Energy and Demand Projections

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Queensland's electricity demand is being reshaped by the rapid uptake of consumer energy resources (CER) and emerging electrification, driving record low minimum demand and continued growth in maximum demand and energy consumption. Powerlink's central scenario forecasts an average increase in demand of 2.7% per annum over the next 10 years, including a modest amount of data centre load growth.

Key highlights

- Queensland's maximum transmission-delivered demand for 2025/26 was 9,462 megawatts (MW), on Thursday, 12 February 2026. This maximum demand occurred at 6.30pm and was 512MW lower than the record maximum delivered demand set in January 2025.
- Queensland's minimum transmission-delivered demand for 2026 was 2,077MW, on Saturday, 19 September 2026. This minimum demand occurred at 11:30am and was 162MW lower than the previous record minimum delivered demand set in August 2025.
- Expected maximum demand growth has increased since the 2025 Transmission Annual Planning Report (TAPR), primarily driven by higher forecast uptake of data centre connections.
- Residential and transmission-connected battery energy storage systems (BESS) uptake is helping stabilise minimum demand in the near-term and moderating increases in underlying demand.
- While Powerlink's electric vehicle forecast uptake has been revised upwards compared to the 2025 TAPR, the future charging behaviour of electric vehicle owners is a key source of forecasting uncertainty. If charging is unmanaged, owners might charge during peak evening hours and add strain to the grid, whereas smart charging via time-of-use tariffs will move charging away from evening peaks.
- Powerlink's Central scenario forecast includes a modest amount of data centre load growth, while the High scenario incorporates a higher outlook on potential data centre developments based on early engagement with proponents. As project certainty increases, data centre load is expected to be progressively incorporated into future forecasts.
- Transmission-delivered maximum demand is expected to have steady growth with an average annual increase of 2.7% per annum over the next 10 years. This increase is mainly due to load growth within the distribution network and data centre connections.
- The previous decline in transmission-delivered minimum demand is expected to moderate over the next 10 years, with minimum demand forecast to grow at an average annual rate of 2.0%, primarily driven by new data centre consumption.

2.1 Demand and energy forecasting

Accurate demand and energy forecasting is a critical input for Powerlink to deliver safe, reliable and cost-effective transmission services. These forecasts underpin critical decisions on infrastructure investments and grid stability. However, the evolving energy landscape introduces significant uncertainties that challenge the accuracy of the forecast. Uncertainties are driven by:

- variable load growth due to dynamic economic factors impacting industrial expansions in mining and manufacturing
- the pace of electrification, particularly in transport and industrial processes
- adoption of electric vehicles and uncertainties around charging behaviours
- uptake of behind the meter energy storage
- emergence or otherwise of large data centre load
- global commodity prices and policy shifts.

Adding to these challenges is the impact of Queensland's variable weather, which significantly influences electricity demand, particularly through air conditioning loads during extreme heatwaves or prolonged wet seasons. Climate projections also suggest increasing frequency and intensity of such events, disrupting historical weather-normalisation models and amplifying demand fluctuations.

These factors underscore the critical need for scenario-based and probabilistic forecasting methods that Powerlink has incorporated into the forecasting process.

2.2 Powerlink forecast tool

Powerlink has developed a transmission-delivered demand and energy forecast tool that enables the creation of High, Central and Low demand scenarios at both a regional and sub-regional level. Powerlink's Central scenario represents the most probable demand outlook based on current evidence and forecast assumptions. It is broadly consistent with the Australian Energy Market Operator's (AEMO) Step Change scenario, with several key inputs derived from that scenario. The High and Low scenarios provide a range of plausible future demand outcomes. The High scenario assumes a faster uptake of demand-driving developments and technologies, while the Low scenario assumes a slower rate of uptake and a correspondingly lower demand outlook. The tool provides detailed forecasts for individual TAPR zones across the transmission network, allowing future load growth, including new demand and electrification impacts, to be assessed with greater granularity. Forecasts are informed by a range of data sources and inputs, as outlined in Appendix E.

The Powerlink forecast process individually models a range of building blocks that impact electricity demand:

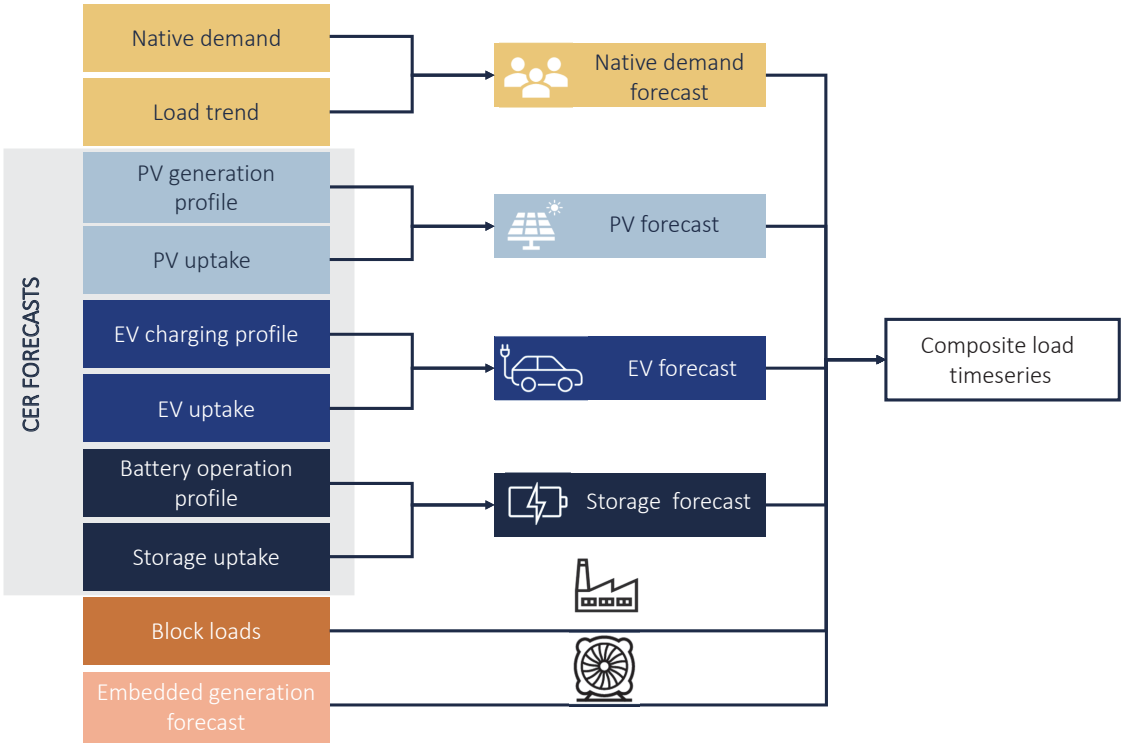
- native demand
- solar PV
- electric vehicles
- residential batteries
- block loads
- embedded generation.

Powerlink endeavours to use the best available data sources. The forecast tool incorporates the latest assumptions for macroeconomic factors and evolving trends in energy consumption and technology adoption, with sources including:

- Data from Energy Queensland and Powerlink customers
- Australian Bureau of Statistics (ABS) energy account
- Queensland Government
- AEMO
- Deloitte Access Economics economic forecasts
- CSIRO GenCost reports.

Figure 2.1 presents a schematic of the individual building blocks that make up the aggregate demand forecast. Independent sub-models are derived for the different CER technologies, native demand trends, block loads and embedded generation. Composite load traces are constructed from the output of each sub-model.

Figure 2.1 Powerlink's forecasting components



2.3 Forecasting assumptions and key drivers

2.3.1 Energy Queensland consultation

Energy Queensland provided summer and winter maximum demand forecasts for both the Energex and Ergon Energy distribution networks, over a 10-year outlook period. Powerlink produced transmission connection supply point forecasts that incorporate a variety of Energy Queensland's inputs. Powerlink's connection supply point forecasts are presented in Appendix E.

Powerlink proactively engages with customers to understand their future load requirements. Early customer engagement supports more efficient network planning and enables transmission network services to be developed in ways that align with customer needs and deliver the greatest value.

Both Powerlink and Energy Queensland jointly conduct the Queensland Household Energy Survey (QHES) to improve understanding of consumer behaviours and intentions. More than 4,000 participants completed the survey in 2026.

The Queensland Government is accelerating the roll-out of smart meters across the state, with full deployment targeted by 2030. Reflecting this transition, the 2026 QHES marked the first year in which a greater proportion of customers received monthly bills (47%) than quarterly bills (44%).

The survey also highlighted a continued shift away from flat-rate tariffs towards time-of-use and demand-based tariffs, a trend enabled by the increasing penetration of smart meters. By providing customers with greater visibility of their energy consumption and exposing them to price signals that vary by time and demand, smart meters are expected to encourage behavioural changes that smooth consumption patterns and place downward pressure on maximum demand over time.

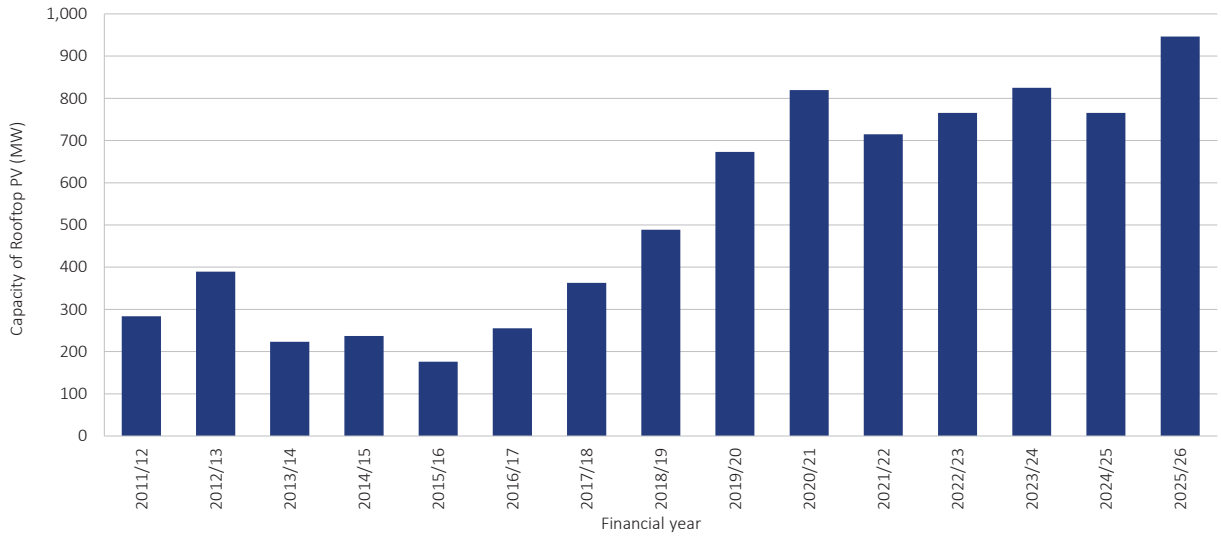
2.3.2 Consumer energy resources

Powerlink works with Energy Queensland to develop forecasts for CER. Energy Queensland maintains a register of the number, capacity and location of rooftop solar PV, electric vehicle and residential battery installations, providing insights into historical uptake trends. These inputs are combined with AEMO assumptions and forecasts relating to technology adoption, customer behaviour and policy settings to model future uptake and develop CER projections for use in Powerlink's demand forecasting and network planning processes.

2.3.3 Rooftop solar PV

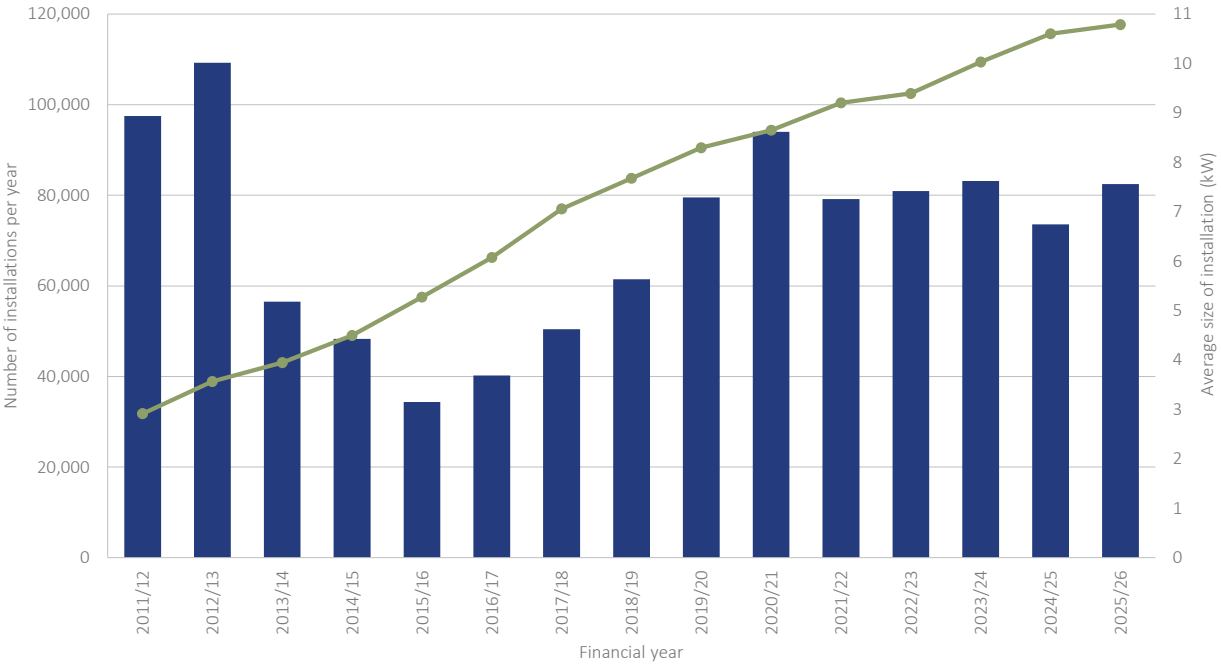
Rooftop solar PV installations have continued to grow at a steady rate with a further 946MW being installed over the 12 months to 30 June 2026. This growth is expected to continue, with the 2026 QHES indicating that around 30% of respondents intend to install new rooftop solar PV systems or upgrade existing systems within the next three years. An increase in system upgrades is anticipated ahead of the expiry of the 44 cent per kilowatt hour feed-in-tariff on 1 July 2028, as customers seek to maximise the value of their solar investments. The forecast does not incorporate the recently announced expansion of the Small-Scale Renewable Energy Scheme (SRES) to support solar PV systems up to 1MW. This policy is expected to accelerate the deployment of larger rooftop solar PV systems, with its impact to be reflected in the 2027 TAPR forecast.

Figure 2.2 Net increase in installed rooftop solar PV panel capacity in Queensland



Notes:
(1) Source: Clean Energy Regulator, Small-scale Installation Postcode Data.
(2) Registrations generally lag installations and hence data for FY2026 may be slightly understated.

Figure 2.3 Annual installation rates and average sizes for Queensland rooftop solar PV panel capacity

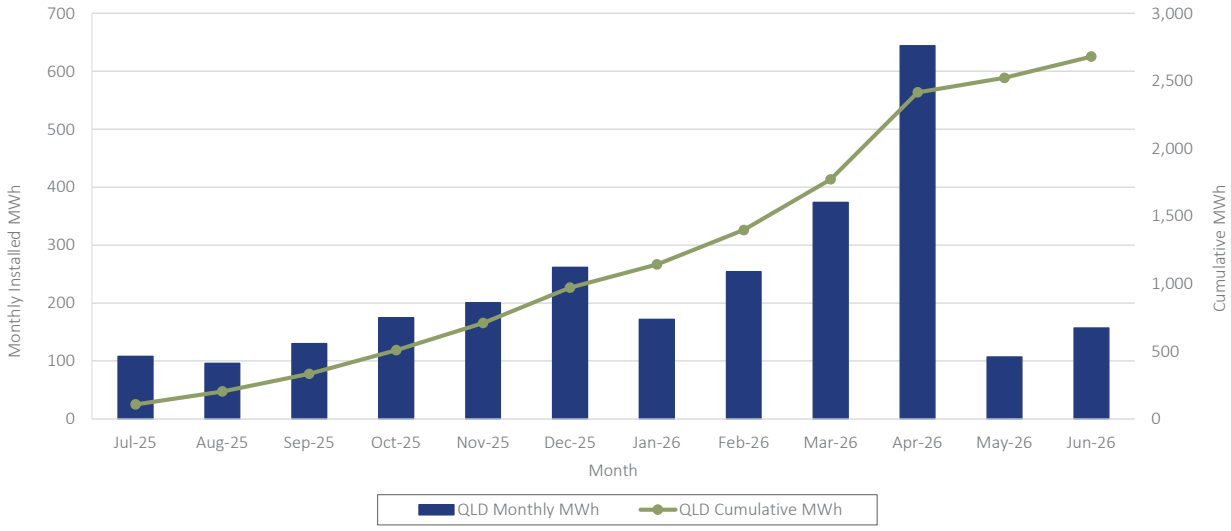


Notes:
(1) Source: Clean Energy Regulator, Small-scale Installation Postcode Data.
(2) Registrations generally lag installations and hence data for FY2026 may be slightly understated.

2.3.4 Residential batteries

Residential battery installations have increased significantly over the past 12 months, exceeding earlier expectations following the introduction of government incentives. As a result, higher adoption rates have been incorporated into the forecasts, leading to increased battery uptake across all scenarios, as shown in figures 2.4 and 2.5. While changes to the Cheaper Home Battery Program in May temporarily reduced the uptake of larger battery systems, these trends were not known when the forecast assumptions were finalised. Over the longer-term, residential battery adoption is expected to continue growing, supported by government policy, declining technology costs and increasing customer interest in energy self-sufficiency. The growth in residential batteries is expected to further flatten the load profile, helping to ease both maximum and minimum demands. The 2026 QHES highlights the strength of this trend, with 35% of surveyed households with rooftop solar PV reported they have a household battery, up from 21% in 2025. A further 17% indicated they intended to purchase a battery within the next three years. Among households that have or intend to purchase a battery, 52% cited storing excess solar energy for use in peak periods as the primary motivation, while 37% of participants expressed a high interest in community batteries.

Figure 2.4 Queensland monthly residential battery installations



Notes:
(1) Source: Clean Energy Regulator, Small-scale Installation Postcode Data.
(2) 2025 residential battery data is only available from 1 July 2025, when residential batteries became eligible under the Small-scale Renewable Energy Scheme.

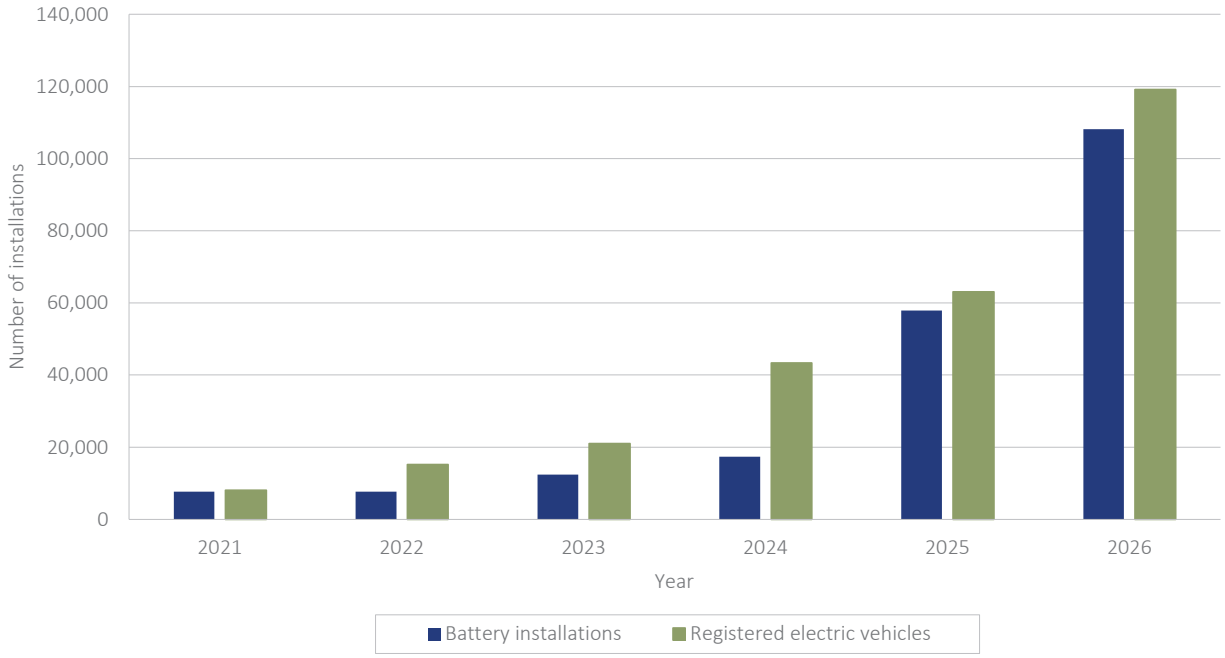
2.3.5 Electric vehicles

The forecast for electric vehicle uptake has been revised upward in 2026 to reflect stronger than expected market growth. The 2025 TAPR forecast anticipated that 93,000 electric vehicles would be registered by 2026; however, actual registrations reached approximately 119,000, resulting in an uplift in the electric vehicle forecast across the outlook period.

A key uncertainty in assessing the future forecast and network impacts of electric vehicles is charging behaviour. Unmanaged charging has the potential to increase demand during peak evening hours and add strain to the grid, whereas smart charging solutions, supported by time-of-use tariffs and incentives from electricity retailers, are increasingly shifting charging to off-peak times and reducing pressure on the network.

Consumer interest in electric vehicles continues to strengthen. The 2026 QHES found that 67% of households who do not own an electric vehicle or plug-in hybrid would consider purchasing one in the next three years, up from 58% in 2025. This growing interest is consistent with the strong recent growth in electric vehicle sales and supports continued expansion of the electric vehicle fleet over the forecast period.

Figure 2.5 Queensland residential battery uptake and number of registered electric vehicles



Notes:
(1) Source (residential battery uptake): Clean Energy Regulator, Small-scale Installation Postcode Data.
(2) Source (registered electric vehicles): Queensland Government, Electric Vehicle Snapshot.

2.3.6 Data centres

Queensland offers opportunities for data centre development through its combination of existing and emerging generation, a well-developed transmission network and locations with access to multiple transmission pathways. This aligns with the Queensland Government's support for responsible data centre investment that supports local employment, delivers benefits to host communities and contributes to Queensland's economy.

Interest in data centre developments in Queensland has increased significantly over the past six months, driven by growing global demand for digital infrastructure and the availability of development opportunities in Queensland. As a result, Powerlink has experienced a substantial increase in engagement with data centre developers.

While the maturity and timing of individual developments remain uncertain, emerging data centre loads are becoming an increasingly important consideration in Queensland's long-term demand outlook.

The 2026 Central scenario includes a modest contribution from data centre developments, while the High scenario reflects a stronger growth outlook informed by early engagement with prospective developers. The Low scenario, by comparison, does not include any data centre load growth. The associated data centre demand and energy assumptions adopted in the Central and High scenarios are shown in Figure 2.6 and Figure 2.7. As project certainty increases, further data centre load is expected to be progressively incorporated into future forecasts. While data centre demand is expected to contribute to peak demand, emerging policy, regulatory and connection frameworks may increasingly encourage or require large loads to provide demand flexibility, including reducing or shifting consumption during periods of system stress, network constraints or limited supply availability. During daytime periods, data centre demand may reduce the curtailment of excess solar PV generation and help increase demand at minimum system load times.

The extent to which future data centre demand can be supplied will therefore depend not only on the scale and location of proposed developments, but also on their operating characteristics. Data centres that can provide some level of demand flexibility, including the ability to reduce, shift or temporarily curtail load during defined network conditions, may enable more efficient utilisation of existing network infrastructure and reduce or defer the need for network augmentation. As connection frameworks continue to evolve, demand flexibility may become an increasingly important consideration in facilitating the connection of large-scale loads and improving access to available network capacity.

To support this emerging sector, Powerlink has prepared guidance (see Appendix B) on network and connection considerations to support prospective developers to make informed decisions during the early stages of project development. The guide provides practical information on site selection, connection pathways and the technical and planning considerations associated with connecting large-scale data centre loads to Queensland's transmission network. It complements, but does not replace, the connection process prescribed under Chapter 5 of the National Electricity Rules.

The guidance outlines how the location, scale, timing and operating characteristics of a proposed data centre can influence its connection requirements. Key considerations include proximity to existing and future generation, the capability and configuration of the transmission network, the proposed connection point, reliability requirements and the potential need for network augmentation. Proponents are encouraged to provide detailed and realistic forecasts of demand and energy consumption, daily load profiles, development staging and commissioning timeframes. This information will enable Powerlink to assess the proposed connection across a range of operating conditions and identify potential network constraints, augmentation requirements or alternative connection arrangements.

Early engagement with Powerlink, supported by experienced technical advisers, can help developers better understand potential connection opportunities, network capability considerations, connection pathways and project-specific requirements before committing to detailed project designs. Prospective developers are encouraged to contact Powerlink's Connections and Development Team via Powerlink's website.

Figure 2.6 Queensland data centre Central and High scenario demand forecast

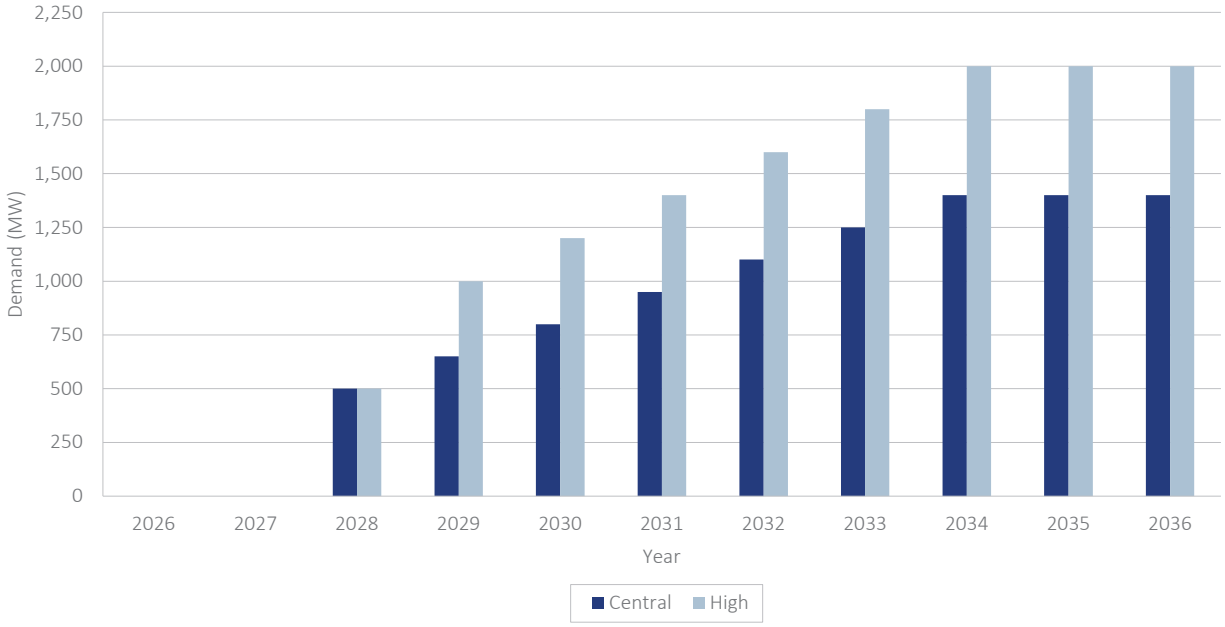
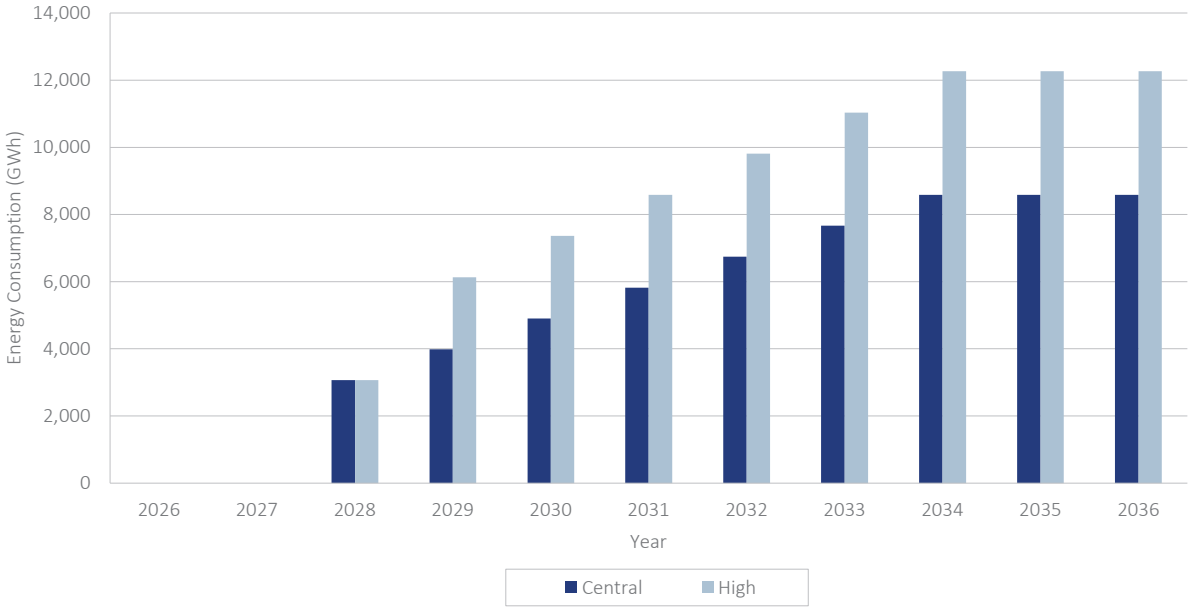


Figure 2.7 Queensland data centre Central and High scenario annual energy consumption forecast



2.3.7 Hydrogen

Hydrogen load forecasts remain highly uncertain and have been excluded from the Central scenario forecast. Following the significant reduction in forecast hydrogen-related demand in the 2025 TAPR, there has been limited evidence over the past year to support the inclusion of material hydrogen loads within the Central scenario planning horizon.

While a couple of proponents continue to investigate hydrogen production opportunities in Queensland, most projects remain at an early stage of development and are subject to considerable uncertainty regarding economics, technology costs, market demand, policy settings and final investment decisions. As a result, hydrogen-related electricity demand is currently treated as a potential future source of load growth rather than a committed forecast load.

This cautious outlook is consistent with broader industry trends, with hydrogen project development continuing to progress more slowly than initially anticipated both in Australia and internationally. Powerlink will continue to monitor project developments and incorporate hydrogen-related loads into future forecasts as projects mature and achieve greater certainty.

2.3.8 Electrification of load

In 2023/24, approximately 24% of final energy consumption in Queensland was from electricity and this electrical energy was predominantly supplied from the interconnected power system[1]. The remaining energy consumption was largely met through the direct combustion of fossil fuels across sectors including transport, agriculture, mining and manufacturing. While electrification remains a potential source of long-term growth in electricity demand, expectations for near-term uptake have moderated. The most material opportunities for large-scale electrification are currently associated with industrial processes and mining operations, where decarbonisation pathways continue to be assessed. However, significant uncertainty remains regarding the timing, scale and location of these developments. Powerlink's Central scenario includes electrification projects where there is sufficient evidence of progress and commitment, with manufacturing electrification currently representing the primary source of forecast electrification demand.

Growth in grid-supplied electricity resulting from electrification may be partially offset by improvements in energy efficiency. Electric technologies are generally more efficient than fossil fuel alternatives, meaning that converting a process from fossil fuels to electricity does not typically translate to a one-for-one increase in energy consumption. In addition, behind-the-meter generation can reduce the amount of energy supplied through the network.

The geospatial distribution of these effects is not expected to be uniform. Some areas may experience substantial increases in demand for grid-supplied electricity driven by industrial development or electrification initiatives, while other areas may experience lower demand growth due to energy efficiency improvements and increasing levels of CER.

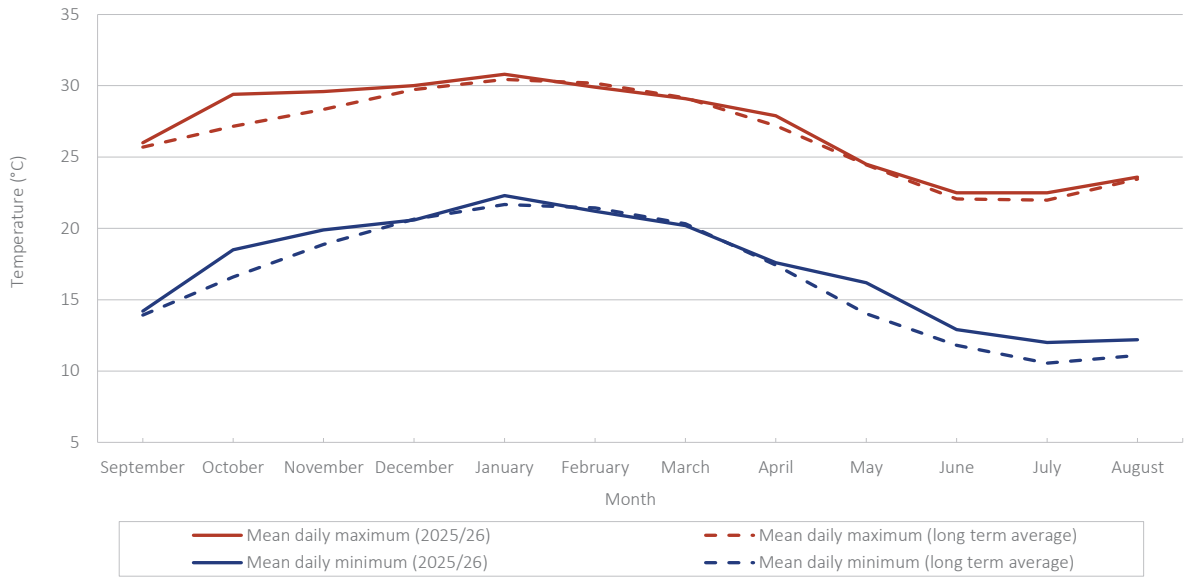
[1] At the time of writing, the ABS indicated the next energy account release would be 29 October 2026.

Powerlink continues to work closely with customers, industry and AEMO to improve our understanding of emerging technologies, industrial development and electrification opportunities so these impacts can be appropriately considered in future demand forecasts and transmission network planning processes.

2.3.9 Weather

Queensland's demand is highly sensitive to the sub-tropical climate and temperature variations, with heatwaves amplifying peak loads. Figure 2.8 shows observed mean temperatures for Brisbane during September 2025 to August 2026 compared with long-term averages. The comparison reveals a very average summer in south east Queensland and the winter minimum temperatures in July and August were also warmer than the long-term average.

Figure 2.8 Brisbane temperature ranges over September 2025 to August 2026



Notes:
(1) Long-term average based on years 2000 to 2024/25.
(2) Source: Bureau of Meteorology, Monthly Mean Maximum Temperature (Brisbane).

2.3.10 Transmission connected customers

Powerlink obtained summer, shoulder and winter maximum demand forecasts from customers that connect directly to the Powerlink transmission network. No new large loads have connected in the past 12 months.

There are several proposals under development for new data centre, mining, metal processing, other industrial loads and for the electrification of existing loads. These potential large loads total approximately 1,466MW. The likely distribution of these loads is shown in Table 2.1. The loads in Table 2.1 are not included in the Low and Central scenario forecasts.

Table 2.1 Potential large loads excluded from the Low and Central scenario forecasts

Zone	Description	Possible load
Northern Queensland	Manufacturing	166MW
Central Queensland	Hydrogen production Mining	460MW
Southern Queensland	Data Centre Manufacturing	840MW

2.4 Forecast highlights

Powerlink's demand forecasts for 2026 show steady growth in transmission-delivered summer maximum demand at an average rate of 2.7% per annum over the 10-year period.

The forecast increase is predominantly driven by distribution-connected load growth and anticipated data centre load growth on the transmission network, supplemented by additional demand associated with the electrification of industrial operations in the Gladstone zone.

Powerlink forecasts annual transmission-delivered minimum demand to increase over the 10-year outlook period. Minimum demand, or minimum system load, represents the lowest level of demand supplied by the transmission network at any point in time. While minimum demand has steadily declined over the past seven years, largely due to the increasing uptake of rooftop and distribution-connected solar PV, this trend is expected to reverse as anticipated large new loads, including data centres, connect to the network.

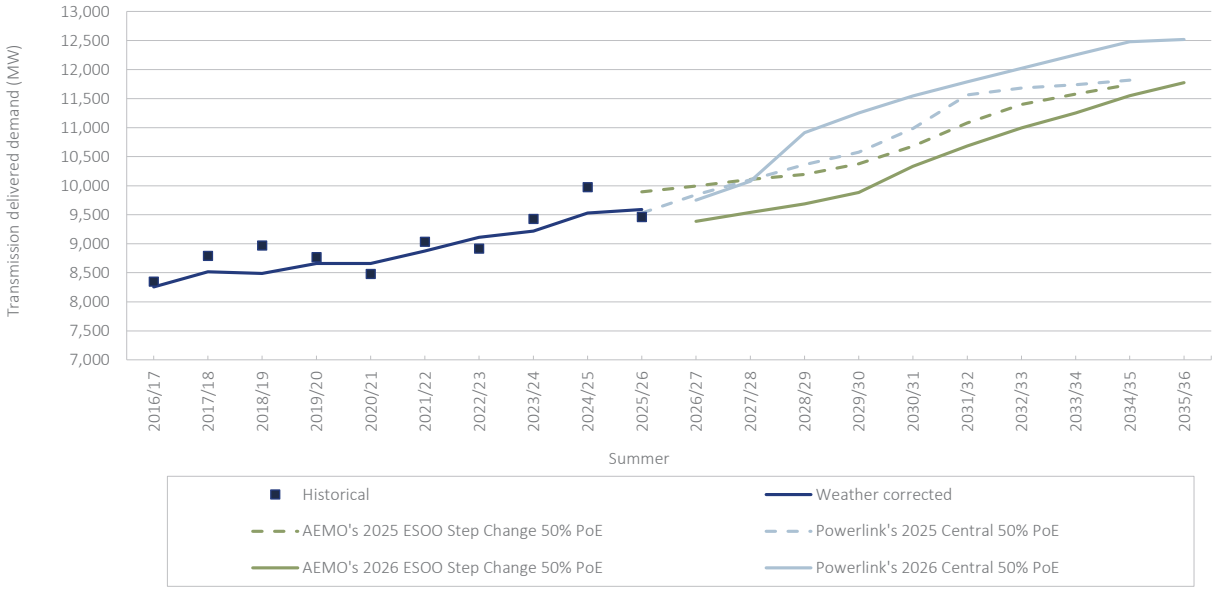
Queensland did not observe a new record maximum demand over the last 12 months but did observe a new record minimum demand. Maximum demand did not peak this year due to the relatively milder 2025/26 summer temperatures. A new record minimum transmission-delivered demand of 2,077MW was recorded on Saturday, 19 September 2026, at 11.30am and was 162MW lower than the previous record set in August 2025.

2.5 Maximum delivered demand

The 2025/26 maximum transmission-delivered demand in Queensland occurred at 6.30pm on Thursday, 12 February 2026, when 9,462MW was delivered from the transmission grid (refer to Figure 2.13 for load measurement definitions). Operational as-generated peak demand was recorded at the same time, reaching 10,385MW. After weather correction, the 2025/26 summer maximum transmission-delivered demand was 9,591MW, 0.65% higher than Powerlink's 2025 forecast for 2025/26.

Figure 2.9 shows a comparison of AEMO's 2025 and 2026 Electricity Statement of Opportunities (ESOO) delivered summer maximum demand forecasts based on the step change scenario with Powerlink's 2025 and 2026 Central scenario, all with 50% Probability of Exceedance (PoE). The increase in Powerlink's forecast maximum demand primarily results from the inclusion of anticipated data centre load.

Figure 2.9 Comparison of AEMO's 2025 and 2026 ESOO Step Change scenario forecast with Powerlink's 2025 and 2026 Central scenario 50% PoE transmission-delivered demand forecast



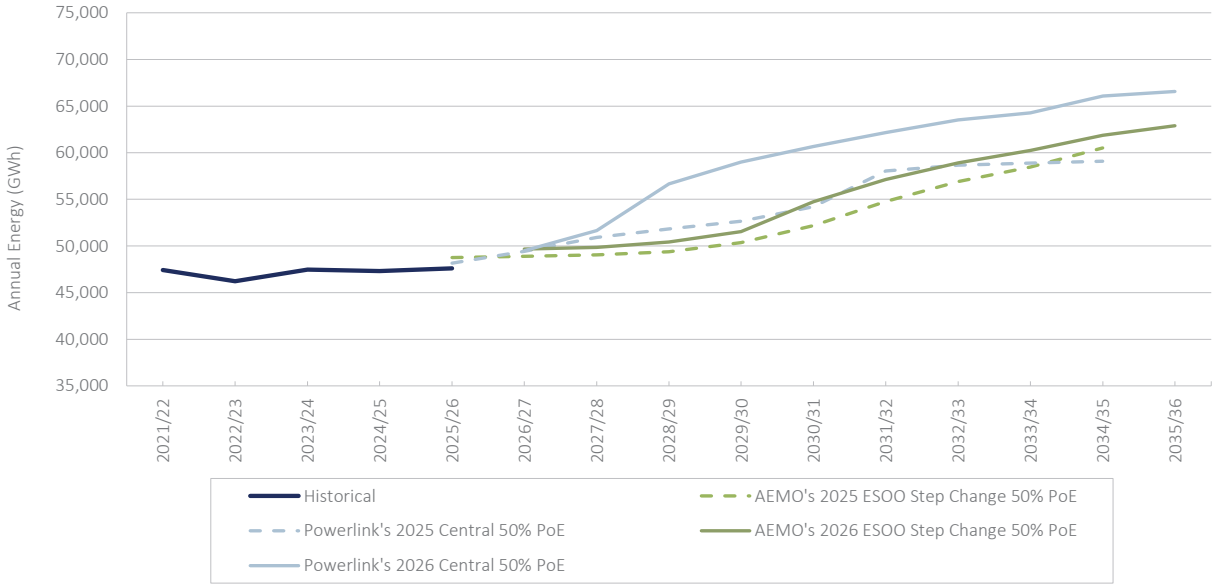
Note:

(1) AEMO's 2025 and 2026 ESOO (Electricity Forecasting Data Portal) forecast has been converted from operational sent out to transmission-delivered for the purposes of comparison. Refer to Figure 2.13 for further details.

2.6 Annual delivered energy

Powerlink's energy forecast has increased compared to last year's outlook. Over the forecast period, energy consumption is expected to be higher, primarily due to the inclusion of anticipated data centre demand. Figure 2.10 compares AEMO's 2025 and 2026 ESOO energy forecasts under the step change scenario with Powerlink's 2025 and 2026 Central scenario forecasts. The higher growth observed in Powerlink's forecast is largely attributable to anticipated data centre load. While this load is not currently reflected in AEMO's forecast, AEMO's outlook includes significant electrification-related demand growth. Powerlink considers that some of the electrification assumptions underpinning AEMO's forecast have moderated since those forecasts were developed. As a result, both AEMO and Powerlink project growth in energy consumption, although the primary drivers of that growth differ between the two forecasts.

Figure 2.10 Comparison of AEMO's 2025 and 2026 ESOO Step Change scenario forecast with Powerlink's 2025 and 2026 Central scenario 50% PoE delivered energy forecast



Note:
(1) AEMO's 2025 and 2026 ESOO (Electricity Forecasting Data Portal) forecast has been converted from operational sent out to transmission-delivered for the purposes of comparison. Refer to Figure 2.13 for further details.

2.7 Minimum delivered demand

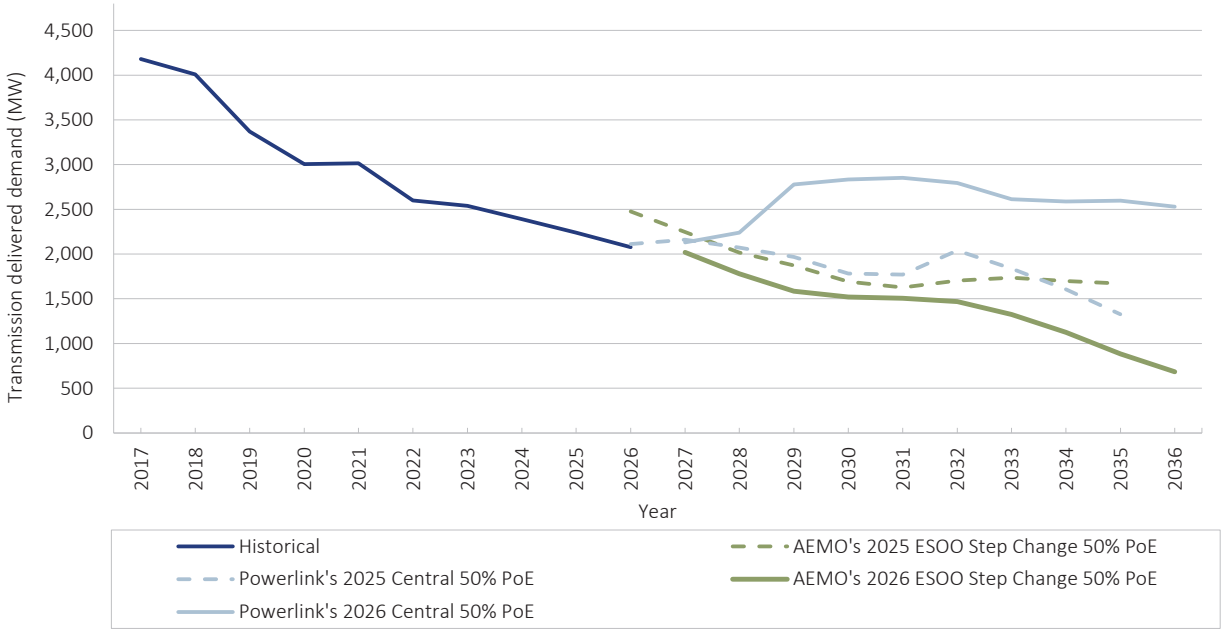
The 2026 Queensland minimum transmission-delivered demand occurred at 11:30am on Saturday, 19 September 2026, when only 2,077MW was delivered from the transmission grid (refer to Figure 2.13 for load measurement definitions).

At the time of minimum transmission-delivered demand, directly connected loads made up about 99% of the transmission-delivered demand with Distribution Network Service Provider (DNSP) customers making up the remainder. Mild weather conditions, during a weekend in combination with strong contribution from rooftop solar PV and Energy Queensland connected generation were contributors to this minimum demand.

Figure 2.11 shows a comparison of AEMO's 2025 and 2026 ESOO annual delivered minimum demand forecast based on AEMO's Step Change scenario with Powerlink's 2025 and 2026 Central scenario. Compared with last year's forecast, minimum demand is forecast to be higher in the near-term due to increased uptake of residential and distribution-connected batteries, which are expected to increase charging load during daytime minimum demand periods. Anticipated data centre demand is also expected to provide a significant source of baseload consumption during minimum demand periods, further increasing transmission-delivered minimum demand. The variance between Powerlink's and AEMO's 2026 forecasts is largely attributable to Powerlink's inclusion of anticipated data centre demand, which has not been incorporated into AEMO's forecast.

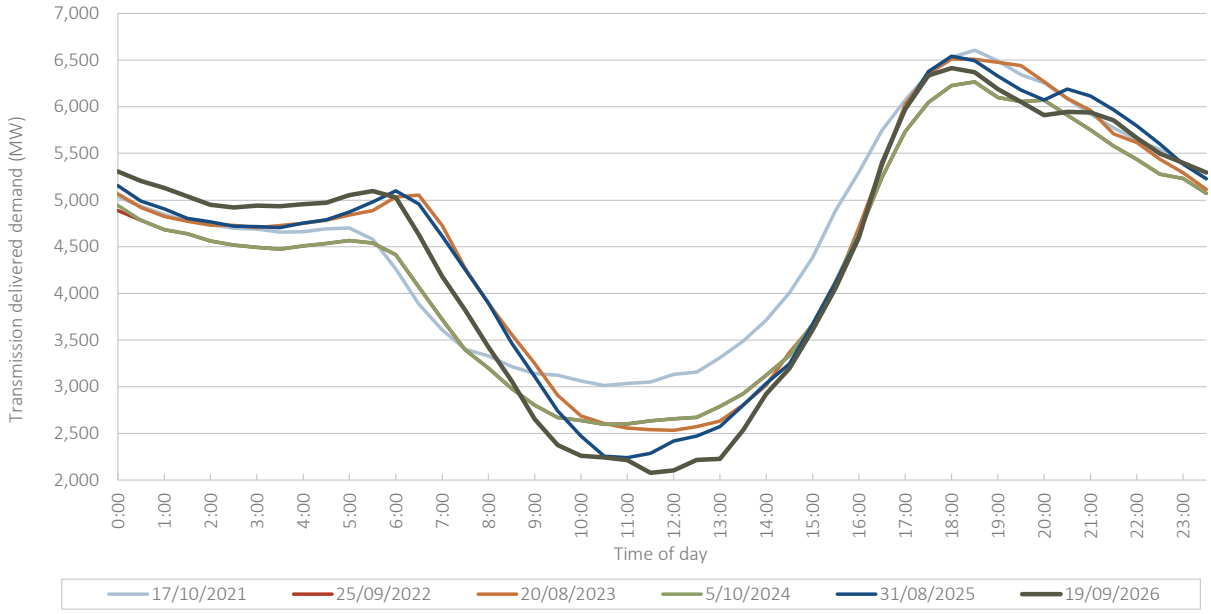
The forecast does not include the recently announced expansion of the SRES to support solar PV systems up to 1MW. This measure is expected to accelerate the installation of larger rooftop PV systems and further reduce minimum demand outcomes.

Figure 2.11 Comparison of AEMO's 2025 and 2026 ESOO Step Change scenario minimum delivered demand forecast with Powerlink's 2025 and 2026 Central scenario



Note:
(1) AEMO's 2025 and 2026 ESOO (Electricity Forecasting Data Portal) forecast has been converted from operational sent out to transmission-delivered for the purposes of comparison. Refer to Figure 2.13 for further details.

Figure 2.12 Transmission-delivered minimum demand for the Queensland region



Note:
(1) 2026 trace based on preliminary metering data up to 22 September 2026.

Minimum demand has continued to decline since 2016, driven by the ongoing growth of rooftop solar and grid-connected solar PV. In contrast, maximum daily demand has continued to rise in line with underlying load growth, as the contribution of solar PV diminishes in the late afternoon and early evening. This has resulted in an increasing spread between minimum and maximum demand levels.

Meeting these higher peak demand periods requires greater support from large-scale generation and the transmission network, as they occur at a time when solar PV output is limited. The recent acceleration in residential and transmission-connected battery energy storage systems (BESS) uptake will start to ease minimum demand conditions through increased daytime battery charging. However, the previous decline in transmission-delivered demand is expected to moderate over the next 10 years, with minimum demand forecast to grow at an average annual rate of 2.0%, primarily driven by new data centre demand.

2.8 Demand and energy forecast

As part of the TAPR, Powerlink prepares and reports on the High, Central and Low forecast scenarios to reflect different development pathways. Demand forecasts are also prepared to account for yearly weather variations and are expressed as 10% PoE, 50% PoE and 90% PoE forecasts. They represent demand conditions that are expected to be exceeded once in 10 years, five times in 10 years and nine times in 10 years respectively.

The forecast average annual growth rates for the Queensland region over the next 10 years under High, Central and Low scenarios are shown in Table 2.2. These growth rates refer to transmission-delivered quantities as described in Section 2.8.1. Maximum demands continue to be expected in the summer period, while minimum demand, which historically occurred only in winter, may now occur during winter or shoulder periods. The summer and winter maximum demand growth rates are based on 50% PoE corrected values for 2025/26 and 2025 respectively.

Table 2.2 Average annual demand and energy growth rate over next 10 years

	High scenario	Central scenario	Low scenario
Delivered energy	5.4%	3.4%	0.4%
Delivered summer maximum demand (50% PoE)	4.3%	2.7%	0.2%
Delivered winter maximum demand (50% PoE)	4.6%	2.9%	0.3%

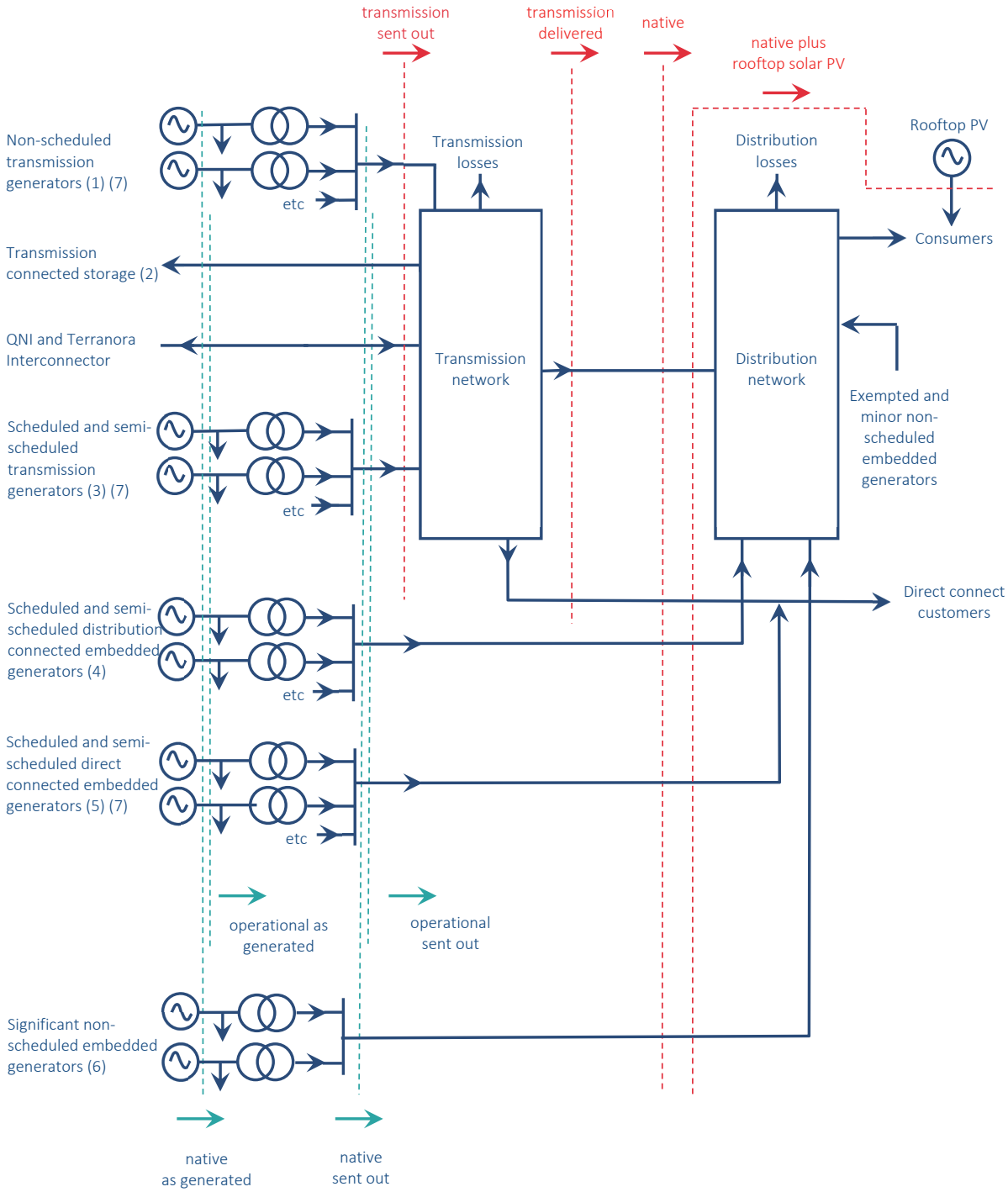
The forecast for minimum delivered demand is strongly correlated to the uptake of rooftop solar PV installations and embedded variable renewable energy (VRE) generation on the Energy Queensland network. The forecasts presented in this chapter assume these resources can operate without constraints and do not account for future market outcomes, operational directions or system security measures that may limit their output.

Tables showing historical and forecast demand data from Section 2.8 are available in the Energy and Demand Projections Data workbook on the Powerlink website.

2.8.1 Demand and energy terminology

Demand and energy values vary depending on where they are measured within the network, with different stakeholders measuring these quantities at different points to support their specific needs. Figure 2.13 shows the common demand and energy measurement definitions used throughout the network, and this terminology is applied consistently throughout the TAPR. Transmission-connected BESS are excluded from the demand forecast, as they are scheduled loads whose charging demand is determined by market outcomes rather than underlying electricity consumption. Consequently, this load is not considered a requirement that the transmission network must be planned to meet.

Figure 2.13 Load measurement definitions

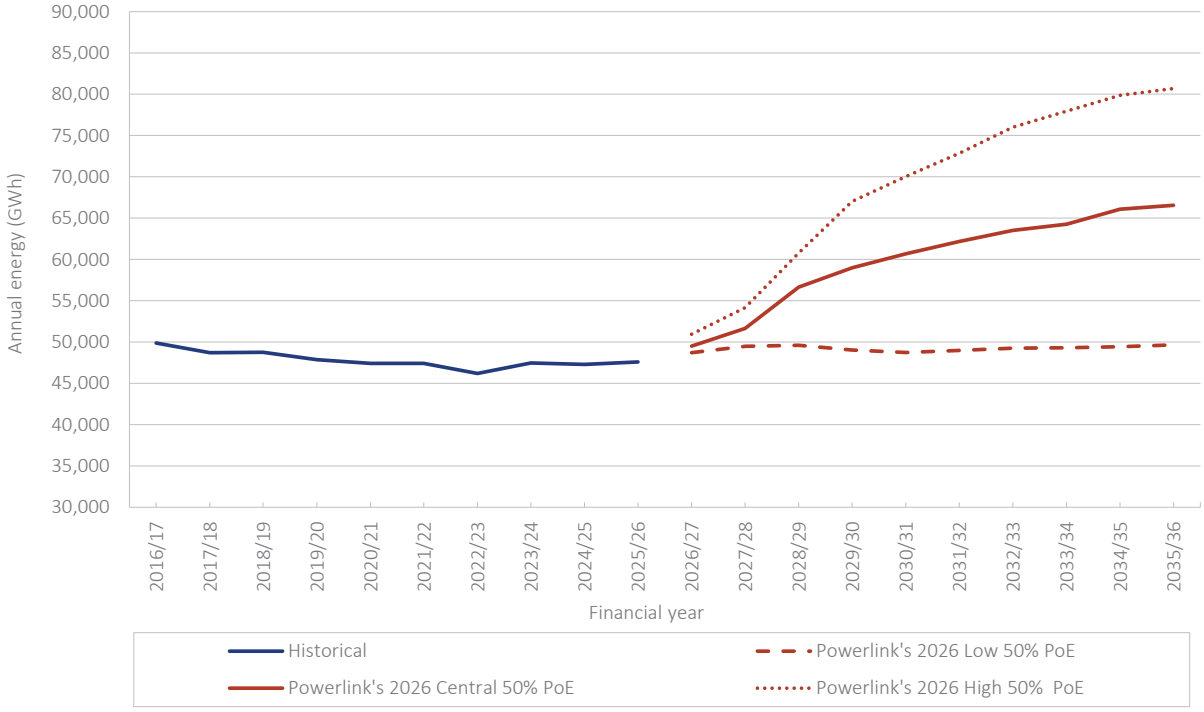


Notes:
(1) Includes Invicta and Koombooloomba.
(2) Including pump and transmission connected BESS loads.
(3) Includes Yarwun which is non-scheduled.
(4) For a full list of scheduled and semi-scheduled distribution connected generators refer to supplementary data workbook for Chapter 9.
(5) Sun Metals Solar Farm and Condamine.
(6) Lakeland Solar and Storage, Hughenden Solar Farm, Pioneer Mill, Moranbah North, Racecourse Mill, Barcaldine Solar Farm, Longreach Solar Farm, German Creek, Oaky Creek, Baking Board Solar Farm, Sunshine Coast Solar Farm and Rocky Point.
(7) For a full list of transmission network connected generators, transmission connected BESS and scheduled and semi-scheduled direct connected embedded generators and BESS, refer to supplementary data workbook for Chapter 9.

2.8.2 Energy forecast

Historical annual transmission-delivered energy, and forecast transmission-delivered energy for the High, Central and Low scenarios, are shown in Figure 2.14.

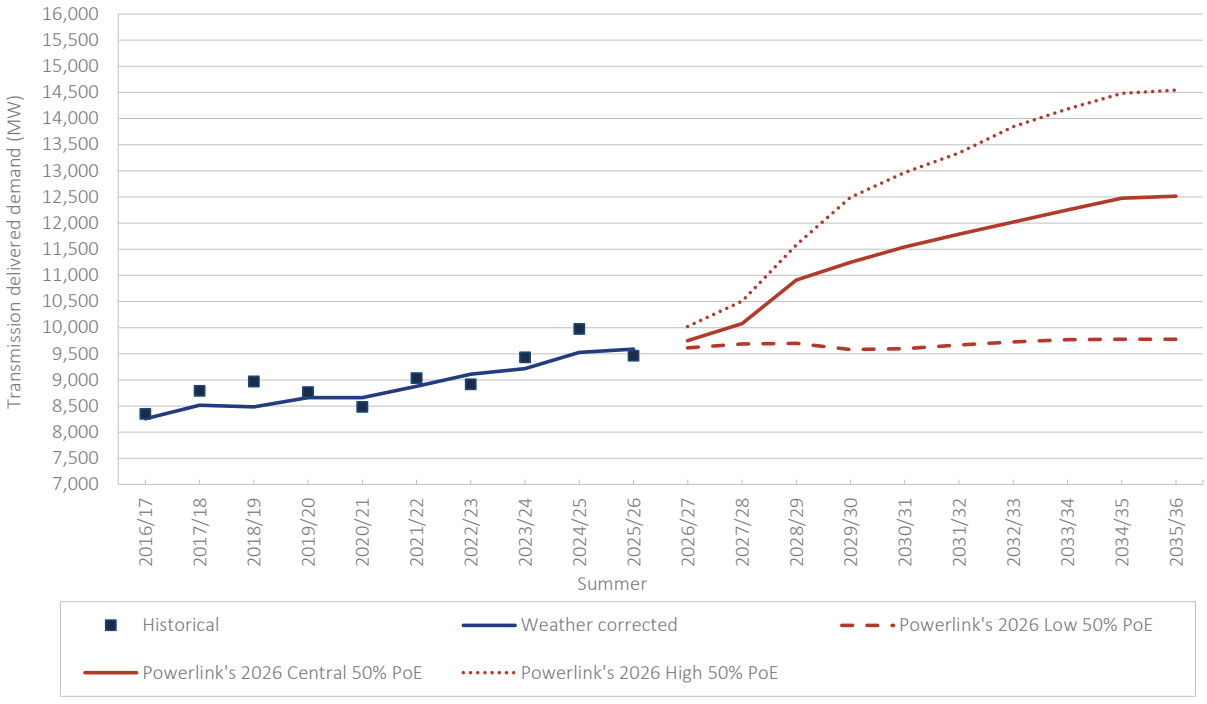
Figure 2.14 Historical and forecast transmission-delivered energy



2.8.3 Summer maximum demand forecast

Summer historical transmission-delivered maximum demands, and the forecast 50% PoE summer transmission-delivered maximum demands for the High, Central and Low scenarios, are shown in Figure 2.15.

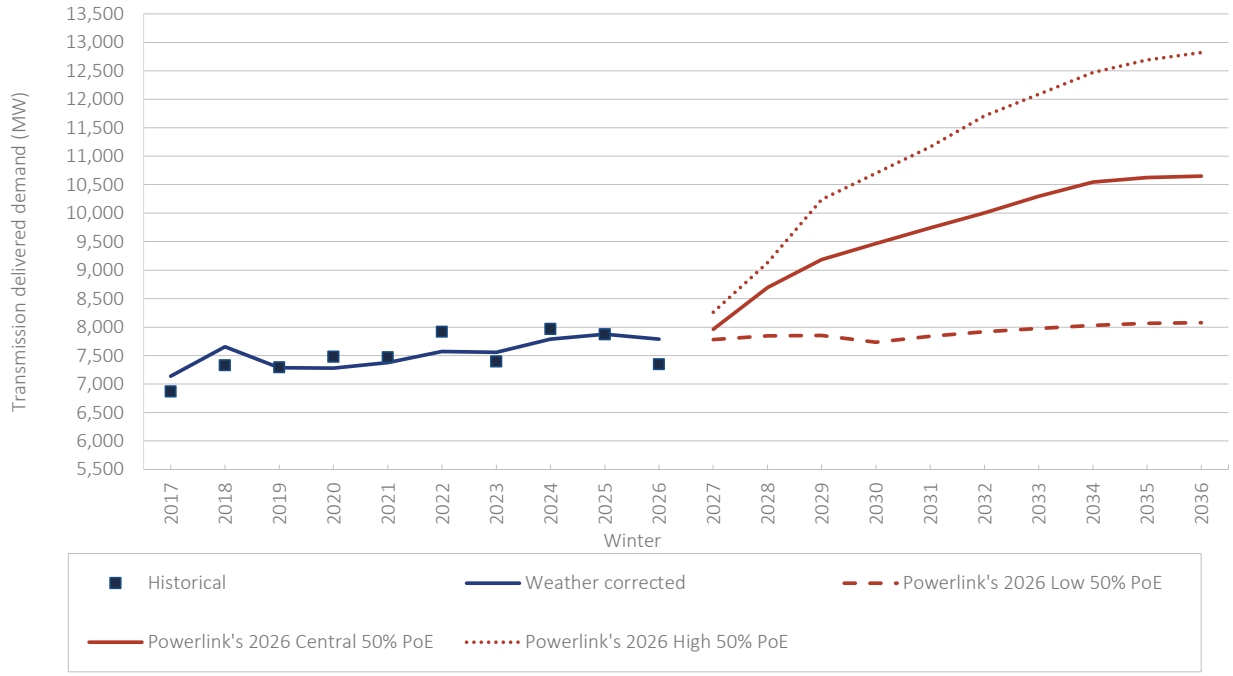
Figure 2.15 Historical and forecast transmission-delivered summer maximum demand



2.8.4 Winter maximum demand forecast

Winter historical transmission-delivered maximum demands, and the forecast 50% PoE winter transmission-delivered maximum demands for the High, Central and Low scenarios, are shown in Figure 2.16.

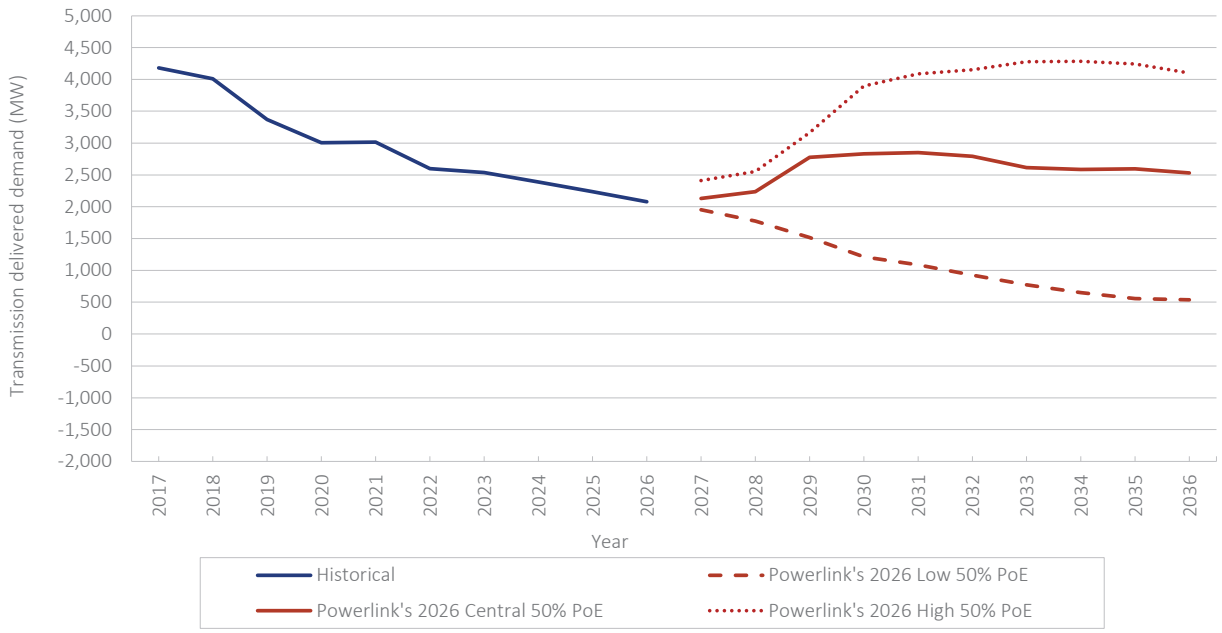
Figure 2.16 Historical and forecast transmission-delivered winter maximum demand



2.8.5 Minimum demand forecast

Historical transmission-delivered minimum demands, and the forecast 50% PoE annual transmission-delivered minimum demands for the High, Central and Low scenarios, are shown in Figure 2.17.

Figure 2.17 Historical and forecast transmission-delivered annual minimum demand



Note:
(1) The minimum demand forecast does not factor in any market intervention to prevent the grid from becoming insecure under the minimum system load conditions. Market interventions could include directing off embedded non-scheduled generators and directing on transmission-connected BESS and Pumped Hydro Energy Storage (PHES) systems to increase demand.

2.9 Zone forecasts

Powerlink's 2026 TAPR zone maximum demand forecasts have been on a coincident basis with the state peak demand. The 11 geographical zones are defined in Table H.1 and illustrated in Figure H.1 in Appendix H. Each zone experiences its own (non-coincident) maximum demand, which is greater than or equal to that shown in tables 2.4 to 2.9.

Table 2.3 presents the average ratio of each zone's maximum transmission-delivered demand to its transmission-delivered demand at the time of Queensland region maximum delivered demand. These values can be used to multiply demands in tables 2.6 and 2.8 to estimate each zone's individual maximum transmission-delivered demand, the time of which is not coincident with the time of Queensland region maximum transmission-delivered demand. The ratios are derived from historical demand patterns.

Table 2.3 Average ratios of zone maximum delivered demand to zone delivered demand at time of Queensland region maximum delivered demand

Zone	Winter	Summer
Far North	1.14	1.12
Ross	1.56	1.40
North	1.16	1.16
Central West	1.13	1.25
Gladstone	1.03	1.02
Wide Bay	1.03	1.19
Surat	1.26	1.27
Bulli	1.06	1.12
South West	1.05	1.23
Moreton	1.02	1.04
Gold Coast	1.07	1.10

Tables 2.4 and 2.5 show the historical and forecast transmission-delivered energy for the Central scenario for each of the 11 zones in the Queensland region.

Table 2.4 Annual historical transmission-delivered energy by zone (GWh)

Financial Year	Far North	Ross	North	Central West	Gladstone	Wide Bay	Surat	Bulli	South West	Moreton	Gold Coast	Total
2016/17	1,704	2,682	2,661	3,098	10,196	1,305	4,154	1,524	1,308	18,103	3,145	49,880
2017/18	1,657	2,645	2,650	3,027	9,362	1,238	4,383	1,497	1,315	17,873	3,092	48,739
2018/19	1,648	2,338	2,621	2,996	9,349	1,198	4,805	1,519	1,376	17,849	3,065	48,764
2019/20	1,594	2,466	2,495	2,859	9,303	1,031	5,025	1,580	1,141	17,395	2,971	47,860
2020/21	1,519	2,569	2,413	2,813	9,383	970	5,241	1,491	993	16,807	3,222	47,421
2021/22	1,598	2,418	2,755	2,776	9,124	904	5,420	1,395	990	17,101	2,924	47,405
2022/23	1,602	2,074	2,668	2,783	8,898	898	5,279	1,334	971	16,829	2,878	46,214
2023/24	1,566	2,286	2,548	2,866	9,368	951	5,376	1,481	991	17,093	2,948	47,474
2024/25	1,501	2,275	2,555	2,807	9,353	953	5,363	1,513	918	17,125	2,941	47,304
2025/26	1,452	2,466	2,746	2,848	9,496	773	5,365	1,512	978	17,028	2,928	47,592

Table 2.5 Annual forecast transmission-delivered energy by zone (GWh)

Financial Year	Far North	Ross	North	Central West	Gladstone	Wide Bay	Surat	Bulli	South West	Moreton	Gold Coast	Total
2026/27	1,569	1,993	2,700	3,006	9,405	459	5,350	1,376	953	19,125	3,564	49,502
2027/28	1,549	2,114	2,698	3,219	9,979	487	5,369	1,405	976	20,202	3,649	51,647
2028/29	1,528	2,115	2,710	3,387	10,766	498	5,400	4,410	993	21,060	3,798	56,664
2029/30	1,508	2,106	2,733	3,389	11,126	493	5,457	4,437	991	22,905	3,867	59,014
2030/31	1,484	2,091	2,705	3,385	11,219	482	5,396	4,414	985	24,594	3,912	60,667
2031/32	1,462	2,184	2,683	3,387	11,280	474	5,231	4,406	977	26,122	3,961	62,165
2032/33	1,446	2,178	2,665	3,367	11,230	474	5,060	4,371	976	27,732	4,014	63,512
2033/34	1,430	2,177	2,653	3,359	11,215	468	4,949	4,346	967	28,683	4,048	64,294
2034/35	1,423	2,173	2,635	3,357	11,211	468	4,885	4,333	969	30,524	4,103	66,082
2035/36	1,414	2,172	2,629	3,356	11,211	466	4,863	4,337	966	31,002	4,152	66,567

Tables 2.6 and 2.7 show the historical and forecast transmission-delivered summer maximum demand for each of the 11 zones in the Queensland region, based on the central scenario and average (50% PoE) summer weather.

Table 2.6 State historical summer maximum transmission-delivered demand by zone (MW)

Summer	Far North	Ross	North	Central West	Gladstone	Wide Bay	Surat	Bulli	South West	Moreton	Gold Coast	Total
2016/17	258	222	378	429	1,193	270	421	178	286	3,993	719	8,347
2017/18	304	376	413	463	1,102	278	504	183	301	4,147	718	8,789
2018/19	342	339	400	484	1,096	285	526	191	312	4,270	724	8,969
2019/20	286	325	391	368	1,080	263	610	191	267	4,276	709	8,766
2020/21	254	405	431	471	1,111	298	588	165	248	3,894	614	8,479
2021/22	363	441	473	518	1,103	269	594	174	253	4,146	697	9,031
2022/23	305	365	414	418	1,091	283	547	132	276	4,359	725	8,916
2023/24	294	321	423	372	1,098	214	608	177	270	4,907	742	9,429
2024/25	327	443	405	475	1,120	297	641	197	255	4,988	824	9,974
2025/26	348	520	446	484	1,143	334	608	180	285	4,344	768	9,462

Table 2.7 State forecast summer maximum transmission-delivered demand by zone (MW)

Summer	Far North	Ross	North	Central West	Gladstone	Wide Bay	Surat	Bulli	South West	Moreton	Gold Coast	Total
2026/27	356	600	581	553	1,131	249	640	185	299	4,425	733	9,752
2027/28	357	628	598	603	1,246	262	662	203	303	4,471	742	10,076
2028/29	364	608	607	608	1,314	256	675	688	296	4,719	777	10,912
2029/30	369	592	606	616	1,320	264	675	685	302	5,026	796	11,251
2030/31	366	596	612	607	1,301	252	658	670	302	5,355	824	11,542
2031/32	367	603	616	597	1,307	258	640	672	299	5,596	831	11,787
2032/33	373	633	624	597	1,320	262	648	681	290	5,767	825	12,020
2033/34	372	643	627	618	1,325	249	635	674	306	5,978	825	12,252
2034/35	382	620	638	611	1,326	257	613	674	303	6,222	831	12,476
2035/36	379	595	609	597	1,264	253	579	639	296	6,447	857	12,516

Tables 2.8 and 2.9 show the historical and forecast transmission-delivered winter maximum demand for each of the 11 zones in the Queensland region, based on the Central scenario and average (50% PoE) winter weather.

Table 2.8 State historical winter maximum transmission-delivered demand by zone (MW)

Winter	Far North	Ross	North	Central West	Gladstone	Wide Bay	Surat	Bulli	South West	Moreton	Gold Coast	Total
2017	241	368	366	377	1,074	216	513	187	248	2,797	483	6,870
2018	242	366	335	439	1,091	235	475	186	336	3,086	540	7,331
2019	234	284	362	419	1,037	239	615	195	293	3,078	540	7,296
2020	227	306	327	449	1,104	246	531	191	313	3,274	515	7,483
2021	204	296	334	383	1,075	250	592	179	339	3,275	545	7,472
2022	230	246	322	431	991	280	508	162	360	3,780	611	7,921
2023	217	237	352	418	1,069	252	606	167	321	3,225	537	7,399
2024	221	187	367	441	1,071	270	473	193	396	3,728	624	7,970
2025	233	329	416	457	1,059	247	673	192	324	3,392	555	7,876
2026	221	378	381	424	1,099	224	614	189	304	3,017	497	7,349

Table 2.9 State forecast winter maximum transmission-delivered demand by zone (MW)

Winter	Far North	Ross	North	Central West	Gladstone	Wide Bay	Surat	Bulli	South West	Moreton	Gold Coast	Total
2027	282	475	460	438	1,131	197	507	147	237	3,506	581	7,962
2028	304	534	509	513	1,246	223	563	173	258	3,803	631	8,757
2029	301	502	502	503	1,314	211	558	569	244	3,901	643	9,249
2030	305	490	501	509	1,320	218	558	567	250	4,155	659	9,531
2031	304	495	508	504	1,301	209	546	556	251	4,447	684	9,805
2032	307	504	515	499	1,307	216	536	562	250	4,679	695	10,069
2033	310	526	519	496	1,320	218	539	566	241	4,793	685	10,213
2034	306	529	515	508	1,325	205	522	554	252	4,915	678	10,308
2035	310	504	518	497	1,326	209	499	548	246	5,058	675	10,391
2036	308	484	496	486	1,264	206	471	520	241	5,244	697	10,416

2.10 Summer and winter maximum and annual minimum daily profiles

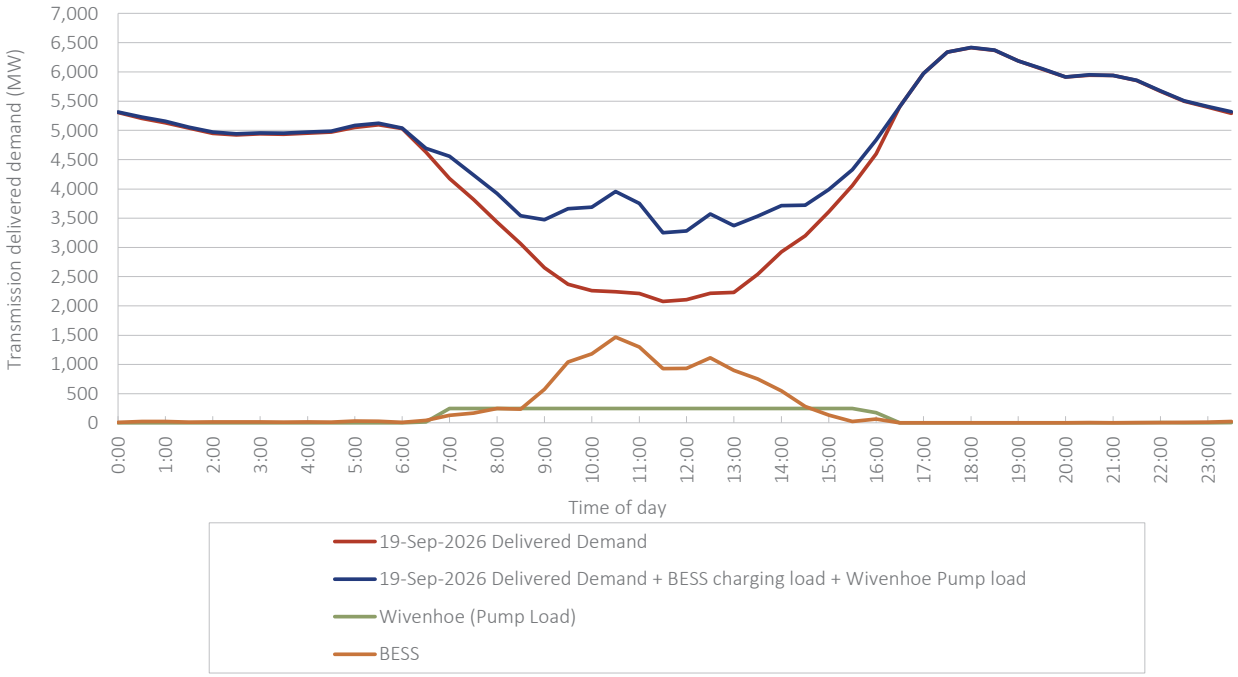
The daily load profiles (transmission-delivered) for the Queensland region on the days of summer 2025/26 and winter 2026 maximum demands are shown in Figure 2.18.

Figure 2.18 Daily load profile of summer 2025/26 and winter 2026 maximum transmission-delivered demand days



The 2026 annual minimum (transmission-delivered) daily load profile for the Queensland region delivered demand plus transmission-connected BESS charging load and Wivenhoe pump load is shown in Figure 2.19.

Figure 2.19 Daily load profile of the 2026 annual minimum transmission-delivered demand day and minimum delivered demand plus transmission-connected BESS charging load and Wivenhoe pump load



Notes:
(1) Based on preliminary meter data up to 22 September 2026.
(2) The transmission-delivered demand definition excludes the load from pumped hydro and transmission-connected BESS charging load. Adding the transmission-connected BESS and pumped hydro load to the minimum transmission-delivered demand demonstrates that there is extra load on the network that assists in avoiding insecure load levels.

2.11 Annual load duration curves

The annual historical load duration curves for the Queensland region transmission-delivered demand since 2021/22 are shown in Figure 2.20. The curves illustrate the widening gap between minimum and maximum demand levels on the network. While maximum demand has traditionally driven network planning considerations and asset utilisation, the rapid decline in minimum demand is creating new operational challenges that must also be managed. Figure 2.21 and Figure 2.22 provide a detailed view of the lowest and highest demand periods, respectively, which are the areas of greatest interest from a network planning perspective.

Figure 2.20 Historical transmission-delivered load duration curve

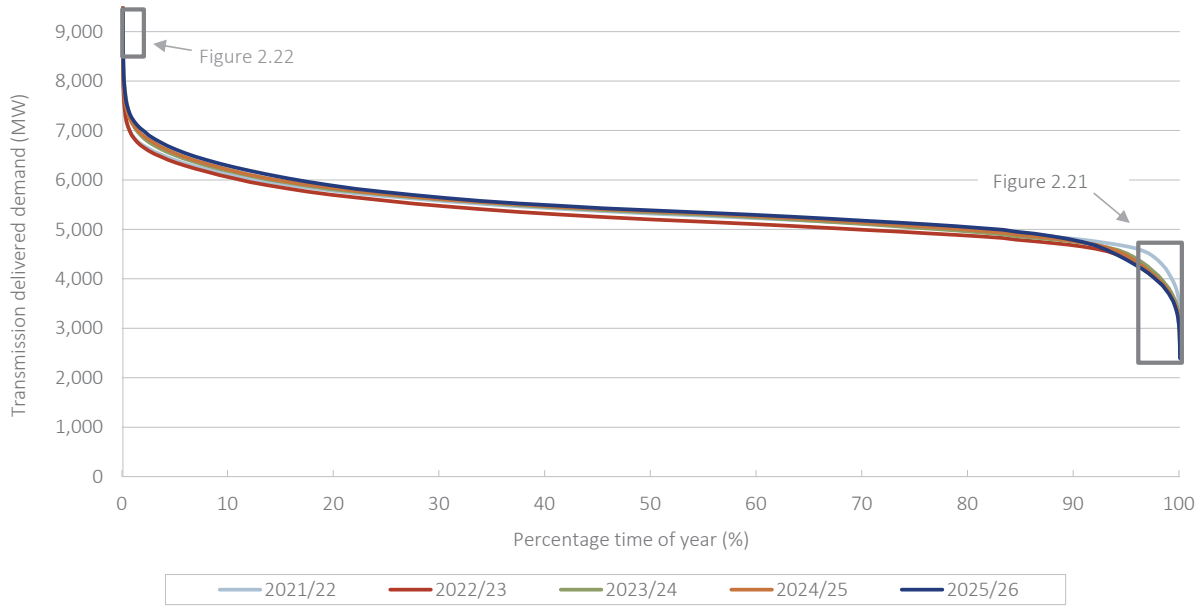


Figure 2.21 Historical transmission-delivered load duration curves (95-100%)

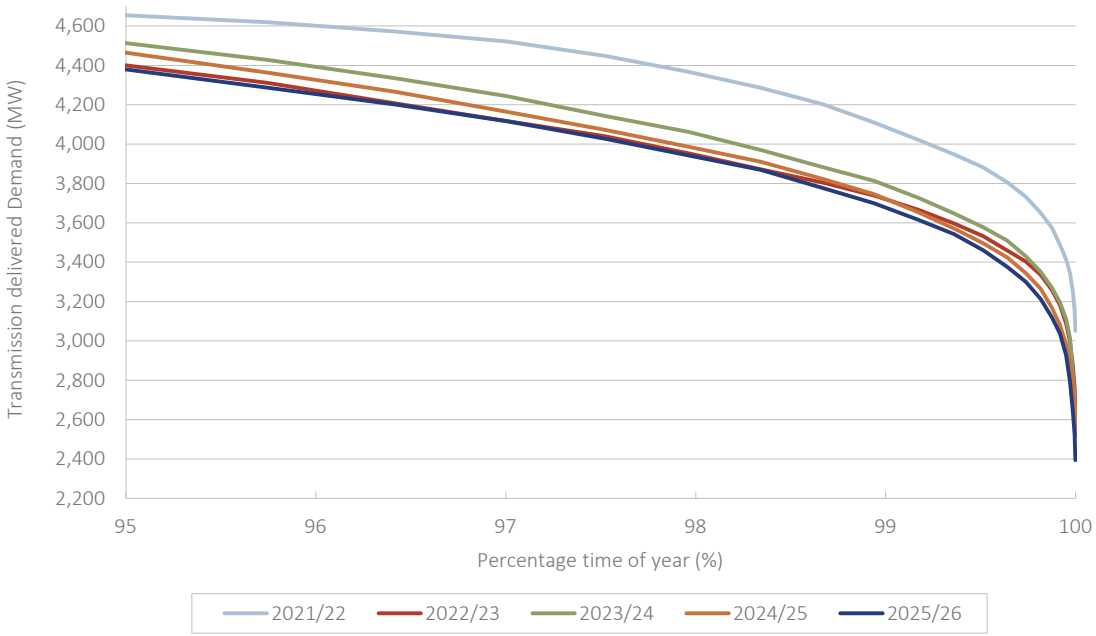


Figure 2.22 Historical transmission-delivered load duration curves (0-0.5%)

