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Integrated System Plan
Stakeholder Webinar
11 Feb 2020
• Our set up
• Ground rules
  • Please submit your questions via today's Sli.do
    • Grab your mobile device and head to www.sli.do and enter our event code # ISP
    • It's important to us to hear from you, so we'd like you to ask your own questions if you feel able.
    • Please include your name with your question and when appropriate we'll unmute you so you can ask it.
    • We'd like to hear from as many people as possible today, so it's important that you keep your questions short and direct.

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Welcome
Natasha Sinclair
Principal Analyst / ISP Stakeholder Engagement

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Consultation close dates:
- Draft 2020 ISP: 21 February 2020
- Non-network options for QNI medium/VNI west: 13 March 2020

Our timeline

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Objectives of today

- Provide an opportunity to ask questions and improve your understanding of the ISP process and outcomes
- Involve participants in the ISP process by requesting feedback and input to prioritisation of scope for the Final 2020 ISP

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<td>Strategic outcomes</td>
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<td>Meet the modellers</td>
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Introducing...the ISP
Managing risks, costs, and reliability in a world with large future uncertainty

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Key themes - replacement of retiring thermal generation and delivering policy

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Resource Outlook

Andrew Turley | Manager, Integrated Energy Systems
Resource Outlook

- What we heard from stakeholders?
  - Strong role for storages of various technologies, locations and storage depths
  - Balance of renewable energy technologies (wind and solar) to complement storage and network availability
  - Battery storage potential much stronger than initial projections
  - Cost uncertainty and resource availability may provide development challenges that need consideration

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REZ, Renewable Integration & Network

Elijah Pack | Manager National Planning
Chris Davies | Manager Future Energy Systems
Bianca Christison | Acting Principal Engineer
REZ, Renewable Integration & Network

• What we heard from stakeholders?
  • System strength analysis and costing is a priority
  • Other system security services, such as frequency control, operating reserves and fleet ramping requirements should be detailed
  • The outcomes from the Renewable Integration Studies (RIS) should be integrated into the ISP
  • Include more detailed analysis of how strategic placement of storage can be optimised to limit network build
  • Consider ways to stage REZ expansions

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REZ, Renewable Integration & Network

Large international power systems operating with high instantaneous penetrations of wind and solar generation, and Australian comparisons

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REZ, Renewable Integration & Network

NEM total generation and wind and solar PV generation 2019 (actual) and 2025 (central scenario)

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REZ, Renewable Integration & Network

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Prioritising further work
• Further validation of the plan through **detailed hourly simulations**
• Resilience to climate **change** – we will be including a chapter on this in the Final ISP
• Central West NSW REZ – other sensitivities with generation development in this zone
• Choice of **route selection** for VNI West
• In step change scenario, are we confident the **system is operable in 2040**?
• **Cost increases** on interconnectors or generators (capex generally)
• Projections of **Marginal Loss Factors (MLFs)**

Prioritisation for final ISP
Q&A

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To help us going forward...

We’d like to get your thoughts on today's session

• Head here on your tablet or mobile device and leave us some feedback

Feedback
bit.ly/379GkAd
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Next steps

- Jul 18 – Feb 19: Presentations of 2018 ISP, planning for 2020 ISP
- Feb 19 – Aug 19: Consultation on scenarios, inputs and assumptions
- Dec 19: Draft 2020 ISP published
- Dec 19 – Mar 20: Consultation on draft ISP and non-network options
- Jun 20: Final 2020 ISP published

Jul 19 – Nov 19: Modelling for Draft 2020 ISP

Jan 20 – May 20: Modelling for Final 2020 ISP
Thank you!