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# Appendix M – Works Delivery Strategy

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**September 2011**





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# Works Delivery Strategy

July 2012 – June 2017

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Prepared by:

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# Document interpretation and use

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This document describes and explains Western Power's Works Delivery Strategy (WDS) for AA3, which commences on 1 July 2012. The document provides an overview of the delivery strategies that have been developed for each of the Customer Service, Distribution and Transmission Divisions and explains how these individual strategies have been consolidated into a network and portfolio view.

The information presented in this document will be of interest to a wide audience within Western Power, including the leadership team. The document may also be provided to the ERA as part of the forthcoming access arrangement review process.

The document has been structured to allow readers to identify and access sections that are of particular interest to them. Explanatory information and cross-referencing to related Western Power policies and procedures is also provided to direct readers to supporting documents that are relevant to the delivery strategy.

In this document:

- all acronyms are defined in Section 9, Glossary of Terms
- all document references link to Western Power's document management system
- all historical program expenditure and future forecast expenditure is shown in June 2011 real dollars, including overhead costs
- all resource expenditure (material, fleet labour) is shown in June 2011 real dollars, excluding overhead costs
- all full time equivalents (FTE) refers to skilled labour which directly books to the works program and is defined in Western Power's resource type framework. Indirect FTE such as formal leaders and administration staff are not included in the labour resource supply / demand analysis.

This WDS is part of a hierarchy of Western Power documents that describe the arrangements governing the preparation and execution of delivery strategies as follows:

- the Works Delivery Framework (WDF) sets out guiding principles and overall governance arrangements
- the separate delivery strategies for Transmission, Distribution, and Customer Service Divisions have been prepared in accordance with the requirements of the WDF
- as noted above, the three divisional delivery strategies are brought together in this single, consolidated WDS, which provides both a network and a portfolio level view.



# Executive Summary

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## ***Scope and purpose of the Works Delivery Strategy (WDS)***

Western Power's expenditure planning and governance processes are focused on ensuring that Western Power's operating and capital expenditure is prudent and efficient. To achieve this objective the expenditure plans must:

- select the appropriate programs of work and capital projects that provide safe and reliable network services at minimum total life cycle costs
- deliver these projects efficiently

The purpose of this WDS is to explain how Western Power will ensure that the AA3 work program is delivered efficiently. The overarching objectives of the delivery strategy are:

- **efficient delivery** – maximising competition between external suppliers and fine-tuning internal processes to ensure Western Power's delivery method is efficient
- **deliverability** – ensuring that the optimal mix of labour, materials and fleet is available so that the program will be delivered
- **maintaining an in-house emergency response capability** – we will retain a level of internal resource that can be mobilised quickly to respond to emergencies and ensure rapid fault restoration
- **building and retaining in house expertise** – we will develop and retain visibility and control of the works delivery program in-house to enable us to scope projects and manage contracts effectively

We are confident that the strategy outlined in the following sections will enable the delivery of the increased work volumes proposed during AA3. The strategy is consistent with the principle outlined section 6.40 of the Access Code that:

*... the non-capital costs component of approved total costs for a covered network must include only those non-capital costs which would be incurred by a service provider efficiently minimising costs<sup>1</sup>*

The strategy has been developed in accordance with:

- **Western Power's works delivery framework**– which sets out the works delivery vision, objectives and principles to guide the delivery strategy
- **lessons and experience from AA2** – including the lessons from the lower-than-expected work volumes, and initiatives taken during AA2 to improve delivery performance

## ***Key features of the WDS***

The cornerstone of the WDS is the balanced portfolio, which maximises competition by comparing performance across internal and external resources and utilising different contracting arrangements where it is efficient to do so.

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<sup>1</sup> p. 66, section 6.40, *Electricity Networks Access Code 2004*

## Internal Resources

Western Power utilises its own employees to undertake work planning, resource planning and field activities. The following areas of expertise are where we will maintain a significant role:

- **effective program, project and contract management** - ensures we effectively manage external parties and compare costs of internal versus external delivery
- **work planning and scheduling** - ensures we have visibility of the work pipeline and control to adjust work allocation dependent on delivery performance and optimal resource utilisation
- **materials procured competitively** - with the exception of materials competitively sourced from external service providers, strategic materials such as transformers, capacitor banks, wood poles and switchgear will continue to be procured through Western Power's 'centre-led' process to maximise cost savings. These materials will also be free issued to external providers.

Western Power's procurement arrangements are consistent with good industry practice, and equip the business to competitively procure all of its strategic supplies in an efficient manner.

This was confirmed in an audit report by the WA Office of Auditor General during AA2. The findings resulted in favourable rankings in four key areas:

- open and effective competition
  - strategic management of procurement
  - probity controls
  - accountability controls
- 
- **design and commissioning** - ensures we maintain expertise to scope contracts and work effectively with external service providers to achieve efficient outcomes. Having expertise and oversight in commissioning new assets onto the network mitigates supply and compliance risk
  - **delivery of maintenance work** - ensures that operational risks including safety (public and personnel) are reduced, customer interruptions are minimised and we can efficiently respond to unplanned events. The consistency of preventative maintenance work volumes promotes efficient utilisation of in-house resources.
  - **delivery of construction work** - in contrast to maintenance, projects such as new sub stations, terminal yards and new feeder lines are better suited to a mix of internal and external service provision where scale economies are stronger and where there is less reliance on location-specific knowledge of operational conditions
  - **ensuring essential services** - safe and timely fault response and supply restoration is provided by in-house staff, particularly in rural and remote locations. In contrast to external service providers, internal resources can be

fully deployed across a range of capital and operational works while still providing fault response capability

The level and mix of work to ensure we retain our core capability and mitigate delivery risk has been assessed for AA3 and amounts to delivering approximately 30% of the forecast expenditure. A moderate increase in skilled labour will be required to deliver this work program.

We have also examined attrition rates, efficiency of work crew sizes and the aging workforce to inform our recruitment plan. Western Power has had considerable success in recruiting additional staff to support the delivery of the work program. In 2008 we recruited 138 additional staff into technical field job categories. Our past success together with a recent independent global market study by Deloitte (Labour Market Supply Analysis and Sourcing Strategy) provides confidence that Western Power will meet its resourcing needs for AA3.

### External Resources

The remaining work program will be delivered by external delivery channels that comprise the balanced portfolio. Table E1 summarises the external delivery channels.

**Table E1: External delivery channels summary**

Delivery channels	Description
Alliance	<p>Alliance contracting is where two or more parties focus on working together to achieve common outcomes as a single entity (in virtual or legal terms). In Western Power, alliance contracting is used for high risk programs or projects where we wish to maintain a high involvement or level of control, to leverage off the skills and expertise of other organisations while sharing the benefits of improved efficiencies with customers.</p> <p>The customer funded distribution program is an example of work delivered through alliance contracting. This work stream provides consistency of work flow ensuring alliance labour resources are optimally utilised. This program was historically delivered internally which resulted in conflicts in priority of work with other asset driven programs. Alliance delivery provides customer focus and priority while asset driven programs are delivered by other delivery channels.</p>
Performance based contracts (PBC)	<p>PBC in Western Power is a relationship-based model which facilitates the joint achievement of outcomes. However the parties are working as separate entities, bound by traditional contractual arrangements. Key performance indicators drive improved efficiency and specific remedies such as work re allocation are used should service providers under perform.</p> <p>This delivery channel is primarily used for distribution preventative maintenance, asset replacement and growth-driven programs. major national service providers are engaged under this form of contract following a national tender process. DDP provide an optimal balance between sustainable work levels (to encourage investment in plant, equipment and labour) and nurturing competition. This model was adopted after extensive benchmarking of the east coast distribution network operators.</p>
Standard contract	<p>Australian Standards contracts such as General Conditions of Contract for Design and Construction - AS4300 – 1995 are used for delivery of projects where outcomes are specified and delivery risk is allocated where it is best managed, thus securing the most efficient price.</p>
Preferred vendors (PV)	<p>This delivery channel is best suited to use for non strategic or ad-hoc work, or for specialist tasks that may not warrant the establishment of a deeper relationship. To ensure the most efficient engagement of this market, Western Power has established a panel of preferred suppliers or vendors with pre negotiated schedule of rates based on a broad scope of requirements.</p>

An assessment of work level and mix for each delivery channel has been made in accordance with work delivery framework guiding principles and work allocation matrices which consider factors such as:

- viable work loads for each delivery channel
- overall and year on year work program variation
- uncertainty of customer funded projects
- delivery risk
- performance

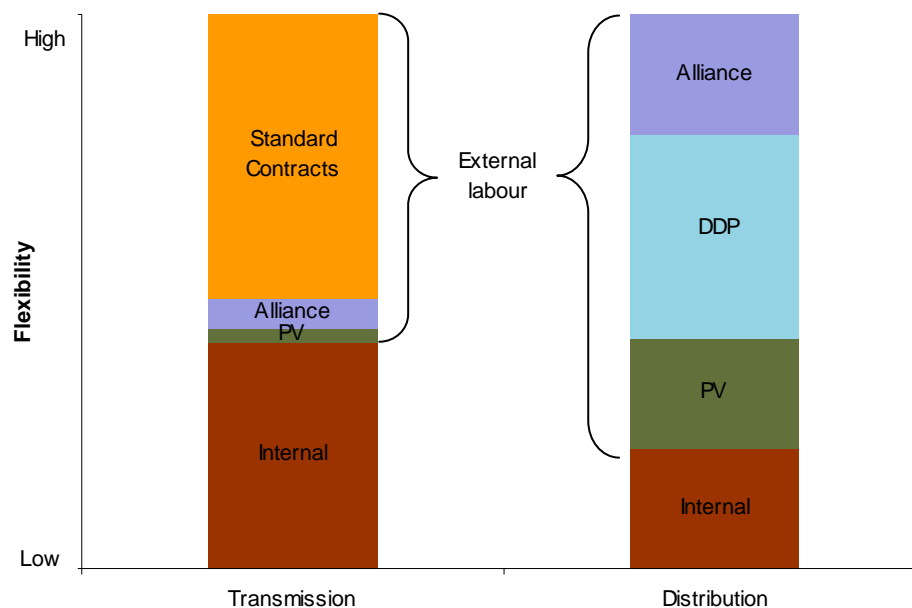
### Contracting Strategy

The balanced portfolio enables Western Power to efficiently minimise costs via:

- **negotiating a competitive price**; the balanced portfolio facilitates benchmarking across the delivery channels and enables efficiencies to be pursued in terms of price and quality performance
- **increasing the effectiveness of competition** – we are able to provide advice to external providers on likely work volumes, and therefore encourage investment in capacity and capability (people and fleet)

The inherent flexibility in the balanced portfolio also provides benefits which we can pass onto our customers. Figure E1 shows flexibility levels for each delivery channel.

**Figure E1: Delivery channel flexibility**



Internal delivery has low flexibility in terms of resource allocation. Variation in the internal work program of greater than 5% may result in stranded resources and redundancy costs. Work allocated to internal field crews therefore consists of stable and fixed components of the work program such as non growth and maintenance programs.

Variable components of the work program such as customer funded transmission projects, distribution growth projects and programs are more efficiently delivered by external delivery channels. Western Power has selected major service providers who operate across Australia, therefore have higher flexibility to manage variability in work levels by re allocating resources across different contracts and regions.

Key features of external delivery for AA3 are:

- **competitive external delivery of transmission line capital projects** - the installation and supply of the specialist materials required for these projects (such as towers, concrete and cable) will be put to tender. The tender applicants are better placed than Western Power to deliver these specialist materials and services as they have greater purchasing power and have delivered these services for national and international clients in energy and similar industries. Other non-specialist or recurring materials would be procured through Western Power's in-house procurement resource
- **growing the alliance work volume** - rigorous performance reporting and open book, independent auditing ensures Western Power's alliance partner demonstrates value for money delivery and has a shared objective to minimise costs. These controls mean increasing work volumes through the alliance will deliver economies of scale
- **maintaining DDP** - during AA2 Western Power consolidated its suite of numerous external distribution service providers into three DDP. Rationalising the supplier base in this way and providing greater visibility of work enables the business to achieve economies of scale, fosters competition and provides opportunities to optimise work packaging and scheduling. The DDP will deliver the majority of the proposed wood pole replacement program
- **maintaining specialised PV** - we will maintain a suite of suppliers that provide specialist services that would not be efficient for Western Power to deliver in-house due their the ad-hoc or bespoke nature. These include line easement vegetation management, helicopter patrolling and under ground boring

Competitive unit prices have already been established for the bulk of the works program, including pole replacements. Domestic market intelligence as well as a global market capability study confirms capability is available to deliver our major projects and programs when required. Figure E2 shows the broad timing of key contracts to ensure the balanced portfolio continues to deliver the required outcomes.

**Figure E2: Contract periods**

	Contract	Start	Finish	Pricing review period	Option to extend	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
1																	
2																	
3																	
4																	
5																	

**Work allocation overview**

Figure E3 illustrates the allocation of Western Power's total Approved Work Program (AWP) to delivery channels, based on the application of the principles and other

matters described above.

### **Figure E3: Consolidated work allocation**

Figure E3 shows that Western Power's internal labour resource base will grow modestly over AA3 compared to the rate of growth in total resource requirements. Over the period, the majority of the additional work will be sourced through the Alliance and external delivery channels. This balanced portfolio approach proved robust during AA2 and together with updated market intelligence provides a high level of confidence at the portfolio level that the AA3 work program is deliverable.

Resource supply versus demand analysis in terms of labour, material and fleet underpins the WDS and was a key input in ensuring the forecast expenditure is deliverable and efficient.

Analysis highlighted risks with delay in ERA approval, funding approval and supply of wooden poles; however there is sufficient lead time available to work with the ERA, DTF and our strategic vendors to manage this risk effectively.

### ***Concluding comments***

We have undertaken a robust, systematic assessment of our capability to deliver the AA3 work program. The balanced portfolio framework is used in delivery of the AA2 program, which while not of the scale of AA3, has posed a series of challenges to date that test the portfolio's flexibility and efficiency. This coupled with the effective response in rebalancing internal and DDP resources as conditions change provides confidence that the balanced portfolio approach will be able to efficiently deliver the AA3 investment proposal.

Further, continuous improvement and better alignment of accountabilities during AA2 has increased the effectiveness of this framework. A significant improvement was the increased operational asset management focus in specific transmission and distribution program areas, enabling improved visibility of the works. This ensured that network risks and deliverability constraints were assessed up front with effective production and delivery plans implemented to mitigate delivery risks and potential skills shortages. We are confident that the plans and arrangements in place will

deliver the proposed work consistent with a service provider efficiently minimising costs.

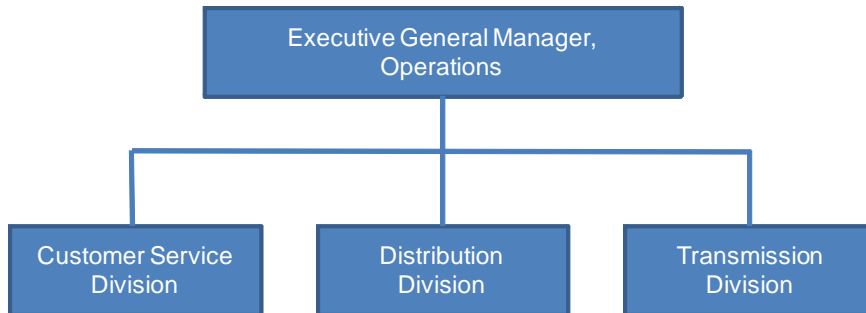
# 1 Purpose and scope of this document

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## 1.1 Objectives and approach

Operations are responsible for ensuring that Western Power's AWP is delivered efficiently. The three divisions that comprise Operations are depicted in the diagram below:

**Figure 1-1: Organisation structure - Operations**



This document explains Western Power's WDS for the efficient delivery of the AA3 work program at the Operations level. The WDS consolidates the divisional delivery strategies that have been developed by the Customer Service, Distribution and Transmission Divisions. The consolidation process involves a top-down review, the purpose of which is to:

- test to ensure that the delivery strategies provide for the efficient delivery of the work program
- test the deliverability of the divisional delivery strategies individually and collectively at the Operations level
- provide final verification that the work program reflects prudent, efficient and deliverable expenditure forecasts at a portfolio level, having regard to planning and delivery lead-times, and any binding resource constraints

The overarching objective of the WDS is to ensure that the delivered work provides value for money for customers, whilst also ensuring that Western Power achieves its Service Standard Benchmarks.

The WDS addresses the resourcing challenges arising from the planned increase in expenditure for the forthcoming AA3, which commences on 1 July 2012. The delivery strategy also builds on lessons and experience from the current access arrangement period. A number of guiding principles have been developed so that a rigorous and systematic approach can be applied to testing alternative approaches to delivery. This systematic approach ensures that the delivery strategies described in this document provide the most efficient means of delivering the work program.

The development of the WDS reflects the outcomes from close consultation between the Networks Division and Operations, underpinned by robust internal governance and approval processes. In particular, the AA3 work program is the product of iterative consultation between the sponsors of the proposed work (Networks Division) and those responsible for ensuring it is delivered efficiently (Operations).



It is also important to note that the Customer Service and Distribution Divisions work particularly closely to ensure that the divisional strategies maximise the synergies and efficiencies across the two divisions. This co-operative and iterative approach recognises that both Divisions have responsibilities in relation to the construction and maintenance of assets on the distribution network. Both Divisions therefore require access to the same delivery channels and resources, which necessitates a co-ordinated approach to achieve efficient delivery across the Divisions. For example, it is important that work is allocated to the Distribution Delivery Partners (DDP) in a manner that does not lead to Customer Service and Distribution Divisions competing for resources and driving costs higher.

The WDS and individual divisional delivery strategies will be refined and updated on an annual basis in light of benchmarking data and key performance indicators in relation to delivery performance. These refinements will be important to ensure the approach to delivery remains optimal. However, material changes to the delivery strategy are not expected to be made during AA3.

Operations are confident that the WDS presented in this document will achieve the objectives described above.

## 1.2 Scope of delivery strategy

The WDS is focused on the efficient delivery of the work program. As noted in section 1.1, robust processes and governance arrangements are in place to ensure that the sponsors of the work program (Networks Division) and Operations work together to produce operating and capital work programs that reflect efficient and deliverable expenditure forecasts.<sup>2</sup> The efficient expenditure forecasts and their associated work programs are therefore “taken as given” for the purpose of this document. This recognises that the AWP reflects a collaborative, cross-divisional approach to planning which includes input on deliverability.

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<sup>2</sup> Further details of the expenditure and works delivery governance arrangements are outlined in section 2.2 of this document.

## 2 Framework for developing the delivery strategy

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### 2.1 Introduction and overview

The purpose of this chapter is to provide the context for the WDS in terms of Western Power's broader strategies and governance processes. The relevant strategies and processes aim to ensure that customers obtain value for money from network and customer services. The chapter also sets out the principles that have guided the development of each operating division's delivery strategy.

The key messages from this chapter are as follows:

- Western Power's expenditure and work delivery governance arrangements provide an integrated framework, which ensures that the AA3 work program reflects efficient expenditure, and is delivered in an efficient manner
- Western Power's NIS provides a robust framework for ensuring that the AA3 work program meets the principal objectives of providing customer value and statutory compliance
- Western Power's procurement policy is an important component of efficient delivery. It reflects an industry-standard approach and equips the business to procure all of its required external supplies in an efficient manner
- each division's delivery strategy has been developed in accordance with the WDF

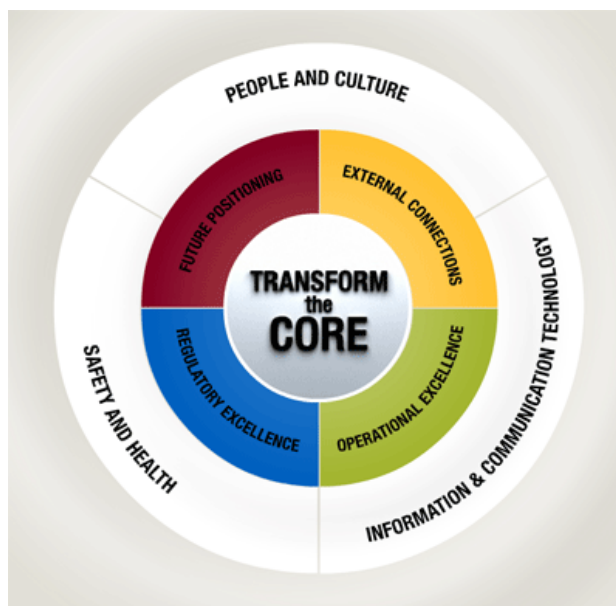
### 2.2 Related strategies and governance processes

#### 2.2.1 Background

Western Power's WDS sits alongside the Network Investment Strategy (NIS) within the broader Corporate Governance Framework, which has been developed within the context of Western Power's overarching strategy for performance improvement, known as *Transform the Core*.

The *Transform the Core* strategy responds to the current strategic challenges faced by Western Power and is intended to operate over the three year period from 2010/11 to 2012/13. Its aim is to focus on excellence across the core operations to simplify and improve the responsiveness and commerciality of the business. In particular it aims to equip Western Power to respond more fully to the needs of the shareholder, customers, regulators and other stakeholders. *Transform the Core* has four primary areas of focus: External Connections; Regulatory Excellence; Operational Excellence; and Future Growth, plus three enabling strategies: Safety and Health; People and Culture; and Information and Communication Technology, as represented in Figure 2-1.

**Figure 2-1: Western Power’s transform the core strategy**



## 2.2.2 Network Investment Strategy

The role of Operations is to deliver Western Power’s AWP (as determined in accordance with the NIS) in an efficient manner. In essence, the NIS shapes the network investment portfolio which is then delivered by the operating divisions.

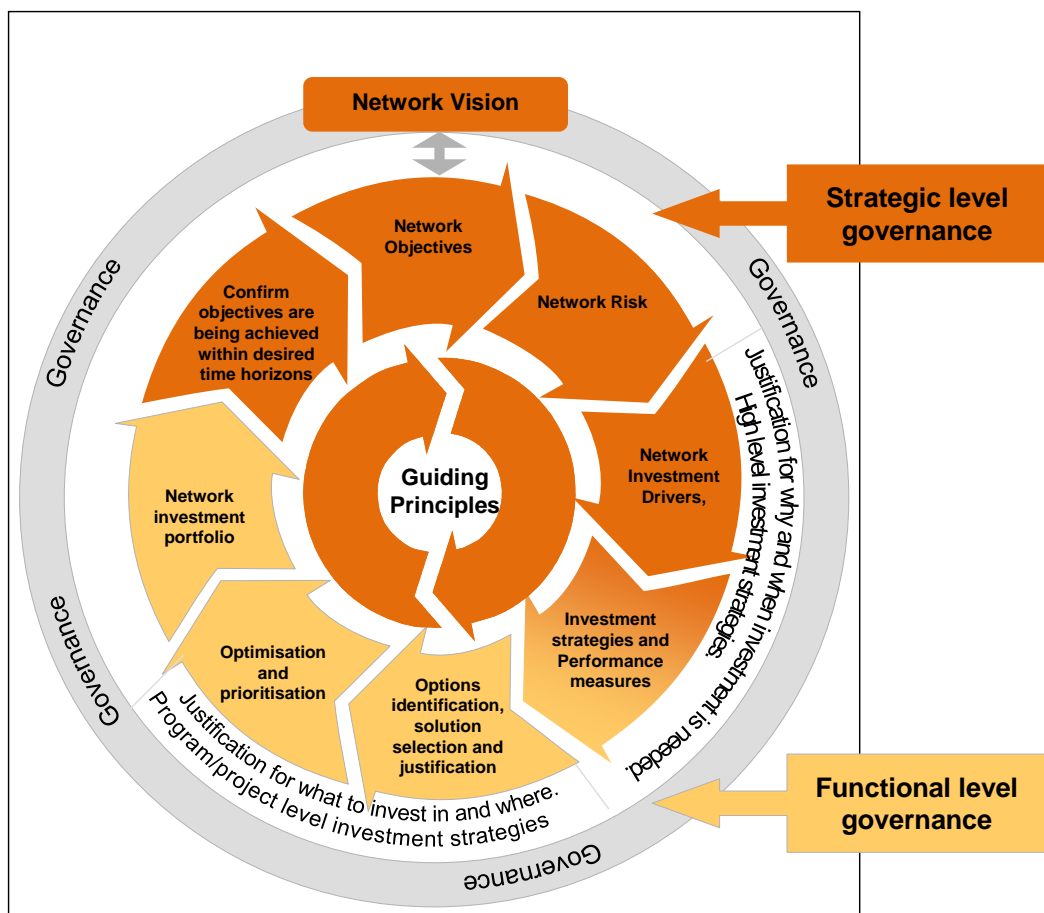
The NIS establishes the following objectives for investment decisions:

- meet customer requirements for performance and value
- comply with statutory obligations
- enable customer flexibility and choice
- enable a competitive electricity market and deliver future energy policy
- meet the requirements of the New Facilities Investment Test as defined in section 6.52 of the Access Code

To achieve these objectives, the governance framework establishes clear roles and accountabilities throughout the investment decision making and work delivery processes. The governance framework requires accurate and timely information to support decision making at each milestone, as well as establishing processes for reviewing and monitoring outcomes.

Figure 2-2 below depicts the NIS governance arrangements.

**Figure 2-2: NIS and governance arrangements**



At the core of the strategy there are four key principles:

1. Network investments will be transparent and commercially sound, balancing return on investment against risk and compliant outcomes.
2. Network investments will balance current (short term) and future (long term) needs.
3. Network investments will be based on an optimal response across the portfolio of investment drivers and consideration of appropriate options.
4. Overall cost efficiency and performance of network investments will improve through learning and continuous improvement.

Figure 2-2 shows that at the strategic level, the emphasis is on establishing and governing those elements of the NIS framework that guide the strategic direction of investments. This is predominantly the role of the Board and Executive. While not static, compared to functional level governance these elements are more enduring, with a proactive rather than reactive focus.

In contrast, at the functional level the emphasis is on establishing and governing those elements of the framework where individual investment decisions are made. These elements are closely aligned with day-to-day activities. Accountabilities for these elements lie with individual General Managers and Branch Managers based on their specific areas of accountability. These elements are more dynamic and subject to more regular review and approval compared to the strategic level governance described above.

The overall investment governance framework that exists at the functional level is described in Western Power’s Work Program Governance Model

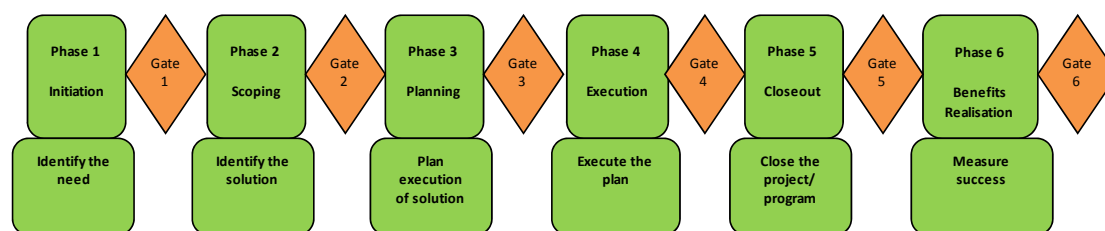
This sets out the steps required to identify, develop, design and deliver projects or programs and is characterised by a six gate process (described in further detail at the end of this section).

A key output of the NIS is the identification of Western Power’s investment portfolio, which consists of the various projects and programs of work required to address network issues. The network investment portfolio contains a 25 year view of all existing, proposed and potential capital and operating projects and programs identified to address known or forecast network issues. Projects and programs within the investment portfolio exist with varying levels of confidence, definition and approval and will be at various stages of development. Naturally, there is a higher level of definition for work in the near term compared to work identified for later periods.

A key subset of the network investment portfolio is the AWP, which provides an annually refreshed view of forecast capital and operating expenditure over the 5 financial years following the current year. The AWP reflects an optimised, prioritised and constrained view of the expenditure requirements on the transmission and distribution networks.

As noted earlier, Western Power’s work program governance model defines a six gate process governing the identification, development, design and delivery of network investment projects and programs. These governance arrangements apply to the AWP, and they are depicted in Figure 2-3 below.

**Figure 2-3: Work program governance model**



The six “gates” or milestones in these governance arrangements provide key points of control through the asset creation and project / program delivery process. At a corporate level, the NIS is principally concerned with Phases 1, 2 and 3. Under the governance arrangements, the project/program sponsors (Networks) are responsible for ensuring that all proposed transmission and distribution network projects are justified in terms of the criteria and principles set out in the NIS<sup>3</sup>. In the case of Customer Service Division, the governance framework is contained wholly within the Division for customer-initiated / customer funded work. All projects and programs entering the delivery chain at Gate 3 must be economically justified and efficient.

formal optimisation forums have been introduced into the annual planning calendar to provide points in the annual planning cycle for optimisation to be undertaken within and across all network investment driver categories. Arrangements are also in place to enable project / program sponsors, estimators and Operations’ project managers to interact during the scoping and planning phases (phases 2 and 3 shown in Figure 2-3) to sequence and prioritise the forward work program to ensure that it can be

<sup>3</sup> As already noted, these criteria encompass, amongst other matters, the requirements of the New Facilities Investment Test.

delivered efficiently, having regard to the following factors and constraints:

- environmental approval lead-times
- key equipment delivery lead-times
- the mix and availability of internal and external labour, material and fleet resources
- the availability of maintenance and construction network outage windows

### 2.2.3 Works Delivery Framework

The WDF provides an overarching framework to guide the development of Western Power’s delivery strategies.

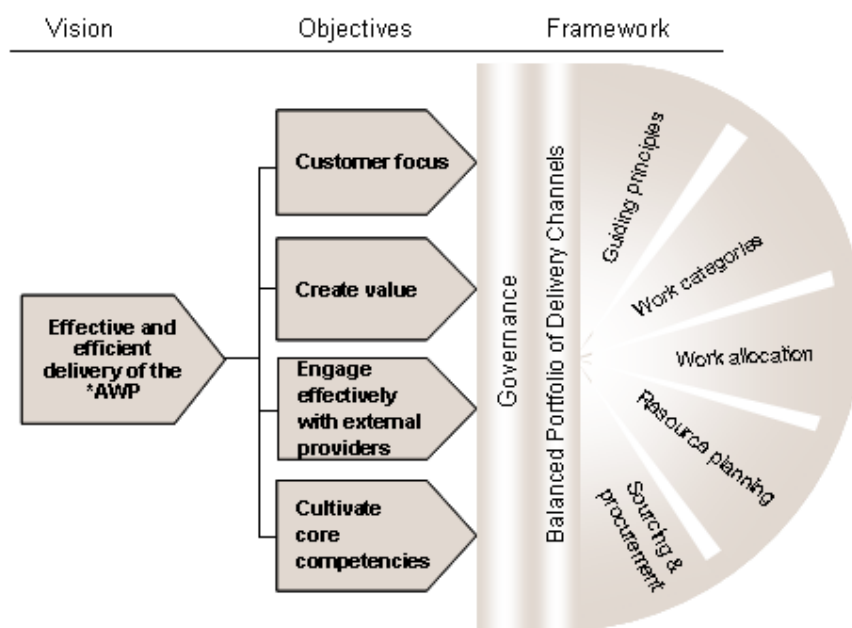
At the portfolio level, the WDF sets the works delivery vision, objectives and guiding principles to secure the efficient and effective delivery of Western Power’s AWP. The delivery vision provides for the efficient and effective delivery of the AWP as follows:

- the AWP will be developed through a collaborative and iterative process between Networks and Operations, such that it is optimised for efficient delivery and Western Power’s objectives can be met
- the AWP will be delivered efficiently through implementation of the Balanced Portfolio strategy (described in Table 2-1 below), supported by resource planning, sourcing and procurement processes. Appropriate performance measures and benchmarks will be developed and applied

The WDF guides decisions in optimising field workforces and other resources to achieve cost efficiencies by minimising mobilisation and demobilisation costs, minimising skills shortages and allocating sustainable work volumes and mixes.

At the functional level the WDF guides the development of program level delivery strategies for the operating divisions. Components of the framework are shown below.

**Figure 2-4: WDF components**



The WDF document sets out full details of the framework and its components. For convenience (and to assist in the interpretation of Figure 2-4), a brief overview of these key matters and framework components is presented below.

**Table 2-1: Summary of the WDF**

Key matter or component	Summary of detailed explanation provided in the WDF
<b>Objectives</b>	The four objectives are: customer focus; create value; engage effectively with external providers and cultivate core competencies. These objectives are closely aligned to the guiding principles which are described in further detail below.
<b>Governance</b>	<p>The WDF establishes the processes, systems and controls which ensure that all investments and their associated operating and maintenance programs are delivered in an efficient manner. As noted in relation to the NIS, there are two levels of governance – strategic and functional –applying to the WDF:</p> <ul style="list-style-type: none"> <li>• at the strategic level, the emphasis is on establishing and governing those elements that guide the strategic direction of delivery. While not static, these elements are more enduring and have longer periods between reviews</li> <li>• at the functional level, the emphasis is on establishing and governing those elements where individual delivery decisions are made. These elements are dynamic and subject to more regular review and approval</li> </ul>
<b>Delivery channels</b>	<p>The following delivery channels are available to Western Power as part of a Balanced Portfolio (see below) for the effective and efficient delivery of the AWP:</p> <ul style="list-style-type: none"> <li>• internal</li> <li>• alliance</li> <li>• external</li> </ul> <p>A more detailed description of Western Power’s current delivery channels is provided in section 3.2.</p>
<b>The Balanced Portfolio</b>	<p>The purpose of the Balanced Portfolio is to optimise the work volumes and mix across delivery channels so that:</p> <ol style="list-style-type: none"> <li>1. The flexibility and responsiveness of Western Power’s cost structure to changes in work volumes is improved.</li> <li>2. Core competencies are maintained and developed.</li> <li>3. Western Power maintains control over high risk delivery areas.</li> <li>4. Western Power positions itself to obtain value for money from its suppliers.</li> <li>5. Western Power maintains an informed buyer status.</li> <li>6. External delivery channels have transparency on likely work volumes and mix to encourage investment in capability and capacity (people and plant).</li> <li>7. Benchmarking across delivery channels of like work categories can be utilised to nurture competition and continuously improve performance.</li> </ol>

Key matter or component	Summary of detailed explanation provided in the WDF
<b>Guiding principles</b>	<p>The guiding principles are routinely and consistently applied during development of the AWP, during annual work planning cycles and during the work allocation decision making process.</p> <p>The guiding principles are intended to provide a frame of reference for resource planning and work allocation decision makers, where trade-offs between costs, risk and performance is required. The WDF guiding principles are:</p> <ul style="list-style-type: none"> <li>• guiding principle 1: Retain and cultivate core competencies to be operationally excellent</li> <li>• guiding principle 2: Engage effectively with external providers</li> <li>• guiding principle 3: Demonstrate Value for Money in delivery of the work program</li> <li>• guiding principle 4: Meet service obligations to customers</li> </ul>
<b>Work Categories</b>	<p>The work categories provide a view of work at a portfolio level to enable consolidation and optimisation of the Balanced Portfolio across all delivery divisions.</p>
<b>Work allocation</b>	<p>Work allocation matrices are developed by delivery divisions in collaboration with subject matter experts to ensure that appropriate resources are available to deliver the work. The focus is to ensure efficient delivery by: providing a flexible cost structure, strengthening core competencies and providing external delivery channels with viable workloads (volume and mix).</p>
<b>Resource Planning</b>	<p>Resource planning considers the demand and supply for the delivery of the AWP. Periodic scenario studies are undertaken to manage potential resourcing gaps, including material, fleet as well as labour resources.</p> <p>Resource demand modelling is undertaken by each of the delivery divisions using various corporate tools, including Primavera, spreadsheets and databases. The modelling converts the AWP into a resource demand view, taking into account the guiding principles, age profiles, material, plant and equipment forecasts and market capability intelligence.</p> <p>The outcome of resource planning is a long term view of internal/external resource ratios by work type which assists in identifying training and development requirements, minimising skills shortages as well as assisting the budgeting process.</p>
<b>Sourcing and procurement</b>	<p>Western Power adopts a centre-led procurement function that promotes value for money; fair competition; accountability; efficient risk management; and probity and transparency in procurement activities.</p> <p>The sourcing model is designed to deliver timely sourcing outcomes utilising an aligned enterprise view which seeks to minimise the total cost of ownership.</p>

## 2.2.4 Procurement

The Procurement Policy establishes the principles and practices that govern Western Power's procurement activities for all goods, materials, services and intellectual property assets. These governing principles are:

- agreements must be established via a competitive process to meet business requirements and to deliver value for money
- the selection, evaluation and award process is supported by the engagement of relevant subject matter experts to ensure that the goods and services obtained meet Western Power's requirements including compliance with safety, environmental, technical, commercial, and qualitative standards



Western Power adopts a centre-led procurement function that enables the business to leverage its spend in order to gain maximum utilisation and savings, standardise procurement policies and processes, facilitate knowledge and resource-sharing, provide transparency and governance whilst empowering local business units to undertake their own purchasing. As noted in the WDF, the centre-led approach promotes value for money; competition; accountability; risk management; and probity and transparency in Western Power's procurement activities.

Western Power aims to achieve four broad outcomes through its procurement activities:

- deliver value for money
- procure quality goods and services
- manage supply risk efficiently
- ensure compliance with Western Power's policies and procedures

The actions taken to achieve these outcomes are detailed in the Procurement Policy

Under the Procurement Policy Western Power purchases inventory items required for work undertaken by external contractors as well as the internal workforce. The centralised procurement of inventory (and "free issue" to external contractors) enables Western Power to leverage scale economies in purchasing, and to ensure quality and compliance of materials with standard designs and specifications. The variable nature of some work (in particular, transmission) results in some ad-hoc procurement of materials, or the use of "supply and construct" contracts, under which the contractor procures the necessary materials.

Western Power's procurement arrangements are consistent with good industry practice, and equip the business to competitively procure all of its strategic supplies in an efficient manner.

This was confirmed in an audit report by the WA Office of Auditor General in June 2011. The findings resulted in favourable rankings in four key areas:

- open and effective competition
- strategic management of procurement
- probity controls
- accountability controls

Since the audit we have implemented further initiatives as part of our operational excellence program to continually improve performance.

## 2.3 Principles guiding the delivery strategy

To meet the Access Code requirement to efficiently minimise costs, the following detailed principles were adopted to guide the development of the delivery strategies.

**Table 2-2: Detailed principles guiding the delivery strategy**

Key principle	Explanation
<b>Customer focus</b>	Consistent with Western Power’s corporate customer engagement principle, the delivery strategy should ensure that work is delivered in a manner that meets customers’ expectations and satisfies statutory obligations.
<b>Achieving and demonstrating value for money</b>	<p>Enhancing competition across the delivery value chain is an important factor in achieving and demonstrating value for money. The delivery strategy should facilitate the measurement of performance in delivering value for money (in terms of cost, timeliness and quality), through tools such as benchmarking and independent review.</p> <p>More broadly, continuous improvement can be achieved through improvements in business processes and practices identified through mechanisms such as independent assessment and peer review.</p>
<b>Maintaining an informed buyer status</b>	As an informed buyer, Western Power must have sufficient technical and commercial knowledge and skills to enable it to procure high quality, value-for-money services and materials from external providers, on a sustainable basis.
<b>Building sustainable human capital and intellectual property</b>	An efficient work delivery operation must build and maintain its own core stock of technical and commercial skills and knowledge, against the backdrop of constant technological change, an ageing workforce, and a labour market in which commercial and technical skills are in short supply. Building and maintaining human capital and intellectual property over the long-term requires a culture of innovation and continuous improvement, and the delivery strategy should reflect this culture and cultivate the core competencies required by Western Power to be operationally excellent.
<b>Safe and timely fault response and network recovery capability</b>	The choice of delivery channels should provide the capability for safe and efficient responses to network faults and unplanned network outages. The capability must reflect the high value placed on supply reliability by customers as well as the challenging geographic characteristics of the Western Power Network.
<b>Managing complexity and risk</b>	The choice of delivery channels must have regard to the complexity of the proposed work or its bespoke nature. Complex work in brownfield situations may expose Western Power or customers to significant reliability and performance risks arising from the importance of asset-specific knowledge. As a result, such work is more likely to be provided in-house in order to enable efficient management of these risks.

Key principle	Explanation
<b>Flexibility and ability to manage uncertainty</b>	<p>The delivery strategy should be sufficiently flexible to enable Western Power to respond efficiently to:</p> <ul style="list-style-type: none"> <li>• changes in economic conditions that drive the demand for Western Power's services (for instance, changes in the characteristics and location of load demand and new generation sources)</li> <li>• changes in factors that affect Western Power's investment capability (for instance, the impact of external events such as the GFC, and the effects of capital constraints imposed by Government)</li> <li>• changes in market conditions that affect the availability and prices of outsourced services</li> </ul>
<b>Competitive tension</b>	<p>The existence of a range of competing external service providers will help ensure that services procured through external delivery channels are priced efficiently, and represent value for money. Competitive market prices also provide good yardsticks for measuring the performance of Western Power's in-house resources.</p>
<b>On time delivery</b>	<p>As noted in section 1.2, the AA3 work program has been developed by Networks Division in consultation with Operations. The challenge for the delivery strategy is to document how the work will be delivered in a timely and efficient manner. In particular, the strategy must aim to achieve on-time delivery, without compromising safety, quality, efficiency and other key performance indicators.</p>
<b>Quality management</b>	<p>The choice of delivery channels must consider the ease with which performance quality can be assured and monitored.</p>
<b>Governance and audit</b>	<p>Rigorous and effective internal controls, processes and procedures that foster efficiency, transparency and probity in decision-making.</p>

The principles set out above have been applied by each of the operating divisions. For particular Divisions, some of the guiding principles will be more relevant to the development of their delivery strategy. The focus on particular principles by each operating division is driven by the nature of the divisional work and the particular challenges arising in the AA3 work program.

## 3 Current delivery arrangements and performance

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### 3.1 Introduction and overview

The purpose of this Chapter is to provide background information which is relevant to the development of the WDS. The background information includes:

- a description of the existing delivery channels
- an overview of Western Power's recent delivery history and the corporate initiatives to improve delivery performance
- information on the efficiency of Western Power's current delivery performance, including benchmarking data and key performance indicators

The key messages from this Chapter are as follows:

- Western Power adopts a Balanced Portfolio in relation to its internal and external delivery channels. This approach provides a flexible contracting strategy that involves a portfolio of delivery channels including the internal workforce, alliances and contractors
- Western Power has undertaken a restructuring of Customer Service, Distribution and Transmission Divisions to strengthen accountability, deliver operational efficiencies, and enable further improvements to be achieved in operational asset management and customer service
- Western Power has also responded efficiently to an unexpected downturn in capital expenditure requirements during AA2, by reducing its internal resources and modifying pre-existing alliance arrangements
- Western Power has implemented a number of initiatives at the corporate level that will continue to drive efficient delivery performance

### 3.2 Current delivery channels

The WDF explains that Western Power adopts a balanced portfolio approach in relation to its available delivery channels. The objectives of the balanced portfolio are to:

- improve the flexibility and responsiveness of Western Power's cost structure to changes in work volumes
- maintain and grow core competencies
- maintain control over high risk delivery areas
- have a position in the market to ensure that Western Power can extract value from its suppliers
- maintain an informed buyer status

- ensure external delivery channels have sufficient information on likely work volumes and mixes to encourage investment in capability and capacity (labour and fleet); and
- enable benchmarking across all delivery mechanisms, so as to promote the pursuit of efficiency gains through price and comparative competition.

To ensure that the above objectives are met, the adopted portfolio is regularly reviewed and optimised to take account of prevailing conditions and any changes to the work program. Each of the external delivery channels are implemented through competitive processes. Contractual terms (based on Australian Contracting Standards and Western Power's specific procurement policy) are reviewed and refined continuously in light of on-going experience.

A description of the delivery channels is provided below:

**Table 3-1: Delivery channels summary**

Delivery channels	Description
Internal	<p>Western Power's employees are engaged in the following operational delivery activities:</p> <ul style="list-style-type: none"> <li>• procurement</li> <li>• planning and scheduling</li> <li>• design and commissioning</li> <li>• construction and maintenance</li> <li>• project and contract management</li> </ul>
Alliance	<p>Alliance contracting is where two or more parties focus on working together to achieve common outcomes as a single entity (in virtual or legal terms). In Western Power, alliance contracting is used for high risk programs or projects where the company wishes to maintain a high involvement or level of control, to leverage off the skills and expertise of other organisations, and to have flexibility to change contractual arrangements in response to changing external factors. Customer funded distribution programs provide an example of work that is delivered through an alliance arrangement</p>
Performance based contract	<p>The performance based contracting delivery channel in Western Power is a relationship-based model which facilitates the joint achievement of outcomes but the parties are working as separate entities, bound by traditional contractual arrangements.</p> <p>This delivery channel is primarily suitable for distribution preventative maintenance and growth-driven works. DDP are engaged under this form of contract following a national tender process. They provide an optimal balance between sustainable work levels (to encourage investment in plant, equipment and labour) and nurturing competition. This model was adopted after extensive benchmarking of the east coast distribution network operators.</p>
Standard contract	<p>Australian Standard contracting series such as AS 4000 are a key component of Western Power's traditional delivery channels, particularly for delivery of Transmission assets. The form of contract used is determined by the delivery divisions.</p> <p>This approach is most appropriate for large or one-off work such as transmission substation construction, transmission line projects and civil construction.</p>
Preferred vendor	<p>The preferred vendor model engages pre-qualified contractors to deliver specific parcels of work at pre-agreed rates. This delivery channel is best suited to use for non strategic or ad-hoc work, or for specialist tasks that may not warrant the establishment of a deeper relationship.</p>

## 3.3 Recent history, challenges and initiatives

### 3.3.1 Alliance rationalisation

In response to the economic boom which occurred over the period from 2006 to 2008, Western Power formed two alliance partnerships, the 'Power Alliance' and the 'Transfield Alliance'. The alliance partnerships were established to:

- address the skills shortages that existed at the time
- address a projected increase in the work program
- manage increasing material and project costs

Unfortunately, following the establishment of the alliance partnerships Western Power faced a significant reduction in the planned volume of capital work, including the deferral and/or reduction in scope of several large capital projects (such as the Perth to Geraldton 330 kV transmission line). The reduction in the volume of work was primarily due to:

- **the GFC** – which led to the deferral or cancellation of a number of generation-driven and load-related projects
- **the ERA's decision to write down actual capital expenditure** - incurred by Western Power during AA1 which led to project deferral and funding issues as:
  - the Department of Treasury and Finance imposed funding restrictions on Western Power
  - Western Power revisited its governance and investment processes, and carefully scrutinised all planned capital expenditure, resulting in the deferral or cancellation of some proposed projects

In February 2009 Western Power initiated a review of its alliance strategy. The review identified that the current alliance strategy provided surplus capacity and could no longer deliver value for money.

While the outcomes sought from alliance delivery had not been fully realised in 2009/10, Western Power's review concluded that it was appropriate to maintain this delivery channel through one alliance. The Alliance was retained to provide:

- an alternate end-to-end capable workforce
- value for money delivery (in terms of cost performance, safety, customer, environment and community outcomes)
- flexibility in commercial and operational arrangements to enable Western Power to adjust any change within the economic environment

### 3.3.2 Organisational change

In 2010, Western Power undertook a corporate restructuring to establish separate work delivery Divisions for Customer Service, Distribution and Transmission, with a single Executive General Manager appointed to oversee all operations activities. This re-organisation provides strengthened accountability across the delivery value chain,

delivers operational efficiencies, and enables improvements to be achieved in operational asset management and customer service.

At the same time, Western Power took action to minimise its potential exposure to the cost of stranded transmission engineering resources. The internal design capability was down-sized, leading to a substantial reduction in internal labour costs, and a flexible delivery strategy for design (as well as construction) was adopted. This initiative enhanced the flexibility of Western Power's cost structure to accommodate changes to work volumes.

### **3.3.3 Establishment of DDP**

Distribution Delivery "Project Charlie" was implemented in 2010. Prior to the implementation of the project, there existed more than 40 individual contractors working with Western Power. These contracts did not provide an effective performance management framework.

The Distribution Delivery project addressed this problem, by reducing the number of contractors and offering successful DDP increased visibility of work allocation, which in turn has enabled Western Power to procure services at more efficient costs, and under more favourable commercial terms. The new contractual framework requires the DDP to provide end-to-end project management of work, and will allow Western Power to monitor DDP performance more effectively.

### **3.3.4 Reduction in backlog of transmission work**

Measures undertaken by Transmission Maintenance Delivery Branch have significantly reduced the backlog of work across the entire OPEX program. These measures included:

- restructuring of maintenance resources and creation of extra teams, both in substation maintenance and overhead lines maintenance, which has enabled planned work programs to proceed without being impacted on by unplanned work
- smart planning and the introduction of Combined Maintenance, which provides for more efficient use of resources in the delivery of the maintenance program
- more effective targeting of high risk assets through the asset replacement program has reduced the backlog of work in corrective programs. For instance, the Pole Base Inspection and Treatment program commenced in AA2 to address a full year of backlog work from the last year of the AA1 period. During 2009/10, this backlog was completely eliminated

### **3.3.5 Unit cost reductions in maintenance**

Unit cost reductions have been achieved across the total operating expenditure program by:

- embedding a team of contractor resources within line maintenance, which provided savings on labour as well as plant and equipment

- more effective management of work being outsourced, resulting in reduced costs and improved quality
- 'right-sizing' crew numbers to reflect the size of the jobs, resulting in reduced labour costs
- increased clarity in the allocation of accountability for the delivery of specific programs of work
- the introduction of combined maintenance across the program.

Benefits of these actions are demonstrated by the following achievements:

- there has been a 25% reduction in the average cost for the replacement of a Transmission pole
- since the start of AA2, there has been a unit cost reduction per bay achieved in the vegetation management program

### 3.3.6 Operational excellence

During AA2, Western Power expanded its Operational Excellence program to include a number of specific projects aimed at improving Western Power's ability to deliver value for money, and to provide cost savings within the business. The projects are:

- **Engineering standards** - design and delivery of a suite of sustainable and NFIT- aligned engineering standards, consistently applied from project planning to implementation
- **Investment strategy** - development of a holistic Investment Strategy ensuring NFIT compliance and responsible risk management and well justified investment decisions
- **Value for money** - streamlining the work program planning and delivery process to drive and demonstrate efficiency and effectiveness in work program execution
- **Supply chain optimisation** - improvement of the end-to-end supply chain to enable efficient purchasing, accurate accounting and inventory management and tight financial control
- **Works management optimisation** - streamlining the Works Management System to improve and demonstrate productivity, cost efficiency and well justified decision making
- **End to end pole management** - the establishment of an end-to-end, integrated pole management compliance plan driving safety, sustainability and reliability

### 3.3.7 Enhanced planning and works management

The Enhanced Planning and Works Management (EPWM) Project was launched in 2009. This project involves improving delivery planning processes, governance and



the implementation of Primavera<sup>4</sup>, which will be used throughout the business for project, program and portfolio management within the work program.

Once complete, EPWM will provide a single source of work program data, enabling improved long-term work and resource planning, and enabling improved program and portfolio management. Two key challenges that EPWM is addressing are:

- **timeliness in project approvals** - on-schedule delivery of projects, particularly transmission capital projects is becoming increasingly challenging due to increasing community concerns and environmental requirements. Improved forward visibility and prioritisation of the work plans together with the robust governance arrangements underpinning EPWM will ensure project approvals through each gate are managed more proactively
- **management of network access** - gaining outages on the network to undertake planned maintenance or commissioning new assets is becoming increasingly difficult. Increased network loadings and utilisation results in smaller windows for outages, which limits some work activities to spring and autumn periods when system loadings are more manageable and able to accommodate outages. EPWM, together with other targeted work scheduling initiatives, will provide the ability to optimise network access windows

As part of its EPWM initiative Western Power has so far implemented Primavera as its modelling tool for transmission capital projects. As maintenance and distribution holistic work planning processes are embedded, this will become the enterprise resourcing tool. Plans are to have this implementation completed by the beginning of AA3. This initiative responds to criticisms made by the ERA in its AA2 Final Decision<sup>5</sup> regarding Western Power's work management and governance processes. Until the EPWM initiative is fully implemented other tools such as Microsoft Excel and Access are used.

### 3.3.8 Improved vegetation management

During AA2 Western Power's approach to vegetation management was modified to deliver improved community safety and efficiency. In 2010, a centralised Specialist Vegetation Management team was established. In addition, the number of contractors engaged for the clearance of vegetation around powerlines was increased from one to three. Each contractor has been awarded a specific vegetation zone, and this delivered benefits in the form of improved service levels (including public safety), and stronger competitive pricing.

### 3.3.9 Benchmarking and alternative delivery models

Western Power met with six network owners in 2008, across three Australian states and New Zealand, to gain a sound understanding of current industry practice in work delivery approaches, as well as commercial pitfalls in alternative approaches. Whilst no confidential information was shared, in line with the Trade Practices Act, all participants were forthright with their assessment of key principles.

Key observations from this initiative were:

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<sup>4</sup> Commercially available portfolio, program, project management tool

<sup>5</sup> Economic Regulation Authority, final decision on proposed revisions to the Access Arrangement for the Western Power Network, 3 December 2009, paragraph 471.

- there are a variety of competing models in operation, driven by factors that are unique to each operator, such as geography, corporate goals, corporate history and owners' preferences for particular work delivery models
- overall there was a clear preference for “one-stop-shopping” for provision of multiple services wherever possible
- there was a clear desire to build up competitive markets to provide choice and value for money

Key principles that are relevant to Western Power which emerged from this exercise included:

- **long-term contracts with larger players** - enable the negotiation of better rates whilst allowing contractors to invest in the necessary capital equipment and training to deliver work at lower levels of risk and overall unit cost
- **large contracts of packaged work in specific geographical areas** - drive better unit rates and increased value for money. However, assignment of guaranteed geographical “patches” should be avoided, so as to allow degrees of overlap to enable reallocation of work amongst competing suppliers if required
- **market competition** - maintains tension between market players, resulting in more keen pricing and maintenance of quality
- **benchmarking based contracts** - provide information on contractor performance that assists to optimise the allocation of work to service providers
- **centralised work allocation** - ensures that an independent function maintains control. This keeps the internal workforce motivated to perform against targets, rather than maintaining a sense of “work entitlement”
- **core competency** - determines the scope of work to be undertaken by internal resources and the activities that are suited to outsourcing
- **informed buyer status** - enables Western Power to extract maximum value for money from external service providers

Each Division is developing success factors or key performance indicators to monitor the efficiency of its delivery processes and to identify opportunities to innovate and improve current processes. Benchmarks and key performance indicators will measure performance in areas including:

- **safe execution** - including fatalities / serious harm, site inspection compliance, and public safety Incidents
- **customer impact** - including system minutes interrupted, circuit availability, vegetation management, bushfire management, asset initiated fires
- **efficient delivery** - including on budget performance, competitively sourced work, contract variations and unit cost reductions
- **on time completion** - including the monitoring of contract variations
- **quality service** - including design and as-built compliance, and construction QA compliance, and outstanding work post-commissioning

- **commercial and operational sustainability** - including employee turnover and tender bid compliance

Some of these performance measures have been developed and introduced during AA2.

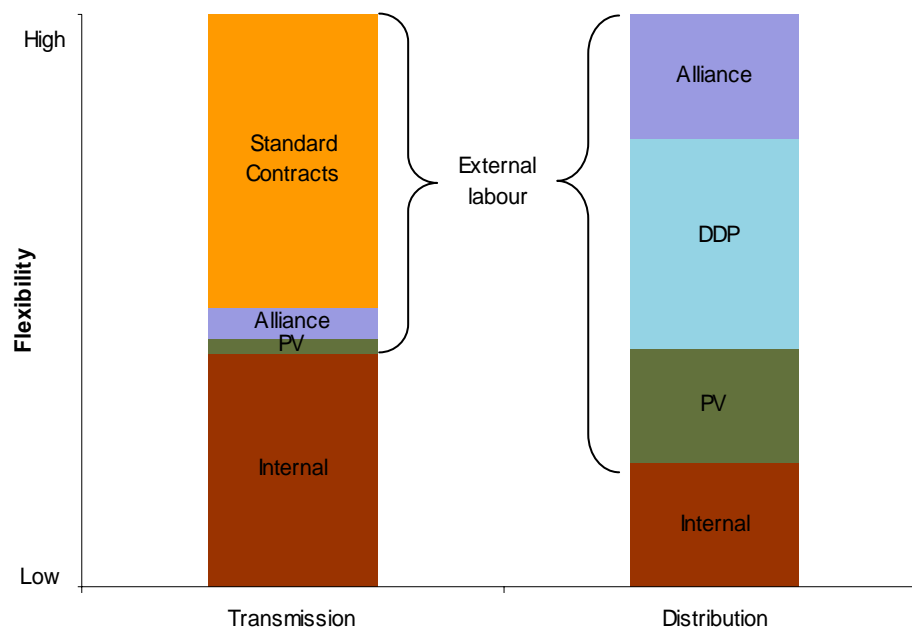
### 3.3.10 Efficient work delivery in AA2

This section provides information that demonstrates Western Power’s efficiency in delivering the work program during AA2. Section 3.3.10.1 below provides an overview of the flexible resourcing approach adopted by Western Power during AA2 in response to the fluctuating work volumes that occurred during the period. Section 3.3.10.2 then presents comparative information to demonstrate Western Power’s overall efficiency in delivering works.

#### 3.3.10.1 Flexible resourcing

An inherent flexibility in the balanced portfolio provides benefits which Western Power can pass onto customers. Figure 3-1 shows flexibility levels for each delivery channel (discussed in table 3.1).

**Figure 3-1 Delivery channel flexibility**



Internal delivery has low flexibility in terms of resource allocation. Variation in the internal work program of greater than 5% may result in stranded resources and redundancy costs. Work allocated to internal field crews therefore consists of stable and fixed components of the work program such as non growth and maintenance programs.

Variable components of the work program such as customer funded transmission projects, distribution growth projects and programs are more efficiently delivered by external delivery channels. Western Power has selected major service providers who operate across Australia, therefore have higher flexibility to manage variability in work levels by re allocating resources across different contracts and regions.

#### In-house recruitment achievements

Western Power has had considerable success in recruiting additional staff to support the delivery of the work program. In 2008 we recruited 138 additional staff from other electricity industry utilities into technical field job categories. 70% were from countries such as the Philippines, South Africa and the United Kingdom.

A corresponding investment in building capability of Power Training Services (PTS), Western Powers internal technical training group had also occurred. PTS had developed a tailored induction and competency development program that ensures that all Western Power employees, contractors, Alliance and sub contractors accessing the Network have the required competencies, qualifications, skills and electrical safety awareness to undertake the required work.

Table 3-2 documents the achievements in recruitment activity during 2008.

**Table 3-2: Recruitment activity 2008**

Resource Type	Number Recruited
Design Protection	5
Design Distribution	26
Design SCADA	8
Design Lines	5
Linesman Distribution	41
Construction Manager	32
Project Manager	14
ELM Environmental Management	3
Technician Comms	2
Cable Technician	1
Primary Plant Technician	1
<b>Total</b>	<b>138</b>

Our past success provides confidence that Western Power will meet its resourcing needs for skilled resources during AA3. Resource demand details are provided in Chapter 7.

#### In-house resource rebalancing

As noted in section 3.3.1, the GFC significantly cut load forecasts for transmission line construction and significantly delayed construction of major projects such as the Perth to Geraldton 330 kV transmission line. A further reduction in work volume resulted from Western Power's closer scrutiny of its proposed work program and reductions in funding from Western Power's shareholder following the regulatory write down of capital expenditure incurred during AA1.

In response to these developments, Western Power took action to rationalise and down-size its internal transmission engineering resources (in the areas of design, project management and contract management), leading to a substantial reduction in internal labour costs. As previously noted, a flexible delivery strategy for design and construction was adopted to improve the flexibility and responsiveness of Western Power's cost structure to changes in work volumes. Transmission's flexible delivery strategy also entails external procurement of construction and commissioning services.

#### External flexible resourcing

With reduced work volumes in 2009/10 compared to original forecasts in April 2008, Western Power's alliance partner, scaled back to minimal resource levels required to deliver value for money over the longer term.

Alliance delivery has demonstrated flexibility in resource planning with changing work volumes. In April 2008, when the forecast alliance program of work for 2009/10 exceeded \$400 million the alliances mobilised labour resources from the eastern states, overseas and parent company projects. In early 2009 when work volumes were scaled back to approximately \$200 million the alliance partners either demobilised resources or adjusted their allocation between distribution and transmission projects. This flexibility provides a high level of confidence that the Alliance will be successful in achieving the required supply levels for their work allocation during AA3.

### **3.3.10.2 Overall AA2 efficiency**

A broad indication of Western Power's overall efficiency in delivering the operating and maintenance expenditure work program can be obtained by examining partial productivity measures published by the Australian Energy Regulator (AER).

The information set out in Figure 3-2 and Figure 3-3 was prepared using Western Power data and information contained in the AER's Transmission Network Service Provider (TNSP) Electricity Performance Report for 2008-09, which was published in February 2011.<sup>6</sup>

The figures show operating expenditure (nominal June 2008) for each TNSP (including Western Power) as a function of network size, measured in terms of:

- electricity transmitted in Figure 3-2
- transmission line length in Figure 3-3

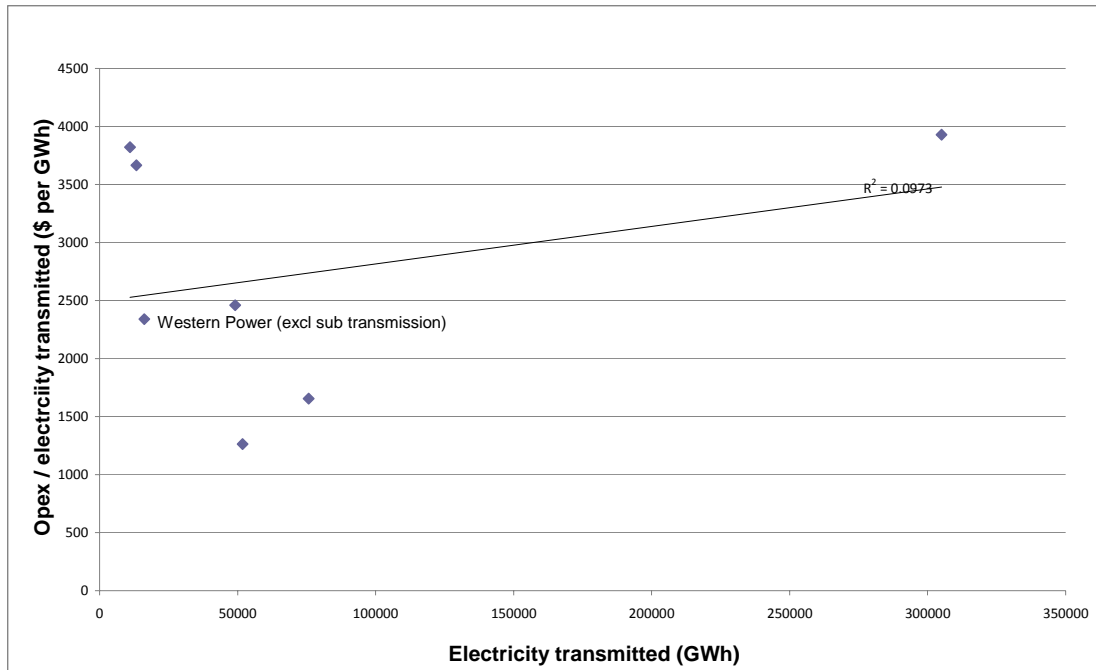
The straight line in each figure is a line of best fit through the data, and it represents a prediction of transmission operating expenditure for a given network size. A TNSP with costs above the line has higher costs than predicted, while a TNSP with costs below the line has lower costs than predicted (implying efficient performance).

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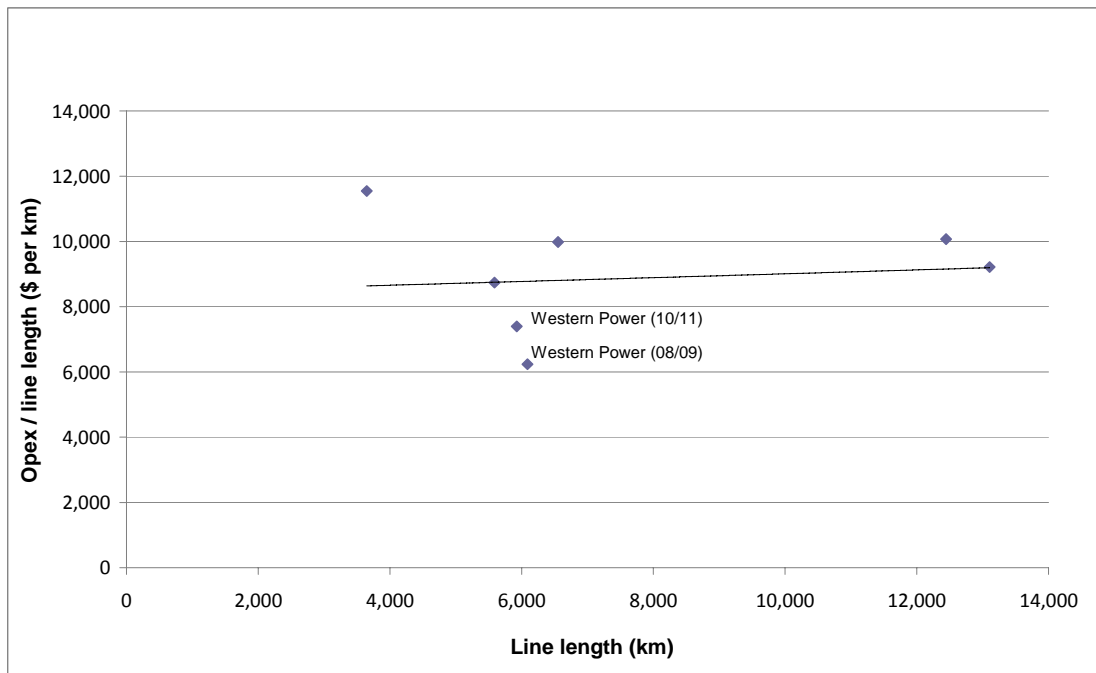
<sup>6</sup>

See: <http://www.aer.gov.au/content/index.phtml/itemId/741888>

**Figure 3-2: Transmission - opex / electricity transmitted vs electricity transmitted**



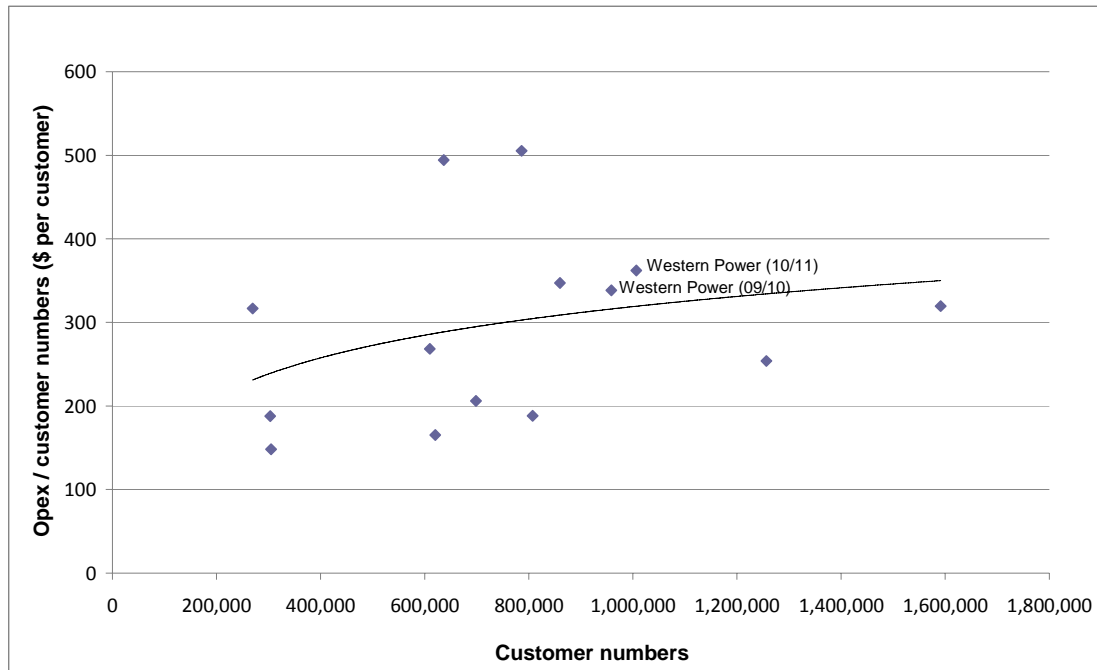
**Figure 3-3: Transmission – opex/line length versus line length**



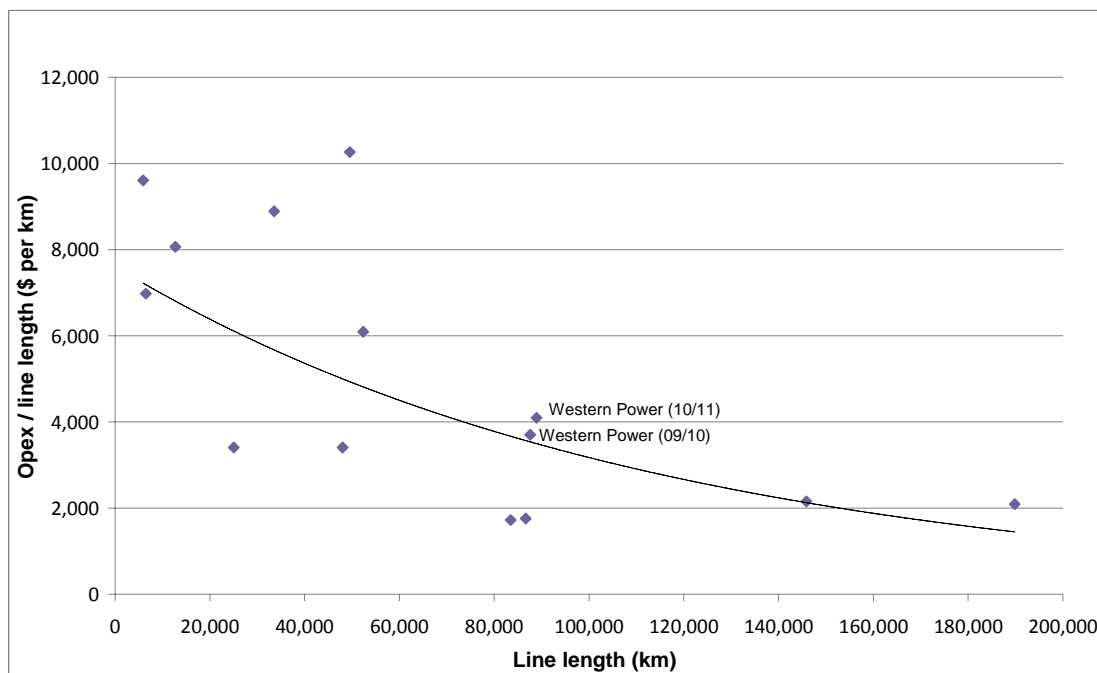
Each of the above figures indicates that Western Power’s transmission cost performance sits close to the predicted costs. This analysis therefore provides a broad indication that Western Power’s cost performance (including delivery) can be regarded as efficient. Figure 3-4 and Figure 3-5 shows a comparable analysis for

Western Power's distribution business, which also indicates costs close to the predicted level<sup>7</sup>.

**Figure 3-4: Distribution - opex / customer numbers vs customer numbers**



**Figure 3-5: Distribution - opex/line length versus line length**



<sup>7</sup> The data for all distribution utilities in the study (except the NSW distributors) was obtained from either annual reports or publicly available performance reports. The customer number and line length data for NSW distributors was obtained from annual reports and the operating expenditure data was obtained from either draft or final AER determinations (shown in June 2009 nominal dollars).

# 4 Customer Service Delivery Strategy

## 4.1 Introduction and overview

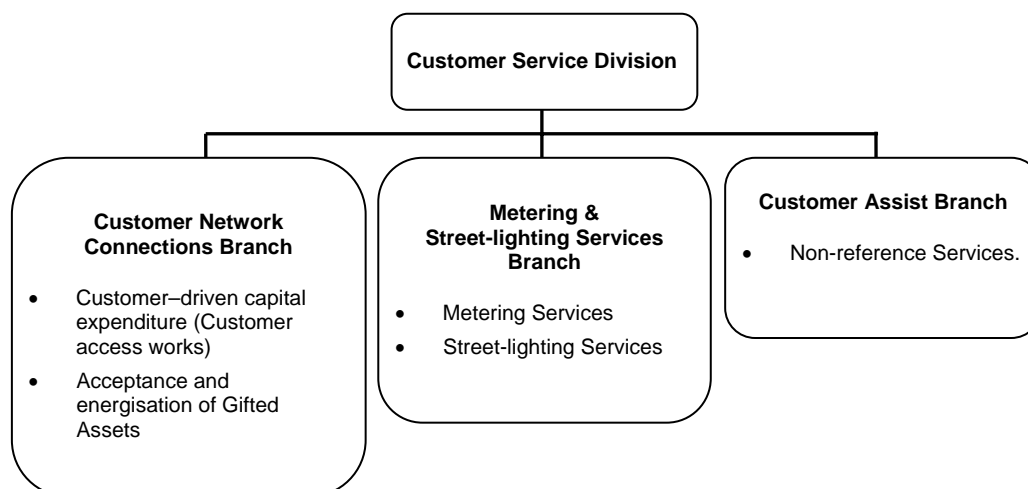
This Chapter provides an overview of the Customer Service Delivery Strategy, which describes the preferred channels for delivering specific categories of customer-related and customer-initiated expenditure on the distribution network. The focus of the strategy is to identify the optimal delivery channels to ensure that customer-related distribution works can be delivered efficiently, and in a manner that meets customers' expectations.

In developing the Customer Service Delivery Strategy it is important to note the close working relationship and responsibilities between the Customer Service and Distribution Divisions. In particular, Customer Service Division is responsible for construction of part of the distribution network, while Distribution Division is responsible for maintenance and asset management of the entire distribution network. Both Divisions therefore require access to the same delivery channels and resources, which necessitates a co-ordinated approach.

The development of the divisional strategies for Customer Service and Distribution reflects the output from joint workshops which examined the combined delivery initiatives and approaches. Distribution Division undertook detailed scenario modelling with input from Customer Service Division to ensure that there was an optimal allocation of the combined program of work across the available delivery channels. Further information on scenario modelling used to support the joint strategy development is set out in the Distribution Delivery Strategy document.

Figure 4-1 depicts the Customer Service Group's current structure, which comprises three Customer Service Branches: Customer Network Connections; Metering; and Customer Assist.

**Figure 4-1: Structure of the Customer Service Division**





The key messages in this chapter are:

- the Division is focussed on managing an efficient gateway for customer requests, and in efficiently managing the end-to-end process for customers seeking connection to the distribution network. From the customer's standpoint, timeliness of connection to the distribution network is of critical importance
- the work program for Customer Service Division is driven directly by customers. The level of customer-driven work generally reflects the underlying rate of economic growth, so the overall level of Customer Service expenditure is reasonably consistent from year to year. The delivery challenges arising in AA3 therefore relate to the efficient achievement of 'business as usual' objectives within the existing delivery framework
- the Division has put in place a number of initiatives which have enabled performance improvements to be achieved, and which provide a sound basis for driving increased levels of efficiency in work delivery in the future. Accordingly, the Division is in a strong position to deliver the AA3 work program in an efficient manner, consistent with the Code requirement that Western Power should be efficiently minimising costs

## 4.2 Current delivery practices, enhancements and performance

The overall goal of Customer Service Division is to deliver quality, timely and value-for-money service outcomes to Western Power's customers. Specifically, Customer Service Division's focus is on managing an efficient gateway for customer enquiries and requests, and in efficiently managing the end-to-end process for customers seeking to connect to or relocate assets on the distribution network.

The Customer Service Delivery Strategy must take account of current delivery practices, recent enhancements to the delivery processes and current delivery performance. Key points on these matters arise in the following 5 areas:

### 1. Customer Access Work;

- an end-to-end design to commissioning accountability has been established within Customer Network Connections Branch to improve quality, timeliness and efficiency in delivery
- a Project Management Office (PMO) is being established to drive the end to end delivery of customer funded projects. The PMO will support project managers to oversee end-to-end delivery of individual major projects. The PMO will also support project coordinators and project services officers to support programs of work, scheduling, resource levelling and outsourcing design and construction related works. This will ensure timely, efficient delivery of customer funded work
- a dedicated program management support team will manage the high volume/low value Customer Access work end-to-end, at a program level
- the DDP are being transitioned to full service construction work providers via PBC and coordinated through Distribution Division, on behalf of Customer Service Division

## **2. Gifted Assets;**

- gifted assets are to be incorporated within an end-to-end design function and project management capability, to create maximum visibility of in-service energisation dates

## **3. Metering Services;**

- a long-standing contract for meter reading was renegotiated in 2009. This enabled Customer Service Division to rationalise its in-house resources whilst retaining ownership of intellectual property
- in-house resources were restructured to create a technically skilled core team of Connection Field Officers and Metering Technicians, to improve timeliness of delivery. The team is capable of scoping installation and commissioning procedures for new metering technologies (thus ensuring Customer Service Division maintains “smart buyer status” in this important area)
- together with its established delivery channels, the Metering Branch has been able to deliver the additional work driven by the increase in interval meter installations associated with increased solar panel take-up, which is currently running at 2,500 installations per month
- market testing of prices for future meter supply was undertaken in late 2010. This also provided an opportunity to assess market pricing and capability to supply smart meters in anticipation of potential future “smart grid” initiatives

## **4. Street-lighting Services;**

- specific initiatives in metal pole replacement, luminaire replacement and switch-wire replacement programs have enhanced the timeliness and efficiency of works delivery

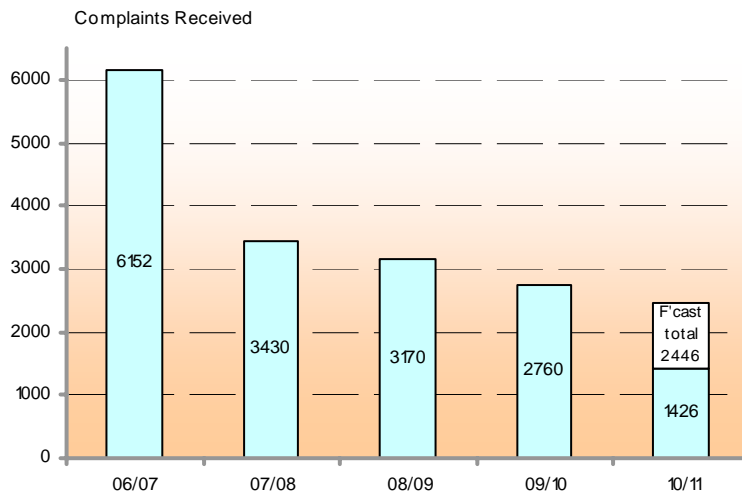
## **5. Non-reference Services;**

- specific initiatives include transitioning towards a single source strategy, to rationalise and streamline the portfolio of services and to achieve an efficient level of cost recovery

The improvements and arrangements outlined above provide a sound basis for driving increased levels of efficiency and performance in works delivery. In terms of the Code provisions, these initiatives are consistent with ‘efficiently minimising costs’. These initiatives also provide a robust foundation for the development of an efficient Customer Service Delivery Strategy for AA3.

The level of customer complaints is a good indicator of Customer Service Division’s delivery performance and the overall level of customer satisfaction. Over the course of AA2, significant and consistent improvements in reducing the number of customer complaints have been achieved, as shown below.

**Figure 4-2: Customer Service Division complaints tracking<sup>8</sup>**



This improvement demonstrates strong performance in delivering work programs and services over the course of AA2. The actions taken by the Division in response to the challenges faced over the period have resulted in an enhanced service delivery capability and performance. As a result, the Division is in a strong position to deliver the AA3 work program in an efficient manner, consistent with the Code requirement that Western Power should be efficiently minimising costs.

### **4.3 AA3 delivery challenges and guiding principles**

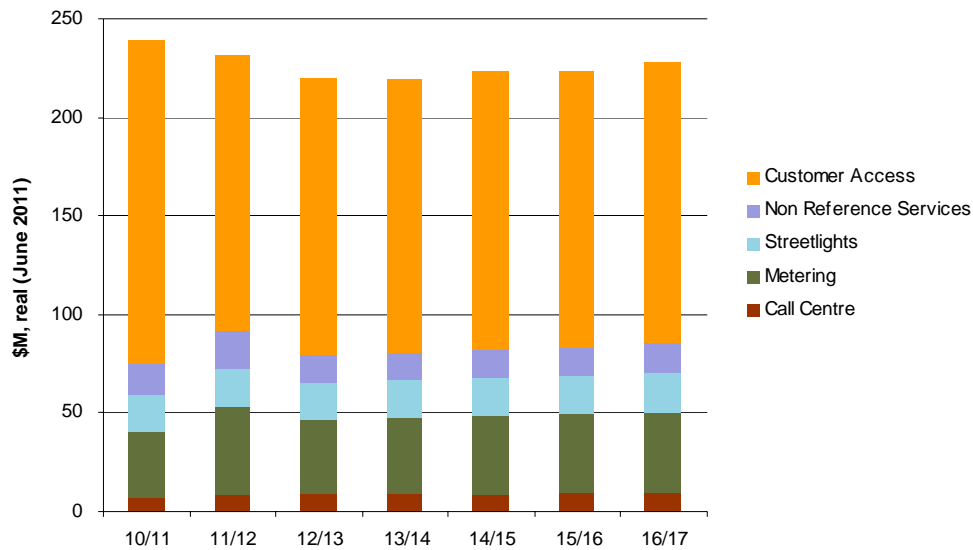
In contrast to Transmission and Distribution Divisions, the work program for Customer Service Division is driven directly by customers. The level of customer-driven works generally reflects the underlying rate of economic growth. Consequently, the overall level of Customer Service expenditure is reasonably consistent from year to year (subject to the influences of non-recurring events such as the GFC and the present Building the Education Revolution Stimulus Program).

From the customer's perspective, timeliness of access and connection to the distribution network is of critical importance. Once a timeline is agreed with a customer, Customer Service Division must remain committed to meeting this timeframe without compromising safety, quality or cost efficiency.

Figure 4-3 below provides a summary of the Customer Service expenditure forecast since the Divisions inception in July 2010, by service.

<sup>8</sup> Figures for 2010/11 are as at February 2011.

**Figure 4-3: Customer Service forecast work program**



While the Customer Service Delivery Strategy should be flexible in order to manage annual variations in work efficiently, the type of resourcing challenges associated with a step change in the work program that may arise in the Transmission and Distribution Divisions' work programs are not likely to arise for Customer Service Division. Given this background, the delivery challenges arising in AA3 relate to the efficient achievement of 'business as usual' objectives within the existing delivery framework.

In light of the above observations, the table below summarises the key delivery challenges for each service category for AA3 and the implications for the Customer Service Delivery Strategy. A summary of the Customer Service Delivery Strategy is then presented in section 4.4.

**Table 4-1: Key challenges and implications for the delivery strategy**

Service category	Challenges	Implications for delivery strategy
<b>Customer Access Work</b>	<p>Improve the end-to-end coordination of work, to ensure efficient and timely delivery on an on-going basis.</p> <p>Ensure that work continues to be delivered in accordance with quality, cost and safety parameters.</p>	<p>Focus on value for money, on time delivery, quality management, and customer focus.</p>
<b>Gifted Assets</b>	<p>Ensure an accurate forecast of energisation dates for new land releases to enable efficient coordination of related Customer Access works.</p>	<p>End-to-end capabilities contemplated as part of the delivery strategy must take account of the significant volume of gifted assets that join the Western Power Network each year.</p>
<b>Metering Services</b>	<p>Ensure the Division retains sufficient flexibility and capability to deliver a smart meter program if this project is sponsored during AA3.</p> <p>The increase in the 3-phase replacement program can be met from existing delivery channels.</p> <p>The provision of solar panel meter changes has led to an increase in volumes which will continue into AA3.</p> <p>Maintain competitive tension and informed buyer status to ensure that future delivery remains efficient.</p>	<p>Significant changes to the existing delivery channels are not required to address the delivery challenges in relation to Metering Services.</p> <p>It is not necessary or appropriate to undertake a detailed assessment of alternative delivery options for Metering Services. However, enhancements to the existing arrangements will be required to ensure that the identified challenges will be met.</p>
<b>Street-lighting Services</b>	<p>The present strategy of using dedicated external service providers has proved successful and therefore no major challenges arise in delivering Street-lighting Services efficiently.</p>	<p>The principal focus of the Delivery Strategy should be on continuous improvement. The end date on the current contract provides the opportunity to test the market through a tender process during 2011/12.</p>
<b>Non-reference Services</b>	<p>Establish the most efficient means of delivering the range of Non-Reference Services and recovering the efficient service costs.</p>	<p>The Customer Service Division has already taken steps to address cost recovery issues, so the delivery strategy is focused on streamlining the provision of services.</p>

In formulating its delivery strategy, Customer Service Division has undertaken a rigorous assessment process, involving consideration of different delivery options for Customer Access Work. The alternative delivery approaches have been examined with reference to a number of guiding principles described in section 2.3. From the perspective of the Customer Service Division (which acts as the “customer champion” within Western Power) the guiding principles of customer focus and value for money are paramount.

## 4.4 Customer Service Delivery Strategy

In light of the principles noted above, Customer Service Division’s assessment is that maintenance of the Balanced Portfolio will play a key role in ensuring that customer services continue to be delivered efficiently. The table below provides a summary of the delivery strategy, in terms of the allocation of Customer Service work types to the delivery channels.

**Table 4-2: Allocation of Customer Service work to delivery channels**

	Delivery channels			
	DDP	Alliance	PV	Internal
Indicative overall work allocation				
Customer access work				
Metering Services				
Street lighting Services				
Non reference Services				

The Customer Service delivery strategy for AA3 is summarised as follows:

- **customer connections** –

Western Power’s Customer Network Connections Branch will retain responsibility for the efficient end-to-end delivery of all distribution customer funded work

- **metering** – includes a major replacement program of 280,000 3-phase meters for AA3. Western Power is positioned to manage this program through external delivery channels. The external delivery of the meter replacement program would provide a platform for smart meter programs should they eventuate during AA3
- **street lighting services** – will continue to be undertaken by specialist external providers, and the incidence and turnaround times of streetlight faults will continue to be reduced
- **non reference services** – will move progressively to an external delivery model on a competitive basis
- **competitive tension** – will continue to be explored in relation to the delivery of all customer driven works to ensure that Western Power efficiently minimises the costs of delivery

The Customer Service Delivery Strategy provides a continued focus on efficiency, quality and safety outcomes through strategic delivery channels, whilst creating flexibility to manage any variability in future workloads.

## 4.5 Concluding comments

Customer Service Division will remain committed to achieving its overarching goal of delivering quality and value-for-money service outcomes to Western Power’s customers. Specifically, Customer Service Division will remain focused on managing an efficient gateway for customer enquiries and requests, and in efficiently managing the end-to-end process for customers seeking to connect to the distribution network. Customer Service Division is confident that this Customer Delivery Strategy provides a framework for the efficient delivery of all customer-initiated work over the forthcoming AA3 and beyond.

# 5 Distribution Delivery Strategy

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## 5.1 Introduction and overview

This Chapter provides an overview of the Distribution Delivery Strategy for the efficient delivery of the AA3 work program.

Networks Division and Distribution Division engage in an iterative consultation process to ensure the AWP for Distribution is both efficient and deliverable. The focus of the Distribution Delivery Strategy is to develop the optimal delivery channels to ensure that the AA3 work program can be delivered efficiently. As explained in Chapter 4, the delivery strategies of the Distribution Division and Customer Service division have been considered jointly.

The Distribution Division's work program consists primarily of high-volume, low-cost projects and programs. The Distribution Delivery Strategy recognises these characteristics of distribution expenditure, which requires a particular focus on the packaging, allocation and scheduling of work to achieve efficient delivery.

The key messages in this Chapter are as follows:

- Distribution Division has introduced a number of enhancements during AA2 to its delivery processes
- available benchmarking data indicates that current delivery performance is efficient
- the key challenge in terms of future delivery is in relation to procuring increased levels of labour resources to undertake increasing work volumes. A significant portion of this increase relates to underground construction activities
- Distribution Division is confident that the challenges of resourcing the increased work program in relation to material and fleet resources can be addressed within the framework provided by the existing delivery arrangements
- in relation to the labour challenge, Distribution Division has undertaken a rigorous assessment process, involving consideration of a range of delivery options, risk assessments and financial modelling. The principal conclusions from this analysis are:
  - the balanced portfolio remains appropriate
  - the DDP should be allocated work volumes that reflect commercially sustainable levels for those external providers
  - in AA3, the Alliance should be the primary delivery channel for providing the additional resources required, but all other delivery channels should also make a contribution
- Distribution Division is confident that the Distribution Delivery Strategy will ensure the efficient delivery of distribution work over the forthcoming AA3 period and beyond

## 5.2 Current delivery practices, enhancements and performance

The Distribution Delivery Strategy must take account of current delivery practices, recognising the recent initiatives to improve delivery performance and the potential areas for further improvements and innovation. These are summarised below:

- Distribution Division currently adopts a Balanced Portfolio, consistent with Western Power's WDF. The delivery channels include: internal resources; an alliance arrangement; three DDP; and a number of niche PV. Each of the external delivery channels are implemented through competitive processes
- the Enhanced Planning and Works Management (EPWM) program will improve long-term work and resource planning functionality, and program and portfolio management
- the materials and fleet procurement processes have been improved to reduce the risks to timely delivery, and to enhance costs efficiencies. Two Operational Excellence initiatives (Holistic Planning and Contested Spend) will result in improved efficiency of work delivery and materials procurement
- Distribution Division has improved flexibility and lowered delivery risks by increasing the number of dual or back-up vendors and increasing the number of approved factories available to supply materials
- Distribution Division is extending success factors, or key performance indicators, to monitor the efficiency of its delivery processes and to identify further opportunities to innovate and improve current processes

A broad indication of Distribution Division's overall efficiency in delivering the operating and maintenance expenditure work program can be obtained by examining partial productivity measures. As noted in figure 3.4 section 3.3.10.2 (page 39), Western Power's performance relative to the other Australian DNSPs indicates that the company's overall level of operating and maintenance activity and expenditure is comparable to that of the other Australian DNSPs. This provides confidence that the Distribution Division's delivery performance compares favourably with other Australian distributors.

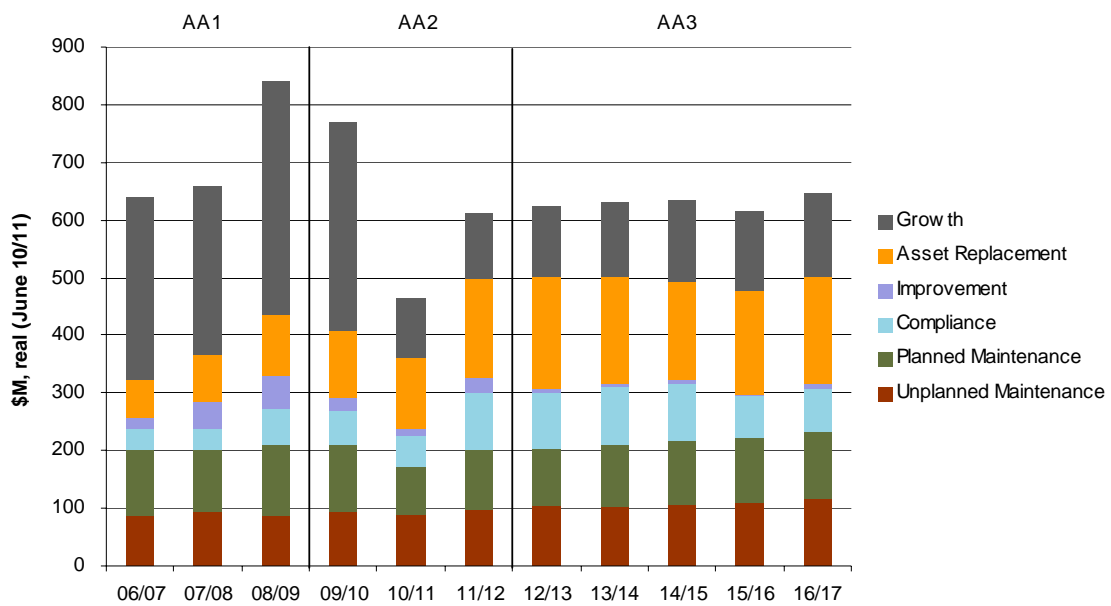
In summary, Distribution Division considers that the above information, and the fact that a large portion of its work program is subject to competitive tender processes, indicates that current delivery performance should be regarded as efficient.

## 5.3 AA3 delivery challenges and guiding principles

As noted above, the principal challenge for the Distribution Delivery Strategy is to address the resourcing challenges arising from the AA3 work program. The distribution historical and forecast expenditure, by work type, is summarised in the figure below. Note that the work program is reduced from 2010/11 onwards as customer access growth, metering, streetlight and non reference service program accountability moved to the new Customer Service Division with effect from 2010/11.



**Figure 5-1: Distribution historical and forecast work program**



The distribution division work program, by resource type, is summarised in the figure below. As previously mentioned only direct<sup>9</sup> resource expenditure is shown.

**Figure 5-2: Distribution resource mix**

Analysis of the expenditure forecast indicates that the greatest challenge will relate to increasing the direct labour resources:

- labour is the most significant component of distribution delivery costs. The total labour requirement, in terms of full time equivalents (FTE), is forecast to increase by 7% in the last year of AA2 and remain steady into 2012/13. This is followed by a step up in FTE of 4% in 2013/14 and also 2014/15. A small decrease (2%) occurs in 2015/16 before assuming the same level as 2014/15 in 2016/17
- a significant portion (12%) of this increase relates to underground activities

<sup>9</sup> For the avoidance of doubt, direct means resource expenditure directly booked to the AWP, excluding overhead.

In relation to material and fleet, Distribution Division considers that these resources can be delivered efficiently through Western Power's centre-led procurement processes and the initiatives discussed previously. Nonetheless, due to the increase, there are a number of risks that will need to be managed. These risks relate principally to a few critical materials (most notably wooden poles) and certain fleet requirements (most notably heavy fleet for overhead work activities).

To address the labour resource challenges, Distribution Division has undertaken a rigorous assessment process, involving the examination of a range of delivery options using risk assessments and financial modelling with the assistance of Deloitte. Financial modelling examined the capacity and efficiency of providing the increased labour resources through different combinations of delivery channels. The modelling was applied to a shortlist of viable options identified following initial risk assessment. Modelling outcomes showed that the alternative options were comparable in terms of cost. Accordingly, Distribution Division selected its preferred option with reference to a consideration of risk (corporate and delivery).

The alternative delivery approaches were also examined with reference to a number of guiding principles developed from the WDF (as described in section 2.3). In relation to these guiding principles, the following matters are worth noting in relation to the Distribution Delivery Strategy:

- retention and cultivation of core competencies for operational excellence and maintenance of informed buyer status are critical, given the complexity and criticality of many aspects of the distribution work program, particularly in the Perth metropolitan region
- recent experience has highlighted the importance of flexibility. The work program changed considerably during AA2 because of the GFC. The Distribution Delivery Strategy must therefore be capable of responding to changing circumstances such as these, without significantly affecting deliverability and cost
- safe and timely fault response capability is also a key principle for the Distribution Division, noting the value that customers place on network reliability. The distribution network plays a crucial role in providing a reliable electricity supply
- in view of its "essential service" characteristics, the Distribution Division requires the capability to respond to unplanned outages across a geographically challenging network area in a fast, safe and efficient manner. Considerations of prudent risk management under forced outage or emergency conditions area must be weighed carefully in assessing whether external service provision is a viable option

## 5.4 Distribution Delivery Strategy

Having regard to the principles described above, the delivery strategy for the Distribution Division is established on the foundation of the Balanced Portfolio. The main elements of the strategy over AA3 are to:

1. Maintain the core competencies of the internal workforce to undertake primary fault response, rectification and network maintenance.

2. Grow the share of the portfolio allocated to the Alliance to grow Western Power's capability over a diversified portfolio of work and gain economies of scale.
3. Maintain the works delivery share of DDP and PV as these individual vendors are efficient providers sourced through a competitive market.

Further details on each strategy element are provided below:

### **1. Maintain the core competencies of the internal workforce**

There is an identified need to maintain the core skills required to undertake primary fault response and rectification work as well as network maintenance and construction activities with particular regard to the more complex areas of the network. Western Power also intends to retain the ability to internally project-manage and maintain oversight of the AWP delivery via all delivery mechanisms. There is also recognition of the need to ensure that the Distribution Division remains an informed buyer of external services.

### **2. Grow the share of the portfolio allocated to the Alliance**

Through the revised commercial arrangements implemented in 2010, the Alliance is now established as a cost effective and efficient delivery mechanism based on a volume-based agreement. As work volumes increase the Alliance and Western Power will benefit from economies of scale and the ability to offset relatively fixed central support costs against increased activity. The Alliance also has superior flexibility to manage any variability in work delivery if economic conditions change. This is the key reason for Operation's decision to make the Alliance the main channel for delivery of customer funded work. With a diversified portfolio of work, the Alliance facilitates superior benchmarking opportunities with three delivery mechanisms delivering specific areas of the Distribution work program, ie Internal workforce, DDP and Alliance.

### **3. Maintain the DDP and PV**

The formation of the DDP provides Western Power with a cost effective, efficient delivery mechanism underpinned by robust market testing in 2010. Through the introduction of the DDP, market capacity and capability was consolidated, based on a study of practices employed by Eastern States and New Zealand electrical utilities. Western Power recognises the importance of maintaining the DDP work volumes at commercially sustainable levels through AA3, to maintain medium to long term market capability and capacity. PV will continue to be used where their specialist skills are considered to provide the most efficient delivery channel for that activity.

Critical Enablers to ensure sustainable and efficient work delivery are:

- continue to apply the "Measure and Manage" approach of Works Program Management. Key management and control functions will remain in-house to ensure that Distribution Division retains the necessary capability to oversee the efficient delivery of the work program
- Western Power is developing recruitment and training plans to ensure sufficiently skilled and authorised resources will be available both to Western Power, the Alliance and the external service providers. Most notably, the recruitment plan is considering international markets, such as the UK and

Ireland, where supply is not so constrained and electrical workers have equivalent qualifications to those required in Western Australia

- benchmarking supply performance to maintain superior customer and internal service levels, and drive sustainable improvements over time
- the centre-led procurement process will continue to deliver materials and fleet efficiently and in accordance with the requirements of the work program

The planned allocation of work to delivery channels is shown in the figure below.

**Figure 5-3: Work allocation by delivery channel**

Table 5-1 below shows the proposed allocation of different Distribution work types across the alternative delivery channels.

**Table 5-1: Allocation of Distribution work to delivery channels**

		Delivery channels			
		DDP	Alliance	PV	Internal
Indicative overall work allocation					
<b>Work Types</b>	Reliability				
	Corrective deferred/ emergency maintenance				
	Preventative condition/ routine maintenance				
	Customer funded				
	Asset replacement				
	Capacity expansion				
	Regulatory compliance				
	SUPP				

The table identifies whether a particular work type has been allocated to a particular delivery channel. The mix of work types across delivery channels varies, reflecting the particular skills and capabilities of the different delivery channels. For example:

- PV focus predominantly on preventative maintenance and underground work
- internal resources focus on preventative and corrective maintenance and regulatory compliance
- the Alliance focuses predominantly on customer funded work
- the DDP undertake a broad mix of work, focussing mostly on capacity expansion and asset replacement

## 5.5 Concluding comments

Distribution Division is confident that the Distribution Delivery Strategy will provide a framework for the efficient delivery of all distribution work required over the forthcoming AA3 and beyond.

## 6 Transmission Delivery Strategy

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### 6.1 Introduction and overview

This Chapter provides an overview of the Transmission Delivery Strategy for the efficient delivery of the AA3 work program.

The Transmission Delivery Strategy considers the particular characteristics of transmission expenditure and the nature of transmission services. In particular transmission is regarded as an 'essential service'. Transmission Division must therefore retain the capability to restore supply rapidly in the event of an outage.

Strong scale economies exist in the bulk transmission of electricity, so capacity is added in large, infrequent increments. The 'lumpy' nature of transmission capital expenditure is exacerbated by the potential impacts of new generation and load connections, which are typically very large and inherently uncertain.

The key messages in this Chapter are as follows:

- Transmission Division has introduced a number of enhancements during AA2 to improve its delivery processes, and benchmarking data indicates that current delivery performance is efficient
- the 'headline' increase in the transmission expenditure must be analysed to understand the real impact on deliverability. The major components of increased expenditure are the 330 kV works and materials costs. Both of these resourcing issues are manageable within the existing delivery framework
- forecast levels of expenditure are not materially higher than levels delivered successfully during AA1
- the Transmission Delivery Strategy will introduce the Flexible Engineering initiative to ensure efficient delivery of the AA3 work program. This initiative will establish the capability to use external market resources as an 'overflow' to supplement internal design and commissioning resources, which will be maintained at an appropriate level to sustain Western Power's core competency in this important area
- the Transmission Delivery Strategy identifies a number of other initiatives that will drive innovation and continuous improvement in delivery performance. The specific initiatives adopted in the Transmission Delivery Strategy are aimed at maintaining the Division's informed buyer status by building on its core competencies, intellectual property and human capital

### 6.2 Current delivery practices, enhancements and performance

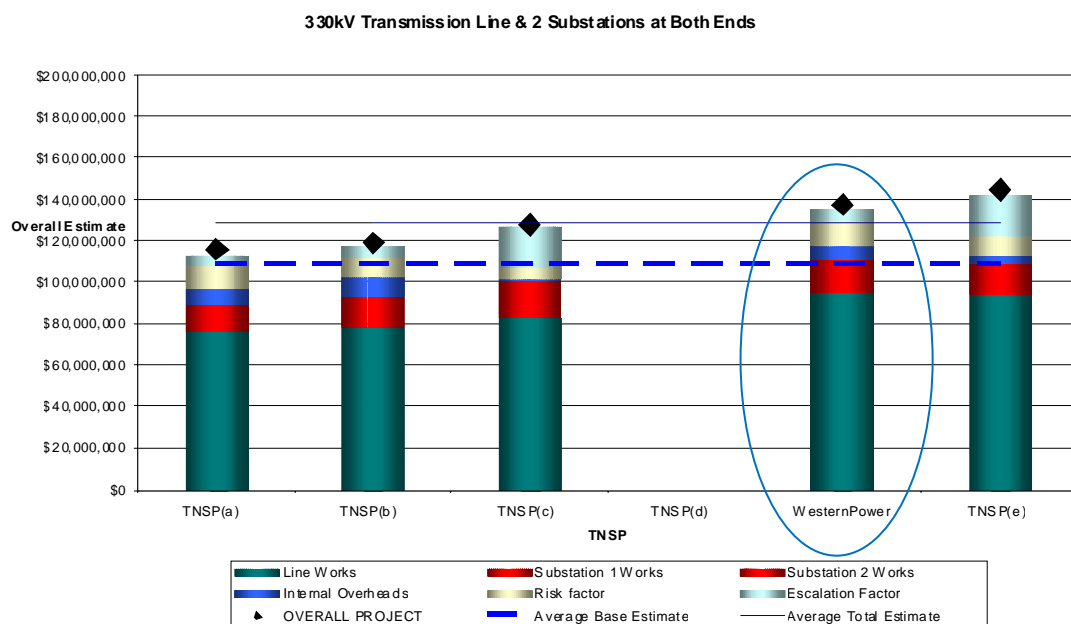
The development of the Transmission Delivery Strategy takes account of current delivery practices, recognising the recent initiatives to improve delivery performance

and the potential areas for further improvements and innovation. These are summarised below:

- Transmission Division currently uses the following four delivery channels: internal resources; alliance arrangements; standard contracts; and preferred vendor arrangements. Each of the external delivery channels is implemented through competitive processes. Contractual terms (based on Australian Contracting Standards and Western Power's specific procurement policy) are reviewed and refined continuously
- Transmission Division has introduced specific initiatives in relation to maintenance delivery which are producing benefits in terms of lower unit costs. These initiatives include Combined Maintenance Scheduling, which has reduced overhead costs associated with administration of works, travel, mobilisation and outage management
- Transmission Division has introduced a number of success factors, benchmarking or key performance indicators to monitor the efficiency of its delivery processes. These will enable the Division to identify opportunities for further innovation and improvement of delivery performance

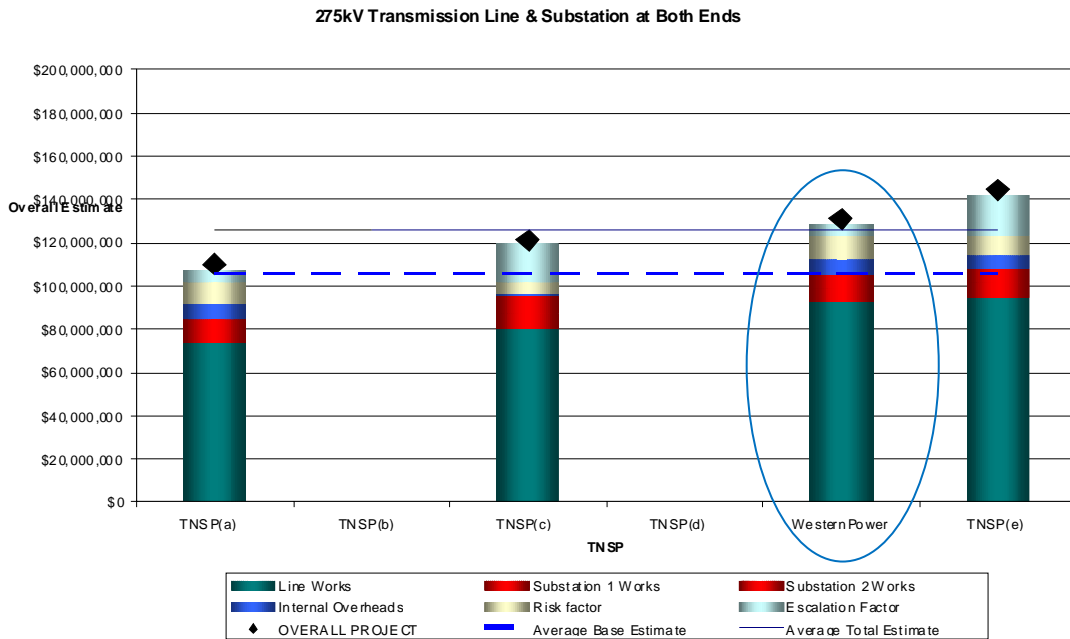
Western Power participates in the Australian Transmission Network Service Providers' (TNSP) Benchmarking Estimating Working Group. This group was established in May 2007, for the initial purpose of costing generic scopes of work for various typical transmission projects, to facilitate a comparison of the various TNSPs' cost estimates. The group's status report<sup>10</sup> of September 2010 compares Western Power's estimates for standard jobs consisting of a transmission line with a two breaker substation situated at either end at various transmission voltages. At 330 kV and 275 kV Western Power's estimates were approximately aligned with the average of all the TNSPs estimates, as shown in the figures below (which are reproduced from the group's report).

**Figure 6-1: TNSP estimates for 330 kV line and substation work**



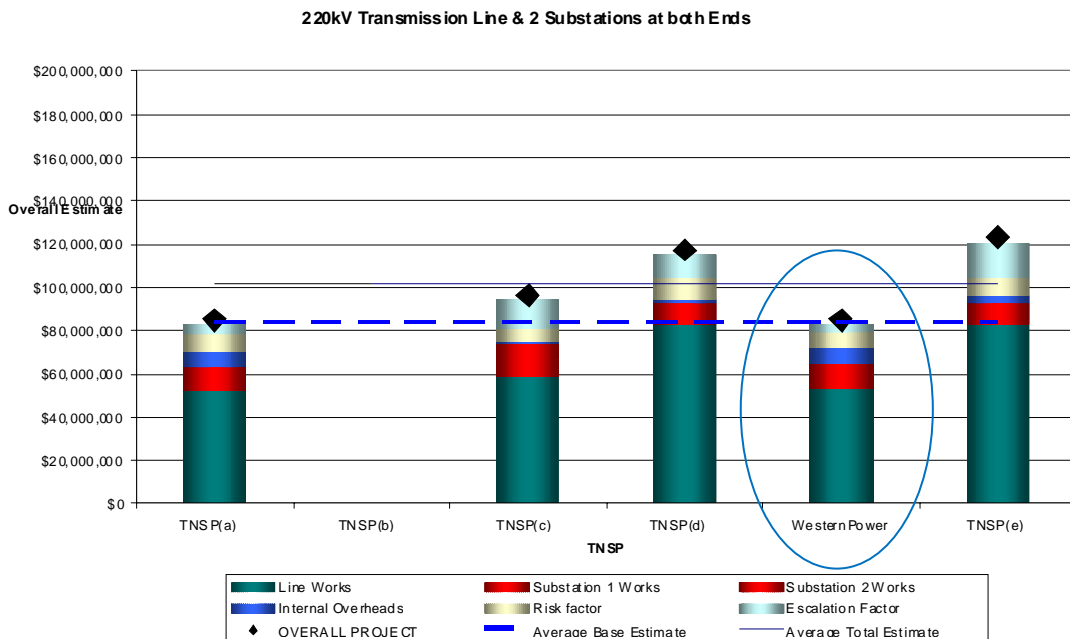
<sup>10</sup> TNSP Benchmark Estimating Working Group, *Status Report*, September 2010.

**Figure 6-2: TNSP estimates for 275 kV line and substation work**



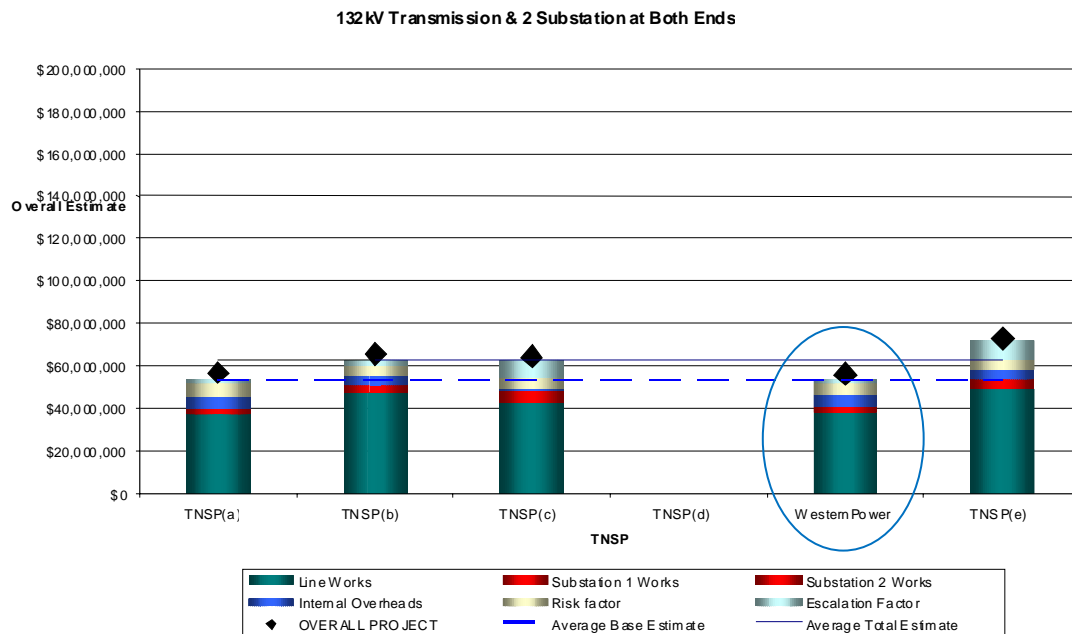
At voltages of 220 kV and 132 kV, Western Power's estimates were substantially below the average of the other TNSPs' estimates, as shown in the figures below.

**Figure 6-3: TNSP estimates for 220 kV line and substation work**





**Figure 6-4: TNSP estimates for 132 kV line and substation work**



The TNSPs also provided estimates to the Working Group for a range of actual substation and transmission line jobs that had already been completed. The results of this comparison indicate that Western Power’s estimates were consistently within variance range of the other TNSPs participating in the comparison.

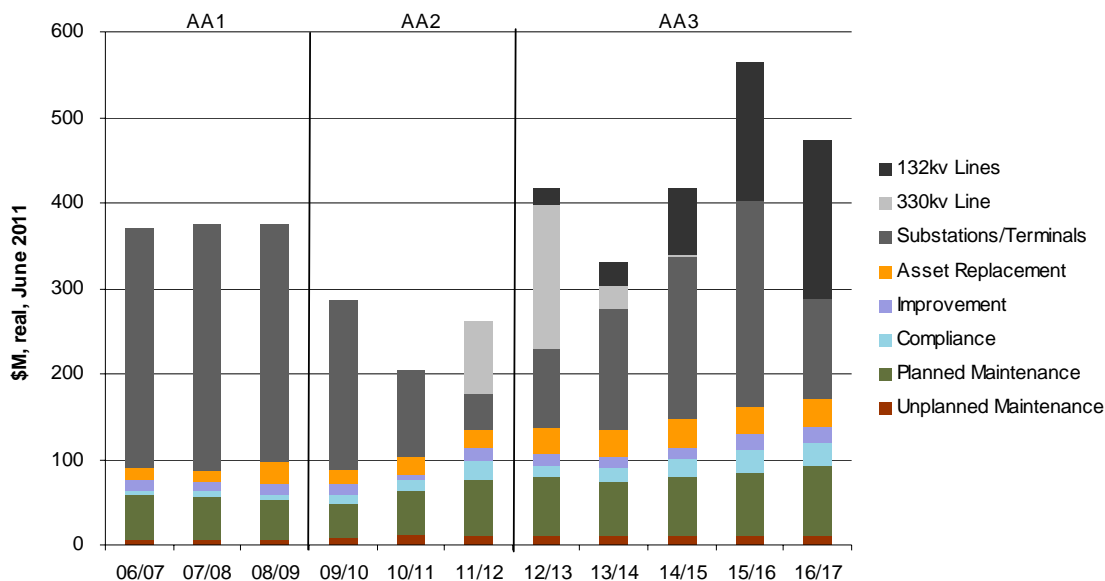
Section 3.3.12 provides comparative information on Western Power’s transmission operating and maintenance cost performance, which demonstrates that the company’s overall level of transmission operating and maintenance activity and expenditure is comparable to that of the other Australian transmission companies, and by inference, Western Power’s performance in delivering the operating and maintenance program is efficient.

The above information indicates that Transmission Division’s current delivery performance is efficient.

### 6.3 AA3 delivery challenges and guiding principles

The transmission historical and forecast expenditure, by work type, is summarised below.

**Figure 6-5: Transmission historical and forecast expenditure for AA3**



Analysis of the expenditure in terms of work types and resourcing highlights the following observations:

- the proposed lines work account for much of the expected increase in spend. This category of capital expenditure is generally outsourced to large national and international construction companies
- forecast levels of investment have been delivered successfully in the past
- materials cost is a major component of transmission expenditure. Transmission Division has assessed that the required materials can be delivered efficiently through Western Power's centre-led procurement process

The above observations indicate that the AA3 work program should be capable of being delivered efficiently. However, there are a number of important delivery challenges that must be addressed, including:

- delivering value for money
- maintaining a flexible approach
- managing resourcing bottlenecks, particularly in relation to design and commissioning activities
- continuing to innovate to drive delivery improvements

To address these challenges, Transmission Division has considered a number of delivery approaches ranging from outsourcing options (such as outsourcing transmission maintenance) through to increasing internal resources (particularly in relation to design and commissioning capability). These alternative delivery approaches were examined with reference to the guiding principles described in section 2.3.

From the perspective of the Transmission Division, in addition to the overarching objective of delivering value for money, the following guiding principles are of particular significance:

- maintaining an informed buyer status

- building sustainable human capital and intellectual property
- safe and timely fault response capability
- managing complexity and risk
- flexibility

In broad terms, the “essential service” nature of the transmission network requires Transmission Division to maintain capability to respond to unplanned outages across a geographically challenging network area in a fast, safe and efficient manner. Considerations of prudent risk management under forced outage or emergency conditions area must be weighed carefully in assessing whether external service provision is a viable option. In addition, the inherent variability in transmission work means that Transmission Division must employ flexible delivery channels.

## 6.4 Transmission Delivery Strategy

The key features of the Transmission Delivery Strategy for capital expenditure for AA3 are as follows:

- Transmission Division will adopt a Flexible Engineering initiative to manage the peaks and troughs in work volume by optimising the mix of internal and external design resources to minimise overall costs and avoid stranding of internal resources. The initiative will also address the increased need for commissioning resources by including pre-commissioning activity in construction contracts
- the Transmission Delivery Strategy continues to draw a distinction between ‘brownfield’ and ‘greenfield’ work. Brownfield capital expenditure tends to be more complex and smaller scale work and it is therefore more cost effective to undertake this work in-house. In contrast, greenfield capital expenditure is better suited to a mix of internal and external service provision
- procurement of key materials is competitive, either in the form of period contracts for standard equipment or tender for unique materials. Line materials are primarily provided by service provider supply and install contracts. Inventory is managed on a just-in-time basis, in that equipment is sourced specifically for projects and delivered directly site where appropriate

Figure 6-6: Summary of the Transmission Capital Delivery Strategy

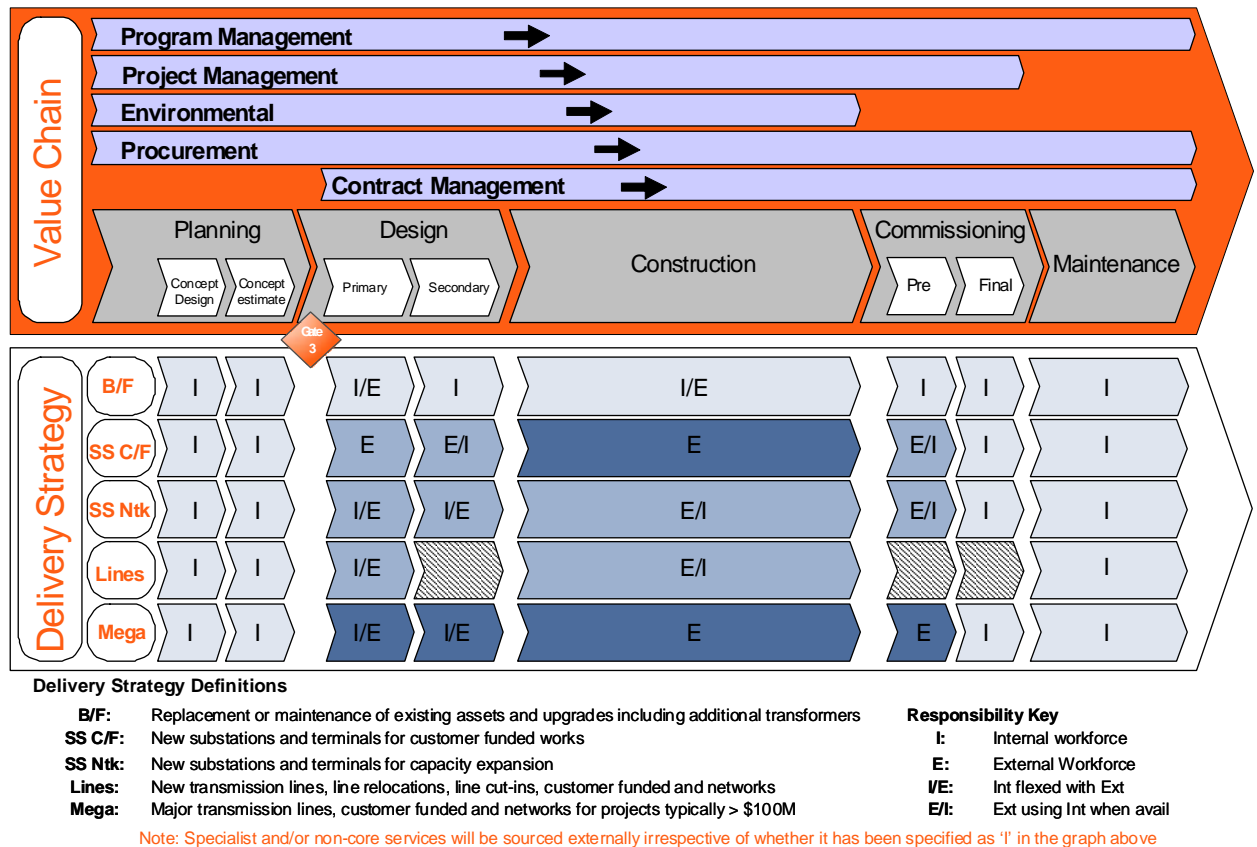


Figure 6-6 illustrates the core value chain activities and the delivery strategy for each work type.

**Core management and control functions**

Efficient work delivery can only be achieved through the application of sound and effective program and project management, contract management, quality control and quality assurance. These key management and control functions will remain in-house to ensure that Transmission Division retains the necessary capability to oversee the efficient delivery of the capital work program.

**Concept design and estimating**

Concept design and estimating are high value activities essential to support sound investment decision making. These high value functions will remain in-house to ensure that Transmission Division provides Western Power with the accurate technical and cost information on proposed capital work.

**Design**

The Transmission Delivery Strategy aims to deliver a minimum of 50% of all designs, balancing the need for flexibility using external design expertise with the need to remain a technically competent informed buyer. Figure 6-6 illustrates that:

- brownfield work is undertaken in-house due to the complex and hazardous nature of the work. Brownfields work is also stable and predictable, suitable for supporting an internal workforce
- greenfield work is undertaken using a combination of in-house and external design delivery as it is more suitable to the application of standard designs

and delivery activities that can be easily bundled (eg. design, procurement, civil and electrical construction, pre-commissioning)

- customer substation work is difficult to plan due to the uncertain timing of approvals, therefore it is more suitable for external design delivery

### **Construction**

Transmission Division only carries a limited electrical construction capability and externally delivers the bulk of construction works. The in-house electrical construction resources are allocated to brownfield work due to the complex and hazardous nature of the works. In-house line crews are used for small line works such as substation cut-in work and line relocations.

### **Commissioning**

Final commissioning is delivered in-house as it is essential that Transmission Division controls the energisation of any network asset due to the inherent risk of such activity. Pre-commissioning is delivered using either in-house or external resources, with a preference to use external resources on greenfield construction work.

In relation to operating expenditure, the Transmission Delivery Strategy reflects the following findings and considerations:

- existing resourcing arrangements remain appropriate to deliver a relatively modest increase in operating expenditure during AA3 compared to the work delivered during AA2
- core activities within the maintenance programs will be delivered by Western Power's internal workforce. For the purpose of defining the delivery strategy and identifying optimal delivery channels, core activities are defined as those that are mission critical for the restoration of power supply during emergencies and unforced outages
- the transmission maintenance team will be comprised of a skilled and competent core internal workforce of sufficient size (or "critical mass") to ensure that the team sustains the capability to respond to major network events rapidly and effectively
- the program and contract management of outsourced services will remain in-house and will be delivered by Western Power resources within the Transmission maintenance delivery team
- the existing maintenance teams will be retained. In particular, the principal maintenance team will continue to be based in the Perth metropolitan area. In addition, a second regionally-based maintenance team has been established in Picton to service the South-West areas of the Western Power Network. The establishment of this second team has enabled planned maintenance to be delivered more cost-effectively, and enhances Transmission Division's fault and emergency response capability
- maintenance activities will be outsourced through a competitive procurement process based on a preferred vendor contracting model. Providers of these "non core" maintenance services are able to leverage scale economies and other efficiencies that are not available to Western Power, and hence they provide an efficient alternative to in-house service provision

The table below shows the proposed allocation of different transmission work types across the alternative delivery channels.

**Table 6-1: Allocation of Transmission work to delivery channels**

		Delivery channels			
		PV	Alliance	Standard contracts	Internal
<b>Work Types</b>	330 kV line construction				
	330 / 132 kV terminal construction				
	132 kV line construction				
	132 / 22 kV substation construction				
	Asset replacement				
	SCADA / Communications				
	Maintenance				

## 6.5 Concluding comments

Transmission Division has carefully examined the forecast volume and mix of work types to be delivered, to derive an efficient allocation of work across all delivery channels. The Division has undertaken market research, and has engaged directly with external service providers to satisfy itself that the volumes of work allocated to each delivery channel can be delivered efficiently.

Approximately two-thirds of the AA3 transmission work program will be delivered by external suppliers. The competitive sourcing of this work through the centre-led procurement process provides confidence that the work will be delivered in accordance with the Code requirement of efficiently minimising costs.

Transmission Division is confident that this Transmission Delivery Strategy will provide a framework for the efficient delivery of all transmission work required during AA3 and beyond.

# 7 Delivery assessment

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## 7.1 Introduction and overview

This chapter assesses the deliverability of the AA3 work program at a consolidated level and also drills down to assess the resource requirements at a network level, recognising that transmission and distribution have different work characteristics.

The consolidation process examines the aggregate resource requirements and delivery approaches across the three Divisions. It provides a verification that the work program itself reflects prudent, efficient and deliverable expenditure forecasts at a portfolio level, having regard to planning and delivery lead-times, and any binding resource constraints. The consolidation process also tests the deliverability and efficiency of the divisional delivery strategies individually and collectively.

The consolidation process culminates in a “pressure test” review involving all Divisions and the Operations management team. Key challenges are identified and the efficiency and robustness of the delivery strategies are assessed. This process also identifies residual risks, which are then managed at the divisional or Operations level as appropriate.

Following completion of the consolidation process, the divisional delivery strategies and the WDS are formally signed off by the Executive General Manager – Operations and the relevant members of the Operations management team.

The key finding from the analysis presented in this Chapter is that the AA3 work program can be delivered efficiently, and the strategies developed at a divisional level are appropriate at both a portfolio and network level.

## 7.2 Consolidated analysis

### 7.2.1 Expenditure Forecasts

Figure 7-1 below shows Western Power’s capital and operating expenditure forecasts for AA3 along with actual expenditures for AA1 and AA2. The bar graph shows June 2011 real dollars. This enables a more useful view when analysing resource supply and demand and seeking to understand volume variation through time.

The line graph in Figure 7-1 is provided to show the difference between the area of focus for resource analysis versus the total forecast expenditure for AA3 which includes business support, IT and June 2012 real dollar escalation.

**Figure 7-1: Consolidated historical and forecast capital and operating expenditure**

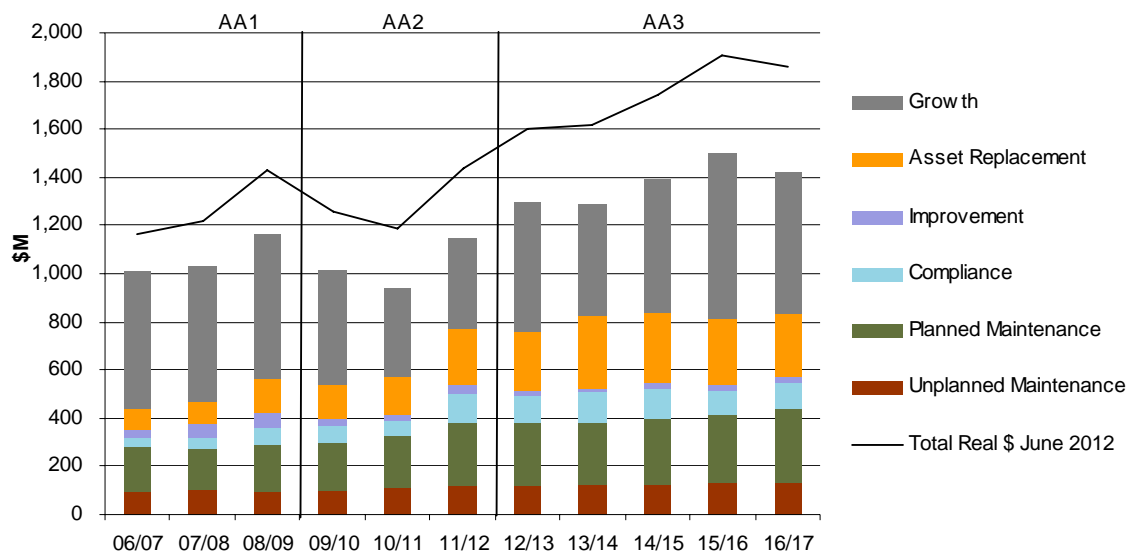


Figure 7-2 illustrates the work allocation of Western Power’s AWP to delivery channels, based on the application of the principles and other matters described in the preceding chapters. It includes the total direct labour, material and fleet by each channel.

Note the total resource expenditure shown excludes overhead, gifted assets and System Management Division operational expenditure, which accounts for the difference in totals between Figure 7-1 and Figure 7-2.

**Figure 7-2: Consolidated work allocation**

The above figure shows that Western Power’s internal labour resource base will grow modestly during AA3 compared to the rate of growth in total resource requirements. Over the period, the majority of the additional work will be sourced through the Alliance and external delivery channels (DDP, PV and standard contracts). This balanced portfolio approach is used during AA2 and together with updated market intelligence provides a high level of confidence at the portfolio level that the AA3 work program is deliverable.



## 7.2.2 Work allocation across delivery channels

The annual average consolidated work allocation (in terms of direct labour) across delivery channels is shown in Figure 7-3. For comparative purposes, the average annual work allocation for AA2 is also shown.

**Figure 7-3: Consolidated average annual work allocation**

Figure 7-3 shows that for AA3, a lower percentage of work will be delivered by internal resources, compared to the percentage delivered internally during AA2. This lower percentage is explained by the large Mid West 330 kV transmission project and several 132 kV lines, which will be delivered externally during AA3 through standard contract arrangements, as illustrated in Figure 7-4 below.

**Figure 7-4: Transmission average annual work allocation**

Figure 7-5 shows the average annual allocation of work across delivery channels for Distribution and Customer Service combined, for AA2 and AA3. In accordance with the Distribution Delivery Strategy, the work allocated to the DDP is increased to commercially sustainable and efficient levels, with the remaining increase in resource requirements sourced by growing the alliance and through modest growth in the internal and PV delivery channels.

## Figure 7-5: Distribution average annual work allocation

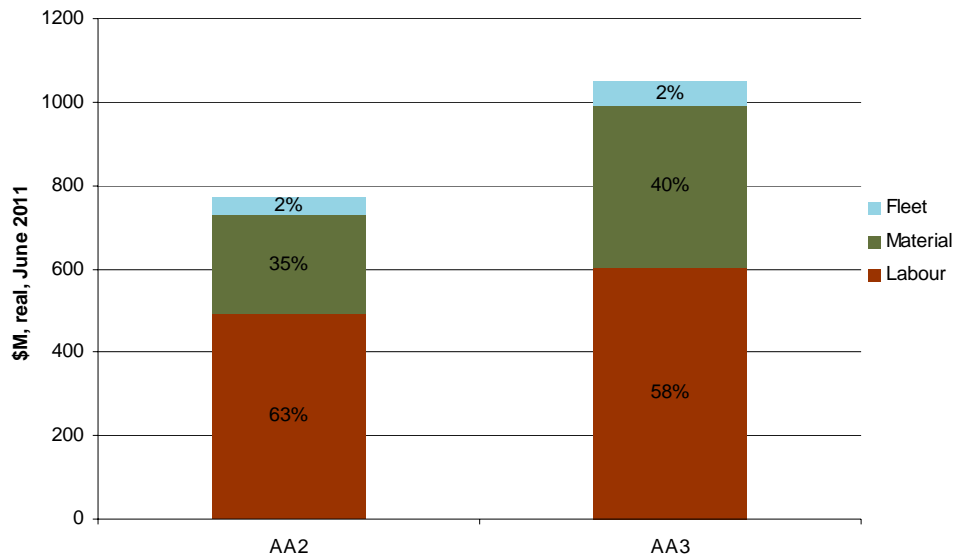
As already noted, under Western Power's Balanced Portfolio approach the level and mix of work allocated to the internal operational workforce ensures that:

- core competencies (including those in relation to emergency response, supply restoration and maintenance capability) continue to be strengthened, and to improve the flexibility of Western Power's cost structure to changes in work volumes
- the business retains a sustainable level of design, project management and delivery capacity to maintain its position as an informed buyer

### 7.2.3 Resource requirements

The consolidated annual average forecasts of materials, labour and fleet requirements are set out in Figure 7-6 below. For comparative purposes, the average annual forecast for AA2 is also shown.

**Figure 7-6: Consolidated average resource requirements**



The above figure indicates that the principal resourcing increases in AA3 relate to materials and labour. Although labour reduces in percentage terms between AA2 and AA3, the total labour resource requirement will increase over the period. By the same token, although fleet resources remain stable at 2%, this percentage reflects an increase in aggregate terms as the work program for AA3 is materially larger than AA2. The material percentage increase is driven by increases in contract materials associated with the 330 kV line and several 132 kV projects.

To examine the resourcing challenges in detail and to assess deliverability, it is necessary to examine the resource requirements at a network level. This network level analysis is necessary because the resource requirements and challenges differ markedly across the networks.

### **7.3 Transmission delivery assessment**

Figure 7-7 shows the planned maintenance and capital work on the transmission network.

**Figure 7-7: Transmission work program by work category**

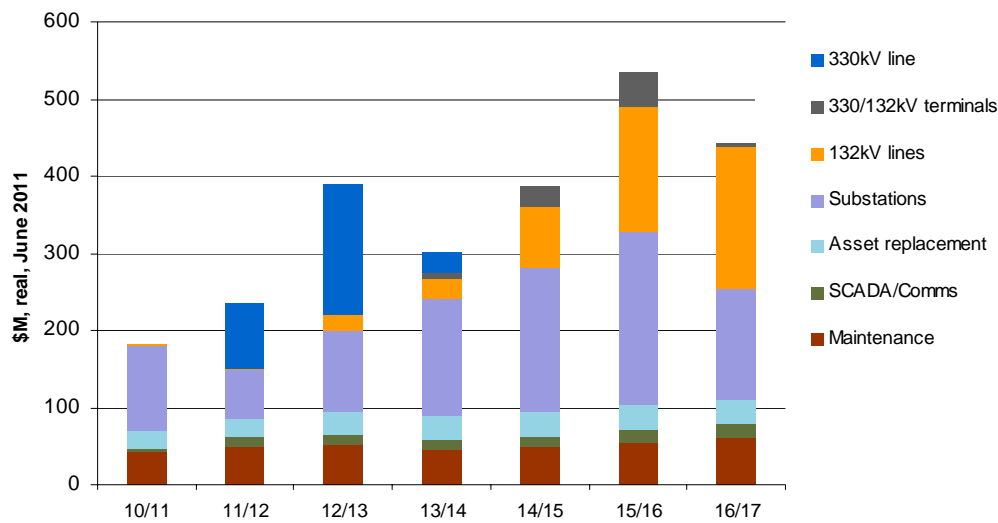


Figure 7-8 below shows the resource mix (excluding indirect costs) and delivery channels to be employed to deliver this work.

**Figure 7-8: Transmission resource mix by delivery channel**

The above figure illustrates that internal labour requirements remain steady over the period, consistent with the Flexible Engineering initiative. The principal deliverability challenges arising from the above figures can be summarised as follows:

- a substantial majority (approximately 70%) of the transmission work program is to be delivered by external service providers, particularly in relation to 330 kV and 132 kV line work, and greenfield substation work
- substantial increases in materials and fleet are required to deliver the work program

Each of these matters is addressed in turn.

### 7.3.1 External provision of Transmission capital work

The 330 kV line work is comprised of a single project to construct a 200 km double circuit 330 kV line from Perth to Eneabba. This work will be outsourced to tier 1 contractors, which are sufficient in size and number to ensure a competitive environment. In addition, large international contractors are already mobilised in Australia in order to meet the TNSPs' major work programs.

Western Power has recently carried out a market intelligence survey and determined that there is sufficient interest in the proposed Western Australian high voltage projects to attract several responses to tenders, thereby ensuring competitive rates. Hence we do not expect the 330 kV work to present a delivery challenge.

The Transmission work program includes \$1.4 billion of capacity expansion (132 kV line and substation) work in order to meet growth and customer connection requirements. Figure 7-9 shows the historical performance and the forecast requirements for growth works in AA3.

**Figure 7-9: Transmission growth capital work**

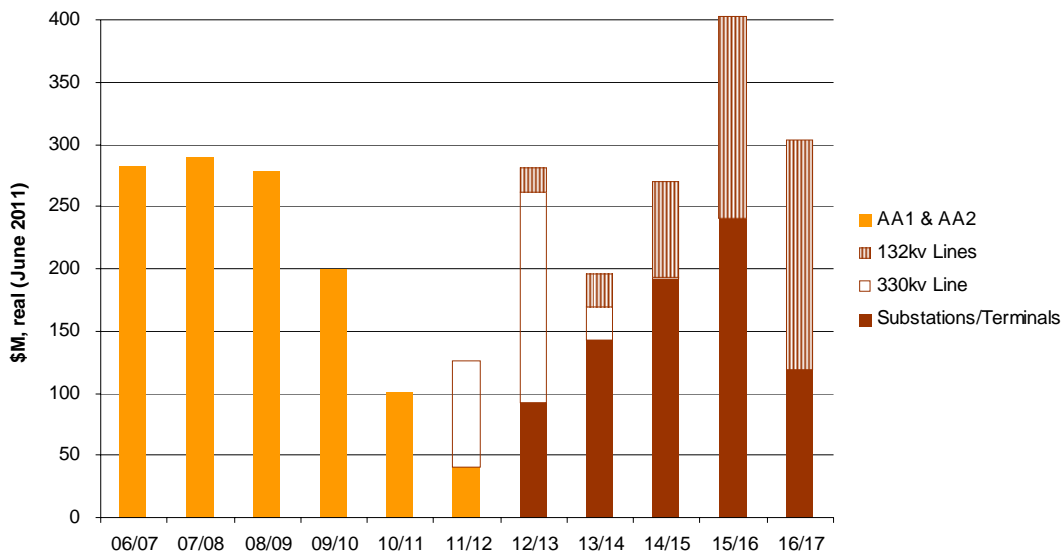


Figure 7-9 indicates that the levels of growth capital work in the first 2 years of AA3, excluding the 330 kV line are lower than the levels achieved in the period 2006/07 to 2009/10. The relatively low growth capital work at the start of AA3 will enable Western Power to develop external 132 kV line and substation design and construction capability to meet the higher volume towards the end of AA3. Approximately 60% of growth is material driven rather than labour. Our “centre led” and competitive procurement processes have demonstrated efficient delivery in the past and will ensure this component will be delivered efficiently during AA3.

The ramp up in skilled labour to deliver the year on year growth from 2012/13 to 2015/16 will be achieved by bundling work into larger packages and broadening the scope of works to include design, supply, construction and pre-commissioning. This approach enables external service providers to provide competitive pricing and innovation in delivery.

## 7.3.2 Transmission materials and fleet requirements

Figure 7-8 shows that there are two types of material included in the transmission capital works - 'contract materials' (also referred to as 'preferred supplier materials') and 'strategic materials'.

### Contract materials

Contract materials refer to the materials provided in supply and construct contracts where the materials are sourced by the successful tenderer. The bulk of contract materials are in the form of:

- steel and concrete for civil works - Steel is sourced from international suppliers with proven capacity to satisfy international demand where growth is dominated by countries such as China and India. Concrete is sourced locally from a number of suppliers that have demonstrated their capacity to service the Western Australian market
- steel and cable for fabrication and electrical works - Steel required for fabrication is sourced from the same international suppliers as discussed for civil work. Electrical cable is also sourced internationally, with specialised equipment, such as underground transmission cables, being sourced from well established European suppliers

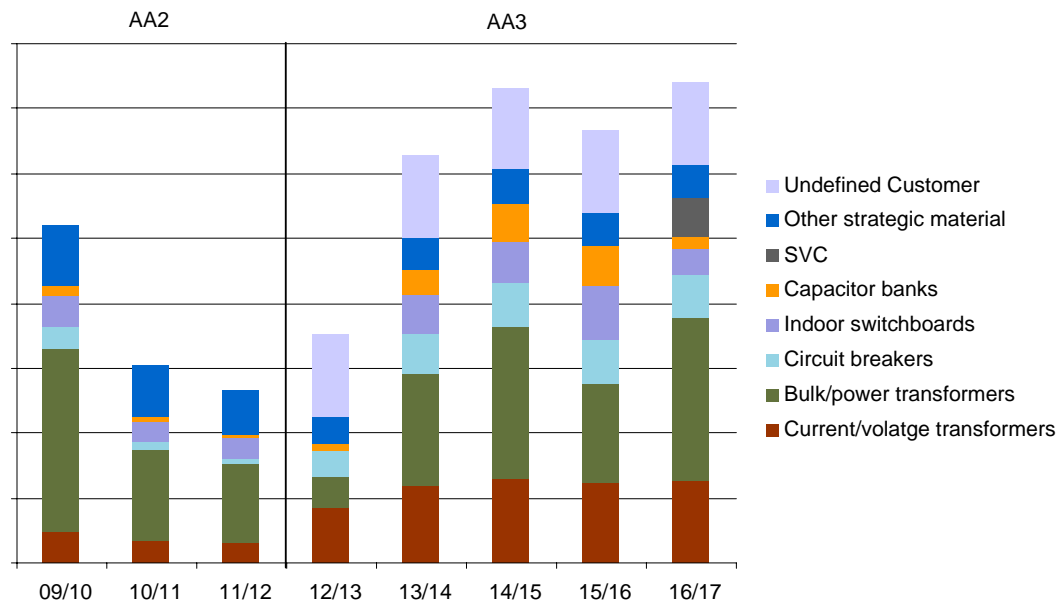
Western Power prefers to use supply and construct contracts with tier 1 contractors for the major works because tower construction, civil works and long haul cable stringing is infrequent and specialist work which we have not developed in house capability for. These contractors have access to international material suppliers and hence can source these materials at lower rates compared to one-off orders as would be the case if we sourced the materials and manufactured goods ourselves. Due to the proven capacity of the international material providers, the supply of construction materials is not expected to present a delivery challenge during AA3.

### Strategic materials

As noted in section 2.2.4, Western Power's procurement arrangements reflect good industry practice, and equip the business to competitively procure all of its required external supplies in an efficient manner. Western Power utilises the preferred supplier arrangements established under our procurement arrangements to source the materials required for the majority of asset replacement, substation electrical and SCADA and communications works. Western Power adopts a dual vendor or back up preferred vendor strategy to manage single point supply risks.

Figure 7-10 shows the strategic material to be procured by Western Power for internal work and provided as free issue to external service providers. For the avoidance of doubt, this material excludes the contract materials (described above) provided by contractors under supply and construct contracts.

**Figure 7-10: Transmission strategic material requirements**



Note: 'Other' includes disconnectors, surge arrestors and opex materials

Figure 7-10 shows that the materials required for the initial two years of AA3 is consistent with volumes delivered at the beginning of AA2, therefore will not present a delivery challenge. Furthermore a supply chain optimisation initiative in 2009 has improved material forecasting accuracy, increasing our negotiation position for priority of manufacturing time slots for long lead time items.

The increase in strategic material requirements in 2014/15 through to 2016/17 is primarily driven by the requirement for bulk and power transformers. After removal of these, the increase in strategic material requirements is being driven by additional switchboards, circuit breakers and current and voltage transformers which does not present a delivery challenge to our preferred suppliers as Western Power's requirements represents a small proportion of their total output. As previously mentioned our effective procurement processes together with competitive tension between preferred materials suppliers will ensure this material will be provided at best price.

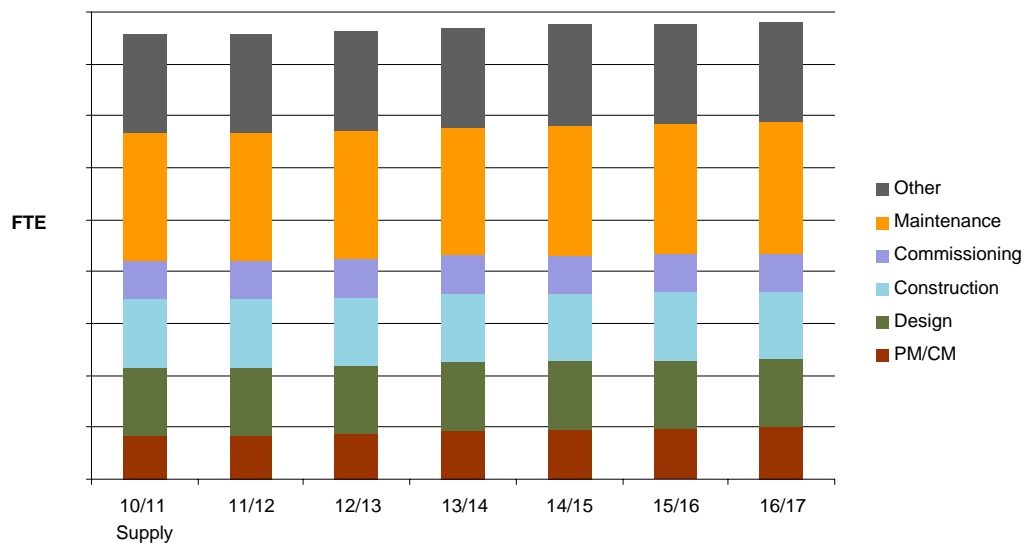
**Fleet**

Transmission fleet requirements for construction works are primarily provided by external service providers under supply and construct contracts. The increase in forecast fleet requirements from 2012/13 levels shown in Figure 7-8 is due to the construction of the 200 km 330 kV line to Enabba. If the 330 kV line requirements are removed the fleet requirements mirror the pattern of the growth of the remaining capital works. Western Power's market research indicates that these fleet requirements will be met.

**7.3.3 Transmission internal labour resource requirements**

The transmission deliverability assessment examined the capacity of the in-house labour pool to deliver the work identified. Figure 7-11 shows Transmission in-house labour capability, which remains reasonably fixed during AA3.

**Figure 7-11: Transmission in-house labour resource supply versus demand**



Note: 'Other' includes SCADA and information system, switching operator, land & community management, estimators and sponsors

As already explained, under Transmission’s Flexible Engineering Delivery Strategy the existing internal engineering capability will be maintained at present levels, and supplemented as and when necessary using external providers. This approach also applies in relation to commissioning capability. Whilst Western Power has sufficient experienced commissioning staff it is currently establishing further capability with external contractors. This approach will facilitate the management of peak commissioning workloads by utilising a combination of internal and external resources.

Internal construction staff are predominantly utilised on brown-field construction and asset replacement works due to the complexity of these works, which are typically in close proximity to energised assets.

The forecast level of skilled maintenance labour for AA3 is of the same order as that used to deliver the existing AA2 program. In addition, the mix between substation, lines and SCADA and communications technicians remains relatively constant during AA3.

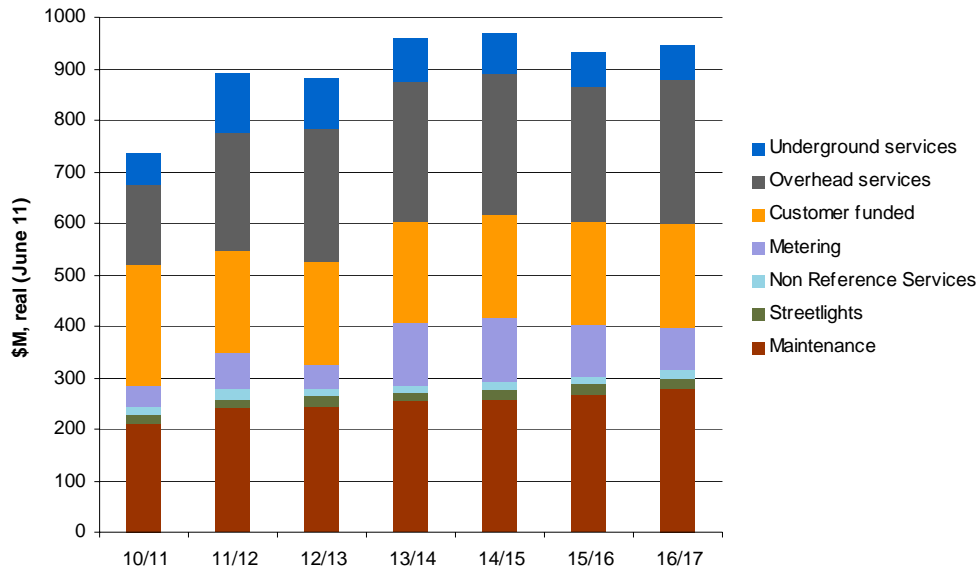
While Figure 7-11 shows that the in-house resource demand for AA3 is constant, with some minor growth in project and contract management (PM/CM) resource, a separate analysis of labour attrition and training requirements has been undertaken to ensure appropriate skills are maintained efficiently. Cost associated with these requirements has been factored into our forecasts.



## 7.4 Distribution delivery assessment

Figure 7-12 shows the planned maintenance and capital work on the distribution network. This includes all customer connection work.

**Figure 7-12: Distribution work program by work category**



Western Power is forecasting its distribution work program to increase by 17% in the final year of AA2 and then decrease modestly in 2012/13. Thereafter the work program increases by 8% in 2013/14, then another 1% in 2014/15 before decreasing by 4% in 2015/16 and then increasing by 1% in the final year. Figure 7-12 indicates that asset driven overhead and underground work drive the initial increase in requirements. A reduction in metering expenditure is also shown due to reduced levels of Smart Grid expenditure from 2015/16 onwards.

Customer funded work is forecast to reduce slightly from recent levels (due to completion of the “Building the Education Revolution” stimulus program) and remains steady throughout AA3. It should be noted however that volumes in this work category can vary according to the state of the economy and government programs such as the National Broadband Network. Western Power has therefore employed delivery channels for customer funded work that are sufficiently flexible to meet any changes in volumes.

Figure 7-13 below shows the total resource requirement for the Distribution network including customer connections and related work.

**Figure 7-13: Distribution resource mix by delivery channel**

The above figure indicates that the principal challenges relate to external labour and strategic material requirements. A more detailed examination of these challenges is presented below.

### 7.4.1 Distribution external labour requirements

Figure 7-14 shows the labour resource requirement arising from the allocation of distribution work to external and alliance delivery channels.

**Figure 7-14: External and Alliance labour resource requirements**

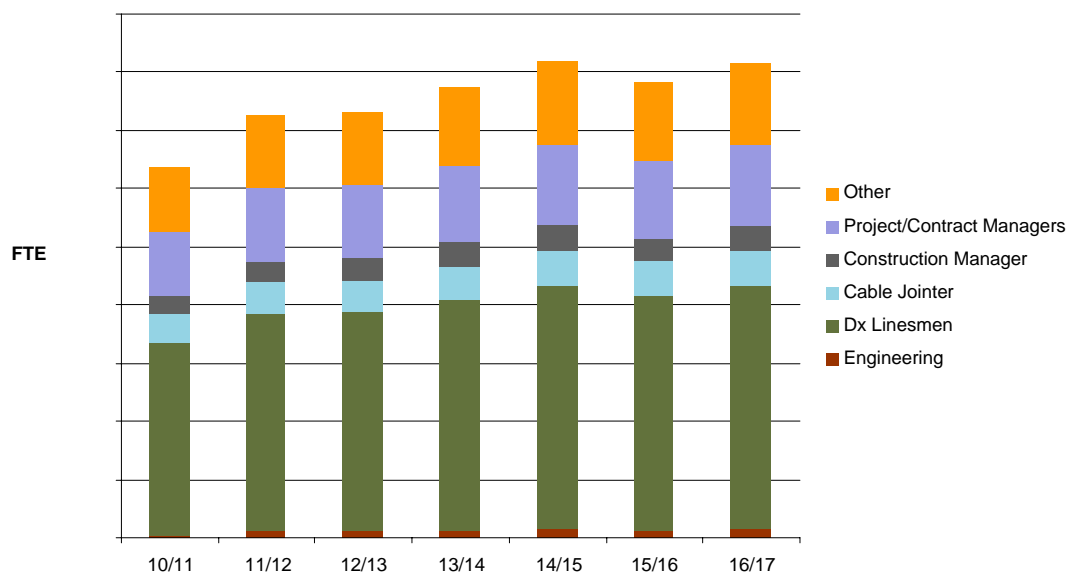


Figure 7-14 shows an increase in external and alliance labour resource requirements in 2011/12, primarily due to requirements for additional linesmen, cable jointers, construction managers and project managers. A corresponding increase in non trade and trainee workers, which support these key skilled workers, is also indicated by the growth in the “Other” labour category. The external resource requirements during AA3 trend steadily upwards with an overall increase of 10%. The increase in

linesmen and construction managers in 2013/14 and 2014/15 is primarily due to allocation of asset driven work to the Alliance.

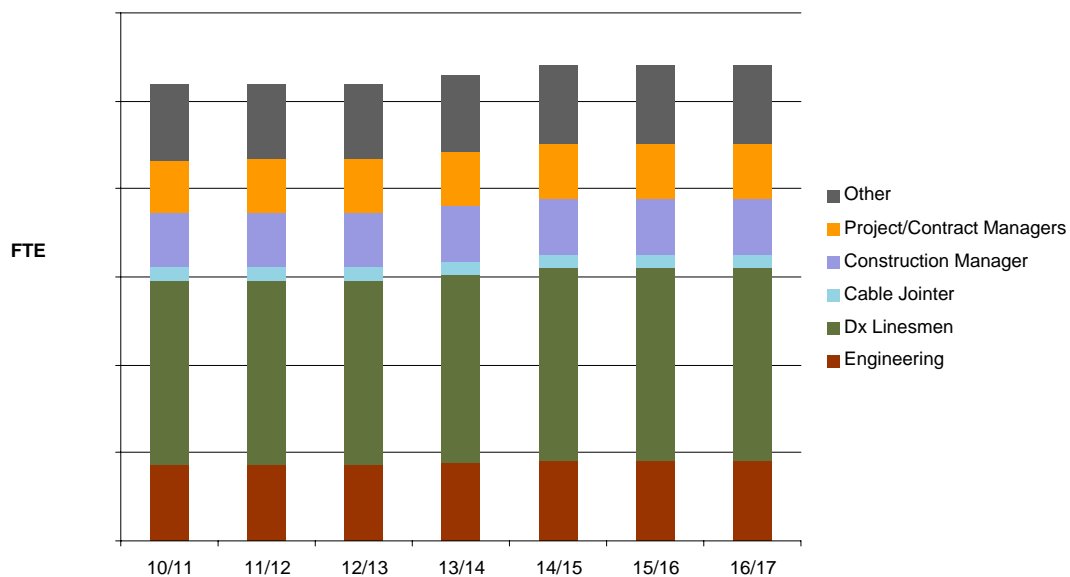
Market intelligence indicates that Western Power’s external service providers currently have the capability to acquire and deliver the identified increase in skilled resources. Western Power’s training capability, together with other selected registered training organisations, will be able to provide the required non trade and trainee workers. External labour resource requirements for AA3 are reasonably similar to levels required in 2011/12. Western Power has identified preferred recruitment regions (refer section 7.4.3) and has established dialogue with our delivery partners to ensure a coordinated approach to recruitment. Western Power is therefore confident that once resource levels are established in the final year of AA2, the external market will be able to meet the AA3 labour resource requirements.

## 7.4.2 Distribution internal labour requirements

The distribution deliverability assessment examined the capacity of the in-house labour pool to deliver the work program.

The current in-house labour capability in 2010/11 and future requirements to 2016/17 are shown in Figure 7-15.

**Figure 7-15: Internal labour requirements**



A moderate increase in internal linesmen, cable jointers and construction managers is indicated. The majority of the increase in linesmen and cable jointers will be provided externally. “Other” labour (i.e. the non trade and trainee workers) will be maintained at slightly increased levels to those at the end of AA2.

### Attrition

A separate analysis of age-related labour attrition has also been undertaken to ensure internal skills are maintained at efficient levels. The Metro and Country Operations teams have approximately 80 employees that are due to retire within the next 12 months, with a continuing impact over the next five years. All of these employees have more than 25 years service with Western Power, and therefore a significant amount of knowledge and experience will exit the business.

To mitigate these impacts, Western Power is investigating a variety of working

arrangements to suit both the needs of the business and of the retiring employees. For example, alternative working arrangements such as part-time work, changing from qualified line workers to non-trade roles, and taking on mentoring and coaching roles are in development.

Attrition of younger workers under 30 years old is also a risk, particularly as the economy picks up and Generation “Y” workers seek to increase experiences across different industries. Retention strategies that match their psychographic need through offering job flexibility, community involvement, mentoring, and mixed reward systems are being investigated.

### Training

In light of the growth requirements and attrition risks, Western Power has undertaken an assessment of existing training capability. As a result, we are planning to expand training facilities, recruit additional trainers and work with registered training organisations to meet the required increase in internal and external labour.

In addition to this we have undertaken a comprehensive market capability study the outcomes of which are summarised in the following section.

## **7.4.3 Market capability study**

Western Power continuously monitors the resource capability of external service providers to ensure that the scale and skills of resources necessary to implement the works program are available when required.

Specific resource types monitored include:

- switching operator
- cable jointer
- line worker
- design officer
- design engineer

Detailed resource supply and scenario analysis was undertaken as part of the development of the delivery strategy, including eastern states utilities resource demand, National Broadband Network roll out and mining industry expansion.

The conclusion from this analysis was that the domestic supply of qualified workers is limited and with the work available across Australia there is little incentive for eastern states electricity industry sector workers to move across to Western Australia.

We will maintain regular dialogue with our delivery partners to explore opportunities for domestic recruitment. To mitigate the above recruitment risk, Western Power engaged Deloitte to undertake an independent global market study to explore international recruitment options in order to meet demand.

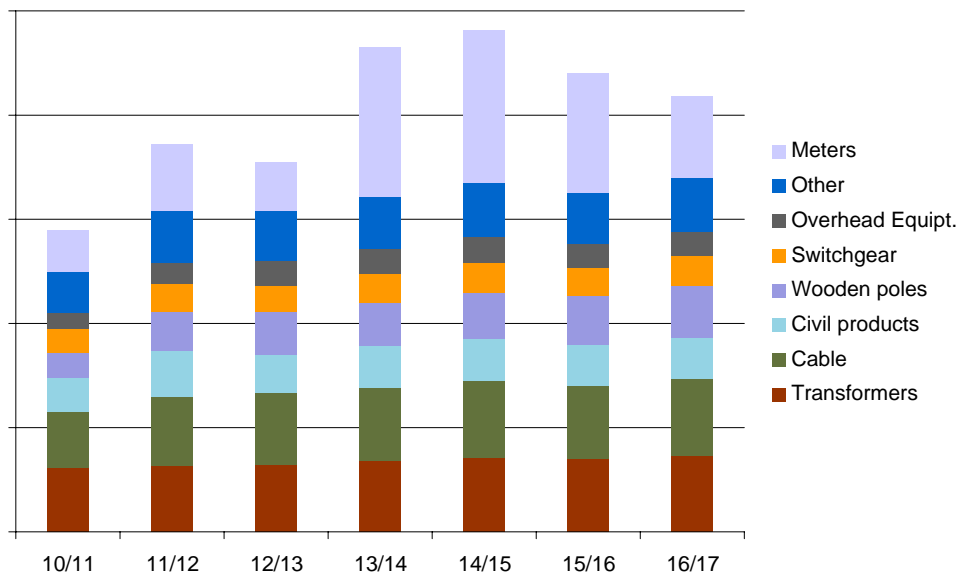
Deloitte provided a detailed report (Labour Market Supply Analysis and Sourcing Strategy) which recommended four countries and specific regions within these countries for targeted recruitment. The report also provides retention of international employee strategies specific to these countries and examines likelihood to migrate, compatibility and qualifications alignment.

The global market capability study together with our scenario analysis and a coordinated approach for recruitment with our delivery partners provides confidence that the labour resource requirements for AA3 will be met.

### 7.4.4 Distribution materials and fleet requirements

Figure 7-16 shows the strategic material to be procured by Western Power for internal work as well as strategic material procured by Western Power and provided as free issue to external distribution work delivery providers. Therefore, external service providers have a minimal requirement for materials, being limited to incidental and minor non strategic items.

**Figure 7-16: Material requirements**



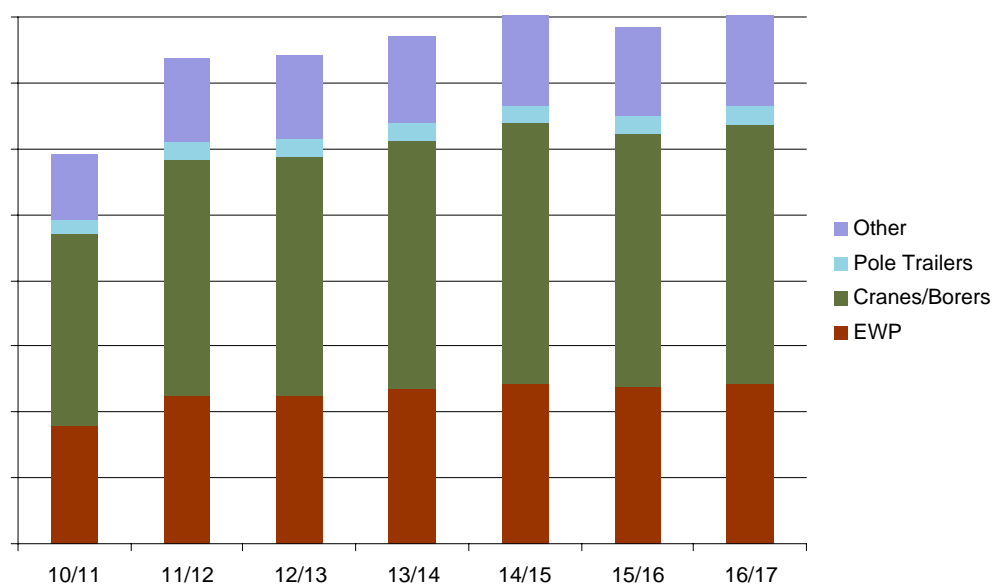
The above figure shows that the average material requirement for the forecast period is significantly higher (approximately 33%) than the level of material procured for the 2010/11 financial year primarily due to the smart grid meter roll out. Market testing of prices for future meter supply was undertaken in late 2010. This provided an opportunity to assess market pricing and capability to supply smart meters in anticipation of the smart meter roll out peaking in 2014/15. After removal of these, other increases in strategic material requirements are being driven by additional wooden poles, civil products and cable associated with our pole replacement program.

Western Power’s analysis highlighted some risks in relation to wooden pole supply. However there is sufficient lead time available for Western Power to work with its strategic vendors to manage this risk effectively.

As previously mentioned our effective procurement processes together with competitive tension between preferred materials suppliers will ensure this material will be provided at best price.

Figure 7-17 shows the key fleet requirements for AA3.

**Figure 7-17: Distribution fleet requirements**



The above figure indicates that distribution fleet requirements for AA3 are not significantly greater (< 8%) than forecast for AA2. The key challenge is the initial step up from 2010/11 to 2011/12 (20%).

The majority of fleet supply is managed by the external service providers, who will undertake the necessary investment in elevated work platforms and cable borers provided there is reasonable certainty regarding future volumes of work. Significant investment in fleet was made as Western Power implemented its DDP strategy. Market intelligence suggests this fleet can be remobilised for Western Power in 2011/12 and for AA3.

Western Power uses a contractual approach for the procurement of its in-house fleet units, which provides flexibility through:

- state government CUA arrangements for the purchase or hire of light fleet and trucks
- Western Power's panel contracts for purchase, hire and lease of trucks and plant equipment

In addition to well established purchasing and hiring processes, Western Power has in-house capability to maintain, fit out specialised units and audit external service provider plant, ensuring it complies with safety and technical standards.

Analysis of the moderate growth in internal work allocation and revised work patterns together with established and proven fleet procurement practices indicates that in-house fleet requirements will be met.

## **7.5 Performance measures**

An important component of each division's delivery strategy is the establishment and monitoring of key performance indicators and benchmarks. Performance monitoring of the efficiency and effectiveness of each division's delivery activities enables opportunities for performance improvement to be identified and acted on. Further details of each division's performance internal monitoring arrangements are set out in the divisional delivery strategy documents.

At the portfolio level, performance measures will also be employed to monitor the effectiveness and efficiency of delivery performance, and to drive improvements at the Operations level. Although the details of the output targets have not yet been finalised, the table below sets out Western Power's current thinking.

**Table 7-1: Proposed output measures for AA3**

Category	Principle	Objective	Measure	Target	Outcome
Portfolio	Value the customer	Improve the overall customer experience	Customer satisfaction survey		Meet or exceed customer expectations
		Minimise planned outages	Planned system minutes		Maintain network reliability
	Demonstrate value for money	Minimise loss of energy supply to customers	Value of lost load (VCR x minutes off supply)		Maintain network performance
		Maintain efficient Transmission network	Cost to operate per line length		Efficient cost to operate
		Maintain efficient Distribution network	Cost to serve per line length		Efficient cost to serve
Process	Value the customer	Keep the customer safe	Public safety incidents (all network)		Improved network safety
		Achieve required connection times	Connection cycle time		Maintain customer outcomes
	Demonstrate value for money	Maximise estimating accuracy	Actual costs / business case budget (all network, major projects)		Efficient cost to operate and serve

## 7.6 Management of residual risks

The Balanced Portfolio approach adopted in the WDS, along with various specific aspects of each Division's delivery strategies (such as Transmission Division's Flexible Engineering approach) provide an effective means of managing delivery risks.

Western Power's risk analysis indicates that there are three key residual risks under the WDS that will continue to require active and careful management. These risks and the proposed mitigation actions are described in the table below.

**Table 7-2: Key residual risks and mitigation actions**

Description of risk	Likelihood of occurrence	Consequence of occurrence	Mitigation action
Possible delay in the DTF funding and ERA's approval of Western Power's access arrangement	Low	A delay in funding approval and /or ERA approval could adversely affect Western Power's ability to deliver the entire AA3 work program, and would lead to additional costs.	Western Power is working with its external delivery channels to understand the potential costs arising from a delay in funding or regulatory approval. These potential costs may need to be included in Western Power's expenditure forecasts for AA3.  Western Power will also work constructively with DTF and the ERA to facilitate timely approvals.
Inability to recruit and train the additional labour resources required to deliver the AA work program	Low	Delivery risks arise if Western Power is unable to recruit and train additional internal resources (principally within Distribution Division)	An independent review of Western Power's overseas recruitment strategy provides recruitment options as well as attraction and retention strategies.  Development of new Power Training Services facilities is underway. Additional training resources will be obtained through recruitment and via the Alliance and DDP who have registered training organisation status.
Inability to procure wooden poles at the volumes required to complete the AA3 work program	Low	Delivery of the planned increased in wood pole replacement requires Western Power to make early commitments to suppliers to ensure availability of materials and labour.	Section 68 funding approval will be sought if necessary.

Western Power will continue to monitor the effectiveness of the mitigation actions noted above, and assess the potential exposure to the deliverability of the AA3 work program.



## 8 Concluding comments

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A systematic and robust approach has been adopted in developing the divisional delivery strategies. In particular, the strategy development has involved the application of a consistent set of principles and a common framework, whilst focusing on the specific delivery challenges for each Division. In addition, the divisional strategies have been informed by discussion, workshops and 'challenge sessions' both at a divisional and company-level.

The process of bringing together the divisional strategies into this WDS has:

- tested and verified the deliverability of the divisional strategies individually and collectively
- provided final verification that the work program reflects prudent, efficient and deliverable expenditure forecasts at a portfolio level, having regard to planning and delivery lead-times, and any binding resource constraints
- tested to ensure that that the delivery strategies provide for the efficient delivery of the work program

Western Power is confident that this WDS will provide a framework for the efficient delivery of all Customer Service, Distribution and Transmission works required over the forthcoming AA3 and beyond.

## 9 Glossary of terms

Term/Acronym	Description
AA1	The access arrangement period from 1 July 2006 to 30 June 2009
AA2	The access arrangement period from 1 July 2009 to 30 June 2012
AA3	The access arrangement period from 1 July 2012 to 30 June 2017
Access code	Electricity Networks Access Code 2004 – Section 6.40
AER	Australian Energy Regulator
Alliance	The alliance between _____ and Western Power entitled _____.
AS	Australian Standards
AWP	Approved work program
Cs	Customer Service Division
CUA	Common use agreement
DCE	Direct cost estimate
DDP	Distribution Delivery Partner
DM	Document management
DNSP	Distribution network service provider
DTF	Department of Treasury and Finance
Dx	Distribution Division
EPWM	Enhanced planning and works management
ERA	Economic Regulation Authority of Western Australia
EWP	Elevated work platforms
FTE	Full time equivalents
GCC	Gross controllable cost
GFC	Global financial crisis
IP	Intellectual property
KPI	Key performance indicator
NEM	National energy market
NIS	Network investment strategy
NRS	Non reference services
OE	Operational Excellence
PBC	Performance based contracts
PMB	Project management budget
PMBok	Project management body of knowledge
PMI	Project management institute
PMO	Program management office
PPM	Project Portfolio Management
PTS	Power training services
PV	Preferred Vendor
PWI	Program and works integration branch

<b>Term/Acronym</b>	<b>Description</b>
RAB	Regulated asset base
RIS	Required in service date
RTO	Registered training organisation
SLA	Service level agreement
TNSP	Transmission network service provider
Tx	Transmission Division
UK	United Kindom
VFM	Value for money
WA	Western Australia
WDF	Works delivery framework
WDS	Works delivery strategy
Western Power	Electricity Networks Corporation ABN 18 540 492 861
WPO	Works program office