Submission on Data Centres and AI Infrastructure in Tasmania

Draft Expectations for Data Centres and AI Infrastructure Developers

Tasmanian Government
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Individual submission through PIIS
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Purpose

I recommend that the Tasmanian Government establish an enforceable statewide framework for major data-centre and AI infrastructure development. The framework should protect existing electricity users, drinking-water supplies, environmental amenity and public finances while enabling development that demonstrates measurable and enduring public benefit. This submission responds to the Draft Expectations for Data Centres and AI Infrastructure Developers consultation [1].

Central proposition: Tasmania should establish the public-interest rules governing major computational infrastructure before project commitments determine the allocation of electricity, water, infrastructure and public resources.

Contact: [redacted]

Contents

The executive summary and summary of recommendations set out the decisions requested. The regulatory framework explains the proposed operating model. Sections 1 to 17 develop the recommendations; sections 18 to 22 provide the standards schedule, implementation timetable, certification evidence, risk assessment and references.

Section	Page
Executive summary	3
Summary of recommendations	4
Proposed regulatory framework	5
1 Purpose and governing principle	6
2 Statutory category Large Computational Load Facility	9
3 World’s Best Practice performance ratchet	9
4 Energy efficiency and PUE	10
5 Electricity additionality firming and flexible computational load	11
6 Water	13
7 Recoverable thermal energy	14
8 Site selection and associated infrastructure	16
9 Environmental standards for associated generation	17
10 Amenity emergency generation lighting and freight	17
11 Decommissioning and restoration security	19
12 Public benefit social licence skills and innovation	20
13 Staged commissioning independent verification and enforcement	22
14 Commonwealth national security referral	23
15 Measurement and accountability matrix	24
16 Implementation and evidence safeguards	24
17 Response to the consultation expectations	27
18 ISO and IEC standards used	28
19 Proposed implementation schedule	29
20 Evidence required for operating certification	30
21 Risks opportunities and responses	31
22 References and bibliography	32

Executive summary

Major AI and data-centre developments can create investment, research opportunities and technical capability. Their concentrated demand for electricity, water and infrastructure also requires assessment of cumulative impacts and continuing operating performance. Conventional project approvals and voluntary expectations alone do not establish the complete operating framework proposed in this submission.

The State promoted data-centre investment through its 2018 Data Centre Action Strategy, which proposed an investment-context gap analysis and whole-of-government coordination [9, 10]. A major Long Reach planning approval preceded the release of the present draft expectations [11, 12]. These records warrant a published account of the preparation undertaken, the protections now enforceable and the gaps remaining. They do not establish that no regulatory work occurred during the intervening period.

I propose a statutory category of Large Computational Load Facility, with proportionate thresholds, cumulative assessment and staged operating certificates. Each increase in authorised load should depend on independently verified evidence that its additional supply, water arrangements, environmental performance, emergency capability and financial security are in place. Construction expenditure and repeated testing should not create an entitlement to commercial operation.

The framework should require additional power for additional demand, verified curtailment before essential users are displaced, substitution of non-potable water for industrial cooling and productive assessment of recoverable heat. World's Best Practice should be determined through comparable sustained operating evidence, supported by adopted ISO and IEC measurement methods. PUE 1.04 is proposed as an initial benchmark for assessment, with technical comparability and superior demonstrated performance considered explicitly.

Proponents should meet attributable infrastructure and regulatory costs, provide accessible security for closure liabilities, and deliver additional, measurable public benefits. Independent regulation, system-level oversight and standardised reporting should make those obligations effective through ownership changes, expansion and eventual decommissioning. Existing facilities require lawful and proportionate transition arrangements.

Summary of recommendations

1. Establish an enforceable statewide framework for major computational infrastructure, supported by a published legal and technical gap analysis.

2. Define Large Computational Load Facilities by demand and effects, with aggregation rules preventing artificial project fragmentation.

3. Publish a register of proposed, approved and operating facilities and assess cumulative demand under normal and constrained resource conditions.

4. Require staged commissioning and operating certificates, with independently verified compliance before each material increase in authorised load.

5. Adopt a World's Best Practice performance obligation, with transparent comparability assessment, justified departures and review when superior sustained performance is demonstrated.

6. Assess PUE 1.04 as the initial energy-efficiency benchmark and require adopted ISO and IEC methods, absolute demand data and actual operating results.

7. Require additional electricity demand to bring additional, deliverable supply, storage, firming and demand response matched to the authorised load.

8. Protect households, essential services and established industry through verified curtailment arrangements coordinated with relevant electricity authorities.

9. Require proponents to meet attributable network, import, infrastructure and system-service costs, with transparent allocation and no concealed public subsidy.

10. Prohibit potable water for industrial cooling and process demand under the proposed regime, with narrowly defined safety exceptions; establish fit-for-purpose non-potable supply and purple-pipe pathways.

11. Require measured assessment of recoverable heat, technically viable heat-driven cooling and productive thermal uses before final rejection of the resource.

12. Establish a safeguarded planning pathway for resource-integrated agriculture and assess shared water and thermal infrastructure on demonstrated demand.

13. Assess associated generation, storage, connection and servicing infrastructure across its lifecycle, including fuel provenance and biodiversity impacts.

14. Enforce acoustic, lighting, landscape and habitat requirements through baseline assessment, commissioning tests, continuing monitoring and a written complaints process.

15. Restrict backup fossil generation to genuine emergencies and necessary controlled testing, with no commercial electricity sales from backup generators.

16. Require decommissioning security, appropriate insurance and continuing financial assurance before liabilities arise and through ownership changes.

17. Create an additional, measurable and enforceable public-benefit obligation, including transferable skills, TasTAFE and University of Tasmania pathways and evidence-based research.

18. Maintain independent statutory regulation and independent system-level oversight, with clear responsibilities, adequate expertise and conflict controls.

19. Require standardised public performance reporting, regulator access to underlying evidence and proportionate enforcement, including operating-load restriction or suspension.

20. Refer national-security and strategic-dependency issues to competent Commonwealth authorities and require precise evidence for sovereignty claims.

21. Publish a staged implementation timetable, establish lawful transition arrangements for existing facilities and respond to each recommendation with reasons.

Proposed regulatory framework

Tasmania should establish measurable outcomes for major computational facilities and require proponents to demonstrate compliance before increasing authorised operating capacity. Actual performance should be independently verified, material results publicly reported and continuing obligations enforced. The framework should remain capable of accommodating changes in computing, energy and cooling technology.

A planning permit, construction approval or electricity connection agreement must not, by itself, confer an unrestricted right to operate a Large Computational Load Facility (LCLF). Under the proposed regime, operating authority must be staged and tied to demonstrated performance at the electrical/computational load actually authorised.

Basis for the proposed framework

Investment promotion creates a corresponding responsibility to prepare the State for the activity being promoted. I am concerned that project commitments can advance faster than the specific safeguards needed to govern their cumulative resource demands and continuing performance. Approval of a building is not enough to establish the conditions under which a very large electrical load should operate over its life.

The Government should publish the gap analysis proposed in its investment strategy, clarify whether it examined regulatory readiness, identify which protections are already enforceable and undertake a legal and technical gap analysis to explain how it will close the remaining gaps. Tasmania must not be placed in a position where construction expenditure or commercial commitments become reasons to relax resource, amenity or public-benefit requirements.

The detailed recommendations below provide a means of proceeding responsibly. They apply according to scale and impact rather than a developer’s branding of a facility as a data centre, AI factory or another computational service. They also provide a pathway for existing facilities, rather than leaving improved standards applicable only to future developments.

Core requirements

- Create a statutory category of Large Computational Load Facility above a prescribed demand threshold.
- Apply a World's Best Practice (WBP) performance obligation: where a measurable superior benchmark has been independently demonstrated and is reasonably applicable to comparable facilities, Tasmania begins from that benchmark rather than from industry-average performance.
- Use a WBP ratchet: measurable standards may tighten as superior sustained performance is demonstrated, but must not be weakened merely because a proposed development cannot meet them.
- Allow a proponent to seek a justified departure where it can demonstrate, with independently verified engineering evidence, that a benchmark is not reasonably applicable to the proposed facility. Cost or preferred equipment choice alone must not establish the case.
- Require independent verification before commercial operation and before each material increase in authorised operating load.
- Measure actual operation, not merely design predictions. The regulator must have access to underlying data, with material performance publicly reported.
- Use proportionate enforcement: corrective action, restriction of authorised load, penalties and, where necessary, suspension.

Stages of operating authorisation

The proposed framework provides the following distinct authorisations and verification stages:

- Construction approval.
- Time- and load-limited commissioning authorisation.
- Stage 1 operating certificate specifying maximum authorised commercial IT/electrical load.
- Independent verification of performance and compliance.
- Subsequent operating certificates authorising higher load only after the applicable requirements are satisfied.
- Full operation only after the final authorised stage is certified.

Commissioning and testing must not become a substitute for operating approval. If computing equipment is performing routine commercial workloads, it is operating rather than commissioning, irrespective of the label applied by the operator. Neither expenditure already incurred nor successful testing creates an entitlement to the next operating stage.

Performance pillars

Pillar	Core requirement	Accountability
Energy efficiency	Demonstrated comparable WBP with PUE as the initial benchmark.	Adopted method, independent verification and actual reporting.
Electricity additionality	Additional zero-emissions supply with sufficient firming or verified flexibility.	Time-resolved reconciliation and curtailment tests.
Water	Potable water reserved for potable-quality needs; use fit-for-purpose alternatives.	Source metering, drought planning and WUE.
Thermal energy	Assess and implement practicable beneficial uses before final rejection.	Temperature, MWth, MWhth and actual reuse.
Associated infrastructure	Assess cumulative infrastructure needed for intended operating capacity.	Coordinated assessment despite separate owners and permits.
Amenity and environment	Continuing compliance at affected receptors.	Worst-case tests, monitoring and remedial powers.
Decommissioning	Secure full foreseeable restoration liability.	Independent costing, protected security and reassessment.
Public benefit	Additional enduring Tasmanian outcomes.	Milestones, independent verification and public reporting.

1 Purpose and governing principle

Tasmania is considering infrastructure capable of imposing unusually large, continuous and long-lived demands on electricity, water, land, network infrastructure and environmental amenity. The regulatory question is therefore not simply whether individual projects can obtain conventional approvals. It is whether Tasmania has a framework capable of governing cumulative resource demand and continuing operating performance over the life of this emerging industry.

The proposed framework requires a defined performance level and a recognised measurement method for each material outcome.

Independent verification should precede commercial operation. Continuing measurement, public reporting and enforcement should establish whether each authorised operating stage remains compliant.

No regulatory standard may operate without a defined measurement method, and no material performance claim may depend solely on self-verification by the proponent.

Government promotion and regulatory preparation

The Office of the Coordinator-General's Data Centre Action Strategy, identified by its official website as the 2018 strategy, explicitly sought large-scale investment. Its ministerial foreword was signed by Michael Ferguson. It promoted electricity, water and climate advantages, identified typical power demand of 2–50 MW, and proposed a Tasmanian gap analysis and whole-of-government coordination [9, 10]. These are documented indications that substantial data-centre development was anticipated; they are not evidence that the precise demands of today's AI factories were known in 2018.

George Town Council records approval of the Long Reach data-centre application DA 2026/29 on 25 August 2026 [11]. The Government released its draft expectations on 7 September 2026 [12]. This establishes that a major planning decision preceded the present consultation. It does not establish that the approval was unlawful, that every relevant safeguard was absent or that eight years passed without any regulatory work.

My criticism concerns the order in which investment promotion, project commitment and tailored regulatory preparation have occurred. Existing approval processes may address individual impacts, but their existence does not demonstrate a complete framework for cumulative demand, additional supply, operating-stage certification, transparent performance and lasting public benefit. Government should substantiate that adequacy rather than require communities to assume it.

Government began encouraging large-scale data-centre investment in 2018, yet its present draft identifies no dedicated statutory authority accountable for overseeing the industry's cumulative resource demands, staged commissioning and continuing operating performance [1, 9, 10]. Government should explain what legislative and institutional preparation it undertook during that period, and why a coordinated, enforceable framework was not established before major project commitments advanced. The strategy's promised gap analysis concerned the Tasmanian investment context; it did not explicitly promise a regulatory gap analysis.

The draft identifies the Office of the Coordinator-General as an investment facilitator and expressly distinguishes that role from statutory regulation [1]. Existing agencies address separate parts of developments, but the draft identifies no single authority accountable for the combined result. A planning approval, electricity supply arrangement or water agreement may address its own requirements while leaving unresolved whether the industry's total demand can be accommodated without compromising existing users, environmental protection or public finances.

The consequences are practical. Communities must pursue answers across multiple organisations; cumulative impacts can fall between separate assessments; and proponents lack a single, transparent statement of the conditions they must satisfy before each increase in operating load. Construction and commercial commitments can advance while responsibility for monitoring, enforcement and infrastructure liabilities remains fragmented.

Delay also makes effective regulation harder. Once substantial money has been committed, Government faces increasing pressure to accommodate projects rather than require projects to satisfy safeguards established beforehand. Tasmania risks having its resource allocation and public obligations shaped by development already underway. Establishing independent oversight and enforceable operating conditions is therefore an immediate responsibility, not a matter to defer until the industry is established.

A professional development framework also strengthens Tasmania's position with industry. Clear, demanding standards, coordinated planning and competent independent oversight can give responsible investors greater certainty about costs, conditions and delivery. They can encourage innovative approaches to additional energy, cooling, water reuse and transferable local skills. Tasmania should compete on the quality of its preparation and the enduring value of development, rather than allow the urgency of securing investment to determine its safeguards.

The Government should publish what its promised gap analysis examined, when it was completed, what it found, which recommendations were implemented and which remain outstanding. Where no such analysis was completed, it should explain why and undertake one now. A summary of each legal power, the responsible body, the enforceable obligation and any gap would make the response assessable.

The scale requires an operating framework

Hydro Tasmania states that Firmus sought a long-term arrangement supporting 444 MW across its proposed Tasmanian factories. It describes a 104 MW retail arrangement for St Leonards and expressly distinguishes its supply-assessment role from approval or regulation of AI factories [13]. Firmus describes Bell Bay's maximum demand as approximately 288 MW and presents dispatchability and predominantly dry cooling as design features [14]. These are attributed statements, not independently verified operating results.

MW measures power at a point in time; MWh measures energy over time. A stated maximum demand does not establish utilisation, annual consumption or a share of Tasmania's annual electricity use. The State should publish comparable maximum-demand and annual-energy information, with load profiles and scenario assumptions, so the debate does not confuse capacity with consumption.

For scale only, a constant 444 MW load over a non-leap year would consume 3,889,440 MWh, or about 3.89 TWh. This arithmetic is not a forecast of Firmus's consumption. At 50 per cent of that assumed average load, the illustrative energy would be about 1.94 TWh. Real assessment needs the expected workload, commissioning timetable, curtailment and actual meters.

The material issue is the relationship between new demand and the resources available to serve it. A highly efficient facility may still impose a large absolute demand. A contractual renewable label does not by itself demonstrate additional generation, drought resilience, adequate firming or protection for established users.

A public register of cumulative demand

Government should maintain a public register of proposed, approved, commissioned and operating LCLFs. Each entry must distinguish project stage, maximum import demand, IT load, predicted annual energy, water demand by source, generation and storage commitments, and authorised operating capacity. Predictions must be dated and replaced or accompanied by actual results as operation develops.

The register should support scenario analysis rather than add incompatible headline numbers. It must identify which projects are mutually exclusive, which figures refer to staged expansion and which capacity is merely an expression of interest. Statewide and regional assessments should test coincident demand under low inflows, heatwaves, network outages and delays to promised supply infrastructure.

This submission makes no allegation that a named developer has operated unlawfully. The proposed framework is intended to prevent a situation in which physical development or repeated testing advances beyond the safeguards appropriate to its eventual commercial load.

2 Statutory category Large Computational Load Facility

Tasmania should establish a statutory category of Large Computational Load Facility (LCLF) above a prescribed electrical-demand threshold. The threshold and technical definitions should remain capable of amendment by regulation as the industry evolves.

Under that regime, a planning permit or electricity connection agreement must not, of itself, authorise operation above the prescribed threshold. A separate staged operating authority must attach to the maximum authorised commercial load.

The legislation must prevent artificial fragmentation of a project into smaller components where the components form part of one reasonably foreseeable computational-load development.

Define the regulated activity by its effects

The statutory definition should capture computational facilities above the adopted demand threshold, including training, inference, cloud hosting and comparable uses. The definition should not depend on the operator's preferred name, the type of corporate customer or ownership of the computing equipment. An operator must not escape regulation by leasing equipment to customers or separating property ownership from the computational business.

Aggregation must consider physically or operationally connected components, common control, shared infrastructure and reasonably foreseeable staged development. Separate meters, leases, subsidiaries or planning applications must not divide one functional development below the threshold. Conversely, aggregation must have published criteria and reasons so genuinely independent smaller facilities are not arbitrarily combined.

I do not nominate a numerical threshold without a technical and legal assessment. Government should consult on a threshold that captures material demand early enough to govern it, with proportionate requirements for smaller facilities. The threshold must be reviewable as technology and the number of facilities change.

Clarify each approval and its limits

Every decision must identify what it authorises. Land-use permission, building approval, environmental requirements, water arrangements, electricity connection and commercial supply contracts address different matters. Government should publish a project-specific map of these approvals and identify the body accountable for unresolved interactions. No applicant or community should have to infer the operating entitlement from an assortment of permits and contracts.

The proposed operating authority should specify the regulated entity, site boundary, authorised load, equipment stage, applicable standards and reporting obligations. Transfer to a new operator should require confirmation of financial security, data access, competent management and continuing compliance. Customer confidentiality must not prevent the regulator identifying who actually controls the regulated load.

3 World's Best Practice performance ratchet

All new LCLFs must be designed, constructed and operated to meet demonstrated World's Best Practice for energy, water, cooling, thermal-energy utilisation, emissions, resilience and other material environmental-performance measures.

Where a measurable WBP benchmark exists, the initial regulatory standard must begin at the demonstrated level. When independently verifiable evidence establishes a superior, sustained and reasonably comparable benchmark, the prescribed standard must be reviewed and, where appropriate, tightened.

The WBP ratchet must not move because of a fleeting laboratory record. The benchmark must be based on sustained performance applicable to comparable operational facilities.

Where a proponent claims that a WBP benchmark is not reasonably applicable because of intrinsic or site-specific circumstances, the burden rests on the proponent to provide independently verified engineering evidence. Any approved departure must be technically justified and transparent, time-limited where appropriate, and must not establish a lower benchmark for later developments.

A ratchet that is demanding and administratively workable

World's Best Practice should be a documented comparative process. The regulator should maintain an evidence register showing the candidate benchmark, source facility, measurement boundary, assessment period, climate, workload, utilisation, reliability requirement and verification status. Marketing claims and short demonstrations may identify candidates for investigation but must not become regulatory benchmarks without sustained comparable evidence.

A benchmark must be assessed across relevant environmental outcomes. An apparent PUE improvement should not be accepted as progress if it shifts material water consumption, noise, refrigerant leakage or emissions outside the reported boundary. Any proposed trade-off should be quantified and justified rather than hidden within a single efficiency ratio.

When better comparable performance is demonstrated, Government should review the prescribed level on a published timetable. New approvals and material expansions should meet the revised level; existing facilities should have defined transition periods and retrofit assessments. A time-limited exception must state what cannot be achieved, why, the substitute obligation, the expiry or review date and the evidence needed to remove it.

Departure decisions must remain exceptional and transparent. Engineering feasibility, safety and genuinely intrinsic differences are relevant. Expenditure already incurred or a preferred vendor should not by itself justify a weaker level. The decision-maker should explain the weight given to cost, practical feasibility and environmental consequences, with appropriate review rights.

A performance standard must be expressed so it can be measured and enforced. Where no reliable benchmark exists, the immediate obligation should be an independently verified assessment and a regulator-approved performance plan. This allows the framework to cover thermal use and emerging technologies without inventing a supposedly universal numerical limit.

4 Energy efficiency and PUE

Power Usage Effectiveness (PUE) compares total data-centre energy with IT-equipment energy. ISO/IEC 30134-2:2026 provides the current published PUE standard [4]. PUE measures facility overhead; it does not by itself measure useful computational output, total resource demand or emissions. These matters require separate measures.

I propose PUE 1.04 as the starting benchmark for assessment, subject to independent comparability assessment. A 2018 US national-laboratory presentation reports a trailing twelve-month average PUE of 1.04 at its high-performance computing facility [3]. This is a documented operational example, not proof that every facility can achieve it or that it is the current global minimum. The US Department of Energy also reports facilities with PUE 1.03 [8]. Under the proposed rule, a proponent seeking a less stringent standard must demonstrate why the adopted benchmark is not reasonably applicable to its facility. Sustained superior comparable evidence must trigger review under the WBP ratchet.

PUE must be measured under ISO/IEC 30134-2:2026, or a successor expressly adopted by the regulator, using the prescribed facility boundary and measurement category [4]. Compliance must use actual annual operation, supported by shorter-interval reporting. The regulator must define treatment of

on-site generation, shared infrastructure and mixed-use premises so boundaries cannot be selectively narrowed. Predictions and commissioning measurements support initial stage decisions but do not substitute for the first complete annual operating assessment.

Illustrative calculation, not a stated project capacity: at a constant 46 MW IT load, each 0.01 increase in PUE adds 0.46 MW of facility overhead. Over a non-leap year, 0.46 MW × 8,760 hours = 4,029.6 MWh. Actual savings depend on operating hours, IT load and measured PUE.

Compare measured operation rather than selected claims

The PUE 1.04 proposal is a starting point for rigorous comparison, not a claim that a US research facility and every Tasmanian commercial facility have identical circumstances. The operator must disclose the annual measurement basis, utilisation, ambient conditions, equipment boundary and relevant supporting loads. A design PUE, instantaneous best result and annual operating PUE must never be presented as interchangeable.

Before operation, calibrated meters and a monitoring plan must demonstrate that compliance can be assessed. Limited operating stages may then establish seasonal performance. The first full annual result must be independently verified, followed by continuing annual assessments and more frequent publication of material trends. Low-load commissioning results must be interpreted against the actual load and conditions of that stage.

The regulator should require separately reported energy for IT equipment, cooling, pumps, power conversion, lighting, ancillary systems and emergency generation where material. Missing meter data must be disclosed, estimated using an approved method and corrected; missing data must not make the reported ratio more favourable. The same boundary rules must apply before and after expansion.

IT efficiency also matters. Operators should disclose meaningful workload-efficiency measures where comparability permits, but tokens per unit of electricity or other proprietary measures must identify model, task, precision and quality assumptions. Government should not reward a facility for moving energy use into the IT denominator while reducing useful output.

Australian verification capability

NABERS offers operational data-centre energy ratings based on PUE [15]. Government should investigate using that established assessment capability alongside the adopted international measurement requirements. The specialist must establish compatibility of boundaries and methods; a star rating or management-system certificate must not automatically satisfy every proposed obligation.

Material performance reports must include absolute energy consumption as well as PUE. A facility that doubles useful computational capacity while maintaining a low PUE may still double its electricity demand. The staged load certificate and additionality assessment govern that absolute demand; the efficiency ratio governs overhead.

5 Electricity additionality firming and flexible computational load

New computational demand must be supported by genuinely additional zero-emissions generation brought into service because of that new demand. Existing Tasmanian renewable generation must not merely be rebadged, reallocated or contractually reassigned from existing consumers.

Additional generation must be accompanied by an appropriate combination of storage, firming and demonstrable demand flexibility so that the facility does not materially reduce Tasmania's electricity security, strategic hydro-storage position, network reliability or affordability for existing consumers.

Nameplate MW is insufficient. Compliance must reconcile actual consumption with actual additional generation, storage, firming and curtailment at a temporal resolution capable of showing whether the additional demand is physically supported rather than merely balanced on an annual accounting basis.

Non-curtailable computational load must be supported at all times by qualifying additional supply, storage or additional firming whose physical availability and deliverability are independently verified. A firming contract alone must not establish compliance. Flexible computational load must be capable of rapid reduction when qualifying supply is unavailable or the electricity system requires relief.

Before unrestricted operation, independently supervised commissioning tests must demonstrate the claimed curtailable load, response time, minimum non-curtailable load, and transition arrangements. Renewable-energy certificates or contracts alone must not establish compliance. The proponent must demonstrate additional physical generation brought into service for the new demand, its deliverability, and sufficient time-matched supply, storage, firming or verified curtailment. Annual matching or contractual reassignment of existing generation must not substitute for that evidence.

Bring additional power with the additional load

The obligation to bring their own power should mean bringing sufficient additional qualifying supply and supporting arrangements into service for the new load. It need not mean that every generator occupies the data-centre site. Off-site supply may be appropriate, but the proponent must demonstrate deliverability, additionality and the arrangements protecting other consumers.

The proposed framework must identify the generator, expected annual and seasonal output, connection and commissioning dates, contractual control, storage energy capacity, firming limits and competing commitments. A project must not count the same generation towards more than one additionality obligation unless the allocation is explicit and the combined claims remain within actual output.

Storage power and energy must be reported separately. A battery rated in MW cannot establish how long it can support a load without its usable MWh, discharge limits, charging source, state-of-charge policy and cycling assumptions. Likewise, a wind or solar nameplate rating cannot be treated as firm continuous supply.

Qualifying supply must be assessed under conditions of simultaneous low renewable output, low hydro inflows, network constraints and delayed generation delivery. The assessment must identify minimum safe load and how it will be met. Emergency diesel must not be counted as routine qualifying zero-emissions firming.

Protect households and established industry

A proponent must meet the costs attributable to its connection, network augmentation, metering, dispatch arrangements and necessary water or other infrastructure. The allocation must distinguish costs that genuinely benefit the wider system from those caused by the project. Public benefits from shared infrastructure must be independently assessed before existing consumers are asked to bear any part of the cost.

Long-term obligations must address abandonment, lower utilisation than promised, insolvency and relocation. The responsible network or utility should require appropriate security against stranded project-specific costs. A private contract that fixes a developer’s price must not be represented as proof that the wider system faces no risk.

Hydro’s supply assessment is important, but its published statement makes clear that it does not approve or regulate AI factories [13]. Government must therefore identify who integrates supply adequacy with cumulative planning, water, amenity and operating permissions. No material issue should fall between the commercial supplier and statutory regulators.

Verify priority curtailment

The operating certificate must define the conditions that trigger curtailment, the authorised party issuing the instruction, response time, required reduction, minimum safe demand and restoration sequence. Discretionary computational load should reduce before essential community services and consumers unable to reduce safely, subject to lawful coordination with the electricity-system operator.

Tests must demonstrate the complete response, including customer workloads, cooling and support equipment. Moving the computation elsewhere, throttling processors, pausing training and using storage are different responses and must be identified. A battery that hides import briefly without reducing energy use is not evidence of indefinitely curtailable demand.

Commercial and safety consequences of curtailment must be incorporated into contracts before operation. If a facility's customer commitments make interruption impossible, the proponent must provide the qualifying supply and firming appropriate to that non-curtailable load. Claimed flexibility must be retested after material equipment or workload changes.

Environmental integrity of additional generation

Native-forest material must not be accepted as qualifying zero-emissions additional supply merely because it is described as forestry waste or renewable biomass. Any proposed fuel must have independently checked provenance, lifecycle emissions, biodiversity consequences and consistency with adopted policy. My preference is for a supply pathway that avoids creating additional demand for native-forest extraction. This is a proposed safeguard, not a finding about a particular fuel contract.

6 Water

The governing principle should be: reserve potable water for uses that require potable water. The operative rules below give effect to that principle.

LCLFs must prioritise cooling architectures with zero operational cooling-water consumption where technically achievable. Microsoft describes a next-generation design intended to eliminate evaporative cooling-water consumption [7]; this is a developer report, not independent verification of universal feasibility. Initial filling, maintenance, domestic water and electricity-supply water impacts must be identified separately. Where cooling water is required, approved fit-for-purpose non-potable sources must be used; any exception based on legally or technically required potable quality must be independently justified, narrowly defined and published.

New facilities must use dual reticulation where appropriate. Potable water must be confined to drinking, food preparation, personal hygiene and uses legally or technically requiring potable quality. Toilets, cooling/process uses, landscaping, compatible cleaning and other non-potable functions must use recycled or other approved non-potable water where practicable.

Approved rainwater and screened stormwater should be eligible non-potable sources, with first-flush control, treatment, safe storage and cross-connection prevention appropriate to their use. Purple-pipe networks should be assessed for regional supply; neither colour coding nor closed-loop design alone demonstrates water safety or zero consumption.

Water use must be measured and publicly reported by source. Facilities must demonstrate that prescribed drought or water-restriction conditions can be managed without priority access to potable water needed by households, essential services, agriculture or established industry.

Where practicable, non-potable infrastructure developed for an LCLF must be designed as shared regional infrastructure capable of supplying fit-for-purpose water to other industrial, agricultural,

horticultural, recreational or municipal users. The objective is regional potable-water substitution, not merely on-site compliance.

Make potable substitution an enforceable design decision

Potable supply should be prohibited for routine industrial cooling, flushing, irrigation and other uses not requiring potable quality. A narrowly justified exception should require evidence of the technical or legal need, alternatives assessed, volume, duration and measures to remove the exception. Convenience or connection to an existing drinking-water main should not establish necessity.

The water plan must identify dry-mode and wet-mode operation, operating temperature triggers, peak daily demand, annual demand, source reliability and drought contingencies. Predicted low annual consumption must not conceal a high demand on the same hot days when households, agriculture and ecological systems are stressed.

Firmus publicly describes its water policy as prioritising dry-mode cooling and site-specific planning [16]. Such commitments should be translated into measurable site conditions and verified results. Household-equivalent comparisons should be accompanied by actual volumes, the reference household assumption and peak-day use; they cannot replace engineering data.

TasWater's public recycled-water information describes an existing network of reuse schemes [17]. This establishes a basis for investigating regional reuse, not a guarantee of supply at any proposed site. Feasibility must examine treatment quality, seasonal availability, pipeline costs, existing allocations and ecological obligations before a facility relies on that source.

Regional purple pipe and stormwater opportunities

Government should commission regional non-potable water plans with TasWater, councils, existing industries and potential agricultural users. LCLF investment should be used to help establish appropriately sized shared networks rather than isolated pipes with no value beyond a single business. Cost allocation, ownership and maintenance must be agreed before construction.

Screened stormwater and roof runoff may contribute to non-potable supply, subject to first-flush control, treatment, storage and contamination risk. Underground storage should be assessed where it reduces land take and supports reliable use. A development must not intercept runoff required by other lawful users or ecosystems without assessing that consequence.

Dual reticulation must include cross-connection prevention, source identification and maintenance responsibility. Purple colour coding supports identification but is not a substitute for appropriate treatment or safe plumbing. Water quality must be suitable for the actual use, including aerosol and worker-exposure risks where relevant.

Reporting must show withdrawals, consumption, recycled volumes, discharge, initial filling and maintenance losses. Government should separately consider the water implications of electricity supply and other consequential infrastructure. A zero-cooling-water claim must specify its boundary and must not be presented as zero total water impact.

7 Recoverable thermal energy

Thermal energy must not be classified as waste merely because it is no longer required by the process that produced it. Under the proposed framework, it remains a recoverable resource until practicable opportunities for beneficial use have been exhausted.

Before approval of the relevant operating stage, each LCLF must prepare a Thermal Energy Utilisation Plan identifying the quantity, temperature and availability profile of thermal energy; technically

recoverable energy; potential users within an economically reasonable distance; required transfer infrastructure; and the expected proportion beneficially used.

The required assessment hierarchy must consider higher-value direct thermal uses where appropriate, followed by heat-assisted cooling or refrigeration and progressively lower-temperature uses such as controlled-environment agriculture, aquaculture or building heat, before final rejection.

The hierarchy must be applied according to temperature and local demand. Absorption or adsorption cooling must be assessed where source temperature and equipment performance support it; low-grade heat must not be assumed capable of providing useful refrigeration without temperature upgrading or additional energy.

Actual performance must be measured in MWth and MWhth/year, with temperature and availability reported alongside the proportions beneficially used and finally rejected. Energy Reuse Factor under ISO/IEC 30134-6:2021, or an expressly adopted successor, can supplement the physical thermal ledger [5]. Internal heat-assisted cooling must be separately reported; it must not automatically be counted as exported beneficial reuse.

Where an identified potentially practicable use is not implemented, the proponent must provide the technical and economic basis for that decision. The regulator must have power to require independent verification where the significance of the rejected thermal resource warrants it.

The facility energy ledger must, as far as practicable, reconcile electrical energy supplied, IT-equipment energy, facility overhead, thermal energy generated, technically recoverable thermal energy, beneficially utilised thermal energy and thermal energy finally rejected.

Treat heat as a resource with temperature and time

A thermal resource has quantity, temperature, location and timing. A large MWh figure does not establish that heat can be used by a nearby customer at the required temperature. The Thermal Energy Utilisation Plan must provide supply and return temperatures, flow rates, heat-exchanger approach temperatures, recoverable output at each operating stage and expected seasonal availability.

Australian Government heat-recovery guidance identifies temperature and flow assessment, heat pumps and heat-driven refrigeration as relevant options [18]. The recommendation here is a mandatory engineering assessment, followed by implementation of practicable uses supported by verified performance. The submission does not assume that low-temperature server coolant will drive any particular chiller or frozen-product process without additional energy.

Heat-driven cooling, including absorption and adsorption, should be expressly examined. The assessment must disclose the source temperature required, useful cooling output, thermal coefficient of performance, electrical auxiliaries, any temperature upgrading and total rejected heat. A viable installation may displace electrical refrigeration; an unsuitable one may add cost and resource use without adequate benefit.

Where a heat pump is proposed, report recovered heat, electricity used and useful delivered output separately. Useful heat must not be counted twice when it moves between the data centre, thermal network and customer. Where heat-assisted cooling is internal to the facility, its electricity savings and remaining rejection should be reported separately from exported reuse.

Build markets around a verified resource

Site assessment should identify existing and potential users such as food processing, horticulture, aquaculture, building heat and suitable industrial processes. Demand should be evidenced through a realistic load profile, required temperature, distance, connection cost and the user’s willingness and capacity to participate. A letter expressing interest is not a guaranteed offtake agreement.

Cold production and thermal storage should be investigated where technically suitable, including chilled or frozen exports and other commercial cold demand. Indoor snow or ice recreation and ice-related shipping applications are research concepts only. They should receive no guaranteed public subsidy or benefit credit until independently demonstrated demand, safety, energy and environmental performance support them.

Thermal networks should allow future users to connect where practicable. The proponent must identify pipeline ownership, loss rates, charges, maintenance, backup arrangements and what happens when computing load falls or the facility closes. A dependent local business should not inherit an unmanageable heat-supply risk.

Plan for resource integrated agriculture

Government should investigate a planning provision for resource-integrated, temperature-dependent agriculture and aquaculture near suitable industrial heat and non-potable water sources. This is a proposed planning tool, not an assertion that a new zone already exists. It should enable appropriate co-location while preserving food safety, water quality, biosecurity, buffers and agricultural land protections.

Co-location must not become an excuse for unsuitable siting or a promised benefit that never materialises. Assessment should consider soil-independent production where appropriate, existing agricultural businesses, viable market demand and independent servicing. Consent for the computational facility should not automatically authorise every associated agricultural or thermal project.

8 Site selection and associated infrastructure

The environmental footprint of a large computational facility is not confined to the data-centre boundary. It includes the infrastructure reasonably necessary to supply and operate the facility at its intended capacity.

For assessment purposes, Tasmania must consider cumulative infrastructure reasonably necessary to construct and operate the proposed facility at intended capacity, irrespective of whether individual components have different owners, proponents, approval pathways or construction schedules.

This includes additional generation, storage, transmission, substations, water infrastructure and other consequential development. Each component may retain its own statutory approval process, but the overall resource and environmental consequences must not disappear through project splitting.

Site-selection assessment must consider opportunities for thermal-energy users, recycled-water networks, existing industrial infrastructure, transport, sensitive receptors and existing Tasmanian technical/manufacturing capability before a site becomes effectively irreversible.

Assess the development that will actually operate

The cumulative assessment should begin with the intended operational capacity and identify every substantial component required to reach it. This includes energy generation and storage, transmission, substations, telecommunications, water treatment and distribution, roads and thermal-use infrastructure. Separate owners and applications should retain their lawful processes while contributing to a coordinated overall assessment.

The assessment must test both construction sequencing and eventual operation. A facility can have a satisfactory individual site design while causing consequential impacts elsewhere. Additional generation may affect habitat; a new water pipeline may affect other allocations; network augmentation may create costs or constraints beyond the local council area.

Industrial land and previously disturbed surfaces should be assessed before new land disturbance where they can meet the requirements. Nevertheless, the label industrial precinct must not be taken as proof that residential receptors, ecological values or agricultural neighbours are unaffected. Site suitability must be demonstrated through actual distances, conditions and cumulative effects.

A project's infrastructure plan must disclose dependencies and fallback arrangements. If the generator, pipeline or heat customer is delayed, the regulator must identify what lower load remains compliant. A construction timetable should not oblige the State to authorise a capacity unsupported by the required infrastructure.

9 Environmental standards for associated generation

A requirement for additional renewable generation does not make the environmental impacts of that generation irrelevant. Associated generation and storage must independently meet prescribed standards for biodiversity, land disturbance, noise, water, wildlife, visual impacts, materials and rehabilitation.

Before substantial new greenfield generation is accepted as necessary, proponents must assess practicable alternatives including developed-surface generation, industrial land, distributed generation, storage, demand flexibility and other lower-impact options.

The framework should remain technology-neutral and encourage research and testing of improved renewable generation, storage, power electronics and demand-response systems rather than legislatively selecting a preferred technology.

Reduce the footprint of new supply

Developed surfaces, car parks, industrial roofs and suitable disturbed land should be examined as generation opportunities before accepting avoidable habitat conversion. Storage and demand flexibility may reduce the generation capacity or network augmentation required, but that benefit must be demonstrated in the supply model rather than assumed.

Associated wind generation must assess species-specific bird and bat risks, collision monitoring and mitigation. Blade treatments, detection and curtailment technologies may be investigated, but a single treatment must not be assumed effective at every site. Trials must have a baseline, defined ecological outcomes and independent review.

The public-benefit research program should include vertical-axis wind and other lower-impact generation concepts alongside storage, control systems and conventional technologies. A Tasmanian research stream can test noise, ecological effects, maintainability and performance. It must not treat an unproven concept as qualifying firm supply or legislate a preferred turbine design.

Land, water and biodiversity obligations must apply to associated energy projects even when their power serves an otherwise efficient computational facility. Financial security should cover their closure and rehabilitation under the appropriate approval arrangements, with the overall assessment identifying any gaps in responsibility.

10 Amenity emergency generation lighting and freight

LCLFs must demonstrate continuing compliance with prescribed noise, vibration, lighting, air-emission and other amenity standards at affected receptors under reasonably foreseeable worst-case operating and meteorological conditions.

A numerical noise limit alone must not establish acceptable amenity where identifiable tonal, low-frequency, impulsive or other characteristics cause unreasonable disturbance. Pre-construction modelling must be checked through commissioning and continuing monitoring where risk warrants it.

Emergency combustion generation must be limited to genuine emergency operation and the minimum testing necessary to establish reliability. It must not become routine computational electricity, a means of avoiding additionality obligations or a source of commercial grid sales. Testing must be coordinated to minimise cumulative noise and emissions. Safe shutdown and genuinely essential safety loads must be provided for in the operating conditions.

Lighting must be limited to that reasonably required for safety, security and operation, with shielding and controls to minimise off-site effects.

Heavy-vehicle and service access must be designed and operated to minimise noise, light, dust, congestion, road deterioration and night disturbance. Where material impacts are predicted, practicable isolation measures - including screening, enclosure, grade separation or below-ground access where appropriate - must be assessed.

Measure amenity where people experience it

Noise assessment must identify the affected homes and other sensitive receptors, background conditions, terrain, equipment combinations and meteorology. The regulator should prescribe relevant limits and corrections for tonal, impulsive and low-frequency characteristics. This submission does not invent a universal decibel threshold without an acoustic and policy assessment.

Commissioning must test representative worst-case combinations, including cooling during hot conditions, transformer and power-electronics operation, emergency equipment and permitted testing. Modelling assumptions must be reconciled with actual measurements. If seasonal conditions cannot be tested initially, a limited certificate must specify the later test and consequences of failure.

Operators must retain synchronised equipment and monitoring logs so complaints can be investigated against the actual operating state. An accessible written complaint process should identify the responsible authority, response time, investigation and result. Residents must not be required to commission their own expensive technical studies before a credible complaint is examined.

Emergency generation and testing

The operating conditions must distinguish a genuine emergency from planned commercial operation during high electricity prices or ordinary supply shortfalls. Testing should specify frequency, duration, load, notice, hours and cumulative equipment operation. Emergency events require logs of cause, duration, fuel, emissions and restoration; prolonged operation requires regulatory review.

Backup generators must not sell electricity commercially into the grid under the proposed LCLF conditions. Testing must not become a revenue activity or a means of establishing routine generation through repetition. Safe shutdown and genuinely essential safety functions must remain possible, with their minimum demand explicitly defined.

Architecture lighting and habitat

Buildings and service areas should minimise reflection, off-site light spill and avoidable loss of night amenity. Lighting must have shielding, task-appropriate levels, controls and a verified boundary assessment. A claim of security must identify the actual need rather than justify permanent excess illumination.

Car parks should provide suitable tree canopy and permeable or water-sensitive design where compatible with safety and infrastructure. Landscape plans must state species, planting locations,

survival requirements, maintenance and replacement. Predicted mature canopy must not be reported as canopy already provided.

Where habitat trees or hollows are affected, a qualified ecologist must identify retention, avoidance and appropriate replacement measures. Artificial hollows, where ecologically suitable, should be installed by a specified milestone no later than ten years after relevant disturbance, or earlier where required by the impact. Artificial hollows must not be treated as automatic compensation for loss of irreplaceable mature habitat.

Equipment procurement and environmental plans must identify hazardous substances, refrigerants, fuels and cooling fluids; avoid PCB-containing equipment; and assess safer practicable alternatives. The regulator must require containment, leak detection, spill response and end-of-life handling. No particular developer is alleged to use PCBs or another hazardous substance unlawfully.

Freight and maintenance impacts must cover equipment replacement and decommissioning as well as initial construction. Screening, enclosed servicing and, where proportionate and feasible, grade separation or below-ground access should be assessed against actual impacts. These are options for evaluation, not mandatory construction methods at every site.

11 Decommissioning and restoration security

Tasmania should establish a decommissioning regime under which the State does not inherit financial or environmental liability when a computational facility closes, becomes technologically obsolete, is sold, restructured or enters insolvency.

Before operation, the proponent must provide independently assessed financial security sufficient to meet the full reasonably foreseeable cost of decommissioning and site restoration if the owner fails to do so.

The security must be held independently, survive sale and corporate restructuring, and be periodically reassessed for changes in infrastructure, inflation, contamination risk and restoration cost.

Required coverage must include buildings and equipment, batteries and storage, backup generation and fuel systems, cooling infrastructure, hazardous substances, redundant cables/electrical infrastructure, water infrastructure without continuing public value, contaminated materials and land rehabilitation.

Infrastructure may remain where it has continuing beneficial use and a responsible entity formally accepts ownership, maintenance and future liability. Sale or transfer must not extinguish the decommissioning obligation.

Security must exist before liabilities accumulate

A decommissioning plan must identify the assets to be removed, contaminated materials, safe disconnection, residual land condition and intended reuse. An independent cost estimate must include mobilisation, specialist handling, disposal, inflation, contingencies and the possibility that salvage values collapse. Expected equipment resale must not substitute for secured funds.

Security should be established before the relevant construction or operating stage creates the liability and topped up as capacity grows. The legal instrument must specify who can draw on it, under what conditions and how funds remain available if the operator or parent enters insolvency. An unsupported parent promise is not equivalent to independently accessible security.

Change of ownership, refinancing, asset leasing and corporate restructuring must trigger confirmation that obligations remain covered. A purchaser must not obtain operating authority until continuing

responsibility is documented. The State should obtain specialist advice on structures that preserve security without assuming that an ordinary contract defeats insolvency law.

Periodic reassessment must reflect actual infrastructure, contamination, restoration standards and costs. Insurance may address defined events but must not replace security for predictable closure obligations unless equivalent protection is demonstrated. The regulator should publish the security's status and reassessment date while protecting genuinely sensitive financial details.

Infrastructure should remain only where it has demonstrable continuing value and an identified entity accepts maintenance, ownership and future liability. The handover must be documented. Communities must not inherit abandoned pipes, redundant electrical assets or hazardous equipment merely because removal is inconvenient.

12 Public benefit social licence skills and innovation

Under the proposed regime, an LCLF must not receive approval solely because individual environmental impacts can be managed. At this scale, the proponent must demonstrate measurable net public benefit to Tasmania after relevant public costs and opportunity costs are considered.

Compliance with ordinary environmental obligations is not itself a public benefit. Protecting drinking water, meeting noise limits or funding decommissioning are obligations and must not be double-counted as community benefits.

Social licence should not be treated as compensation paid to a community for tolerating a development. It should arise from a continuing partnership in which the development creates measurable, enduring and shared value for the community, the State and the developer.

Benefits claimed as public benefit must be additional, measurable, independently verifiable and enduring. A useful policy test is whether the benefit would still have value to Tasmania if the data centre disappeared in twenty years.

Skills and workforce

LCLFs must contribute to Tasmanian training pathways capable of developing the workforce required throughout the complete facility lifecycle: construction, commissioning, operation, monitoring, maintenance, servicing, upgrading, retrofitting and eventual decommissioning.

Qualifications must be recognised and transferable, with continuing skills development as technology changes. Required partnerships must involve vocational and tertiary providers, industry and existing Tasmanian workers and businesses where appropriate. Outcomes must be measured by participation, qualifications, higher-level skills, employment and progression rather than merely dollars spent.

TasTAFE and the University of Tasmania should be invited to develop pathways with industry and workers in refrigeration, heat-assisted cooling, electrical systems, water management and independent monitoring. No agreement or commitment by either institution is assumed.

Research, development and innovation

Large computational infrastructure can provide a real-world test environment for Tasmanian research and innovation in energy generation and storage, grid-responsive computing, cooling and refrigeration, recoverable thermal energy, water recycling and treatment, monitoring and controls, materials recovery, environmental mitigation, upgrading and decommissioning.

Tasmania should build this capability from existing areas of engineering and technical expertise - including advanced manufacturing, mining equipment, electrical engineering, refrigeration, automation,

fabrication, renewable energy and water technology - rather than creating an isolated industry requiring every participant to become an 'AI expert'.

The State should investigate a dedicated Tasmanian skills, research and innovation capability for computational infrastructure, linking operating facilities with vocational education, universities, researchers, manufacturers and technology businesses. Its purpose should be to connect verified operational problems with research, prototype development, operational testing and Tasmanian manufacture or commercialisation.

Expenditure, sponsorship or creation of an institution must not by itself constitute public benefit. Claimed benefit must be demonstrated through actual projects, Tasmanian participation, transferable capability, prototypes, commercialisation, manufacturing capability and, where appropriate, intellectual property or public return.

A public benefit obligation beyond ordinary compliance

A benefit assessment must distinguish construction activity, continuing direct employment, supply-chain effects and wider modelled effects. Assumptions, time periods and displacement must be disclosed. Promised employment should be monitored as actual Tasmanian jobs, qualifications and progression, not only as a projected multiplier.

Benefits must be assessed against attributable public costs and opportunity costs, including infrastructure commitments, resource use and foregone alternatives. Paying taxes and complying with environmental law are ordinary obligations. Their importance does not make them an additional negotiated community benefit.

A major-development public-benefit obligation should have specified outcomes, delivery dates and remedies. Suitable commitments may include shared non-potable infrastructure, transferable training, research access, local manufacturing capability and viable thermal-resource connections. Cash sponsorship should not substitute for enduring value or permit the purchase of weaker environmental conditions.

Training and a Tasmanian technical workforce

The required workforce plan should identify occupations at each stage, existing local capability, gaps, apprenticeships, placements, recognised qualifications and continuing retraining. TasTAFE and the University of Tasmania should be invited to develop relevant pathways with workers and industry; no commitment by those institutions is assumed.

Refrigeration and heat-assisted cooling, electrical engineering, water treatment, instrumentation, automation, independent measurement and decommissioning offer skills transferable beyond AI. Public funding, where justified, should prioritise this portability. A training program should remain useful if a particular computing platform or business disappears.

The operator should report enrolment, completion, employment, retention and progression, with privacy-preserving publication. Government should assess whether recruitment is creating additional capability or drawing scarce workers away from essential local services without replacement. Local procurement targets must use clear definitions and audited delivery.

Research that can be tested and manufactured locally

A coordinated research capability should connect operational problems with universities, vocational providers, manufacturers and technical businesses. Candidate programs include heat-driven cooling, thermal networks, dry cooling, water reuse, grid-responsive loads, vertical-axis wind, instrumentation, materials recovery and noise mitigation.

Each program must identify a problem, technical partner, trial site, baseline, milestones, success criteria and route to use or manufacture. Research credit should depend on delivered work and transferable capability. Creating a centre, purchasing equipment or sponsoring a university is not by itself proof of public benefit.

Agreements should address access to operational data, intellectual property, publication and commercialisation before research begins. Genuine trade secrets may require protection, but public funding should have an identifiable public return. Tasmania should build practical engineering capability rather than become only a host for proprietary systems serviced elsewhere.

13 Staged commissioning independent verification and enforcement

An LCLF must not commence routine commercial computational operation, or increase its operating electrical demand beyond an authorised level, without certification for that stage of operation.

Each commissioning authorisation must specify the equipment/capacity under test, maximum electrical demand, permitted duration, purpose, required tests, measurement methods, success criteria and cease conditions. Commissioning authorisation must not constitute commercial operating approval.

Successive commissioning authorisations must not be used to progressively establish continuing commercial operation or circumvent staged operating certification. The regulator must assess cumulative operating capacity and activity rather than each testing event in isolation.

The State should nominate a lead statutory authority responsible for authorising each commissioning and operating stage. Under the regime, that authority must obtain independent specialist verification appropriate to the matter being certified and must not rely solely on developer information or assurance.

Required tests may be undertaken or witnessed by qualified specialists funded by the developer, but the developer must not control the final regulatory finding. Conflicts must be disclosed and managed, and the regulator must have access to underlying measurement data.

Only the regulator may authorise the corresponding increase in commercial operating capacity. Passage of time, completion of testing, expenditure incurred or previous commissioning activity does not create an entitlement to a higher operating certificate.

The legislation should provide a proportionate enforcement ladder including corrective directions, time-bound remediation, restriction of authorised load, civil or other statutory penalties and, for serious or persistent non-compliance, suspension of operating authority.

Separate commissioning from commercial operation

The regulator should define permitted commissioning activities, representative test workloads and the limited circumstances in which customer work may form part of a supervised test. Any exception must be disclosed, time-limited and counted towards authorised load. Labelling continuing paid computation as testing must not create an operating entitlement.

A commissioning certificate must include a register of equipment, meters, maximum demand, test plan, permitted hours and duration, cease conditions, responsible personnel and reporting deadline. Successive certificates must be reviewed together. The operator must not establish permanent operation by repeatedly renewing temporary tests.

Each operating stage should require verified supply, water arrangements, efficiency instrumentation, amenity performance, curtailment capability, financial security and relevant public-benefit milestones. The regulator must identify any outstanding seasonal or annual test and the limited operating capacity allowed until it is completed.

Failure must produce a defined response. The regulator should be able to require remedial work, prohibit an increase, reduce load or suspend relevant activity, with urgent powers for serious risks and fair review procedures. A missed material condition must not be routinely converted into another non-binding promise.

Independent verification and system oversight

Developer-funded verification should be commissioned or approved by the regulator, with disclosed conflicts, qualification requirements and access to source data. The specialist must report directly to the authority. The developer may correct factual errors but must not control adverse findings or select only favourable results for publication.

The lead authority must have staff, funding, instruments and powers proportionate to the facilities it governs. A levy may fund regulation, but financial dependence must not give operators control over enforcement priorities. Relevant agencies should agree responsibilities for connected issues while the lead body remains accountable for integration.

An independent inspectorate or oversight function should examine whether the system itself is working: whether certificates are issued lawfully, conditions are tested, complaints resolved, data published and conflicts managed. It should report to Parliament with recommendations and Government responses. This role should not be confused with the operator's auditor or the authority issuing the certificate.

Transparency that permits public scrutiny

Government should publish permits, operating certificates, authorised loads, adopted benchmarks, approved exceptions, material monitoring results, enforcement actions and decommissioning-security status. Performance datasets should be machine-readable as well as accessible to non-specialist readers.

Commercial sensitivity should be assessed item by item. Protecting customer identities or security arrangements may be justified; suppressing aggregate water use, actual energy consumption or compliance outcomes requires a different and compelling reason. The regulator must retain full underlying access even where public disclosure is restricted.

The annual report must explain performance against each obligation, material failures, remedial actions and changes in capacity. It must distinguish design predictions, independently verified results and operator-reported data awaiting verification. Corrections must remain visible rather than silently replacing inconvenient numbers.

14 Commonwealth national security referral

Large-scale AI infrastructure should be referred to appropriate Commonwealth national-security and critical-infrastructure assessment where applicable, with those matters determined by agencies possessing the necessary expertise, statutory authority and access to classified information.

The Tasmanian framework should not attempt to duplicate classified national-security assessment. Its principal role should remain Tasmanian resource use, environment, amenity, infrastructure, operating performance and public benefit.

Define sovereignty claims rather than accept labels

Physical location in Tasmania does not by itself establish Australian control of data, models or services. Any claim of sovereignty should specify ownership and control, applicable jurisdictions, access to data, contractual rights, dependencies and continuity arrangements. Government should refer security-sensitive matters to competent Commonwealth bodies rather than attempt to settle them through general promotional statements.

This submission makes no blanket claim that every model, dataset or item of hardware is owned by US companies. The relevant test is the actual arrangement and the powers available to Australia. Local jobs, renewable electricity and a Tasmanian address cannot substitute for that assessment.

Commonwealth assessment should complement, rather than displace, Tasmania's responsibilities for resources, amenity, infrastructure and public benefit. A favourable national-interest assessment must not automatically authorise a higher operating load or excuse a failure of State performance conditions.

15 Measurement and accountability matrix

Requirement	Measure	Before operation	Continuing evidence	Public reporting	Consequence
PUE/energy efficiency	ISO/IEC 30134-2:2026; prescribed boundary	Commissioning and baseline verification	Metered operating PUE	Annual/material performance	Corrective action/load restriction
Electricity additionality	Consumption, new generation, storage, firming, curtailment	Physical supply and curtailment tests	Time-resolved reconciliation	Material supply/performance	Curtailment/load restriction
Water	Volume by source; drought resilience	Water system/dual-reticulation verification	Metering by source	WUE/source use where applicable	Corrective action/restriction
Thermal energy	MWth, MWhth, temperature, availability, ERF/use	Thermal utilisation plan/instrumentation	Actual recovery/use/rejection	Material thermal ledger	Further investigation/corrective action
Amenity	Noise/vibration/ light/emissions at receptors	Commissioning measurements	Risk-based/ complaint-triggered monitoring	Material exceedances/results	Remediation/load/ operating restrictions
Public benefit	Defined measurable commitments	Plan before relevant stage	Delivery against milestones	Outcome reporting	Corrective plan; later-stage approval consequences
Decommissioning	Independently assessed full cost	Security before operation	Periodic reassessment	Security status/major changes	Top-up; operating restriction if deficient

16 Implementation and evidence safeguards

The Government should develop the statutory mechanisms needed to implement these recommendations. This submission does not assert that existing planning, environmental or electricity powers already authorise every proposed requirement. Legal drafting must address jurisdiction, delegation, procedural fairness, review rights and interaction with national electricity and Commonwealth frameworks.

- Define the demand threshold, aggregation rules and treatment of connected sites through a published technical and legal process. Specify both maximum electrical import and relevant IT-load limits so separate definitions cannot create an avoidance route.
- Adopt measurement standards through an identified statutory mechanism. ISO catalogue entries confirm PUE ISO/IEC 30134-2:2026, ERF ISO/IEC 30134-6:2021 and WUE ISO/IEC 30134-9:2022 [4–6]. Full standards and specialist advice must inform operative clauses; the public catalogue summaries are not a clause-by-clause compliance specification.

- Specify benchmark comparability, reporting intervals, permitted departures and review procedures. Tightening must use sustained evidence, transparent reasons and defined transition periods; an automatic change to an unspecified external standard must not replace a lawful adoption process.
- Apply staged requirements to new facilities and material expansions. Establish a published, time-bound assessment and retrofit pathway for existing facilities, with independently justified exceptions and transition arrangements.
- Define qualifying additional generation and firming, supply reconciliation intervals, curtailment triggers, response times and safe minimum loads. Flexibility must be demonstrated for the actual workload and equipment; this submission assumes no universal percentage or response speed. Commonwealth expectations support additional clean energy and demand flexibility, but do not establish a site-specific capability [2].
- Require water reporting in absolute volumes by source as well as WUE under ISO/IEC 30134-9:2022 [6]. Distinguish consumption from withdrawal, and disclose cooling, domestic use, initial filling and maintenance. Low WUE alone must not excuse inappropriate potable-water use.
- Require each thermal-use proposal to disclose source temperature, required delivery temperature, flows, seasonal demand, heat-pump or heat-driven cooling energy, conversion losses and final heat rejection. No fixed conversion percentage or universal feasibility of low-temperature heat-driven cooling is assumed.
- Require attributable network, water and other infrastructure costs to be paid by proponents, with transparent allocation and protection against stranded costs. Establish independent oversight of the regulatory system, accessible complaints, public compliance reporting and periodic review.

The attributed project figures in section 1 establish the scale of proposed demand; they do not establish actual operating consumption. The Government is asked to identify the statutory powers, institutional responsibilities and transitional arrangements required to implement this framework. Specialist legal review has not been completed.

International examples and their limits

European Union Delegated Regulation 2024/1364 establishes reporting information and common calculation methods for data centres with installed IT power demand of at least 500 kW. Its indicators cover energy, water, heat reuse and renewable energy [19]. This provides a documented example of structured reporting; it does not establish that the EU requires this submission's PUE target or publishes every facility's commercially sensitive data.

Ireland's regulator announced a new connection policy on 12 December 2025. Its stated requirements include generation or storage matching requested maximum import capacity and at least 80 per cent annual demand from additional renewable projects, with a six-year development pathway [20]. This demonstrates that additionality and connection conditions can be made explicit. The percentage, timeline and treatment of generation are not recommended here as an automatic Tasmanian model.

Tasmania should commission a structured comparison of France, Ireland, Canada and Norway, separating national, provincial and municipal rules. The comparison should examine legal powers, measurement boundaries, heat and water requirements, grid conditions, public reporting and enforcement. No current rule from France, Canada or Norway is asserted in this submission without verification.

International examples should inform local design, not provide a lowest common denominator. Tasmania's climate, water systems, electricity arrangements and public objectives require their own assessment. A threshold selected for a continental reporting scheme should not be copied without testing its suitability for a smaller electricity system.

Transition for existing and committed facilities

Existing facilities must enter a defined assessment pathway covering current demand, monitoring, supply, water, amenity, thermal opportunities and financial security. The assessment should identify feasible retrofits and a time-bound implementation plan. An existing approval should not be assumed to confer an unlimited right to future expansion.

Government must obtain advice on lawful transition arrangements, existing rights, permit conditions, review and any compensation questions before imposing new obligations. That legal work should identify available options rather than treat every commercial commitment as an obstacle that makes reform impossible.

Where new legislation is required, Government should publish the timetable and use existing powers only within their lawful scope. It should avoid making new public resource or subsidy commitments that prejudice the proposed safeguards. A temporary operating limit or condition must have a proper legal basis; this submission does not assume Government can suspend any project by announcement alone.

17 Response to the consultation expectations

1. Maximising Tasmanian benefits: require additional, measurable and enduring public benefit, transferable skills, research and local capability under section 12.
2. Early community engagement: require consultation before site and infrastructure decisions become irreversible, followed by accessible complaints and disclosure of material changes and monitoring results.
3. Engagement with Government: nominate a lead statutory authority, publish responsibilities and require proponents to meet attributable costs rather than rely on public subsidy.
4. Supporting Tasmania's energy system: require additional supply, firming, verified flexibility, efficiency and staged load authorisation under sections 4, 5 and 13.
5. Sustainable water usage: reserve potable water for potable-quality needs and require source metering, resilience and shared non-potable infrastructure where practicable under section 6.
6. Approval pathways: retain necessary project approvals while adding coordinated cumulative assessment and a separate staged operating authority under sections 2, 8 and 13.
7. Transparency and reporting: make material performance disclosure mandatory, with independent verification, underlying data access and narrowly justified protection of genuinely sensitive information.

The Government's seven published consultation areas provide a useful structure [1]. My recommendation is to turn these expectations into defined obligations with an accountable authority, a measurement method, a reporting timetable and a consequence for non-compliance.

I request that the Government publish a response identifying which recommendations it accepts, modifies or rejects, the reasons, the responsible authority and the proposed implementation timetable.

18 ISO and IEC standards used

These joint ISO and IEC standards provide measurement methods. They do not prescribe the PUE 1.04 benchmark, a potable-water prohibition or the operating obligations proposed here. The regulator must identify the edition, measurement category and boundary it adopts.

Standard and edition	Measure	Application	Reference
ISO/IEC 30134-2:2026	Power Usage Effectiveness PUE	Facility overhead energy efficiency; sections 4 and 15	[4]
ISO/IEC 30134-6:2021	Energy Reuse Factor ERF	Beneficial energy reuse; sections 7 and 15	[5]
ISO/IEC 30134-9:2022	Water Usage Effectiveness WUE	Operating water intensity; sections 6, 15 and 16	[6]
ISO/IEC 30134-1:2016 with Amendment 1:2018	Overview and general requirements	Common KPI terminology and boundaries	[21, 22]
ISO/IEC 30134-3:2016 with Amendment 1:2018	Renewable Energy Factor REF	Renewable share; supplementary to physical additionality	[23, 24]
ISO/IEC 30134-8:2022	Carbon Usage Effectiveness CUE	Operating carbon intensity; separately report absolute emissions	[25]

Edition status checked 8 October and rechecked 11 October 2026 against the official ISO catalogue. ERF and WUE revisions are under development; an unpublished draft must not silently replace the adopted edition. Specialist access to the full standards is required when drafting operative measurement rules.

19 Proposed implementation schedule

The following is my recommended timetable after Government adopts the framework, not a statement of Government commitments. Legal drafting and technical consultation should proceed together. Existing lawful controls continue while new mechanisms are prepared.

Proposed milestone	Responsible body	Required result
First 90 days	Government and nominated lead authority	Publish legal and technical gap analysis, approval map and project register; identify interim lawful controls and unresolved responsibilities.
Within 6 months	Government with agencies and Parliament	Publish legislative proposals, threshold and aggregation rules, operating certificate model, measurement methods, funding and review arrangements.
Before each relevant operating stage	Lead authority with specialist verifiers	Certify supply, curtailment, water, monitoring, amenity, security and stage-specific public-benefit commitments.
Within 12 months of framework commencement	Lead authority and existing operators	Complete existing-facility baseline assessments and publish justified retrofit and transition plans.
First complete operating year and annually	Operators and independent verifiers	Report actual PUE, source water and WUE, thermal ledger, supply reconciliation, emissions and public-benefit delivery.
At least annually and on material change	Lead authority and independent oversight	Review compliance, security, exceptions, cumulative demand and benchmark evidence; report to Parliament.

Government should publish progress against the timetable and explain any delay. Numerical milestones are recommendations for consultation; they do not override statutory processes or invent powers that have not been enacted.

20 Evidence required for operating certification

An application must provide sufficient evidence to let the authority test the proposed load, rather than rely on a summary assurance. The schedule below is a proposed minimum. The authority may require additional site-specific material, with reasons.

Facility and control

Site plan, equipment inventory, ownership and operating entities, customer-control arrangements, connected stages and intended ultimate capacity.

Electricity and generation

Maximum imports and IT load, hourly or finer model as prescribed, expected annual use, identified additional generation, commissioning dates, storage MW and usable MWh, firming and deliverability.

Curtailment

Triggers, response time, minimum safe load, customer permissions, communications, fail-safe arrangements, independently witnessed tests and restoration sequence.

Efficiency and emissions

Meter locations, calibration, data intervals, boundaries, prescribed PUE category, annual assessment plan, fuel logs, carbon factors and absolute operating emissions.

Water

Volumes by source and use, peak-day demand, dry and wet mode conditions, initial fill, treatment, cross-connection control, drought plan, discharge and source permissions.

Thermal resource

Measured temperatures and flows, recoverable MWth and MWhth, seasonal availability, offtake demand, transfer losses, heat-pump and cooling inputs, reuse and final rejection.

Amenity and ecology

Receptors, baseline and worst-case modelling, commissioning measurements, lighting assessment, generator schedule, habitat measures and complaint protocol.

Closure and finance

Independent restoration estimate, security instrument, drawdown rights, reassessment process, insolvency and transfer arrangements, hazardous-materials inventory.

Public benefit

Additional outcomes, local workforce and training plan, research milestones, procurement definitions, attributable costs, verification and remedies for non-delivery.

The certificate must record which evidence was accepted, any residual uncertainty and the authorised response to failure. A material omission must be resolved or explicitly constrain the permitted stage; it must not disappear into a general promise to provide information later.

21 Risks opportunities and responses

This assessment concerns the proposed regulatory framework. It is not a financial appraisal of a particular developer. Its purpose is to identify the advantages and costs of implementing the recommendations, including risks created by inaction.

Strengths

Outcome-based rules can accommodate changing computing and cooling technologies. Staged capacity creates a practical link between evidence and permission. Shared water, thermal and skills infrastructure can retain value beyond one facility.

Weaknesses

Specialist verification, metering and enforcement require funding and scarce skills. Comparability is difficult across workloads and climates. Thermal uses depend on temperature, nearby demand and commercial agreements.

Opportunities

New demand can support additional generation and flexible-load systems where physically demonstrated. Regional reuse networks, refrigeration capability, applied research and manufacturing can serve other industries.

Threats

Investment can outrun supply and regulation. Fragmented approvals can conceal cumulative impacts. Optimistic benefit forecasts, weak financial security, insolvency and technology change can leave public costs.

The response to implementation cost is proportionate scope, a funded authority and reuse of qualified Australian assessment capability. The response to technical uncertainty is measurement, bounded trials and transparent exceptions. The response to infrastructure delay is lower authorised load until the supporting systems are demonstrably available.

The strongest risk of a purely voluntary framework is that compliance depends on continuing goodwill while resource commitments endure. The strongest risk of an over-prescriptive framework is locking Tasmania to equipment that becomes obsolete. Enforceable outcomes, properly adopted methods and periodic evidence-based review address both concerns.

Conclusion and requested Government response

I ask the Government to respond to each recommendation, identify the safeguards already enforceable, specify the additional powers required and publish an implementation timetable. Where a recommendation is rejected or modified, the response should explain how the underlying risk will be managed. Investment should proceed under clear, enforceable conditions that protect public resources and existing users throughout the operating life of the facility.

22 References and bibliography

Primary sources checked 8 October and rechecked 11 October 2026. TasWater's recycled-water information was rechecked through indexed official text because direct page access was blocked. References identify the evidence relied on, its purpose and relevant limits. Regulatory recommendations, illustrative calculations and implementation milestones are the author's proposals, not requirements attributed to these sources. ISO catalogue verification confirms editions and stated scope; full standards were not purchased or audited clause by clause.

[1] Tasmanian Government. Draft Expectations for Data Centres and AI Infrastructure Developers and Make a submission. Consultation 7 September to 12 October 2026.

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Consultation scope, seven focus areas and closing time. The submission page explains public handling and authorship.

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https://www.industry.gov.au/publications/expectations-data-centres-and-ai-infrastructure-developers

National policy context. Expectations work alongside existing laws; they are not treated here as a substitute for Tasmanian operating powers.

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https://research-hub.nlr.gov/en/publications/dcdm1-lessons-learned-from-the-worldaposs-most-energy-efficient-d/

Institutional abstract reports trailing twelve-month PUE 1.04. Historical operational example; comparability to each Tasmanian proposal remains an engineering task.

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[8] US Department of Energy. Clean Energy Resources to Meet Data Center Electricity Demand.

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[9] Tasmanian Office of the Coordinator-General. Data Centre Action Strategy. Officially linked as the 2018 strategy.

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Primary evidence of large-scale investment promotion, stated resource advantages, proposed gap analysis and coordination. Does not prove that no regulatory work followed.

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https://www.cg.tas.gov.au/investment_opportunities/sector_opportunities/emerging_sectors/data_centres

Identifies the strategy as 2018 and provides current investment-promotion context.

[11] George Town Council. 25th of August 2026 Council Meeting Outcomes. Posted 26 August 2026.

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Records approval of DA 2026/29 at Long Reach. Does not establish construction status, the full conditions or final operating permissions.

[12] Premier of Tasmania. Clear expectations for data centres and AI infrastructure. 7 September 2026.

https://www.premier.tas.gov.au/latest-news/2026/september/clear-expectations-for-data-centres-and-ai-infrastructure

Confirms release date and Government’s stated policy objectives.

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https://www.hydro.com.au/hydro-tasmania-and-firmus-technologies

Attributed 444 MW proposed supply request, 104 MW St Leonards arrangement and Hydro’s defined supply-assessment role. Capacity is not actual annual consumption.

[14] Firmus. Bell Bay Industrial Precinct AI Factory Project.

https://firmus.co/bell-bay-industrial-precinct-ai-factory-project

Proponent description of approximately 288 MW maximum demand, dispatchability and cooling. Design claims require independent operating verification.

[15] NABERS. Data Centres.

https://www.nabers.gov.au/ratings/spaces-we-rate/data-centres

Australian operational energy-assessment capability. A rating does not automatically satisfy the entire proposed framework.

[16] Firmus. Firmus launches energy and water policies to support Australia’s renewable transition and responsible AI growth. June 2026.

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https://www.energy.gov.au/business/equipment-guides/waste-heat-recovery

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