Substation - Properties' is based on data contained in:

- SP AusNet internal document 'PGI 67-01-01 List of Transmission and Sub-transmission Stations and Communication Sites';
- Asset Management Strategy 'AMS 20-55: Civil Infrastructures';
- Asset Management Strategy 'AMS 10-55 Civil Infrastructure, Terminal Stations'; and
- Site information.

All civil infrastructure properties at one terminal station or zone substation have been assumed as one property. Based on this, information provided for 'Substation – Property' is considered estimated information. Properties not owned but maintained by SP AusNet are excluded from the data provided.

Asset Quantity – Inspected/Maintained

In relation to 'Substation Switchbays' and 'Power Transformers', information provided has been calculated as the sum of the 'Asset Quantity at Year End' divided by the 'Inspection Cycle' in years and 'Asset Quantity at Year End' divided by the 'Maintenance Cycle' in years.

In relation to 'Substation Properties', the 'Asset Quantity - Inspected/maintained' is the sum of the number of assets inspected and the number of assets maintained for each Regulatory Year. The quantity of assets inspected was calculated as the 'Asset Quantity at Year End' divided by the 'Inspection Cycle'. In relation to the quantity of assets maintained, condition based remedial works on properties are based on work completed on the 'Miscellaneous' asset category in Maximo. Miscellaneous assets in Maximo represent the assets which are not included in other specific asset category and therefore assumed as 'Substation Properties' assets. A report was run from Maximo showing the number of work orders for 'Miscellaneous' assets. The report generated covered the 2009 to 2013 Regulatory Years and the average work orders per month was calculated. Using professional judgment, the monthly data was adjusted to correct inaccuracies identified. The data was then extrapolated across a 12 month period to derive an estimate of the yearly number of assets maintained (for all Regulatory Years).

Information provided in relation to 'Asset Quantity Inspected/Maintained' is considered estimated information as it has been assumed that actual maintenance performed is aligned with the policy (and no non-routine maintenance was required) as well as due to the estimates outlined above in relation to the number of Substation Properties inspected or maintained.

Maintenance and Inspection Cycle

Data provided is based on the SP AusNet internal policy document 'PG 02-01-02 Summary of Maintenance Intervals – Transmission Plant Guidance and Information PGI-MTCE INTERVALS-T'.

In relation to Substation Switchbays, 'Average maintenance cycle' is based on Class 1 (minor) maintenance works and 'Average inspection cycle' is based on the comprehensive yearly inspection of equipment (including scanning).

In relation to Power Transformers, 'Average maintenance cycle' is based on major maintenance works (Class 2 tap changer maintenance) and not minor maintenance (Class 1). Routine maintenance of all auxiliaries is scheduled every four years. 'Average inspection cycle' is based on the comprehensive yearly inspection of equipment (including scanning and oil testing).

In relation to 'Substation Properties', properties are inspected on a monthly basis and are maintained approximately on a monthly basis (in line with the number of work orders per annum for 'Miscellaneous' assets – as discussed above).

SCADA and Network Control Maintenance

Asset Quantity at Year End

Data reported for 'Asset Quantity at Year End' was sourced from Template 4.1 Asset Age Profile based on the information reported for the 'Communications Assets' and 'Control Equipment' categories.

For the 2013 Regulatory Year, 'Asset Quantity' was calculated as the cumulative sum of installed assets (the quantity currently in commission) for the above categories.

For the 2012 Regulatory Year, the total assets installed in the 2013 Regulatory Year (per Template 4.1 Asset Age Profile) were subtracted from the 2013 reported 'Asset Quantity' to derive the 2012 'Asset Quantity'. This process was followed for all required Regulatory Years.

Data provided is considered estimated information, based on assumptions and estimates included in preparing Template 4.1 Asset Age Profile.

Asset Quantity – Inspected/Maintained

Information provided has been calculated as the sum of the 'Asset Quantity at Year End' divided by the 'Inspection Cycle' in years and 'Asset Quantity at Year End' divided by the 'Maintenance Cycle' in years.

Information provided in relation to 'Asset Quantity Inspected/Maintained' is considered estimated information as it has been assumed that actual maintenance performed is aligned with the policy (and no non-routine maintenance is required).

Maintenance and Inspection Cycle

Data provided was extracted from the SP AusNet internal policy document 'Summary of Maintenance Intervals – Transmission: Plant Guidance and Information PGI-MTCE INTERVALS-T' as the inspection/maintenance interval for Protection Schemes.

Protection Systems Maintenance

Asset Quantity at Year End

Data reported for 'Asset Quantity at Year End' was sourced from Template 4.1 Asset Age Profile based on the information reported for 'Protection & Control Infrastructure', 'Other: Relays' and 'Other: Batteries categories'. The quantity of relays is based on the number of relays (not the number of protection 'schemes') and the quantity of batteries is based on the number of battery banks (not individual cells). Current and voltage transformer volumes have not been included in the quantities reported.

For the 2013 Regulatory Year, 'Asset Quantity' was calculated as the cumulative sum of installed assets (the quantity currently in commission) for the above categories in Template 4.1.

For the 2012 Regulatory Year, the total assets installed in the 2013 Regulatory Year (per Template 4.1 Asset Age Profile) were subtracted from the 2013 reported 'Asset Quantity' to derive the 2012 'Asset Quantity'. This process was followed for all required Regulatory Years.

Data provided is considered estimated information, based on assumptions and estimates included in preparing Template 4.1 Asset Age Profile.

Asset Quantity – Inspected/Maintained

The number of assets inspected or maintained was obtained from the Asset Management system based on work orders. The relevant work order data was extracted by selecting the "PROT" and "RELAY" classifications. The data was summed to derive the 'Asset Quantity Inspected/Maintained' for each Regulatory Year.

Maintenance and Inspection Cycle

Data provided was extracted from SP AusNet internal policy document 'Summary of Maintenance Intervals – Transmission: Plant Guidance and Information PGI-MTCE INTERVALS-T' as the maintenance interval for Protection Schemes. Conventional technology is maintained on a 3 year cycle and newer (digital) technology is maintained on a 6 year cycle. A 3 year cycle has been reported based on the highest cost of the maintenance cycles. The inspection and maintenance cycles are the same for Protection System assets as inspection and maintenance is performed simultaneously.

Average Age of Asset Group

Preparation Methodology:

'Transmission Towers', 'Transmission Tower Support Structures' and 'Conductors' -

> For 'Transmission Towers', 'Transmission Tower Support Structures' and 'Conductors', information (for all Regulatory Years) was obtained from the AER Economic Benchmarking submission as the difference between the 'Estimated Service Life of New Assets' and the 'Estimated Residual Service Life' for 'Overhead Transmission Assets'.
>
> Data included in the Economic Benchmarking tables was sourced from information extracted from the Asset Management System. The 'Estimated Service Life of New Assets' and the 'Estimated Residual Service Life' disclosed in the Economic Benchmarking tables were calculated based on unit rates and asset lives - applied on a per asset basis utilising data supplied for the Transmission

Revenue Reset ("TRR") submitted in 2012/2013. The internal policy document 'AMS 10-101 Asset Life Evaluation' defines the useful lives used.

Consistent with Economic Benchmarking, the data provided for 'Transmission Towers', 'Transmission Tower Support Structures' and 'Conductors' was calculated using 2012 information. The lives calculated in the 2012 year were reported for all Regulatory Years on the basis that the weighted average lives are not expected to materially change over this time period. 2012 information was used as the 2012 AER approved Repex Model (which was built in 2013) was utilised as it provided the best available data.

It has been assumed that all 'Transmission Towers', 'Transmission Tower Support Structures' and 'Conductors' have a consistent 'Average Age'. This assumption is considered reasonable as these assets are constructed together.

All 'Average Age' information provided in relation to 'Transmission Towers', 'Transmission Tower Support Structures' and 'Conductors' is considered estimated information.

'Transmission Cables' –

The average age of 'Transmission Cables' information (for all Regulatory Years) was obtained from the AER Economic Benchmarking submission as the difference between the 'Estimated Service Life of New Assets' and the 'Estimated Residual Service Life' for 'Underground transmission assets'.

The asset lives for the single asset in this category, were ultimately sourced based on the Asset Allocation Spreadsheet for determining Transmission Customer Charges used to escalate cable valuation from SKM's *Final Report Valuation of Victorian ESI Transmission and Distribution Assets*. For the 'Underground transmission assets', the Service Life and Residual Service Life are for the Richmond Terminal Station – Brunswick Terminal Station Cable based on its installation date and estimated service life.

All 'Average Age' information provided in relation to 'Transmission Cables' is considered estimated information as the lives used to calculate 'Average Age' were estimated using the information outlined above.

'Substations Equipment and Property Maintenance' –

For ' Substation – Switchbays (including reactive plant) and 'Substation Power Transformers', information (for all Regulatory Years) was obtained from the AER Economic Benchmarking

submission as the differences between the 'Estimated Service Life of New Assets' and the 'Estimated Residual Service Life' for 'Switchyard, substation and transformer assets'.

Data included in the Economic Benchmarking tables was sourced from information held in the Asset Management System. The 'Estimated Service Life of New Assets' and the 'Estimated Residual Service Life' disclosed in the Economic Benchmarking tables were calculated based on unit rates and asset lives applied on a per asset basis utilising data supplied for the Transmission Revenue Reset ("TRR") submitted in 2012/2013. The internal policy document 'AMS 10-101 Asset Life Evaluation' defines the useful lives utilised.

Consistent with Economic Benchmarking, the data provided for ' Substation – Switchbays (including reactive plant) and 'Substation Power Transformers' was calculated using 2012 information. The lives calculated in the 2012 year were reported for all Regulatory Years on the basis that the weighted average lives are not expected to materially change over this time period. 2012 information was used as the 2012 AER approved Repex Model (which was built in 2013) was utilised as it provided the best available data.

For 'Substation Property' the average age was estimated as the standard useful life of 'Establishment' assets per the 2014-2017 TRR. This is considered a reasonable estimate of the 'Average Age' given the nature of the 'Substation Property' assets.

All 'Average Age' information provided in relation to 'Substations Equipment and Property Maintenance' is considered estimated information.

'SCADA and Network Control Maintenance' and 'Protection System Maintenance'

In relation to 'SCADA and Network Control Maintenance' and 'Protection System Maintenance', the 'Average Age' was determined as the difference between the Standard Lives and Remaining Lives of Secondary Assets. Information was sourced from the 2014-17 TRR. Ultimately the information was obtained from the AER's Roll-forward model.

All 'Average Age' information provided in relation to 'SCADA and Network Control Maintenance' and 'Protection System Maintenance', is considered estimated information as it has been assumed that the 'Average Age' of all Secondary Assets is consistent between 'SCADA and Network Control Maintenance' assets and 'Protection System Maintenance' assets.

Table 2.7.2 – Cost Metrics for Routine and Non-Routine Maintenance

Maintenance expenditure (Opex only) has been provided for each of the prescribed maintenance categories. Opex has been presented in nominal dollars. Expenditure reported relates to Direct Costs only and excludes expenditures on Overheads.

Expenditure incurred for the simultaneous inspection of assets and vegetation or for access track maintenance, has been included in 2.7 Vegetation Management and not 2.8 Maintenance. This has not been included in 2.8 Maintenance as the costs cannot be split based on the data available. The amount of access track maintenance is not considered material.

Routine maintenance costs are costs of recurrent/programmed activities undertaken to maintain assets, performed regardless of the condition of the asset. Costs of activities are predominantly directed at discovering information on asset condition, and often undertaken at intervals that can be predicted.

Routine maintenance is activities to maintain asset condition and/or to maintain the capacity of the transmission system to transmit electricity, and where the activities are:

- routine in nature; and
- indiscriminately carried out for a pre-defined set of assets; and
- scheduled to occur at pre-defined intervals.

Routine maintenance may include activities to inspect, survey, audit, test, repair, alter, or reconfigure assets.

Routine maintenance expenditure excludes costs of activities that are designed to increase or improve the capacity of the transmission system to transmit electricity, except where the increase or improvement is incidental to the maintenance of the transmission system. It also excludes costs associated with asset removal, asset replacement, new asset installation, vegetation management, and emergency response.

Non-routine maintenance costs are costs of activities predominantly directed at managing asset condition or rectifying defects. The timing of these activities depends on asset condition and decisions on when to maintain or replace the asset, which may vary over time.

Non-routine maintenance is activities to maintain asset condition and/or to maintain the capacity of the transmission system to transmit electricity, and where the activities are not routine in nature.

Non-routine maintenance expenditure excludes activities that are designed to increase or improve the capacity of the transmission system to transmit electricity, except where the increase or improvement is incidental to the maintenance of the transmission system.

Basis of Preparation – Category Analysis

2009 – 2013 Regulatory Years

Preparation Methodology:

Expenditure was extracted from the Financial System by work code for each Regulatory Year. The maintenance work codes (comprising 7 work codes) were segregated from the non-maintenance work codes. The costs extracted excluded overheads.

One of the 7 work codes was allocated to routine maintenance. The other 6 work codes were allocated to non-routine maintenance. This allocation was derived based on an assessment of the nature of the work codes.

The work codes provide information on the type of maintenance (e.g. emergency, scheduled, unscheduled) but do not provide information on the assets being maintained. The Asset Management system (Maximo) contains more detailed information on the types of assets maintained in the form of 'Leadcraft' codes. The Leadcraft codes contain financial information, although historically this has not been reconciled to the general/projects ledgers. This has not been deemed necessary based on the historical use of leadcraft data.

In order to report the costs in the categories required in Table 2.7.2, the costs derived from the work codes were allocated to the categories based on the Leadcraft expenditure allocations. That is, if 'Secondary' Leadcraft codes (i.e. Protection codes) comprised 8% of the total expenditure posted against Leadcraft maintenance codes, then 8% of the total cost at the work code level was allocated to Protection Systems Maintenance.

For transmission lines and substations categories, Leadcraft codes were further allocated into the asset sub categories based on volumes of assets inspected and maintained in each of the Regulatory Years.

Estimated Information:

All financial information provided is considered estimated information. SPI PowerNet does not internally report by the maintenance cost categories prescribed in Table 2.7.2. Work codes and Leadcraft codes are not set up to provide this level of detail.

The allocations to the high level asset categories ('Transmission lines', 'Substation Equipment and Property Maintenance', 'SCADA & Network Control Maintenance' and 'Protection Systems Maintenance') are considered estimates as they are derived by multiplying the total maintenance cost in the general ledger by the proportion of costs posted to the relevant Leadcraft codes.

The allocation between the 'Transmission lines' and 'Substation Equipment and Property Maintenance' asset sub categories is estimated information as the allocations were based on volumes of assets inspected and maintained and assumed the cost to inspect and maintain each of those assets are consistent. Estimates provided are considered Management's best estimates based on the information available.

2.8 Overheads

Overhead Expenditure is expenditure that cannot be directly attributed to a work activity, project or work order. It consists of labour, materials, contract costs and other costs.

Overheads have been disaggregated as Network Overheads and Corporate Overheads.

Table 2.8.1 – Network Overheads Expenditure

Overhead expenditure in Table 2.8.1 has been reported before it is allocated to services or direct expenditure and before any part of it is capitalised.

Network Overhead costs refer to the provision of management services and other related operational, network planning, asset management and compliance functions that cannot be directly associated with any specific operational activity (such as routine maintenance, vegetation management, etc.).

Network Overhead is the sum of expenditure for Maintenance Support, Network Monitoring & Control, and Asset Management Support.

- Maintenance Support expenditure relates to expenditure on activities and services that directly support field maintenance activities but are not directly attributable to working on an item of plant or equipment and aligns with the reported maintenance support expenditure in SPI PowerNet's Annual Regulatory Accounts.

- Network Monitoring & Control expenditure is expenditure associated with activities in operating and monitoring assets in the field and the control centre and aligns with the reported maintenance support expenditure in SPI PowerNet's Annual Regulatory Accounts.

- Asset Management Support expenditure is expenditure on operational activities and services associated with managing and developing the transmission network, and supporting the strategic development of the network, but not directly attributable to maintaining or operating the network. This expenditure aligns with the reported maintenance support expenditure in SPI PowerNet's Annual Regulatory Accounts.

Preparation Methodology:

Using information from the Financial System that was used to prepare the Annual Regulatory Accounts, Overheads Expenditure was classified into the prescribed categories in Table 2.8.1. In order to perform this allocation, expenditure information was extracted from the Financial System by cost ledger code and by division. Where there was a requirement to disaggregate the expenditure categories presented

in the Annual Regulatory Accounts into the current categories in Table 2.8.1, an assessment was made, by an appropriate expert, to determine the categorisations.

Expenditure presented in Table 2.8.1 is on a gross basis (inclusive of amounts capitalised). SPI PowerNet capitalises overhead expenditure that is directly attributable to bringing an asset to its intended in-service state. These indirect costs (to bring the asset to its intended in-service state) include labour costs of employees who do not complete timesheets. The amount of capitalised overheads was allocated to the prescribed categories based on the Activity Based Costing ("ABC") Survey process undertaken in accordance with the Cost Allocation Methodology. There has not been a material change in the capitalisation policy across the 2009 to 2013 Regulatory Years.

Estimated Information:

The data included in Table 2.8.1 has been extracted directly from the Financial System and Annual Regulatory Accounts. Based on this, the information provided is considered 'actual information' as no estimation was required.

Table 2.8.2 – Corporate Overheads Expenditure

Overhead expenditure in Table 2.8.2 has been reported before it is allocated to services or direct expenditure and before any part of it is capitalised.

Corporate Overhead costs refer to the provision of corporate support and management services by the corporate office that cannot be directly identified with specific operational activity. Corporate Overhead expenditure aligns with the reported expenditure in SPI PowerNet's Annual Regulatory Accounts. Expenditure includes, but is not limited to: Taxes and charges, Insurance, Self-insurance, OH&S, Finance, Human resources, IT support and Management Fees.

Preparation Methodology:

Using information from the Financial System that was used to prepare the Annual Regulatory Accounts, Overheads Expenditure was classified into the prescribed categories in Table 2.8.2. In order to perform this allocation, expenditure information was extracted from the Financial System by cost ledger code and by division. Where there was a requirement to disaggregate the expenditure categories presented in the Annual Regulatory Accounts into the current categories in Table 2.8.2, an assessment was made, by an appropriate expert, to determine the categorisations.

Expenditure presented in Table 2.8.2 is on a gross basis (inclusive of amounts capitalised). SPI PowerNet capitalises overhead expenditure that is directly attributable to bringing an asset to its intended in-service state. These indirect costs (to bring the asset to its intended in-service state) include labour costs of employees who do not complete timesheets. The amount of capitalised overheads was allocated to

the prescribed categories based on the ABC Survey process undertaken in accordance with the Cost Allocation Methodology. There has not been a material change in the capitalisation policy across the 2009 to 2013 Regulatory Years

Estimated Information:

The data included in Table 2.8.1 has been extracted directly from the Financial System and Annual Regulatory Accounts. Based on this, the information provided is considered 'actual information' as no estimation was required.

2.9 Labour

Labour costs reported relate only to costs incurred in the provision of prescribed transmission services ("PTS"). Costs have been allocated to PTS in accordance with the AER approved Cost Allocation Methodology in effect for the respective Regulatory Years.

Labour costs relating to labour hire contracts have been included within the classification levels. Labour used in the provision of contracts for both goods and services, other than contracts for the provision of labour (e.g. labour hire contracts) have not been reported.

Quantities of labour, expenditure, or stand down periods have not been reported multiple times across the labour categories. Where applicable, labour has been split between tables - for example, one worker may have half of their time allocated to corporate overheads and half of their time to network overheads.

The total cost of labour reported is equal to the total labour costs reported against the Capex and Opex categories listed in Template 2.10 Input Tables.

The following 3 categorisations have been applied -

1. Corporate Overhead costs - refer to the provision of corporate support and management services by the corporate office that cannot be directly identified with specific operational activity.

2. Network Overhead costs - refer to the provision of management services and other related operational, network planning, asset management and compliance functions that cannot be directly associated with any specific operational activity.

3. Direct Network Labour - includes workers who primarily undertake field work in their job. This includes:
    - Field tradespeople including workers working in field depots (e.g. fitters and turners and mechanics working in depots).
    - Apprentices training for work that would primarily be field work (i.e. irrespective of whether most of their current work or training is not undertaken in the field).

The below definitions have been applied in the preparation of Tables 2.9.1 and 2.9.2.

Labour Classification Level	Definition
Executive manager	A manager responsible for managing multiple senior managers. For example CEO, General Manager People and Safety, Finance & Treasury

	and Legal.
Senior Manager	A manager responsible for managing multiple managers who each manage work teams and projects within the organisation.
Manager	A manager responsible for managing teams of staff.
Professional	Professional workers who do not have a primary role as staff managers. These may include lawyers, accountants, economists etc.
Semi professional	Workers with some specialist training supporting fully trained professionals (e.g. draftsperson, bookkeeper etc).
Support staff	Non-professional support staff not undertaking field work (e.g. clerical support, secretaries).
Intern, junior staff, nonfield work apprentice	Interns, junior staff and apprentices undertaking non field work. All apprentices undertaking or training to undertake field work are reported under Labour Classification Level –Apprentice.
Skilled electrical worker	Fully qualified/trained electrical workers. This will include line workers, cable jointers, electrical technicians and electricians who have completed an apprenticeship.
Skilled non electrical worker	Skilled non electrical worker employed for their skill set. Examples are tradesmen who have completed an apprenticeship such as carpenters, mechanic, painters and arborists.
Apprentice	A field worker employed as part of a government accredited apprenticeship program. This includes all apprentices who will not primarily be working in offices once fully trained (e.g. apprentices training to become electrical workers, fitters and turners, plumbers, painters, mechanics and arborists).
Unskilled worker	Field workers with limited specialist training. This includes workers who have completed short courses with no other qualifications (e.g. labourer, arborist's assistant, traffic controller, meter reader).

Table 2.9.1 – Cost Metrics per Annum

For each Regulatory Year, a report was generated from the Payroll and Timesheeting Systems which provided information in relation to all employees required to submit timesheets and who charged time to Transmission business projects and overhead labour costs for the transmission business (costs of employees not required to submit timesheets). The reports included details of labour costs, productive and non-productive hours, normal time/overtime/allowances and cost centre information. The yearly reports were compiled and, using data obtained from ABC surveys, scaled to reflect hours and costs relating to PTS work only. This compiled report is referred to hereafter as "Report 1".

A report was also generated from the Financial System (for all Regulatory Years) showing the labour hire employee costs. The report included a number of credit balances representing the allocation of labour hire costs to overheads when the relevant purchase order is receipted. To accurately reflect total labour hire costs, only debit entries were accounted for (before reallocations). Based on cost centres, the

report was scaled to reflect prescribed transmission services costs only. This report is referred to hereafter as "Report 2".

SPI PowerNet does not currently categorise employees in accordance with the prescribed categories. Therefore, using Report 1, employee 'categorisations' were derived based on a combination of job titles, cost centres and the SP AusNet organisational chart. Judgements were made by an appropriate expert when determining the categorisations. Employee 'classifications' were determined using positions held for each employee and the date the positions changed (with classifications being updated in the month in which the change occurred) - for each Regulatory Year. The labour category was determined based on the employee classification and cost centre.

In relation to Report 2, employees and labour hire resources were assigned to an employee 'classification' and labour 'category' based on the cost centres used to code the labour expenditure. For cost centres with various employee classifications, the employee classification and labour category selected were based on the employee and labour category assigned to the majority of staff in that cost centre.

Based on the judgements made, all data presented in Table 2.9.1 and 2.9.2 is considered estimated information. All information reported in these tables is considered Management's best estimate, based on the information available.

Average Staffing Level ("ASL")

One ASL is a full-time equivalent employee undertaking prescribed transmission services work receiving salary or wages over the entire year. For avoidance of doubt, a full time employee equating to one full-time equivalent ("FTE") over the course of the year that spends 50% of their time on prescribed transmission services work is 0.5 ASL.

FTEs include all active full-time and part-time, ongoing and non-ongoing employees engaged for a specified term or task paid through payroll (part-time employees are converted to full-time equivalent based on the hours they work) and workers engaged under labour hire contracts.

Preparation Methodology:

For Report 1, the total PTS hours were divided by 1800 (reflecting the average annual hours worked - based on 48 weeks at 37.5 hours per week) to derive the number of ASLs.

For Report 2, the total cost was divided by 1800 and also by the average unit rate (per employee classification) to derive ASLs. The rates applied were the average of the standard hourly rates between 2011 and 2013 (based on employee classifications in the Payroll System). The calculated average was then applied to all Regulatory Years. One standard rate has been applied per employee classification.

Estimated Information:

For all FTEs, ASLs were derived using an estimation of the total annual hours worked. For labour hire employees and non-timesheet employees, further judgements were made in relation to the standard hourly rates used.

Total Labour Cost

'Total labour cost' is the total labour costs associated with the total ASLs in a given classification level. Labour costs are the costs of Labour hire, Ordinary time earnings, Other earnings, on-costs and taxes and superannuation.

'Ordinary time earnings' means expenditure that was required under contracts of employment with SPI PowerNet and which constitutes ordinary time salaries and wages. It excludes expenditure required under contracts other than employment contracts, irrespective of whether or not the contract includes a labour component.

Other earnings, on-costs, and taxes means expenditure:

- that was required under contracts of employment with SPI PowerNet; and
- which does not constitute employer superannuation contributions; and
- which constitutes:
- overtime; and/or
- staff allowances, including allowances for expenses incurred (e.g. meal allowances) and allowances for nature of work performed (e.g. special skills allowance, or living away from home allowance); and/or
- bonuses, incentive payments, and awards; and/or
- benefits in kind and corresponding compensation payments (e.g. housing, electricity or
- gas subsidies); and/or
- termination and redundancy payments; and/or
- workers compensation; and/or
- purchase of protective clothing for use by employees; and/or
- training and study assistance provided to employees; and/or
- taxes (payroll tax, fringe benefits etc)

Preparation Methodology:

Information reported in relation to 'Total labour costs' was obtained from Reports 1 and 2, after PTS percentages were applied.

Given the requirement to reconcile Total Direct Labour Costs reported in Template 2.10 Input Tables to Template 2.9 Labour, an adjustment was made. The information contained in Report 1 was based on project data whereas the labour information in Template 2.10 was based on Payroll system data. The adjustment was calculated as the difference between the 2 data sources and was allocated on a prorata basis to all employee classifications in Table 2.9.1.

Based on the above, the information provided is considered Estimated Information.

Average Productive Work Hours per ASL

'Average Productive Work Hours per ASL' is the average productive work hours per regulatory year per ASL in each Classification level spent on prescribed transmission services work that are 'Ordinary time earnings'.

Productive work hours are hours worked undertaken by the employee/labour hire person's substantive job. Productive work hours include:

- Supervised on the job training including supervision of apprentices, mentoring and normal employee feedback and development.

- All normal work involved in undertaking the person's substantive job including time spent on meetings and travel between different work areas.

Non-productive work hours are work hours that are non-productive such as annual leave, sick leave, training course and sessions (that are more than supervised on the job training, mentoring and normal employee feedback and development) and other non-productive work hours.

Preparation Methodology:

For Report 1, information in relation to Productive work hours was included in the report data. 'Average Productive Work Hours per ASL' was calculated as Total Productive (PTS) hours divided by ASLs (engaged in PTS work).

For Report 2, 'Average Productive Work Hours per ASL' was calculated as the 'Total labour cost' divided by standard hourly rates and ASLs.

Estimated Information:

For labour hire employees and non-timesheet employees (included in Report 2), it has been assumed that all labour costs incurred relate to productive work hours only. Further judgements were made in relation to the standard hourly rates applied (as discussed previously above).

Stand Down Occurrences per ASL

Preparation Methodology:

'Stand down occurrences per ASL' is the average number of stand down periods per ASL in each classification level over the year.

A stand down period is where an employee, or worker employed under a labour hire contract, can't start a scheduled shift that would involve prescribed transmission services work at normal ordinary time wages due to prior work at the organisation (for example, due to not having sufficient time off between work shifts).

No stand down occurrences have been captured in SPI PowerNet's Payroll System. Based on the nature of operations, stand down occurrences are considered rare and not material to the business.

Table 2.9.2 – Extra Descriptor Metrics for Current Year

Average Productive Work Hours per ASL – Ordinary Time

'Average Productive Work Hours per ASL – Ordinary Time' is the average productive work hours per regulatory year per ASL in each classification level spent on prescribed transmission services work that are 'Ordinary time earnings'.

Preparation Methodology:

For Report 1, information in relation to normal (ordinary) time is available. 'Average productive work hours per ASL – ordinary time' was calculated as total normal time divided by ASLs.

For labour hire employees and non-timesheet employees included on Report 2, 'Average productive work hours per ASL – ordinary time' was calculated as 'Total labour cost' divided by the standard rates.

Estimated Information:

For labour hire employees and non-timesheet employees, it has been assumed that labour costs incurred relate to ordinary time only. Further assumptions were applied in relation to the standard hourly rates used (as discussed previously above).

Average Productive Work Hours Hourly Rate per ASL – Ordinary Time

'Average Productive Work Hours Hourly Rate per ASL – Ordinary Time' is the Regulatory Year's average productive work hours (spent on prescribed transmission services) hourly rate per ASL for each Classification level including labour costs that are direct on costs related to 'Ordinary time earnings'.

The average hourly rate for each year is calculated by reference to the average number of hours paid as 'Ordinary time earnings' for each year and includes costs that are ordinary time salaries and wages in the year.

Preparation Methodology:

For Report 1, this metric was calculated as the productive, normal labour cost divided by (productive normal hours). This was then reduced by an estimated percentage of on-costs. The on-cost percentage used was the 2013 percentage applicable to Victorian employees (where the majority of employees are based). The percentage applied was obtained from the Payroll System.

For Report 2, this metric was calculated as the 'Total Labour cost' divided by (average productive hours multiplied ASLs). This was then reduced by the percentage of on-costs (as discussed above).

Estimated Information:

The on-cost percentage applied was estimated based on payroll information for Victorian employees. One standard percentage has been applied across all SPI PowerNet employees.

Average Productive Work Hours per ASL – Overtime

'Average productive hours per ASL – Overtime' is the average overtime hours for the regulatory year paid per ASL for each classification level per year spent on prescribed transmission services. Overtime hours are paid productive work hours that are not 'Ordinary time earnings'.

Preparation Methodology:

For Report 1, information in relation to overtime is available. The 'Average productive work hours per ASL – overtime' was calculated as total productive overtime hours divided by ASLs.

For Report 2 all labour hire employees' and non-timesheet employees' time is considered ordinary time. Based on this, no 'Average productive hours per ASL – Overtime' calculation was performed.

Estimated Information:

For labour hire employees and non-timesheet employees (included in Report 2), it has been assumed that all labour costs incurred relate to ordinary time only.

Average Productive Work Hours Hourly Rate per ASL – Overtime

'Average Productive Work Hours Hourly Rate per ASL' is the Regulatory Year's average productive work hours (spent on prescribed transmission services) hourly rate per ASL for each classification level

including labour costs that are direct on costs related to productive overtime hours that are not 'Labour Costs – ordinary time earnings'.

The average hourly rate is calculated by reference to the average number of productive work hours paid as overtime and includes costs that are overtime salaries and wages in the year

Preparation Methodology:

For Report 1, this metric was calculated as the productive, overtime labour cost divided by the productive overtime hours. This was then reduced by the 2013 on-cost percentage of on-costs for Victorian employees. The percentage used was extracted from the Payroll System.

For Report 2 all labour hire employees' and non-timesheet employees' time is considered ordinary time. Based on this, no 'Average Productive Work Hours Hourly Rate per ASL – Overtime' calculation was performed.

Estimated Information:

The on-cost percentage applied was estimated based on payroll information for Victorian employees. One standard percentage has been applied across all SPI PowerNet employees.

For labour hire employees and non-timesheet employees (included in Report 2), it has been assumed that all labour costs incurred relate to ordinary time only.

2.10 Input tables

Information reported in Template 2.10 Input Tables relates to direct costs for Prescribed Transmission Services. Data reported excludes overheads and is presented on an 'as incurred' basis in accordance with the response to issue number 125 on the AER Issues Register. The cost allocations presented (Direct Materials Cost, Direct Labour Cost, Contract Cost, Other Cost, Related Party Contract Cost and Related Party Contract Margin) are considered mutually exclusive.

The summation of costs for each category reconcile to total expenditure amounts reported in each of the respective templates (with the exception of 2.1 Repex and 2.4 Connections).

Direct Costs

Preparation Methodology:

Vegetation Management

For all Regulatory Years, information was sourced from the Financial System. The GL accounts in the Reports used to prepare Template 2.6 Vegetation Management were mapped into the cost categories required based on information from the Financial System. This process was completed for each Regulatory Year.

Routine and Non-Routine Maintenance

The GL accounts in the Reports used to prepare Template 2.7 Maintenance were mapped into the cost categories required based on information from the Financial System. This process was completed for each Regulatory Year.

Overheads

The GL accounts in the Reports used to prepare Template 2.8 Overheads were mapped into the cost categories required based on information from the Financial System. This process was completed for each Regulatory Year.

Augmentation

Data in the Augmentation category has been blacked out as the required network augmentation information is captured by AEMO. This is consistent with Template 2.3 Augex.

Connections

For all Regulatory Years, the required information was extracted from the Financial System reports used to prepare Template 2.4 Connections. Only the direct material and direct labour costs relating to Connections projects which were reported in Template 2.4 Connections were included in the cost categories presented in Template 2.10 Input Tables.

Replacement

For all Regulatory Years, the required information was extracted from Financial System reports generated for direct costs only. These reports were run on an 'as incurred' basis and provided the total category costs for each Regulatory Year.

The allocation of the total costs into the Repex categories (based on a 'project close' basis) was determined based on the percentage allocation of costs in Template 2.1 Repex.

Non-Network Expenditure

For all Regulatory Years, information was sourced from the Financial System, from workings to Annual Regulatory Accounts and workings to Template 2.5 Non-Network.

The allocation of Motor Vehicle Capex into the cost categories is considered estimated information as it was assumed all Capex relates to Contract cost only.

Estimated Information:

The information provided in relation to Replacement is considered estimated information due to the percentage allocation applied to categorise the data.

The Connections data reported is estimated information due to estimates applied in preparing the data reported in Template 2.4.

The Routine and Non-Routine Maintenance information is estimated information based on judgements made to allocate expenditure between Routine and Non-Routine Maintenance in Template 2.7.

Information provided in relation to Motor Vehicles is considered estimated information as Motor Vehicle Capex was estimated to be Contract costs only. This is considered reasonable based on the nature of Motor Vehicles Capex.

The information provided is considered Management's best estimate, based on the data available.

Related Party Costs and Margin

Preparation Methodology:

For the purpose of completing Template 2.10, a 'Related Party Contract' is defined as a finalised contract between SPI PowerNet and a Related Party for the provision of goods and/or Services. A Related Party is defined as any other entity that:

(a) had, has or is expected to have control or significant influence over SPI PowerNet;
(b) was, is or is expected to be subject to control or significant influence from SPI PowerNet;
(c) was, is or is expected to be controlled by the same entity that controlled, controls or is expect to control SPI PowerNet – referred to as a situation in which entities are subject to common control;
(d) was, is or is expected to be controlled by the same entity that significantly influenced, influences or is expected to influence SPI PowerNet; or
(e) was, is or is expected to be significantly influenced by the same entity that controlled, controls or is expected to control SPI PowerNet;

but excludes any other entity that would otherwise be related solely due to normal dealings of:

(a) financial institutions;
(b) authorised trustee corporations as prescribed in Schedule 9 of the Corporations Regulations 2001 (Cth);
(c) fund managers;
(d) trade unions;
(e) statutory authorities;
(f) government departments;
(g) local governments and includes SPI PowerNet Pty Ltd (ACN 079 798 173); or
(h) where any of the entities identified in sub-paragraphs (a) to (e) have novated or assigned a contract or arrangement to or from another entity (where that contract or arrangement relates to the provision of transmission services by SP AusNet), the entity to whom that contract or arrangement has been novated or assigned.

Related Party Costs (both Opex and Capex) were obtained from the Annual Regulatory Accounts for each Regulatory Year. Using the workings to the Annual Regulatory Accounts, Related Party Costs were allocated into the categories required.

In relation to Replacement, the Related Party Costs were allocated across the various Replacement sub-categories based on the percentage allocations applied to the total direct costs.

Related Party Margins have been estimated based on an analysis of contracts currently in place with Related Parties. The judgements and resulting estimates were made by an appropriate SME.

Estimated Information:

The allocation of Related Party costs for the Replacement sub-categories was estimated using the same percentage applied to allocate the direct costs.

All Related Party Margin information provided is considered estimated information due to judgements made in relation to counter party margins.

The information provided is considered Management's best estimate, based on the data available.

4.1 Asset age profile

For each prescribed asset category the age profile for assets currently in commission has been provided. Data reported corresponds with the 5 years of historical replacement volumes and cost data in Template 2.2 Repex. Where required, additional rows have been added to Table 4.1.1 to ensure all assets are reported and asset refurbishments are captured.

Economic life is the estimated period after installation of the new asset during which the asset will be capable of delivering the same effective service as it could at its installation date. The period of effective service considers the life cycle costs between keeping the asset in commission and replacing it with its modern equivalent. Life cycle costs of the asset include those associated with the design, implementation, operations, maintenance, renewal and rehabilitation, depreciation and cost of finance.

'Installed assets – quantity currently in commission by year' is the number of assets currently in commission and the year they were installed.

Table 4.1.1 – Asset Age Profile

Preparation Methodology:

Information was sourced from the Maximo Asset Management System. The information extracted from the Asset Management Systems is current data as at May 2014. This is due to the Asset Management Systems being 'live' databases. System limitations prevent asset reports being run as at specific (historic) points in time. Additionally, it is noted that the Asset Management system data has been subject to data cleansing over the Regulatory Years and is subject to continuing reviews.

The SPI PowerNet asset categories do not directly align with the prescribed AER asset categories. In order to populate Table 4.1.1, engineering judgement has been applied to align assets in the required categorisations. Where SPI PowerNet identified assets that are significantly different to the asset categories prescribed by AER, 'Other' categories have been included in Table 4.1.1 with a suitable description.

The quantity of assets included in age profile for each year is the number of assets with an installation date in that year. Assets with no installation date in Maximo or an installation date of 1901 (which is a default for an unknown installation date) have been included in the age profile in the final year (1910/11) in Table 4.1.1.

The Economic Life for each asset has been based on the 'Asset Life Evaluation' contained in SPI PowerNet's 'Asset Management Strategy AMS 10-101'. The AER asset categories have been aligned with SPI PowerNet's asset categories to populate the required Economic Life information. Refer to Table 1 below.

AMS 10-101 includes a range around the Expected Asset Life. For the purposes of populating Table 4.1.1, it has been assumed that the asset life can be represented by a Normal distribution and that the range between 'Earliest Life' and 'Latest Life' in AMS 10-101 represents two standard deviations around the mean. To calculate one standard deviation the 'Earliest Life' has been deducted from the 'Latest Life' and divided the result by 2.

In relation to Refurbished assets, age profile information reflects the quantity of Refurbished assets in Template 2.1 Repex for the 2009 to 2013 Regulatory Years. For years prior to this period, Refurbished assets cannot be distinguished from the population of assets in Maximo. Based on this, the age profile for Refurbished assets prior to the 2009 Regulatory Year has not been populated.

It has been assumed that the Economic Life of Refurbished assets mirrors the Economic Life and Standard Deviation provided for the corresponding AER Replacement asset category. This is an estimate as it is not possible to provide an accurate Economic Life for the collection of refurbishment projects included.

Table 1: Expected Life and Standard Deviation Match to AMS 10-101

Asset Category	Asset Type	AER Category Match	Earliest Life	Expected Life	Latest Life	Technical Life	One standard deviation
AIS Switchbay -Air Blast CB	500kV DMF		40	**43**	45	55	**2.5**
	220kV DLF		40	**43**	45	55	**2.5**
	220kV DCF/DCVF		40	**45**	50	55	**5**
	220kV AT (CGE)		40	**43**	45	55	**2.5**
AIS Switchbays - Minimum Oil CB	220 - 330		35	**40**	45	42-60	**5**
	330kV HPF		35	**40**	45	42-60	**5**
	220kV HPF		35	**40**	45	42-60	**5**
	220kV HLR		35	**40**	45	42-60	**5**
	66kV HPF		35	**40**	45	42-65	**5**
	66kV OS10		45	**48**	50	42-65	**2.5**
	66kV HKEYC		44	**46**	50	42-65	**3**
	66kV HLR		35	**40**	45	42-65	**5**
AIS Switchbay Bulk Oil CB	220kV JW420		40	**43**	45	42-60	**2.5**
	220kV JW419		40	**45**	50	42-60	**5**
	66kV LG4C		40	**45**	50	42-65	**5**
	22kV 345GC	Switchbays =< 33KV CB	45	**48**	50	42-65	**2.5**
AIS Switchbay SF6 CB	AVERAGE OF ALL SF6 CB	Switchbays >33KV CB, BUS, RACK, CVT and Surge Diverters	35	**40**	45	42-55	**5**
	500kV HPL		35	**40**	45	42-55	**5**
	500kV FA4		35	**40**	45	42-55	**5**
	500kV 3AT5		35	**40**	45	42-55	**5**
	330kV LTB		35	**40**	45	42-60	**5**
	330kV HPL		35	**40**	45	42-60	**5**
	275kV FXT15		35	**40**	45	42-60	**5**
	220kV 3AQ1EE		35	**40**	45	42-60	**5**
	220kV 3AS2		35	**40**	45	42-60	**5**
	220kV 3AQ2E1		35	**40**	45	42-60	**5**
	220kV LTB		35	**40**	45	42-60	**5**
	220kV HPL		35	**40**	45	42-60	**5**
	220kV FL245		35	**40**	45	42-60	**5**
	220kV FXT14		35	**40**	45	42-60	**5**
	66kV EDF SKF		35	**40**	45	42-65	**5**
	66kV S1-72.5		35	**40**	45	42-65	**5**
	66kV HGF		35	**40**	45	42-65	**5**
AIS Disc bay	All		35	**45**	55		**10**

Table 2: Expected Life and Standard Deviation Match to AMS 10-101 (continued)

Metal Enclosed Switchgear	22kV 22L42T Bulk Oil Indoor		50	**53**	55		**2.5**
	220kV SF6 Dead Tank Outdoor	Substation Switchbays - Air Insulated Isolators/earth switch	40	**45**	50		**5**
Switchbay (AIS) - Reactive	Capacitor switch	Transformer - Other: Diverter Switches	15	**20**	25		**5**
	Reactor switch		15	**20**	25		**5**
GIS Bays	500kV Outdoor	Substation Switchbays - GIS MODULE: 330 - 500 kV	35	**40**	45		**5**
	220kV Indoor	Substation Switchbays - GIS MODULE: 0 - <330 kV	45	**50**	55		**5**
Current Transformers - single phase, oil insulated	Tyree	Average used for transformer types: VT and CT	27	**33**	39	45	**6**
	Brown Boveri		36	**42**	48	45-50	**6**
	ASEA		40	**47**	54	30-45	**7**
	ABB		24	**30**	37	30-45	**6.5**
	Other		38	**44**	50	30-50	**6**
				40			**6**
Capacitor Bank	Pre 1970	Used for all Reactive Plant (SVCS, Capacitors, Oil Filled Reactors)	35	**40**	45	40	**5**
	Post 1970		30	**35**	40	40	**5**
Synchronous Condenser	Machine w/o refurbishment	Reactive Plant: OTHER <=33 KV SYNC CONDENSER	32	**34**	35		**1.5**
	Auxiliary Equipment		32	**34**	35		**1.5**
	Refurbished (rotor, auxiliaries and stator re-wedge)		45	**47**	50		**2.5**
Insulators - Pilkington and Doulton			35	**40**	45	30-90	**5**
Insulators - Ceramic			40	**50**	60	30-90	**10**
Insulators - Polymeric			20	**30**	40	30-90	**10**
Fittings (including dampers & spacers)			40	**60**	70	30-80	**15**
Steel Overhead Ground wire			40	**50**	65	30-80	**12.5**
ACSR Conductor (& ground wire)		Conductors (GROUND WIRE SPAN) and OTHER BY - Infrastructure: Earth Grid.	35	**60**	70	30-804	**17.5**
Towers		Transmission Towers and Support Structures (ALL) Lighting Pole Other Poles & Towers	60	**70**	85	60-1004	**12.5**
HV and EHV Power Cable		Conductors (ALL)	40	**60**	70	30-804	**15**
	Average of PROT and CONTROL	Used for SCADA - Control equipment, infrastructure, relays, neutral earth compensators, generators and motors, compressors, metering					
Protection & Control Scheme	(A1) Electro-mechanical with continuous moving parts e.g. RI		22	**29**	34		**6**
	(A2) Electro-mechanical with occasionally moving parts		26	**32**	36		**5**
	(A3) Electro-mechanical with electro-magnetic operation		29	**35**	39		**5**
	(B2) Analogue electronic based mainly on solid state discrete components		18	**24**	28		**5**
	(B3) Analogue electronic device using discrete comp.s & integrated circuits		17	**23**	27		**5**
	(C1) Hybrid analogue/digital device		12	**19**	23		**5.5**
	(C2) Hybrid analogue/digital device		13	**21**	25		**6**
	(D1) Digital device incoming signals converted to digital form		13	**19**	23		**5**
Station Control Platform	Analogue		30	**35**	45		**7.5**
	Screen based (1st generation PC Based)		10	**14**	16		**3**
	Integrated digital platform		10	**14**	16		**3**
Energy Metering	1st generation units		6	**10**	12		**3**
SCADA	Station RTUs (B2)		18	**24**	28		**5**
	Station RTUs (B3)		19	**23**	29		**5**
	Station RTUs (D1)		13	**19**	23		**5**
Control Centre	Master SCADA system		10	**12**	15		**2.5**
	Host computer equipment		2	**3**	5		**1.5**
DC Supplies	Batteries (pasted plate)	SCADA - Other: Batteries	13	**15**	16		**1.5**
	Home lighting		4	**5**	7		**1.5**
	Battery Chargers (Early Analogue)		20	**24**	30		**5**
	Battery Chargers (Digital Control)		10	**15**	20		**5**
	Average of all Communications	Used for SCADA - Communications Assets		**24**			**5**
Equipment	Analogue Channel Equipment and associated frames		5	**9**	10		**2.5**
	Digital (SDH & PDH) Multiplex, Channel equipment & associated frames		6	**10**	11		**2.5**
	Digital (DSL) Metallic Line Equipment		7	**11**	12		**2.5**
	Optical (SDH & PDH) Line Equipment (Terminal, repeater & Amplifiers)		5	**9**	10		**2.5**
	New Power Line Carrier		11	**15**	16		**2.5**
	Radio & Antenna Equipment and Associated Feeder Equipment		6	**10**	11		**2.5**
	Telephone Exchange Equipment		6	**10**	11		**2.5**
Cables	Underground Metallic		24	**35**	40		**8**
	Underground Optical Cable		29	**35**	40		**5.5**
	Optical ADSS Cable		12	**18**	20		**4**
	OPGW Cable		27	**35**	40		**6.5**
Remote Site	Towers		60	**70**	85		**12.5**
	Establishment		40	**45**	50		**5**

Estimated Information:

Estimates and assumptions have been applied to align the SPI PowerNet asset categories with the prescribed AER asset categories and to provide age profile information in relation to Refurbished Assets. These assumptions have been outlined above. Additionally, the information is considered estimated information as it was extracted from a 'live' database in May 2014.

The information provided in Table 4.1.1 is considered Management's best estimate of the data required based on the information available.

4.2 Maximum Demand at Network Level

Table 4.2.1 — Raw and Weather Corrected Coincident Maximum Demand at Network Level

The above table has not been completed as the required information is owned and maintained by AEMO.

4.3 Maximum Demand and Utilisation at Spatial Level

Table 4.3.1 — Non-Coincident and Coincident Maximum Demand

The above table has not been completed as the required information is owned and maintained by AEMO.