GOLDFIELDS ESPERANCE DEVELOPMENT COMMISSION

Your ref:
Our Ref: 2/225/01/01
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Dear Mr Self

WESTERN POWER'S AA3 PROPOSAL

Thank you for the opportunity to make a submission on the above-mentioned proposal. The Goldfields-Esperance Development Commission would like to make the following comments for the ERA's consideration.

THE GEDC AND ITS PURPOSE

The GEDC is a Western Australian statutory agency committed to encouraging and promoting economic and social activity in the Goldfields-Esperance region of Western Australia. The GEDC is one of nine Regional Development Commissions that were established under the Regional Development Commissions Act (1993).

The GEDC's mission is to increase investment and attract population to the region and its function is to:

- Maximise job creation and improve career opportunities in the Region.
- Develop and broaden the economic base of the Region.
- Identify infrastructure services to promote business development within the Region.
- Provide information and advice to promote business development within the Region.

- Seek to ensure that the general standard of government services and access to those services in the Region is comparable to that which applies in the metropolitan area.
- Generally take steps to encourage, promote, facilitate, and monitor the economic development in the Region.

THE GOLDFIELDS-ESPERANCE REGION

The Goldfields-Esperance Region is characterised by a number of paradoxes. It is huge. A land area of 770,488 km2 makes the region over three times the size of the State of Victoria, and just under a third of Western Australia's total land mass. It is the largest region in Western Australia and yet has a population base of just 58,727 (2009). The Goldfields-Esperance region is located in the South Eastern corner of Western Australia and incorporates nine local government areas – the City of Kalgoorlie-Boulder and the Shires of Coolgardie, Dundas, Esperance, Laverton, Leonora, Menzies, Ngaanyatjarraku and Ravensthorpe. It is bounded geographically by the Sandy and Gibson deserts to the North; the Wheatbelt region to the West; the Great Australian Bight to the South; and the South Australian and Northern Territory borders to the East.

In 2009/10, the Region contributed an estimated $8.094 billion in terms of gross regional product, ranking third to the South West Region ($12.408 billion) and the Pilbara Region ($9.270 billion).

In terms of infrastructure provision, including energy, the paradox is that whilst the region is economically significant in state and national terms; it's large, mostly remote, geographic expanse and low population base makes the traditional business case for the provision of infrastructure services difficult to justify. There is also the social equity issue of all West Australians having access to a standard of affordable services irrespective of where they live in the country, as espoused by various governments over many decades.

OUTCOMES OF THE AA3 PROPOSAL

In general, this Development Commission supports the important outcomes that Western Power seeks to achieve during the 2012-2017 period through its AA3 Proposal.

These outcomes being:

- Address the highest risk public safety issues including wood pole failures, bush fires and shock incidents;
- Support growth, including improving the network connections process for all forms of electricity generation;
- Increase system security by reducing the risk of long duration outages; and
- Help to maintain current service levels while at the same time improving service in poor performing areas.

Whist we are keen to encourage future electricity increases to regional households and businesses be kept to a minimum, we recognise that Western Power is also subject to increasing cost pressures, and requires an adequate return on its investment if it is to achieve the outcomes listed above. However, large price steps need to be avoided at all costs.

Therefore, we support Western Power's estimate of a pre-tax weighted average cost of capital (WACC) of 8.82%. An amount less than this will have a negative impact on Western Power's ability to maintain and deliver better services to the region.

There is a growing belief in this region that the 'just in time' investment model and the role of network augmentation in industry and regional development are not adequate to meet future pending demands; and needs to be changed.

SWIS MATTERS OF CONCERN IN THE GOLDFIELDS-ESPERANCE REGION

The SWIS provides electricity to Coolgardie, Kalgoorlie-Boulder, Kambalda, and Ravensthorpe.

"The capacity of the 220kV interconnection is limited by voltage and synchronous stability constraints mainly due to the distance between Muja and Kalgoorlie. The power transfer capability of this interconnection is 130MW. **The current load forecast indicates that the peak load demand is approaching this system capacity limit (130MW)**. (NB: Western Power has informed regional stakeholders that this system capacity limit will probably be reached by 2013; sooner if additional mining operations are connected to the SWIS in the interim).

-----Recent results of systems studies indicate that there is emerging need to eliminate undesired power flows (or power wheeling) through the Country East 132kV and 66kV networks-------.

Another significant issue in the Country Goldfields Region in the next few years are ageing assets at Merredin and Kalgoorlie Terminals, especially the static var compensators (SVCs) that are used for controlling the voltage and synchronous stability. The SVCs will require either major maintenance or replacement. This presents an opportunity to investigate the use of more recent technology." (Transmission and Distribution 2010/11 Annual Planning Report by Western Power; p.88).

"In AA3 we will invest $8 million, 5% of forecast transmission asset replacement expenditure, to replace static var compensators (SVCs). There were no SVC replacements in the AA2 period. There are three SVCs in the Western Power Network. SVCs on the Eastern Goldfields Interconnected System provide dynamic reactive power support to the 220/132 kV system supplying the Kalgoorlie area enabling the 220 and 132 kV voltage levels to be automatically controlled under varying power transfer and plant outage conditions. This maintains the voltage and power transfer stability of the system, ensuring compliance with section 2.3.7: *Power System Stability and Dynamic Performance,* of the *Technical Rules*.

Without the SVCs in service, the supply system to the Eastern Goldfields would (under certain conditions) collapse and adversely affect supplies to areas such as the major regional centres of Kalgoorlie and Merredin.

The condition of the SVCs serving West Kalgoorlie and Merredin has been closely monitored over several years. While maintenance has been increasing, the high cost of replacing these assets means that it is not prudent to make the capital investment until absolutely necessary. The SVCs at West Kalgoorlie and Merredin have deteriorated drastically over the AA2 period and urgent attention is required to prevent them from failing in service. In addition, the SVC cooling systems (reactor coolers) have suffered from severe oil leaks with the coolers heavily clogged with dust, bugs and rodents. These have required extensive maintenance since 2002.

The SVCs at West Kalgoorlie are scheduled for replacement in 2016. Rather than proceeding with like for like replacements, the optimum long term solution is to replace the asset with static synchronous compensator (STATCOM)46 or similar new technology device.

This option has the following benefits:

- avoids significant expenditure to proceed with separate asset replacement for *bad* condition assets associated with the SVC including the saturated reactors, cooling systems and programmable logic controllers
- reduces maintenance costs due to wear on moving parts and oil leaks on ageing assets
- mitigates risk of technological obsolescence of equipment and availability of spares and realises the benefits of introducing next generation technologies
- reduces unplanned outages due to equipment failures
- supports compliance with environmental legislative obligations for oil containment, PCBs and asbestos

The saturated reactor SVCs at West Kalgoorlie will be replaced with three modern 45 Mega Volt Ampere Reactive (MVAR)47 reactive devices (combination of capacitor banks and STATCOMs or similar). Two of these reactive devices will be direct replacements for the existing 'bad' condition units and the third is required to provide additional reactive power to support the Eastern Goldfields area when there is a loss of one of the STATCOMs.

It is expected that further investment will be required early in AA4 for the replacement of the SVC at Merredin." (Appendix A: Capital and Operating Expenditure Report; September 2011:p127; Western Power)

RAVENSTHORPE AS AN "EDGE OF SWIS GRID" CASE STUDY

Ravensthorpe is at the edge of the SWIS grid being at the end of nearly 300km of power line stretching back to Katanning. Over many years the township of Ravensthorpe has been subjected to "brown-outs" and "black-outs. Through the RPIP (Regional Power Improvement Program), pole replacement program, network automation and various other network maintenance strategies, are part of Western

Power's ongoing overall improvement program to improve power reliability in regional areas.

In 2009, because of a review of power supply to Ravensthorpe township, Western Power installed diesel generation plant and "islanded" Ravensthorpe from the grid. This was stage 1 of an overall strategy to deal with the supply issues in the town. The budgeted funding for fuel costs ran out earlier than originally forecasted; and therefore Ravensthorpe has now been placed back onto the grid, with the option to be able to change back to diesel generation in times of fault escalation and also for peak load periods.

"Western Power and Horizon Power have already commenced preliminary engineering for stage 2 of the project, which is likely to involve the development of a hybrid power station, with a combination of renewable energy and diesel. This will be capable of operating in parallel with the network.

The aim of this project is to identify a more sustainable solution to providing capacity and reliability benefits at a lower cost-an approach that may also be useful for other towns at the edge of the grid.

While this investment is important in delivering a long-term energy solution for the Ravensthorpe region, it also aligns with the Liberal-National government's objective of providing a secure, reliable, efficient, and competitive energy supply to meet the needs of communities throughout Western Australia."

Extract from Hansard [COUNCIL – Tuesday, 20 October 2009] p8211c-p8212a Hon Peter Collier

The reliability of power supply to Ravensthorpe continues to be a serious problem for the community, restricting its growth potential, and needing to be resolved on a permanent basis.

The high cost of head-works charges to businesses even wanting to connect to the SWIS is still a very contentious issue.

A mining company located outside of Ravensthorpe, has expressed its dilemmas in trying to connect to the SWIS over the last twelve months. It is no closer to being connected now than it was a year ago.

In 2007, the South Eastern Shires Regional Power Group (SERPG) consisting of the shires of Gnowangerup, Jerramungup (including Bremer Bay) and Ravensthorpe, commissioned a report *Power Supply Options – Options for supplementing power supply to the shires of the SESRP* (Matricon: January 31, 2008).

The report assessed the short-term and long-term options for the supplementation of the power supply to the region.

FUTURE DEMAND PRESSURES

The Goldfields-Esperance region's population was 53,708 in 2006, and this is projected to reach 65,400 by 2031; an increase of 21.8% (ABS, 2007).

"Forecast growth of the mining sector suggests the Mid-West, **Goldfields-Esperance,** and the Pilbara will lead GRP growth in Western Australia."

(*Directions Paper*-SPS Department of Planning, 4 October 2010; p.7)

"Areas with specific opportunity for long term economic focus and growth are:

- Pilbara, the Mid West, **Goldfields-Esperance**: driven primarily by the on-going availability of natural resources, and the development of technology/equipment/processes to increase efficiency and safety."

(*Directions Paper*-SPS Department of Planning, 4 October 2010; p.8)

SECURITY OF ENERGY SUPPLIES

The Goldfields-Esperance region's utilities are supplied over hundreds (with the Goldfields Gas Pipeline make this over a thousand) kilometres over some of the most rugged, barren and isolated territory on the planet.

These extended, essential supply lines by their very nature pose significant security and maintenance challenges including:

- Climate change – with an increase in temperature and the occurrence of more severe storm activity predicted;
- Bush fires;
- Sabotage
- The increasing costs in an ensuring that existing infrastructure is properly maintained – with reports indicating that the current network distribution system is badly in need of updating.

SMART GRIDS

The Department of Planning's *Strategic Planning for Physical Infrastructure Directions Paper* has identified the absence of smart adaptable grids as being a gap in the Goldfields-Esperance region's power network.

Therefore we believe that Western Power's proposal to allocate $15 million over five years to run pilot programs on smart grid technologies is an inadequate investment, and needs to be revised upwards considerably.

ENERGY SUPPLY DIVERSIFICATION STRATEGY

The Department of Planning's *Strategic Planning for Physical Infrastructure Directions Paper* has identified "energy supplies that focus on diverse renewable inputs" as a key priority for the Goldfields-Esperance region's energy mix.

In the Goldfields, there is a proposal to establish a major solar farm that will feed power into the SWIS grid. The Colgar wind farm near Merredin has recently been connected to the SWIS and is due to start generating power in the near future.

The Climate Institute calculates that Western Australia has enough clean energy potential to power 1,500,000 homes, remove pollution equivalent to 1,700,000 cars, and create 4,380 new jobs the majority of which would be regionally based.

Given just these few examples, it is obvious that renewable energy resources need to be given real support so as to present Western Australia with the opportunity to truly diversify its energy supply well into the future.

AFFORDABLE POWER

Rural, regional, and remote communities require access to affordable essential services. Any new tariff structures that are proposed should contain the basic principle of providing a certain amount of power required by households to maintain a decent standard and quality of life that is affordable by all.

The principle of cross-subsidisation for the provision of essential services has served this state and nation well over many generations; encouraging development and population centres outside the main coastal cities, which otherwise might not have happened.

Small to medium businesses are the "backbone" of regional development. It is generally acknowledged that doing business in rural and remote parts incurs additional costs eg. increased transport and living costs. This is particularly true for regional infrastructure headworks charges; which impose an unreasonable additional cost for regional businesses.

Government policies should not have the affect of placing regional businesses at a cost disadvantage compared to the main urban areas, and in the process adding to their financial plight in these uncertain economic times.

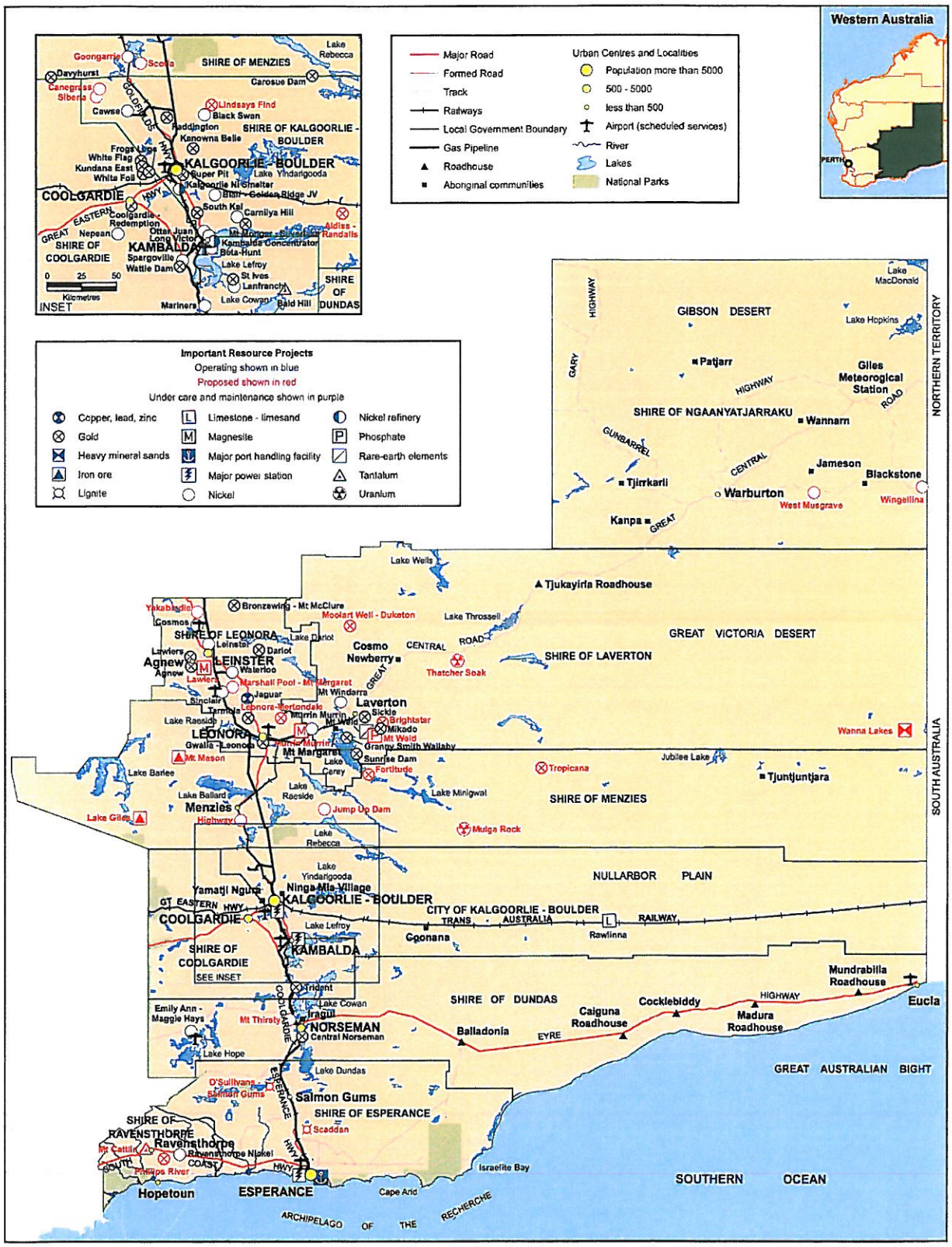
Yours sincerely

[redacted]

Mr Robert Hicks
Chief Executive Officer

29 November 2011

Attachment: - Goldfields-Esperance Key Feature Map December 2009



GOLDFIELDS-ESPERANCE
KEY FEATURES

Government of **Western Australia**
Department of **Regional Development and Lands**

Government of Western Australia
Department of Water

This map is a product of the Department of Water, Spatial Services and was printed on 19/06/2009

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Spheroid: Australian National Spheroid

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Kilometres

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DATA DICTIONARY		
THEME	SOURCE	DATE
Cultural	Landgate	March 2009
Transport	Landgate / DMP	September 2008
Hydrography	Department of Water	August 2009
Tenure	Department of Conservation	June 2008
LGA Boundaries	Landgate	December 2006
Important Resource Projects	DMP - Modified from MINEDEX Database	February 2009