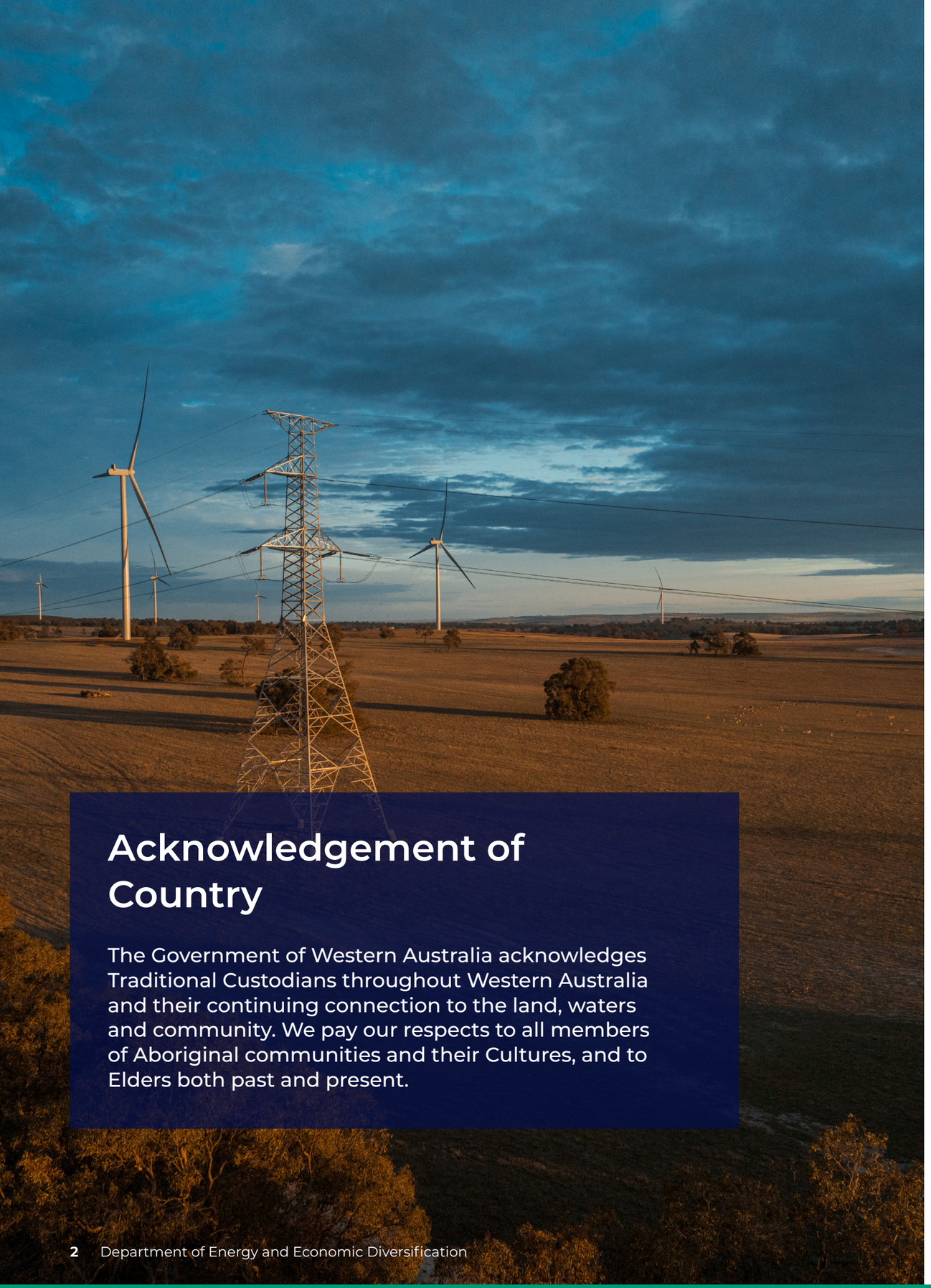
GOVERNMENT OF WESTERN AUSTRALIA

Department of
Energy and Economic Diversification

South West Interconnected System Transmission Plan

Powering our State's Future

September 2025



Acknowledgement of Country

The Government of Western Australia acknowledges Traditional Custodians throughout Western Australia and their continuing connection to the land, waters and community. We pay our respects to all members of Aboriginal communities and their Cultures, and to Elders both past and present.

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Minister’s Foreword

Our State’s largest energy system, the South West Interconnected System (SWIS), is changing as we move towards a clean energy future for all.

To meet our decarbonisation commitments and build a stronger, more diversified and resilient economy, we’re advancing our vision to make Western Australia a renewable energy powerhouse. From mining the critical minerals needed to develop battery energy storage systems, to progressing the Made in WA plan and manufacturing the transmission infrastructure required to connect new wind and solar projects, this marks one of the most significant economic, infrastructure and energy transformations in our State’s history.

Ultimately, it will mean a decarbonised energy system delivering clean, cost-competitive energy to Western Australian households and businesses - powering industries that underpin our State’s economic prosperity for generations to come.

New and upgraded transmission infrastructure is essential to the energy transition. With the phase-out of all State-owned coal generation by 2030, the continued integration of households’ distributed renewables, and the emergence of new industries driving economic diversification, it is time to reimagine how Western Power’s network will continue to support our prosperity - now, and into the future.

The South West Interconnected System Transmission Plan (the Plan) sets out the State Government’s vision for the transmission network in the SWIS, along with the immediate and future projects needed to make it a reality.

We’ve taken our long-term vision for the SWIS and mapped the transmission needed to deliver it. We have aligned our plans to connect new renewable energy generation with the economic opportunity set in the Made in WA plan and Diversify WA framework, prioritising the delivery of clean electricity to our Strategic Industrial Areas (SIAs).

The result is exciting. It is the transmission backbone that will support the phased transition away from coal generation, drive the decarbonisation and electrification of existing industries, and provide the certainty industry needs to invest in the new sectors that will diversify and strengthen our State’s economy. From expanding network capacity in the Perth metropolitan area and strengthening local infrastructure in regional communities, to powering SIAs and driving our economic growth, the Plan presents a strategically designed, future-ready vision for WA’s main transmission network.

The Cook Government looks forward to continuing to work together with Western Australian communities and industries to deliver on this Plan, building a modern and decarbonised electricity network and powering our State’s future.

Hon Amber-Jade Sanderson MLA

Minister for Energy and Decarbonisation; Manufacturing; Skills and TAFE; Pilbara

Executive Summary

The Plan outlines the State Government’s strategic priorities for the SWIS and defines the network development necessary to realise it.

It builds on the Whole of System Plan 2020, the South West Interconnected System Demand Assessment, and the 2024 South West Interconnected System Transmission Planning Update. Energy Policy WA (EPWA), with support from Western Power, has led the development of this document.

The SWIS is undergoing a period of significant change, transitioning from a system reliant on fossil fuel generation to one centred on clean, renewable energy, firmed by grid-scale batteries and gas generation.

There are world class renewable energy resources, capable of generating clean energy at scale, spread throughout the footprint of the SWIS. Underpinning the successful transition to replace coal with this clean energy by 2030 will be an enhanced, expanded and robust transmission network. New transmission lines will connect diverse renewable profiles, gas generation, and energy storage capacity to the grid to grow the supply of clean energy and maintain system security and reliability. At the same time, network augmentation is required to connect new and expanded industrial loads as WA’s economy grows.

This Plan outlines the infrastructure development required to navigate the current phase of the transition and beyond. It aligns the future transmission build with the requirements of industry, population growth, decarbonisation goals and emissions reduction, and the State Government’s economic growth and diversification agenda. Each phase of infrastructure development delivers against these priorities. At the same time, it outlines a responsible approach to development, avoiding over or under investment in the network to balance energy security and reliability without burdening the State with unnecessary expenditure that could increase costs for the State and network users.

WA’s energy transition is driven by pragmatism - a commitment to economic growth, affordable electricity, and system security and reliability. The transmission build outlined in the Plan is a key enabler, but the State Government also recognises that households have a vital role to play in the energy transition in the SWIS through the uptake of distributed energy resources and their integration into the broader power system.

By 2030, 50 per cent of homes in the SWIS footprint will have rooftop solar installed. Furthermore, the Western Australian Residential Battery Scheme will support around 100,000 new batteries in our State, kickstarting widespread adoption of the technology. Project Jupiter, supported through funding from the Australian Renewable Energy Agency, will set the foundations for integrating these resources into the power system through virtual power plants, maximising their impact.

The State Government will continue to work to deliver the transition in the SWIS through a combination of technologies and frameworks - building out the transmission network required to connect new large-scale renewable generation and storage projects while also utilising consumer-driven energy resources and new, household level technologies. Together, this will deliver an energy transformation that benefits all Western Australians.

Part One: Connecting Possibility and The Need for Transmission Investment

Western Australia's Energy Transition

The energy transition is a global, fundamental shift in the way electricity is generated and how energy systems function. Western Australia's own energy transition is one of the single most significant infrastructure and economic transformations in the State's history.

The transition to affordable, reliable, and low emissions energy is essential to ensuring WA's environment, businesses, and communities continue to thrive. The energy sector is the key to driving the economic growth that will secure the long-term prosperity of the State - and a fit-for-purpose transmission network is a crucial enabler for this.

WA has already made considerable progress toward a low emissions energy future.

In 2024-25, renewable energy accounted for 39 per cent of the electricity used on the SWIS - around three times the amount in 2016. This growth in renewable penetration has been driven by the rapid uptake of rooftop solar over the last decade and the connection of new, large-scale renewable generation and storage projects like the Warradarge Wind Farm, Flat Rocks Wind Farm, Cunderdin Hybrid Solar-Battery Project and Kwinana Battery Energy Storage Systems. On 19 November 2024, the SWIS achieved a record 85.1 per cent renewable penetration.

This milestone attracted global attention and highlighted the pace and potential of the transition already underway.

In addition to increasing renewable penetration, energy storage capacity on the SWIS has grown significantly. By the end of 2025, the SWIS will host almost 1.5 gigawatt (GW) of grid-scale battery storage capacity, mostly in Kwinana and Collie.

These battery energy storage systems play an important firming role within the system by allowing excess solar energy generated during the middle of the day to be stored and released during the evening peak in demand. Anticipated growth in the uptake of household batteries, driven by the WA Household Battery Rebate Scheme and coordinated through virtual power plants, will increase storage capacity on the SWIS and enhance our ability to maximise the utilisation of solar energy generated.

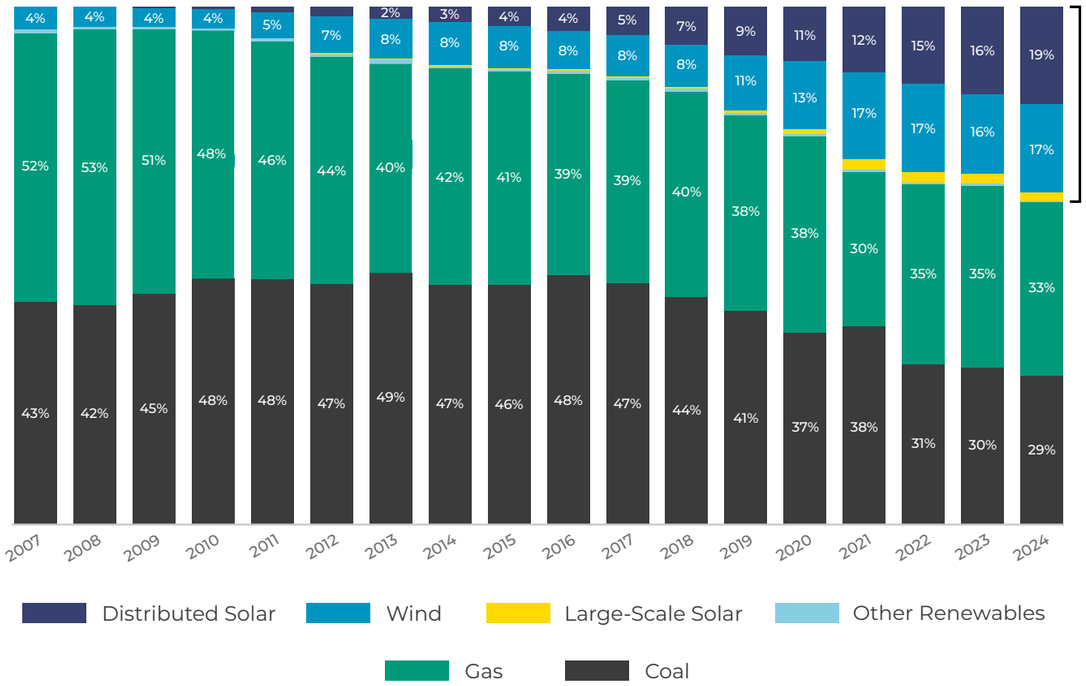
More generation will be needed to support the energy transition, and the State Government is transforming the transmission network in the SWIS to facilitate this outcome. The Government has already invested over $1.6 billion in transmission infrastructure expansion and enhancement, including $584 million in the most recent State Budget. Western Power has commenced construction on Clean Energy Link – North, which expands and enhances the network in the north of the SWIS. However, more transmission augmentation, supported by further investment, is required to realise the vision of Western Australia as a renewable energy powerhouse.

The Plan sets out a blueprint for the infrastructure development required to deliver WA's renewable energy transition.

Informed by extensive modelling and system planning efforts over several years, along with dialogue with key industry stakeholders, this document lays out a realistic, responsible blueprint for the development of the Western Power transmission network for the next decade and beyond.

SWIS generation output (%) by calendar year and fuel

38 per cent of energy on the SWIS was renewable in 2024 ▼



Delivering a Responsible Transmission Build

Western Power's transmission network is a key enabler for WA's decarbonisation and economic diversification ambitions.

The Plan outlines the network augmentation required to deliver the WA Government's ambitious agenda while ensuring that investment occurs responsibly. Each phase of development is staged to support the delivery of one or more of the Government's priorities – facilitating new generation connections as coal is retired from the system, meeting growth in underlying demand, supporting new industrial load connections and electrification, SIA activation, and powering emerging green industries. Three phases of development allow for increasing levels of optionality, creating the flexibility required to respond to changing circumstances over time.

The Plan is designed to ensure that Western Australia possesses the right transmission infrastructure, in the right place, at the right time. Inherently, near-term demand growth and project progress are better understood than the factors which will influence post-2030 system demand. Acknowledging the need for urgent, targeted investment, Phase One of the Plan presents a least-cost development pathway designed to ensure that the SWIS will meet the requirements of our population and industry through to 2030.

Beyond Phase One, the Plan remains agile and responsive to emerging and changing network requirements. By outlining future infrastructure investments that will be triggered by peak demand forecasts, Government priorities and input from industry, the Plan remains flexible while delivering a realistic and achievable framework for the future of the SWIS.

Construction of transmission infrastructure can take between 5 to 10 years depending on the level of build complexity and requirements to undertake significant planning, community engagement and development approvals, with industry relying upon clear signals from Government as the first mover to stage project development. To ensure that the SWIS will remain fit-for-purpose into the future, action is required today. Accordingly, Western Power is progressing scoping and planning works to ensure it remains responsive to industry and power system needs. On the other hand, over-investment could result in unnecessary costs for the State and network users. To balance these considerations, the Plan provides a clear near-term investment pathway which evolves to monitor targeted demand signals to ensure that investment occurs when and where it is most needed.

Beyond Coal: A Cleaner, More Sustainable Energy System

The transition in the SWIS is now approaching a critical phase in the lead up to retirement of all State-owned coal-fired generation by 2030. The phase out of coal generation is essential to meeting the target of Net Zero by 2050 and is a cornerstone of the Government's decarbonisation agenda.

Decarbonisation is not the only imperative – the coal retirements are also being driven by practical, operational and economic realities.

Household solar has grown from supplying just 3 per cent of total energy on the SWIS in 2014 to nearly 20 per cent in 2024. Within the SWIS footprint, 41 per cent of households now have rooftop solar installed, and that figure is expected to rise to 50 per cent by 2030.

This has shifted demand and generation patterns on the SWIS, lowering daytime wholesale prices and fundamentally changing coal's role within the system. The State's coal generation assets are increasingly being utilised to provide firming capacity, where output is reduced during the middle of the day as rooftop and large-scale solar generation delivers an abundance of cheaper, cleaner energy to the grid.

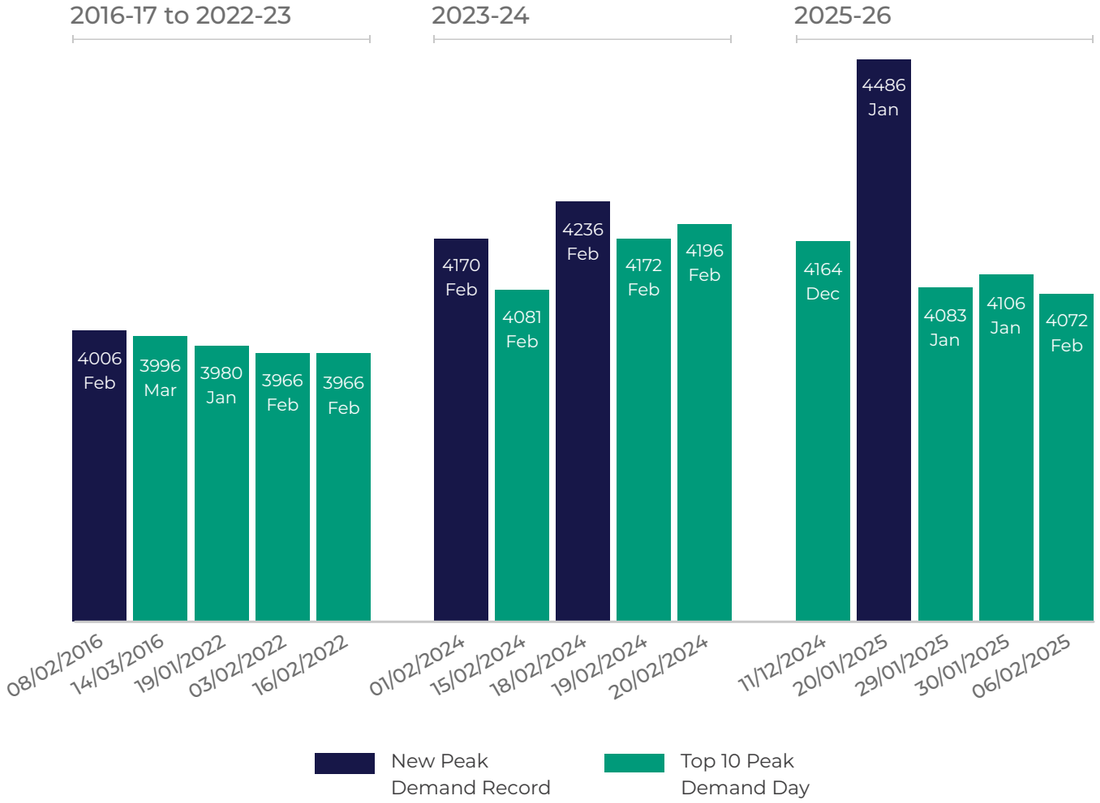
Economic and System Security Considerations are Driving the Retirement of Coal

Muja D and Collie Power Stations - the two main State-owned coal generation assets on the SWIS - began their operational lives in 1985 and 1999, respectively. Both were designed to act as a consistent and firm source of generation. Because of this, they are inflexible, slow to ramp up and down, and are poorly suited to the dynamic demand and supply fluctuations of a system increasingly underpinned by intermittent renewable generation. This has contributed to increased operational costs - with regular ramping stressing already aged infrastructure. At the same time, the quality and availability of coal mined in Collie is falling, further raising costs. These factors mean coal will no longer be a dependable or economic means of generation for the SWIS in the future. Modelling shows that the least-cost generation mix required to replace coal is a mix of renewable energy and gas generation, supported by energy storage systems and demand-side programs.

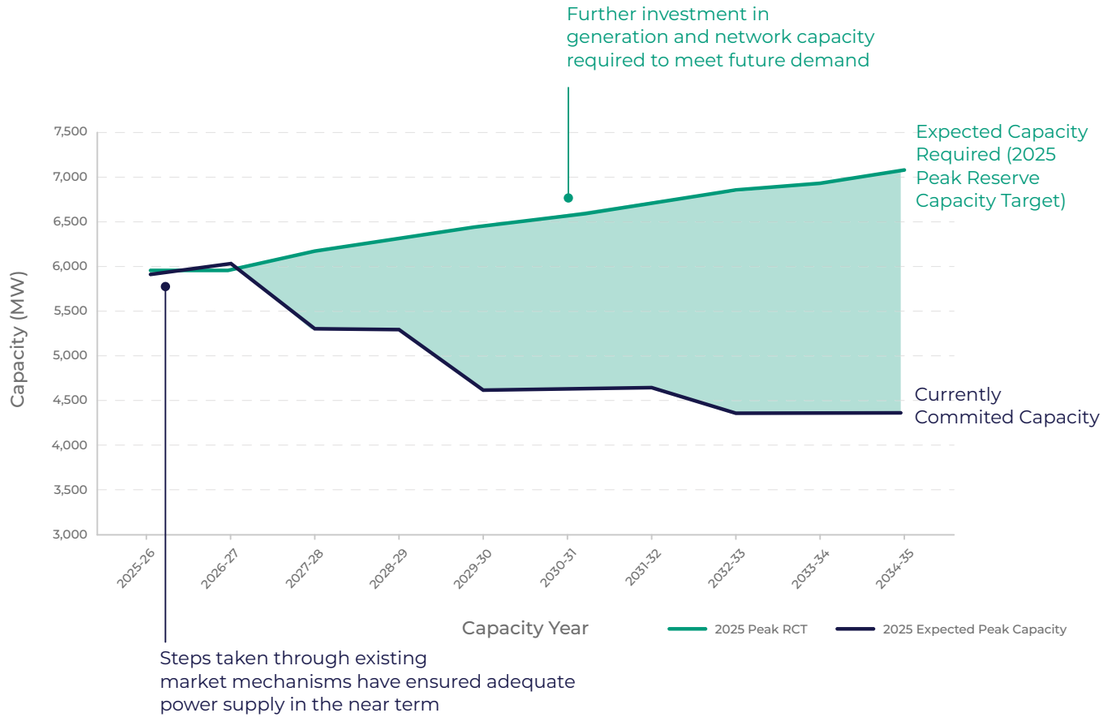
The retirement of coal generation will create an opportunity for new investment in generation capacity to maintain system security and reliability. This will be required to meet rapidly growing electricity demand, driven by WA's increasing industry and population, hotter summers and the increased use of appliances like household air conditioners. Wholesale Electricity Market data shows that the top ten peak demand periods on the SWIS have occurred over the last two years, with four of those events occurring over the 2024-2025 summer period. A record high of 4,484 megawatt (MW) occurred on 20 January 2025. The Australian Energy Market Operator (AEMO) anticipates this demand growth will continue, with the 2025 Wholesale Electricity Market Electricity Statement of Opportunities forecasting peak demand for the 2025-26 summer season at 4,734 MW.

The opportunities are clear. Replacing coal with renewable generation will facilitate a lower-emissions generation mix and increase the supply of cost-competitive clean energy on the SWIS. The exit of coal generation is a significant step toward the target of Net Zero by 2050 and is a crucial step towards decarbonising WA's main electricity system. These opportunities can unlock transformative economic growth - and expanding Western Power's transmission network is key to enabling the investment required to seize this opportunity.

Top 5 Peak SWIS Demand Days



New Investment Opportunities in Generation Capacity as Coal Retires



As regional and global markets look to reduce emissions and secure critical resources, WA's combination of renewable potential, mineral wealth and strategic location, underpinned by clean and affordable energy, offers a foundation for long-term leadership in sustainable industry.

At the same time, the retirement of coal presents challenges around maintaining system security and energy reliability. Coal accounted for 29 per cent of the energy used on the SWIS in 2024. While this is significantly lower than ten years prior - when it provided 47 per cent of energy on the grid - coal still makes a substantial contribution to the supply of energy in the SWIS.

Regulatory reform, new and existing gas generation assets and battery storage systems all have a role in meeting the challenges associated with the retirement of coal. However, new renewable energy generation is ultimately key to replacing the generation capacity lost as coal is phased out of the system. There are renewable energy resources – high-quality winds and sunlight capable of generating clean energy at scale - spread across the SWIS. Unlocking these resources and ensuring the geographic diversity of renewable generation needed to support reliability requires significant transmission augmentation. Additionally, new transmission will also connect gas generation and energy storage projects - crucial to stabilising the grid as renewable penetration continues to grow.

The scale and pace of the required transmission build demands a coordinated response. By clearly communicating the timelines and approach to the build through the Plan, the State Government seeks to enhance clarity and confidence for investors in new renewable generation projects, with the aim of facilitating project progression in parallel to transmission development. This is a critical part of ensuring that the projects required to offset the generation capacity shortfall from the coal phase-out and meet rising demand are delivered in a timely manner.

Over time, renewable energy penetration will increase, with renewable energy projects supported by storage and efficient, flexible gas generation to advance the Government's decarbonisation agenda. This will provide the energy WA needs to develop a more diverse, more resilient economy.

Transmission and Renewable Diversity: Key Enablers for Reliability

Wind profiles vary by location, season, and time of day. By spreading wind farms over a large geographical area and accessing a variety of distinct wind profiles, the availability of renewable energy at any one time on the grid can be maximised. As renewable penetration grows, this diversity becomes more important, with greater diversity facilitating a more reliable and secure system.

Transmission is a key enabler for improving the geographic diversity of renewable generation in the SWIS. By building new transmission links in the south west and east of the network, and expanding and enhancing infrastructure to the north, the potential of the wind resources in each of these regions can be unlocked – delivering a more reliable and secure energy system.

WA's Pathway to Becoming a Renewable Energy Powerhouse

Since 2019, Western Australia has been the top performing economy in the country, contributing roughly a fifth of total Gross Domestic Product despite making up just over 10 per cent of the national population.

The State Government is building on this success, fostering a more diverse and more resilient economy through the Diversify WA framework and the Made in WA plan.

Made in WA

The Made in WA plan outlines the investments and policies that will keep WA at the forefront of global market shifts, driving a more diverse and more resilient State economy. This includes training, industry support and infrastructure for local manufacturing, renewable energy and job-creating industries.

Diversify WA

As WA transitions away from carbon-intensive power sources, investment in a diverse range of industries will ensure a strong and resilient economy. The Diversify WA framework outlines the Government's approach to economic diversification and key priority sectors, such as energy and critical minerals. The Plan will unlock growth in these sectors, including through the development and activation of SIAs.

The expansion of existing industries and the emergence of new green sectors depends on the availability of fit-for-purpose, investment-ready land. Because of this, strategic and priority industrial areas are important components of the Made in WA plan and Diversify WA framework.

Six of the State's 13 SIAs, along with the priority Coolangatta Industrial Estate, sit within the SWIS footprint. A substantial portion of the SIA project pipeline is concentrated in these areas – meaning that these locations collectively support the development of some of WA's most vital industries, underpinning the Government's economic growth and diversification agenda.

The Government is already investing in activating SIAs across the State, delivering common use-enabling infrastructure including transport links, communications systems and water connections. Importantly, the $1 billion Strategic Industries Fund was established

to support continued activation of Western Australia's industrial areas, through the acquisition of industrial land, the provision of enabling infrastructure and the case management of industry proponents.

Existing network capacity in several strategic and priority industrial areas within the SWIS is currently insufficient to meet the demand of potential future loads. This means transmission infrastructure, including new generation connections and local upgrades around these SIAs, will be a critical enabler for the industrial developments required to deliver a more diverse and resilient State economy. The Plan has identified additional strategic transmission infrastructure upgrades for the Western Trade Coast, Coolangatta Industrial Estate and Kemerton SIA to connect new or growing industrial loads.

The Plan outlines the initial network upgrades required to connect new gas generation capacity and industrial loads in Kwinana SIA. It also outlines the delivery of a new terminal and transmission infrastructure, which will unlock significant load capacity in the Western Trade Coast, enabling mineral processing and ship building operations. The Plan also maps out the augmentation required to unlock new industry operations in Kemerton SIA and provides the blueprint for the transmission build needed to activate green steel and other green industry operations on the Coolangatta Industrial Estate, a crucial component to support the Collie Just Transition.

Made in WA: Local Content in the Transmission Build

The Made in WA plan includes a suite of initiatives to enhance Western Australia's manufacturing capabilities, including support for locally made transmission components.

As part of the Made in WA plan, the WA Government is investing $75 million to support transmission manufacturing in Picton, Forrestfield and more broadly. The proposed Picton facility will serve as the anchor tenant of the Advanced Manufacturing and Technology Hub (AMTECH) demonstrating a clear commitment to the development of an advanced industrial ecosystem in the region.

The transmission build outlined in the Plan will form part of a broader pipeline of demand for locally made and supported energy infrastructure across the State, securing local jobs and developing capability to ensure the State can manufacture strategically important energy infrastructure for the decades ahead.

Part Two: Western Power's Clean Energy Link Program

Background

The State Government, Western Power and AEMO have undertaken a suite of complementary consultation and modelling exercises to determine the future generation and network requirements of the SWIS.

Prior to 2025, these exercises produced findings that were outlined within the Whole of System Plan (WOSP), the SWIS Demand Assessment (SWISDA), and the SWIS Transmission Planning Update (TxIP2024).

The WOSP, released in October 2020, presented a 20-year outlook for the SWIS. Developed by EPWA in collaboration with AEMO and Western Power, the WOSP highlighted the need for transmission upgrades to support the evolving energy mix on the SWIS, while ensuring system reliability. The SWISDA was published in May 2023, presenting an assessment of likely future demand as well as a broad analysis of the network, generation and storage infrastructure that would be required to support anticipated future demand at the lowest total system cost.

In late 2023, industry signalled its commitment to delivering generation capacity and outlined expected energy demands through a Registration of Interest (ROI) initiative run by EPWA and Western Power. This process garnered substantial engagement, with 45 proponents submitting proposals for 143 grid-connected projects.

These projects were a mix of potential generation and load connections.

The results of the ROI formed a key input into establishing TxIP2024, jointly developed by Western Power and EPWA and informed by least-cost system modelling, leveraging the existing modelling framework established for the SWISDA. The TxIP2024 outlined the potential transmission projects now known as the Clean Energy Link program, and reaffirmed the commitment to the Clean Energy Link – North project. Western Power was funded $324 million in the 2024-25 State Budget to develop the Clean Energy Link program and has been actively undertaking scoping and planning activities since that time.

Throughout these exercises least-cost system modelling continues to show that transmission investment is required to enable the connection of wind, solar, storage and gas generation.

Developing the Plan

The development of Western Power's Clean Energy Link program is the result of an iterative modelling and consultation process. Western Power and EPWA have continued to update demand projections and refine modelling processes over time, ensuring that the impacts, benefits, risks and limitations of the Clean Energy Link program are considered from a range of scenarios.

Key inputs into the modelling and planning processes came from project proponents, which in turn informed the development of the Plan. Western Power, under their Critical Projects Framework, conducts regular meetings with proponents. Since its establishment in July 2024, PoweringWA has also engaged with proponents regularly to understand projects and identify key blockages to delivery.

Demand Growth Forecasts

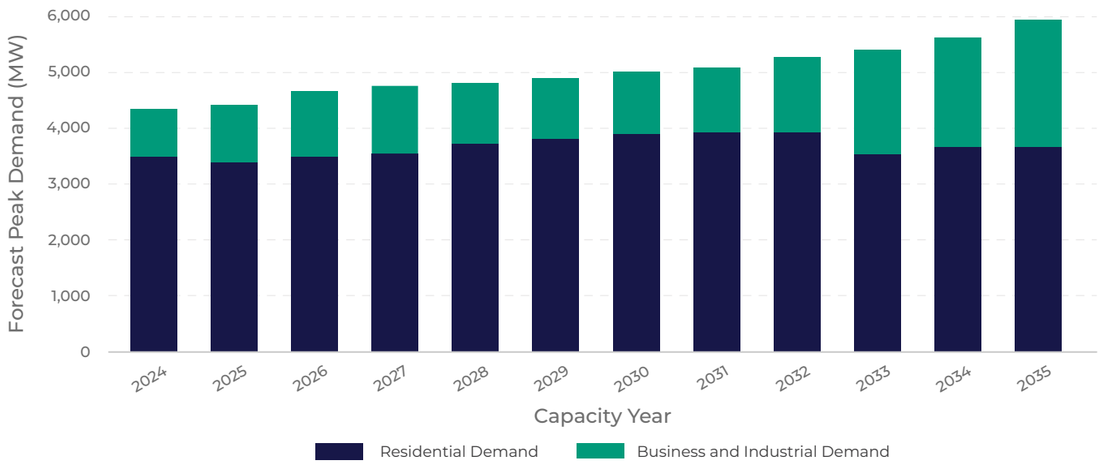
EPWA has worked with Western Power, the previous Department of Jobs, Tourism, Science and Innovation (now part of the Department of Energy and Economic Diversification) and other key stakeholders to develop a shared understanding of future demand and supply in the SWIS.

While demand growth forecasts are broadly aligned with AEMO's Wholesale Electricity Market Electricity Statement of Opportunities (WEM ESOO) 2025 forecasts over the next 10 years, there are some additional loads related to industrial activation captured in this work.

These reflect the State Government's economic growth and diversification priorities. The demand forecast informing medium-term development of the Plan has operational peak demand rising to 5 GW by 2030 and 5.9 GW by 2035. This has informed the identification of Phase One network investments.

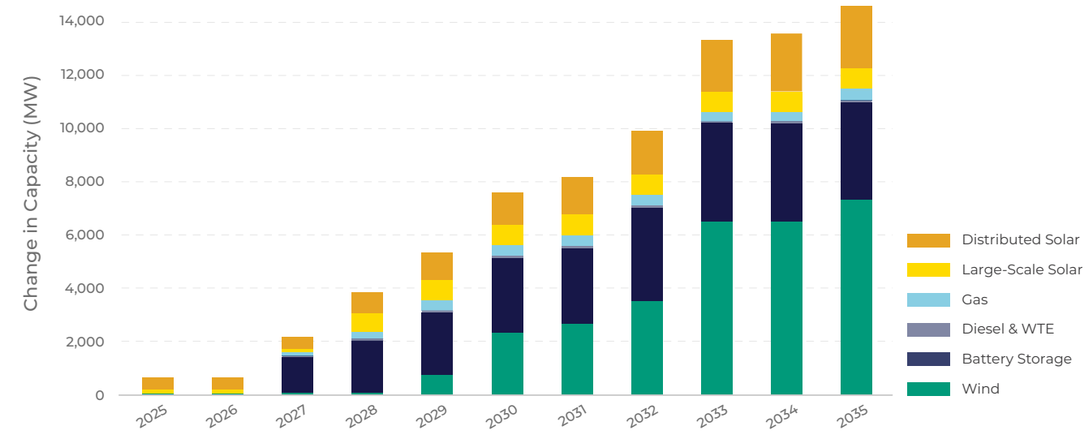
Industry expansion is driving peak demand growth, with residential and small business growth muted by the expected continued uptake in DER and increasing levels of orchestration through virtual power plants to manage peak demand impacts.

Forecast Peak Demand



A pipeline of credible projects under development in the SWIS that could be supported by the transmission investments outlined in the Plan is presented below. In practice, developments outside of this snapshot are likely to be identified over time in response to market signals and processes like the WEM ESOO and Western Power's Network Opportunities Map. The below generation capacity outcomes provide a snapshot that describes the potential scale of investment and opportunity, some committed projects were not included for the below modelling extract. The capacity mix present in future years will continue to evolve in response to actual new entrant capacity volume and type, retiring capacity, demand growth and policy direction.

Potential Project Pipeline and Cumulative Change in Capacity



Reliability Modelling

Reliability modelling considered committed projects from the 2024 WEM ESOO and tested different supply mixes to understand the reliability-driven requirement for transmission augmentation. This work has been informed by analysis of practical in-service dates for new transmission and ongoing engagement with new generation proponents and will support future decisions on transmission investment.

Reliability outcomes will continue to be assessed through the WEM ESOO, as generation projects progress in parallel with transmission network upgrades.

Least-cost Energy System Modelling

Least-cost energy system modelling indicates that renewable generation, firmed by battery storage and gas generation, is the most efficient way to replace energy produced by coal generation while also supporting future demand growth. Analysis also indicates that large-scale solar generation could play a significant role in the future generation mix of the SWIS, driven by the decline in the cost of battery storage and solar generation outlined in the CSIRO's GenCost 2024-25 report. Given this, hybrid solar generation-battery storage projects may also play a greater role in the future of the SWIS compared to what is shown above. The need for significant new generation capacity underscores the fundamental need for expansion and enhancement of the transmission network in the SWIS regardless of the future renewable energy generation mix.

Gas generation can firm renewables, maintain reliability and provide essential system services. Currently, there is around 3.1 GW of registered gas generation in the SWIS. The future extent of the role of gas on the SWIS will be shaped by the connection of new wind and solar generation projects. It is foreseeable that gas-fired generation will play a complementary role to other generation technologies and demand side programs over the long-term.

Least-cost system modelling shows that additional gas generation capacity does not remove the need for substantial renewable generation capacity on the grid as additional renewable generation capacity displaces gas generation when available. However, reliability modelling shows that some new gas generation capacity will be necessary to maintain system reliability even as renewable generation capacity grows. There are limited locations in the SWIS that have access to both gas supply and the transmission network. The Plan outlines the transmission augmentation required to improve network access in areas where access to the gas network is also present, including the Mid West, Neerabup and Kwinana.

Customer Collaboration Approach: Critical Projects Framework

Western Power's Major Customer Connection Process (MCCP) guides a Connection Application from initial enquiry to Access Offer, underpinned by the Applications and Queueing Policy independently approved by the Economic Regulation Authority. Together, they aim to ensure an equitable, transparent, and efficient process for assessing Connection Applications and issuing access offers, supporting economically efficient, non-discriminatory access to the network.

Historically, applications have been treated on a 'first-in, first-out' basis. However, this approach is no longer fit for purpose due to the significant volume of applications and the need for timely connection of large-scale renewable applications, particularly those linked to the retirement of coal-fired power stations.

To improve the Connection Application process, Western Power introduced the Critical Project Framework in May 2024, issuing the relevant guidelines to both customers with active projects, and the wider industry. The Critical Projects Framework seeks to address 'dormant' connections that block progress for projects that are ready, willing, and able to reach an Access Offer.

Under the Framework, Western Power and applicants work to understand project and network needs in order to identify those projects that are connection ready. Each enquiry must include evidence that specific criteria are met at each phase, which also improves the accuracy of regional demand and generation forecasts that support effective network planning.

The Framework plays a key role in qualifying projects with Western Power working closely with customers throughout the connection process to identify appropriate network connection options and technical solutions, ensuring that grid connection demand is evidence-based, informing network planning and supporting business cases for Clean Energy Link project development.

Planning Assessment Studies

To assess the real-world impact of Clean Energy Link projects on network planning and operation, Western Power has undertaken a high-level planning assessment that builds on the least-cost system modelling underpinning TxIP2024. It has overlayed updated and more detailed Clean Energy Link project information resulting from the planning and scoping activities of the past 12 months. It also focuses on the potential Clean Energy Link project triggers and sequencing. Complimentary system reliability studies undertaken by EPWA have then been used to inform the project triggers to ensure sufficient transmission infrastructure will be in place to support the necessary generation supply outcomes.

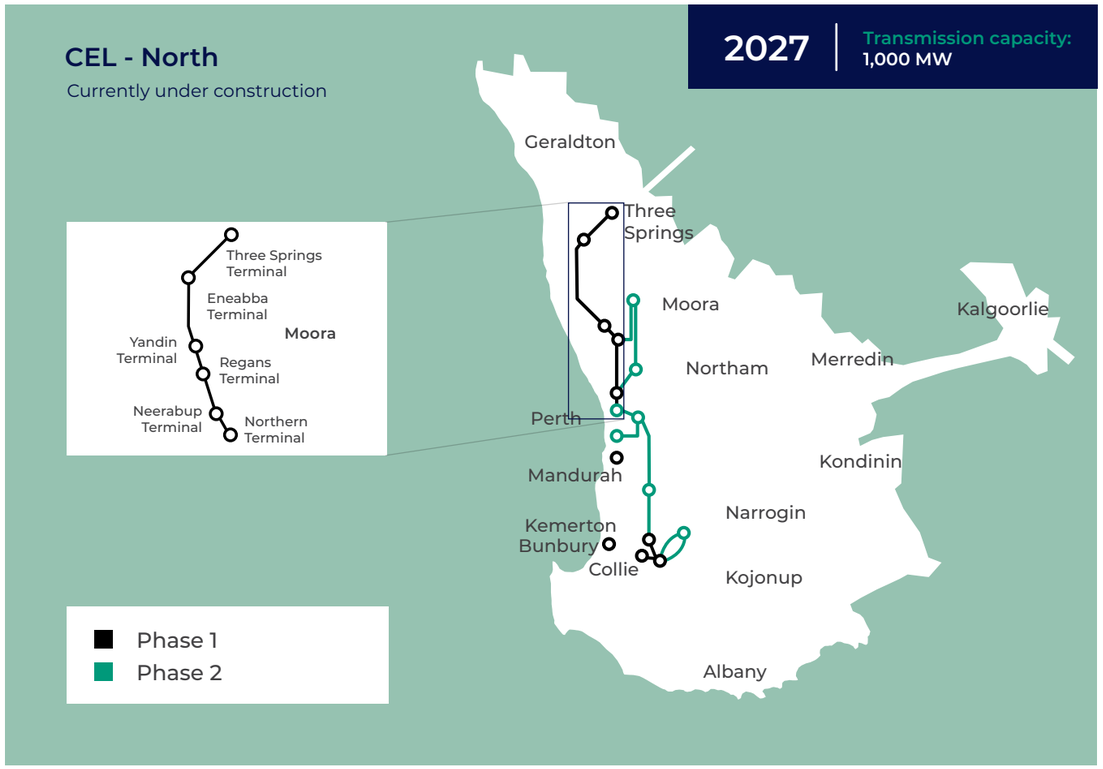
The Plan uses a trigger of ~500 MW demand increments roughly aligned to the associated capacity of generation connected by each Clean Energy Link project. In some cases, the removal of existing network constraints in regions separate to the connecting generation are also required to ensure sufficient energy can flow through the existing network to support the diverse generation locations supplying load in the SWIS.

Transfer capacity is estimated using load flow simulations on the SWIS transmission network model. Each nominated boundary between key nodes on the SWIS is stress-tested to find the limit for which power can be sent across the boundary via application of single credible contingencies, to determine the worst-case network situation. This method approximates a network state, accounting for how power flows on the network are maintained within acceptable limits by AEMO's Wholesale Electricity Market Dispatch Engine. Limiting factors are generally transmission line thermal ratings and steady-state voltage levels on the network. A high-level summary of the process for each boundary is provided below:

- Importing node tuned to realistic minimum generation dispatch and forecast maximum system load;
- Exporting node tuned to maximum generation dispatch; and
- Iterative process to determine the transfer limit. Contingencies are applied to test network thermal/ voltage; reference generation/load is then added at the exporting/importing nodes respectively (if required).

Commitments to Date

The State Government has invested over $1.6 billion in expanding and enhancing the SWIS transmission network over the last several years. In mid-2025, Western Power commenced construction on Clean Energy Link – North. Supported by over $1.2 billion in funding, including an allocation of $584 million at the 2025-26 State Budget, the project is strengthening the transmission network through Perth's northern suburbs and beyond. It will upgrade the current mix of 132 kilovolt and 330 kV lines in the northern part of the SWIS network, including upgrading the existing transmission line between Neerabup and Three Springs to 330 kV to support the connection of future renewable generation projects, de-constrain existing generation and facilitate industrial loads in the Mid West.



Phase One 2025-2030: Facilitating Coal Retirement and Meeting Growing Industrial Demand

The increase in capacity from these upgrades will allow up to 1 GW of additional generation to connect to the north of the network. Works to enhance Western Power's existing terminal at Regans Ford, with a new 330 kV substation, will grow network capacity by a further 400 MW. These projects will remove current constraints on 400 MW of existing wind generation projects. The generation unlocked by this enhanced capacity is a critical enabler for the planned retirement of State-owned coal generation assets. Existing and new wind, solar, and gas generation projects, including the Warradarge Wind Farm Stage 2 Expansion Project, will benefit from these capacity upgrades. The transfer of this additional capacity to the metro will be enhanced by new lines between Neerabup and Perth's northern suburbs. This will also unlock additional transfer capacity in the Neerabup region, improving total capacity between metropolitan Perth and Neerabup.

The Minister for Energy and Decarbonisation has supported the timely progression of these projects through determinations naming Clean Energy Link – North and Regans Reinforcement as 'priority projects' under the Electricity Networks Access Code 2004. Priority project determinations assist in streamlining regulatory approvals and are anticipated to support delivery of future CEL projects, where appropriate.

Western Power expects Clean Energy Link - North to be operational and in-service by December 2027.

Alongside Clean Energy Link - North, Western Power is committed to delivering other transmission network reinforcements and improvements in coming years, including upgrades to existing transmission lines in the Southwest (around Mandurah, Pinjarra, Kemerton, Picton and Busselton) to increase their transfer capacity by approximately 160 MW by October 2027. More information on connection opportunities on the existing parts of the SWIS will be outlined in the Network Opportunities Map, planned to be released later in 2025.

Additionally, Western Power is unlocking more transfer capacity in its existing network by rolling out dynamic line ratings (DLR) in the Perth metropolitan area. DLR will allow Western Power to more accurately assess the thermal capacity of its network in real time, rather than relying on conservative assumptions and worst-case scenarios of environmental conditions. By continuously monitoring the environmental factors that influence the network's performance (such as temperature, wind speed and solar radiation) and adjusting network operations accordingly, this innovation will allow Western Power to unlock approximately a 10 per cent increase in overall transfer capacity.

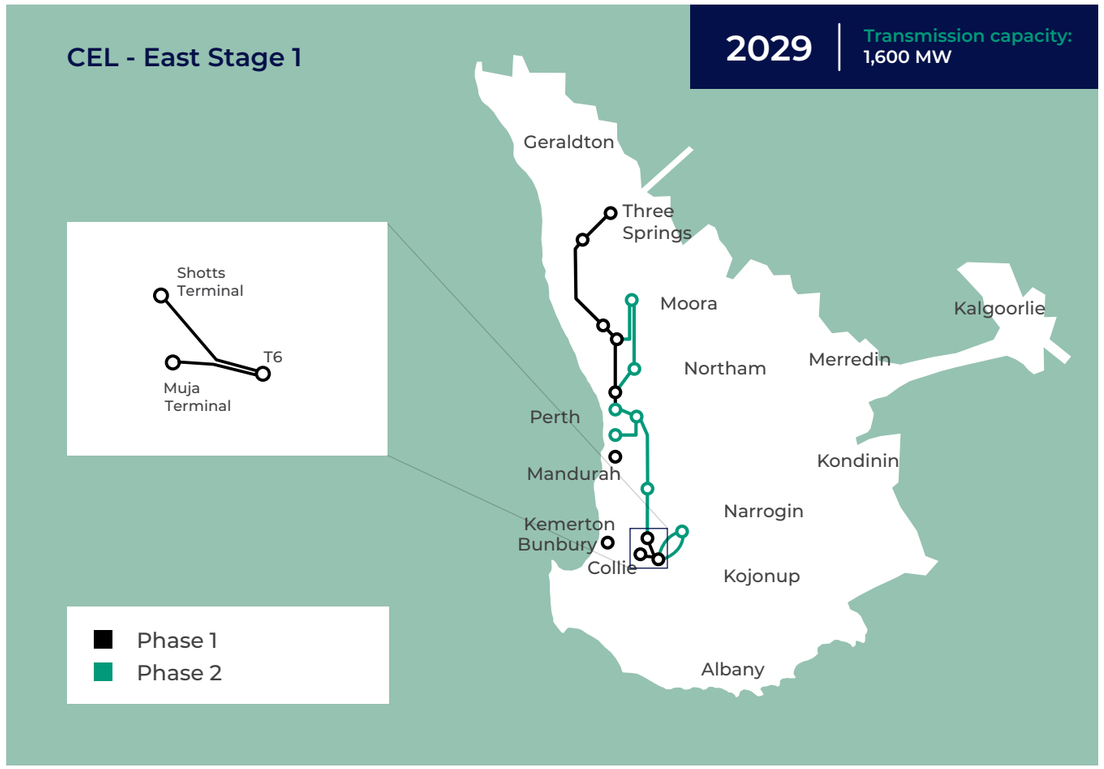
Phase One Clean Energy Link projects are required to connect the new energy generation capacity needed to meet forecast demand (arising from the 2030 coal retirements) while also meeting forecast growth in peak demand driven by household energy use. Phase One projects also enable the connection and new generation capacity to support around 200 MW of new industrial loads, facilitating industry operations across priority SIAs in line with State Government policy priorities. Western Power is targeting delivery of Phase One projects before 2030 to support system security and reliability and energy affordability.

Clean Energy Link – East Stage One: Connecting New Renewable Generation

Stage One of Clean Energy Link – East will facilitate the connection of renewable generation projects in the south east section of the SWIS. Western Power has already commenced planning and scoping works for the project and is working to complete Stage One by the second half of 2029.

This project includes the delivery of a new transmission terminal to the east of Collie, connected to the Shotts and Muja terminals by two new 330 kV transmission lines. It will leverage the existing network around Collie to connect up to 1.6 GW of new renewable generation in the eastern region of the SWIS, facilitating the development of new renewable generation near Collie, enabling future connections in Stages 2 and 3.

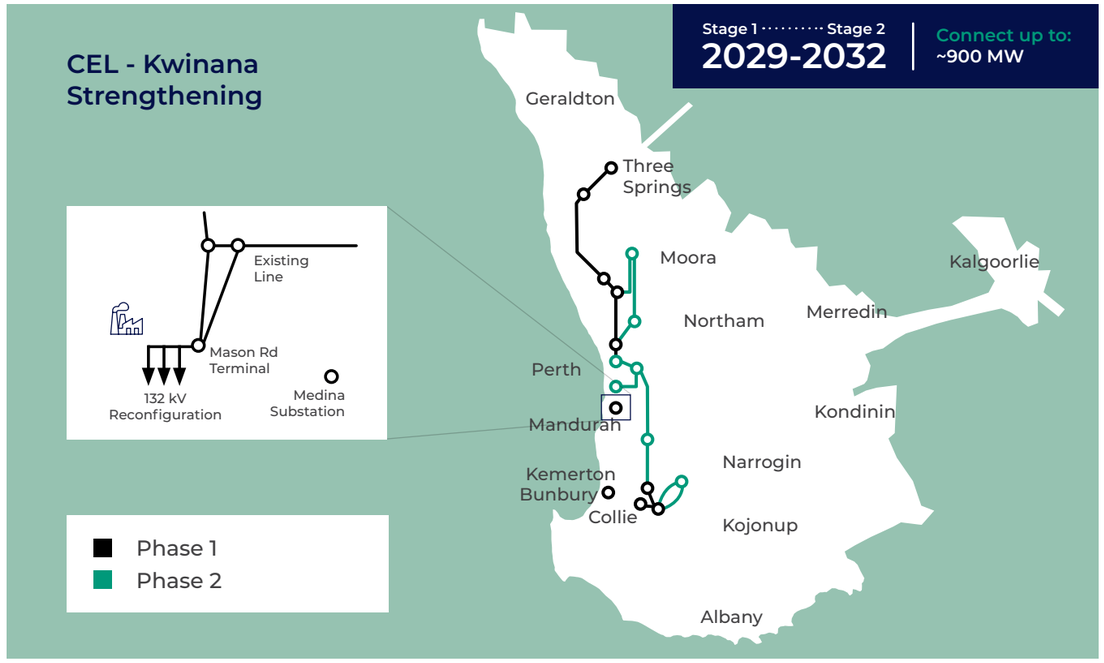
Augmentation – Muja area	
Forecast In-Service Date (FIS)	2029
Scope	Circuit length (330 kV) ~90 km Establish new T6 Terminal (near Muja) Expand existing Terminals at Muja and Shotts Establish double circuit 330 kV transmission lines between T6 Terminal and both Muja Terminal, and Shotts Terminal. Additional network decongestion (132 kV) scope may be identified through further grid planning studies.
Benefits	The new transmission lines and Terminals will enable a step change in new renewable energy project connections in the East Country (around Bowelling and Collie areas). The proposal will facilitate import/export of up to 1,600 MW.



Importantly, Stage One of Clean Energy Link – East will enhance the geographic diversity of renewable generation on the grid by unlocking wind profiles distinct from those currently connected to the network - largely concentrated in the north of the SWIS footprint. This diversity is important to maintaining reliability on the SWIS. Furthermore, the generation connected by Stage One of Clean Energy Link – East will be crucial to supporting growing industrial loads located within the Western Trade Coast, Kemerton SIA, and the Coolangatta Industrial Estate.

Clean Energy Link - Kwinana Strengthening: Powering the Western Trade Coast

Augmentation - Kwinana and the Western Trade Coast	
FIS	**Stage 1:** 2029 **Stage 2:** 2032
Scope	Circuit length (330 kV) ~5 km Circuit length (132 kV) ~25 km **Stage 1:** DevelopmentWA to provide land required for Terminal within industrial precinct. Establish new 132 kV Terminal adjacent to existing Mason Road 132 kV substation Establish double circuit 132 kV transmission line to connect Mason Road Terminal to Medina substation Establish double circuit 132 kV transmission line to connect Mason Road Terminal to Rockingham substation Establish double circuit 132 kV transmission line and expand Medina and Rockingham substations **Stage 2:** Establish new 330 kV Terminal Establish double circuit 330 kV transmission line to connect Mason Road Terminal to the existing Kwinana – Kemerton/Oakley transmission line Establish double circuit 330 kV transmission line to connect Mason Road Terminal to the existing Kwinana – Northern Terminal transmission line Additional network decongestion (132 kV) scope may be identified through further grid planning studies
Benefits	Establish Mason Road Terminal to connect new gas generation and expand capacity for new industrial loads in the Kwinana area up to 900 MW.



The Clean Energy Link - Kwinana Strengthening project will address capacity constraints within the WTC. It will deliver new 132 kV and 330 kV terminals and progressively reconfigure the existing 132 kV network through new transmission line builds, enabling connections when additional customer demand exceeds the current network limitations. Western Power is currently undertaking the scoping and planning works for the Clean Energy Link - Kwinana Strengthening project. This includes preliminary designs, land access, commencing the relevant approvals processes and consideration of staging options.

The WTC is strategically vital for Western Australia and will play a key role in the delivery of the Made in WA plan and the DiversifyWA economic agenda. Both the Westport infrastructure initiative and the Australian Marine Complex sits within the WTC footprint, making the area vital to both the flow of imports and exports into WA and the delivery of the Federal Government's AUKUS commitments. Furthermore, the WTC hosts future-facing mineral processing operations.

Clean Energy Link - Kwinana Strengthening is a vital enabler for ongoing public investment in these projects and the WTC as a whole - making it crucial for the Government's broader economic vision for WA. By enabling up to 900 MW of new load in the WTC to connect, Clean Energy Link - Kwinana Strengthening will facilitate the ongoing development and expansion of strategically important critical mineral processing operations, defence and shipbuilding within the WTC. CEL - Kwinana Strengthening will also facilitate new firming resources in the vicinity of the WTC, complementing and underpinning renewable generation elsewhere on the grid. Additionally, the project will facilitate new behind-the-meter generation within the WTC footprint.

A Just Transition for Collie

The State Government has committed to a Just Transition for Collie, working to manage the town's phased shift away from coal-powered energy by encouraging new opportunities for economic diversification and supporting the local community's engagement in its future.

In recognition of the priority of this work and the need for cross-Government collaboration, the Collie Delivery Unit (CDU) was established in 2019. Since then, the WA Government has committed almost $700 million in funding to drive economic diversification and create jobs in and around Collie, helping the region transition away from its dependence on coal and toward a more diverse and resilient economy.

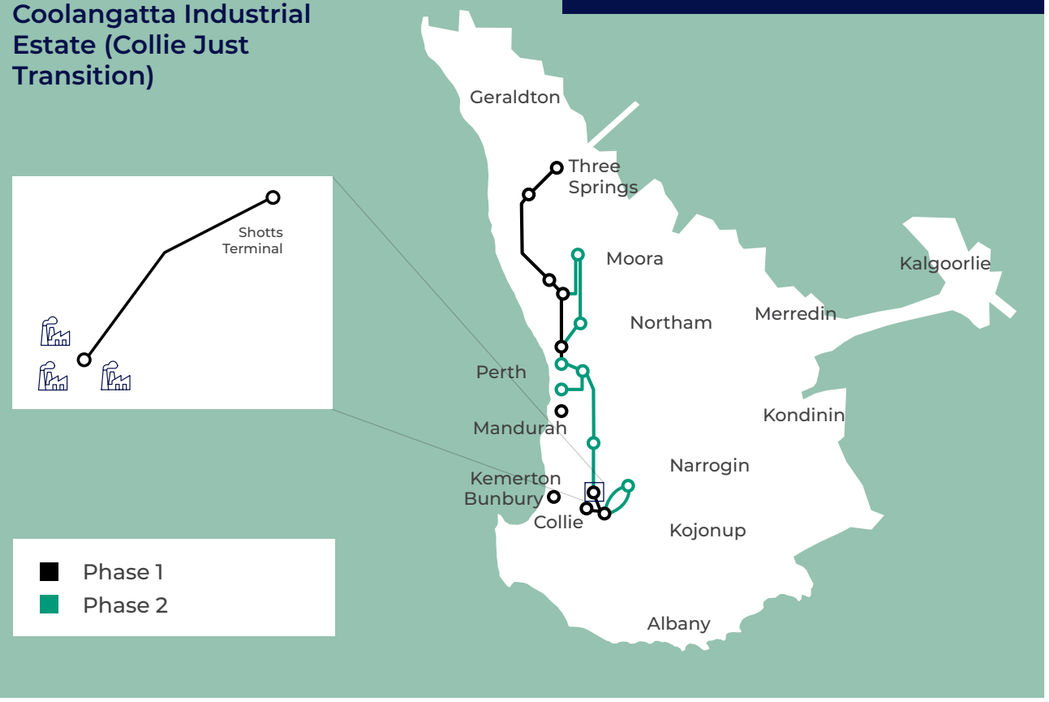
Transmission augmentation will play a vital role in delivering a Just Transition for Collie. Western Power has commenced scoping activities and studies to establish a new 330 kV terminal connecting to the network near the existing Shotts Terminal location. This will facilitate the development of the Coolangatta Industrial Estate and lay the foundation for the additional upgrades and capacity enhancements required to connect new critical minerals processing facilities in the future. These projects could collectively deliver over 500 local jobs, supporting Collie's workforce transition.

The Coolangatta Industrial Estate is forecast to have additional capacity for 500 MW of load connections in the medium-long term, facilitated by a 330 kV connection. Further industrial development will require additional generation to be connected to the network.

Augmentation – Coolangatta Industrial Estate	
FIS	2028-2030
Scope	Circuit length (330 kV) ~5 km Establish new Terminal (near Coolangatta) Expand existing Shotts Terminal Rebuild existing single circuit 330 kV transmission line as double circuit 330 kV line between Shotts and new Terminal
Benefits	Develop a new Terminal to connect ~500 MW of industrial loads, build a new line to connect to the Shotts Terminal. Land for Terminal in industrial precinct is part of industrial development.

Augmentation - Coolangatta Industrial Estate (Collie Just Transition)

2028-2030 | Connect up to: ~500 MW



Activating the Kemerton SIA

Existing network capacity in and around the Kemerton SIA is tightly constrained. Two stages of activation are needed. The first will install a new transformer and upgrade the surrounding network to support up to 100 MW in additional transfer capacity.

In the second stage, Western Power will establish a new terminal (likely to be 132 kV) to support industry connections in the SIA, facilitating load growth in the short-medium term. This development is subject to the completion of a major environmental study of the area and surrounds, expected to be delivered in the second half of 2026. This study and its findings will inform further development within the Kemerton SIA.

Augmentation - Kemerton SIA	
FIS	**Stage 1:** 2030 **Stage 2:** 2032
Scope	Circuit length (132 kV) ~30 km **Stage 1:** Expand existing Kemerton Terminal, including third transformer replacement **Stage 2:** Establish new 132 kV substation. Expand existing Bunbury Harbor 132 kV substation Establish double circuit 132 kV transmission line to connect the new Substation to Kemerton Terminal Establish double circuit 132 kV transmission line to connect the new Substation to Bunbury Harbor Substation Land allocation is required for substation within industrial precinct Additional network decongestion (132 kV) scope may be identified through further grid planning studies
Benefits	Upgrade existing network to increase capacity for industrial load growth in Kemerton SIA.

Phase Two 2030-2035: Economic Growth and Diversification

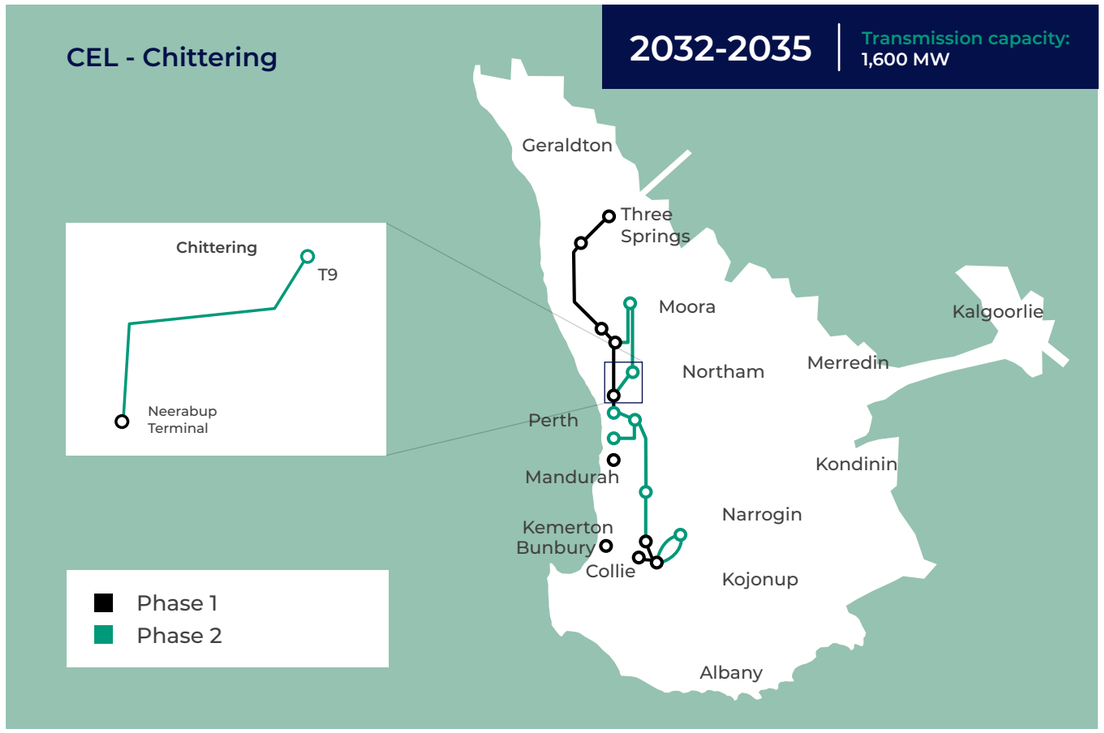
Modelling conducted as part of the SWISDA forecast significant growth in industrial demand on the SWIS, driven by the expansion and electrification of existing operations and the development of new and emerging industries like green steel and battery production, enabled by the Government's investment in the Made in WA plan. To deliver economic growth, job creation, and emissions reductions, these industries must be supported by an energy system that provides affordable, reliable, and low-emissions electricity. Meeting this demand requires not just increased generation connections but also enhanced transfer capacity at strategically-important parts of the network. These priorities are required to unlock a more diverse, more resilient and more prosperous Western Australian economy.

Clean Energy Link - Phase Two will deliver on these priorities, focusing on building the transmission infrastructure required to support forecast growth in household electricity demand and industrial load growth beyond 2030. The timing, sequence and delivery of Phase Two builds will depend on the pace, scale and location of industrial load growth and the continuing need to maintain reliability as the generation mix of the SWIS evolves over time. Existing planning processes in the SWIS including AEMO's WEM ESOO, Western Power's Transmission System Plans and next Whole of System Plan will inform the sequence and timing of Phase 2 investments in the transmission network.

Rising peak demand could result in the first tier of Phase Two projects, likely to be CEL-Moora and CEL-Chittering, needing to be delivered by as early as 2032. This possibility, combined with long lead times on transmission investments and construction, means that decisions on priority Phase Two projects may be required to take place in parallel to the delivery of Phase One of the CEL build, around five years in advance of the delivery date. Given this, planning and scoping works for some Phase Two projects will continue in parallel with the delivery of Phase One and will progress in advance of any final commitment from Government. Key priorities will be identifying terminal locations to assist projects to develop and gain approval for connection assets ahead of construction.

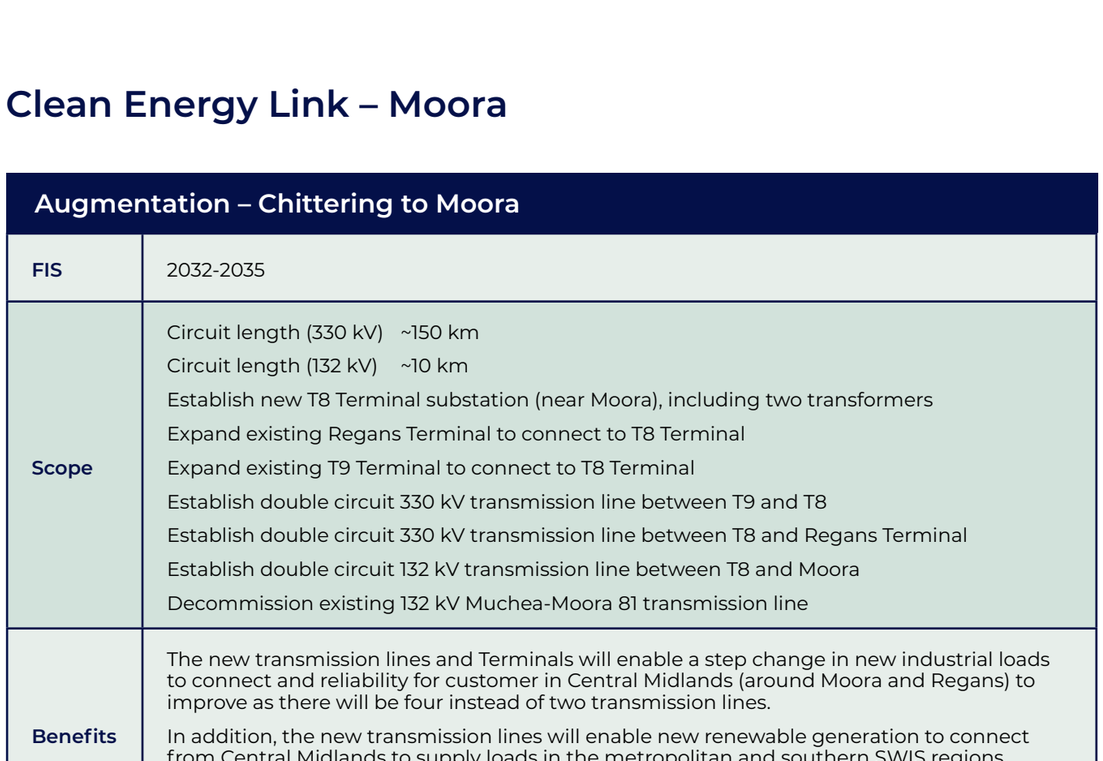
Clean Energy Link – Chittering

Augmentation – Perth Metro to Chittering	
FIS	2032-2035
Scope	Circuit length (330 kV) ~45 km Circuit length (132 kV) ~30 km Establish new Terminal T9 (Northeast of Perth) Expand existing Neerabup Terminal with third transformer Establish double circuit 330 kV transmission line between Neerabup Terminal and T9 Terminal Establish double circuit 330 kV transmission line for connection of the Neerabup Terminal to the existing 330 kV line Establish double circuit 132 kV transmission line for replacement of the Pinjar Terminal to Muchea Substation Establish single circuit 132 kV transmission line between Henley Brook and Landsdale 132 kV substations Expand Landsdale 132 kV substation Additional network decongestion (132 kV) scope may be identified through further grid planning studies
Benefits	The establishment of T9 Northeast Perth Terminal and the circuits to Neerabup Terminals will provide some improvement of import / export transfer capacity for new industrial loads and new renewable generation connections between north metropolitan to Neerabup by approximately 1600 MW/1600 MW, respectively.



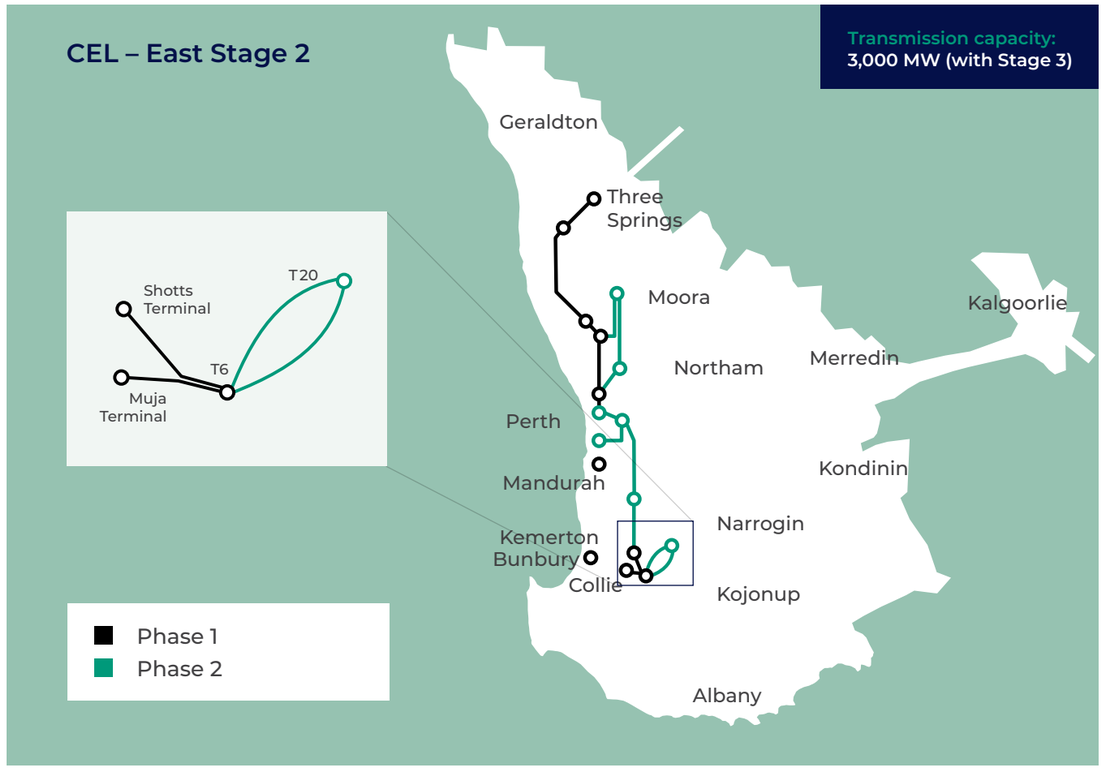
Clean Energy Link – Moora

Augmentation – Chittering to Moora	
FIS	2032-2035
Scope	Circuit length (330 kV) ~150 km Circuit length (132 kV) ~10 km Establish new T8 Terminal substation (near Moora), including two transformers Expand existing Regans Terminal to connect to T8 Terminal Expand existing T9 Terminal to connect to T8 Terminal Establish double circuit 330 kV transmission line between T9 and T8 Establish double circuit 330 kV transmission line between T8 and Regans Terminal Establish double circuit 132 kV transmission line between T8 and Moora Decommission existing 132 kV Muchea-Moora 81 transmission line
Benefits	The new transmission lines and Terminals will enable a step change in new industrial loads to connect and reliability for customer in Central Midlands (around Moora and Regans) to improve as there will be four instead of two transmission lines. In addition, the new transmission lines will enable new renewable generation to connect from Central Midlands to supply loads in the metropolitan and southern SWIS regions. The import/export transfer capacity between Neerabup to Central Midlands will improve by approximately 1600 MW/1600 MW, respectively.



Clean Energy Link – East (Stages Two and Three)

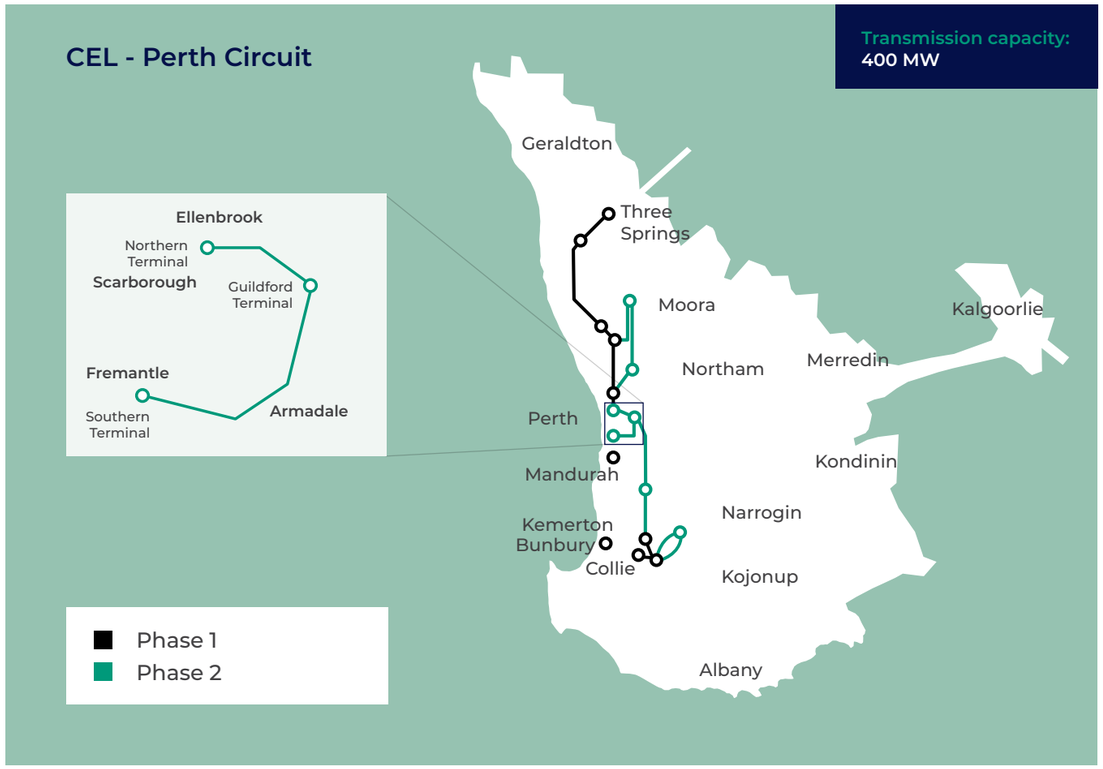
Augmentation - Muja to West Arthur	
FIS	TBC
Scope	Circuit length (330 kV) ~140 km **Stage 2:** Establish new T20 Terminal (near Williams) Establish new T42 Terminal (near Darkan) Double circuit 330 kV transmission line between T42 and T20 **Stage 3:** Establish double circuit 330 kV transmission line between T6 and T20
Benefits	The new transmission lines and Terminals will enable a step change in new renewable energy project connections in the East Country (around Darkan and Williams areas). When combined, Clean Energy Link - East Stages 2 and 3 will facilitate the import/export of up to 3,000 MW.



As well as new transmission lines to connect to renewable energy generation projects, Phase Two includes a series of investments in network augmentation to facilitate the transfer of electricity.

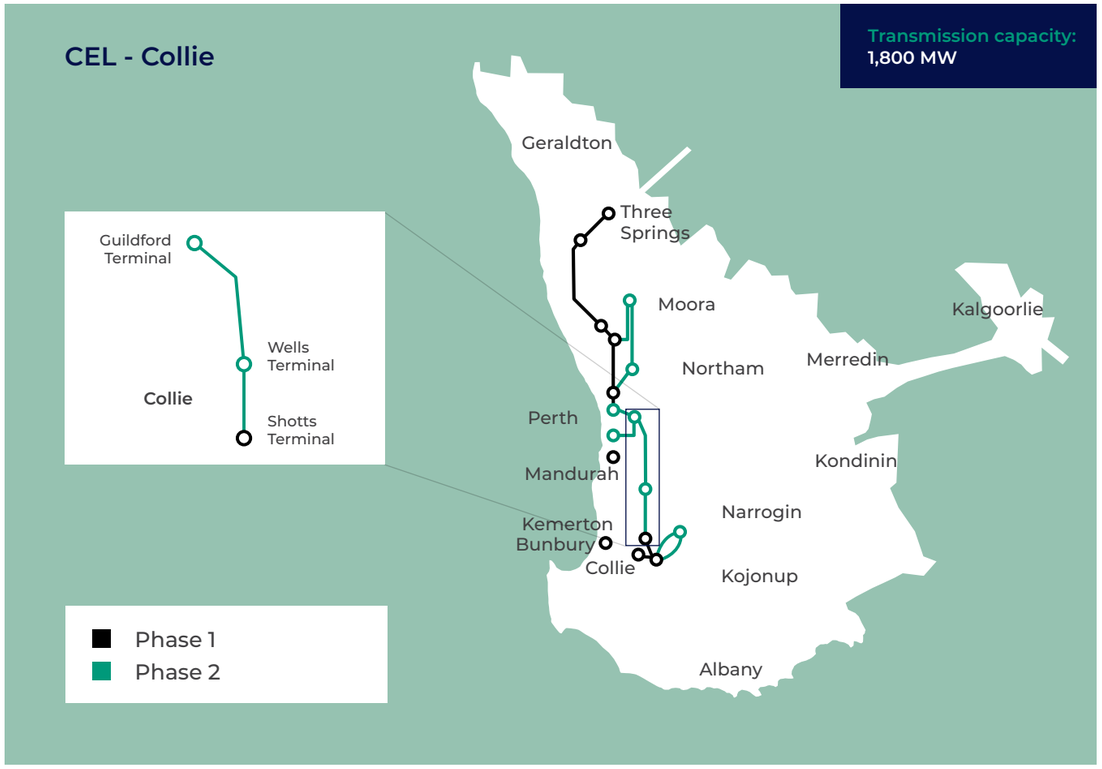
Clean Energy Link – Perth Circuit

Augmentation – Malaga to Bibra Lake (via Guildford)	
FIS	TBC
Scope	Circuit length (330 kV) ~45 km Circuit length (132 kV) ~5 km Establish a second circuit 330 kV circuit between Guildford Terminal and Southern Terminal by: • Installing a conductor to the second side of the existing Guildford Terminal to Southern Terminal 330 kV where there is an existing double circuit transmission line • Establishing sections of single circuit low profile 330 kV transmission line between Guildford Terminal to Southern Terminal where the current 330 kV line is single circuit Expand existing Hazelmere Substation Establish single circuit 132 kV line from Guildford Terminal to Hazelmere substation
Benefits	The new circuits to Northern, Guildford and Southern Terminals and associated substation expansions will provide an improvement of import/export transfer capacity between industrial loads in the north metropolitan and Kwinana of approximately 400 MW/200 MW, respectively.



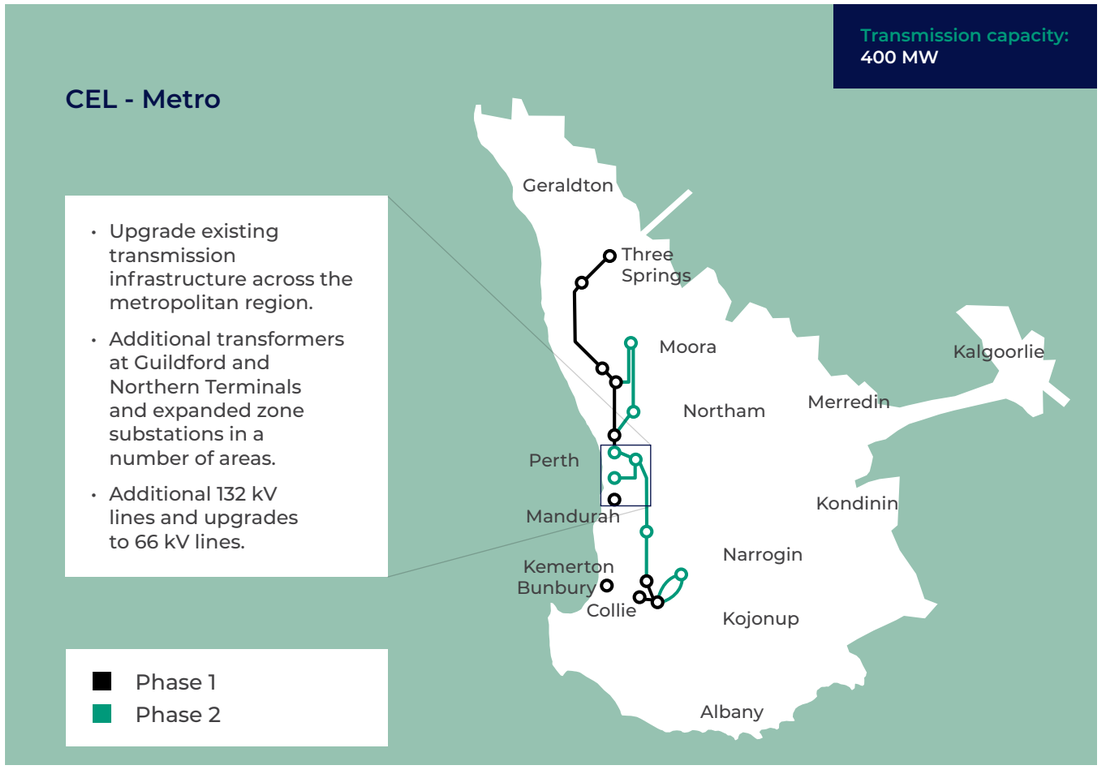
Clean Energy Link – Collie

Augmentation – Guildford to Shotts (via Boddington)	
FIS	TBC
Scope	Circuit length (330 kV) ~200 km Circuit length (132 kV) ~10 km Expand existing Guildford and Shotts Terminals Establish new Wells Terminal (near existing site) Establish double circuit 330 kV transmission line between Guildford Terminal and Wells Terminal (northern section) Establish single circuit transmission lines between new terminal and existing terminal Install conductor to the second side of the existing Shotts Terminal to Wells Terminal 330 kV double circuit transmission line. Decommission existing Guildford Terminal – Wells Terminal 132 kV transmission line Additional network decongestion (132 kV) scope may be identified through further grid planning studies
Benefits	The new circuits to Wells, Guildford and Shotts Terminals and associated substation expansions will provide an improvement of import/export transfer capacity between industrial loads in the north metropolitan region and Kwinana and renewable generation connections in the southwest of approximately 1800 MW/1800MW, respectively. Clean Energy Link - Collie will enable additional capacity to be released from Clean Energy Link East Stage Three.



Clean Energy Link – Metro

Augmentation - Perth Metropolitan Region	
FIS	TBC
Scope	Circuit length (132 kV) ~115 km **Metropolitan 132 kV reconfigure including:** Additional transformers at Guildford and Northern Terminals Expansion of zone substations and additional 132 kV lines in a number of Metropolitan locations Upgrading of existing 66 kV substations and lines to be incorporated into 132 kV network
Benefits	The Metropolitan 132 kV reconfigure allows increased power to flow on the 330 kV network to service metro loads from the other generation capturing Clean Energy Link projects. It will provide an improvement of import/export transfer capacity between north metropolitan area and Kwinana of approximately 400 MW/400 MW, respectively. It also improves the reliability of the metro 132 kV networks north and south of the river and replaces the aged 66 kV network in the western suburbs and Fremantle.



Phase Three 2035 and Beyond: Powering Global Decarbonisation

WA can play a significant role in global decarbonisation.

The State's abundant deposits of critical minerals including lithium, nickel, cobalt and rare earths are necessary to manufacture electric vehicles, household and utility-scale batteries, as well as solar panels and wind turbines. Global demand for products such as green iron, data centres, hydrogen and ammonia represent opportunities for green exports and economic diversification. In WA, there is a significant pipeline of over 30 proposed hydrogen projects in various stages of development. These account for almost a third of all hydrogen projects underdevelopment in Australia. Importantly, WA also has abundant renewable energy resources, close to a world class export industry, well supported industrial hubs and a sophisticated resources sector.

These advantages mean that there is an opportunity to unlock transformative economic growth for the people of WA. As our regional and global trading partners pursue their decarbonisation objectives, WA's renewable energy potential and strategic location can position it as a global leader in sustainability and a clean energy powerhouse.

Fulfilling this potential will require a reliable supply of cost-competitive sustainable energy at scale, facilitated by a transmission network capable of connecting new green industry loads and the renewable energy generation projects required to power them.

Projects comprising Phase Three would potentially expand the transmission network in the SWIS to well beyond its current footprint. Continued investigation and engagement with industry is necessary to define the scopes for individual projects.

However, key drivers may include:

- continued peak demand growth;
- heavy industry electrification; and
- development of new green industries (e.g. data centres, green iron and hydrogen).

These drivers' impact on the SWIS is not currently expected until the mid-2030s and they carry a high degree of uncertainty. EPWA, Western Power and AEMO will continue to monitor developments and incorporate findings into future planning cycles.

Depending on the location of credible future generation and load projects, Phase Three will expand the transmission network further. This could include connecting new, strategically-positioned load centres to more of the quality renewable energy resources in the Mid West, Wheatbelt and Great Southern regions.

Some significant loads may not be serviceable by Clean Energy Link projects alone. Mega-projects that may underpin a future green export sector could seek to be mostly off-grid with a limited connection to the SWIS. For these projects with large behind-the-meter generation requirements, the State Government facilitating common-use, privately funded connection assets to the SWIS may provide a lower-cost outcome for consumers and industry. PoweringWA is committed to working with industry to progress solutions as appropriate.

Part Three: The WA Government's Approach

Public Ownership, Public Benefit

Unlike in most of the eastern states, the transmission network in the SWIS is publicly owned and operated. Western Power, as a Government Trading Enterprise, is responsible for operating the network in the interests and for the benefit of the Western Australian public.

Energy is strategically important and underpins delivery of the State's economic diversification and decarbonisation objectives. While there is a significant upfront cost associated with transmission augmentations, WA's public ownership model means transmission augmentation build can be leveraged to unlock economic growth, acting as an enabler for a more diverse and resilient economy.

To ensure that this ambitious investment program occurs in time and in line with the State's objectives, the implementation of the Plan will be proactively managed and led by the Minister for Energy and Decarbonisation. The Plan provides a clear pathway while also maintaining sufficient optionality for the State Government to make decisions and ensure that the right transmission infrastructure is delivered in the right place at the right time. By continuing to monitor and utilise real-time inputs, including ongoing planning processes, feedback from industry and updated demand projections, the State Government will ensure that its investment decisions are evidence-driven and timely.

Phase One and Two projects will be progressed through planning and scoping towards commitment and construction. Western Power will continue to develop detailed business cases for each project and further refine their scope to meet power system and industry needs.

The State Government expects to commit funding when the costs for Clean Energy Link projects are crystalised and investment triggers are reached. The development of each Clean Energy Link project will be overseen by Government, to ensure that future investments are aligned with the State Government's objectives and remain guided by the needs of the Western Australian public and industry.

The Economic Regulation Authority will continue to provide oversight of the efficiency of these network investments in addition to monitoring existing network services.

Additionally, to facilitate this investment and provide greater certainty for industry, the State Government is considering how transmission costs can be most equitably recovered while providing clear, transparent signals to the market.

Communities at the Centre

While the Plan outlines both metropolitan and regional projects, regional communities will play a significant role as they will likely host both transmission and renewable generation projects.

PoweringWA is committed to engaging meaningfully with communities across the SWIS to ensure local priorities are heard and understood, and that communities are supported throughout the energy transition. Timely and inclusive engagement with local stakeholders, including Aboriginal Prescribed Body Corporates, is essential to enable impacted communities to actively participate in the transition and fully realise meaningful benefits from that participation. These benefits include access to economic opportunities arising from infrastructure investment, local employment from the development of new and emerging industries, developing more diverse and resilient local economies, and investment in local infrastructure.

PoweringWA is focused on establishing the policy frameworks and enabling conditions necessary to ensure communities can derive meaningful and lasting benefits from Western Australia's energy transition.

In addition, PoweringWA actively collaborates with Government agencies, industry partners, and local stakeholders to understand, and where possible address cumulative impacts challenges identified through policy mechanisms. This coordinated approach supports the State Government's broader objectives of delivering an inclusive energy transition, while fostering long-term community resilience and prosperity across Western Australia.

PoweringWA's engagement approach is grounded in transparency, honesty, and ongoing communication. It prioritises delivering clear, accessible, and accurate information to support informed decision-making and actively seeks opportunities to improve outcomes for communities and stakeholders. Central to this commitment is supporting communities as they navigate Western Australia's evolving energy landscape through sharing relevant information, understanding local concerns, and collaborating across Government to address challenges where appropriate.

Western Power will also engage proactively with impacted communities - both regional and metropolitan – in a timely manner to help shape the Clean Energy Link projects. The engagement will be designed to ensure that activities are tailored, transparent, and relevant to both stakeholder needs and individual project requirements. It aims to build strong relationships with key stakeholders by involving them - wherever appropriate and as early as possible - in the scoping and planning phases. Additionally, the engagement will prioritise timely communication through individual stakeholders' preferred channels to raise awareness, inform program development, and enhance understanding of the engagement process.

The Clean Energy Link engagement will be guided by the principles of:

- **Transparency:** Clarity, openness and honesty about processes and what decisions communities can and cannot influence.
- **Respect:** All parties listen, acknowledge and act in a respectful manner in all engagements.
- **Proactivity:** Early and regular engagement, with feedback consistently provided in a timely manner.
- **Fairness:** Encompassing both procedural fairness - following a fair and proper procedure before making a decision - and distributive fairness - aiming for fair distribution of the costs, risk and benefits of projects.
- **Informed decision making:** Relevant social performance information is collected and integrated into Western Power's internal decision-making processes.
- **Working together:** Collaborating with all impacted stakeholders to identify, avoid where possible, mitigate and manage impacts and to enhance benefits.

Identifying, selecting and confirming transmission line corridors and terminal sites for each Clean Energy Link project will be guided by Western Power's established site and corridor selection processes, which incorporate multiple inputs to balance generation and network requirements, alongside environmental, social and economic considerations.

Western Power recognises the community, and in particular landowners, as critical stakeholders with deep, often intergenerational ties to their land. Engagement processes begin with clear communication of the intent, so all stakeholders receive accurate information without unnecessary delays or confusion.

Environmental Management

To mitigate environmental impacts from the Clean Energy Link program, Western Power will apply an evironmental avoidance hierarchy - avoid, minimise, rehabilitate, and offset. Key environmental risks such as biodiversity, inland waters, noise, emissions, waste, and contamination will be managed carefully, to inform development of investigation study areas for projects. Site-specific environmental surveys will be conducted before design finalisation to support avoidance measures, with biological surveys undertaken at appropriate times - typically in spring, and ideally years ahead of construction. A strategic offsets approach will be taken to enable streamlined approvals by addressing unavoidable impacts early. Ongoing engagement with State and Commonwealth regulators will explore approval opportunities, and Environmental Management Plans will be developed to manage residual environmental risks and ensure compliance throughout Clean Energy Link project delivery.

Aboriginal Heritage and Planning Approvals

The Clean Energy Link program will align with current and future planning strategies to protect Aboriginal heritage. Acknowledgement, preservation and celebration of First Nations heritage is a key principle of the energy transition, ensuring cultural practices, traditional knowledge and sacred sites are protected.

An avoidance methodology in all project designs is fundamental, with desktop heritage assessments, analysis of heritage studies and collaboration with Traditional Owners on regulatory approvals helping determine if approval is required under *the Aboriginal Cultural Heritage Act 2021*.

Workforce, Procurement and Supply Chain Opportunities

The energy transition is global in scope. Around the world, the move to decarbonise has created unprecedented demand for the materials, technology, and skilled workforce required to deliver clean energy infrastructure. From electrical-grade steel to qualified electricians, the competition for materials and talent is fierce. Western Australia is not immune to these pressures. That's why the WA Government is taking a proactive and strategic approach to building local capability, ensuring vital infrastructure can be delivered on time and on budget. Through Made in WA, the Government is supporting local industry and workers to step up and take an active role in the energy transition.

The Government is investing heavily in developing and attracting the skilled workforce the State needs not only to deliver the transmission build required, but to diversify and grow the economy more broadly. To meet workforce demand, the State Government has partnered with the Commonwealth Government to fund the Clean Energy Skills National Centre of Excellence, which will grow the capability of WA's TAFE colleges and training institutes to build the skilled workforce needed to support the transition to a renewable energy economy. The State Government has also invested heavily in supporting workers in training. Schemes like the Workforce Development Travel and Accommodation Allowance and the Construction Training Fund provide financial assistance to apprentices and trainees, helping them complete their training and enter the workforce.

Furthermore, Western Power has well-established, robust frameworks and processes to support the efficient, effective, sustainable, and transparent procurement of goods and services. Western Power is committed to creating meaningful opportunities for local industry participation in its supply chains, maximising economic and social benefits for the State.

Supporting Other Areas of the SWIS

Customers' requirements when connecting to the SWIS are complex, varying substantially for different generators and loads depending on factors like location, distance, network constraints, and future opportunities.

With strong renewable resources across the southwest, there may be circumstances where industry will pursue network solutions that are not currently being prioritised by the State Government. There may also be situations where multiple users could benefit from fit-for-purpose network solutions due to existing network constraints. In such situations, Western Power will work with these customers to identify shared opportunities to achieve a suitable connection outcome.

The complexity and variability of customers' requirements will remain, and innovative solutions may be required to ensure that these customers can connect to Western Power's network. Western Power will continue to work together with PoweringWA and proponents to identify and implement solutions that meet the immediate needs of industry, while future-proofing the network.

The State Government recognises that there may be areas in or adjacent to the existing SWIS footprint where private sector-led transmission development is required to meet the needs of a specific region or of an individual large-scale industrial load, subject to the right conditions. Private development could play a role by complementing the publicly-owned Western Power network and providing bespoke transmission solutions.

The Goldfields

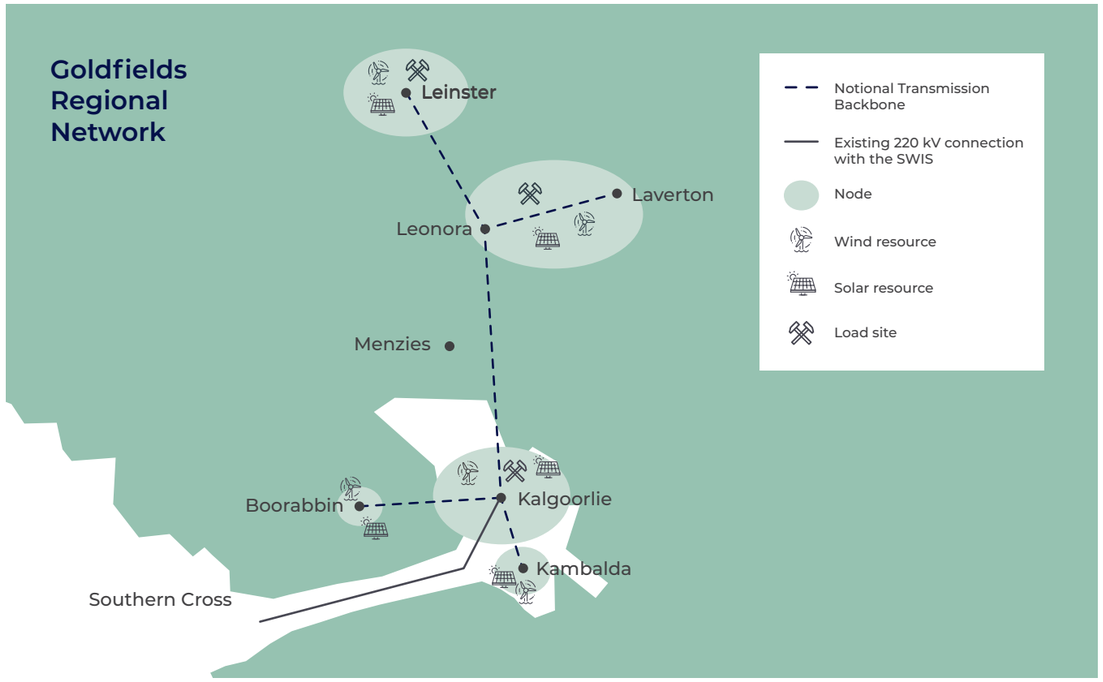
The Goldfields is one such case. The region is distinct from other parts of the SWIS for several reasons. Around 700km from Perth, the Goldfields is home to mining, mineral processing and heavy manufacturing operations vital to the Western Australian economy. It will also host WA's first grid-connected vanadium battery.

The Goldfields sits at the eastern most fringe of the SWIS, connected to the broader network by a single 220 kV transmission line running from Collie to Kalgoorlie via Merredin. The State Government and Western Power are working to improve the region's reliability in the near term.

However, the region's economic importance, geographical distance, industrial loads, and relative exposure to reliability concerns means a tailored transmission solution, potentially including private development and ownership, may be required.

To support industry decarbonisation and improve regional reliability, the State Government is investigating the possibility of a new common-use transmission network in the region - the Goldfield Regional Network (GRN). This investigation builds on the outcome of modelling undertaken as part of the SWISDA which identified the potential development of a new electricity network in the Goldfields as a key component of WA's energy transition.

The GRN is being investigated in a three-stage process aimed at demonstrating its viability and potential benefits. Stage One, a high-level economic assessment of the GRN concept, has been completed. It modelled three demand scenarios, finding that the GRN could be part of the least-cost solution for meeting regional energy demands and achieving industry and the State's decarbonisation objectives. PoweringWA is now progressing Stages Two and Three of the GRN project, considering the potential commercial, regulatory and markets arrangements for the network, with the aim of completing both Stages by late 2025.



New Investment to Maintain Reliability

The Wholesale Electricity Market (WEM) supplies electricity to households and businesses connected to the SWIS. It also provides Essential System Services to maintain the security, reliability, and stability of the power system, an increasingly important function as more renewable energy enters the grid.

The WEM:

- promotes economically efficient, safe, and reliable electricity supply for consumers;
- facilitates competition and private investment; and
- provides energy providers and wholesale purchasers with flexibility in how they buy and sell electricity, and who they transact with.

The State Government, through the Coordinator of Energy and EPWA, are the custodians of the Electricity System and Market Rules and are responsible for overseeing and administering any changes. This ensures the market rules continue to evolve to keep pace with new technology and deliver against the State Electricity Objective.

AEMO is responsible for the efficient operation of the WEM and is also responsible for managing the Reserve Capacity Mechanism (RCM). The RCM is a unique feature of the WEM, designed to ensure there is enough generation and storage capacity to meet peak electricity demand - especially important because the SWIS is an isolated grid.

AEMO manages the RCM by:

- Forecasting how much capacity will be needed two years in advance, an annual process to ensure each year's reliability is carefully managed well in advance;
- Facilitating existing and new entrant generators to offer capacity from their facilities;
- Assessing whether those facilities can reasonably be expected to deliver to the required capacity target;
- Assigning Capacity Credits to eligible generators; and
- Ensuring generators make their capacity available in return for payments.

As aging coal plants retire and electricity demand continues to grow, it is crucial that the State Government ensures the WEM works effectively, and transmission network capacity is available for new connections. This will allow the market to invest in new generation and storage through the annual procurement process to maintain reliability each year.

Ongoing Planning and Management of the Transition

EPWA, Western Power and AEMO will continue to assess the ongoing needs of the power system through several planning and modelling processes. These will support the State Government's decision-making and ensure that the investments outlined in Phase Two and beyond; are delivered in a timely way and achieve the Government's economic diversification and decarbonisation objectives.

The SWISDA, TxIP2024, and this Plan will be built upon by the next Whole of System Plan (WOSP), scheduled for release in 2027. The Clean Energy Link projects outlined in Phase One will be incorporated into the next WOSP which will also consider the need and timing of Phase Two and potential Phase Three investments, alongside Western Power's annual Transmission System Plan and Network Opportunities Map and AEMO's annual WEM ESOO.

Looking ahead, the next WOSP will consider a range of complex challenges and emerging opportunities for the SWIS, extending beyond Western Power's transmission network. These include industrial load flexibility, adoption of distributed energy resources, virtual power plants, vehicle-to-grid and other technologies. It will be an important opportunity to update whole-of-Government thinking on the energy transition and will assess the timing for Clean Energy Link – Moora, Clean Energy Link – Chittering and other projects in Phase Two.

The exact pathway to 2035 will depend on a variety of factors, including the changing electricity needs of industry and consumers. However, one thing is clear - the State Government's continued development of transmission infrastructure will be essential to support progress in the energy transition and the planned retirement of all State-owned coal-fired generation by 2030. Western Power will undertake crucial planning and scoping works to support Phase Two projects in parallel with the delivery of Phase One. This includes determining the locations for future terminals and line routes to assist industry to plan their own connections.

Supported by robust decision-making processes, the State Government will proactively manage the energy transition in the best interests of the WA people. Continuing to consult and collaborate with industry, communities and affected stakeholders will be essential to deliver a secure, reliable and decarbonised energy future for all Western Australians.

GOVERNMENT OF
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