2026 Victorian Annual Planning Report

# Appendix 3

# Input assumptions for Victorian Annual Planning Report models

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# Acronyms

| Term | Definition |
|---|---|
| **BESS** | battery energy storage system |
| **ESOO** | Electricity Statement of Opportunities |
| **GFM** | grid-forming |
| **GW** | gigawatt/s |
| **kV** | kilovolt/s |
| **MVA** | megavolt ampere/s |
| **MVAr** | megavolt ampere/s reactive |
| **MW** | megawatt/s |
| **REZ** | renewable energy zone |
| **RIT-T** | regulatory investment test for transmission |
| **VAPR** | Victorian Annual Planning Report |
| **VTP** | Victorian Transmission Plan |

# Appendix 3:

# Input assumptions for Victorian Annual Planning Report (VAPR) models

When undertaking power system analysis to identify future limitations, VicGrid constructs base cases that include the inputs from committed generation, transmission augmentation, committed VicGrid's Victorian Transmission Plan (VTP) programs and stability projects, Victorian connection point forecasts, and the Victorian region forecast from the Electricity Statement of Opportunities (ESOO) 2025 *Step Change* scenario. In addition to performing base case analysis, VicGrid also performs sensitivity analysis of different operating scenarios, primarily based on different combinations of generation dispatch and interconnector flows.

VicGrid has incorporated approximately 9,802 MW of new generation and storage capacity within the 10-year planning horizon, including 5 GW of offshore wind in Gippsland. The following new generation, network augmentation, system strength, and voltage stability projects have been considered over the next decade for the network assessment and capabilities. VicGrid applies a cut-off date of 31 March each year for project updates to be included in the Victorian Annual Planning Report (VAPR), however, some project timings or parameters may have changed between the cut-off date and publication.

A summary of these projects and underlying assumptions is provided in Table 1.

**Table 1 Committed generation, transmission augmentation and system stability projects**

| Year | Generation project | Network augmentation and system stability projects |
|---|---|---|
| **2025-26** | Glenrowan Solar Farm (102 MW) | 500 kV line uprate (Keilor-Sydenham, Moorabool–Cressy–Haunted Gully–Mortlake–Tarrone–Heywood) |
| | Hawkesdale Wind Farm (97 MW) | |
| | Ryan Corner Wind Farm (218 MW) | Cranbourne–Tyabb 220 kV lines ratings update |
| | Rangebank BESS (200 MW) | East Rowville Terminal Station B1, B4 transformer replacement (parameters updated) |
| | Wunghnu Solar Farm (94 MW) | Installation of 4th, 220/66 kV transformer at Cranbourne Terminal Station |
| | Girgarre Solar Farm (93 MW) | Ararat synchronous condenser (250 MVA) |
| | Latrobe Valley BESS (100 MW) | Mortlake Turn-in (to Haunted Gully–Tarrone 500 kV line) |
| | Mokoan Solar Farm (46 MW) | |
| | Winton North Solar Farm (86.5 MW) | |
| | Golden Plains Wind Far East (756 MW) - stage 1 | |
| | Melbourne/Melton Renewable Energy Hub - Side A (600 MW) | |
| | Koorangie BESS (185 MW grid-forming (GFM) inverters) | |
| | Goorambat East Solar Farm (250 MW) | |
| | Mornington BESS (240 MW) | |
| | Terang BESS (100 MW) | |
| | Horsham Solar Farm (118.8 MW) | |
| | Carwarp Solar Farm (150 MW) | |
| | Francis Street Data centre (120 MW) | |
| **2026-27** | Pine lodge BESS (250 MW) | EnergyConnect - Stage 2 |
| | Wooreen BESS (350 MW) | Shepparton Terminal Station B2, B3, 220/66 kV transformer replacement (parameters updates) |
| | Gnarwarre BESS (250 MW) | |
| | Axedale Solar Farm and BESS (190 MW) | Installation of Altona Terminal Station B1, 220/66 kV transformer |

| Year | Generation project | Network augmentation and system stability projects |
|---|---|---|
| | Fosterville Solar Farm and BESS (200 MW) | |
| | Joel Joel BESS (250 MW) | |
| | Kerang BESS (Big Battery) 100 MW | |
| | Thomastown BESS (300 MW) | |
| **2027-28** | Leakes Road data centre (240 MW) | Eastern Victoria reinforcement program:<br>• Install a second Hazelwood to Yallourn double circuit line<br>• Undertake load management works on the Rowville to Templestowe to Thomastown 220 kV circuit, and Rowville to Ringwood to Thomastown 220 kV circuit |
| | Brooklyn Data Centre (225 MW) | Western Victoria reinforcement program:<br>• Increase the rating of the Moorabool to Geelong 220 kV circuits (No.1 and No.2) |
| | Cherry Lane Data Centre (225 MW) | Templestowe Terminal Station B2, B3 transformer Replacement (parameters updated) |
| | Kiewa Valley BESS (500 MW) | Installation of 3rd 220/66 kV B3 transformer at Deer Park |
| | Kerang Hybrid (171 MW) | Capacitor banks retirement at following locations, as part of Metropolitan Melbourne Voltage Management:<br>• 330 kV Dederang and Wodonga,<br>• 220 kV buses of Altona, Moorabool, Rowville, and Dederang, and<br>• 66 KV Tyabb Terminal stations. |
| | Wimmera Plains Energy Facility (182.4 MW) | |
| | Campbells Forrest Solar Farm (Raywood) (205 MW) | |
| | Mortlake Energy Hub (300 MW) | |
| | Golden Plains Wind Farm Stage 2 (557 MW) | |
| | Bennetts Creek BESS (100 MW) | |
| | Golden Plains BESS (162.9 MW) | |
| | Delburn Wind Farm (197 MW) | |
| | Barwon Solar Farm and BESS (254 MW) | |
| | Mortlake BESS (300 MW) | |
| | Fulham Solar Farm (101 MW) | |
| | Fulham Solar Farm BESS (64 MW) | |
| **2028-29** | Little River (Sandy Creek Road) BESS (350 MW) | Eastern Victoria reinforcement program:<br>• Increase the rating of the existing Mount Beauty to Dederang and Mount Beauty to Eildon lines |
| | Elaine Solar Farm & BESS (125 MW) | Western Victoria reinforcement program:<br>• Switch the existing Geelong to Keilor circuits into Deer Park (No.1 and No.3) |
| | West Mokoan Energy Hub (300 MW) | Yallourn W 4 units closure 2028 and transition to modified parallel operating mode |
| | Mount Cottrell Terminal Station (378 MW) | Metropolitan Melbourne Voltage Management Regulatory Investment Test for Transmission (RIT-T) Stage 1 is:<br>• Install two 100 MVAr shunt reactors at Altona Terminal Station 220 kV<br>• Install one 100 MVAr shunt reactor at Brooklyn Terminal Station 220 kV |
| | | Red Cliffs Terminal Station transformers replacement and station rearrangement |
| | | Installation of 2 x 250 MVAr synchronous condensers at Hazelwood Terminal Station 500 kV as part of System Strength RIT-T |
| **2029-30** | Renewable energy zone (REZ) connected to Central Highlands Wind Farm at Elaine (143 MW) | Eastern Victoria reinforcement program: |

| Year | Generation project | Network augmentation and system stability projects |
|---|---|---|
| | | • Installation of a second 500/220 kV transformer at Cranbourne and tie in the existing Hazelwood to Rowville 500 kV (No.3) circuit at Cranbourne |
| | REZ connected to Gippsland Wind Farm at Hazelwood (400 MW) | Western Victoria reinforcement program:<br>• Replacement of H1 and H2 330/220 kV transformers at South Morang<br>• Rebuilding the existing transmission line between Ballarat and Moorabool into a 220 kV high-capacity double circuit<br>• Undertaking augmentation of A2, A3 and A4 500/220 kV transformers at Keilor to 1000 MVA |
| **2030-31** | REZ connected to Central Highlands Wind Farm at Elaine (469 MW) | Transmission augmentation to access renewable energy in western Victoria - Western Renewable Link[1] |
| | REZ connected to Southwest Wind Farm at Mortlake (431 MW) | Installation of one 100 MVAr capacitor at DPTS 220 kV as part of Metropolitan Melbourne Voltage Management - Stage 2 |
| | | Install 1 x 250 MVAr synchronous condenser at Hazelwood Terminal Station 500 kV as per System Strength RIT-T |
| **2031-32** | REZ connected to Southwest Wind Farm at Mortlake (900 MW) | Victoria New South Wales Interconnector West |
| | 2 GW of offshore wind connected to Gippsland | Marinus Link - Stage 1 |
| **2032-33** | No planned generation changes | Gannawarra Energy Storage System retirement |
| | | Ballarat Energy Storage System (30 MW) retirement |
| | | Marinus Link - Stage 2 |
| | | Somerton four units Open Cycle Gas Turbine (OCGT) 170 MW retirement |
| | | Southwest expansion program:<br>• Installation of a new 500/220 kV terminal station at Truganina and 2 x 220 kV double circuit lines from Truganina to Deer Park<br>• Install a new 500 kV double circuit line from Tarrone to Mortlake to Moorabool and Tarrone 500 kV turn in<br>• A new Moorabool to Truganina 500 kV double circuit, and a new 500 kV single circuit from Truganina to Sydenham.<br>• Rebuild the 3 existing transmission lines between Deer Park and Keilor with new high-capacity double-circuit lines |
| **2033-34** | No planned generation changes | Latrobe Valley strengthening program:<br>• Increasing the line rating of the Hazelwood and Yallourn to Rowville 220 kV line by adding a system overload control scheme and dynamic wind monitoring. |
| | | Metropolitan Melbourne Voltage Management - Stage 3:<br>• Install 1 x 100 MVAr shunt capacitor at Malvern Terminal Station 220 kV<br>• Install 1 x 100 MVAr shunt capacitor at Tyabb Terminal Station 220 kV |
| | | Install power flow controllers at Hazelwood |
| | | Install 1 x 250 MVAr synchronous condenser at Hazelwood Terminal Station 500 kV as per System Strength RIT-T |
| **2034-35** | REZ connected to Northwest Wind Farm at Kerang (400 MW) | North West Victorian Expansion: |

1 Western Renewable Link construction is expected to be completed November 2029, however it has been assumed that for modelling, the full benefits of Western Renewable Link's completion will be available from 2030-31

| Year | Generation project | Network augmentation and system stability projects |
|---|---|---|
| | | • Rebuild the existing transmission line between Murra Warra, Horsham and Ballarat into a high-capacity double circuit line<br>• Rebuild the existing transmission line between New Kerang and Bendigo into a high-capacity double circuit line |
| | Western REZ connected to Wimmera Southern Mallee Wind Farm at Murra Warra (400 MW) | Install 1 x 250 MVAr synchronous condenser at Woodside Terminal Station 500 kV bus for offshore wind |
| | Western REZ connected to Wimmera Grampians Wind Farm at Bulgana (400 MW) | |
| **2035-36** | No planned generation changes | Retire Loy Yang A Power Station 4 units (A1-A4) & Loy Yang B Power Station units (B1 and B2), and start using B units as synchronous condensers |
| **2037-38** | Increase size of offshore wind units at Gippsland to 5 GW | Gippsland offshore wind transmission stage 2 program:<br>• Install a second Gippsland 500 kV double circuit radial line and tie-in loop |
| | Offshore Wind Farm connection at Portland (500 MW) | Offshore wind upgrade:<br>• Increase the rating of the Portland to Heywood 500 kV double circuit lines. |