Attachment 5.30

Other capex - forecast & explanation (plant & tools)

May 2014

Executive Summary

We forecast $27.5 million of capex for Tools & Equipment

This document provides an overview of the proposed capex required for **Tools & Equipment** to support our distribution network in the 2014-19 period. Ausgrid requires a Tools & Equipment capex of $20.7 million ($ Constant Dec' 2012) for Standard Control Services over the period. This will support the ongoing delivery of standard control services by ensuring necessary tools and equipment are readily available for our people to complete their works in a safe and productive manner. The following document focuses on the Tools & Equipment needs of Network Operations, which has historically accounted for over 85% of the total Tools & Equipment expenditure. The remaining capex attributable to the Network Development and Chief Engineer divisions is not covered in this document, and contributes to the differences that are present within Ausgrid's total capex forecast of $27.5 million ($ real 2013/14), or $25 million ($ real 2013/14) for Standard Control Services. This is shown in Table 1 below.

($ million 2013/14)	2014-15	2015-16	2016-17	2017-18	2018-19	Total
Standard Control Services	**7.34**	**3.63**	**5.27**	**4.24**	**4.55**	**25.04**
Alternate Control Services	0.14	0.07	0.10	0.08	0.09	0.48
Public Lighting	0.14	0.07	0.10	0.08	0.09	0.48
Unregulated	0.50	0.20	0.29	0.24	0.25	1.48
Total Tools & Equipment	**8.12**	**3.97**	**5.77**	**4.64**	**4.98**	**27.48**

Ausgrid is able to provide details of the Network Development and Chief Engineer division Tools & Equipment requirements upon request.

Table 2 below details the yearly expenditure forecast for Network Operations, which is the focus of this document:

Table 2 – Network Operations Tools & Equipment Forecast ($ million, Dec. 2012)

($ million Constant December 2012)	2014-15	2015-16	2016-17	2017-18	2018-19	Total
Network Operations Tools & Equipment	**4.140**	**4.140**	**4.140**	**4.140**	**4.140**	**20.698**

Ausgrid's tools and equipment proposal includes items as small as multi-meter testing instrument through to significant items such as diesel generators and heavy duty high capacity (12T) hydraulic crimping heads. It also includes specialised items such as technical survey stations and high voltage live work insulating gloves and sleeves. Many items are sourced directly from our internal stores where competitively tendered supplies are held in stock or supplied directly from vendor held stock which is delivered on order. Other less frequently required or specialised items are purchased directly from suppliers on a competitive quotation basis.

The focus of our Tools & Equipment proposal for the 2014-19 period is to ensure access to required tools and equipment in order for our teams to construct, repair and maintain the network in a safe and timely manner.

In past proposals this category of capex has not been treated independently, and therefore comparison with a previous forecast is not possible. This proposal utilises 2012-13 as the base year as the 2012-13 financial year includes the impact of reduced expenditure from changes to Ausgrid's governance resulting from the NSW Government's introduction of Networks NSW. The proposed capex reflects the continuance of business as usual after a downwards change factor in 2013.

Introduction

The purpose of this document is to provide an overview of our forecast capex for Tools & Equipment to meet our obligations in delivering Standard Control Services for the 2014-19 period.

The introduction below provides background on the characteristics of our functional operations, and the reasons why we are required to undertake them to achieve the overall strategic objectives of Ausgrid.

Ausgrid is responsible for the management, planning and reliability of the distribution network involving works to construct, repair and maintain the network delivering a safe, reliable and sustainable operation. In order to achieve this function our teams need to be appropriately supported with access to the necessary tools and specialised equipment to undertake daily duties in a safe and productive manner.

Construction, repair and maintenance activity involves the utilisation of a significant array of tools and equipment. Some of this is highly specialised and highly technical. For example working on the high voltage network using live techniques; that is, when the high voltage network remains energised, requires particular tools and equipment in order to ensure the work is completed safely. Very specialised tools and equipment such as high voltage link sticks, HV insulated covers and HV insulating gloves and sleeves are required to complete this work safely. Operating the network equally requires specialised tools and equipment in the form of telescopic operating and shot-gun sticks used to operate at a distance the fuses and various switches used to control the network. Also included in this capex are those items commonly used by lineworkers, cable jointers and technicians such as extension ladders, hydraulic cable cutting and crimping tools and a myriad of small power and battery operated tools.

Tools and equipment are required to construct, repair and maintain the network by approximately 550 technicians, 450 lineworkers and 100 cable jointers. Without access to these basic needs Ausgrid would not be able to deliver the full range of standard control services required by the Rules in a safe and productive manner.

As the capex program rolls off, the need for the future spend will decrease. This is reflected in the plan with the downward change factor occurring in 2013. The trend of spending that occurred in 2013 is expected to continue into the foreseeable future based on our current understanding of forecast work load and the fact that the functions provided by this group are essential to the ongoing responsibility for construction, repair and maintenance of a safe and reliable network that will contribute to achieving the Licence conditions in relation to reliability.

The forecast capex for Tools & Equipment also includes the replacement of tools due to their age and/or due to the tools being lost or stolen.

Objectives

The objectives of the Tools & Equipment cost group are to:

- Comply with all applicable regulatory obligations or requirements associated with the provision of standard control services.
- Maintain a safe and reliable electrical supply across the Ausgrid network.
- Construct, repair and maintain the network ensuring our people and the public's safety.
- Provide access to appropriate tools and equipment to complete our obligations in delivering standard control services.
- Comply with WHS obligations.

Scope of activities

Functions and tasks performed by Ausgrid relating to Tools & Equipment can be summarised into the following activities:

- Construct, repair and maintain the network.
- Maintain electrical supply security across the Ausgrid network.
- Operate the Network safely and within equipment limits.
- Test and maintain the electrical integrity of the network.
- 24/7 emergency response to network incidents.
- Manage the network to ensure it remains safe and reliable.

Requirement for activities

Ausgrid is committed to ensuring the safe operation of its network and gives priority to safety issues, including workplace and public safety, over all other aspects of network management.

Ausgrid's network planning balances the need to meet applicable legislative and regulatory requirements with our wider organisational objectives and business responsibilities, including meeting customer expectations of a reliable and safe supply of electricity, managing safety, environmental and security risks associated with our network infrastructure, and managing the financial performance of the business.

To deliver these objectives, Ausgrid requires a range of Tools & Equipment to help manage the safety, environmental and infrastructure security risk in relation to the network. Some situations require the use of highly technical and specialised tools and equipment to construct, repair and maintain the network. The various environmental, safety and asset security obligations applicable to Ausgrid's network, and to the services Ausgrid provides as standard control, have been taken into account in developing Ausgrid's approach to network management.

The performance requirements for the network are determined by license regulations, thus Ausgrid must ensure appropriate resource to respond promptly and professionally to maintain the safety of the network and restore power to customers in the shortest and safest possible timeframe.

Ausgrid targets its investment expenditure to ensure that network performance and compliance outcomes are achieved in a manner that is efficient and prudent. The availability of tools and equipment required to construct, repair and maintain the network is essential in delivering Ausgrid's standard control responsibilities.

Operational constraints

The organisation faces operational constraints in delivery of standard control services and this proposal will help ensure a level of service equal to that in previous years. The following constraints have been considered:

- Quantum of work required will drive the need for tools and equipment.
- During emergencies, availability of necessary tools and equipment is essential to restore supply safely and in a timely manner.
- Some works are undertaken on parts of the network while it remains live. Specialised tools are required to undertake this work safely.
- Electric energy cannot be seen. Specialised tools and Equipment are required to test and work on the network safely.
- Ausgrid's network is complex and heavily utilised requiring a range of specialised and highly technical tools and equipment to construct, repair and maintain the network.
- Managing WHS obligations to ensure safe work practices

Outcomes last period

During the 2009-14 period, Ausgrid spent $28.1 million on Tools & Equipment capex to deliver its objectives.

The purpose of this section is to identify the outcomes of capex in the 2009-14 period. Examination of previous expenditure can provide critical insights on the level of forecast capex, and the veracity of previous approaches.

1.1 Circumstances during 2009-14 period

The 2009-14 period witnessed delivery of a significant capital program to the Ausgrid network. In the previous period much of the distribution work completed related more to maintaining the assets rather than augmenting. Increased work brought increased resource requirements including new specialised tools and equipment. Additional fleet required fitting out with the specialised tools and equipment required to construct, repair and maintain the network.

The increased program also introduced the need to better assess sections of the network to more accurately determine how long we could safely defer replacement or upgrade of some significant assets. This required specialised high voltage testing tools and equipment including suitable transport capability to reach those parts of the network under assessment. A number of high cost items such as the 150kV Resonate Test Set and the HV Impulse Test Set purchased in the early part of the period will permit Ausgrid to assess highly valued assets on the network for many years to come. These costs are one-off and therefore will not be repeated in the next period and contributed significantly to the downward change factor in expenditure that occurred in 2013. The roll off of other projects such as the Smart Grid Smart City also impacted on the downward change factor in 2013.

1.2 Capex outcomes during the 2009-14 period

During the period, Ausgrid incurred $28.1 million of capex in relation to Tools & Equipment as shown in the tables below:

Table 3 – Total Historical Expenditure on Tools & Equipment ($ million, nominal)

($ million, nominal)	2009-10	2010-11	2011-12	2012-13	2013-14 Forecast	Total
Tools & Equipment	6.3	6.5	7.0	4.1	4.2	28.1

This Tools & Equipment expenditure can be further broken down into the following cost elements:

Table 4 – Expenditure Components of Tools & Equipment ($ million, nominal)

($ million, nominal)	2009-10	2010-11	2011-12	2012-13	2013-14 Forecast	Total
Plant & tools	2.25	2.05	1.96	2.02	2.07	**10.33**
Materials Consumed	0.46	0.36	0.59	0.58	0.60	**2.58**
External Material	2.77	2.85	3.79	1.19	1.22	**11.82**
Loose Tools and Minor Plant	0.77	1.16	0.61	0.29	0.30	**3.12**
Procurement Charge/Recovery	0.05	0.04	0.05	0.06	0.06	**0.26**
Total	**6.28**	**6.45**	**7.00**	**4.14**	**4.24**	**28.11**

The above expenditure is representative of the expenses of delivering capitalised components of work associated with standard control services.

1.3 Variations to allowance

In past proposals, this category of capex has not been treated independently and therefore we do not have a previous allowance in which to directly compare. Expenditure for Tools & Equipment was previously bundled within the 'Fleet and Other' capex plan.

Section 5 of our proposal provides information on how we are transitioning to a more transparent forecast which identifies the requirements for Tools & Equipment separately for the 2014-19 period.

2014-19 Tools & Equipment Plan

Our focus for the 2014-19 period is to continue to construct, repair and maintain the electricity network so that it can be operated safely while delivering an adequate, reliable and cost effective electricity supply. We will adhere to relevant legislation, standards and codes of practice to maintain a safe and reliable distribution network environment and maintain quality of supply and customer satisfaction.

The purpose of this section is to identify the key circumstances driving Ausgrid's Tools & Equipment capex in the 2014-19 period. The forecast for the period is mainly based on the capex from the 2012-13 period set as the base.

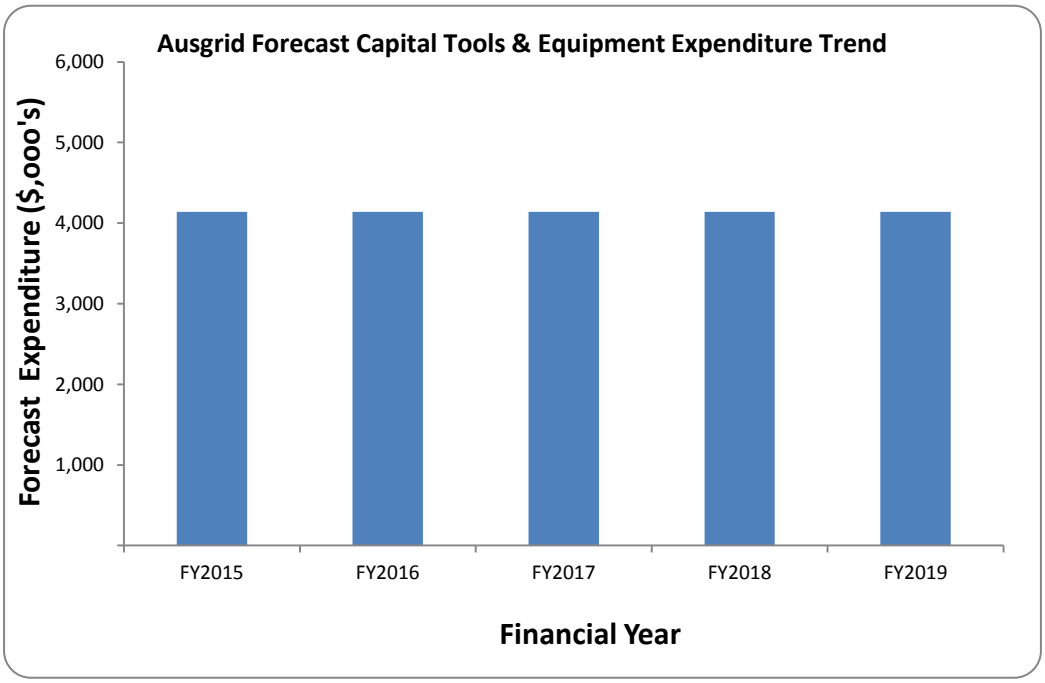

Figure 1 - Ausgrid Forecast Capital Tools & Equipment Expenditure Trend ($ '000, Dec 2012)

A key reason for this trend is that we have invested in capital programs in the 2009-14 period providing the tools and equipment necessary to deliver the full range of standard control services during very high demand for resources. The vast majority of the tools and equipment purchased have a reasonable life and will continue to be serviceable into the next period. The forecast reduced work load will also contribute to the trend by lowering the need to purchase additional tools and equipment.

The focus of our capex plan is to maintain compliance, reliability and continue to support network activities. At the same time we have sought to minimise price pressures on our customers to the full extent possible by prioritising prudent investment in capital, including tools and equipment.

The 2013 downward change factor has levelled expenditure that we expect will continue into the foreseeable future based on our current understanding of forecast work load and the fact that the functions provided by this plan are essential to the ongoing responsibility for public safety and achieving the Licence Conditions in relation to reliability while delivering standard control services.

2.1 Key circumstances during 2014-19 period

During the 2014-19 period it is expected that our work volumes will reduce in comparison to the current period. As a result we forecast our 2013 expenditure as the base to our ongoing need. Additional governance to be introduced around tools and equipment will ensure the forecast trend is maintained within allowance.

2.2 Key operational drivers and variables

As in previous years, the key operational driver for tools and equipment is the demand driven by network activity. Should network activity decrease greater than forecast then a further downwards trend in tools and equipment is expected. Any increase will have the opposite affect. Any volume of work completed by contracted services is a variable that will also impact the trend of expenditure required for tools and equipment.

2.4 Relationship with opex program

The tools and equipment in this plan are used interchangeably on both opex and capex activity. The assets acquired from the expenditure in this plan are generally capital based with any single item valued over $1,000 being included in the asset register. Pooled assets are included in the range of $500 to $1000.

There is a level of opex related to the costs involved in repairing and maintaining tools and equipment. However, often the replacement of tools and equipment is generally preferable and more efficient than repair.

Changes between opex and capex will not influence expenditure on tools and equipment as they are required for either category of work with a reduction in capex activity generally met with an increase in opex activity.

Forecast method

We have relied on a base year cost for the purpose of our approach in forecasting capex for the 2014-19 period.

The purpose of this section is to provide an overview of the process we have used to derive the total capex forecast for Tools & Equipment. In doing so, we have taken into account the proposed business as usual operations after the downward change factor in expenditure in 2013 and carried forward from the 2009-14 period and the circumstances in the 2014-19 period as described in Section 2.

3.1 General approach

Ausgrid has developed a separate proposal for Tools & Equipment. This proposal has largely relied on a high level model rather than detailed bottom up forecasting. Our forecasting methods across the proposal are based on robust assumptions.

A summary of our general method is set out below, with further information provided in supporting information that sets out the model in more detail. Refer to supporting information 'Network Operations Non System Capex Tools & Equipment Support Information.xlsx'

Model approach

The forecast methodology utilises data from SAP for each financial year from 2010 to 2013 covering all expenditure related to capex tools and equipment. The data was reviewed to remove any outlying items and items that would not be repeated in the next period. This left a data set that could be used as a basis to forecast future expenditure.

The base year trend approach is appropriate for forecasting this category of expenditure in the next period as it is based on business as usual costs following the downward change factor seen in 2013. That is, the financial modelling was based on underlying business as usual costs.

Key assumptions

Our forecast methods are based on consistent and robust assumptions of the future. The key assumptions include:

- Cost escalation factors
  - Escalation of labour on expected wage increase
  - Escalation factor of CPI on other categories

Forecast outcomes

We have forecast $20.7 million of capex for Tools & Equipment

The purpose of this section is to provide a summary of the total capex proposed.

4.1 Summary of Capex

The table below shows the forecast capex for Tools & Equipment broken into the following cost elements.

Table 5 – Forecast Expenditure Components ($ million, Dec 2012)

Component	2014-15	2015-16	2016-17	2017-18	2018-19	Total
Plant & tools	2,017	2,017	2,017	2,017	2,017	**10.084**
Materials Consumed	582	582	582	582	582	**2.910**
External Material	1,189	1,189	1,189	1,189	1,189	**5.943**
Loose Tools and Minor Plant	292	292	292	292	292	**1.459**
Procurement Charge/Recovery	61	61	61	61	61	**0.303**
Total	**4,140**	**4,140**	**4,140**	**4,140**	**4,140**	**20,698**

The graph below shows the forecast expenditure for Tools & Equipment capex (standard control services). The proposed capex is 26.4% lower over the period from 2014-19 compared to 2009-14.

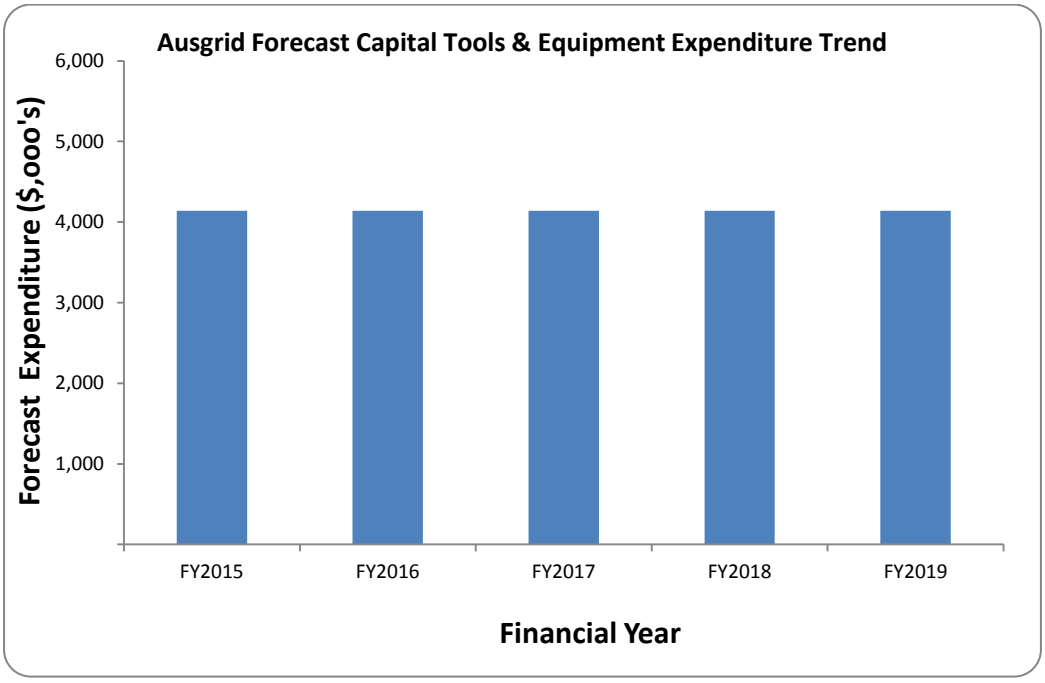

Figure 2 - Ausgrid Forecast Capital Tools & Equipment Expenditure Trend ($ '000, Dec 2012)

High level review

Our forecast capex reflects the efficient costs that we would be required to deliver the outcomes under the National Electricity Rules. It also reasonably reflects the costs that a prudent operator would require and a realistic expectation of the forecast and cost inputs required to achieve these outcomes.

The purpose of this section is to demonstrate that our proposed capex meets the capex objectives and criteria, with regard to the capex factors in the Rules.

5.1 Meeting the capex objectives

Our forecast capex of $20.7 million is required to achieve the following objectives:

- Comply with all applicable regulatory obligations or requirements associated with the provision of standard control services.
- Maintain a safe and reliable electrical supply across the Ausgrid network.
- Construct, repair and maintain the network ensuring our people and the public's safety.
- Provide access to appropriate tools and equipment to complete our obligations in delivering standard control services.
- Comply with WHS obligations.

This forecast also represents expenditure that is properly allocated to standard control services in accordance with the principles and policies set out in Ausgrid's cost allocation method.

5.2 Meeting capex criteria

The Rules sets out the criteria that the AER must be satisfied with before it can accept our proposed capex forecast. These criteria are:

- That the proposed forecast capex must reasonably reflect the efficient cost of achieving the capex objectives
- The costs that a prudent operator would require to achieve the capex objectives, and
- A realistic expectation of the demand forecast and cost inputs required to achieve the capex objectives.

While there was no specific capex allowance for Tools & Equipment during 2009-14, the expenditure was $28.1 million. This was generally a result of the significant capital program delivery. Going forward the forecast spend is expected to be business as usual based on the downward change factor that occurred in 2013. The forecast expenditure in the 2014-19 period is $20.7 million which is 26.3% below the 2009-14 period.