DELIVERY STRATEGY

MidWest Energy Project – Southern Stage

Project No: T0180069

Original Issue: 22 March 2011
Prepared by: Transmission Capital Program Management

ABN 18540492861

Print date: 5 August 2011

Document Control

Endorsement Approvals

	Name	Title	Signature
Prepared by	Ian Anderson	Project Manager – Transmission Capital Program Management	
Endorsed by	Gair Landsborough	Branch Manager – Transmission Capital Program Management	
Approved by	Mehdi Toufan	Group Manager – Transmission Delivery	

Record of Revisions

Revision number	Date	DMS version	Revised by	Description
1	18/04/11	1	I Anderson	Signed and Issued
2	04/05/11	2	I Anderson	Revised 1.1 to 87%

Documents Referenced In This Document

DMS#	Title of Document
DMS and other document reference in this document are indicated in blue underlined text.	

Stakeholders (people to be consulted when document is updated)

Position / Title
Branch Manager – Transmission Program Management
Branch Manager – Transmission Primary Engineering & Construction
Branch Manager – Secondary Systems Engineering
Group Manager – Transmission Delivery

Notification List (people to be consulted when document is updated)

TABLE OF CONTENTS

1 EXECUTIVE SUMMARY

1.1 DELIVERY STRATEGY SUMMARY

The purpose of this report is to provide details on the delivery mechanisms Western Power is proposing to use for the construction of the Mid-West Energy Project (MWEP). It defines the procurement strategy for the project, detailing how all components for the works will be sourced.

Western Power has determined that the appropriate delivery mechanism for this project is to employ a mix of contracting (through competitive tendering), standing supply contracts (preferred suppliers) and internal resources.

This mix of sourcing strategies chosen for the varying components of work is chosen to maximise value for money by leverage off the strengths of Western Power's workforce where this provides best fit, utilising competitive tendering for large construction packages of work, and use of standing supply contracts for specialised electrical primary plant. The standing supply contracts are set up regularly via competitive tendering to ensure best value for money. The sourcing techniques balance value for money against schedule and cost risk.

The major component of the project is the detailed design, procurement and construction of the 330kV double circuit transmission line both from a cost and effort basis.

Approximately 87% of total project costs are associated with works that will be procured by open competitive tender.

Where major work packages have been indentified to be placed under competitive tender, Western Power's Group Commercial branch has created specific Sourcing Strategies for these packages of works.
The packages of works and their sourcing strategy documents are:

- 330kV Double Circuit Transmission Line – DM 7561484
- Three Springs 330kV Terminal Establishment – DM 7593426
- Neerabup Terminal 330kV Expansion – DM 7589043

1.2 PROJECT SCOPE

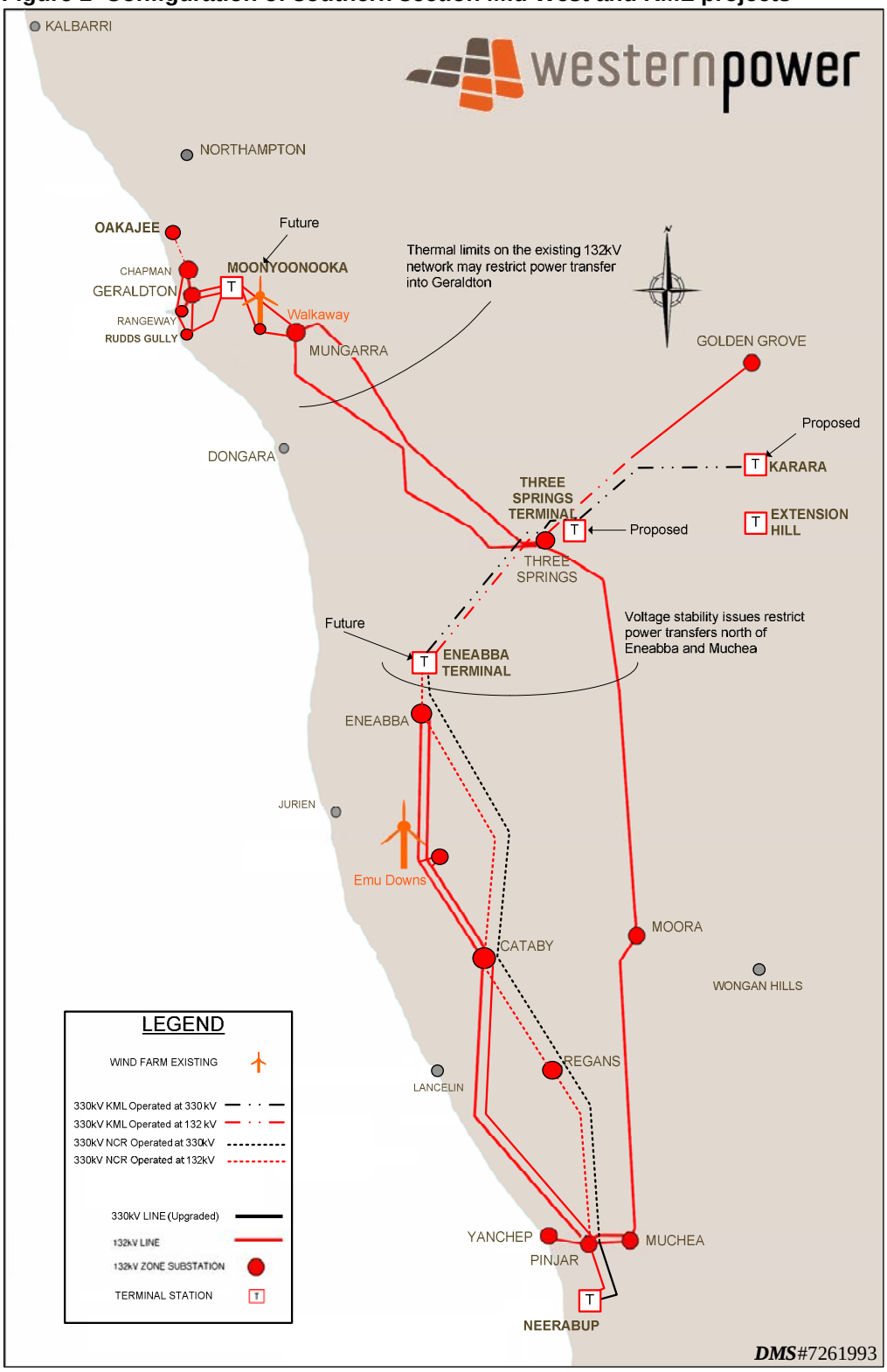
The MWEP project will allow 330kV transmission of electricity from Neerabup on the northern outskirts of Perth to Eneabba and then on to Three Springs. At Three Springs the 330kV supply will be stepped down to 132kV and interconnected to provide support to Western Power's existing network.

The scope of the Midwest Energy project is to create a new 330kV double circuit transmission line from Neerabup Terminal substation (NBT) to the location of the future Eneabba Terminal (ENT) Substation and to construct the new Three Springs Terminal substation (TST). The Scope includes 330kV connection works at NBT and 132kV interconnection works between the new TST substation and Western Power's existing Three Springs zone substation (TS).

The project will make use of the ENT to TST 330kV line presently being constructed by Karara Mining Limited (KML).

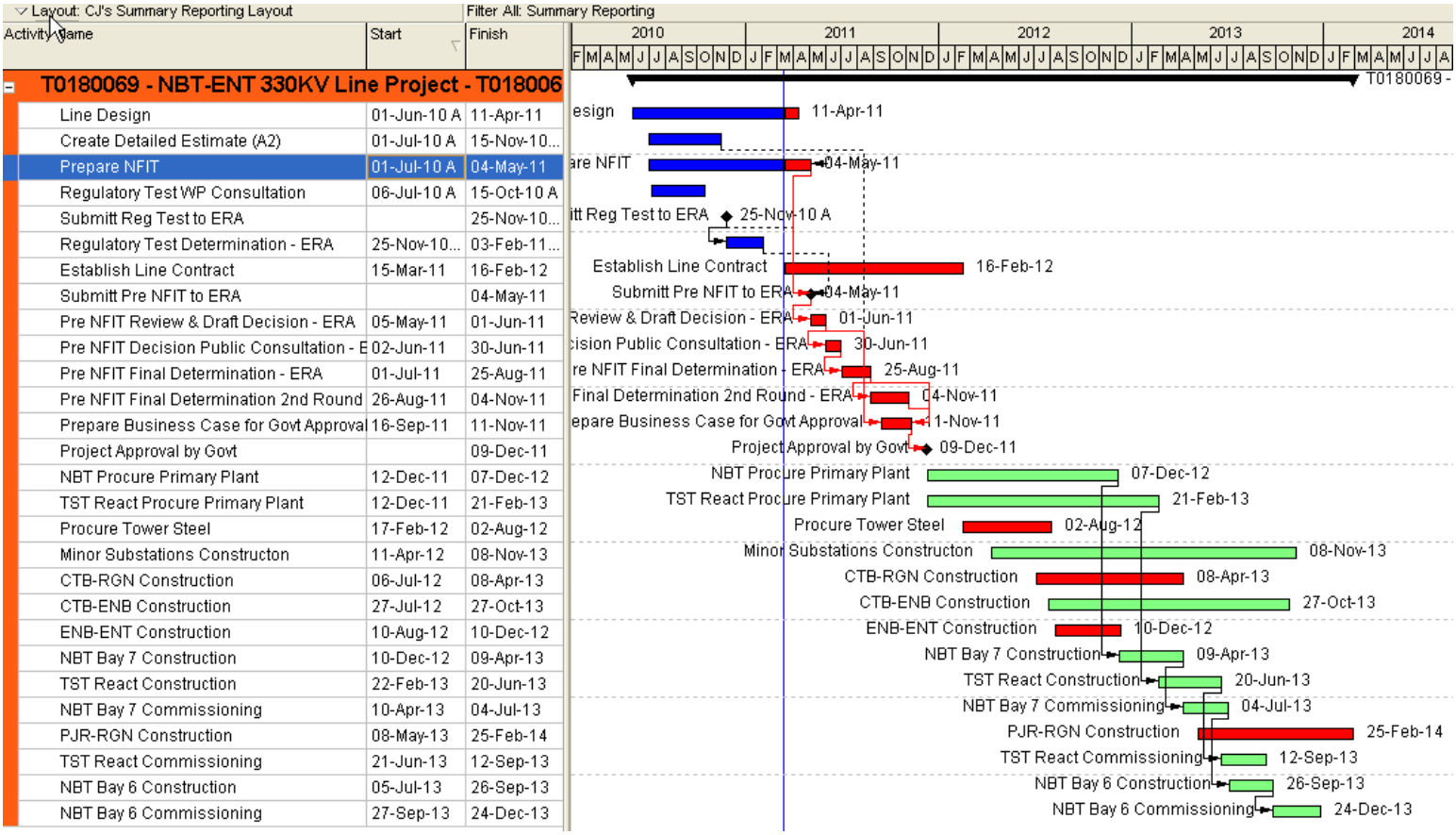
KML are also constructing a 330kV line from Three Springs Terminal to their mine site substation (KRA). This work is not directly related to the MWE project, apart from its purpose to facilitate the connection of this major customer.

Figure 1 Configuration of southern section Mid West and KML projects



1.3 PROJECT TIMELINE

The project delivery timetable for the southern section Mid West project is shown below.



2 DELIVERY STRATEGY

2.1 ENGINEERING SCOPE

To achieve the project requirements the following detailed scope of works is proposed:

1. Decommissioning of the existing wood pole (so called cricket wicket line) PJR-RGN 81, RGN-CTB 81 and CTB-ENB/EMD 81 lines.
2. Construction of 200km of new 330 kV double circuit transmission line
    a. From Pinjar to Regans Ford (PJR-RGN)
    b. From Regans Ford to Cataby (CTB-RGN)
    c. From Cataby to Eneabba zone substation (CTB-ENB)
    d. From Eneabba zone substation to the location of the future Eneabba Terminal (ENB-ENT)
3. 132 kV connections from the new line to Pinjar (PJR), Regans (RGN), Cataby (CTB) and Eneabba (ENB) zone substations
4. Undergrounding of a section of the PNJ-ENB 81/PJR-CTB 81 132kV double circuit line.
5. Rearrangement of line connections at Emu Downs (EMD) from CTB-ENB/EMB 81 to PJR-ENB/EMD 81 line.
6. Constructions of a new 132 kV double circuit transmission line between Three Springs Terminal and Three Springs Substation (TS-TST81).
7. Construction of a new 330kV Three Springs Terminal substation (TST), including installation of a 330/132kV step down transformer.
8. Extensions of Neerabup Terminal (NBT) to allow connection of the new 330kV NBT-TST81 line circuit.
9. Extensions of Three Springs zone substation for the new 132kV TST-TS81 line circuit.
10. Installation of new and modified Protection and SCADA equipment at Three Springs zone, Eneabba, Emu Downs, Cataby, Regans, Geraldton, Mungarra), Chapman, Pinjar and Neerabup Terminal substations.
11. Communications equipment installations and modifications associated with the above works.
12. Undergrounding of 25 sections of distribution lines that cross the proposed 330kV line route or easement.

Note: Completion of the Karara Mining (KML) ENT to TST 330kV Double circuit line is required to allow final commissioning of the above scope of works.

2.2 PROCUREMENT SUMMARY

The southern section of the Mid West 330 kV reinforcement project will be delivered through a combination of works being carried out by Western Power (WP) resources and contract resources procured by open tender.

The varied scope of works of this project requires a range of competencies across diverse activities including:

- Easement access provision, environmental management planning and acquisition of environmental permits;
- System design;

- Detailed facility design (transmission and distribution);
- Procurement;
- Demolition and Construction (transmission and distribution); and
- Commissioning.

The following summarises the project procurement methodologies that have been selected for each component of the works.

- Substation design works carried out by WP internal staff, with discrete packages outsourced if resource constraints exist.
- Transmission line design works carried out by WP staff, leveraging from the Worley-Parsons line design optimisation report.
- Project Management carried out by WP staff.
- Line construction and existing line demolition works to be carried out by contractor using competitive tender and lump sum/schedule of rates contracting methodology.
- Major line materials procurement will be included within the line construction contract.
- Undergrounding of existing double circuit 132kV line near Pinjar and the steel pole TS-TST 132kV line will be carried out by competitive tenders and lump sum contracts for materials and installation.
- Camp style accommodation at two locations (Regan and Cataby) will be provided by the principal line construction contractor.
- Three Springs Terminal will be constructed using competitive tender and lump sum contracts.
- Neerabup Terminal works will be constructed using competitive tender and lump sum contracts
- All other 'brown fields' substation works are to be carried out by WP internal construction and commissioning staff.
- Substation Primary Plant will be procured by WP under its standing supply contracts and free issued for construction.
- All switching and system commissioning works are to be carried out by WP staff
- Efficient delivery (timing of contracts)

2.3 DELIVERY APPROACH

Western Power has implemented a "balanced portfolio" delivery strategy for its capital works program which incorporates three pillars of delivery, namely: internal resources, contracts (traditional and performance based) and alliances.

As part of review of the Mid West project and implementation of the project over a number of stages, Western Power has determined that the most appropriate delivery mechanism for this project is to employ a mix of contracting (through open tendering) and internal resources.

2.3.1 Line

The major component of the project is the detailed design and construction of the 330 kV dual circuit transmission line both from a cost and effort basis.

A specific methodology was adopted to determine how this project component should be delivered. This methodology was based around the State Government Infrastructure Procurement Options Guide and involved a two - stage assessment of delivery options against the specifics and nature of the works to be delivered. A suite of nine potential generic procurement options were considered, including:

1. Direct Management;
2. Managing Contractor;
3. Early Contractor Involvement;
4. Alliance Contracting;
5. Private Public Partnership;
6. Construction Manager;
7. Design and Construct via open tender;
8. Construction only; and
9. Design, Construct and Maintain.

This assessment process included consideration of the elements required for the delivery of the transmission line works, internal Western Power capacities and competencies and also the commercial priorities relevant to the procurement model selection.

The two stage assessment first filtered clearly unviable options from the option set and then evaluated the remaining options in greater depth.

Detailed assessment of the viable options resulted in the recommended option of open tendering procurement method for delivery of the construction of the transmission line works being identified as a superior procurement approach. Key factors driving the decision included:

- The requirement to extract and demonstrate Value for Money;
- Requirement for cost certainty and cost control;
- The low level of uncertainty surrounding design and construction issues given that significant portions of design had already been completed as well as site issues such as environment, line route, access and ground conditions were known because of the amount of work already done. This limited the scope for delivering project gains under partnering style procurement methods;
- Market conditions and presence of a number of experienced contractors in this market segment;
- Requirement for a low risk approach given cost, timing and stakeholder requirements; and
- Availability of support mechanisms and “fit” with Western Power current processes and systems.

The actual tendering process will commence after formal project financial and regulatory approvals have been obtained.

2.3.2 Substations

The remainder of the project works including the new terminal works and augmentation works at existing Western Power facilities is proposed to be done by:

- Use of Western Power engineering design and drafting resources.
- Contracting out of earthworks, civil works, structural fabrication and electrical construction for major substations (TST and NBT).
- Use of Western Power electrical construction resources for minor substation works; and
- Use of Western Power specialist secondary systems resources for Protection, Communications and SCADA systems for installation and commissioning.

2.3.3 Outcomes

The delivery strategy results in 87% of the base cost of the project being delivered through a competitive market process with the balance being provided through specialist Western Power resources. The breakdown of the work packages and associated delivery mechanisms is detailed in Appendix B.

Table 1 Delivery Strategy Breakdown

Work Package Items	Delivery Mechanism
Planning & Project Management	Internal. 4% of total cost. Planning and project management are done using internal resources due to the need for specific knowledge of network requirements, planning criteria and efficient execution management of works.
Design	Internal. 4% of total cost. Optimisation is done using engineering staff using WP specific systems and methodology.
Three Springs Related	13.5% of total cost. Primarily contract works by competitive tender as well as materials sourced via preferred supplier contracts.
Augmentation to existing Substations	2.5% of total cost. Mix of specialist skills available internally plus contract works and materials sourced via competitive tender.
Environment/Access Related	4% of total. Predominantly contract works from competitive tender and payments for land based on independent valuation.
330kV and 132kV Lines	72% of total. Almost all is contract works sourced via competitive tendering.

The contract component (79% total) represents design, procurement and construction works provided through competitive tender. The preferred supplier component (8% total) represents provision of materials such as primary plant sourced through preferred vendor contracts (established via competitive tender). The Internal component (13% total) represents Western Power internal labour and plant. This also includes ELMB works which included easement payments based on independent valuations, and environmental offset purchases based on agreements with the statutory authorities Environmental Protection Agency and Department of Environmental Conservation.

It is proposed to have external consultants review the line design and optimisation to ensure that Western power is correctly optimising the design and hence providing optimal and efficient line construction.

2.4 COMPARISON TO OTHER PROJECTS

A comparison of the delivery strategies proposed for this project and other similar previous projects with proven delivery and Value for Money propositions can be made:

2.4.1 Boddington Gold Mine

- Design was performed internally.
- 330kV line construction was an AS4902 design & construct fixed price contract.
- Wells Terminal (similar in size to TST), was constructed using competitive tenders for all works
- Shotts Terminal Extension (similar in size to NBT works), was constructed using competitive tenders for civil works, and internal workforce for electrical works, primarily due to the difficult nature of the brownfields site.
- Minor substation works and minor line works were undertaken using a mix of competitive tenders and internal construction workforce

2.4.2 Neerabup Terminal

- Design was performed internally.
- 330kV line construction was an AS4902 design & construct fixed price contract.
- Neerabup Terminal (similar in size to TST), was constructed using competitive tenders for civil and structural steel works, using the internal electrical construction workforce to keep a balanced workforce busy during to a downturn in electrical construction at the time

2.4.3 Binningup Desalination Plant Project

- Design was performed internally, with outsourcing of Kemerton secondaries.
- A small 132kV Line construction was based on direct purchase and Alliancing.
- Kemerton Terminal was constructed using competitive tenders for civil and structural steel works, using the internal electrical construction workforce to keep a balanced workforce busy during to a downturn in electrical construction at the time

2.5 CONTRACT MANAGEMENT

To ensure efficient and cost effective delivery, Western Power manages the appointed contractors following good industry practice.
Western power's Project Management and Contract Management procedures follow the PMBOK methodologies and recommendations.
Contracts are awarded under Australian Standard contracting terms and conditions.
A dedicated team of contract administrators and construction managers reporting to the Project Manager are appointed to each major contract, ensuring cost, schedule and quality is controlled.

3 DELIVERY STRATEGY SUBSTATIONS

3.1 SUMMARY

Western Power has a mixed portfolio of delivery options for substations, for both design and construction and for construction of differing complexities and sizes of works. The delivery strategy for the MWEP project leverages off Western Power's strengths, and uses best fit construction strategies to ensure both Value for Money (VfM) and minimising schedule and cost risk to the project.

- Design will be performed Western Power's internal workforce.
- Three Springs Terminal will be constructed using competitive tender and lump sum contracts.
- Neerabup Terminal works will be constructed using competitive tender and lump sum contracts
- All other 'brown fields' substation works are to be carried out by WP internal construction
- Commissioning will be carried out by WP internal commissioning staff.

A specific options analysis as undertaken for the 330kV line construction and procurement was not done for the Substation works. However the same principles apply and the same outcomes are applicable as form the line evaluation.
Similar recently sized substation works have followed Western Power's substation delivery format, as previously discussed in section 2.4 above.

3.2 DESIGN.

Design is generally performed in-house using Western power trained internal resources.
Many aspects of design and drafting require WP specific software and systems hence it is neither efficient nor effective to outsource. Standard 132kV and 330kV terminal designs were utilised to minimise unnecessary additional work.

However discrete packages of design works, particularly drafting, is issued to external consultants the market, to Western Power's panel of preferred suppliers. Design is issued for contract when there are resourcing issues internally, or when a controllable scope of work can be outsourced, freeing internal resources for more complex design tasks.

The decision of outsourcing particular design packages will be decided during project execution, dependent on internal work-loads, ensuring project schedules are not compromised.

3.3 THREE SPRINGS TERMINAL

Three Springs terminal construction is proposed to be constructed via competitive tender and lump sum pricing. The major packages that will be tendered will be:

- Civil works, including earthworks, fencing, site surfacing, control room, foundations, earthing and cable trenches. Western Power does not have any construction expertise in these works.
- Structural Steel (see procurement section 4.2.2 below)
- Electrical construction, including steel erection, and all primary and secondary construction and installation works. While Western power has expertise in electrical construction, the use of competitive tendering ensures VfM, and allows the internal workforce to be better utilised on brownfields and complex sites.

3.4 NEERABUP TERMINAL

The Neerabup terminal extension is proposed to be constructed via competitive tender and lump sum pricing. The major packages that will be tendered will be:

- Civil works, including earthworks, fencing, site surfacing, control room, foundations, earthing and cable trenches. Western Power does not have any construction expertise in these works.
- Structural Steel (see procurement section 4.2.2 below)
- Electrical construction, including steel erection, and all primary and secondary construction and installation works. While Western power has expertise in electrical construction, the use of competitive tendering ensures VfM, and allows the internal workforce to be better utilised on brownfileds and complex sites.

3.5 MINOR SUBSTATION WORKS

There is a number of works at the following substations:

- Pinjar
- Regans
- Cataby
- Eneabba
- Three springs
- Emu Downs

Most of the works are minor, limited to protection, SCADA and Communisations works.
All construction works will be undertaken by internal resources, given the specialised and complex natures of the modifications.
The exception is the addition of a new 132kV line bay at Three Springs. The civil construction is proposed to be constructed via competitive tender and lump sum pricing for this package.

4 PROCUREMENT OF MATERIALS

4.1 LINE CONSTRUCTION

4.1.1 330kV Double Circuit Line

Procurement of all materials for the construction of the double circuit 330kV line will be carried out by the main line contractor.
It has been evaluated that this provides best Value for Money (VfM) to Western power, and passes both cost and schedule risk onto the main contractor:

- Cost and time risk passed to contractor, who will arrange delivery of materials as required for the line construction schedule.
- Major line contractors have greater experience will purchase of bulk line materials
- Major line contractors have significant buying power for line materials

4.1.2 Major 132kV Augmentation

This work relates to the part undergrounding of PNJ-ENB 81/PJR-CTB 81 and for building the DC steel pole TS-TST81 line.
The materials for these works will be sourced from competitive tender to ensure best possible value for money is obtained. They will be installed by contractors sourced under competitive tender.
These are separated from the main line contract, as the works will be carried out in a separate physical location from the main line works, on a separate schedule, and are mainly relating to specialise cable works, and works to tie Three Springs and Three Springs Terminal when the Three Springs Terminal is completed

4.2 SUBSTATIONS

4.2.1 Plant and Secondary Equipment

Standard 132kV and 330kV plant will be utilised for the majority of the substation extensions. WP has negotiated preferred suppliers via an extensive competitive tender process.
Secondary equipment is also supplied under standing contracts, which are periodically re-tendered to Western power's procurement stagey governance policies.

4.2.2 Structural steel

Structural steel is a substantial work package and will be subjected to competitive tenders to ensure the best possible value for money is obtained. Packages will be compiled and separately tendered to meet the schedule requirements for each main terminal, and group of minor substations.

5 DISTRIBUTION

5.1 PROJECT SCOPE

The scope of the distribution works is to underground 25 section of existing distribution assets along the 330kV line route to enable line construction costs to be minimised, and provide a safer working environment.

5.2 DELIVERY STRATEGY

The detailed Delivery Strategy is still to be determined based on the resourcing levels at the time the works are undertaken, and the delivery partners available at each section of line.

Distribution delivery utilise a mix of internal work crews and distribution delivery partners, selected on regularly reviewed preferred vendors and Alliancing panels.

Appendix A : DELIVERY MECHANISM SELECTION MAJOR LINE CONTRACT

This section details the methodology used to select what delivery mechanism provided the best outcomes for the delivery of the major line works, including the double circuit 330kV line, and the 132kv line cut-ins to the intermediate substations.

A.1 LINE ELEMENTS:

The following are the elements of the line construction required, what is needed to deliver a 330kV line of this magnitude.

- Phase 1 Design – route and line engineering
- Phase 2 Design – tower and foundations
- Procurement – steel, conductors, insulators etc
- Foundation installation (inc boring & piling)
- Tower erection
- Insulator mounting & Stringing
- Site management

Site management in this context refers to running and coordination of the works on the working sites.

A.2 WESTERN POWER CAPABILITIES:

Next the capabilities of Western Power to perform the elements of the line construction process were studied for line construction delivery

Component	WP Capability & Capacity
Phase 1 Design	Competent
Phase 2 Design	Minimal*
Procurement	Partial **
Foundations	Minimal
Tower Erection	None
Insulators & Stringing	None
Site Management	Minimal
Standard Tendering	Competent

* Followed power industry evolution to outsource this function.
** Competency in some components.

- National power transmission utilities have adopted this mix of capabilities for efficiency in operations.
- The predecessors of Western Power possessed all of the capabilities in the past but these have been modified in the past 20 years.

- Procurement – Partial means that we can carry out procurement for parts of the line build (e.g. conductors and insulators) but have little experience or expertise in other areas (steel towers).

Phase 1 design has been completed after being carried out internally. This phase of design offers the maximum opportunity for innovation due to determination of major design inputs which impact price and time – route, type of conductor, structure arrangement and clearances, insulator selection, numbers and type of towers, tower spacing and tower alignment.

Phase 2 design has also been completed after being carried out internally. This has been performed as a continuation of the line optimisation process, providing Western power with enhanced design capabilities, and preparing a full suite of design documents for the line, ready for procurement and construction.

A.3 COMMERCIAL PRIORITIES:

Commercial priorities are then defined for the delivery outcomes, as listed in the table below.

CRITERIA	WEIGHTS	DESCRIPTION
Value for Money Proponent	HIGH	Realise and demonstrate the VfM proposition that is both transparent and stands up to scrutiny.
Financial Certainty	HIGH	Ability and mechanisms to stay within budget and demonstration of cost stability over project life.
Design / Innovation**	LOW	Ability to engender innovation in project elements such as design to realise cost and schedule benefits.
Delivery	HIGH	Ability to meet delivery timelines.
Scope	LOW	The project is well scoped and stable and presents little risk to have scope creep or cost (if suitably managed).
Contract Control	HIGH	Control within the delivery model (contractual mechanisms).
Approvals	HIGH	Approval mechanisms/requirements and ability to cope with approval delays.
Internal Fit	HIGH	Organisational fit (support, culture, maturity) for the delivery model

- VfM – The need for the delivery model to support and demonstrate price efficiency and value delivery. I.e. How can we be sure we are getting the best price in the prevailing market.
- Financial Certainty – reinforce that we are concerned with providing forecast spend certainty for our shareholder etc.
- Design/Innovation – scored low as realisation that project has progressed beyond point where further innovation can deliver further gains. Initial Phase 1 design and first pass with Alliance has resulted in mature scope and Phase 1 design.
- Delivery – importance for delivery model to drive schedule performance as we are trying to meet customer needs. An important facet is the delivery model

set-up time – new models will take longer to set-up due to lack of experience and familiarity.

- Scope – we have assumed that there is high probability that the 330kV line is the optimum solution. Planning systems are advanced and suggest this but as yet there has not been a landing with Gindalbie.
- Approvals – Tender validity issues particularly for extended approval cycles. Also relates to what approvals are needed to enable a delivery model.

A.4 DELIVERY STRATEGY AND FRAMEWORK

Having established what are the important commercial issues, a framework for selection of the delivery model was established, and a basket of models to select from established.
The Infrastructure Procurement Options Guide CEIID guide provided a broad framework to use which was relevant to procurement impacting the state. The CEIID guide provides a framework for selection of procurement options for large state Govt infrastructure projects, and is comprehensive and canvasses major delivery/procurement models

This was supplemented by Western Power's procurement expertise in the market sector which led to the use of the two stage assessment.
The two stage assessment is based on:

- First Pass to filter clearly unviable options
- Second Pass to evaluate remaining options in greater depth

A.5 DELIVERY OPTIONS AVAILABLE:

The delivery options available (as listed in the CEIID guide) are listed in the table below, along with a summary of their basis, and the typical usage.

DELIVERY OPTION	SUMMARY	TYPICAL USAGE
Direct Management	Client handles activities directly	Brownfields substation work. Lack of market competition or urgency of works.
Managing Contractor	Fee only managing contractor retained to manage design & construction contractors	Used in complex projects (uncertain scope, risks or technology).
Early Contractor Involvement	Contractor selected to develop design & set target price for construction.	Complex projects with design unknowns, scarcity of available resources & need for price certainty.
Alliance Contracting	Competitive Project Alliancing – joint D&C by client & contractor	Complex & high risk projects, where solution is unclear or high risk of scope change & innovation is sought.
Private Public Partnership	Privately funded, built, maintained, owned and operated project	When whole of life approach is needed & is cost effective, has significant service & operations component.
Construction Manager	Fee only manager retained to manage construction contractors	For complex projects with need for forward works & high client control.

DELIVERY OPTION	SUMMARY	TYPICAL USAGE
Design & Construct	Typical AS 4903 contract (Lump sum or variant)	Where scope is tightly specified; need for single point of accountability, need for price certainty.
Construct Only	Typical AS4000 contract (Lump sum or variant)	As above except designs are available prior to tendering.
Design, Construct & Maintain	Contractor obligation to ongoing maintenance as well as D&C	As for D&C except opportunities exist for bundling services/maintenance.

Western Power's usage and experience in these types of delivery options are:

- Direct Management – typically used smaller scale works. Use of this approach is generally for smaller substation works, and small sections of line works, mostly wood pole lines.
- Managing Contractor – Used in complex projects where flexibility in delivery exists (parcels of work). Sometimes brownfields situations – construction along side operating facilities.
- Early Involvement Contractor – A contractor chosen to develop design (fixed price) and in so doing eliminates many construction unknowns. His construction price may be accepted or client can go to open tender. Generally not used by Western Power.
- Alliance Contracting – Model considered here is competitive project alliance, which involves multiple parties (designers, suppliers, contractors etc). Typically client only has a concept but lacks design and construction experience or knowledge. Good environment for fostering of innovation.
- Private Public Partnership – Suited to situations where requirement is to design, build, operate and maintain. Not used by Western Power, as network assets are required to be operated as a grid.
- Construction Manager – Used for complex projects where a dedicated construction manager is needed to manage a range of subcontractors. Not typically used for line projects.
- D & C – Open tendering. Western Power's usual method of delivery of large lines projects.
- Construct only – Open tendering but no design component. Doesn't tend to be used for lines projects as some design (Phase 2) required.
- D, C & M – Open tendering as for D&C but with a maintenance component. Not used as Western power undertake all lines maintenance directly.

A.6 FIRST PASS FILTERING:

As first pass go/no go filtering was used in the assessment process.

DELIVERY OPTION	ASSESSMENT	REASON
Direct Management	NO GO	Lack of WP capability/capacity across some components
Managing	NO GO	Lack of single point of responsibility. Lacks VfM

DELIVERY OPTION	ASSESSMENT	REASON
Contractor		as the scope is firm and large amount of design done.
Early Contractor Involvement	GO	VfM, innovation and financial certainty.
Alliance Contracting	GO	VfM in competitive version, delivery, innovation possibility.
Private Public Partnership	NO GO	No internal fit. No Operations/Maintenance. No VfM gain as firm scope available.
Construction Manager	NO GO	No internal Fit. Not used by Western Power for large line contracts.
Design & Construct	GO	VfM, financial certainty, matches defined scope, Delivery, Internal fit.
Construct Only	GO	Need Phase 2 design to make it GO, then supersedes D&C
Design, Construct & Maintain	NO GO	No maintenance aspect in project. Reduces back to D&C or C.

NO GOs:

- Direct management – knocked out as Western Power's capacity is limited so model is not viable.
- Managing contractor – lack of contract control through lack of one point of accountability. Also Managing contractor does not provide VfM as little value add due to known scope and phase 1 design done.
- PPP – Model doesn't match on a number of levels – concept design is done and there are no maintain and operate aspects.
- Construction Manager – not used by Western Power so internal fit issues.. Doesn't provide VfM over D&C or C. Western Power has capability of Managing head contractor in D&C and C
- Design, Construct & Maintain – not viable due to maintenance not being a requirement for this project. Minimal maintenance on transmission lines (largely passive elements – conductors, towers etc).

GOs:

- ECI – Good VFM, Financial certainty, Contract control
- Alliance Contracting – VfM, Delivery (via pain/gain)
- D&C – VfM, Financial certainty, Delivery, Contract control, Internal Fit
- Construct Only – VfM, Financial certainty, Delivery, Contract control, Internal Fit.

D&C Vs C

D&C and C become GO/NO-GO exclusive to each other depending on whether Stage 2 design is completed or available.

When Western Power first evaluated the delivery option available, D&C was the selection, as stage 2 design was not undertaken. However as part of the line optimisation process, detailed stage 2 design has been undertaken, and is available to the project, meaning C is the preferred delivery option of the two.

A.7 SECOND PASS ASSESSMENT

CRITERIA		ECI		ALLIANCE		D&C or C
Scale & Complexity		Little complexity and design so less innovation		Little complexity and design so less innovation		Large scale - low complexity. Routine. Capability OK
Political		Little appetite for new approach for small potential gain		Little appetite for new approach for small potential gain		BAU approach – WP experience & competence.
Market Conditions		Some interstate experience for pot. Contractors. Good size job		Poor experience of potential Contractors with Alliancing.		Normal method of delivery for market. Keen market.
Time		Schedule control via contract levers. Slower setup.		Time controls OK. Delivery method set-up slow.		Schedule control via contract levers. Faster setup.
Cost		Good final cost certainty.		Incentivised to reduce costs through innovation etc.		Defined scope & low risk to provide cost certainty.
Scope & Quality		Defined mature scope. Quality aspect needs client monitoring.		KPI's drive quality – little scope clarification needed.		Defined mature scope. Quality needs client input.
Interfaces		Relationship contracting so large amount of governance.		Lesser no. of interfaces. Good external condition performance via KPI's		Reduced no. of interfaces. Needs monitoring to drive good I/F performance.
Knowledge Mgmt		Some knowledge gain at design phase.		Alliance transparency and shared IP allows learning.		Knowledge gain limited to tender doc construction.
Other Risk Factors		New approach so needs new process, docs, system.		New approach so needs new process, tools etc. Also greater client resources needed		Good system and resource support and gearing.
Final Scores		31		25.		37

Rating – Scoring is in range 0 - 5. Highest value is best fit.
Relevance level HIGH, MODERATE and LOW.

A.8 ASSESSMENT OUTCOME

The favoured option via this assessment process is open tendering through AS4000 contract.

- Low risk option reflecting the reduced scope uncertainty.
- Good organisational fit.
- Provides VfM, financial certainty, delivery.

- Good WP experience, process and support structure.
- Opportunities for knowledge gain and positioning for future stages
- Regulatory risk largely mitigated through least cost delivery through competitive market mechanism & contractual obligations.
- Significant time advantages for rolling out this model after project approval which reduces schedule risk compared to other models.
- Low scope risk so exposure to variations is far reduced.
- Expect high comfort factor for ERA and State government.