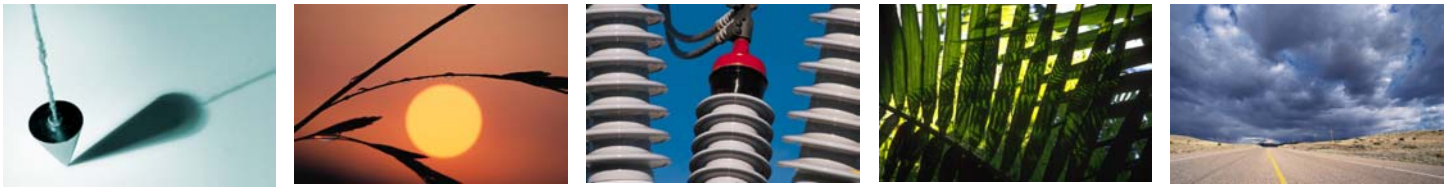

PARKES POWER PROJECT PTY LTD

PARKES 80 MW POWER STATION PROJECT

Project Background Report

September 2006

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DoP	1							1	1

TABLE OF CONTENTS

TABLES

ATTACHMENTS

EXECUTIVE SUMMARY

The Proponents of the Parkes 80MW Power Station Project are a consortium of NP Power Pty Ltd ("NP Power") and Babcock & Brown Pty Ltd ("Babcock & Brown"). The Proponents propose the construction of a gas-fired base-load power station located within the Parkes Shire, Central West of New South Wales.

The Proponents have extensive experience in business development, approvals and licensing processes associated with the construction and operation of various power stations, having successfully undertaken new power station developments in New South Wales, South Australia, Queensland and Victoria.

The Parkes 80MW Power Station Project is ideally located to provide network support to TransGrid's transmission and Country Energy's sub-transmission network. The proposed Power Station will avoid any network augmentation by Country Energy. This also provides the opportunity to optimise the use of natural gas pipeline in the region.

The proposed Power Station will be installed in two phases:

Phase 1 will have a nominal capacity of 60 MW and an additional 20 MW (nominal) will be installed in Phase 2. The application will be for an 80MW Power Station. The phasing of the Power Station development is devised to optimally meet the projected load growth in the region.

In summary, the Parkes 80MW Power Station Project will deliver the following benefits:

1) The power generated by a base-load 60 MW to 80 MW Power Station would:
   - provide secure (>N-1) reliability of power supply to the Parkes, Forbes and Cowra region, as well as reduce the current demands at the Wellington node; significantly deferring the network reinforcement on the 132kV system in the region; and
   - Offer potential to meet demand growth from the small to medium scale industrial development in the region.

2) The Parkes Power Station will contribute to new generation requirements identified in the National Electricity Market (NEM), which demonstrates reserves below minimum requirements in 2008/09 and shortfall of supply in 2009/10.

3) The Parkes Power Station will be a significant response to the NSW Government's Greenhouse Abatement Incentive Scheme and will qualify for the NSW Greenhouse Abatement Certificates (NGACs), with approximately 350,000 NGACs anticipated to be produced each year.

1.0 INTRODUCTION

This report provides background information on the proposed Parkes Power Station Project for the purpose of furnishing the NSW Department of Planning ("DoP") and associated regulatory stakeholders with information on the proposed development, prior to the Planning Focus Meeting scheduled for September 2006. The report aims to provide an outline of the Development Application and assessment processes subject to the proposal, including guidelines for timeframe and cost targets.

All information contained herein is deduced from preliminary information provided by the Proponents and the Parkes Shire Council and is subject to amendment as the Project progresses and further information comes to the fore. The Project details contained herein is also subject to variance, in accordance with governing legislation at the time of application.

2.0 PROJECT PROPONENTS

The consortium is formed by Babcock & Brown, a diversified public company specialising in infrastructure development and investment and NP Power, a US based generation planning, development and operating company.

Both companies have worked together for over ten years, having successfully developed the 130MW coal tailings based Redbank power station in the Hunter Valley in NSW, which has been operating since 2001. They have successfully developed various wind farms including the largest in the southern hemisphere at Lake Bonney in SA (Lake Bonney I and Lake Bonney II). The consortium has also successfully worked to acquire the Rocky Point biomass co-generation facility in Queensland.

The Proponents have expertise in all aspects of project development and operation including:

- Procurement of turnkey power generation plants based on guaranteed performance criteria;
- Securing fuel under long-term supply and transportation contracts;
- Negotiating long-term operating and maintenance arrangements to ensure reliable and commercially-competitive whole-of-life power generation costs;
- Obtaining planning and environmental approvals;
- Project financing; and
- Long term asset management.

Further details of Babcock & Brown and NP Power are as follows:

2.1 Babcock & Brown Pty Ltd

Babcock & Brown is listed on the Australian Stock Exchange, with the worldwide head office located in Sydney. Babcock & Brown has a network of 22 offices, in major financial centres around the world, with over 600 employees.

Babcock & Brown is currently in the top 100 companies listed on the Australian Stock Exchange, with a market capitalisation of over $4 billion.

The company is recognised as a world leader in its field and since its inception has successfully completed more than US$200 billion of innovative financings for some of the world's largest corporate and government bodies.

Established in Australia in 1982, Babcock & Brown's major business areas include property investment and finance, corporate finance, and infrastructure development and finance. Babcock & Brown has an extensive portfolio of power assets and power station developments in Australia, including the following (Table 1).

Table 1: Babcock & Brown Power Projects

Project	Financial Close	Fuel	Size	Babcock & Brown Role	Total (A$m)
Oakey Power Station	1997	Gas/Distillate	300MW	Joint project developer, financial adviser, equity investor and debt arranger	170
Redbank I Power Station*	1999	Coal Tailings	130MW	Joint project developer, financial adviser, equity investor and equity placement	320
Basslink	2002	HVDC Subsea Interconnector	600MW	Financial adviser to developer	850
EcoGen	2002	Gas/Distillate	960MW	Member of acquiring consortium and financial advisor to consortium	200
Northern and Playford power stations	2006	Coal	760 MW	Owner and financial advisors	515
Lake Bonney Stage One*	2003	Wind	80.5MW	Joint project developer, financial adviser, equity investor and debt arranger	160
Alinta Wind Farm*	2004	Wind	89MW	Joint project developer, financial adviser, equity investor and debt arranger	180
SWIS Power Station	2005	Gas	320MW	Joint project developer, financial adviser, equity investor and debt arranger	300
Braemar Power Station	2005	Gas	450MW	Joint project developer, financial adviser, equity investor and debt arranger	340
Lake Bonney Stage Two*	2006	Wind	159MW	Joint project developer, financial adviser, equity investor and debt arranger	300
Rocky Point*	2006	Bagasse	30MW	Member of acquiring consortium and financial advisor to consortium	60
Uranquinty	2006 (est)	Gas	640MW	Joint project developer,	400

				financial adviser, equity investor and debt arranger	

* In conjunction with NP Power

As demonstrated in the table above Babcock & Brown has significant experience and success in developing power projects.

Babcock & Brown is a developer and owner of these projects, with a proven capacity to provide equity to projects. As an investor in, and owner of, Australian infrastructure projects from their earliest point of development, Babcock & Brown has developed strong skills and experience in being able to successfully manage the development process. Babcock & Brown has experience in all aspects of development of projects, including project conceptualisation, landowner and EPC negotiations, development consent applications, as well as the operation of completed projects.

2.2 NP Power Pty Ltd

NP Power is a private employee-owned company formed in 1990. NP Power develops, owns, and operates various sizes of electric generating facilities in the US and Australia.

Over the past 20 years its employees have been responsible for projects to the value of US$13 billion and providing around 7,000MW of generating capacity.

The assets of NP Power in Australia include shareholding in Babcock & Brown Wind Partners, an equity share of the Rocky Point power station and an equity share of and a licence agreement with Redbank Project (other shareholders are Babcock & Brown and Babcock & Brown Infrastructure) and numerous development projects.

The principal owners of NP Power have experience across the entire spectrum of the skills base required for successful project development, i.e. from project conceptualisation, to permitting, construction, to operation and maintenance. They have worked together for many years in areas such as project development, power sales, permitting, project financing and construction and operation management.

NP Power's mission is to:

- Develop, own and operate environmentally sensitive generation;
- Be the low-cost producer/supplier to the grid; and
- Be a niche player.

In addition to this Project, NP Power is currently undertaking advanced development work in relation to projects with a total generating capacity of over 1,000MW. These projects include:

- Wind projects in New Zealand, California and Nevada;
- Biomass fuelled projects in Australia;
- A natural gas-fired peaking project in California/Oregon; and
- A natural gas-fired peaking project in Australia

3.0 PROJECT DESCRIPTION

The consortium proposes to construct an 80 MW gas-fired power plant in two phases: 60 MW in the first phase and additional 20 MW in the second phase. It is anticipated that there will be a 2 year break between phases however, this timing will be driven by market demand.

3.1 Gas-Fired Power Plant

The Proponents have been evaluating options for the development of a gas fired power station in the Parkes region. The evaluation has been underpinned by various needs, one of them being the need to provide network support to both a transmission and distribution system. Incorporating all relevant considerations, the evaluation has determined that the economically feasible size of the proposed Parkes Power Station is approximately 60-80 MW, in view of the load growth of the region.

The following design features of embedded generation have been considered by the Proponents to achieve an optimum generation solution to the Parkes region:

- The need for a continuous operation, parallel with the existing 66/132kV network connection to provide the high level of generation redundancy required for network support, and to avoid any supply interruption in the event of a network fault;
- The capability for reliable “islanded” operation to serve the region in the event of loss of sections along the 132kV system and transmission grid, with suitable voltage regulation and frequency control to maintain a satisfactory quality of supply to customers for the period of a line outage;
- The requirement for an acceptable method for resynchronisation and connection to the network via restoration of the 132kV connection to transmission system;
- The provision of sufficient local generation capacity to meet the existing and projected loads for a reasonable period into the future; and
- A location which minimises the connection and access costs to the grid, and minimises costs for the local distribution system to accommodate the local generation.

In addition to the above, the proposed Power Station would enable optimal utilisation of the existing gas infrastructure in the region.

3.2 Proposed Plant

Recent developments in the generation industry have seen an increasing role of reciprocating gas generators of medium size intermediate and base load power stations. The developments offer high reliability (plant availability of the order of 95% on annual basis) and are relatively easy and quick to install. They have comparable thermal efficiencies to that of a gas turbine based combined cycle plant of 50-100MW capacity range. The developments are highly suitable for dry conditions as they do not require cooling water (unlike combined cycle plants) and their performance is not adversely affected by high ambient conditions, as is the case for gas turbine based combined cycles.

The small unit size configuration of Reciprocating Engine Generators (REGs) has an advantage in building the proposed station capacity closer to the power requirement of the local region and not having to build the over capacity required for redundancy. REGs also have the ability to add future units as the load grows. This can also generate marginal transmission loss savings in certain cases. Efficiency improvements have also been achieved for REGs of increased set sizes, (6-8MW), which are capable of competing with small size gas turbine based power plants.

The proposal is to install seven sets of 8.4 MW (approximately) gas-fired reciprocating generator sets in the first phase and depending upon the regional load growth additional two to three sets in the second phase. These offer relatively high thermal conversion efficiencies and enhanced electricity supply reliability due to the greater generation redundancy. Being modular in nature provides ease for future capacity addition. Considering the maintenance requirement, at any point in time, a firm generation capacity of 42 MW after the first phase and 58-67 MW after the second phase (depending up on the number of sets to added) will be available from the proposed power station.

A number of reputed generator manufacturers like Rolls-Royce, Wartsila and MAN offer such generating sets which are widely used for environment friendly economical generation with proven reliable performance.

Each generation module will comprise a 20 cylinder lean burn internal combustion engine, operating at 750 rpm and directly coupled to an 11, 000 KVA alternator, producing 8.4 MW at 0.8 pf. The module will contain an engine, alternator, all ancillary electrical equipment, coolant pumps and vent fans.

The module will be acoustically lined to attenuate noise and serve as a self-contained bund. The generator will be located outside the module at one end, while the exhaust muffler and flue stack will be located at the other end.

The main components of the gas-fired power plant comprise of reciprocating generators (and associated plant), mechanical and electrical balance of plant, plant control system, monitoring and protection systems.

The power station will be connected to the grid at Country Energy's sub-station at 66kV level. Generation beyond the need of Parkes distribution system will be fed to the 132kV system and supplied to Forbes and Wellington region.

For the greatest supply reliability, any embedded generator should be a base-load generator, operating continuously. This would lead to considerable savings in line losses otherwise lost in transmitting power to the Parkes/Forbes region. The project would despatch energy on a continuous base-load basis with high generator availability and export 20 MW to 40 MW to the Forbes and Wellington region.

3.3 Plant Technical Details

3.1.1 Gas Generators

Rating	~8.4 MW as generated (ISO)
Unit Design	Medium speed, spark ignited,
Speed	750 rpm
Number of Cylinders in each generator	20

3.1.2 Generators

Number of Generators	1 per generator set
Ratings	11 MVA
Power Factor	0.80
Rated Terminal Voltage	11 kV
Frequency	50 Hz
Type of Cooling	Air cooled
Excitation Power Supply	Static Excitation system via slip rings

The power station will have a black start facility using compressed air storage system.

3.1.3 Transformers

Generator Transformers	To 66kV
Unit Auxiliary Transformers	To 6.6kV
Auxiliary Transformers	6.6kV / 415V
Auxiliary transformers	11kV / 415V

3.1.4 DC Power Supply

Battery charger and lead acid battery system to supply power to essential DC loads.

3.1.5 Fuel Supply

Natural Gas Energy Flow	530 GJ/hr(max) (Phase 1), 605 GJ/hr (Phase 2)
Gas Pipeline Pressure	5 to 10MPa @ Central West Pipeline (CWP) off-take
Gas pressure to the Gas Engine	1.8 to 2 MPa

3.1.6 Operating Regime

All-Year Average Rating	54 MW total (Phase 1), 68 MW total (Phase 2)
Starts	4 per unit per annum
Annual Capacity Factor	95%
Energy Sent Out	473 GWh/annum (Phase 1), 595 GWh/annum (Phase 2)
Natural Gas Consumption (All-Year Average Rating)	4.25 PJ/annum (Phase 1) and 5.35 PJ/annum (Phase 2)

3.4 Gas Supply

The power station would use natural gas as fuel and would require approximately 4.25 to 5.35 PJ/a.

Parkes region is served by the Central West Pipeline (CWP), which is connected to the main Moomba to Sydney Pipeline (MSP) at Marsden. CWP connects MSP to Dubbo and now to Tamworth through the new connection. MSP is also connected to the Victorian GasNet through Calcairn This, provides the diversity of the fuel supply to the proposed power station from Victorian sources as well as from Moomba.

The current pipeline capacities are adequate to meet the gas transportation requirement for the power station, however, with possible new consumers and Phase 2 of the power station development. The CWP may need compression to augment the transportation capacity of the pipeline.

4.0 POTENTIAL BENEFITS OF THE PROJECT

The power station development at Parkes has a number of benefits. Some of the benefits can be quantified in dollar terms, while many others may not.

The power generated by a base-load 60 MW to 80 MW gas fired power station at Parkes would:

- Provide higher than N-1 network support and eliminate any need for transmission reinforcement to the region;
- Optimise the use of the gas pipeline infrastructure in the region;
- Respond to the emerging shortfall of overall generating capacity in NSW and the NEM by developing distributed generation located close to the source of demand; and
- Respond to NSW legislation to abate greenhouse emissions.

5.0 PROPOSED SITES AND ROUTES

The Proponents have investigated a number of potential site and route/easement localities for the Power Station and associated infrastructure.

5.1 Power Generation Facility

Desktop and field reviews were undertaken to assess potential sites for the construction of the power generation plant in the Parkes area. A number of potential sites were identified, based on existing and surrounding land uses, distance to residential dwellings, town planning consideration, proximity to Country Energy's substation and sub-transmission network, visual and environmental constraints and commercial acquisition availabilities.

Based on these investigations and incorporating the system requirements of the Power Station (Table 2), Site 2B in Table 3 has been flagged as being the most suitable site for the facility. Figure 1 in Attachment A illustrates the preferred site location of the proposed Power Station. Figure 2 in Attachment A displays the alternative site locations that were considered in the site evaluation process. The Site 2B selection is based on the assumption that Country Energy is able to provide the connection to their 66/11kV Parkes Town substation.

Table 2: Parkes Power Station System Requirements

- Footprint area requirement of 450x500 m2 for an ultimate 80 MW stage
- Proximity to the grid connection point (CE's 66kV substation or close by on the 66kV line).
- Proximity to the gas pipeline
- Ease of land acquisition
- Ease of Development Approval from a community consultation point of view.

5.2 Gas Pipeline

Figure 3 in Attachment B illustrates the proposed route considered for the gas pipeline connection to the proposed power generation facility.

The gas pipeline will only be included as part of the project approval under Part 3A of the *Environmental Planning and Assessment Act 1979* ("Act") if appropriate studies and agreements are completed by the time of submission of the environmental assessment. Under Part 3A of the Act, a Pipeline Licence will need to be obtained from the NSW Department of Energy, Utilities and Sustainability after the Minister of the DoP has approved the Project.

If the gas pipeline progresses outside Part 3A of the Act, it will follow the requirements of the *Pipelines Act 1976.*

5.3 Transmission Lines

The Power Station will be connected to existing transmission lines through the Country Energy substation and a small section of new lines when at full operation. The transmission line from the Country Energy Substation will extend over a distance of approximately 1.5 kilometres. Figure 4 in Attachment C illustrates the design of the transmission lines. These lines will be constructed by Country Energy.

The TransGrid substation is located approximately 11 kilometers from the proposed Project site. This substation is connected to the Country Energy substation. The location of the TransGrid substation is illustrated in Figure 4, Attachment C. If an additional capacity is required, further to the supply from the Country Energy Substation, a parallel transmission line may be connected to the TransGrid substation. Feasibility assessments and appropriate approvals will be sought prior to the construction of this transmission line.

Table 3: Parkes Power Station Site Location Analysis

CONSIDERATION	SITE 1A	SITE 1 B	SITE 2A	SITE 2B	SITE 3
Grid connection feasibility	Connection to CE's substation and future requirement of augmenting the carrying capacity of the 66kV line connecting to CE's substation.	Connection to CE's substation on 66 kV side. This has to be discussed with CE for the feasibility. Check with council about the access to properties for transmission line access.	Connection to CE's substation and future requirement of augmenting the carrying capacity of the 66kV line connecting the CE substation.	Connection to CE's substation and future requirement of augmenting the carrying capacity of the 66kV line connecting the CE substation.	Connection to CE's substation on 66 kV side. Future requirement of augmenting the carrying capacity of the 66kV line connecting the CE substation. This has to be discussed with CE for the feasibility.
Connection to the Gas pipeline	Approximately 2km but road access for pipeline available from council	Approximately 3km but road access for pipeline available from council additionally some access for the pipeline will have to be worked out with Terminal Australia along with the land	Approximately 1.5km but road access for pipeline available from council	Approximately 1km but road access for pipeline available from council	Approximately 2.5km but road access for pipeline available from council
Ease of land acquisition and cost	Part of Terminal Australia's big land which they have acquired from Council, these parts are not likely to affect them and Council is keen to work it out with them.	Part of Terminal Australia's big land which they have acquired from Council, these parts are not likely to affect them and Council is keen to work it out with them. Possibly easier to acquire than 1A	Comfortable to acquire as is owned by council	Comfortable to acquire as is owned by council	Comfortable to acquire as is owned by council
Adequacy of size of land	If Terminal Australia agrees to give the land size can be worked out.	If Terminal Australia agrees to give the land size can be worked out.	Shape of the land is not perfect but given other advantages- proximity to gas pipeline and CE's substation this can work	Adequate	Adequate
Proximity to the house and possibility of community concerns	Nearest houses in 2km range	Nearest houses in 3km range	Close +/-1.5 km range, this person is not seen to have any issues with past development applications	Nearest houses in 2.5km range	Close +/-1.5 km range

CONSIDERATION	SITE 1A	SITE 1 B	SITE 2A	SITE 2B	SITE 3
Ease of obtaining Development Approval	Already in the industrial development zone, no issues on this	Already in the industrial development zone, no issues on this	Already in the industrial development zone, if the resident close by has no issues this can be smooth	It is in the adjoining area of industrial development zone but not in the currently defined industrial development zone. Council is trying to work it out but this may not be required if approval process is from DoP. There are no residences which is likely to have any concern.	Already in the industrial development zone, if couple of residents close by has no issues this can be smooth

5.4 Site and Easement Considerations

Each of the proposed location sites for the Power Station (Table 3) and associated infrastructure (e.g. transmission lines) is continually being reviewed and assessment via field investigations in order to determine the most appropriate placement.

Preliminary site information is currently being obtained from the Parkes Shire Council and the NSW Department of Lands to provide an indication of the following:

- Location of any easements;
- Route of all existing transmission lines;
- Routes of all existing gas pipelines;
- Locality of other utilities and facilities;
- Proximity to current and future development;
- The availability of land (land tenure and ownership, current usage, potential future usage, native title etc);
- Proximity to waterways and wetlands; and
- Proximity to environmentally sensitive areas (including *Environment Protection and Biodiversity Conservation Act 1999* issues).

In addition, other site considerations to be evaluated will include:

- Geotechnical issues;
- Potential aircraft impact; and
- Economic and acquisition issues.

6.0 ENVIRONMENTAL CONSIDERATIONS

An overview of the purpose and strategy of each specialist study that is proposed to be conducted to meet the information requirements of the Environmental Impact Statement (EIS) is provided below. All potential environmental impacts of the proposed Project will be mitigated and managed in accordance with the Site Based Management Plan (SBMP) for both the Construction and Operational Activities of the Project. Consideration will also be given to implementing a certified Integrated Management System, which will incorporate Environmental, Quality and Occupational Health and Safety aspects of the proposed Project.

6.1 Air Quality and Greenhouse Gas Emissions

For the proposed Project, typical Natural Gas consumption has been calculated to be approximately 4.25 - 5.5 petajoules per annum (PJ/a).

A comprehensive air quality assessment will be undertaken to initially describe the existing air environment and identify the environmental values of the Project environment which may be affected by the proposal.

The air quality assessment will also determine the expected quantity and quality of emissions to the atmosphere as a result of construction and operational activities of the proposed Project. The emissions from the stacks will be the most significant factor to assess in this regard; with extensive plume modelling to be conducted which

will incorporate a number of variations in the meteorological characteristics of the surrounding region and topography.

An assessment of greenhouse emissions, in tonnes CO_2 equivalents, will be undertaken. The energy produced by the proposed Power Station will displace an equivalent amount of energy that would otherwise be produced by largely coal-fired power stations elsewhere on the grid. The greenhouse gas emissions for the proposed Project will be compared to the figure that would result from producing the same amount of energy from other fuels.

The potential impacts of the proposed Power Station will be evaluated to determine the suitability of the proposed site location and will serve to assist in determining the most appropriate structural design of the development in an effort to minimise the potential environmental impacts associated with emissions to the surrounding environment.

A Health Risk Assessment (HRA) will also be undertaken to demonstrate that the emissions from the proposed development will not put human health at risk.

6.2 Receiving Environment Aspects – Land Use, Climate, Topography, Soils and Geology

Land Use

The current land use of the Project area will be assessed to describe the existing environment and the environmental sensitivity of the proposal area. This assessment will enable the Proponent to identify the environmental values of the receiving environment which may be affected by the proposed Power Station. This in turn, will ultimately confirm the suitability of the site location and the necessary management and mitigation strategies that will be required to limit any environmental harm caused by the Project.

Climate

Studies will be undertaken to identify air temperatures, humidity, wind (direction and speed) and any other special factors (e.g. temperature inversions) likely to affect air quality within the environs of the proposal. Rainfall patterns, including magnitude and seasonal variability of rainfall will also be considered. Extremes of climates (e.g. droughts, floods, cyclones etc) will also be assessed to evaluate the water management protocols which will be required for the Project. The vulnerability of the proposal area to natural or induced hazards will also be assessed with reference to relative frequency, magnitude and risk of such events.

Topography

The topographical features of the site are an important aspect of the environmental impact assessment at both a regional and local level. The potential of the Project to develop and expand is determined by the suitability of the landscape, with potential impacts, most notably air emissions, affected by the shape and relief of the surrounding land. Maps at appropriate scales will be detailed at suitable increments, with levels shown with respect to Australian Height Datum (AHD). These maps will

serve to demonstrate the appropriateness of the topography for the Project requirements.

Soils and Geology
The soils and geology of the proposal area to ascertain the physical and chemical properties of the Project environment which will influence the erosion potential, storm water run-off quality and rehabilitation of the land.

The soil assessment will determine the profile description of the land, including stability, soil structure and texture, erodiblity, dispersivity, rockiness, salinity and sodicity and pH of the proposal area. These qualities will influence the design of the proposed facility and the management of the land during the construction stage of the Project when the land will be disturbed. The manageability of erosion and drainage will also be analysed to evaluate any issues that may manifest during the operational period of the Power Station.

6.3 Visual Amenity

An assessment of the existing visual quality/landscape character of the Project site and the surrounding area will be conducted to ascertain the visual impacts of the proposed Project on the receiving environment. The assessment will include illustration of all predicted visual impacts throughout the life of the Project upon sensitive receiver locations, including existing and potential future private residences, transport routes and other developments.

The Proponents will aim to identify the areas of the proposal which have the greatest capacity to absorb land use change without detriment to the existing visual quality and landscape character of the proposed Project area.

6.4 Noise Emissions

Baseline monitoring will be undertaken at a selection of sensitive sites affected by the proposal. Long-term measured background noise levels of the receiving environment are necessary to determine the potential noise levels attributable to the operation of the Power Station and other project related activities (e.g. traffic, construction works etc). The background noise levels will also take into account seasonal variations, as required.

The results of the existing environment noise levels and potential noise levels as a result of the proposed Project will assist in identifying the potential environmental harm at all potentially sensitive receptors. These effects will be quantified in terms of objectives, standards and indicators that will need to be achieved in accordance with the governing legislation.

6.5 Surface Hydrology and Groundwater Impacts

The proposed Project is expected to consume approximately 3-4 Ml/annum of water during operation. An investigation into providing town water supply to the site through a normal 50 millimetre pipeline, with storage capacity of 500 kl on-site is currently underway. Such a capacity is required for input to the Power Station and

for normal domestic use and fire fighting purposes. The Project will control all liquid wastes in accordance with a zero liquid waste effluent discharge policy.

The surface water assessment will identify the Project's position in relation to the regional catchments and sub-catchments of the region. The assessment of the Project site will serve to identify the physical integrity, fluvial processes and morphology of watercourses in the proposal area. This assessment is necessary to ascertain the potential of contaminant pathways, flood-prone areas and the development of plans associated with discharges to local waters. The surface water quality and sediment load characteristics will also be investigated to determine key monitoring parameters.

A groundwater assessment will assist in defining the groundwater resources of the Project area which may be affected by the proposed operations. The assessment will allow the Proponent to assess the significance of the Project to impact on groundwater depletion or recharge and groundwater quality. Management strategies will be appropriately defined to monitor and mitigate any potential impacts resulting from the Project construction and operation.

An assessment of the proposed stormwater drainage system and the proposed discharge and reuse arrangements, including any off-site services will be assessed. This will assist the Proponent in minimising any stormwater runoff and how it can be utilised as a source of water supply.

6.6 Nature Conservation Impacts

An assessment of the environmental values of nature conservation in the Project area will be undertaken, in terms of qualifying the:

- Integrity of ecological processes, including habitats of rare and threatened species;
- Conservation of resources;
- Biological diversity;
- Integrity of landscapes;
- Ecological integrity of aquatic and terrestrial ecosystems;
- Remnant native vegetation; and
- Conservation status of regional ecosystems.

The EIS studies will provide baseline information and maps on current land use including remnant flora and fauna communities of the immediate area and surrounds, including communities downstream of the site that may be impacted by variations in water quality and siltation. This will be determined by literature reviews and where required surveys and sampling programmes. The reports will provide overall evaluations of the flora and fauna communities and list rare, endangered and vulnerable native species and communities, and evaluate the significance of occurrences of such species and communities in relation to their overall status, distribution and condition with respect to the proposed development.

Referral to the Commonwealth Department of Environment and Heritage will also occur to ensure compliance with the *Environment Protection and Biodiversity Conservation Act 1999*.

The EIS will identify issues relevant to sensitive areas, or area which may have a low resilience to environmental change, as a result of the proposed Project establishment and operation. Key flora and fauna indicators will be identified in the assessment to

ascertain the appropriate monitoring, management and mitigation strategies necessary for the Project, in the effort to preserve the flora and fauna values of the area.

6.7 Hazard and Risk Analysis

An analysis of any potential hazards and risks that may be associated with the Project will be undertaken, in the context of their potential effect on environmental values. This analysis will include an assessment on issues such as fire risk, natural gas concentrations, chemical storage and emergency procedures.

6.8 Health & Safety Assessment

Any potential impacts on the health and safety of the community, workforce, contractors, suppliers and other stakeholders will be assessed in terms of health, safety and quality of life. The assessment will assist the Proponent to devise:

- Emergency plans for the Project site;
- Building fire safety measures;
- Fire and rescue training; and
- Contingency procedures for the immediate affects of natural disasters.

6.9 Transportation

A transport impact assessment will be conducted in consultation with the State and local governing bodies to determine the capacity of the road infrastructure to manage any foreseen traffic increases during the construction phase of the proposed power station. This will incorporate the structural, geometrical and safety aspects of the road systems, and will include any recommendations relating to upgrades.

The EIS will document the volume, composition, origin and destination of good to be moved to and from the Project site during the construction phase. The EIS will further assess other transport aspects such as the volume of traffic generated by workforce personnel, visitors and service vehicles and proposed transport routes.

It is considered unlikely that there will be any transport impacts on the receiving environment during the operational phase of the power station.

6.10 Socio-Economic Impacts

The EIS studies will outline the current socio-economic position of the local and regional communities, and provide an analysis of the social and economic impact of the proposed Power Station.

A social impact assessment will be undertaken to describe the existing social values of the proposal area which may be affected by the proposed Power Station. This will include an assessment of the impacts of the project on local and regional industries, employment, infrastructure and demography. The integrity of social conditions, amenity and liveability, harmony and well being, will be incorporated into the assessment to gain a true representation of the effects of the proposed Project on the surrounding social environment.

An economic impact assessment will service to assess the economic viability of the Project, in terms of its economic attributes/benefits to the surrounding communities and region. Such elements as existing housing markets, rental accommodation which may be available for the Project workforce and availability of goods and services of the region, will be incorporated in to the economic assessment.

Appropriate mitigation and management strategies will be derived based on the findings of such assessments.

6.11 Heritage/Indigenous Impacts

A cultural heritage study will be undertaken to describe the indigenous cultural heritage sites and places and their values in the proposal area and surrounds. The study will be designed to meet the requirements of the relevant legislation and may involve, but are not limited to, the following procedures:

- Liaison with relevant indigenous community to identify places of significance to that community (including archaeological sites, natural sites etc);
- A systematic survey of the proposed development area to locate and record indigenous and non-indigenous cultural heritage places;
- An assessment of the significance of cultural heritage areas and the objects located; and
- An assessment of the potential impacts of the proposed development on cultural heritage values.

Depending on the findings of such assessments, a Cultural Heritage Management Plan (CHMP) will be developed to specifically for the Project, to protect and preserve the cultural sensitivity of the environment, where appropriate.

6.12 Waste Management and Minimisation

An assessment will be made of the types and quantities of waste produced during the construction and operational phases of the proposed Project. An inventory of wastes generated will be provided in the EIS.

Having regard for best practice waste management strategies and the criteria prescribed by the relevant legislation, the Proponent will devise appropriate methods for waste avoidance, reuse, recycling, treatment and disposal. The identification and characterisation of major waste streams during construction and operation will assist in the development of waste management strategies including waste minimisation, re-use and recycling.

The site will control all liquid wastes in accordance with a zero liquid waste effluent discharge policy.

Attachment A

Figure 1: Proposed Parkes Power Station Site Location

Figure 2: Alternative Site Locations

Attachment B

Figure 3: Proposed Gas Pipeline Route

Attachment C

Figure 4: Proposed Transmission Line Route