



# FUTURE READY™

## Case Study



# ENERGYCONNECT

## PROJECT OVERVIEW

To support the growth of renewable energy in Australia, Transgrid, and ElectraNet have partnered to deliver EnergyConnect, an energy infrastructure project that involves the construction of a new 900-kilometres electricity transmission line with approximately 800MW transfer capacity.

The electricity transmission line runs between the power grids of three states – New South Wales (NSW), South Australia (SA), and Victoria, and will enable energy to be transported from future renewable sites within the South-West Renewable Energy Zone (REZ). These are areas of high energy resource potential where strategic transmission infrastructure upgrades can connect multiple projects at lower cost.

The project's goal is to establish an essential component of the Australian Energy Market Operator's Integrated Systems Plan. The interconnector will run from Robertstown in SA, to Wagga Wagga in NSW, with an additional connection to Red Cliffs in North-West Victoria (as shown below). Supporting infrastructure will also be built or upgraded, including a new substation between Buronga and Wagga Wagga.

WSP was engaged by Transgrid to deliver the environmental assessment and planning approval components of the project in NSW (the Western Section and Eastern Section) and Victoria. The NSW-Western Section includes works between the NSW/SA border, Transgrid's existing substation at Buronga, and the NSW/Victorian border near Monak. The NSW-Eastern Section of the project comprises around 540km of new transmission line infrastructure and supporting substation construction and upgrades between Wagga Wagga and Buronga.

Given its complexity, WSP didn't shy away from the monumental challenge presented by EnergyConnect's sheer size and scale. Instead, the project was separated into four separate planning approvals and our experts tackled the challenge head-on by calling on multi-disciplinary specialists from our offices across Australia to provide innovative advice. WSP's role focused on achieving environmental sustainability and minimising environmental impacts, leveraging technology, and delivering value to society for decades to come. Our team incorporated a Future Ready mindset to deliver a more renewable and socially responsible project that sets a new standard of sustainable infrastructure development in Australia.



## WHAT FUTURE TRENDS DID WE CONSIDER?

Net Zero & Beyond	A Networked World
Indigenous Influence	Energy Transition

## HOW DID WE CONSIDER THESE TRENDS?

### Climate



#### Net Zero & Beyond

EnergyConnect spans hundreds of kilometres across state boundaries and presented numerous environmental challenges that required careful consideration. WSP's ecological experts conducted detailed biodiversity assessments to determine the project's potential impact on Australia's biodiversity. The team identified necessary mitigation measures (including identification of areas of particular species avoidance and alignment changes where necessary) for both the NSW Environmental Impact Statement's (EIS) and Victorian planning approvals.

To gain a full understanding of the local area, we undertook extensive assessments over 18 months, taking into account the seasonal fluctuations of flora and fauna species. The results of these studies guided the final corridor alignment and assessment process for both the NSW (Western) and NSW (Eastern) projects, and provided a detailed understanding of threatened or endangered areas to avoid during subsequent stages of the project.

WSP's attention to detail and commitment to sustainability set a very high standard for project delivery. We developed a biodiversity offset package that provided an enduring conservation outcome within both the local and regional areas and aligned with our commitment to sustainability and climate action.

### Society



#### Indigenous Influence

WSP recognises that as Australia's social, economic, and environmental landscape continues to evolve, it has become increasingly important to involve Indigenous knowledge holders and traditional custodians of Country in shaping the future. We collaborated with our Indigenous Specialist Services to engage in extensive consultation, site surveys, and a large-scale test excavation program. This enabled us to implement measures to minimise the impact of the project on sacred cultural sites.

By prioritising community engagement and cultural sensitivity, we advanced the energy transition while creating a respectful outcome for society at large. Moreover, our team engaged with regulatory stakeholders at the local, state, and federal government levels throughout the project, ensuring relevant laws and regulations were complied with at every step.

### Technology



#### A Networked World

WSP approached this project uniquely by integrating technology, innovative thinking, and a multi-disciplinary approach at every stage of the process. In the initial stages of the project, we used digital mapping to assist in identifying the most appropriate route for the project that will have the of least amount of impact from both an environmental, social, and technical perspective. We also digitised the two NSW component EIS's by utilising an Online Community Portal to streamline the process and enhance stakeholder engagement. The platform provided instantaneous access for the community and stakeholders to provide formal comment on the project.

By embedding technological solutions into the project, WSP was able to facilitate Future Ready conversations between in-house and external specialist teams in a range of areas, including:

- Biodiversity
- Social impact assessment
- Traffic, transport and access
- Air quality
- Noise and vibration
- Contaminated land management
- Hydrology
- Flooding and surface water
- Groundwater
- Aboriginal and non-Aboriginal heritage
- Landscape and visual
- Agricultural lands
- Bushfire hazard
- Economic assessment

### Resources



#### The Energy Transition

The imperative to decarbonise our energy sector has led to an accelerating transition to renewable energy sources. EnergyConnect is a crucial part of Australia's energy transition to a more sustainable and low-carbon world. The project not only meets the requirements for the connection of the identified REZs but will also enable the integration of renewable energy sources with grid stability and reliability for decades to come.

WSP understands the need to accelerate the shift towards renewable energy sources such as wind and solar power. EnergyConnect is enabling the energy transition by creating a pathway for renewable projects to connect to the grid and supply new energy to the network. In turn, this will help to reduce reliance on fossil fuels, lower greenhouse gas emissions, and support Australia's climate goals. Importantly, the project is a significant step towards a more sustainable and resilient energy system that can meet the needs of consumers while protecting the environment.

## HOW WAS OUR APPROACH BETTER?

WSP's multi-disciplinary approach, utilisation of technology, and Future Ready thinking enabled us to overcome the unique challenges posed by the projects scale and complexity. By providing expertise on the ground, we were able to deliver tailored solutions that mitigated location-based challenges for our client. WSP worked effectively and efficiently to undertake the required environmental assessments required for the project and to progress the project through the complex and multi-jurisdictional planning approvals.

We customised an online mapping platform to provide stakeholders with an interactive and real-time source of information throughout the project's development phases. This tool was further developed and used as part of the Online Community Portal, allowing for broader community and other stakeholders to have reliable access to information. Further, our transmissions team provided customised advice on functionality, cost, and constructability aspects for key aspects of the projects design solution.

Overall, our innovative approach enabled us to comprehensively collaborate and deliver a strong and integrated solution to the Transgrid team.



Proposed Transmission Line

## THE OUTCOMES

The EnergyConnect project is a significant step towards a more sustainable and resilient energy future for Australia. The project will drive competition in the wholesale electricity market and connect Australians with more renewable energy for the future. The project abates ongoing carbon emissions each year and is a significant contribution to meeting the country's climate change targets.

EnergyConnect delivers the infrastructure required to support the renewable evolution by connecting the energy grids of NSW, SA, and Victoria. These connections will expand the wholesale electricity market across the three states, meaning increased reliability and security of electricity supply and lower power bills. In addition to its environmental benefits, the project delivers a range of direct benefits to consumers in all three states, including improved energy security and increased economic activity.

Additional benefits include:

- The creation of approximately 1,700 new construction jobs in SA and NSW.
- NSW households will save \$180 million a year on energy bills. Typical residential electricity bills are estimated to be reduced annually by \$100 in SA while businesses can expect higher savings.
- Income increases in regions hosting the interconnector infrastructure by \$163 million in SA and \$209 million in NSW.
- The development of new renewable projects at connection points and facilitating the growth of associated industries.
- The improvement to the security, reliability, and resilience of the power network in SA and NSW.

### Contact

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### WSP Australia Pty Ltd

 **Our Offices**  
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### About us

WSP is one of the world's leading engineering professional services consulting firms, bringing together approximately 6,000 talented people across 14 offices in Australia. We are technical experts who design and provide strategic advice on sustainable solutions and engineer **Future Ready™** projects that will help societies grow for lifetimes to come.

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