

Major Augmentation Proposal

Responses to Submissions

Picton South Transmission Network Reinforcement

31 Mar 2020

Contents

Contents	2
1. Overview	3
1.1 Proposal.....	3
1.2 Purpose of this report	3
1.3 Regulatory Test requirements.....	3
1.4 Public consultation.....	4
1.5 Methodology	5
2. Responses to submission and queries	6
3. Final Option	7
4. Appendix A – Invitations sent to request input	9
4.1 Sample email sent to key stakeholders.....	9
4.2 Social media – targeted Facebook posts	10
4.3 Social media – Twitter post	10
4.4 Social media – LinkedIn post	11
4.5 Print advertising.....	11
5. Appendix B – Forum handout	12
6. Appendix C – Forum Notes (for both sessions)	14
6.1.1 Attachment one	21
6.1.2 Attachment two	21
6.1.3 Attachment one	28
6.1.4 Attachment two	28
7. Appendix D - Submissions received	29
7.1 Community Resident.....	29
7.2 Geographe Underground	30
7.3 Shire of Dardanup	31
7.4 Alinta Energy.....	33
7.5 Late submission	35

1. Overview

1.1 Proposal

The Picton South network is one of the few remaining pockets of Western Power's network that is still operating at 66kV voltage. A significant number of these assets are approaching or have already exceeded their expected replacement life, with many assets also in degraded condition, resulting in multiple safety, reliability of supply and system security risks.

Additionally, significant growth within the last 25 years has led to the 66-kV network exceeding its intended design capability, resulting in existing voltage related N-1 non compliances that limit further growth opportunities in the area. While historical peak demand forecasts have been heavily revised down over the years, the existing voltage capacity limitations are expected to increase further due to growth forecast in the area over the long term

As the Picton South network is still forecast to experience growth with new residential developments, commercial spaces, recreational hubs and joining existing agricultural industry in the area, an investment is needed to ensure customers in the Picton South region continue to benefit from a secure and reliable electricity supply.

Western Power recognises the importance of reliable and secure electricity supply to customers and has completed planning investigations to identify the most prudent and efficient course of action to continue to meet the needs of its customers in the Picton South region.

In accordance with the requirements of chapter 9 of the Electricity Networks Access Code 2004, Western Power has prepared an Options Paper for public consultation as part of the Regulatory Test process for a Major Augmentation Proposal to the Western Power network.

The objective of the Options Paper is to inform the public, in general, and interested parties, in particular, of the Major Augmentation Proposal and to obtain input with regard to any additional or alternative considerations.

The Options Paper was released as part of a public comment period that commenced on 5 February 2020 and closed at 5pm on 28 February 2020.

1.2 Purpose of this report

This Report presents a summary of the outcomes of the public consultation and submissions which will be published as part of Western Power's submission to the Economic Regulation Authority (ERA) for a Major Augmentation Proposal and associated approvals.

1.3 Regulatory Test requirements

The Economic Regulation Authority (ERA) requires all major augmentation proposals to be approved under clause 9.15 of the Electricity Networks Access Code 2004 (the Code). Under section 9.15 of the Code, Western Power must make a Regulatory Test submission to the ERA before it can commit to a reinforcement project.

The Regulatory Test requires Western Power to demonstrate, to the satisfaction of the ERA, that the major network augmentation has been:

"properly assessed to determine whether it maximises the net benefit after considering all reasonable alternative options".

The Regulatory Test also requires Western Power to undertake a public consultation process which:

- is undertaken in accordance with the requirements of Appendix 7 of the Code
- gives all interested persons a reasonable opportunity to state their views and to propose alternative options

Western Power must demonstrate that it has given due regard to public views and alternative options proposed.

1.4 Public consultation

Clause 9.16(c) of the Code states the requirements for public consultation. The overall aim is to undertake a comprehensive and inclusive process which will meet the needs of the community, stakeholders, ERA and Western Power.

The public comment period ran from 5 February 2020 to 28 February 2020 with the Options Paper being available from 5 February 2020. The deadline for submissions was 5pm on 28 February 2020. One late submission was received.

Communications methods

A number of methods were employed to invite comments on the Options Paper and advise of the opportunity to attend a stakeholder or public forum including:

- direct invitations (via email) were sent to 61 stakeholders across Perth CBD and the South West region including key industry representatives, State Government Agencies, Local Government and major customers;
- two advertisements appeared in The West Australian newspaper;
- two advertisements appeared in the South West Times newspaper;
- targeted Facebook advertising to those who live or work in Bunbury through to Capel and onto Busselton. The Facebook posts reached (people who saw the advertising on their news feed) 3264 people and engaged (number of times people clicked to read or view the post, liked, commented and shared) 101 people.
- a Twitter post;
- a LinkedIn post;
- information on the Western Power website, with a total of 301-page views; and
- notice published by the ERA.

Please see Appendix A for a copy of materials.

Stakeholder and public forums

Two stakeholder and public forums were held. One was held on 17 February 2020 at Western Power's Head Office (363 Wellington Street, Perth) at 9.30 - 11.00am and the other on the 19 February 2020 at the Quality Hotel Lighthouse (2 Marlston Drive, Bunbury) at 11.00 - 12.30pm. In total, 17 external individuals attended, 7 at the Perth forum and 10 at the Bunbury forum.

Notes from both forums can be found in Appendix D.

Western Power was represented by professionals from Grid Transformation, Economic Regulation and Community Engagement Functions of Western Power. Information provided at the forum was:

- MS PowerPoint presentation¹; and
- Project handout A4 sheet².

Submissions received

Western Power invited submissions by email or post, while also taking comments and questions at the public forums.

Five email submissions were received with one late submission, from interested stakeholders in relation to the Picton South transmission reinforcement. Western Power's response to them can be found in Appendix D. No postal submissions were received.

The late submission was received 9 days past the submission due date and was not pertinent to the Picton South investment, as such a response was not provided. It is included in Appendix D for reference.

1.5 Methodology

The Access Code requires Western Power to detail the methodology adopted in dealing with the information obtained and how regard was given to any alternative options proposed and issues raised during the consultation process.

For Picton South transmission network reinforcement, the methodology adopted was to:

- ensure community and key stakeholders are well informed of the scope, impacts and benefits of the project;
- review all information received;
- review the validity and relevance of the information in relation to the proposal;
- identify opportunities to incorporate the new information and issues in the proposal; and
- examine the alternative options with the original proposal against the key criteria/requirements for the augmentation.

Based on this analysis, Western Power determined how the information/issues/options would be incorporated and considered as part of the overall South West region long-term Strategy.

Where information/issues/options were not considered appropriate, justification was provided.

¹ EDM #51704882

² EDM #51583646

2. Responses to submission and queries

An important requirement by key statutory approval authorities is clarity over how stakeholder input was received and used in the formulation of the options and final option submitted for approval.

Table 2.1 outlines the issues raised from the submissions received during the formal consultation and engagement process for the Picton South transmission network reinforcement Regulatory Test. The submissions and Western Power's response to them can be found in Appendix D.

Table 2.1: Responses to submissions and queries received during formal consultation process

Submission received	Issue raised	Current proposal	Suggested amendment	Justification and rationale
Community resident	<i>Asset replacement</i> Stobie poles be used to replace all timber poles to provide a safer more permanent electrical distribution system.	Use of wood poles in the Western Power Transmission Network	No change to current proposal	A comprehensive study on pole materials conducted by Parsons Brinckerhoff in 2015 concluded that Stobie poles are not available in the size and strength required for transmission lines, so they are not an option for the Picton South Transmission Reinforcement
Geographe Underground	<i>Commercial opportunity</i> Job opportunities for local contractors to complete works.	Transmission reinforcement works to the south of Picton	No change to current proposal	Western Power will be approaching its panel of vendors for various services in due course.
Shire of Dardanup	<i>Non-network option</i> Western Power should consider alternative power supply for growth areas such as for Wanju and Waterloo Industrial Park and the South West region in general.	Transmission reinforcement works to the south of Picton	No change to current proposal	The Picton South works are primarily driven by deteriorating asset condition. The proposed works focus on reinforcement south of Bunbury, through to Busselton. Wanju and the Waterloo Industrial Park are located north of Picton substation, and therefore fall outside of the Picton South reinforcement.

Submission received	Issue raised	Current proposal	Suggested amendment	Justification and rationale
Alinta Energy	<p><i>Financial assumptions</i></p> <p>Who benefits and who pays for the proposed augmentation?</p> <p>At a high level how will the costs be distributed amongst transmission entry and exit customers; and distribution customers?</p> <p>At a high level how will the costs be distributed amongst future access arrangements?</p>	Mechanism of revenue recovery pertaining to the expenditure related to the Picton South Transmission Network Reinforcement	No change to current proposal	<p>The ERA approves the “revenue requirement” as part of the regulatory determination process, or the Access Arrangement (AA). The revenue required to recover the total cost of these works will be added to the total revenue requirement that Western Power as a transmission and distribution network businesses can recover from customers for the use of these networks.</p> <p>Transmission customers pay for the portion of the transmission network they use, and distribution customers pay for the transmission network they use as well as for the distribution network costs.</p>
Community resident Late submission	<p><i>Electricity costs & Generation</i></p> <p>Improving systems by maintaining best value options to reduce the costs of electricity, while favouring reduced emissions for the ozone layer including the choice of embracing nuclear energy as a source of power.</p>	Transmission reinforcement works to the south of Picton	No change to current proposal	The Picton South works are primarily driven by deteriorating asset condition. The proposed works focus on reinforcement south of Bunbury, through to Busselton. Choice of generation falls outside of the Picton South reinforcement.

3. Final Option

In review of the comments received during the consultation phase, Western Power does not propose to make any modifications to the original proposal (option 2).

The first series of critical investments, as part of the recommended development strategy, which provide the pathway towards mitigating the deteriorated assets and voltage capacity limitations in the Picton South region. Collectively these investments are referred to as Stage 1 works and comprise of the following:

- the uprate of the Picton-Capel/ Westralian Sands 71 line to support future energisation at 132kV;
- transfer of Westralian Sands 66 kV tee-line from Picton-Capel/Westralian Sands 71 to Picton-Capel 72 transmission line;
- installation of a new 100 MVA 132/66/22 kV transformer at Busselton substation; and
- installation of static and dynamic reactive support at Busselton substation.

This investment is the subject of Western Power's regulatory test submission and remains as the recommendation investment that is to be submitted to the ERA.

Western Power will:

- continue to engage and involve in a meaningful way, key stakeholders in the design and planning for the Stage 1 works to ensure key issues are addressed in a timely manner; and
- keep all key stakeholders informed of any changes as a result of either the ERA outcome or the development assessment process to ensure all are up to date on the status of the Stage 1 works.

4. Appendix A – Invitations sent to request input

4.1 Sample email sent to key stakeholders

From: RegulationTest
Sent: Wednesday, 5 February 2020 3:27 PM
To: Louise Walker
Subject: Western Power invite: key stakeholder forum on South West future electricity supply

Good afternoon,

Have your say on the South West's future electricity supply

To secure future power supplies in the South West region, Western Power is taking on a significant project in the region – the Picton South transmission network reinforcement project.

As a key stakeholder, and in line with our commitment to stakeholder and community engagement, we're inviting you to share your thoughts on the options we've considered as part of the project. Your feedback is also an important step in the Regulatory Test approval process for the Picton South transmission network reinforcement project.

Our preferred option for securing electricity supply is a staged conversion from 66kV to 132kV, which will increase power capacity to the region and replace ageing assets in the area. This project is subject to approvals from relevant authorities following the outcome of the Regulatory Test.

Your opinion matters to us

Information sessions will be held in Perth and the South West to discuss all the possible options, including our preferred option. This forum provides an opportunity for anyone to ask questions and provide alternative options for consideration.

Perth Forum

When: Monday 17 February 2020, 9.30am – 11.00am
Where: Western Power Perth Office, 363 Wellington Street, Perth

South West Forum

When: Wednesday 19 February 2020, 11.00am – 12.30pm
Where: Quality Hotel Lighthouse, 2 Marlston Dr, Bunbury

Light refreshments will be provided.

Please confirm your attendance by Thursday 13 February 2020 to picton.south@westernpower.com.au

If you can't make it to an information session but would still like to comment, you can submit your feedback via email or post. Please note, your submission will be made public as part of our public consultation report. Please email your feedback to picton.south@westernpower.com.au with the subject heading "Submission – Picton South transmission network reinforcement". Alternatively, send your submission to:

*Picton South transmission network reinforcement
Grid Transformation
Western Power
GPO Box 1921
Perth WA 6842*

1

Public consultation period

The deadline to submit your feedback is 5pm, Friday 28 February 2020.

Want more information?

More information (including the Options Paper) is available on our website www.westernpower.com.au/picton-south and the ERA website www.era.gov.au.

If you have questions, feel free to contact Srinivas Sampath on (08) 9326 7925 or email picton.south@westernpower.com.au

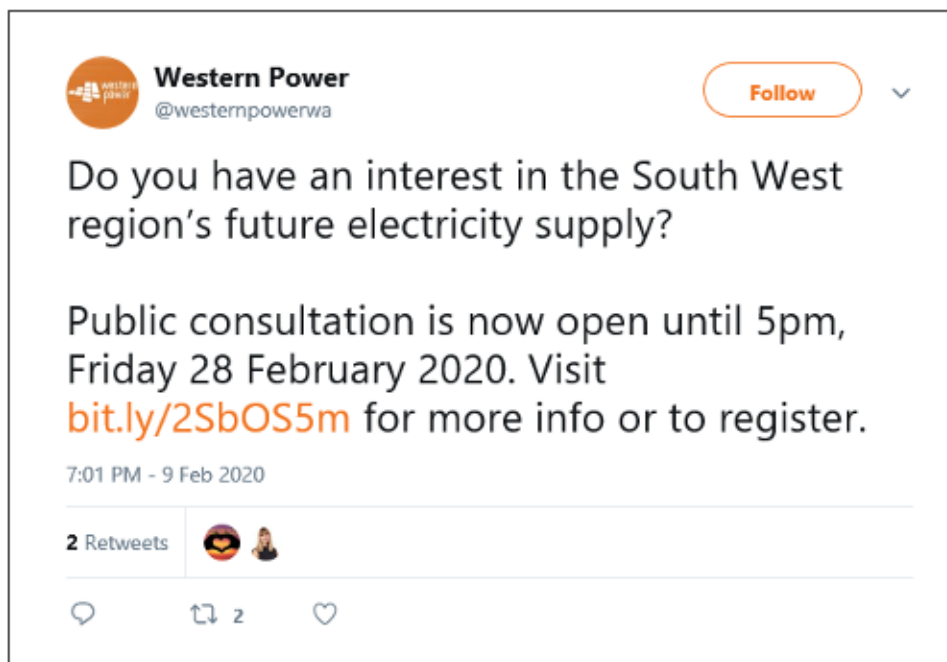
Yours sincerely,

Dyan Paskarina
Engineering Team Leader - Grid Transformation
westernpower.com.au

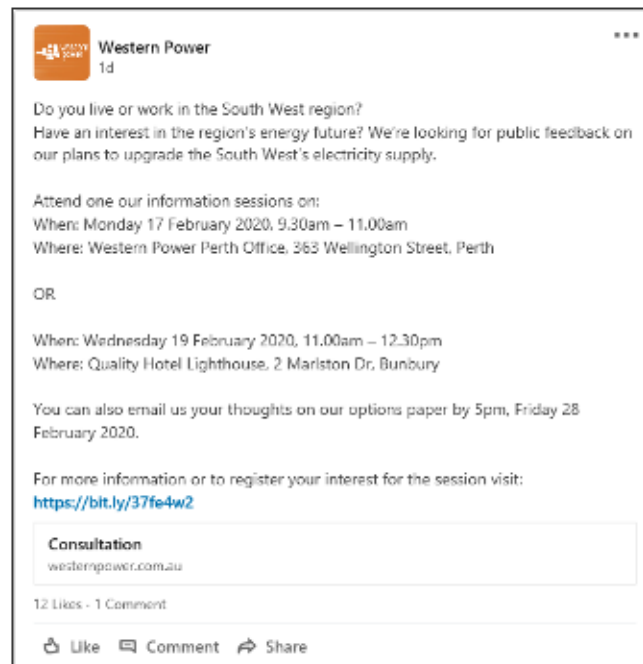
4.2 Social media – targeted Facebook posts



4.3 Social media – Twitter post



4.4 Social media – LinkedIn post



Western Power
1d

Do you live or work in the South West region?
Have an interest in the region's energy future? We're looking for public feedback on our plans to upgrade the South West's electricity supply.

Attend one our information sessions on:
When: Monday 17 February 2020, 9.30am – 11.00am
Where: Western Power Perth Office, 363 Wellington Street, Perth

OR

When: Wednesday 19 February 2020, 11.00am – 12.30pm
Where: Quality Hotel Lighthouse, 2 Marlston Dr, Bunbury

You can also email us your thoughts on our options paper by 5pm, Friday 28 February 2020.

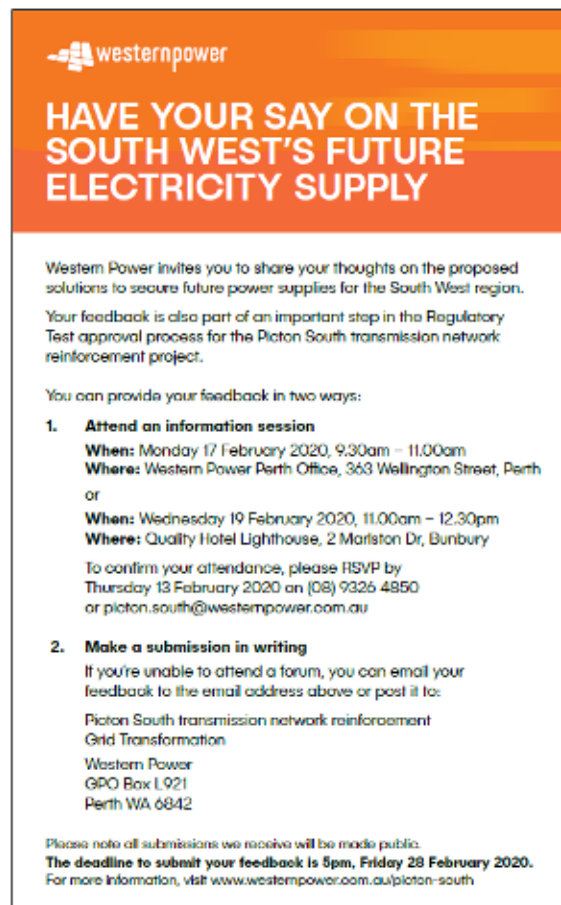
For more information or to register your interest for the session visit:
<https://bit.ly/37fe4w2>

Consultation
westernpower.com.au

12 Likes · 1 Comment

Like Comment Share

4.5 Print advertising



westernpower

HAVE YOUR SAY ON THE SOUTH WEST'S FUTURE ELECTRICITY SUPPLY

Western Power invites you to share your thoughts on the proposed solutions to secure future power supplies for the South West region. Your feedback is also part of an important step in the Regulatory Test approval process for the Picton South transmission network reinforcement project.

You can provide your feedback in two ways:

- 1. Attend an information session**
When: Monday 17 February 2020, 9.30am – 11.00am
Where: Western Power Perth Office, 363 Wellington Street, Perth
or
When: Wednesday 19 February 2020, 11.00am – 12.30pm
Where: Quality Hotel Lighthouse, 2 Marlston Dr, Bunbury
To confirm your attendance, please RSVP by Thursday 13 February 2020 on (08) 9326 4850 or picton.south@westernpower.com.au
- 2. Make a submission in writing**
If you're unable to attend a forum, you can email your feedback to the email address above or post it to:
Picton South transmission network reinforcement
Grid Transformation
Western Power
GPO Box L 921
Perth WA 6842

Please note all submissions we receive will be made public.
The deadline to submit your feedback is 5pm, Friday 28 February 2020.
For more information, visit www.westernpower.com.au/picton-south

5. Appendix B – Forum handout



Powering the South West

Western Power is working to deliver a bright future for the South West Region by investing in the electricity network that supplies the community.



The South West Region is growing rapidly, with new residential developments, commercial spaces and recreational hubs, joining existing agricultural industry in the area. Safe, reliable power and the ability to harness new technology is vital to support this growth.

We are continually upgrading our electricity infrastructure to meet the changing needs of our customers. As part of this ongoing improvement and to secure future power supplies in the South West, we are investing in a significant project in the region- the Picton South transmission network reinforcement project.

About the project

Western Power is planning strategically, to meet the challenges of a rapidly growing region. This includes upgrading our transmission infrastructure between Picton and Busselton. This is proposed in stages to ensure timely investment in the region.

Like many electricity networks around the world, significant sections of our network are progressively scheduled for replacement. To secure electricity supply to meet increasing demand and to replace ageing assets in the area, we have considered various options. These options consider cost, flexibility in the system to accommodate future growth, technical feasibility and environmental impact.

Our preferred option:

- is lower in cost
- predominantly uses the existing corridor and footprint
- reduces environmental impact
- minimises ongoing maintenance costs; and
- accommodates future growth opportunities.



Regulatory submission

Before committing to a major augmentation, Western Power is required to demonstrate to the satisfaction of the regulator that the proposed augmentation is the best way of developing the wider system, compared to alternative network investments, generation, demand management, or other alternative solutions.

In developing its options, Western Power consults with impacted stakeholders and the community and ensures interested parties have an opportunity to express their views or propose alternative options.

The process is known as a Regulatory Test and involves making a submission to the regulator. The submission will propose the preferred option, comprising multiple stages spanning the next 10 years, and will seek endorsement of the overall strategy. Once approved by the regulator, the project can proceed, subject to approvals from relevant authorities.

We welcome your feedback

Your feedback is an important step in the Regulatory Test approval process. If you would like to make a submission, ask a question or provide an alternative option, you can email us at: picton.south@westernpower.com.au

Please note, all submissions and responses will be made public. The deadline to submit your feedback is 5pm, Friday 28 February 2020.

More information

- Public submissions are welcome until 5pm, 28 February 2020
- We will respond to all submissions within 10 business days
- Pre-submission presentation and draft paper will be provided to the Economic Regulation Authority (ERA) in March – April 2020
- ERA determination is expected within 45 business days from formal submission

More information (including the Options Paper) is available on our website: www.westernpower.com.au/picton-south and the ERA website: www.erawa.com.au



363 Wellington Street Perth WA 6000
GPO Box L921 Perth WA 6842
westernpower.com.au

6. Appendix C – Forum Notes (for both sessions)

WESTERN POWER PICTON SOUTH TRANSMISSION NETWORK REINFORCEMENT COMMUNITY FORUM

VENUE: Ground Floor G.02 - Western Power, 363 Wellington Street, Perth

DATE: 9.30AM, Monday, 17 February 2020

WORKSHOP SUMMARY

1. WELCOME, WORKSHOP PURPOSE AND PROCESS

Linton Pike welcomed participants to the Picton South Regulatory Test Workshop explaining that the workshop purpose was to:

- **Share Western Power's proposed investment plans** for major augmentation in the Picton South load area
- **Present the strategic vision, investment drivers, options,** selection process and community / customer impacts of the recommended development strategy
- **Invite comments, feedback** and questions and to provide further clarity as necessary

Each workshop participant received:

- Project information handout

The workshop agenda is provided at Attachment One.

A list of workshop participants is provided at Attachment Two.

Each workshop participant provided a brief personal introduction.

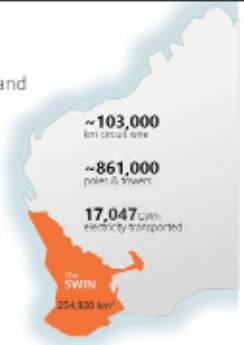
2. PROJECT CONTEXT

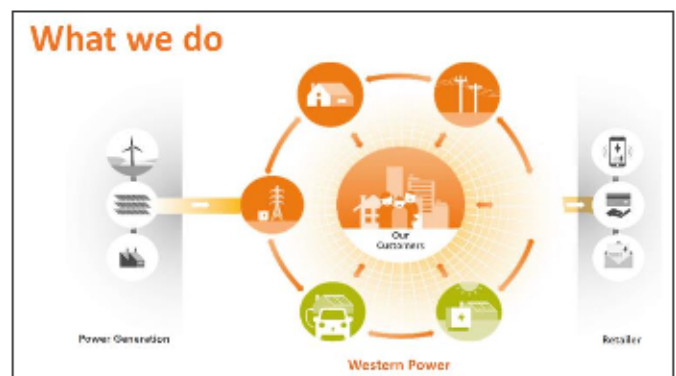
Ben Bristow (Head of Grid Transformation at Western Power) explained:

About Western Power

- Build, maintain & operate transmission and distribution assets on the South West Interconnected Network (SWIN)
- 2+ million customers
- 217,000 street lights
- More than 1000MW of solar PVs connected*
- 793 battery applications approved*
- 103,000km circuit wire*

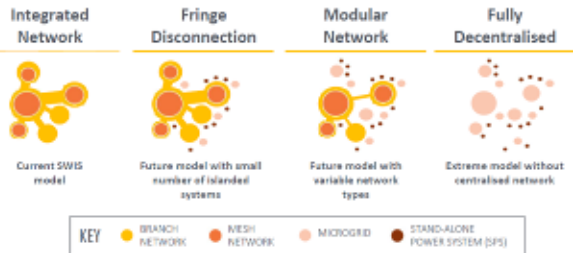
* As at 26/8/19





Reshaping our network

Network evolution is reliant on community behaviour, technology advancement rates, regulation and policy



Regulatory Test

- Western Power is regulated by the Economic Regulation Authority (ERA) which requires compliance with:
 - Technical Rules
 - The Electricity Network Access Code (2001) (the Code)
- Under the Code, Western Power must obtain the ERA's approval via a Regulatory Test submission before it can commit to a major augmentation when the value of the total investment exceeds \$37.9 million



Dyan Paskarina (Team Leader of Grid Transformation) explained:

Picton South Network

Area under consideration

- 46,000 customers (residential, commercial, agricultural and industrial)
- Western Power's substations (Picton, Capel, Busselton and Margaret River)
- Customer owned substation (Westralian Sands)

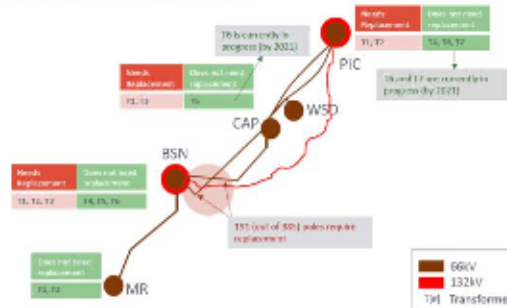


Investment drivers

- The network
 - Asset condition
 - System security
- Long term strategy
 - 66kV rationalisation
 - Network and non-network solutions
- Opportunities
 - Growth
 - Future technology



Asset condition drivers



System security drivers

- Sensitive to peak demand at Busselton and Margaret River driven by load growth over past 25 years
- Current demand is at maximum supportable level; limiting connection opportunities
- Compliance is currently managed operationally, however it is unsustainable to cater for forecast demand



Long term strategy

66kV Rationalisation

- Upgrade to 132kV when aged 66kV assets require replacement
- Reduce maintenance cost
- Obsolete parts
- Small incremental cost for greater benefit
- Allow future growth and technologies



Picton South Demand (2013-2042)



Investment Options

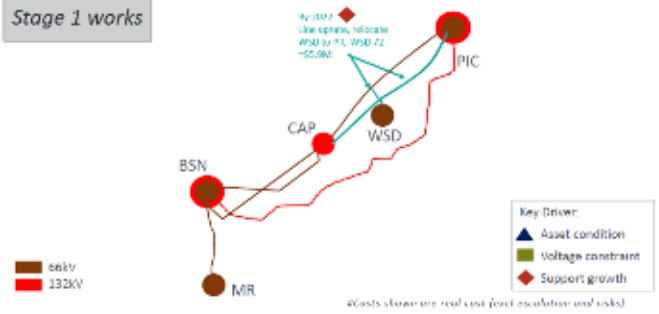
Investment Strategy	Investment Options	Lifetime cost (\$M)*
Conversion of Picton South network to 132kV	1. Accelerated 132kV conversion	156.1
	2. Staged 132kV conversion – BSN	143.6
	3. Staged 132kV conversion – PIC	148.9
Retention of 66kV network and asset base*	4. Procure Network Contract Services	174.1
	5. Install additional reactive support	161.5

* Retention of 66kV network is a hybrid of network and non network solutions
 * Lifetime cost is evaluated over 50 years (net present cost)



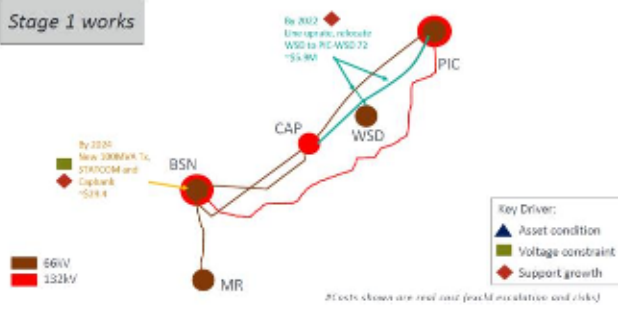
Preferred Option: Staged 132kV Conversion - BSN

Stage 1 works



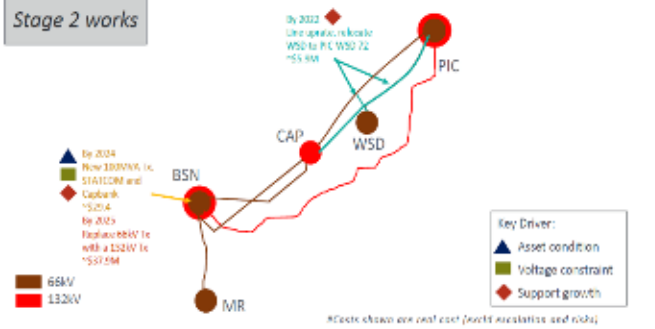
Preferred Option: Staged 132kV Conversion - BSN

Stage 1 works



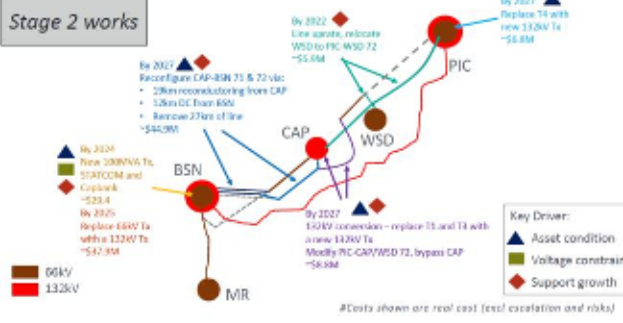
Preferred Option: Staged 132kV Conversion - BSN

Stage 2 works



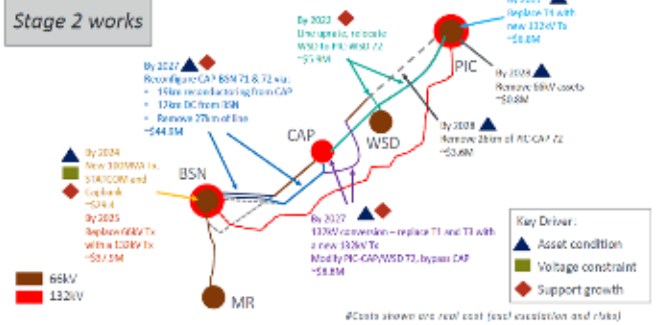
Preferred Option: Staged 132kV Conversion - BSN

Stage 2 works



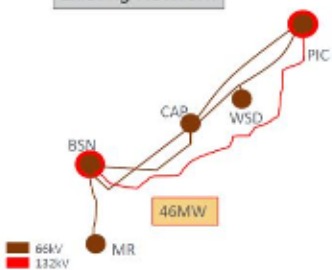
Preferred Option: Staged 132kV Conversion - BSN

Stage 2 works



Preferred Option: Existing vs After Completion of Stage 2

Existing Network



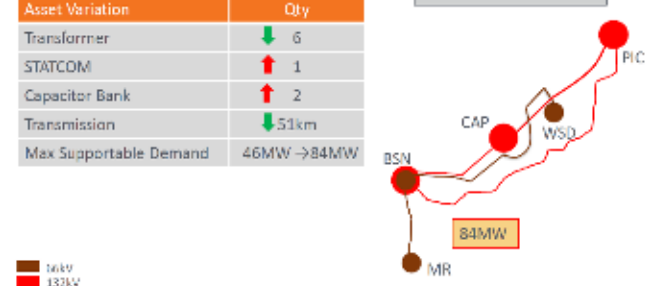
After Completion of Stage 2



Preferred Option: Summary of the Works

Asset Variation	Qty
Transformer	↓ 6
STATCOM	↑ 1
Capacitor Bank	↑ 2
Transmission	↓ 51km
Max Supportable Demand	46MW → 84MW

Final configuration



Preferred Option Summary

- Lower in cost
- Predominantly utilises existing corridor and footprint
- Reduces environmental impact
- Minimises ongoing maintenance costs
- Maintains safety and reliability
- Accommodates future growth opportunities
- Staged approach allows future technologies to be adopted

Non network solutions

- New technologies (batteries, stand alone power systems (SPS), microgrid)
- Do not address asset drivers, only system security
- Cost prohibitive
 - E.g. ~\$65-80M (battery) vs \$15M (STATCOM in preferred option)
- Western Power will continue to evaluate non-network solutions for future stages



What's next?

- We welcome all public submissions until *5pm 28 February 2020*
- Submissions will be responded to within 10 business days
- Submissions and responses will be made public as part of the ERA submission unless a request for confidentiality is made

All submissions are to be sent to:

Picton_South@westernpower.com.au



3. QUESTIONS AND ANSWERS

The following questions and answers arose:

- Q The economic growth rate assumption of 0.7% growth rate for this investment seems low. Proposed projects are happening in the Kemerton and Bunbury port area. Can this solution cater for higher growth than forecast?
- A Western Power plans to a 25-year horizon and tests the robustness of the investment pathway with sensitivity analysis conducted on a high growth scenario as well as negative growth options.
Emerging technologies and demand management scenarios are also considered to test our investment plan. Block load connections under a high demand growth scenario can be accommodated through the staged approach of the preferred solution. Works can be accelerated if required and as a result our level of confidence in the proposed solution is high. Kemerton and Bunbury Port are outside of the boundaries of this investment, however, Western Power has a longer-term load growth strategy for the Greater Bunbury load area as well and that is another input to our planning.
- Q **Renewable players are interested and we would like to see options remain open for that with growth experienced. Can that be accommodated?**
- A Yes, our plans allow for future renewal projects to connect to the network.
- Q **Renewables are looking to service relatively smaller scale industrial and other land uses at the perimeter as industry looks for affordable cleared land. This goes beyond Kemerton for renewables with Picton with Kemerton more focused on strategic industrial. The Picton area is close to full capacity with high cost of distribution upgrades potentially limiting growth in areas at the cost knife edge.**
- A We acknowledge that, and as a result our growth strategies retest these factors and we are open to further detailed discussion with industry.
- Q **Would the investment increase the likelihood of connection for community based renewable groups around Margaret River?**
- A Any renewable is affected by voltage constraints and connections at Busselton and Margaret River are possible, however, the connection of renewables will be assessed at the time to ensure it doesn't have other effects or network impacts.
The investment strategy related well with renewable connections access wise and will be resolved with increased network capacity following the upgrade and addressing voltage constraints.
- Q **My experience as a Development Assessment Panel (DAP) member when assessing many solar and renewable applications is that it seems they are not suited to the current network. Western Power (WP) hasn't advised of network limitations but we need more information on optimal locations in the future to inform future Joint Development Assessment Panels (JDAP's).
We have raised this matter with WA Planning Commission (WAPC) previously and more complete advice on unsuitable applications would be useful. We are inundated with applications with very few approved with community backlash. Can we address this?**
- A Depending on their connection point location, large renewable generation connections may require significant network reinforcement to facilitate a reference connection.
As the wholesale market transitions to a constrained market model, this will allow more flexibility for connections. WP will aim to publish more information to help guide Proponents to connection locations that are less likely to be constrained and trigger the need for major augmentation works.

WP will engage with Rob Fenn offline to discuss examples and ensure our future approach is more appropriate and to ensure we co-ordinate effectively across the state. This applies to renewable generators and major load connections too.

ACTION: Charles Crew

There are two key considerations:

- Can the network support it? and
- Providing clear and timely supporting information.

Q How does this manage bushfire risk and mitigations for new lines in the context of new technologies? This goes beyond cost and economics with micro-grids potentially more suitable.

A In developing our solutions, we consider bushfire prone areas and try to minimise clearing more land. We establish sound maintenance programs for our corridors and lines, and we avoid building new lines through pristine bush due to the environmental impact. For this investment we make use of existing corridors. New technology is about safety in design in the context of all risks.

Stand-alone systems (SPS), micro-grids offer benefit in reducing bushfire risk in this context but doesn't tick the many other boxes to consider.

The proposed investment removes approximately 51km of 66kV transmission line, which results in a net reduction in bushfire risk. Environmental, social and other impacts are also considered. The second stage will look at bushfire risk in more detail too.

Q What if this initiative doesn't proceed?

A It must proceed in some form to ensure network safety and reliability are maintained and to accommodate future growth safely and affordably.

Q How does the proposed solution stack up reliability wise?

A It is difficult to forecast reliability, but 6 transformers with condition issues will be replaced along with the removal of 51km of 66kV transmission line. Furthermore, the need to manage the voltage issues operationally, at a reduced reliability of supply levels, will no longer be required. Emmanuel Miti of the ERA advised that stakeholder input is needed to supplement the ERA's to ensure it is a balanced assessment from all perspectives.

Q This investment considered STATCOM as a proven traditional solution for voltage constraints, was battery storage considered when assessing the available options?

A STATCOM as mentioned is a reliable solution with proven results compared to a battery-based solution.

We continue to look for these options over time as the cost of battery-based solutions reduce. There is a challenge in aligning with the commercial models of private providers with regard to ensuring viable economic returns for the investments made in battery power storage.

Q What about Vanadium Red Oxide batteries as an emerging technology with technology emerging rapidly?

A We looked at battery size, capacity and cost options but not specific battery types. We will continue to re-evaluate at each stage of our option assessment process and consider these technologies if they become cost effective.

Q Are there any delivery timeframe constraints?

A 2027/28 is a key time horizon for the completion of both stages to address the risk of asset deterioration and then provide for other growth and needs. It can be accelerated or deferred as required.

The first series of investments are at advanced stages of the 'Planning' phase of project development, but subject to the ERA determination before moving into 'Execution' phase. The

second stage of works will be moving into the early planning phases if the ERA approves the investment.

Q If the economic growth rate in the south west accelerates can the program accommodate that? Will the project be resource and material driven or cost driven?

A Timing is the key factor in recognising step change in growth. We need to look in more detail at the growth factors. The preferred solution proposes a staged approach to accommodate change subject to the timing of the enabling funding decisions. If we get approval to proceed, we will continue to look at staging over time

Q Will today's presentation be available to participants?

A Yes, it will be sent out with the Workshop Summary and presentation – for both sessions. The presentation will be sent now, and the Workshop Summary will follow.

Linton Pike invited participant comment on the proposed solution. The following feedback resulted:

- The solution looks comprehensive;
- Some participants felt they needed more time to consider it further;
- Different "hats", needs and expectations have different perspectives;
- Support for renewables growth is important with low growth rate impacting future opportunities so that industry can ramp up their planning and delivery; and
- The focus on Bunbury and the proposed timelines don't raise any major concerns with upgrades matching likely future growth

Key considerations identified by participants include:

- Allowing for, and enabling renewables to connect to the resultant grid;
- Dealing with JDAP's and block load connection points needs timely and accurate information;
- Engagement with SWDC is needed to keep them informed and benefit from their communications network; and
- Picton growth management over time is needed as industry moves to more affordable land options as a distribution issue.

4. ADDITIONAL COMMENT AND NEXT STEPS

The next steps include:

- Western Power welcomes public submissions until 5pm 28 February 2020;
- Submissions will be responded to within 10 business days;
- Submissions and responses will be made public as part of the ERA submission unless a request for confidentiality is made.

Please send your submissions to: Picton.South@westernpower.com.au

The workshop closed at 10:45am

6.1.1 Attachment one

Agenda

Welcome and Housekeeping
Presenter: Linton Pike

Western Power – introduction and purpose of forum
Presenter: Ben Bristow

Picton South network augmentation project
Presenter: Dyan Paskarina

Workshop discussion, questions, feedback and close out
Presenter: Workshop session facilitated by Linton Pike



6.1.2 Attachment two

NAME	ORGANISATION
Vinh Phan	Albermarle
Graham Jackson	Albermarle
Oscar Carlberg	Alinta Energy
Emmanuel Miti	Economic Regulation Authority
Amy Tait	Energy Policy WA
Robert Fenn	Development WA
George Kolichev	Mineral Resources
Jody Touyz	Western Power
Ben Bristow	Western Power
Charles Crew	Western Power
Judy Hunter	Western Power
Sam Ristovski	Western Power
Srinivas Sampath	Western Power
Dyan Paskarina	Western Power
Louise Walker	Western Power
Linton Pike	Estill and Associates Pty Ltd (Facilitator)

WESTERN POWER
PICTON SOUTH TRANSMISSION NETWORK REINFORCEMENT
COMMUNITY FORUM
VENUE: Quality Hotel Lighthouse – 2 Marlston Drive, Bunbury
DATE: 11AM, Wednesday, 19 February 2020

WORKSHOP SUMMARY

1. WELCOME, WORKSHOP PURPOSE AND PROCESS

Linton Pike welcomed participants to the Picton South Regulatory Test Workshop explaining that the workshop purpose was to:

- **Share Western Power’s proposed investment plans** for major augmentation in the Picton South load area
- **Present the strategic vision, investment drivers, options,** selection process and community / customer impacts of the recommended development strategy
- **Invite comments, feedback** and questions and to provide further clarity as necessary

Each workshop participant received:

- Project information handout

The workshop agenda is provided at Attachment One.

A list of workshop participants is provided at Attachment Two.

Each workshop participant provided a brief personal introduction.

2. PROJECT CONTEXT

Charles Crew (Grid Solutions Planning Manager at Western Power) explained:

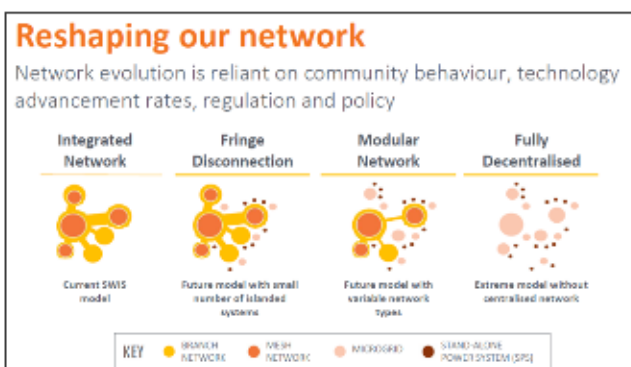
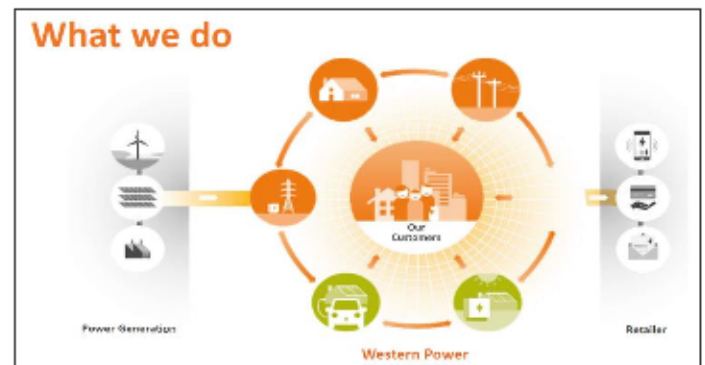
About Western Power

- Build, maintain & operate transmission and distribution assets on the South West Interconnected Network (SWIN)
- 2+ million customers
- 217,000 street lights
- More than 1000MW of solar PVs connected*
- 793 battery applications approved*
- 103,000km circuit wire*

~103,000 km circuit wire
~861,000 poles & towers
17,047 GWh electricity transported

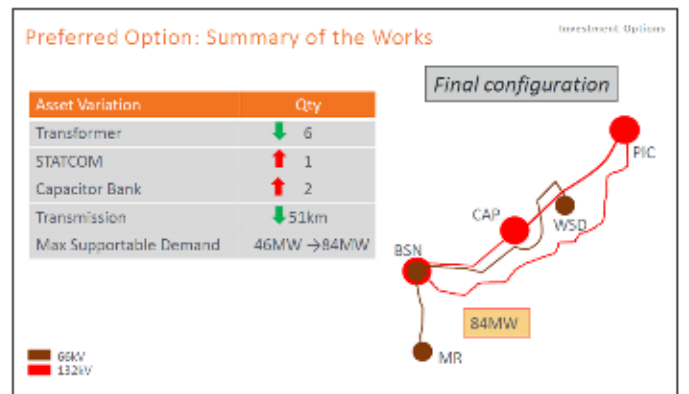
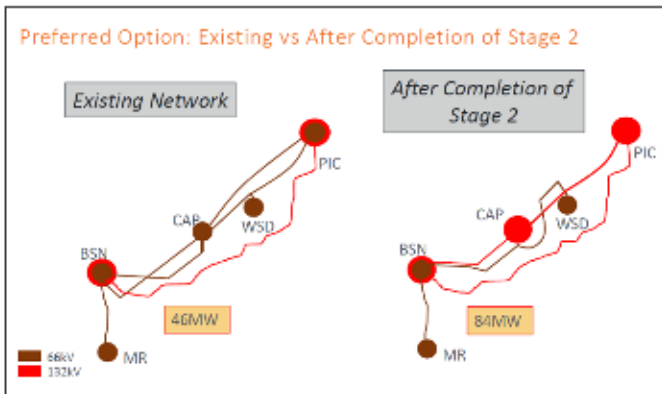
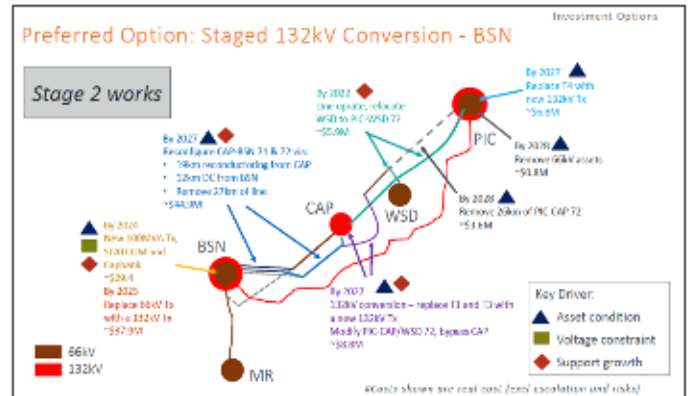
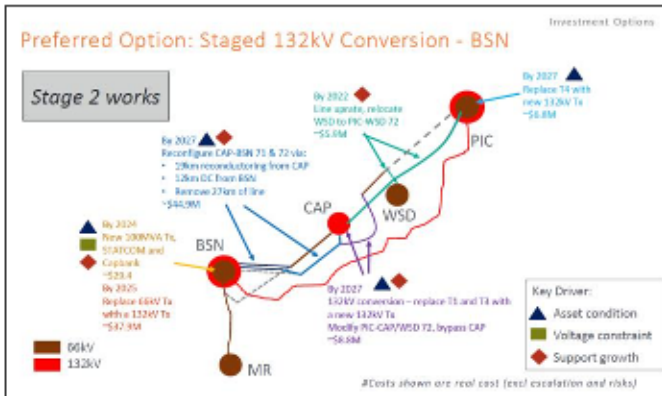
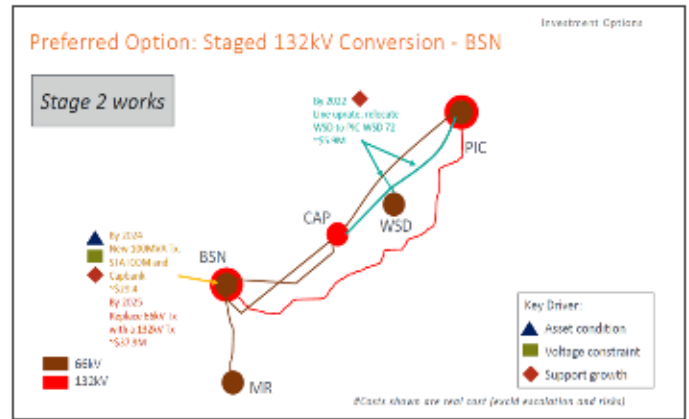
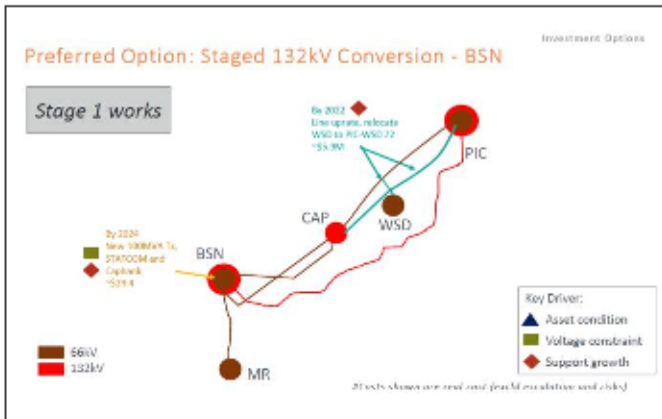
The SWIN
254,920 km²

* As at 26/5/19



Regulatory Test

- Western Power is regulated by the Economic Regulation Authority (ERA) which requires compliance with:
 - Technical Rules
 - The Electricity Network Access Code (2004) (the Code)
- Under the Code, Western Power must obtain the ERA’s approval via a Regulatory Test submission before it can commit to a major augmentation when the value of the total investment exceeds \$37.9 million



- ## Preferred Option Summary
- Lower in cost
 - Predominantly utilises existing corridor and footprint
 - Reduces environmental impact
 - Minimises ongoing maintenance costs
 - Maintains safety and reliability
 - Accommodates future growth opportunities
 - Staged approach allows future technologies to be adopted

- ## Non network solutions
- New technologies (batteries, stand alone power systems (SPS), microgrid)
 - Do not address asset drivers, only system security
 - Cost prohibitive
 - E.g. ~\$65-80M (battery) vs \$15M (STATCOM in preferred option)
 - Western Power will continue to evaluate non-network solutions for future stages

What's next?

- We welcome all public submissions until **5pm 28 February 2020**
- Submissions will be responded to within 10 business days
- Submissions and responses will be made public as part of the ERA submission unless a request for confidentiality is made

All submissions are to be sent to:

Picton.South@westernpower.com.au



3. QUESTIONS AND ANSWERS

The following questions and answers arose:

- Q Does this work address concerns previously raised at voltage in the current system due to household solar PhotoVoltaic (PV) systems
- A This solution recognises disruption to the traditional one-way power flows to manage voltage and increase power load available to the region.
- In addition to addressing voltage limitations in high load period, we are designing to respond to periods of low system demand, where high voltage issues are emerging and resulting in PV system shutdown. This reinforcement maximises use of existing PV systems and facilitates future penetration of additional PV use in the region.
- Q **Why are we still using Westralian Sands when we are now Iluka and have been for a long time?**
- A It is a Western Power former sub-station name. Naming conventions apply and we have retained the name to avoid confusion when identifying specific sub-station sites. In addition, changing assets with labelling will incur costs and may need to be done if future changes in owners occur.
- Q **The proposed investment will result in all the 66kV assets in the Picton South network being converted to 132kV, resulting in Iluka being the only one supplied on 66kV from Busselton. Iluka is committed to and organised around 66kV power supply. A 132kV system won't service our needs without major investment by us to change our electrical system. We have 10-year residual asset life at 66kV with considerable recent 66kV asset investment made by us.**
- What is the residual life of WP's Busselton 66kV network and how long will it remain in service?**
- A Different asset components have different residual service lives but the preferred option, with a new transformer at BSN, enables us to remove PIC 66kV assets which are in worse condition than BSN. BSN will remain at 66kV until changes at our MR substation or other drivers take effect.
- Our obligation is to maintain supply at 66kV for the WSD substation connection as it is still more cost effective than upgrading to 132kV at this stage. Furthermore, the complete investment pathway is detailed in the Options Paper providing electrical users visibility of the long-term network development in the Picton South region to optimise investment and upgrade their network/s. WP will provide a 66kV supply for at least the next 10 years, and until a major trigger occurs to upgrade to 132kV at MR results, we will remain at 66kV. We encourage Iluka and other large power users to start planning for an upgrade from 66kV to 132kV in the future and provide Western Power with visibility.
- Q **A new tee-off line from the 132kV is a relatively short line length should Westralian Sands upgrade in the future**

A Yes, it is, and as we get more detail, we can provide that information and ask that Iluka and others start planning for 132 kV conversion beyond the 10-year horizon or earlier.

Q **Will the 22kV network be retained?**

A Yes, the existing backup supply will be unaffected by the proposed reinforcement.

Q **Will Talison's supply line fit into the model with Picton and Kemerton line upgrades? Collie to Bridgetown is the important link for us.**

A These proposed works won't be dependent upon or impacted by upstream network or block loads. Picton is a relatively strong network already. Kemerton augmentation plans exist which involve transformer upgrades and other transmission line works to support these near-term connections.

Q **Solar supplement from a 1 or 2 MW commercial plant would have limited sale value if recharging the grid. Could we sell it directly to another customer using the WP network? A solar PV farm is not viable for us at current export tariff levels.**

A Yes, but not easily. Enabling Agreements would be needed and possibly go beyond just WP. Louise will provide a contact within WP to get a more complete or detailed answer.

ACTION: Louise Walker

Q **WP uses various standards and we are looking at building a line. Which standards should we use?**

A It depends on asset ownership over time. If handed over or retained by the builder, the standard will reflect their need.

If the asset was to be handed over to WP, we would use the relevant Australian Standard for line design that may have significant associated cost e.g. access to the line if damaged and may not be viable. There are no hidden standards and we are available to discuss this further via Charles Crew.

Q **Are these works to be contracted out and if so, will there be opportunities for local and smaller businesses to participate?**

A We are likely to have a mix of works done in-house or outsourced for design and for construction. Smaller items like wood pole upgrades may be done internally perhaps. Earthworks, civil works, new double circuit lines or sub-station would probably be contracted out.

It is too early to comment with regard to local business involvement with commercial processes to fulfil. We need ERA's approval before we contemplate that level of detail. Tenders will be public documents. Western Power has panels of contractors for outsourcing different types of work.

We will make local content provisions in our tender documentation.

Q **Will the construction costs be recovered from users with increased power costs?**

A The regulatory framework allows Western Power to recover a rate of return on the investments made. Our investments and asset base are funded by existing revenue streams. A regulatory submission would result the same as other asset streams with Treasury scrutiny.

Revenue and tariffs are important and reflect network attributes and costs over time. Over long term it will increase but less than a 66kV solution

Q **What voltage would result to Picton?**

A Currently, Picton is supplied at 132kV (and stepped down to 66kV) with multiple supplies from Muja, Kemerton and others. Over the long term, the 66kV assets will be retired and removed.

- Q What progress has been made with the Contestable Access Group (CAG)?**
- A A new 330kV/132kV terminal transformer and 132kV transmission line works from Kemerton is being considered, with combined customer support and funding needed to progress further.
- Q What is the timing of the BSN upgrade with solar PV issues commonly experienced with drop out and systems not operating?**
- A The reactive support (STATCOM & cap banks) project is the last project of planned stage 1, scheduled for completion in 2024 and subject to ERA approval. The STATCOM will address these voltage issues. In the meantime, operational measures are managing the over voltage risk in the interim.

Linton Pike invited participant comment on the proposed solution. The following feedback resulted:

- It is a sound strategic move to modernise and strengthen the electrical network backbone. The proposed solution seems appropriate;
- There is no major impact for Tronox – Picton and Kemerton bases. It seems a good future proof solution if viable with earlier funding attempts unsuccessful;
- Emergency services are keen to remain in the loop. It is good to see investment for future network reliability and growth proposed with DFES expanding to reflect growth areas;
- It is good to see infrastructure investment in regional areas;
- Local business opportunities resulting from the project would be welcome;
- There is good industry support but little residential user input.

Key considerations identified by participants include:

- Ensuring service continuity and access to the 66Kv network to the 10-year horizon;
- Network and supply reliability are critical in the interim and as a result of these works;
- Opportunities for smaller local businesses in the delivery process are needed;
- Impacts for solar arrays and local isolations for first respondents at risk of electrocution in an emergency should be considered.

4. ADDITIONAL COMMENT AND NEXT STEPS

The next steps include:

- Western Power welcomes public submissions until 5pm 28 February 2020;
- Submissions will be responded to within 10 business days;
- Submissions and responses will be made public as part of the ERA submission unless a request for confidentiality is made.

Please send your submissions to: Picton.South@westernpower.com.au

The workshop closed at 12:30pm

6.1.3 Attachment one

Agenda

Welcome and Housekeeping

Presenter: Linton Pike

Western Power – introduction and purpose of forum

Presenter: Charles Crew

Picton South network augmentation project

Presenter: Dyan Paskarina

Workshop discussion, questions, feedback and close out

Presenter: Workshop session facilitated by Linton Pike



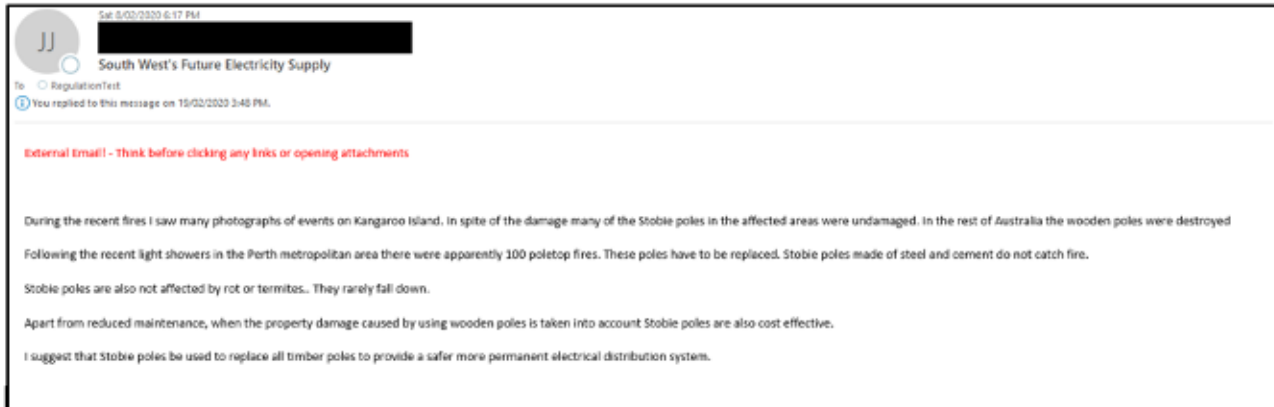
6.1.4 Attachment two

NAME	ORGANISATION
Gavin Harris	City of Bunbury
Sharon Upston	CME WA
Herman Vesser	Iluka Resources
Pat Scallan	Talison Lithium
Wayne Swanepoel	Community member
Mike Harwood	Iluka Resources
George Bell	Tronox
Andy Wright	DFES
Rob Ingram	DFES
Aaron Myles	Geographe Underground
Charles Crew	Western Power
Sam Ristovski	Western Power
Dyan Paskarina	Western Power
Louise Walker	Western Power
Linton Pike	Estill and Associates Pty Ltd (Facilitator)

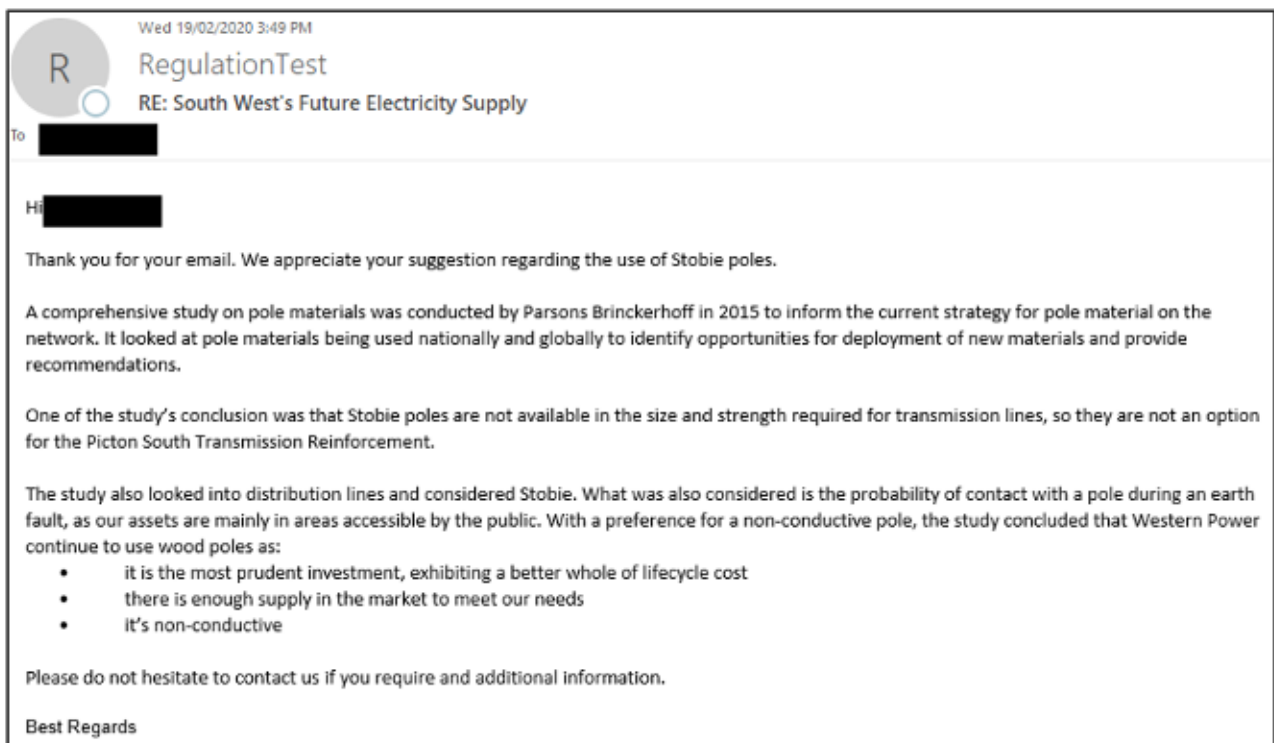
7. Appendix D - Submissions received

7.1 Community Resident

Received from: Community resident




Response to: Community resident




7.2 Geographe Underground

Received from: Geographe Underground

Wed 19/02/2020 1:07 PM

 [Redacted]

Powering the South West - Bunbury Forum

To:  RegulationTest

External Email! - Think before clicking any links or opening attachments

To whom it may concern

Please accept this email as thank you for the information provided at your recent Bunbury Forum.

It is reassuring to see that Western Power is investing in the South West Network.


GUS is a family owned business who operate as a Contractor to Western Power in the South West.

We welcome this investment in the network and look forward to any opportunities that it may provide for our services to be utilised to assist with the construction phase of the project.

Thanks and Regards

Response to: Geographe Underground

Fri 28/02/2020 12:25 PM

 RegulationTest

RE: Powering the South West - Bunbury Forum

To: [Redacted]

Cc: [Redacted]

Hi [Redacted]

Thank you for your email. Appreciate your time in attending the community forum and your support of our investment proposal.

Once the investment has been endorsed by the ERA and other relevant stakeholders, and is approved for construction by our Board of Directors, we will be approaching our panel of vendors for various services in due course.

Thanks and Regards

7.3 Shire of Dardanup

Received from: Shire of Dardanup

26 February 2020

Picton South Transmission Network Reinforcement
Grid Transformation
Western Power
GPO Box L921
PERTH WA 6842
EMAIL: picton.south@westernpower.com.au

To Whom It May Concern

RE: SUBMISSION – PICTON SOUTH TRANSMISSION NETWORK REINFORCEMENT


The securing of future power supplies in the South West region by Western Power is a serious consideration for the future growth of this region. We acknowledge that the Picton South transmission network reinforcement project is an important step in providing a continuous future supply.

Whilst we support in principle the network reinforcement project, our feedback is that Western Power should simultaneously consider alternative power supply for growth areas such as for Wanju and Waterloo Industrial Park and the South West region in general. For a more sustainable and cost effective extension of the existing Western Power network by 2024, micro-grids for distribution and a supporting green energy (battery/solar and hydrogen) should be considered as part of the Picton-South network reinforcement project. This should assist in extending the life cycle and capability of the existing network if it is augmented with alternative supply reducing the capital cost required for future upgrades beyond 2024.

We hope this will be seriously considered as part of the options analysis for the Picton South transmission network reinforcement project.

Response to: Shire of Dardanup

Tue 10/03/2020 12:18 PM

 RegulationTest
RE: Submission - Picton South Transmission Network Reinforcement

To [REDACTED]

Dear [REDACTED]

Thank you for you submission.

The Picton South major augmentation is primarily driven by deteriorating asset condition, with the bulk of the proposed augmentation works to address this. The proposed works focus on reinforcement south of Bunbury, through to Busselton. Based on the current network configuration, Wanju and the Waterloo Industrial Park are located north of Picton substation, and therefore fall outside of the Picton South reinforcement. Please note that Western Power has taken these new developments into consideration in the long term strategy for the greater Bunbury load area.

Western Power has considered a range of alternative (green) technologies in addressing the voltage capacity limitations in within the Picton South region, including Standalone Power Systems (SPS), battery systems and microgrid systems. However, these technologies do not alleviate the deteriorating asset conditions.

For the voltage capacity limitation driver, Western Power investigated multiple implementation options for battery systems, with cost estimates ranging between \$65M - \$80M for grid scale and distribution LV batteries. Although battery costs have reduced significantly, in comparison to the preferred STATCOM and capacitor bank solution (estimated at approximately \$15M), the cost is currently prohibitive.

As an overall option, Western Power has sufficient network based and existing large commercial loads which makes microgrids/batteries and SPS technically challenging and cost prohibitive at this stage.


Western Power continually evaluates new technologies as plans advance, and when they become more cost effective, they will be considered as an alternative.

Thanks and Regards

7.4 Alinta Energy


Received from: Alinta Energy

Tue 3/03/2020 5:56 PM

 [Redacted]

Picton South Network Augmentation

To: RegulationTest

 You replied to this message on 10/03/2020 12:32 PM.

External Email! - Think before clicking any links or opening attachments

Hello


With apologies for not getting in touch before the submission deadline, I was hoping to ask a few questions about Western Power's Picton South Regulatory Test submission, if possible.


Broadly, I'm hoping for more information to answer the question – 'who benefits and who pays for the proposed augmentation?'. As follows I'm seeking answers to the following questions, if possible:


- 1) At a high level how will the costs be distributed amongst transmission entry and exit customers; and distribution customers?
- 2) At a high level how will the costs be distributed amongst future access arrangements?

Many thanks

Response to: Alinta Energy

 RegulationTest
Tue 10/03/2020 12:32 PM
RE: Picton South Network Augmentation

To: 

Hello 

Thank you for your submission. In response to your queries, we are pleased to provide the following information:

If the Picton South Regulatory Test submission is approved by the Economic Regulation Authority (ERA), the revenue required to recover the total cost of these works will be added to the total revenue requirement that Western Power as a transmission and distribution network businesses can recover from customers for the use of these networks.

The ERA approves the "revenue requirement" as part of the regulatory determination process, or the Access Arrangement (AA). The ERA uses the building block method to determine the revenue requirement, which is calculated in the following way:

$$\text{Revenue requirement} = \text{opex} + \text{depreciation} + \text{tax} + (\text{WACC} \times \text{Regulatory Asset Base})$$

Regulatory Asset Base (RAB)

The RAB or capital base is the record of all assets on which Western Power can earn a return. The assets that comprise the RAB are grouped into different asset segments (transmission and distribution) and asset classes (transformers, poles, conductors etc) which have assumed economic lives. Recovery of the RAB occurs over time, meaning the rate we recover revenue from customers for network assets they use is determined by the assumed economic life of these network assets. As an example, if a transformer has an assumed economic life of 50 years and an AA covers a 5-year period, then the cost of this asset will be recovered over 10 AA's.

Transmission and distribution revenue requirements are set separately. Western Power will allocate the total costs of this project between transmission and distribution based on a direct allocation or indirect allocation. Direct allocation occurs where assets or costs are directly attributable to transmission or distribution activities. Indirect allocation occurs where assets or costs are not directly attributable. These costs are allocated to each business segment on causation basis.

At a high level, transmission customers pay for the portion of the transmission network they use, and distribution customers pay for the transmission network they use as well as for the distribution network costs.


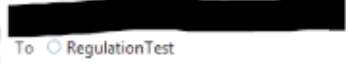
The methodology for this allocation is outlined in the Price List Information <https://www.erawa.com.au/cproot/20421/2/ERA-Approved---Appendix-F.6---2019-20-Price-List-Information.pdf>

Thanks and Regards

7.5 Late submission

Received from: Community resident (late submission)

Southwest's Future Electricity Supply

  To RegulationTest

Mon 9/03/2020 12:20 PM

[Reply](#) [Reply All](#) [Forward](#) [...](#)

[i](#) You forwarded this message on 10/03/2020 12:51 PM.

External Email! - Think before clicking any links or opening attachments

Dear All, (decision makers),

Thanks for the opportunity for some of the citizens to express their views in the South West's future electricity supply.

I am amazed and surprised of the deviation, the additional costs and the various stops and starts on the refurbishment of the old power station. The future of the South West rests on Collie's supply of electricity to the WA Public in the cheapest way possible. I am very much in favour of reduced emissions for the ozone layer but our Country makes minimal damage. China, India and the armies in the World are the ones that need to be observed and to reduce their emissions. There are many ways to improve our systems, by maintaining our best options of value. To reduce the costs of electricity is essential to many people and for the future of our citizens.

Eventually nuclear power supply should take over on the costs and the abundance of minerals that we are blessed to have in our Countries huge deposits.