



Ridgeline Advisory

WATER · ENERGY · INFRASTRUCTURE

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SUBMISSION · PUBLIC CONSULTATION

Making three good scenarios useful: a submission on the FESO 2027 Approach to Determining Scenarios

To: FESO 2027 Working Group, Energy Policy WA, Department of Energy and Economic Diversification — EPWA-info@deed.wa.gov.au

From: Matthew Cronin, Managing Director, Ridgeline Advisory · personal professional capacity

Acknowledgement of Country. Ridgeline Advisory acknowledges the Traditional Owners and custodians of the lands and waters on which we work, and their continuing connection to land and water. We pay our respects to Elders past and present, and we recognise Traditional Owners as the first scientists and water managers of this Country.

In short

This submission responds to DEED's *Approach to Determining Scenarios for the Future Energy System Outlook 2027*. It is offered by one practitioner in a personal professional capacity, not for or on behalf of any client. The draft scenario set is competent, honestly built, and — to DEED's credit — published for scrutiny a year before the plan lands. It meets two of DEED's three tests: it is **clear** and **plausible**. On the third — **useful** — it is not yet stressed where a 2050 investment plan most needs stressing.

One message: the set brackets demand rather than exploring divergent futures, and holds the largest structural uncertainties either common across all scenarios or as maybe-sensitivities. Five targeted changes, all inside the document's existing machinery, would fix that without a redesign:

1. **Add divergence** — a fourth "decoupled demand" scenario (or named sensitivity): high load growth against slow decarbonisation.
2. **Add a water & climate sensitivity** — vary the common supply resource traces for renewable drought, and add water limits on water-intensive supply.
3. **Treat consent as a modelling input** — publish agreement-making and heritage lead times; and, separately, recognise Traditional Owners as parties.
4. **Fix the buried levers** — add retirement timing as a sensitivity (currently unlisted), and confirm the already-flagged gas sensitivity is carried through.
5. **Test co-location** — confirm the very-large-loads case study without co-located generation, and make explicit who commits shared network capacity, and when.

If only one change is made, let it be the first. No draft scenario shows how the system behaves when demand and decarbonisation pull apart — the case most exposed to both the reliability and the price limbs of the State Electricity Objective.

1 Who I am, and why I'm writing

I have spent around thirty years across Australia's energy, water and infrastructure sectors — at Western Power and ATCO Gas & Pipelines, as a Water Corporation executive (General Manager, Strategic Performance; Commercial Director, Growth), and at Aurizon — with a regulatory record spanning ERA access arrangements and the Electricity Market Review. Ridgeline Advisory's practice sits at the intersection this plan must navigate: the water–energy–infrastructure nexus and Traditional Owner partnership and governance in Western Australia. I write because FESO 2027 will shape where public and private capital flows in the SWIS for a generation, and because the consultation is open now, when it can still be shaped.

Disclosure. The author advises clients across the water and energy sectors, including parties with interests in Australian energy markets. This submission was not commissioned by, coordinated with, or reviewed by any client, and the views are the author's alone.

2 What the approach gets right

It is worth being plain about the strengths, because they are real and they set a high base to build on:

- ✓ The **scenarios-based reframe** of the Whole of System Plan — exploring uncertainty through distinct, internally consistent futures rather than a single forecast — is the right instrument for a 20-plus-year horizon.
- ✓ **Early, public consultation** with named engagement windows, a full year before the draft report, is ahead of much national practice and deserves to be said.
- ✓ **IEA anchoring** for global settings and **alignment with AEMO's WEM ESOO 2026 Expected forecast** in the near term keep the State's major planning processes telling one coherent story.
- ✓ The **existing sensitivity and case-study machinery** — and the explicit acknowledgement that the ESM Rules "do not prescribe the number, nature or focus of the scenarios" — means every recommendation below can be absorbed without structural change.

”Scenario development is an iterative process... the ESM Rules set out technical and procedural requirements for FESO, but do not prescribe the number, nature or focus of the scenarios to be modelled.”

— DEED, Approach to Determining Scenarios for FESO 2027, July 2026

3 Where the set is narrow

Read across the three draft scenarios and a pattern emerges: they vary the **pace** of one broad future rather than the **direction** of several. Demand growth and decarbonisation move together in all three, and two of the three inhabit the same IEA world.

Parameter	Central	Rapid Change	Constrained
IEA world	Stated Policies	Stated Policies	Current Policies
Growth & population	Expected	Higher	Slower
Industrial electrification	Steady; some alumina	Faster, deeper; more alumina	Slow, partial; limited alumina
New industries (data centres, H ₂ , green iron)	Gradual; mostly co-located generation	Rapid; mostly co-located generation	Do not emerge
DER & Coordinated DER / V2G	Expected; V2G over time	Higher; V2G at scale	Plateaus; no V2G

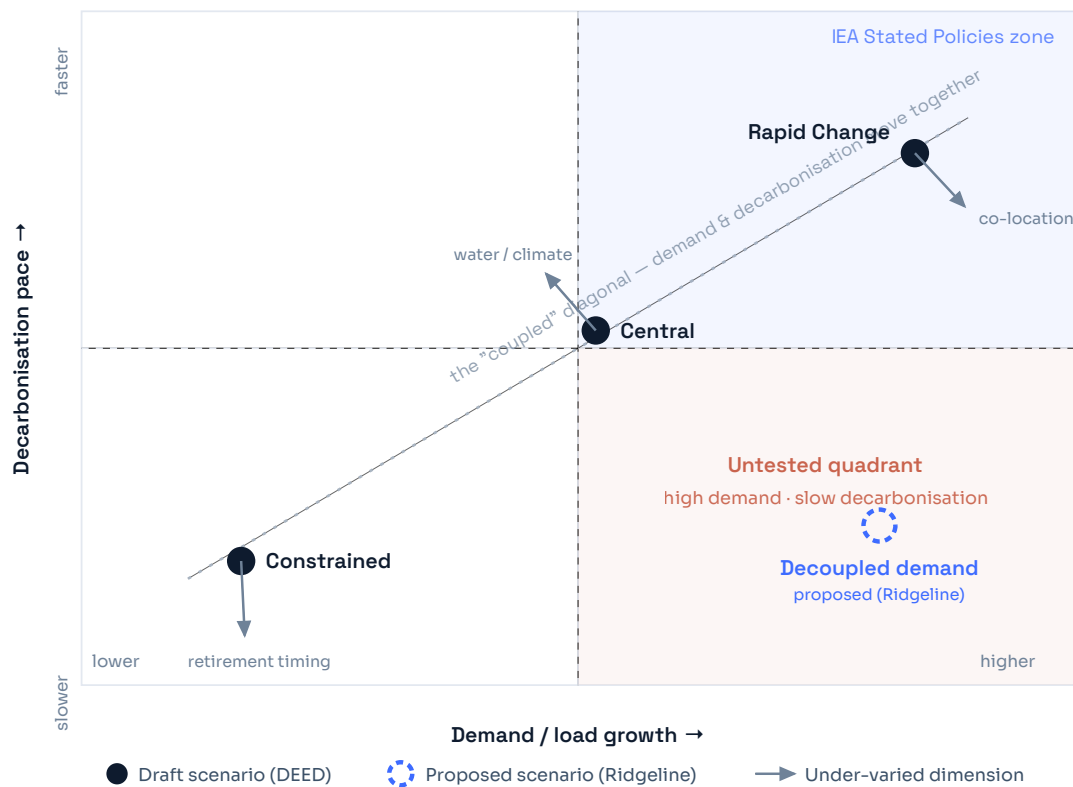
Table 1 — The three draft scenarios on selected parameters. Compiled from the Approach to Determining Scenarios (DEED, July 2026); see also its Table 3-2.

Held **common across all three scenarios** are facility retirement timing, a single gas-price trajectory, common wind and solar resource traces, and the SWIS Transmission Plan's Phase 1 projects (treated as committed); of these, only gas price also appears on the list of potential

sensitivities. The Goldfields Regional Network is excluded from scope. Several of these are among the plan's hardest questions — and, as set out below, they are not all the same kind of gap.

FIGURE 1 • ILLUSTRATIVE SCHEMATIC

The scenario space: what the draft set covers, and the gap a fourth scenario fills



How to read this. The three draft scenarios sit along a single diagonal — as demand rises, decarbonisation quickens with it — and two share the IEA Stated Policies zone. The high-demand / slow-decarbonisation quadrant is left empty; it is where an AI-driven load boom in a world of stalled climate ambition would land. Arrows mark dimensions that currently perturb existing scenarios rather than occupy new space. Positions are indicative, for illustration only — not model outputs.

4 Five recommendations for the draft MISA

Each is principle-based, fits the guiding principles and the sensitivity/case-study machinery, and is offered to make the set more useful — not to multiply scenarios for their own sake.

1 Add a divergent future

RATIONALE

Central and Rapid Change both sit in the IEA Stated Policies world, and all three scenarios move demand and decarbonisation together. The most commercially plausible awkward future — high demand in a slow-decarbonising world — is untested.

IT IS INTERNALLY CONSISTENT

Such a future meets the ESM Rules' consistency test. Data-centre, defence and minerals-processing load is driven by global compute and security demand, not by climate ambition — so it can rise even as decarbonisation stalls. High demand does not need fast decarbonisation to be coherent.

EVIDENCE

AEMO's 2026 WEM ESOO carves out data centres as a separate demand category for the first time, then forecasts them conservatively pending committed projects — precisely the demand that can arrive faster than plans assume. A fourth "decoupled demand" scenario, or at minimum a named sensitivity, would close the gap shown in Figure 1.

2 Add a water & climate sensitivity

RATIONALE

There is no key parameter category for water availability or climate impact. Demand-side forecasting already samples historical weather years; the untested gap is on the supply side, where the approach holds **common wind and solar resource-availability traces** across every scenario. In a drying South West, water is also a first-order input to the technology mix the modelling will select — thermal and gas-plant cooling, hydrogen electrolysis, pumped hydro and long-duration storage, and alumina processing.

ASK

Vary the common supply traces to include a correlated renewable-resource drought — low wind and solar coinciding with high demand — and apply water constraints to water-intensive supply options. Low-cost to run; materially improves confidence in the least-cost mix. (Hydrogen electrolysis alone consumes on the order of nine litres of water per kilogram of hydrogen before purification losses.)

3 Treat consent and agreement-making as modelling inputs — and recognise Traditional Owners as parties

RATIONALE

The build-out FESO will recommend crosses Country at State scale, yet Traditional Owner agreement-making, heritage approvals and community acceptance appear nowhere in the parameters, sensitivities or case studies. In my experience across regulated infrastructure in this State, timelines that assume access rather than consent mis-time corridors and mis-cost the plan.

ASK — WITHIN FESO'S REMIT

Publish the agreement-making and heritage lead-time assumptions embedded in network and generation timing, and let scenario or sensitivity treatment reflect both contested corridors and partnership grounded in free, prior and informed consent — where the schedule benefit is the consequence of Traditional Owners deciding as owners, not the purpose.

ASK — A GOVERNANCE NOTE

Separately, and as a matter for the Steering Committee rather than the modelling: Traditional Owners are not currently named as a stakeholder class (the consultation identifies industry participants, potential investors, policy makers and consumers). Recognising and resourcing their participation would strengthen the plan's standing. This is offered in support of Traditional Owner authority, not speaking for it, and defers to Traditional Owners and their representative bodies.

4 Add retirement timing as a sensitivity; confirm the flagged gas sensitivity

RATIONALE

These are two different gaps, and it is worth being precise. **Facility retirement timing** is held common across all scenarios and does not appear on the list of potential sensitivities at all — yet it is arguably the most consequential near-term uncertainty in the SWIS. **Gas price** is also held common across scenarios, but it is already flagged as a potential sensitivity; there, the ask is simply to confirm it is carried through, given the 2025 WA GSOO forecasts a widening supply gap.

EVIDENCE

The system-level stakes are visible in AEMO's 2026 WEM ESOO, whose ten-year outlook swings from a **347 MW capacity surplus in 2028–29** to a **2,161 MW shortfall by 2035–36** on coincident demand growth and assumed plant exits. Where closure dates are announced government policy, the sensitivity need only test *slippage or acceleration* around the schedule — not question the policy — applied system-wide as a class of uncertainty.

5 Test the co-location assumption

RATIONALE

In every scenario, very large new loads arrive substantially served by co-located generation. Connection charges and the Reserve Capacity Mechanism price much of what an individual load costs the system; what they cannot price is the **timing of shared network augmentation**, which must be committed years ahead of need.

ASK

Confirm the flagged case study on very large loads *without* co-located generation, and make explicit who commits the shared transmission and firming capacity — and when — if the assumption fails or hyperscale customers instead demand firm grid supply.

5 Why these strengthen, not slow, the FESO

None of the five requires a redesign; each fits the guiding principles and the existing machinery. Each also serves the State Electricity Objective directly: divergence and retirement timing bear on both reliability and price; the water and co-location tests on security of the mix and who ultimately pays; consent on deliverability and cost. Stress-testing these is not a detour from the SEO — it is how the plan meets it. The matrix sets out, for each adjustment, what it changes in the modelling and the outcome it surfaces.

Proposed adjustment	What it changes in the modelling	Associated outcome
1 • Divergent "decoupled demand" scenario	Breaks the demand-decarbonisation coupling; adds a high-load, slow-decarbonisation pathway.	▲ Wider risk coverage. Reveals least-cost outcomes when the two big drivers pull apart.
2 • Water & climate sensitivity	Varies the common supply resource traces for correlated renewable drought; applies water limits to water-intensive supply.	▲ Firmer technology confidence. Surfaces water as a constraint on the selected mix.
3 • Traditional Owners as parties; consent as input	Makes agreement-making and heritage lead times explicit in network and generation timing.	▲ Truer cost & schedule. Corridors timed to real consent, not assumed access.
4 • Retirement timing added; gas sensitivity confirmed	Flexes <i>when</i> plant exits (currently unlisted) around announced schedules, and carries the already-flagged gas-price sensitivity through.	▲ Timing risk exposed. Tests the surplus-to-shortfall swing the ESOO already shows.
5 • Very-large-loads case study without co-location	Relaxes the co-located-generation assumption for large new loads.	▲ Cost incidence clarified. Shows who commits shared network capacity, and when.

Figure 2 — Illustrative schematic. Outcomes are directional (what each change reveals or de-risks), not model results; no MW or dollar figures are implied beyond the attributed AEMO ESOO aggregates in Recommendation 4.

A scenario set earns the word "useful" where it is stressed hardest — not where it sits most comfortably.

6 Close

I offer these recommendations constructively, and with respect for the work already done and the openness of the process. All five can be taken up through the draft MISA without disturbing the scenarios' internal consistency or the near-term alignment with AEMO's forecast. I'd welcome the chance to talk any of them through, and I look forward to the draft MISA and its Inputs and Assumptions workbook in the third quarter of 2026.

Yours sincerely,

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Data confidence & sourcing. Scenario settings, parameter categories, common assumptions, sensitivities, case studies and dates are drawn from DEED's *Approach to Determining Scenarios for FESO 2027* (July 2026). The surplus/shortfall figures and the data-centre demand category are from AEMO's 2026 WEM ESOO (June 2026); the gas supply-gap outlook from AEMO's 2025 WA GSOO. Figures 1 and 2 are illustrative schematics conveying structure and direction, not model outputs — no MW, dollar or capacity values are implied beyond the attributed ESOO aggregates. The five recommendations and any characterisation of gaps are the author's structured judgement, offered for discussion. Where the source is silent, this submission says so rather than assume.

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