

Renewable energy development and further Bass Strait interconnection: What's in it for Tasmania?



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Tasmanian Chamber of Commerce and Industry
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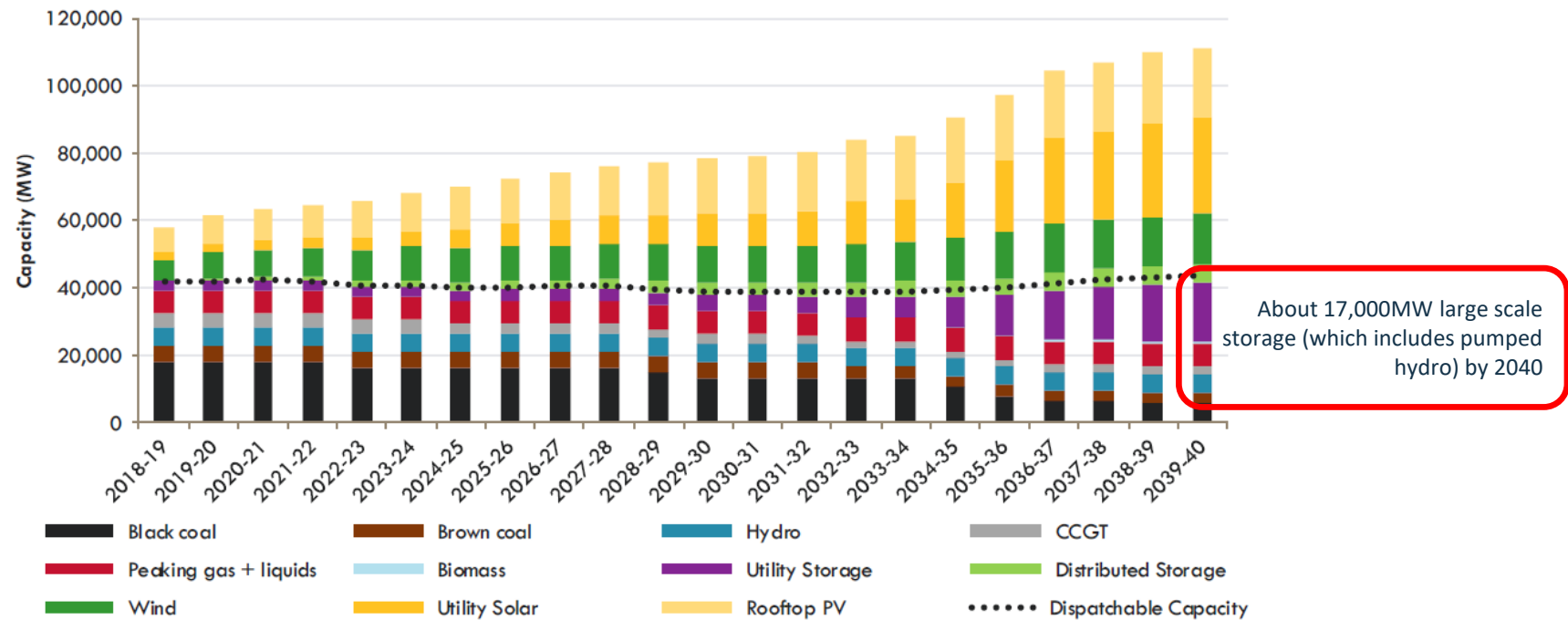


Why are we looking at this?

Our national energy challenge

Australia's energy market is undergoing a significant transformation. This presents a significant opportunity for Tasmania.

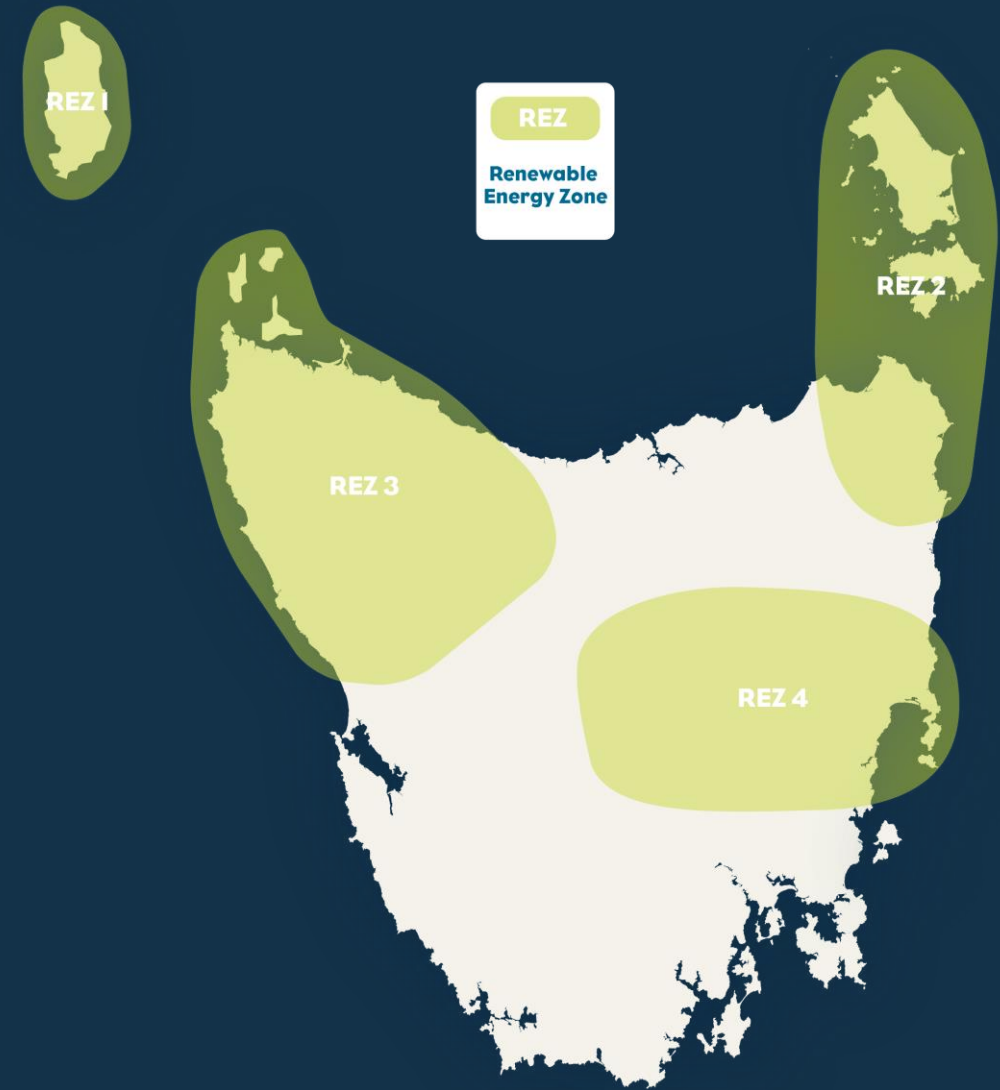
Figure 9 Forecast NEM generation capacity in the Neutral case



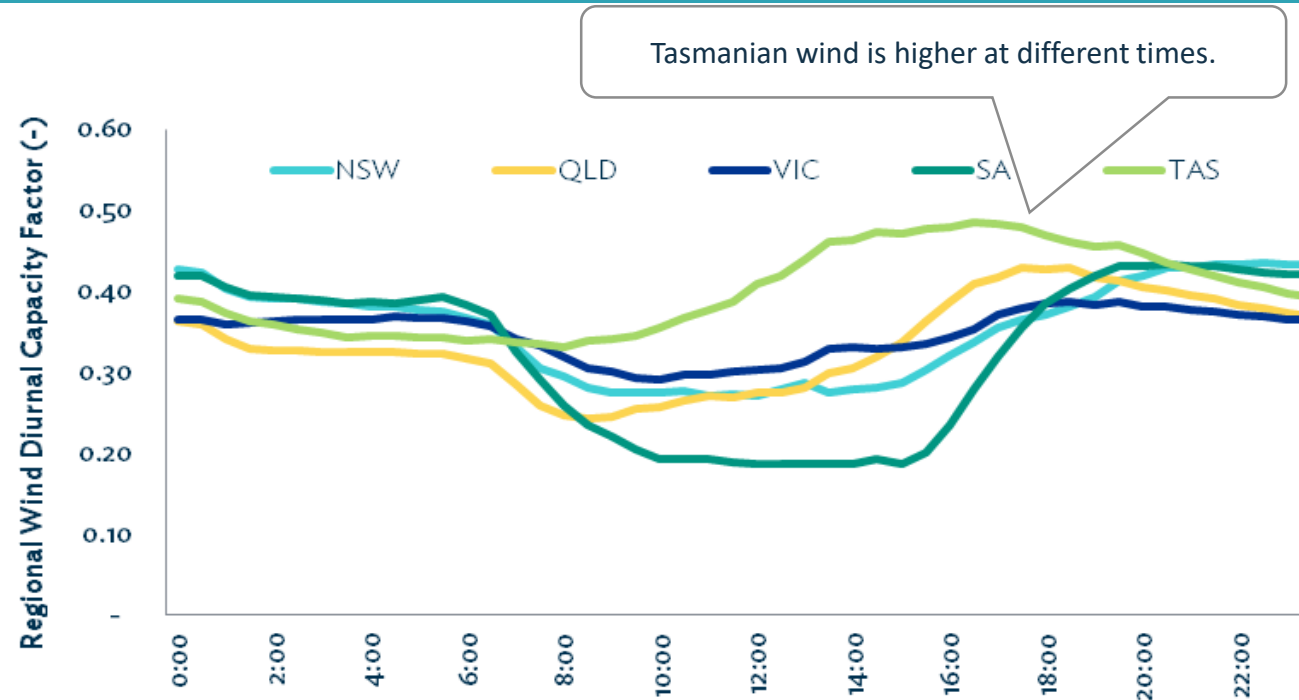
³⁶ Dispatchable capacity in this context refers to generation that is not intermittent, and can theoretically be operated at any level on demand. This includes thermal plant (coal and gas), hydro-electric, biomass, and storage (including the assumed portion of distributed storage that is aggregated). It excludes variable renewable generation – solar and wind generation.

Tasmania's competitive advantage:

- Renewable generation potential (eg. hydro, solar and wind) including high quality, undeveloped wind resources
- A well-established hydropower system with cost competitive pumped hydro energy storage opportunities – 1000s of MW
- Usage patterns that complement the rest of Australia (peak usage in winter rather than summer)
- Generation patterns that complement the rest of Australia



What we've found – significant wind potential



Natural diversity in Tasmanian wind

- High quality and diverse wind resources in Tasmania
- 1000s MW of undeveloped wind generation potential
- Value strengthened by the low correlation between Tasmanian wind resources and those on mainland Australia.

What is pumped hydro?



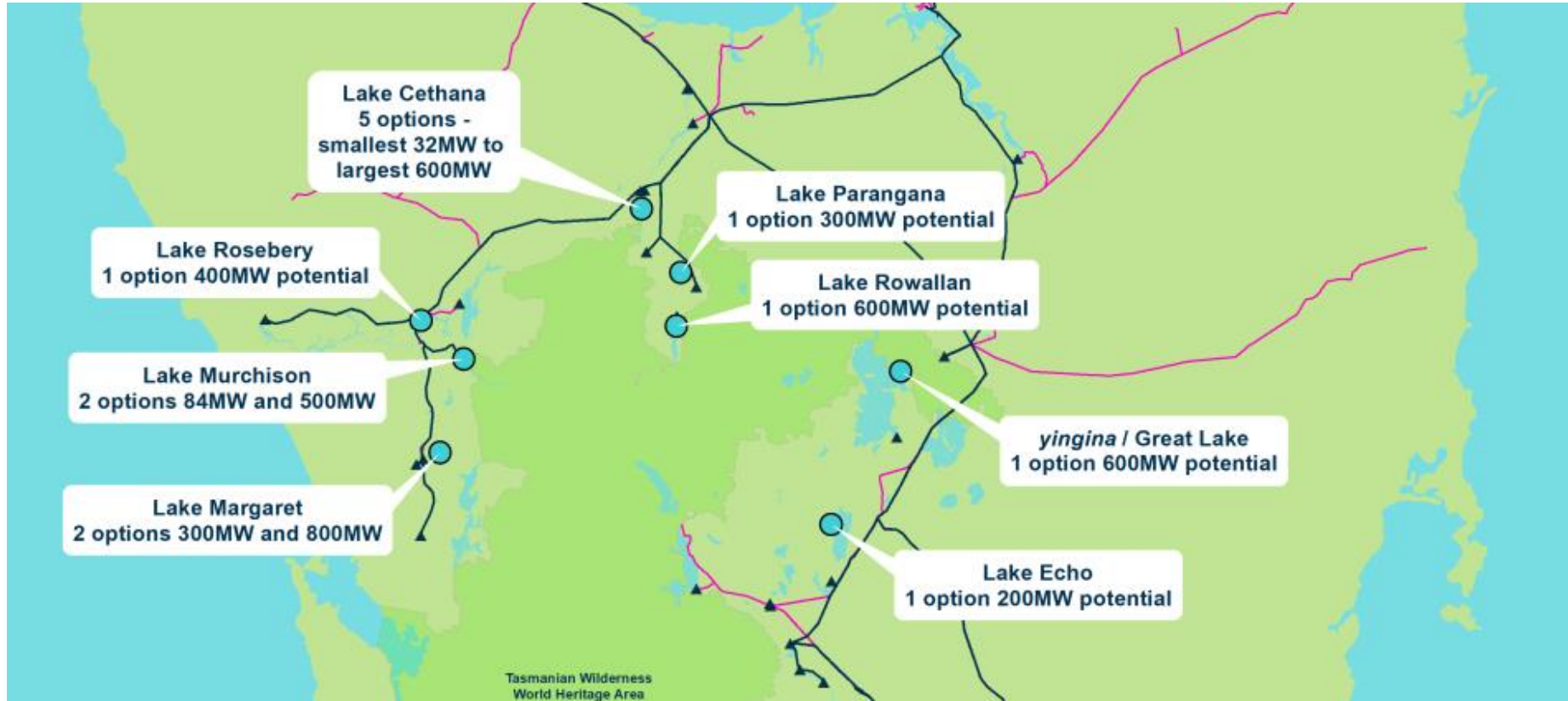
Pumped hydro captures and stores water in two places, with a steep drop in between. Water can be pumped uphill to re-use for power generation again and again.

When the wind blows and the sun shines, but people aren't using much power, excess wind and solar power is available to pump water back up into storage.

At other times, when the wind and sunlight aren't generating enough power to meet demand, the pumped hydropower system swings into action and makes up the shortfall.

The whole system works together like a giant renewable battery – providing the storage, reliability and flexibility that wind and solar can't offer on their own.

What we've found – pumped hydro potential



Significant pumped hydro potential

- ✓ Target: ~ 2500 MW
- ✓ Cost to construct: most are \$1.05 - \$1.5M / MW



PROJECT **MARINUS**



What is Project Marinus?

- Investigating further Bass Strait interconnection
 - Infrastructure Australia priority initiative
 - Australian Energy Market Operator's (AEMO's) Integrated System Plan (ISP) medium term development (mid 2020s)
- \$20M joint TasNetworks and Australian Renewable Energy Agency (ARENA) project
- Technical and environmental assessment, with cost benefit analysis
- Build a social licence and explore funding and ownership models



What is an interconnector?

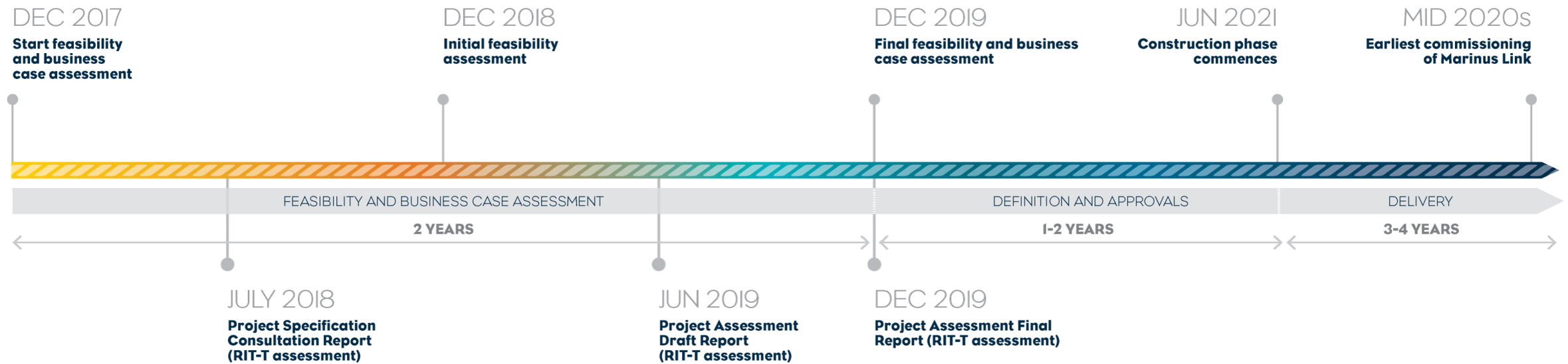
- Enables electricity to be transmitted from one region to another
- Allows electricity to be traded between regions
- Allows a diverse range of generation to flow efficiently to where it is needed
- Can run overland or undersea or both

Potential route options

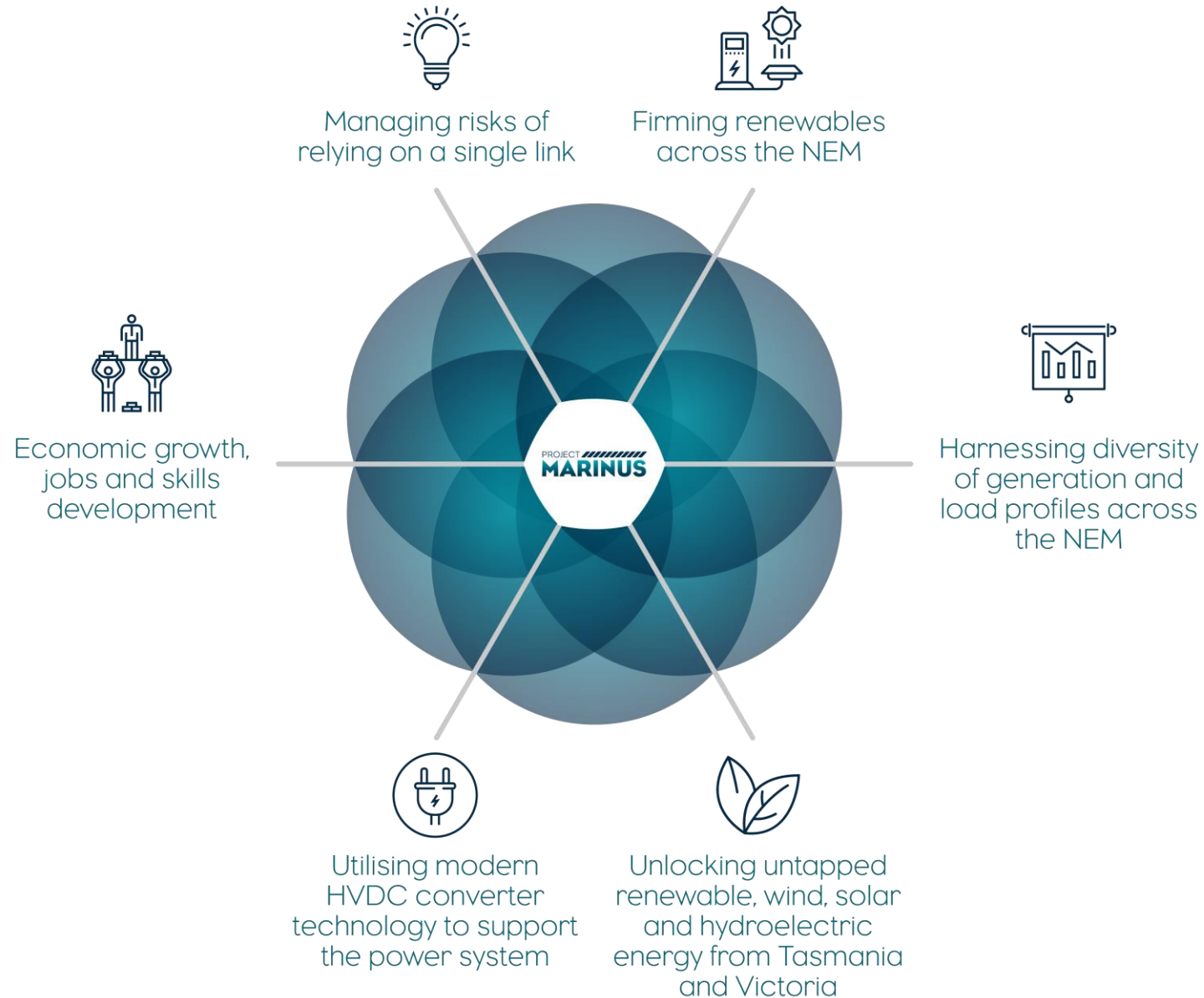
- Various Marinus Link capabilities: 600-1200 MW; potential for more links down the track
- Cost per link: ranging from approx. \$1.4 Billion to \$2.7 Billion (including contingency, DC cable link costs & on-land network upgrades)
- Modern high voltage direct current (HVDC) = flexible technology and enhanced performance
- 3–4 years construction time to build once approved and financed



Working timeline



The benefits of Marinus Link are clear



What could the future look like?

- Economic growth and long-term pipeline of large investment in regional areas of Tasmania
- Possible \$5+ billion of investment in hydropower, wind, solar and electricity transmission development
- Significant ongoing job creation and skills development opportunities in Tasmania, in construction and ongoing operations
- Improved security of supply
- Increased access to new sources of renewable energy supply



Let's talk investment!

- Tasmania could have \$billions of investment in hydropower, wind, solar and electricity transmission development.
- An example...

600MW pumped hydro development
@
\$1.5M to construct

= \$900M investment for ONE site



Let's talk jobs!

Up to 300 people could be employed for one pumped hydro project

- Design
- Engineering
- Project management
- Civil construction
- Trade skills – electrical, mechanical
- Transport

+ ongoing operations and maintenance



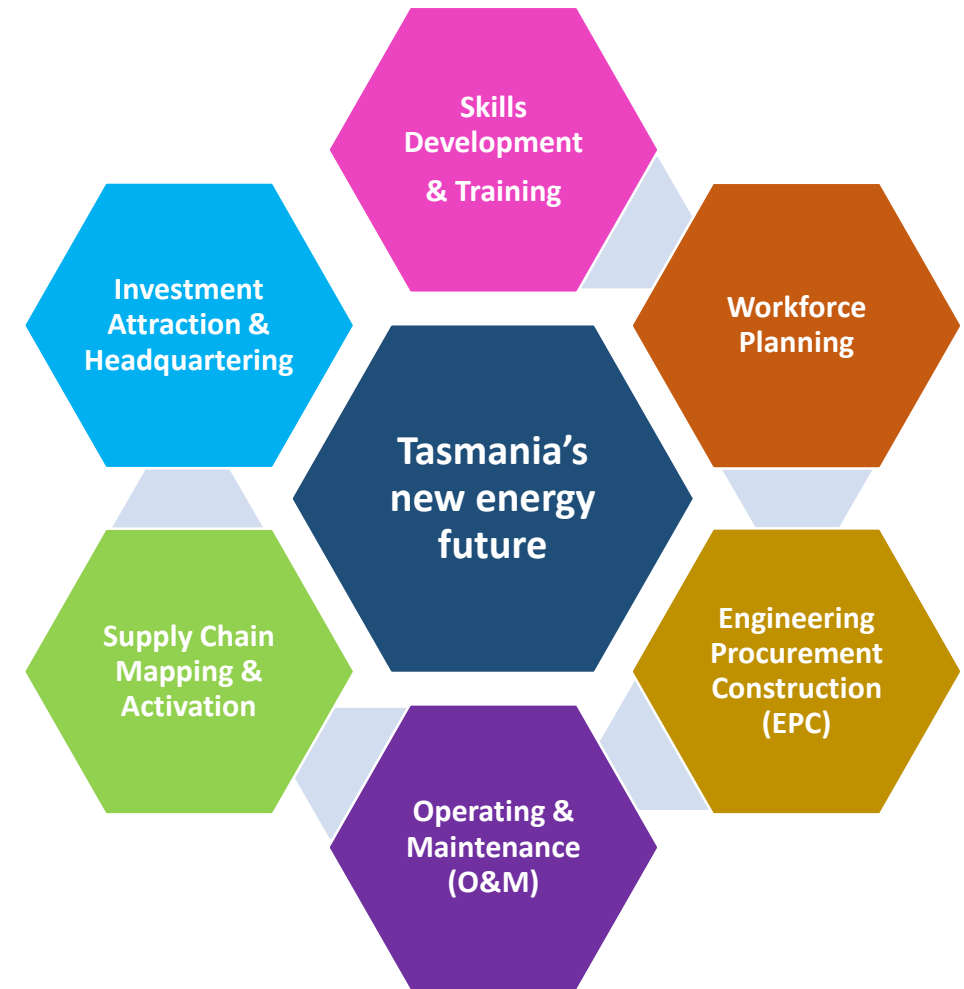
Let's talk local business!

- Civil engineering and construction
- Mechanical fabrication and manufacturing
- Machining shop facilities
- Specialist consulting
- Industrial electrical system manufacture
- Surveying
- Facilities and logistics
- Transport
- Earthworks and tunnelling
- Plant hire
- Cement manufacturing
- Ports and shipping facilities



Unlocking the skills, jobs and supply chains of the future

- A new energy future = an opportunity to grow skills, workforce, supply chains, infrastructure and services into the future.
- Collective leadership, co-design and entrepreneurialism to position Tasmania as an international leader in the delivery of low cost, reliable and clean energy.
- Coordinated and collaborative approach to leverage skills and resources across sectors to harness the collective capability, capacity and ambition of communities across Tasmania.



Key challenges in the next phase

- Collaboration and cooperation, within Tasmania, but also nationally
- Agreement on national energy policy
- The successful co-existence of private and public interest
- Stakeholder management





Image courtesy of Sean Scott

PROJECT 
MARINUS



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