Extension Hill Pty Ltd

Extension Hill Pty Ltd

ABN 81 067 128 938

First Floor, 66 Kings Park Road
WEST PERTH WA 6005
Australia

PO Box 82
WEST PERTH WA 6872

Telephone: 61-8-9216 2600
Facsimile: 61-8-9322 9801

E-mail: austadmin@extensionhill.com.au

9 December 2011

Our Ref No: 10-547-PO-LET-0016_13

Mr Robert Pullella
Executive Director
Economic Regulation Authority
Level 6 Governor Stirling Tower
197 St Georges Terrace
Perth WA

Dear Robert

Re: EHPL's Response to ERA's request for submissions to the NFIT for WPC's Mid West 330kV Transmission Project

Asia Iron Australia Pty Ltd (AIA) is pleased to be able to provide comment on the ERA's Draft Determination - New Facilities Investment Test Application for Western Power's Mid West Energy Project (Draft Determination) (Southern Section).

AIA is developing the Extension Hill Magnetite Project in the Mid West region of Western Australia and has made application for power connections at Three Springs and Geraldton pursuant to its development plans. AIA has received State and Commonwealth environmental approvals to develop the Extension Hill Magnetite Project, which will be a major user of and dependent upon Western Power's Mid West Energy Project.

AIA refers the ERA to the submission made by AIA's wholly owned subsidiary Extension Hill Pty Ltd to the Regulatory Test and to AIA's submission to the NFIT, as those submissions are still relevant and therefore these issues are not repeated here. In its Draft Determination, the ERA advises that:

"After consideration of Western Power's new facilities investment test application and independent advice from GBA and MJA, the Authority's draft determination is that it cannot give pre-approval at this stage for the total proposed expenditure of $383.4 million to be rolled into the regulated capital base as this may lead to existing customers being exposed to an unacceptable risk of increased charges with no commensurate benefit."

AIA is concerned that the ERA's Draft Determination does not accurately reflect the conclusions presented in the report by Marsden Jacob Associates[1] (the JMA Report) upon which the ERA has relied. The JRA report concludes, amongst other things, that:

"In summary, MJA has identified a number of issues that may require explanation or revision by Western Power. These include the potential use of a 20 year timeframe (which would result in a reduction to incremental revenue of $27 million), the use of medium rather than high system-wide growth estimates for calculation of the net benefits (a reduction in net benefits of $11 million), the inclusion of payments to Western Power for wind turbine generation (a reduction to net benefits of $19 million)."
"If all of the above adjustments were required, the total impact would be a reduction of $57 million in benefits. Even with this adjustment, the total benefits ($419 million) would still outweigh the cost of the new facility ($383 million). Therefore the ***resolution of these issues is unlikely to result in the project failing the NFIT*** *(emphasis added)."*

In this submission AIA contends that,

1. The technical limitations of the existing 132kV are not adequately taken into account, especially as it relates to the whole Mid West.
2. The lack of availability of power in Geraldton, and the region generally, has not been adequately taken into account.
3. The fundamental supply and demand drivers of the of the emerging magnetite industry have not been properly considered.

These matters are discussed in more detail below.

1. Technical Limitations of the Existing 132kV system

The ERA has not considered this project as a "network transmission" project, but rather as a "radial distribution" project that focusses on specific, albeit large block loads or generators. AIA contends that this project is a system transmission project that should be developed primarily to service underlying regional growth and to transition from the now technically limited 132kV system to a system that will underpin the region for the next 40 years or more, as did the original 132kV system.

The existing 132kV power transmission system that services the Mid West has a number of significant capacity constraints that arise due to the long distances involved, the predominance of wind power generation in the region and the technical limitation of the system. These technical limitations include:

- Voltage and consequent reactive flows to compensate. As the system load increased well above its surge impedance, reactive control moves from being able to being managed by switching discrete blocks of reactance, inductive or capacitive, to needing dynamic reactive control, either by connecting generators or Static Var Compensators (STATCOMS),

- Synchronous issues, where by the connections between generating nodes is insufficient to transfer enough power during and in fault recovery to remain in synchronism. In the case of north of Three Springs this prevents the Mungara gas turbines from all being able to be run at critical times, and

- Simple thermal limitation of equipment, such as conductors getting too hot and eroding the statutory ground clearances; this is the main cause of WPC offering non-firm supply to new connections above 3MW in Geraldton.

[1] Marsden Jacob Associates 2011, New Facilities Investment Test for Western Power's Mid-West Energy Project (Southern Section), prepared for Economic Regulation Authority of Western Australia

The ERA's determination appears to have a disconnect between the technical and the economics issues, leading to a view that the Mid West is not as poorly placed as it really is. The piecemeal approach to considering the Mid West's transmission development will not lead to optimal technical and economic outcomes. A step change to a 330kV augmentation is essential.
Load growth is a linear function, but the power system's response to the load is non-linear. The non-linear characteristics of a power network relate to the shape of its load curve, i.e. the current carrying power lines and equipment, versus the change in voltage or losses. If a system is at the end of its design capacity, operating well past its surge impedances, the resultant change in voltage and losses are many times the change that occurs for the same load change at lower loads.

2. Lack of power in the region

The Mid West transmission system is rapidly approaching its capacity limits now and the power supply situation in the Mid West is far worse than the ERA seems to acknowledge. For instance for EHPL's connections:

- At Three Springs WPC is currently unable to offer a firm supply to a 2MW load due to transmission constraints.
- At Geraldton, WPC is currently unable to offer a firm supply to a 15MW load; and
- WPC advise that even after the MWEP Stage 1 is completed any load greater than 3MW in Geraldton cannot be given a firm supply due to transmission restrictions.

The point is further demonstrated by a number of other instances where firm capacity is unavailable,

- A long term mineral sands mine closed down recently, but then prices recovered and they sought reconnection of their 14MW load, only to be told that it was no longer available. **So this means that but for this disconnection the Mid West would be in much more trouble, as this repersent over two yeasrs underlying growth.**

- The Geraldton port authority has been advised that its two capacity increases cannot be connected even with the MWEP. The connection requests are 9.45MVA in position 7 in the queue and 4.0 MVA in position 8 in the queue. This means that there are 7 other connections in front of these.

The general regional community and customer base in the Mid West can reasonably expect that their utility will have sufficient transmission capacity to support loads of this scale. It is understandable that there may be constraints further down the network in local sub-transmission and distribution, but not caused by limitations at the transmission level.

So to summarise this issue,

- ERA's load demand is catering for increase normal underlying load growth in total of the order of 3 -5 % per year at the 132 kV transmission level.
- The regional loads are now at the upper end of the operating limit of the 132kV system and two years' planned growth pushes the system into unacceptable operating regimes.
- Any discrete load of greater than 3MW cannot be give a firm supply and yet this size load is applicable to many industrial and commercial operations not considered big or unusual for a town the size of Geraldton.

The ERA has failed to consider the impact of the MWEP on Geraldton. WPC contend that the MWEP provides some necessary breathing space for Geraldton. From the above discussion it is demonstrated that Geraldton and the Mid West north of Moora and Eneabba is in trouble now.

AIA contends that both WPC and ERA have failed to adequately address the nature of major transmission enhancements and have applied linear analysis and assessments to a non-linear problem, leading to a failure to support the earlier development of necessary transmission back bone infrastructure.

AIA contends that WPC has to build this facility regardless of the new mines coming on line. The large mining loads in fact provide the opportunity to bring in earlier revenue than would otherwise be the case. So, far from causing the need for the enhancement, they make the enhancements more attractive. The ERA's technical advisor states,

"The project (sic the Perth to Geraldton proposal) as formulated for the original Regulatory Test and NFIT application did not proceed after it became apparent that the original cost estimate that was used by Western Power as the basis for its regulatory applications was grossly inadequate. The Government subsequently required that the project formulation be reviewed on the basis of updated information and using more realistic costs.

With the potential development of the Karara and Extension Hill mines, it is now clear that the centre of electricity demand in the Mid West region is likely to be Three Springs rather than Geraldton, as assumed for the original project (sic the Perth to Geraldton proposal). The project has now been reformulated to reflect revised assumptions on the location of the electrical load."

AIA requests ERA to reposition its approach to take into account the nature of this project as a back bone transmission systems enhancement.

3. The emerging magnetite industry

MJA notes that:

"MJA is of the opinion that the risks associated with iron ore demand beyond 20 years are significant."

The ERA notes that

"Given the inherent uncertainties associated with mining investment, the Authority is concerned that existing customers should not be left exposed to the risk of a project not going ahead, resulting in the forecast incremental revenue not being realised and exposing existing customers to increases in charges."

However, independent specialist research commissioned by AIA indicates that iron ore demand is expected to grow at 7% CAGR for the next 5 years and that magnetite concentrate will form an increasingly significant proportion of new mine supply. Both the Karara and the Extension Hill Projects are being developed as long term, reliable, suppliers of high quality raw materials for their steel industry owners and both Extension Hill and Karara have ore reserves to support mine lives in excess of 40 years. Both also have sufficient resources and prospective resources for significant expansions and life extensions.

In summary, AIA contends that even with all the minor points of contention raised by JMA and GBA, they both support the declaration of WPC proposed capital as passing the NFIT.

Further AIA believes that the whole process has been fundamentally flawed as it has not recognised the fundamental regional, system based characteristics of the MWEP project.

AIA urges the ERA to fully support WPC proposed development and revenue recovery as proposed, with an unconditional positive NFIT determination.

Extension Hill Pty Ltd agrees to this document being made public.

Yours faithfully
EXTENSION HILL Pty Ltd

MATT DUXBURY
Manager Infrastructure Services