Extension Hill Pty Ltd

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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@asiairon.com

21 November 2007

Ms Karen Tilsed
A/Manager Projects
Electricity Access
Economic Regulation Authority
PO Box 8469
Perth BC WA 6849

Dear Ms Tilsed,

Re; Western Power 330kV Mid-West Augmentation

Extension Hill Pty Ltd submits in the strongest terms that the 330kV must be extended as soon as possible. Our urgent need is to have the extension made to Eneabba by 4th quarter 2009.

The PB report is a confusing document as it has a generally negative disposition to the WPC proposal, but without being definitive. The report does not make clear recommendations and it is unclear to the reader what the report is intended to achieve.

However, having read the documentation and ERA's independent report, Extension Hill Pty Ltd has concluded that there is no sound reason for the extension not to occur. Below we have set out our comments on the PB report. On deeper analysis of the issues raised by PB, there is not a single point that would of itself validate a delay and the myriad of minor items are variously insignificant, poorly analysed for context, relevance and materiality and some issues are based on incorrect assumptions and statements.

Our view is that WPC's proposal is valid as presented, but more so if the Extension Hill Pty Ltd load is added to the demand forecast, and more so again with the Gindalbie load.

Extension Hill Pty Ltd is the owner and developer of the Extension Hill Magnetite Project located at Mt Gibson approximately 350km from Perth on the Great Northern Highway.

The project is valued at approximately US$1b and involves the establishment of a magnetite mine and process plant at Mt Gibson to produce a magnetite concentrate, slurry and water return pipelines between Mt Gibson and Geraldton and various other ancillary facilities.

This project is proceeding and is dependent on the southern leg of the 330kV being completed by the 4th quarter 2009. Any delay will impact on the project, so it is imperative that the approval process in not held up by ill based advice or concerns.

Project Development Timeline
The project has environmental approval.

The project will begin construction in the 2nd quarter of 2008, commissioning is planned for the 4th quarter 2009, with 5 million tonnes per annum (mtpa) production in Jan 2010, with an increase to 10 mtpa commencing 6 months later, 3rd quarter 2010.

Extension Hill Magnetite Project Power Infrastructure Requirements
The project is a 24 hour 365day per year operation and requires 55MW of power to be available in the 4th quarter 2009, with an increase to 110MW 6 months later. The initial project life at 10 mtpa is 20 years, but expansions and life extensions will occur as the total resource is in the order of 1.5b tonnes.

It is imperative that the southern leg of the 330KV line be ready for this time. We are working cooperatively with Western Power and Gindalbie on extension of the 330kV line from Eneabba to Three Springs to enable extension to the respective mine sites. As will be seen latter, any proposal to build a second line 132kV between Eneabba and Three Springs will prejudice this, as the community, and rightly so, will not accept an army of towers marching across their fields.

While discussions have not yet determined the final approach, the parties are mindful of the need to manage regional concerns about the proliferation of power lines over the farming lands, especially where it arises from poor decisions.

Extension Hill Pty Ltd has review PB's report and in summary we conclude,

1. PB appears to have come out against WPC's proposal, but does not do so definitively or categorically. Given the major importance of the matter to the State, and the mid west, it is inconceivable that such a qualified and in parts poorly substantiated report could be taken as a creditable basis to reject WPC's proposal for 330kV transmission for the mid west. We can only conclude that BP is not on balance willing to recommend against the proposal. As presented, BP's suggestions for further areas of consideration are minor, but if not put in context have the negative potential to delay this important decision.

2. PB's load projection in fact validates WPC's load projection and any argument supporting the case against the extension because of this is invalid. This arises because the 1 to 2 years' delay suggested by PB, due to the differences between BP's and WPC's load projections, is practically in the "noise" of such work, i.e. it is a not material difference.

3. The report fails in a number of technical areas, particularly with respect to continued use of 132kV,

    a. The capability of the existing system to maintain synchronism during faults is poor now and should new generation be added in the region the existing problems will be exacerbated,
    b. Any delay to the 330kV will cause problems with its future installation. Any delay will result in load increases, making the removal of the 132kV line more difficult when the 330kV expansion is finally undertaken. If taken to the extreme, the existing 132kV line will not be able to be taken out of service and a new 330kV easement will be needed. It should be noted that the relatively new dual circuit 132kV line did not resolve the problem from very long. It should have been built at 330kV. This mistake should not be allowed to happen again.
    c. The resulting increase in complexity of the 132kV system arising from marginal augmentations and the consequent risk this poses from the potential that there will be more frequent and severe outages in the region has not been addressed

    Any argument that 132kV is a practical, commercial or technically valid option has not been substantiated, nor has the report sufficiently addressed the associated technical problems. Consequently, Extension Hill does not believe that the 132kV augmentation is a valid proposition and any argument against the 330kV expansion based on 132kV being a valid option is flawed.

4. There are a number of comments that are unsubstantiated that are actually incorrect, mostly arising from a lack of understanding about the local competitive energy market. Many comments are based on the premise that new gas is available, which is not the case, to the extent at least that will result in a competitive gas supply side market in the next 5 year period. Any argument supporting the case against the 330kV extension based on the premise that gas is available is therefore invalid.

5. Extension Hill and Gindalbie have independently been to the market seeking power to supply their projects and the winning suppliers have been from south west generators. Any suggestion that the local generation is more competitive is incorrect and any argument supporting the case against the extension because of this assumption is therefore also invalid.

6. Failure to augment the system at 330kV in a timely manner will bottleneck mid west generation expansion and any possibility of a secure connection and load transfer between the two north and south. Effectively two separate systems will be created and the 132kV will become a stranded asset.

The load projection has not included Extension Hill's demand, which is now certain. If the above was not sufficient argument in itself to validate WPC proposal, then Extension Hill's demand certainly does. Further, Gindalbie's load further supports the need for the expansion.

If the project demand for the two projects were supplied independently of the grid, the flow on services and infrastructure demand in Geraldton would still be significant, i.e. port loading, dewatering, workshops, more people in Geraldton and the like multiplier effects, which have not been taken into account in the load projections.

Attached is Extension Hill Pty Ltd's more detained comment on the issues raised by PB in it report for the ERA.

Finally, we cannot state strongly enough that the Extension Hill Pty Ltd is dependent on the 330kV extension proceeding on the time line proposed by WPC. We are available to attend your offices to provide any further information you may need on this issue.

Thank you for the opportunity to make this submission.

Yours sincerely,
EXTENSION HILL PTY LTD

MATT DUXBURY
Manager Infrastructure Service

Extension Hill Pty Ltd Comments on the Parsons Brinkerhoff Associates' Report for the Economic Regulator of Western Australia
Regarding the;

Western Power 330kV Mid-West Augmentation

Prepared and submitted by Matt Duxbury Manager Infrastructure Services, Extension Hill Pty Ltd.

Following is Extension Hill's comments on the BP report.

1. Issue
The report suggests a delay of 1 (PB figure 1) or 2 years may be possible based on PB's own forecast and an assessment of the load forecast method used by WPC.

Comment

We would contend that load forecasting in a statistically small population is a highly uncertain exercise and it is reasonable to say that within the level of accuracy possible, both WPC and PB provide the same load forecast. PB's summary is qualified and states that a delay of 1 or two years "MAY" be possible.

Further, PB states that it has only been able to conduct a "high level review" and we would conclude that it has corroborated WPC case for the expansion, as there are no "show stoppers" identified against the WPC 330kV proposal.

To recommend against the expansion, given the detail of WPC's analysis, on anything other than the existence of a clear "show stopper" requires a solid, detailed case to be made against the proposal, which has not been done! If the case was strong that WPC had got it wrong, then a high level report, such as this, would be acceptable, as the issues would have been irrefutable.

The case presented by BP against the proposal by WPC is weak and conditioned. We contend therefore that the report actually provides strong validation of WPC's proposal.

2. Issue
The PB report does not address security in any meaningful manner.

Comment
The transmission lines in a network are the back bone of the network, planning and outage analysis is necessarily conservative. The 1 to 2 years delay is not significant in the life of the existing 132kV and in proceeding with the 330kV expansion provides a slight lean to the conservative, should the PB projection actually materialize. This is sound transmission planning and is appropriate.

PB does not address how the latter expansion of the 330kV is to be physically achieved, while maintaining security in the region. The timing for building the 330kV line is dependent on the removal of one of the existing 132kV lines from the metropolitan area to Eneabba. The time the line is down will lessen the regional security, which will only worsen as the load increases.

3. Issue

The region has had transient stability issues since the Mungarra GTs were installed some 20 years ago.

Comment

If it was as simple as installing some dynamic reactive supply, this would have been done, as there have been times when the additional Mungarra capacity was sorely needed and in the past competitively priced, especially when pressed to use diesel generation elsewhere on the grid instead.

The 132kV system was installed over 30 years ago and has served its purpose. To consider enhancements at 132kV will take resources that will not be used once a new 330kV line is established. Since the 132kV system is at its practical limit, and has been for some time, it will become more complex to operate as the load increases and marginal enhancements installed. The regional combinations and permutations of generation, GTS, wind power, lines and loads, makes the management of the network complex. Further controls will be needed with any 132kV enhancement, leading to further complexity being added onto an old system. This is not good system engineering, planning or economics. This approach runs the risk of increased outages, and of outages being more severe than for more simple systems. Systems at their limit are more likely to cascade in failure than robust systems.

4. Issue

PB has commented on thermal or load limitation relating to reactive issues and voltage levels.

Comment

The regional transient problems relate also to real power transient flows. The weakness of the connection between the south and generation in the north is a limiting factor in the ability to connect further generation in the north. Connection of more generation at the current transmission voltage, on the occurrence of transmission faults, will likely lead to line outages cascading to separation of the mid west from the south, as pole slipping occurs. The 132kV system has reached its limit in the respect. Again any attempt to augment the 132kV system will add complexity in control and management systems to an old system and is fraught with risks. Also it can only be at best a very short term solution.

Meanwhile, there is an inference in the report that the mooted 400MW coal and 168MW open cycle gas station could connect to the existing 132kV system, since

load transfer is changed to a southerly direction. We cannot understand how such additional generation could be suggested to "help" the situation.

5. Issue
Supply of block load versus island grid has been mentioned as a factor that if it happens, it will reduce demand on the grid.

Comment
This comment shows a complete lack of understanding of the current WA gas supply and of the cost of generation. The current lack of availability of gas and its price makes it uncompetitive to take supply from any open cycle gas generator. It will be a minimum of 5 years before the gas supply is improved sufficiently to supply new industry. The gas supply side will not ease before then and price will remain high. Without the back bone of a transmission grid in the region, access to competitive alternative generators and fuels will not occur. Mid west development will choke.

6. Issue
Transmission's roll in producing economies of scale in generation

Comment
The report fails to recognize the benefit of generation economies of scale. Those economies at present relate to large coal plant and large gas based cogeneration. The latter in particular cannot be used in the mid west without there being a suitable host for heat. Without a good transmission back bone these generators in the south west cannot supply the mid west and the benefits cannot be realized to the Western Australian a community.

7. Issue
PB suggests that demand side measures may contribute to the lowering of demand growth.

Comment
BP fails to comment on the make up of industry and what drives mid west regional demand. In the domestic and small businesses sectors it is notoriously difficult to achieve any meaningful demand side initiatives and their persistence is questionable.

The big industry in the mid west is mining related and tends to be 24 hour 7 day operations. Demand side management opportunity is not real in these operations.

To make the comments that demand side can contribute to load reduction is an easy statement to make that sounds like it has substance, but in the context of the mid west it is a distraction and should not be considered in the mix.

If miners did have generation, and it would be diesel and very expensive, then it would add to the generation in the area, bring its own further complication to an

otherwise already complex system. Given the whole of Mungarra cannot run now, additional generation without transmission augmentation is not the answer.

Further, miners do not shed load for dollars.

8. Issue
PB seems to infer that the losses in transmission from generation in the south servicing loads in the mid west may make local generation competitive. Stating that "as a result, mid west loads will largely be supplied by local sources, notably thermal generation…"

Comment
Given the only developable local generation fuel available to support projects coming on line in the next 2 – 4 year time frame in the mid west is gas off the DBNGP, this is again a demonstration of the lack of understanding of the WA energy market. The losses currently are of the order of 0.4c/kWh for Muja gernation, gas generation in open cycle GTs in the region is about 14 c/kWh, approximately 4c more expensive than the total deliver energy cost. The losses are an order of magnitude less that the base energy cost.

Consequently, the real situation is the exact opposite of the statement made by PB.

Any coal development in the mid west is about 5 years away, due to a very difficult approvals process. Further, the prospect of adding this generation and expecting that the increasingly skinny 132kV lines will be suitable as a connector to the southwest is technically flawed.

9. Issue
Page 10 of the report states "This reflects the uncertainty faced by developers within their projects approval processes, including many exogenous factors…".

Comment
BP is commenting on the uncertainty of the developers' development time line in terms of the realisation of increased regional demand, but neglects to mention that the availability of power is one of the biggest uncertainties for projects. A good transmission back bone provide access to a number of competitive generating sources and greatly diminishes the uncertainty of power supply in the region.

10. Issue
On page 11 of the PB report, PB comments that their forecast is "smoother" than WPC's.

Comment
We fail to understand the significance. It casts a baseless aspersion against WPC's forecast based on smoothness. The real world in a statistically small population such

as the mid west has a higher level of uncertainty than samples on large populations. This is why WCP must be conservative in the demand forecast assessment.

If the WPC and PB projection plots are compared, the small delay of PB compared to WPC fails to be convincing and in our opinion actually validates WPC's projection.

11. Issue
In table 2 item 2, PB puts forward the option of enhancing the 132 kV system, by building a second Eneabba to Three Spring line.

Comment
PP has at no point in the report commented on the difficulty of obtaining easements. The current local community sentiment will forestall any new easement aside the existing line.

There is a practical community barrier to just installing more lines. In the case of the southern leg of the 330kV proposed by WPC, it will be built on the alignment of the dismantled existing single circuit 132kV line and so has not had the community back lash that the northern section has generated. The next practical augmentation to three springs will be at a higher voltage with the removal of the existing132kV line. The community is much more amenable to replacement of an existing line with a new line, even if built along side the existing, followed be latter removal of the existing line.

PB's seeming suggestion for a 132kV augmentation strategy fails to address the need to remove the 132kV line to Eneabba from Perth to allow construction of any latter 330kV line. The larger the load grows to the north of Eneabba, the more difficult it will be to enhance the southern section with out power restrictions, or creating a new line easement.

Logically the timing is right to secure the region's capacity by building the southern section of the 330kV in the existing 132kV easement. PB fails to address the logistics of this in there report.

12. Issue
PB suggests, page 17, 2nd bullet point, that private generators should provide evidence the ability to supply "competitive" generation to islanded loads.

Comment
We have been to the market for 110MW of generating capacity and the potential islanded proponents were more expensive than other grid based suppliers. Gindalbie have announced that their supplier is Verve and we have also selected a south west grid based supplier, yet to be announced.

This is prima facea evidence that the grid enhancement is needed to support mid west development with access to a number of power suppliers to create competition. The

proponents advocating that the network enhancement is not needed, as they can supply demand directly, have a clear vested interest.

13. Issue
On page 17, 4th bullet point, BP suggests that it may be economic for some to use small gas reciprocating engine power stations.

Comment
This is again a profound demonstration of the lack of understanding of the current cost of supply of various options in WA. The only time such a station will be commercial is if the load is close to a gas pipeline and cannot get access to the network, in which case, it was never a load to be included in the load projections.