Standing Committee on Government Administration A

Inquiry into the Construction and Operation of AI Data Centres in Tasmania

Beneficial Reuse of Data Centre Waste Heat

Purpose of this Submission

This submission addresses principally the following Terms of Reference

- TOR 1 - Protect public resources and the environment;
- TOR 2 - Ensuring Tasmania's Resource Management and Planning System adequately recognises and addresses the specific impacts of the development and construction of AI and data facilities
- TOR 6 - Ensuring that the Tasmanian community receives tangible benefits from all AI and data facilities constructed in the state.

It also has relevance to Term of Reference 4, concerning transparent public disclosure of resource consumption, and to matters incidental under Term of Reference 7.

It makes one principal recommendation:

New and substantially expanded data centres should be expected to beneficially reuse waste heat where this is technically and economically feasible. Proponents should therefore be required, before approval, to undertake and publish a credible assessment of the opportunities for heat recovery and productive reuse.

This should not amount to a requirement that every data centre recover its heat. Location, temperature, distance from potential users, scale, seasonal demand and economics all matter.

The requirement should instead be simple:

assess first; reuse where reasonably feasible; explain why where it is not.

Where immediate reuse is not feasible but there is a reasonable prospect of future use, facilities should, where practicable, be designed so that future heat recovery is not unnecessarily foreclosed.

1. Why this Matters

Data centres convert virtually all of the electricity used by their computing equipment into heat[1]. That heat must then be removed continuously to keep the equipment operating.

[1] Uptime Institute, *Heat Reuse: A Management Primer*, noting that almost all energy consumed by data centres is ultimately converted to heat that is normally rejected to the environment. See also US

Conventionally it is treated simply as a cooling problem and discharged to the atmosphere. Increasingly, however, other jurisdictions regard it as an energy resource.

Waste heat from data centres can potentially be used for:

Location	**Potential Productive Uses**
Industrial precincts	industrial process heating, timber and biomass drying, aquaculture, food processing and other low temperature processes
Agricultural areas	greenhouses, controlled -environment agriculture and aquaculture
Urban areas	district or precinct heating, hospitals, universities, swimming pools, public buildings, housing and commercial premises
At or adjoining the data centre	offices, workshops, hot water and other on-site thermal requirements

The suitability of each use depends upon the temperature and quantity of the heat, distance from the user and the economics of collection, upgrading and transport.

These constraints are real. They are not, however, a reason to ignore the resource.

They are a reason to require a proper feasibility assessment.

The underlying principle is one of resource efficiency. A data centre can use electricity to produce a valuable digital service, and the resulting thermal energy may then, where circumstances permit, support a second economic activity.

That has particular relevance to Tasmania, where very large new electricity loads will place additional demands on generation and network capacity that have substantial economic value to the State.

The underlying issue is not whether waste heat itself is necessarily a public resource, but whether Tasmania is obtaining the greatest reasonable value from the electricity, generation capacity and network infrastructure committed to large data centre developments.

Department of Energy, *Cooling Water Efficiency Opportunities for Federal Data Centers*, describing the continuous removal and rejection of heat generated by IT equipment

2. The Bell Bay Experience Demonstrates a Gap

My interest in this issue arose particularly from examination of the proposed Firmus AI facility at Bell Bay.

The ultimate proposed electrical load of the two-building development is approximately 288 MW[2]. At high utilisation, the resulting thermal output would therefore be of the same broad order of magnitude as the electrical energy entering the facility, although the quantity, temperature and proportion practically recoverable will depend upon actual IT utilisation and cooling configuration.

Bell Bay is one of Tasmania's principal industrial precincts. Potential heat users need not therefore be confined to residential heating. Possibilities deserving examination include aquaculture, controlled environment agriculture, timber or biomass drying and suitable industrial processes.

I do not suggest that any particular one of these opportunities has already been demonstrated to be commercially viable at Bell Bay.

That is precisely the point.

There was no clear requirement within the Bell Bay planning assessment process for the proponent to demonstrate, through a transparent technical and economic assessment, whether productive reuse of this very large thermal resource was feasible[3].

The Bell Bay planning assessment process therefore exposes a broader policy problem rather than merely an issue associated with one development.

The production of very large and continuous quantities of low grade heat is a characteristic consequence of operating large data centres. It is therefore one of the specific impacts of this class of development that Tasmania’s Resource Management and Planning System should expressly recognise. The Bell Bay planning assessment demonstrates that the present system does not clearly require that this thermal resource be quantified or that opportunities for beneficial reuse be investigated before approval.

A major data centre can be assessed for matters such as buildings, noise, water, traffic and other conventional planning impacts without anyone being clearly responsible for

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[2] See development material for DA 2026/29

[3] Pitt & Sherry, *Planning Report — Advanced Computing Infrastructure, Lot 1 East Tamar Highway, Long Reach*, prepared for Firmus Technologies, 8 May 2026; George Town Council, *Planning Permit DA 2026/29*, decision dated 25 August 2026. The endorsed planning report assesses the proposal against applicable zone and code requirements and addresses matters including visual impact, traffic, natural values, environment and water quality; the final permit contains conditions relating to matters including noise, TasNetworks, water, bushfire, stormwater and environmental management, but contains no requirement for a waste-heat beneficial-reuse assessment or implementation of heat reuse.

asking: *Is there a practicable way of turning the very large quantity of heat produced by this facility into an additional economic resource for Tasmania?*

Whatever the outcome of any particular planning assessment, that question should be asked before future projects are approved.

3. This is Already Happening Elsewhere

Beneficial heat reuse is no longer experimental.

One particularly relevant example is at Rjukan in Norway. Green Mountain's data centre and the nearby Hima Seafood land-based trout facility are approximately 800 metres apart. A heat-reuse system became operational in 2025. Excess data-centre heat is used to warm water for aquaculture and cooled water can then be returned to assist data-centre cooling. The first phase has approximately 1.75 MW capacity, with the parties examining expansion to 8 MW[4].

This is important for Tasmania because it demonstrates productive **industrial reuse**, rather than simply building heating. Earlier Norwegian work has also examined data-centre heat for lobster farming, while research and demonstration projects have examined greenhouse production and drying of biomass and wood products.

Urban data centres offer a different opportunity.

Meta's Odense data centre in Denmark supplies surplus heat into the local district-heating network. Meta reports approximately 165,000 MWh of surplus heat being supplied annually to around 7,000 households, with expansion increasing the potential reach to approximately 11,000 households[5].

Stockholm has taken the concept further. Stockholm Data Parks is a partnership involving the City, the district-heating company, electricity network provider and fibre provider. More than 30 data centres are reported as connected to the city's district-heating and cooling systems. The objective is deliberately to make heat recovery part of data-centre infrastructure rather than an afterthought[6].

A particularly useful contemporary comparison is the proposed East Havering Data Centre Campus in London. The proposal combines a major data-centre campus with indoor horticulture and a district-heating energy centre. Its draft infrastructure

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[4] Green Mountain, *Green Mountain and Hima Seafood launch groundbreaking heat reuse project*, 2026. The operational Rjukan project transfers excess heat from the data centre to Hima Seafood's land-based trout facility; the initial system is reported at up to 1.75 MW, with potential expansion to 8 MW.
[5] Meta, *We are expanding Facebook's Odense Data Center*, describing its heat-recovery partnership with Fjernvarme Fyn and an expanded capacity capable of supplying recovered heat equivalent to approximately 11,000 homes.
[6] Stockholm Data Parks, *Customer References*, reporting that more than 30 data centres are connected to Stockholm's district-heating and cooling systems and documenting the city's long-standing data-centre heat-recovery arrangements.

standards require waste-heat pipework between the data-centre cooling system and a heat exchanger in the district-heating centre and require an export connection at the site boundary so that an external heat network can connect in the future[7].

The significance of these examples is not that Tasmania should reproduce them.

It is that the design of the data centre, its location and the surrounding economic development can be considered together.

4. International Regulation is Moving in the Same Direction

The strongest precedent is the European Union Energy Efficiency Directive.

It requires data centres with total rated energy input exceeding 1 MW to utilise waste heat or another waste-heat recovery application unless it can be demonstrated that doing so is not technically or economically feasible[8]. For new or substantially refurbished facilities, a cost benefit assessment is required.

Importantly, the European approach does not simply ask whether a district heating network happens already to exist next door.

The assessment is intended to consider technical feasibility, cost effectiveness, local demand and seasonal variation. EU guidance specifically contemplates direct use, heat pumps to raise temperature, industrial users, agricultural uses and district heating.

Norway has independently adopted a similar approach. Since April 2025, planned data centres above 2 MW have been required to undertake a cost benefit analysis of opportunities for utilising surplus heat before construction or major upgrading proceeds[9].

Germany has gone further by establishing minimum planned proportions of reused energy for new data centres: 10 per cent for facilities commencing from July 2026, rising to 15 per cent from July 2027 and 20 per cent from July 2028, subject to specified exceptions[10].

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[7] London Borough of Havering, *East Havering Data Centre Campus — Draft Local Development Order and Statement of Reasons*, 2026. The proposed planning framework provides for heat recovery within the campus and infrastructure enabling future export of surplus heat to external users.

[8] Directive (EU) 2023/1791 on energy efficiency, art 26(6)–(7). Data centres with total rated energy input exceeding 1 MW are required to utilise waste heat or another heat-recovery application unless this is shown not to be technically or economically feasible; new or substantially refurbished facilities above that threshold are subject to an installation-level cost-benefit assessment

[9] Norwegian Ministry of Digitalisation and Public Governance, *The data centre industry — a sustainable industry of the future for the digital Norway*, 2025, section 5.1.2; Norwegian Water Resources and Energy Directorate (NVE), guidance on cost-benefit analysis of surplus heat. From 1 April 2025, planned data centres above 2 MW must undertake a cost-benefit analysis of opportunities to utilise excess heat, which must be approved by NVE before construction commences.

[10] Germany, *Energieeffizienzgesetz* (Energy Efficiency Act), §11(2). New data centres commencing operation from 1 July 2026 are subject to a minimum planned reused-energy share of 10%, rising to 15% from 1 July 2027 and 20% from 1 July 2028, subject to statutory qualifications and exceptions.

Tasmania need not adopt the German prescriptive model. The EU/Norwegian approach is probably better suited to Tasmania because it recognises that opportunities vary considerably between sites.

The important principle is that failure to recover heat should follow a demonstrated finding of infeasibility, rather than simply an absence of any requirement to investigate it.

5. Different Locations Require Different Solutions

There is no single "waste heat solution" that should be applied to every Tasmanian data centre.

For an industrial location such as Bell Bay or Wesley Vale, the logical starting point is likely to be potential industrial and agricultural heat users. Tasmania should consider whether data centres could become anchor businesses around which compatible industries are co-located.

Aquaculture is particularly relevant because the Norwegian Rjukan project demonstrates that low grade heat can have value where a nearby production process needs stable warm water.

Greenhouse horticulture, food production, timber and biomass drying and other low-temperature processes warrant consideration according to local circumstances.

By contrast, an urban data centre at Launceston, Hobart or another substantial population centre may present quite different opportunities. District or precinct heating could potentially supply housing, hospitals, aged care facilities, educational campuses, swimming pools or commercial buildings.

District heating will clearly not be viable everywhere. Tasmania has little existing district heating infrastructure and its relatively mild climate reduces some heating demand compared with northern Europe.

However, this should not lead to district heating being excluded from consideration for future urban developments. Modern low temperature networks and heat pumps can make lower grade data centre heat useful, particularly where heat sources and users are deliberately planned together.

The relevant policy should therefore be technology neutral and location specific.

6. Waste Heat Reuse can Create Tangible Community Benefits

Term of Reference 6 asks how the Tasmanian community can receive tangible benefits from AI and data facilities.

Beneficial reuse of waste heat provides one practical mechanism by which the substantial electricity and infrastructure resources committed to a data centre can generate wider economic and community value. Rather than treating the data centre as an isolated development, heat reuse can enable additional productive activity, reduce energy costs for other users and potentially attract complementary industries.

This may be particularly relevant because large data centres can occupy substantial strategic land while generating relatively low direct employment density. The City of Melbourne has identified this as a potential opportunity cost in strategic employment precincts. Co locating complementary heat using industries provides one means of increasing the wider employment and economic return from the land and infrastructure committed to a data centre.

The benefits could include:

1. **Greater value from Tasmania's electricity resource.** The same electricity produces the digital service and subsequently a useful thermal energy stream.
2. **Additional investment and employment.** A heat user—such as aquaculture, greenhouse production or another industrial process—can create activity beyond the relatively modest permanent workforce usually associated with highly automated data centres.
3. **Reduced energy requirements for adjoining businesses or communities.** Where recovered heat displaces electricity, gas or other fuels, both economic and emissions benefits may arise.
4. **Improved investment attraction.** Industrial precincts offering electricity, water, communications infrastructure and accessible low cost heat may attract industries that would not otherwise locate there.
5. **Circular economy benefits.** Heat presently treated as a waste stream becomes an input to another activity.
6. **Potential cooling benefits for the data centre itself.** Some closed loop arrangements can return cooler water or otherwise contribute to heat rejection, although this depends upon the particular system.

This approach is consistent with the Tasmanian Government's recently released draft Expectations for Data Centres and AI Infrastructure. The Government has said proponents should maximise benefits for Tasmania, support the energy system, use water responsibly, meet attributable infrastructure costs and deliver enduring community benefits[11].

[11] Tasmanian Government, *Draft Expectations for Data Centres and AI Infrastructure*, released 7 September 2026. The Government states that proponents are expected to maximise benefits for Tasmania, engage genuinely with communities, support the energy system and use water responsibly, while delivering enduring benefits for Tasmania.

Waste heat utilisation is a logical extension of those principles.

It is also emerging in Australian policy discussion. The City of Melbourne's 2026 Draft Data Centre and AI Infrastructure Position Paper provides a recent Australian policy precedent. It identifies circular economy outcomes and waste heat reuse among the measurable local benefits that major data centres may deliver. It also proposes that applicants deliver and report on public benefits through the planning approval process, and that opportunities for data centres to support nearby uses be identified and reflected in precinct planning[12].

7. What Should Tasmania Require?

I recommend that Tasmania introduce a Waste Heat Beneficial Reuse Assessment for new major data centres and substantial expansions.

A threshold should be established by regulation. The European 1 MW threshold provides an obvious international reference point, although the appropriate Tasmanian threshold could be determined following consultation.

A scale sensitive approach would also be consistent with emerging Australian thinking. The City of Melbourne identifies the absence of a dedicated, scale sensitive assessment framework as a regulatory gap and proposes that planning controls distinguish between different types and scales of data centres, supported by performance-based standards and clearer assessment requirements.

The assessment should quantify expected heat production, temperature and availability at realistic operating loads; examine potential users both on-site and within a reasonable surrounding area; consider direct use and heat pump upgrading; examine industrial, agricultural and, where relevant, district heating applications; assess the capital and operating economics; record engagement with credible potential heat users; and identify whether design decisions could preserve future opportunities.

A summary of that assessment should be publicly available as part of the approval process.

The test should not be whether reuse is theoretically possible.

It should be whether there is a technically workable and economically reasonable project.

The European approach provides a sensible basis for defining this test. Technical feasibility should take account of the characteristics of the facility and available

[12] City of Melbourne, *Data Centres and Artificial Intelligence Infrastructure: Draft Position Paper for Community and Stakeholder Consultation*, August 2026, particularly pp.14–16. The paper identifies circular-economy outcomes and waste-heat reuse as potential measurable local benefits; proposes identifying opportunities for data centres to support nearby uses through precinct planning; and proposes delivery and reporting of public benefits through the planning process.

technology without compromising the data centre's primary function. Economic feasibility should consider whether the proposed reuse can reasonably cover its costs and provide an acceptable return relative to its risks[13].

Where the assessment establishes a viable opportunity, implementation should normally form part of the project's development commitments.

Where no current opportunity is viable, the approval authority should be able to accept that conclusion.

For very large facilities, however, proponents should also be required to consider whether reasonably inexpensive measures—such as appropriate heat exchangers, pipe corridors, connection points or space reservations—could make the facility heat ready if an economically viable user subsequently develops nearby.

That distinction is important. It avoids requiring proponents to construct expensive infrastructure for which there is no customer, while avoiding inexpensive design decisions today that unnecessarily prevent beneficial reuse over the following 20 or 30 years.

8. Planning Needs to Consider the Heat User as well as the Heat Producer

The greatest benefit may come not from imposing increasingly complicated conditions on individual developments but from better strategic planning.

Waste heat becomes much more useful when heat producers and heat users are deliberately located near one another.

This approach is now appearing in Australian strategic planning. The City of Melbourne proposes to identify opportunities for data centres to support nearby uses and to reflect those opportunities in precinct plans. It also proposes that the location of data centres reinforce the performance of priority innovation precincts and that proposals demonstrate a clear functional need for co-location with associated uses.

Tasmania should therefore consider data centres not merely as stand-alone "utility" developments but as potential components of industrial and urban energy systems.

For Bell Bay, for example, economic development agencies could actively investigate industries capable of using low temperature thermal energy and assess whether future land allocation could facilitate industrial symbiosis.

[13] European Commission, Recommendation (EU) 2024/2395 on implementation of Article 26 of Directive (EU) 2023/1791. The Commission describes technical feasibility by reference to facility characteristics and available technology without compromising the data centre's primary function, and economic feasibility by whether the project can cover its costs and provide reasonable remuneration for risk and investment

For urban centres, strategic planning could identify potential heat loads such as hospitals, universities, major housing developments, aquatic centres and government buildings before data centre sites are selected.

This approach could also influence decisions about where future data centres should be encouraged.

The objective should be to move from: *"A data centre has waste heat. Can anybody use it?"*

to: *"Where should a data centre and compatible heat users be located so that both obtain an economic advantage?"*

9. The RMPS Needs an Explicit Mechanism

The Bell Bay experience suggests that Tasmania's existing planning arrangements do not clearly ask this question.

Waste heat utilisation sits awkwardly between conventional land use planning, environmental regulation, energy policy and economic development.

It can consequently fall between them.

This is not uniquely a Tasmanian problem. The City of Melbourne similarly identifies fragmented governance as a significant issue, noting that planning, energy, water, climate, industry and digital policy are managed through different agencies and levels of government. It concludes that clearer coordination and accountability are required to manage the cumulative impacts and benefits of data centre development.

The Inquiry should recommend that the Government determine the most appropriate statutory mechanism, rather than leaving individual councils to attempt to stretch unrelated planning provisions to address the issue.

Possible implementation mechanisms include the Tasmanian Planning Policies and future revisions of regional and local planning instruments; specific planning requirements for large data centres; environmental assessment requirements for facilities above an appropriate scale; or dedicated data centre legislation or regulations.

The precise mechanism is less important than the outcome: *no large future data centre should reach final approval without a transparent answer to the waste heat question.*

10. Transparency and Continuing Review

Transparent disclosure should extend beyond headline electricity and water consumption to include the scale of recoverable heat generated, the amount beneficially reused, the nature of that reuse and, where reuse is not occurring or is negligible, whether the original feasibility assessment remains current.

The broader principle is consistent with the City of Melbourne's proposal for mandatory collection of standardised site specific data and integrated public reporting of major data centre resource and environmental performance.

The additional reporting burden should be relatively modest because much of the underlying energy and thermal-performance information is already monitored for operational purposes.

Periodic disclosure would also allow government to identify emerging opportunities. A reuse project that is uneconomic when a data centre is first constructed may become viable later because a new industry establishes nearby, the centre expands, heat pump technology changes or an urban heat network is developed.

11. Recommendations

I recommend that the Committee:

Recommendation 1 — Establish the principle [TOR 1, 6]

Recommend that beneficial utilisation of waste heat becomes a standard expectation for new and substantially expanded Tasmanian data centres wherever technically and economically feasible.

Recommendation 2 — Require assessment before approval [TOR 1, 2]

Require proponents above a prescribed capacity threshold to prepare and publicly disclose a Waste Heat Beneficial Reuse Assessment before development approval.

Recommendation 3 — Require a broad assessment [TOR 2, 6]

Require assessments to consider on-site use, industrial processes, agriculture and aquaculture and, particularly for urban locations, district or precinct heating rather than assuming that one form of reuse is appropriate everywhere.

Recommendation 4 — Implement reasonable feasible opportunities [TOR 1, 6]

Where an assessment demonstrates a technically feasible and economically reasonable reuse opportunity, require the proponent to set out how the opportunity will be implemented or facilitated. Where appropriate and legally available, proportionate commitments should be incorporated into the relevant statutory approval or other regulatory instrument.

Recommendation 5 — Preserve reasonable future opportunities [TOR 2, 6]

Where immediate reuse is not feasible, require major facilities to identify reasonable heat ready design measures and, where these are technically practicable and can be provided at proportionate cost, incorporate them into the facility design.

Recommendation 6 — Integrate heat reuse into strategic planning [TOR 2, 6, 7]

Require relevant State agencies and planning authorities to consider proximity to potential heat users when identifying suitable locations for future data centres and to investigate co-location opportunities in major industrial precincts.

Recommendation 7 — Require transparent reporting [TOR 4]

Include waste heat generation, recoverable thermal capacity and beneficial reuse in the resource use and performance reporting framework recommended by the Inquiry.

Recommendation 8 — Immediate administrative action [TOR 1, 2, 6].
Pending development of the statutory framework proposed above, amend the Government's Data Centre Expectations to include an explicit expectation that proponents assess beneficial waste heat reuse and implement or facilitate it where technically and economically reasonable.

Conclusion

Tasmania does not need to decide that every data centre must heat houses, grow tomatoes, dry timber or support fish farming.

It does need to ensure that opportunities of that kind are not overlooked.

The international evidence demonstrates that data centre heat can support district heating, aquaculture, horticulture and other productive uses. It also demonstrates that governments elsewhere are moving beyond voluntary good intentions and requiring proponents to examine the opportunity.

The European Union has adopted a particularly sensible principle: significant data centres should utilise waste heat unless doing so is shown not to be technically or economically feasible.

Tasmania should adopt the same basic approach.

For developments capable of consuming very large quantities of Tasmania's electricity for decades, it is reasonable to ask whether the resulting heat can create additional economic, environmental or community value.

Sometimes the answer will be no.

But for a resource of this scale, *"we were never required to look"* should no longer be an acceptable answer.

Prepared by John Pitt [redacted]

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Appendix A
Evidence of Beneficial Data Centre Waste Heat Reuse

Purpose

This Appendix provides selected international examples demonstrating that waste heat from data centres can be productively reused in a range of circumstances.

The examples are not presented to suggest that any particular use will necessarily be viable in Tasmania. Rather, they establish that:

- data-centre waste heat is a potentially useful energy resource rather than necessarily an unavoidable waste stream;
- productive applications extend well beyond residential district heating;
- relatively low-temperature heat can be useful for aquaculture, horticulture, industrial drying and building heating, sometimes with heat-pump assistance;
- proximity and deliberate co-location of heat producers and users materially improve feasibility;
- heat recovery can be incorporated into data-centre design from the outset; and
- planning systems can preserve future heat-reuse opportunities even where a final heat user has not yet been secured.

The examples therefore support a Tasmanian requirement that major data centre proponents assess beneficial heat reuse and implement it where technically and economically feasible, rather than imposing any particular reuse technology or outcome.

A1. Industrial and Agricultural Reuse

Project / Location	Productive Use	Status / Evidence	What it Establishes
Green Mountain / Hima Seafood, Rjukan, Norway	Land-based trout aquaculture	Operational since autumn 2025. Waste heat from Green Mountain's data centre is transferred to the adjoining Hima Seafood recirculating aquaculture facility. The initial system is being operated at up to 1.75 MW, with a second phase examining expansion to 8 MW.	Strong direct precedent for Tasmania. Demonstrates that data centre heat can become an input to a substantial commercial aquaculture operation rather than merely heat buildings. It also demonstrates the value of locating a compatible heat user close to the data centre.
EcoDataCenter, Falun, Sweden	Drying material used in wood-pellet production; surplus heat also enters district-heating network	Operational. Low-grade heat at approximately 30–32°C is recovered from data centre chiller condensers and transferred to the adjoining energy facility. It contributes to wood-pellet production; when pellet production is not operating, heat can be redirected to the district-heating network. Published case-study evidence reports that data-centre heat supplies roughly half of the pellet plant's process-energy requirement.	Demonstrates industrial process reuse of low-grade heat and is particularly relevant to Tasmanian forestry and biomass industries. It also shows that one heat source can serve different users rather than requiring a single year-round use.
QScale Q01, Lévis, Québec, Canada	Commercial greenhouse horticulture	QScale's 142 MW Q01 campus incorporates waste-heat recovery in its design. Québec Government support has been provided for a	Demonstrates that heat reuse can form part of the economic-development strategy surrounding a large AI/HPC data centre,

		nearby 12-hectare greenhouse development intended to be heated almost entirely by waste heat from the data centre. The Québec Government estimates avoided emissions of more than 23,000 t CO_2-e annually when operational.	and that government can assist development of a complementary heat-using industry rather than treating the data centre as an isolated development.
East Havering Data Centre Campus, London, United Kingdom	Indoor horticulture plus wider heat network	Advanced planning proposal rather than an operational project. The proposed campus includes up to approximately 340,000 m^2 of data centre floorspace, substantial indoor horticulture and a district heating energy centre. Planning documentation provides for collection of data centre heat for horticulture and potential off-site heat networks.	Particularly important as a planning and economic development precedent. It demonstrates how a large data centre, horticulture and heat infrastructure can be considered as an integrated development rather than attempting to find a heat user after the data centre has been built.

Relevance to Tasmania

These cases demonstrate that district heating is not a prerequisite for beneficial reuse.

For industrial locations such as Bell Bay or Wesley Vale, potentially relevant opportunities could include:

- land-based aquaculture;
- greenhouse and controlled-environment agriculture;
- timber, wood-product or biomass drying;
- food processing;

- suitable low-temperature industrial processes; and
- other businesses capable of using a dependable thermal-energy stream.

Whether any particular application is viable would depend on heat temperature, quantity, load profile, distance, infrastructure requirements and commercial demand.

The appropriate policy response is therefore mandatory investigation, not mandatory selection of a particular heat user.

A2. District and Urban Heating

Project / Location	Heat Use	Status / Evidence	What it Establishes
Meta Data Centre, Odense, Denmark	Municipal district heating	Operational. Heat generated by servers is recovered into the Fjernvarme Fyn district-heating system. Meta reports recovery capacity of approximately 165,000 MWh annually, with its expansion capable of supplying heat equivalent to approximately 11,000 homes.	Demonstrates that a hyperscale data centre can provide heat at municipal scale when located close to suitable heating infrastructure.
Tallaght District Heating Scheme, South Dublin, Ireland	Public buildings, university facilities, commercial buildings and housing	Operational since 2023. Waste heat from an AWS data centre supplies a publicly owned district-heating network serving South Dublin County Hall, library and university facilities. The network has subsequently expanded to commercial premises and 133 apartments. The Council reports avoided emissions of about 1,422 tonnes CO_2 in 2025. AWS supplies the recovered heat without charge.	Highly relevant to possible Tasmanian urban or institutional precincts. Demonstrates a model involving local government, a data-centre operator and major public heat users, with later expansion to residential development.

Stockholm Data Parks / Stockholm Exergi, Sweden	City-wide district heating and cooling	Long-established and operational. Stockholm Data Parks reports that more than 30 data centres are connected to Stockholm's district heating and cooling networks and that the utility has more than 25 years' experience recovering data-centre heat.	Shows that heat reuse need not be a one-off demonstration project. With appropriate infrastructure and commercial arrangements it can become a normal part of the urban data centre industry.
EcoDataCenter, Falun, Sweden	Residential and commercial district heating when industrial heat demand is unavailable	Operational. Recovered heat not required for pellet production can be transferred into the municipal heating system.	Demonstrates the advantage of having more than one potential heat sink, improving utilisation where industrial demand varies over time.
East Havering Data Centre Campus, London	Campus buildings, horticulture and potential future external district-heating customers	Proposed planning framework. The draft Local Development Order requires certain campus buildings to use recovered data-centre heat unless this is operationally infeasible, commercially unviable or less carbon-efficient. Importantly, it also requires provision to transfer remaining heat towards the public highway for connection to a future beneficial user.	Provides a strong precedent for future proofing. A viable external heat customer does not necessarily have to exist on the first day of data centre operation for the development to preserve a future connection opportunity.

A3. Australian Policy and Planning Precedent

The City of Melbourne's 2026 *Data Centres and Artificial Intelligence Infrastructure: Draft Position Paper for Community and Stakeholder Consultation* provides a recent Australian policy precedent for incorporating waste heat reuse into broader data centre planning.

The draft position paper:

- identifies circular economy outcomes and waste heat reuse as examples of measurable local benefits that data centre developments may deliver;
- proposes that opportunities for data centres to support nearby uses be identified and reflected in precinct planning;
- proposes planning controls that distinguish between different types and scales of data centres and require clearer assessment of energy, water, emissions, infrastructure and local economic contribution;
- proposes that applicants deliver and report on public benefits through the planning approval process; and
- identifies fragmented governance and the absence of a dedicated, scale sensitive planning framework as regulatory gaps.

The City of Melbourne proposal does not establish a mandatory waste heat feasibility test of the kind recommended in this submission. Its significance is that it demonstrates that waste heat reuse and complementary nearby uses are already entering mainstream Australian data centre planning policy.

A4. What the Evidence Does — and Does Not — Establish

The international experience does not establish that waste heat recovery will be commercially viable at every Tasmanian data centre.

Important limitations include:

Temperature. Conventional air cooled data centres often produce relatively low temperature heat. Some applications can use this directly; others require a heat pump to increase its temperature. Increasing adoption of liquid cooling for high density AI computing may improve the quality of recoverable heat in some facilities.

Distance. Moving low grade heat over long distances can rapidly undermine economics. Heat users located on or close to the data centre site therefore have a substantial advantage.

Demand. A heat source operating continuously needs a sufficiently large and preferably dependable demand. Seasonal heating requirements can reduce utilisation unless alternative users or thermal storage are available.

Capital cost. Heat exchangers, pumps, pipework, heat pumps and external networks can require substantial investment.

Commercial arrangements. The data centre operator, heat network operator and final user may be separate entities. Ownership, pricing, reliability and risk therefore need to be resolved.

These limitations reinforce, rather than weaken, the case for requiring a feasibility assessment. They are precisely the matters that such an assessment should determine.

A5. Lessons for Tasmania

The case studies collectively support six conclusions relevant to the Inquiry.

1. Beneficial reuse is technically demonstrated.
Waste heat from operating data centres is already heating homes, public buildings and commercial premises and contributing to aquaculture and industrial processes.

2. Industrial reuse can be as important as district heating.
This is particularly relevant to Tasmania. Large facilities proposed for industrial precincts should not be assessed solely against northern-European residential district-heating models.

3. Location and strategic planning matter.
The strongest international examples deliberately bring the data centre and heat user together. The City of Melbourne now similarly proposes that opportunities for data centres to support nearby uses be identified and reflected in precinct planning. Strategic planning and economic development agencies can therefore materially influence whether beneficial reuse becomes viable

4. Opportunities should be identified during design, not after construction.
Heat exchangers, cooling architecture, temperature regimes, pipe routes and connection points can all affect subsequent feasibility. Once a data centre is operating, retrofit can be more difficult and expensive.

5. Future opportunities can be preserved without requiring speculative infrastructure.
East Havering provides a particularly useful model. The planning framework distinguishes between requiring an uneconomic heat network immediately and requiring the data centre to be designed so that a credible future connection is not unnecessarily prevented.

6. Waste heat reuse can form part of a broader community benefit framework.
The City of Melbourne places waste-heat reuse alongside local employment pathways, community infrastructure, green infrastructure and other circular-economy outcomes as potential measurable local benefits from data centre development. This supports treating beneficial heat reuse not merely as a technical efficiency measure, but as one mechanism for increasing the wider public value generated by major data-centre investment.

A6. Implication for the Inquiry

The international evidence supports a proportionate Tasmanian policy based on the following principle:

Major data centres should be required to identify and assess reasonably available opportunities for beneficial reuse of waste heat; implement reuse where technical and economic feasibility is demonstrated; and, where immediate reuse is not feasible, take reasonable and proportionate steps to avoid foreclosing credible future reuse opportunities.

This approach would not presume that waste heat has a commercially viable use in every case.

It would instead ensure that, before a very large and potentially long lived thermal resource is routinely discharged to the environment, Tasmania has established whether that resource could economically support another industry, reduce another user's energy requirements, or provide a wider community benefit.

Principal evidence sources

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9. **City of Melbourne (2026),** *Data Centres and Artificial Intelligence Infrastructure: Draft Position Paper for Community and Stakeholder Consultation*, August 2026, City of Melbourne, Melbourne, particularly pp. 14–16, available at: https://participate.melbourne.vic.gov.au/data-centres/draft-position-paper

Submission
Inquiry into AI Data Centres in Tasmania
What is the Best Value Use of Tasmania's Electricity Resources?

Purpose

I make this submission principally in relation to Terms of Reference 1, 2, 3, 4 and 6, and the broader matter permitted by Term of Reference 7.

My central proposition is simple.

Tasmania should not decide whether major data centres are desirable merely by asking whether enough electricity can be generated to supply them. The more important question is whether allocating a substantial share of Tasmania's finite firm renewable electricity capability to these developments represents the best long term use of a strategic public resource.

The scarce resource is increasingly not renewable generation itself. New wind and solar generation can be built. The scarcer resource is the combination of hydro storage, dispatchable generation, firming capability, drought resilience, transmission capacity and system flexibility required to convert variable generation into reliable electricity supply.

That capability has alternative uses and therefore an opportunity cost.

1. The Strategic Question - Protecting a Public Resource

Term of Reference 1

Tasmania's hydro system is a strategic public asset accumulated over generations. Its value lies not merely in the electricity it produces, but in its capacity to store energy and deploy it when electricity is most valuable or most needed.

That capability supports:

• energy security and drought resilience
• existing major industries
• future industrial development
• electrification of transport and industry
• renewable energy integration
• exports to the National Electricity Market
• Hydro Tasmania profitability and State revenue.

Large data centres create very substantial continuous electricity demand. Firmus alone has sought arrangements supporting approximately 450 MW across its Tasmanian operations. Hydro has indicated that new renewable generation would be required and that Hydro may be required to supply electricity when wind and solar output is inadequate.

The issue is therefore not simply the number of megawatt hours consumed. It is the amount of firm capability that must be reserved to support that consumption.

This distinction should be central to the Inquiry.

A data centre able to reduce demand during periods of low renewable output, low hydro storage or high electricity value may impose a substantially smaller burden on Tasmania's firm capability than an inflexible load of the same nominal size.

Future assessment should therefore measure not only electricity consumption, but the firm megawatt capability consumed after allowing for enforceable demand flexibility.

2. The Existing Planning System does not Answer the Strategic Question

Term of Reference 2

The Resource Management and Planning System performs an important role, but it is not presently designed to determine the best use of Tasmania's electricity resources.

Planning Authorities can assess land use, noise, water, traffic, infrastructure, natural values and other matters relevant to a particular site.

What they do not appear to assess is whether allocating hundreds of megawatts of future firm electricity capability to a particular development represents a better economic, social and environmental outcome for Tasmania than alternative uses of that capability. My examination of the Bell Bay and Wesley Vale proposals suggests that this wider resource allocation question does not form part of the normal Development Assessment process.

Nor should local planning authorities be expected to make such a judgement without an appropriate State policy framework.

The solution is not to distort the Planning System. It is to establish a strategic assessment above normal project approval processes.

3. Tasmania Needs a Whole of State Public Value Test

Terms of Reference 1, 3 and 6

Major allocations of scarce firm electricity capability should be subject to a transparent whole of State assessment before long term commitments are made.

That assessment should ask whether the proposal maximises long term public value having regard to:

• Tasmanian economic value created per unit of electricity[1]
• enduring employment, skills and local supply chains[2]
• the amount of firm capability[3] required
• the value of customer flexibility and curtailment[4]
• the opportunity cost of excluding future industries[5]
• impacts on household and business electricity prices[6]
• consequences for Hydro Tasmania profitability and State revenue[7]
• transmission and network costs and who bears them[8]
• drought resilience and energy security[9]
• greenhouse consequences, including transitional imports[10]
• biodiversity, land use and natural capital impacts associated with new generation and transmission[11]

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[1] **Tasmanian economic value created per unit of electricity:** the amount of economic benefit generated in Tasmania, such as gross value added, wages, employment and local business activity, for each MWh of electricity consumed.
[2] **nduring employment, skills and local supply chains:** the extent to which a project creates lasting jobs, develops transferable workforce skills, and supports ongoing demand for Tasmanian suppliers and service businesses beyond the initial construction phase.
[3] **Firm capability:** the dependable electricity supply that can be made available when required, including during periods of low wind or solar output, through sources such as stored hydro generation, storage, interconnection or other controllable supply.
[4] **Curtailment:** a temporary reduction in electricity consumption or generation in response to system conditions, such as low supply, network constraints, or high demand.
[5] **Opportunity cost of excluding future industries:** the economic and strategic value of alternative industries or activities that may be unable to obtain electricity or firm capability once that capacity has been committed elsewhere.
[6] **Impacts on household and business electricity prices:** any effect a development may have on the electricity costs paid by other Tasmanian consumers through changes in generation, network, transmission, firming or wholesale market costs.
[7] **Consequences for Hydro Tasmania profitability and State revenue:** the effect of a development on Hydro Tasmania's earnings and therefore on dividends, tax equivalent payments and other financial returns received by the Tasmanian Government.
[8] **Transmission and network costs and who bears them:** the costs of connecting and supporting additional electricity demand, including new or upgraded transmission and network infrastructure, and the extent to which those costs are paid by the proponent or other electricity users.
[9] **Drought resilience and energy security:** the ability of Tasmania's electricity system to maintain reliable supply during extended periods of low rainfall, low renewable generation, equipment failure or constrained mainland supply.
[10] **Greenhouse consequences, including transitional imports:** the change in greenhouse gas emissions resulting from a development, including emissions associated with mainland electricity imported while new Tasmanian generation is unavailable or insufficient.
[11] **Biodiversity, land use and natural capital impacts:** effects on ecosystems, species, landscapes, soils, water and other environmental assets arising from the additional generation, transmission and infrastructure required to supply a development.

• local ownership and retention of economic returns[12]
• opportunities for beneficial use of waste heat and other associated infrastructure[13]
• the value of preserving future strategic options.[14]

This would not amount to Government choosing individual businesses or technologies. It would establish the criteria by which access to a scarce public resource is evaluated.

The objective should not be to maximise electricity sales, renewable generation or Hydro profit in isolation.

The objective should be to maximise the long term public value generated from Tasmania's electricity system.

4. Opportunity Cost Must be Made Explicit

Terms of Reference 1 and 6

Every commitment of firm capability removes or limits other options.

Electricity used to support a data centre cannot at the same time support another industrial development, future electrification, export during valuable market periods or additional drought security.

These forgone options may never appear in a project business case, but they are nevertheless real economic costs.

The relevant comparison is therefore not: *Does the data centre create benefits?*

It plainly can.

The relevant question is: *Are the benefits greater than those available from credible alternative uses of the same scarce firm capability?*

At present no agency appears to have clear responsibility for answering that question. Hydro undertakes a commercial assessment. TasNetworks considers network requirements. Planning Authorities assess development impacts. Renewable energy developers assess investment viability. Each may make a rational decision within its own mandate while the combined result is not necessarily the best outcome for Tasmania. That is the central governance gap.

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[12] **Local ownership and retention of economic returns:** the extent to which profits, wages, investment income and other economic benefits generated by a development remain within Tasmania rather than flowing to owners, investors or suppliers elsewhere.
[13] **Beneficial use of waste heat and associated infrastructure:** the productive use of heat, energy, water, digital infrastructure or other resources generated or enabled by a development to support additional Tasmanian economic activity.
[14] **Value of preserving future strategic options:** the benefit of retaining some electricity, firm capability and system flexibility for future needs and opportunities that may be more valuable than uses presently proposed.

5. Sequencing and Risk Allocation Require Particular Scrutiny

Terms of Reference 1, 3 and 4

New data centre demand may emerge before the renewable generation, and transmission intended to support it.

If this occurs, the electricity shortfall must be met through some combination of additional Hydro generation, lower storage, increased mainland imports or reduced exports.

The risks therefore need to be identified before load is connected.

For each major data centre, the public should be able to understand:

• how much load may commence before supporting generation is operational[15]
• the source of electricity during that period[16]
• the amount of Hydro firming required[17]
• the degree of contractual demand reduction available[18]
• the conditions under which that demand reduction can be called[19]
• network augmentation required[20]
• the allocation of price, drought and firming risk[21]
• the extent to which existing consumers may ultimately bear costs[22].

This information is necessary if the Parliament and community are to understand the real resource commitment being made.

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[15] **Load commencing before supporting generation is operational:** the amount of electricity demand that may begin before the new renewable generation intended to supply it has been completed and connected.
[16] **Source of electricity during that period:** the generation or imports that would supply the additional demand until the intended new renewable generation becomes available, including Hydro generation or mainland imports.
[17] **Amount of Hydro firming required:** the quantity of dependable Hydro generation or stored energy needed to maintain supply when variable renewable generation is insufficient.
[18] **Degree of contractual demand reduction available:** the amount of customer electricity demand that can be reduced under the electricity supply agreement when system conditions require it.
[19] **Conditions under which demand reduction can be called:** the agreed circumstances, notice periods, duration and frequency under which the electricity supplier or system operator can require the customer to reduce demand.
[20] **Network augmentation required:** new or upgraded transmission, substations, lines or other electricity network infrastructure needed to connect and reliably supply the additional load.
[21] **Allocation of price, drought and firming risk:** how responsibility for higher electricity prices, low Hydro inflows and the cost or availability of firm supply is divided between the customer, Hydro Tasmania, network businesses, Government and other electricity users.
[22] **Extent to which existing consumers may ultimately bear costs:** the degree to which costs created by the new load may be recovered from households and existing businesses through electricity prices, network charges, taxes or reduced returns from State owned electricity businesses.

6. Hydro Tasmania's Financial Position is also a Public Interest Issue

Terms of Reference 1, 3 and 6

Hydro Tasmania's commercial interests are relevant because the company is publicly owned and its financial returns flow to the State.

The strategic value of Hydro is strongly linked to its ability to choose when to generate, preserve water, respond to drought, participate in high value market periods and manage its portfolio flexibly.

Large continuous electricity commitments can affect those choices.

This does not mean that supplying data centres will necessarily reduce Hydro's profitability. Contract design, renewable supply, customer flexibility and market conditions may produce a favourable result.

It does mean that the effect should be explicitly assessed rather than assumed.

The Inquiry should therefore require major electricity allocations to disclose their expected effect on Hydro's storage requirements, commercial flexibility, profitability and payments to the State.

7. Existing Strategic Assumptions Should be Retested

Term of Reference 7

Tasmania's major electricity strategies have historically contemplated substantial additional renewable generation, increased interconnection and greater export capability.

The emergence of potentially very large new domestic electricity loads represents a significant change in circumstances.

A future based primarily on exporting additional renewable energy and a future based on using much of that energy to support large domestic data centres are not necessarily incompatible, but they are not the same system.

The assumptions underpinning Marinus Link, future generation development and transmission planning should therefore be tested against the cumulative scale of proposed data centre demand rather than considering each development separately.

Recommendations

I recommend that the Committee propose:

1. **A strategic major energy user assessment** for developments above an appropriate electricity demand threshold, undertaken before major long term electricity commitments are finalised.
2. **A whole of State public value test**[23] comparing the proposed use of scarce firm electricity capability with credible alternative uses.
3. **Assessment of firm capability rather than energy consumption alone**, including the extent to which enforceable customer flexibility reduces the requirement for Hydro firming.
4. **Transparent disclosure** of expected electricity demand, supporting generation, firming requirements, transmission requirements, demand flexibility, transitional imports and major risk allocations.
5. **Explicit consideration of opportunity cost**, including effects on future industry, electrification, exports, drought resilience and Hydro Tasmania's commercial flexibility.
6. **Assessment of wider Tasmanian benefits**, including economic value, employment, local supply chains and opportunities to reuse waste heat and support associated industries.
7. **Parliamentary oversight of very large strategic electricity allocations** where the scale of the commitment could materially affect Tasmania's future energy options.

Conclusion

This Inquiry need not determine that data centres are either inherently beneficial or inherently undesirable.

Its more important task is to ensure that Tasmania has a governance system capable of determining when such development is in the State's long term interest.

Large flexible data centres may ultimately prove to be a valuable component of Tasmania's future electricity system.

But that conclusion should be demonstrated, not assumed.

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[23] **Whole of State public value test:** an assessment of whether a proposal delivers the greatest long term net benefit to Tasmania when its economic, social, environmental, energy system and fiscal effects are considered together, including the opportunity cost of alternative uses of the same public resources.

Tasmania possesses a valuable but finite firm renewable electricity capability. The appropriate public policy objective is to ensure that this resource is allocated in a way that produces the greatest enduring benefit for Tasmanians while preserving reasonable options for future generations.

Prepared by John Pitt [redacted]

E: [redacted]
M: [redacted]
A: [redacted]