

TRANSPower

Security of Supply Assessment 2026

Reference Case Assumptions and Sensitivities

Invitation to Comment

3 November 2025



IMPORTANT

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1 Executive Summary

1. Transpower, in its role as System Operator, is seeking feedback on the proposed assumptions and sensitivities for the 2026 Security of Supply Assessment (**SOSA**). The SOSA is an annual publication that provides a 10-year outlook on the balance between electricity supply and demand in New Zealand. It supports risk management and investment decisions by market participants, policy makers, and other stakeholders.
2. This consultation invites stakeholders to provide feedback on:
 - The **proposed Reference case assumptions**, which represent expected resources available to the power system over the next decade.
 - The **proposed supply and demand side sensitivities**, which explore plausible variations from the Reference case under different future scenarios.
 - Our **proposal to introduce an Expected Future case** that would represent the combination of Reference case sensitivities we think (at the time of publishing SOSA 2026) reflect our current view of a most likely outcome for the 10-year modelled period (2026-2035). We could then report on how the market is actually tracking against this expected future case through our quarterly Security of Supply Outlook updates
3. An overview of the Reference case and sensitivities we propose to use for SOSA 2026 is shown in Figure 1 later in this document. We have also included a summary of how our proposed Reference case and sensitivities differ from those we used for SOSA 2025 in Section 6.
4. The Reference case assumptions we propose are:
 - **Demand growth**: the medium demand growth scenario from Transpower's long-term demand forecast.
 - **Potential supply pipeline**: a three-stage pipeline that is based on information received confidentially through our SOSA survey of investors and applies an assessment of each potential investment's likelihood to proceed within the 10-year modelled period.
 - **Gas supply**: based on confidential information from gas producers for 2026 and 2027, and Enerlytica's mid-range forecast in later years. Since the publication of SOSA 2025, Enerlytica's mid-range forecast has been revised downward, leading to lower forecast gas supply in the Reference case for SOSA 2026. It now assumes the Maui gas production field will close during winter 2027.
 - **HVDC capacity**: We will ask the Electricity Authority (**Authority**) for its approval to incorporate the HVDC STATCOM investment that Transpower (as the Grid Owner) is expected to complete in 2027 into the Reference Case. Alternatively, the Reference case will reflect the SSAD assumptions unmodified and we will rely on a sensitivity to the model the effect of this committed investment.
 - **Thermal plant availability**: Contact Energy's Taranaki Combined Cycle generation (TCC) will be modelled as unavailable in line with its announced decommissioning and the three Genesis Huntly Rankine units will be modelled as available with sufficient fuel reflecting the Commerce Commission's draft determination to authorise the agreements that would ensure this outcome.
 - **Peak capacity factors**:
 - For thermal generation, wind generation, and hydro generation with controlled storage: the peak capacity factors specified in the SSAD.
 - For other generation types (cogeneration, geothermal, run-of-river hydro and solar): peak capacity factors based on observed generation during the 200 trading periods in 2025 with the highest demand.
 - For batteries: the peak capacity factors based on observations from other jurisdictions.

- Two of three Huntly Rankine units will contribute to capacity, to reflect the slow-start nature of these units and their observed pattern of operation.
5. The sensitivities we propose to apply to the Reference case are:
 - **Demand growth:** the higher and lower electrification demand growth scenarios from Transpower's long-term demand forecast.
 - **Increased demand response:** 100MW more demand response capacity in both the North and South Islands, and long-term demand response reflecting decreased demand for energy (2.5% lower nationally and 5% lower in the South Island).
 - **Low gas supply:** based on confidential information from gas producers for 2026 and 2027, and Enerlytica's low scenario gas production forecast in later years.
 - **High gas supply:** Enerlytica's high scenario gas production forecast.
 - **Change in thermal mix:** models potential thermal decommissionings and any signalled or confidentially disclosed potential decommissionings, or change (increase or decrease) in thermal generation capacity, whether fossil fuelled or biofuelled.
 - **Reduced Rankine availability:** tests unavailability of these units to meet short-term capacity needs, a significant reduction in the coal available to provide energy during winter, and the decommissioning of one unit.
 - **Delayed build times:** reflecting any pessimistic commissioning year that is disclosed to us through the SOSA survey, or a default delay of one year.
 - **Upgraded HVDC:** test the fourth HVDC cable investment that Transpower as the Grid Owner has proposed to make. The Commerce Commission is currently considering this proposal.
 - **No new thermal:** the impact if no new thermal generation is developed, whether fossil fuelled or biofuelled.
 - **Constrained operational capacity:** to explore the market coordination challenge of meeting peak demand on a dark, still winter morning or evening by considering a 0% solar contribution, the lowest 10th percentile of wind generation output and one less Rankine unit available to provide short-term capacity.
 - **Low wind and solar supply:** lower (5th to 10th percentile) capacity factors for both wind and solar generators.
 6. We currently think the combination of sensitivities that the Expected Future case should apply to the Reference case is the Delayed build times, Upgraded HVDC, No new thermal sensitivity, Low gas supply sensitivity and Low demand growth sensitivity.
 7. Stakeholder feedback will inform the modelling and analysis for the 2026 SOSA. A draft SOSA report will be released for consultation in March 2026, with the final report published by 30 June 2026.

2 Introduction

2.1 Purpose of this consultation

8. The purpose of this consultation is to seek feedback on the assumptions and sensitivities we propose to use for our next annual Security of Supply Assessment (**SOSA**). We invite your feedback on our proposed:
- Reference case assumptions,
 - sensitivities, to be applied (individually and combined) to the Reference case, and
 - introduction of an “Expected Future” case, and the combination of sensitivities around the Reference case we currently think it should comprise.

2.2 Background - about the SOSA

9. The purpose of the SOSA is to inform risk management and investment decisions by market participants, policy makers, and other stakeholders.
10. Transpower, as the System Operator, publishes the SOSA annually. It provides a 10-year assessment of the balance between supply and demand in the New Zealand electricity system. The timeframe assessed through SOSA 2026 will be 2026 to 2035.
11. Each annual SOSA is informed by two rounds of consultation and a survey of market participants. This first round of consultation seeks feedback on the proposed Reference case and sensitivities. The survey of market participants collects (confidentially) information about expected and potential future generation investments (the supply pipeline). The feedback and information we receive through these engagements informs our analysis and the draft report on which the second round of consultation will seek feedback. The final SOSA report is published in June each year.
12. Three security of supply margins are evaluated. The:
- **New Zealand Winter Energy Margin (NZ-WEM)**: Adequacy of generation to meet expected national electricity demand under extended dry periods across the winter months (April to September),
 - **South Island Winter Energy Margin (SI-WEM)**: Adequacy of generation and north-to-south transmission capacity to meet expected South Island electricity demand under extended dry periods across the winter months (April to September), and
 - **North Island Winter Capacity Margin (NI-WCM)**: Adequacy of generation and south-to-north transmission capacity to meet the highest winter demand peaks.
13. The SOSA analysis assesses these three security of supply margins against security standards, defined as a range where the expected cost of shortage is estimated to be equal to the expected cost of new generation¹. These security standards are set by the Electricity Authority (**Authority**) and specified in the Electricity Industry Participation Code 2010 (**Code**)² with further details provided in the Security Standards Assumptions Document (**SSAD**).³ The current standards are:
- **NZ-WEM**: 14-16%
 - **SI-WEM**: 25.5-30%
 - **NI-WCM**: 630-780 MW

1 The range represents the fact that this efficient level should not be considered as a single number due to uncertainties in key assumptions when determining these standards.

2 Part 7, Clause 7.3(2)

3 [Electricity Authority, Security Standards Assumptions Document](#)

14. The purpose of the standards is to represent an efficient level of reliability⁴ - that is, a range where the expected cost of shortage is equal to the expected cost of new generation. As an example, the national cost benefit analysis conducted by the Authority when producing the NI-WCM security standards determined that up to 22 hours per annum of energy or reserve shortfall (i.e. insufficient capacity to supply the reserve requirements and sometimes the actual load on the system) is economic before additional investment in peaking generation is warranted.
15. However, falling below the lower⁵ security standards does not equate to electricity shortage. Rather, it implies that investment in new generation would result in an efficient increase in reliability. It can also be interpreted as representing the likelihood of electricity shortage – the higher the actual margin observed the less likely electricity shortage will be, all things being equal.
16. The analysis assesses the energy and capacity margins against the three security standards using the supply pipeline based on information provided by market participants. The analysis does not analyse or consider other aspects of future investment such as the:
 - availability of transmission and distribution network capacity,
 - deliverability of planned new-build generation, or
 - commercial viability or market incentives required for resources to be developed.
17. More detailed System Operator security of supply forecasts that highlight shorter term timeframes and operational risk include the quarterly Security of Supply Outlook,⁶ monthly Energy Security Outlook,⁷ New Zealand Generation Balance,⁸ System Security Forecast,⁹ various market insight publications,¹⁰ and the Weekly Market Report.¹¹

2.3 Consultation process

18. The consultation period is 3 weeks commencing on Monday, 3 November 2025. Submissions are due by 5pm on Monday, 24 November 2025.
19. We have included a Word document, for the convenience of submitters, which incorporates all the questions contained in the consultation paper. You can use this for your submission if you would like to.
20. Please send submissions to system.operator@transpower.co.nz with the subject line "2026 SOSA Reference Case and Sensitivities". We will acknowledge receipt of all submissions. Submissions will be published to our website at [System Operator Consultations | Transpower](#).
21. If your submission contains confidential material, please ensure this is clearly identified and provide a version of your submission that can be published. Transpower takes no responsibility for identifying confidential information.
22. Please note that all information provided to Transpower is subject to potential disclosure under the Official Information Act 1982.

4 The range represents the fact that this efficient level should not be considered as a single number due to uncertainties in key assumptions when determining these standards.

5 The lower standard being 14% for NZ-WEM, 25.5% for SI-WEM and 630 MW for NI-WCM.

6 [Quarterly Security of Supply Outlook | Transpower](#)

7 [Energy Security Outlook | Transpower](#)

8 [Customer Portal - NZGB](#)

9 [System Security Forecast | Transpower](#)

10 [System and market insights | Transpower](#)

11 [Market Operations Weekly Report | Transpower](#)

2.4 Next steps

23. To inform the supply pipeline for the 2026 SOSA, we are surveying market participants in November (earlier than in previous years), allowing additional time for any follow-up questions or data requests that may affect SOSA modelling. The survey will occur in parallel with our Reference case and sensitivities consultation.
24. Once we have considered the feedback we receive in response to this consultation, we will publish our summary of submissions and the decisions we have reached having considered your feedback.
25. We expect to commence consultation on the draft SOSA 2026 report in March 2026. The feedback we receive in response to that consultation will inform the final SOSA 2026 report, which will be published before 30 June 2026. This timeline may need to consider any Government policy changes generated from the Review of Electricity Market Performance.

3 Proposed Reference Case

3.1 Purpose of the Reference Case

26. The purpose of the Reference case is to represent the resources expected to be available to the power system over the next ten years. It reflects, where reasonable, a continuation of current conditions.
27. As such, the Reference case assumes existing generation and industrial demand remain, unless decommissioning has been publicly announced and/or decommissioning activities are being actively pursued. New resources the market is likely to develop are included but may not be the resources the power system will develop.
28. The Reference case reflects a fixed set of assumptions and an outcome that could be expected based on the status quo and aligned with the Authority's SSAD.
29. The Reference case provides a consistent benchmark for assessing supply adequacy shifts over time. Outcomes different from the Reference case are explored by testing its sensitivity to variations to the assumptions where there are key uncertainties about how the future might unfold. Section 4 below sets out the sensitivities we propose to apply for this SOSA.
30. Investment plans and commitments can change significantly between annual SOSA publications, and in parallel with our work to complete our analysis and report for each SOSA. In Section 5 we set out our proposal to introduce an Expected Future case for SOSA 2026 that would reflect the combination of the Reference case and sensitivities that we think (at the time of assessing the SOSA 2026), reflects our view of the most plausible state of the sensitivities for the 10-year modelled period (2026-2035).

3.2 Proposed Reference Case Key Assumptions

31. The Reference case assumptions we propose to use are set out below.

3.2.1 Demand growth

32. We propose to use the medium demand growth scenario from Transpower's long term demand forecast, consistent with the approach taken in previous SOSAs since 2012.¹² It is comprised of a medium rate of acceleration of electrification and growth of distributed energy resources across the economy. It assumes a medium growth rate of transport electrification (electric vehicles), process heat electrification, solar PV and small-scale batteries.
33. Transpower is currently working to set its 2026 demand forecast scenarios, including based on information provided by local electricity distribution businesses (distributors). The scenarios will be published for our consultation on the draft SOSA 2026 report. Our SOSA 2025 report provides the most recent example of the approach proposed for SOSA 2026.^{13, 14}
34. The underlying rate of demand growth covers sectoral changes in electricity efficiency and intensity, sectoral shifts in energy demand, growth of population and the economy, and is informed by distributor-supplied estimates of demand changes on their networks. These

12 Our SOSA reports and supporting information since SOSA 2017 are available on our webpage: [Security of Supply Assessment | Transpower](#)

13 [2025 SOSA - Final Report.pdf](#) Section 2.2.1.1

14 Transpower's Te Kanapu Future Grid Blueprint initiative is currently consulting on five draft scenarios describing future electricity needs in Aotearoa, to help understand what transmission infrastructure will be needed in 2050 and beyond as the country electrifies and grows ([Feedback wanted on Aotearoa's electricity needs in 2050 | Transpower](#)). This longer-term think will not inform the demand forecasts to be used for SOSA 2026.

estimates are provided with corresponding likelihood thresholds, with only step loads of 50% likelihood or higher included in the medium growth scenario.

3.2.2 Potential supply pipeline

35. Consistent with previous SOSAs, the potential supply pipeline is based on information provided by market participants on a confidential basis through our SOSA survey.
36. In contrast to Transpower's published grid connection pipeline information,¹⁵ the SOSA also accounts for generation connected to distribution networks (embedded generation) and confidential information about potential investments that may not yet be publicly available.
37. For SOSA 2026 we propose to assess the Reference case by categorising the potential supply pipeline into three stages (rather than the four stages used for prior SOSAs including SOSA 2025) and introduce a likeness assessment. The stages and proposed categorisation are shown in Table 1 below.
38. Our survey will this year require each respondent to provide us with its own assessment of the likelihood of the potential investment proceeding. We will also test that assessment against other sources of information including Transpower's published grid connection pipeline information. We propose that a potential investment is assessed as "likely" to proceed in the 10-year modelled period if we conclude it has at least a 75% chance of proceeding.
39. We assume that existing generation remains available unless decommissioning is publicly announced, and/or decommissioning activities have been committed to and are being actively pursued.

Table 1 Potential supply pipeline stages

Stages	Short description	Long description of the supply pipeline stage
Stage 1	Existing and committed	Includes: - Existing assets - Committed investments for which a final decision to invest has been made.
Stage 2	Stage 1 + Consented and likely	Includes: - Existing assets - Committed investments for which a final decision to invest has been made - Potential investments that are consented and likely to proceed but a final decision to investment is yet to be made.
Stage 3	Stage 2 + Consent likely to be sought	Includes: - Existing assets - Committed investments for which a final decision to invest has been made. - Potential investments that are consented and likely to proceed but a

¹⁵ [What's the latest with grid connections? | Transpower](#)

Stages	Short description	Long description of the supply pipeline stage
		final decision to investment is yet to be made. Potential investments that are not consented and consent is likely to be sought within the next two years.

3.2.3 Gas supply

40. Gas supply availability (for gas-fired generation) will be assessed by estimating a dry year gas supply margin for each of the next ten years.
41. Gas supply assumptions will be based on confidential information from gas producers for 2026 to 2027, and Enerlytica's mid-range forecast in later years. This is the same approach we used for SOSA 2025.¹⁶ Since the publication of SOSA 2025, Enerlytica's mid-range forecast has been revised downward, leading to lower forecast gas supply in the Reference case for SOSA 2026. It now assumes the Maui gas production field will close during winter 2027.
42. We propose that the Reference case assume that gas supply availability for generation reflects both Methanex and Ballance Agri-Nutrients' Kapuni sites shutting production in 2027 at the same time as the Enerlytica medium gas forecast assumes the Maui gas field will exit.
43. We propose continuing to model a low gas supply sensitivity to show a constrained case for domestic gas production over the coming decade. This sensitivity is explained further in Section 4.3.1.
44. The SOSA modelling applies gas-fired generator capacity de-rating factors reflective of the gas supply forecast to be available for generation. The de-rating factors reflect an energy/capacity trade-off that begins to derate the capacity contribution from peakers when they fall below a 5% capacity factor, and for combined cycle plants when they fall below a 25% capacity factor. The 5% allowance of gas supply for peakers is last to be derated. Otherwise, less efficient units are derated first.

3.2.4 HVDC capacity

45. The Authority's Security Standards Assumptions Document (**SSAD**) sets assumptions for the high-voltage direct current (**HVDC**) inter-island link that reflect its current capacity.¹⁷
46. Transpower in its role as the Grid Owner is currently progressing:
 - investment in a static synchronous compensator (**STATCOM**) and other equipment at Haywards that is committed and expected to be completed by 2027. These upgrades will result in greater contribution from the North Island to the SI-WEM.¹⁸ The extent to which the increased south flow capacity can be utilised will be dependent on the availability of sufficient instantaneous reserves in the South Island and limited by any AC transmission and voltage stability constraints restricting increased south flow.

¹⁶ [Previous Security of Supply Annual Assessments – Appendices Security of Supply Assessment 2025 – Appendix 4](#)

¹⁷ [Electricity Authority, Security Standards Assumptions Document](#)

¹⁸ The [investment](#) in a static synchronous compensator and other equipment at Haywards will increase the amount of time the HVDC can operate closer to its full capacity, but will not increase the maximum northward transfer capacity as modelled by the South Island contribution curve given in the Security Standards Assumptions Document.

- a proposal to renew the HVDC link, which was submitted to the Commerce Commission in September 2025 for its consideration.¹⁹ This proposal includes the addition of a fourth cable that would allow a greater contribution from the South Island to the NI-WCM.
47. Clause 7.3 of the Code allows the System Operator to use different assumptions from those in the SSAD if there are good reasons to do so. If so, we must show how the SOSA differs as a result of using those different assumptions. However, given the HVDC STATCOM investment is committed, we will ask the Authority for its approval to incorporate it as part of the Reference case from 2027 without also modelling the HVDC assumptions in the SSAD unmodified. Alternatively, the Reference case will reflect the SSAD assumptions unmodified and we will rely on a sensitivity to model the effect on the margins of the STATCOM investment.

3.2.5 Thermal plant availability

48. Based on current information, Contact Energy's Taranaki Combined Cycle generation (**TCC**) will be modelled as unavailable in the Reference case in line with its announced decommissioning.²⁰ This assumption may be changed if further information is released in time to include for SOSA 2026.
49. In September 2025, the Commerce Commission published a draft determination to authorise agreements that support the retention of all three Rankine units at Huntly until 2035.²¹ Based on this, we propose that the Reference case will model these units as available, with sufficient fuel to run them when needed, throughout the assessment horizon. This proposed assumption may be revised if further information becomes available in time to be incorporated into the 2026 SOSA modelling and materially affects the results. We propose assessing the impact of reduced Rankine availability as a sensitivity.

3.2.6 Peak capacity factors

50. For thermal generation, wind generation, and hydro generation with controlled storage, we propose to use the peak capacity factors specified in the SSAD.
51. For other generation types (cogeneration, geothermal, run-of-river hydro and solar), we propose to update peak capacity factors based on observed generation during the 200 trading periods in 2025 with the highest demand.²²
52. We propose to use the same updated battery peak capacity factors introduced in for SOSA 2025, which are based on observations from other jurisdictions.²³
53. As in previous SOSAs two of three Huntly Rankine units will contribute to capacity, to reflect the slow-start nature of these units and their observed pattern of operation (with three Rankine units and Huntly unit 5 running simultaneously only at times of high energy risk).

19 [HVDC link upgrade programme | Transpower](#)

20 [2024 Integrated Report – Contact Energy](#) (PDF download link)

21 The Commerce Commission is currently [consulting on its draft determination](#) to grant authorisation of an application by the gentailers that would support the retention of all three Rankine units at Huntly until 2035: [Agreements signed, Huntly capacity to support national energy security | Genesis NZ](#)

22 The metric used to set the NI-WCM is the "H100" or the average of the highest 200 trading periods of demand ([SSAD](#) page 4)

23 [Appendices of Security of Supply Assessment 2025](#) – Appendix 3

Question 1

Do you agree with the proposed assumptions used for the Reference case? If not, please provide further details and what you consider would be reasonable alternate assumptions.

4 Proposed Sensitivities

4.1 Purpose of the Sensitivities

55. The purpose of the sensitivities is to represent plausible variations from the fixed Reference case assumptions which could occur over the 10-year assessment horizon. The sensitivities and compatible combinations of them will be used to create a set of potential system states diverging from the Reference case. This allows stakeholders to better assess the key variables that can impact the energy and capacity margins under different potential future states.
56. Figure 1 at the end of this section provides an illustration of the combinations of proposed sensitivities being considered that can be applied to the Reference case.

4.2 Proposed Demand Side Sensitivities

4.2.1 Demand growth

57. We propose to use the higher and lower electrification demand growth scenarios from Transpower's long-term demand forecast for this sensitivity. This is the same approach we used for SOSA 2025.²⁴
58. Each of these scenarios differs from the medium demand-growth scenario (the Reference case) by varying the rates of acceleration of electrification across the economy, and growth of distributed energy resources. The scenarios are each built up by specifically modelling transport electrification (electric vehicles) and process heat electrification. Different rates of solar PV and small-scale batteries uptake are also modelled as they can offset growth in demand from the grid.²⁵

4.2.2 Increased demand response

59. Demand response could play a larger role in managing peak loads going forward. This sensitivity explores the impact of increased uptake in demand response (100 MW in both the North and South Islands) on the NI-WCM. It also explores the impact of additional long-term demand response on the NZ-WEM and SI-WEM by decreasing the demand by 2.5% and 5% respectively.²⁶

4.3 Proposed Supply Side Sensitivities

4.3.1 Low gas supply

60. This sensitivity is intended to show a constrained case for domestic gas production over the coming decade. It reflects a future where capital investment in the upstream gas industry reduces.

24 See Figure 5 in [SOSA 2025](#) for an indication of the likely spread between the Reference case demand forecast and the high and low scenarios.

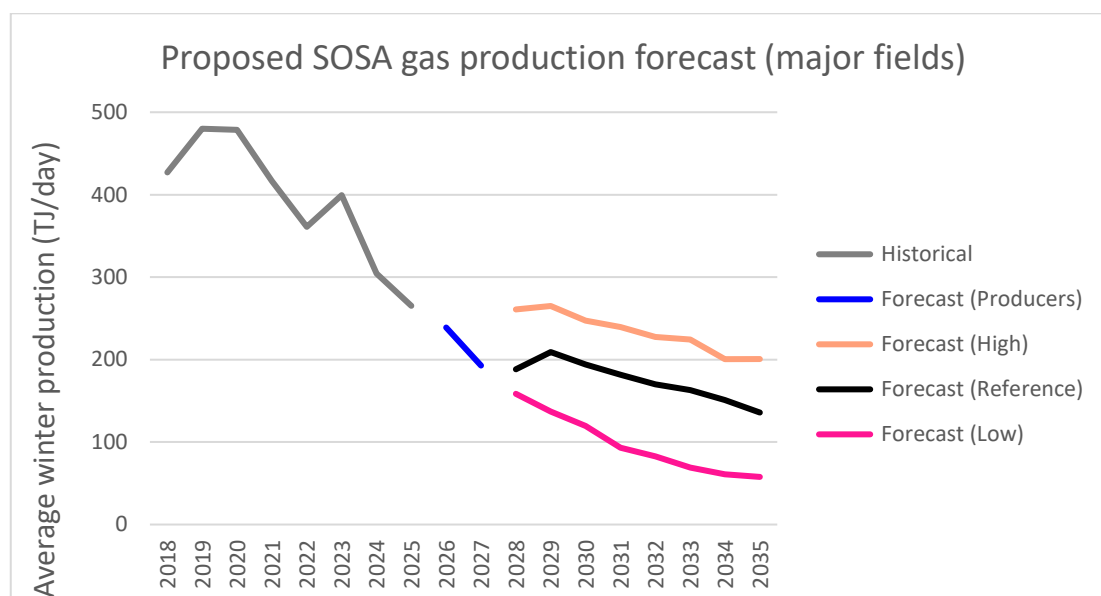
25 [2025 SOSA Appendix](#), Section 2 defines the demand forecast modelling process.

26 Further information on this sensitivity is included in the [2025 SOSA Appendix](#), Section 5.

61. In this sensitivity, we propose to use Enerlytica’s “low” scenario forecast of gas production from 2028 onwards. For gas production in 2026 and 2027 the forecast will be based on confidential information provided to us by gas producers, as in the Reference case.

4.3.2 High gas supply

62. This sensitivity is intended to explore the impact of additional gas availability for dry year electricity generation. The additional gas could come from increased production from existing fields, LNG imports, further reduction in industrial gas usage, and/or increased gas storage capacity (for example through the development of the Tariki Joint Venture).²⁷
63. In this sensitivity, we propose to use Enerlytica’s “High” scenario gas production forecast.



4.3.3 Change in thermal mix

64. The sensitivity previously titled “Thermal decommissioning” has been renamed “Change in thermal mix” to better reflect potential changes in thermal generation availability based on market conditions. This acknowledges that while some existing thermal capacity may be retired, there is also potential for new thermal development (including development of green thermal units that utilise a biofuel rather than a fossil fuel), and/or changes to existing units.
65. This proposed sensitivity models potential thermal decommissionings and any signalled increase in thermal generation capacity that may be disclosed to us confidentially.
66. When combined with the proposed “No new thermal” sensitivity (Section 4.3.7 below), this models a scenario where some existing thermal capacity is retired, and no new thermal capacity is built.

4.3.4 Reduced Rankine availability

67. This sensitivity models reduced availability of the Rankine units at Huntly. This could represent:
- In the case of capacity (NI-WCM), the unavailability of these slow-start units during short-term, unexpected supply shortages, unrelated to hydrology – for example if acting in a dry year reserve only role.

²⁷ [Strategy on track despite challenging year | Genesis NZ](#)

- In the case of energy (NZ-WEM and SI-WEM), a significant reduction in coal available to operate these units. Coal availability during winter is influenced by the initial coal stockpile size and constraints on the rate of coal imports.
 - For both capacity and energy, decommissioning of one or more of these units.²⁸
68. As mentioned in Section 3.2.6 (Peak capacity factors), one of the three Rankine units does not contribute to capacity in the Reference case. In this sensitivity, this unit will also not contribute to energy. Additionally, a second unit will not contribute to energy or capacity from 2027 onwards, leaving a single Rankine unit available for both capacity and energy.

4.3.5 Delayed build times

69. This sensitivity explores the impact of delaying the commissioning dates for all new generation projects to account for a range of potential delays, for example, due to resource constraints, resource consent issues, or investment uncertainty.
70. Meridian submitted a response to our draft SOSA 2025 noting that transformers are acting as a specific bottleneck for new generation, leading to a major constraint on the timing of new projects.²⁹ To better reflect such risks, we will update the 2026 generator survey to ask participants to indicate a “pessimistic commissioning year” alongside the expected commissioning year for each new project. For this sensitivity, we propose using the pessimistic commissioning year if one is provided; otherwise, we will apply a default one-year delay.

4.3.6 Upgraded HVDC

71. Limits on HVDC transfer capacity can affect both the South Island’s contribution to the NI-WCM and the North Island’s contribution to the SI-WEM.
72. As noted in Section 3.2.4 above Transpower as the Grid Owner is currently progressing:
- investment in a static synchronous compensator (**STATCOM**) and other equipment at Haywards that is expected to be completed by 2027. These upgrades will result in greater contribution from the North Island to the SI-WEM.³⁰ We will ask the Authority for its approval to incorporate the STATCOM as part of the Reference case from 2027 without also modelling the HVDC assumptions in the SSAD unmodified on the basis that it is a committed investment expected to be completed by 2027.
 - a proposal to renew the HVDC link, which was submitted to the Commerce Commission in September 2025 for its consideration.^{31, 32} This proposal includes the addition of a fourth cable that would allow greater capacity for northward transfer from the South Island to support the NI-WCM from 2031.³³
73. We propose this sensitivity test the effect of the fourth cable on the NI-WCM from 2031. If the Authority does not approve our proposal to incorporate the committed STATCOM investment into the Reference case we will instead test its effect on the SI-WEM through this sensitivity.

28 [Genesis FY Q3 Performance Report - NZX](#)

29 [Meridian Consultation Submission on Draft SOSA 2025](#)

30 The [investment](#) in a static synchronous compensator and other equipment at Haywards will increase the amount of time the HVDC can operate closer to its full capacity, but will not increase the maximum northward transfer capacity as modelled by the South Island contribution curve given in the Security Standards Assumptions Document.

31 [HVDC link upgrade programme | Transpower](#)

32 The [investment](#) in a static synchronous compensator and other equipment at Haywards will increase the amount of time the HVDC can operate closer to its full capacity, but will not increase the maximum transfer capacity as modelled by the South Island contribution curve given in the Security Standards Assumptions Document.

33 [HVDC MCP Main overview document.pdf](#)

4.3.7 No new thermal

74. In this sensitivity we consider the impact if no new thermal generation is developed during the 10-year assessment horizon, including fossil-fuelled and biofuelled thermal generation (and excluding geothermal generation). This could occur for a variety of reasons, including lack of available fuel.

4.3.8 Constrained operational capacity

75. This sensitivity explores the market co-ordination challenge of integrating increased intermittent generation with slower start thermal plant, which can at times lead to lower levels of capacity available over peak demand periods.³⁴ This sensitivity provides a conservative estimate to assess the impact on the NI-WCM.
76. In line with the Firm scenario used for the New Zealand Generation Balance (NZGB)³⁵ over winter months, we propose this sensitivity assumes a 0% contribution from solar generation to the NI-WCM. This scenario is a metric for the worst-case supply availability scenario.
77. Similarly, we propose using the lowest 10th percentile of wind generation output (~8%) to reflect the Firm scenario assumptions in the NZGB, further supporting a conservative assessment.
78. For this sensitivity we also propose assuming that one less Rankine unit is available to contribute to the NI-WCM (in the Reference case we assume two are available, refer to Section 3.2.653).

4.3.9 Low wind and solar supply

79. This sensitivity previously called “Low wind supply” is proposed to be renamed “Low wind and solar supply” and model a pessimistic estimate of wind and solar generation output during the winter months. This sensitivity assesses the impact low wind and solar generation output has on the winter energy margins (NZ-WEM and SI-WEM).
80. Wind generator capacity factors are reduced by 10% to account for lower-than expected wind and variability in generation. The 10% reduction was chosen to represent a pessimistic scenario, which aligns with the 5th to 10th percentile of capacity factors. This means that the adjusted capacity factors are lower than 90-95% of expected outcomes, providing a conservative estimate to assess the impact on the NZ-WEM and SI-WEM.
81. If changes in the pipeline of wind projects mean that a 10% reduction no longer aligns with a 5th-10th percentile outcome, we will reassess this level of reduction to maintain a similar level of pessimism. This could be required for example if responses to our 2026 generator survey include offshore wind, which they did not in 2025.
82. For solar generation, we propose modelling output similarly at the 5th – 10th percentile to account for lower than expected solar and variability in generation. We will conduct analysis to determine the appropriate capacity factor reduction to apply for the 2026 SOSA.

34 These challenges are described further in [System Operator 2023 Winter Review](#) and [System Operator 2024 Winter Outlook](#)

35 [UG-OC-841 NZGB Application and Calculation User Guide.pdf](#) – Section 10.3.6

Question 2

Do you agree that the proposed sensitivities represent the key security of supply uncertainties facing the New Zealand electricity sector over the assessment horizon (2026-2035)? If not, please provide further details and which of the proposed sensitivities you would replace with alternatives or remove (if not needed).

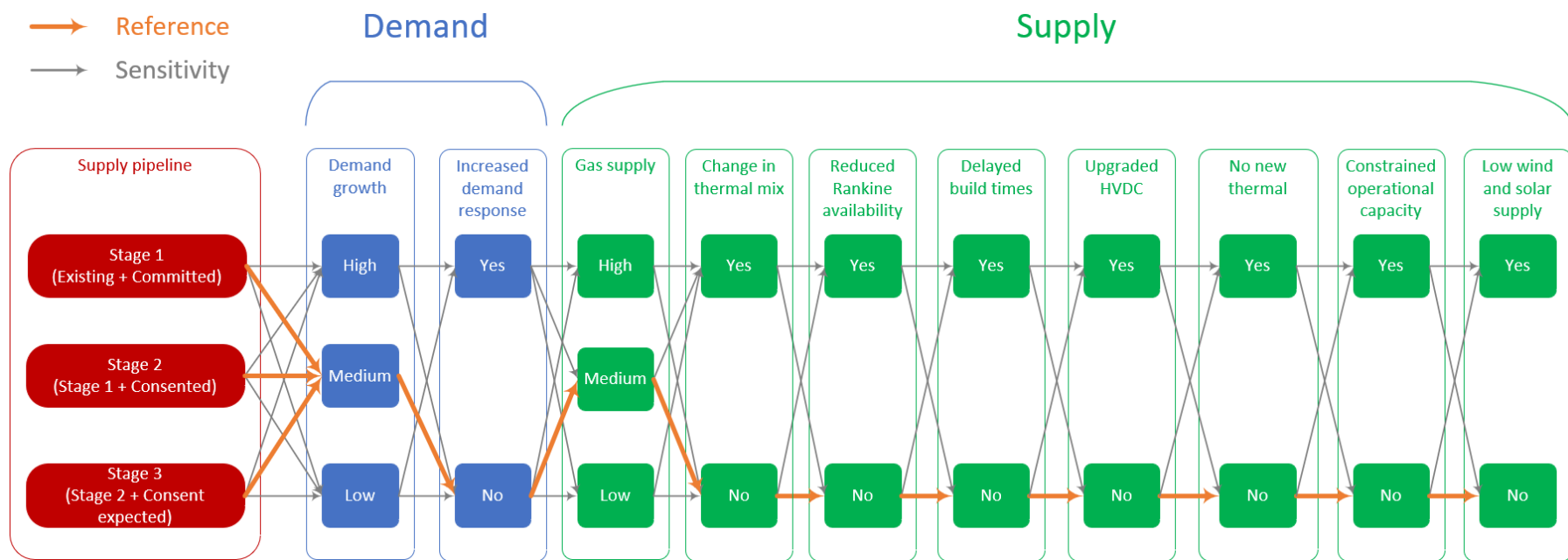


Figure 1 1: Assessed supply pipeline stages and the demand and supply side variations to the Reference case considered as sensitivities

*The orange arrows represent the combination of key variables that make up the Reference case. The grey arrows represent the potential combinations of sensitivities.

5 Expected Future case

83. It has become increasingly clear to us that the current approach that is utilised to develop the Reference case under the SSAD no longer provides a sufficiently representative baseline against which to track evolving investment plans, commitments and commissioning activities between annual SOSA updates. It also does not test the most likely future against the reliability margins thereby potentially impacting the resulting conclusions from the analysis.
84. To help address this concern and ensure the SOSA remains highly relevant for industry and stakeholders, we propose to introduce an “Expected Future” case for SOSA 2026. This would represent the combination of Reference case sensitivities that we think (at the time of publishing SOSA 2026) reflect the current view of a most likely outcome for the 10-year modelled period (2026-2035). We could then report on how the market is actually tracking against this expected future case through our quarterly Security of Supply Outlook updates.³⁶
85. Based on what we know at the time of releasing this consultation we think the combination of sensitivities that the Expected Future case should apply to the Reference case is the:
- Low demand growth sensitivity (refer to Section 4.2.1)
 - Low gas supply sensitivity (refer to Section 4.3.1)
 - Delayed build times sensitivity (refer to Section 4.3.5)
 - Upgraded HVDC sensitivity (refer to Section 4.3.6)
 - No new thermal sensitivity (refer to Section 4.3.7)

Question 3

Do you have any feedback in relation to our proposal to introduce an ‘Expected Future’ case for SOSA 2026? If so, please provide further details.

Question 4

Do you have any feedback on the combination of the Reference case and sensitivities we currently think the Expected Future case should comprise? If so, please provide further details.

³⁶ [Quarterly Security of Supply Outlook | Transpower](#)

6 Summary of changes

86. This section explains how our proposed approach for SOSA 2026 differs from the approach we used for the 2025 SOSA.

6.1 Reference case changes

87. We propose to assess the Reference case by categorising the potential supply pipeline into three stages (rather than the four stages used for prior SOSAs including SOSA 2025) and introduce a likeness assessment.
88. We propose that the Reference case assume that gas supply availability for generation reflects both Methanex and Ballance Agri-Nutrients' Kapuni sites shutting production in 2027 at the same time as the Enerlytica medium gas forecast assumes the Maui gas field will exit.
89. For SOSA 2025 we used a NI-WCM contribution (peak capacity factor) for solar generation of 5.4% of installed capacity, based on winter 2024 wholesale market generation data. We will use the additional data available from winter 2025 to update this value if required.

6.2 Changes to sensitivities

90. **TCC stays:** For SOSA 2025 we included a sensitivity with the Taranaki Combined Cycle plant remaining in service over the assessment horizon. For SOSA 2026 we propose to remove this sensitivity given Contact has announced that TCC has reached end-of-life and will close by the start of 2026.³⁷ This is subject to no further information being released in time to affect SOSA 2026.
91. **Additional step demand:** For SOSA 2025 we included a sensitivity that assumed an additional 100 MW step of load in each island to account for any additional electrification not captured in the Reference case demand forecast. For SOSA 2026 we propose to remove this sensitivity, as the additional 100MW of load was not based on specific forecast information. We propose to retain the "high demand growth" sensitivity using a high demand forecast developed by Transpower's Grid Investment and Modelling team. This forecast, along with the forecasts for low and medium demand growth, aligns with those used for transmission planning and strategic planning.
92. **Change in thermal mix:** We have proposed modifying the previously named "Thermal decommissioning" sensitivity to "Change in thermal mix" to better reflect potential changes in thermal generation availability based on market conditions. This acknowledges that while some existing thermal capacity may be retired, there is also potential for new thermal development (including development of green thermal units that utilise a biofuel rather than a fossil fuel), and/or changes to existing units.
93. **Delayed build times:** We will ask for a pessimistic commissioning year alongside the expected commissioning year for each new project in the 2026 SOSA survey. For this sensitivity, we propose using the pessimistic commissioning year if one is provided; otherwise, we will apply a default one-year delay.
94. **No new thermal:** Previously this sensitivity has considered only fossil-fuelled thermal generation. For SOSA 2025 it will be fuel agnostic and also consider biofuelled thermal generation (and excluding geothermal generation).

37 [FY25 Performance Report – Contact Energy](#) (PDF download link)

95. **Constrained operational capacity:** We have proposed slightly changing the peak capacity factor assumed for wind in this sensitivity (from 5% to 8%) to better align with the NZGB "Firm" scenario.
96. **Wind and solar supply:** We have proposed modifying the previously named "Low wind supply" sensitivity "Low wind and solar supply" to test the impact of a pessimistic estimate of wind and solar generation output during the winter months on the winter energy margins (NZ-WEM and SI-WEM).
97. In the 2021 to 2025 SOSA reports we included a section looking at the implications of the change in security of supply margins resulting from progressively larger amounts of thermal unit retirement across five scenarios.³⁸ We introduced this section in response to the previous government's target of achieving 100% renewable electricity generation by 2030. Thermal generation remains part of the supply mix, particularly to support security of supply during dry years. The declining trend in the thermal share of generation is likely to continue over the next decade.³⁹ However (and given the retirement of TCC by winter 2026 in the proposed SOSA 2026 Reference case), we believe that this is more likely to be driven by thermal generation making up a smaller proportion of increased demand, and/or by remaining thermal plant operating at a reduced capacity factor, rather than further unit retirements. The effects of thermal unit retirements will be tested by our "Change in thermal mix", "Reduced Rankine availability", and "No new thermal" sensitivities.

6.3 Addition of an Expected Future case

98. We have proposed to introduce an Expected Future case comprised of the combination of the Reference case and sensitivities that we consider (at the time of publishing SOSA 2026) reflects the most likely outcome for the 10-year modelled period (2026-2035).

Question 5

Do you have any feedback in relation to the changes we propose to make for SOSA 2026 relative to SOSA 2025? If so, please provide further details.

³⁸ [2025 SOSA - Final Report.pdf](#) – Section 4

³⁹ [Electricity Demand and Generation Scenarios: Results summary July 2024](#) – Page 3

