

AirTrunk submission to the Expansion of the Commercial Building Disclosures program consultation to include data centres

Executive Summary

AirTrunk is an Australian founded and headquartered hyperscale data centre operator in the Asia-Pacific region, with facilities in Australia, Japan, Hong Kong, Malaysia and Singapore.

Data centres are essential infrastructure for the digital economy, providing reliable and secure processing and storage of data for various sectors and industries. Data centres use energy in two ways – to power the IT load, that is the compute processing power that delivers digital services used by business, government and individuals, and for ancillary services like cooling and lighting. The compute power generates heat within the facility requiring cooling to ensure the hardware remains operational.

AirTrunk, like many data centre operators, is committed to Net Zero carbon targets by 2030 and to 100% renewable energy use.

Whilst AirTrunk is supportive of measures which incentivise the sector to improve energy efficiency, adopting the Commercial Building Disclosures (CBD) program to include data centres has some limitations due to the unique characteristics of data centres that differ from other commercial buildings.

- The primary energy use in data centres is the IT load or the compute power for the digital services that run our economies. The increased need for energy comes from the demand for more services and more sophisticated services like artificial intelligence.
- The data centre sector is highly competitive and energy efficiency is already a key factor for customers.
- The data centre sector is diverse with different size and complexity of operators, and different business models.
- A DEEWCC commissioned report by CIE found hyperscale data centres are already highly energy efficient and little will be achieved by mandatory disclosures.
- The data centre sector is rapidly changing through new innovation, much of which is focused on increasing energy efficiency.
- The arrival of new technologies like Generative AI is changing the design of data centres with new chips and other operating materials. It may be some time before the most efficient design is determined so there will not be a single benchmark standard for some time.
- Data centre operators build to the specifications of its customers and often different customers have different specs. This makes an overall energy rating for an operator a challenge.
- Data centres are highly secure facilities that run 24/7 to ensure availability of services, meaning any requirement for retrofitting after they become operational is highly problematic.
- Data centres are not sold or leased on a frequent basis, meaning the point of disclosure under the CBD program would have minimal benefits.

Despite its lack of applicability to data centres, if the Government was to proceed with extending the CBD program, AirTrunk:

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- Proposes that the CBD program should only apply to new data centre facilities, and that the disclosure trigger should be on signing a new customer contract or on demand by a potential customer.
- Suggests that the CBD program should only require the disclosure of the NABERS energy rating and the NABERS Renewable Energy Indicator, as these are the most relevant and useful metrics for data centre customers and stakeholders.
- Does not support the use of minimum energy performance standards (MEPS) for data centres, as it would impose unnecessary regulatory burden and stifle innovation and competition in the sector.

Introduction

AirTrunk designs, builds and operates data centres that cater to the needs of large, global cloud service providers and enterprise customers, offering scalable, secure and reliable solutions.

AirTrunk currently operates three data centres in Australia, with a total capacity of over 400 megawatts (MW), making it the largest data centre operator in the country. AirTrunk is also expanding its presence in the region, with a new data centre in Sydney under construction.

Data centre design has a number of over-riding regulations including that of the Security of Critical Infrastructure (SOCI) Act.

AirTrunk also designs data centres and data halls within data centres to the specifications of its customers. Each customer may have different specifications.

AirTrunk is committed to improving its energy efficiency and reducing its environmental impact, as part of its corporate social responsibility and sustainability strategy. AirTrunk publishes its design power usage effectiveness (PUE) ratings on its website demonstrating PUE's as low as 1.15 across Australian campuses while also reporting annual portfolio operating PUE in its annual sustainability reports.

This PUE means the energy usage of the data centre for ancillary purposes (lighting, cooling etc) is less than 15% of the IT load (or compute power of the hardware providing the digital services to customers).

AirTrunk also sources renewable energy for its data centres, and aims to achieve 100% carbon neutral operations in Australia by 2030 (working with its customers), through power purchase agreements (PPAs) which provide investment to renewable energy projects and add capacity to the grid.

AirTrunk welcomes the opportunity to provide input to the government consultation on the expansion of the CBD program to include data centres, and to share its views and insights on the sector and its energy performance.

Data centres and energy efficiency

Data centres are essential infrastructure for enabling the digital economy, providing reliable and secure processing and storage of data for various sectors and industries, including as e-commerce, banking, health, education, entertainment and government.

Data centres require power for their IT equipment, as well as for cooling systems and lighting.

According to the Australian Energy Market Operator (AEMO), data centres accounted for about 4.5% of the total electricity consumption in the National Electricity Market (NEM) in 2019, and this is expected to grow to 8.5% by 2030.

Improving the energy efficiency of data centres is not only a social and environmental responsibility, but also a business imperative, as it can reduce operational costs, enhance competitiveness and reputation, and meet customer and stakeholder expectations.

Data centre operators use various metrics to measure and report their energy efficiency, such as Power Usage Efficiency (PUE), which is the ratio of the total energy consumed by the data centre to the energy consumed by the IT equipment.

A lower PUE indicates a higher energy efficiency, as it means that less energy is used for non-IT functions. A PUE of 1.0 means there is no energy used other than for IT function. The industry average PUE for data centres in Australia is around 1.7, while the best practice PUE is around 1.15.

Data centre operators also use other metrics, such as carbon intensity, water usage effectiveness, and renewable energy use, to demonstrate their environmental performance and sustainability.

Expansion of the CBD program to data centres

The CBD program is a mandatory scheme that requires most sellers and lessors of office space of 1000 square metres or more to obtain a Building Energy Efficiency Certificate (BEEC) before the building goes on the market for sale, lease or sublease.

BEECs are valid for up to 12 months and include the building's NABERS Energy for offices star rating, and a tenancy lighting assessment (TLA) of the relevant area of the building.

The CBD program aims to improve the energy efficiency of commercial buildings, by providing information and transparency to the market, and encouraging owners and tenants to invest in energy saving measures.

The government is considering expanding the CBD program to different types of commercial buildings, including data centres, as part of its commitment to reduce greenhouse gas emissions and achieve net zero by 2050.

AirTrunk's Position

Whilst AirTrunk is supportive of efforts to provide a consistent and rigorous framework for measuring and reporting energy performance across the sector, and we believe there are opportunities to enhance and complement the existing voluntary disclosure of PUE by data

centre operators, we have some concerns about the proposed approach to apply the CBD program to do this.

Challenges and limitations of applying the CBD program to data centres

The data centre sector is diverse in size and complexity of operators and there are existing competitive incentives for energy efficiency. AirTrunk agrees with many of the findings in the independent report conducted by CIE during the original consultation on the CBD program, which highlighted the following issues:

- Data centres are harder to define than other types of commercial buildings, as they vary in size, location, function, ownership and business model.
- Data centres are already operating close to maximum efficiency, due to the high costs of energy and the competitive pressure to reduce them.
- Data centre customers are not influenced by a NABERS rating, as they already have access to more detailed and relevant information, such as PUE, contractual terms and service level agreements.
- Data centres are highly specialised and customised facilities built to customer service level agreements which makes it difficult to compare them based on a generic rating system.
- Data centres are subject to different regulatory and contractual obligations including the Security of Critical Infrastructure Act (SOC1), which limit the ability to make some changes to design which could improve energy efficiency but lower security.
- Advancements in technology such as Generative AI are significantly altering customer requirements and design standards. Currently, there is no standard benchmark for an energy efficient AI data centre. Due to their high density requirements, AI data centres may have vastly different specifications compared to non AI data centres, which could render a universal efficiency ratings less effective.
- Data centres face technical and financial barriers to obtaining a NABERS rating, such as the need to install sub-metering, the cost of certification, and the potential loss of confidentiality and competitiveness.

AirTrunk also notes that the data centre sector is rapidly evolving and dynamic, and that any regulatory intervention should be flexible and adaptive to the changing needs and circumstances of the sector.

Proposed approach should the decision be made to apply the CBD program to data centres

As stated, we do not believe the CBD program is well tailored to data centre application. If the Government was to expand the CBD program to apply to data centres, AirTrunk proposes the following limitation;

- the CBD program should only apply to *new* data centre facilities, and that the disclosure trigger should be on signing a new customer contract or on demand by a potential customer.

AirTrunk suggests that this approach would address some of the challenges and limitations of applying the CBD program to data centres, as it would:

- avoid imposing unnecessary costs and disruptions on existing data centre facilities, which may not have the required metering or certification infrastructure;
- ensure that the CBD program is aligned with the data centre market dynamics and customer preferences, which are driven by contractual arrangements rather than sale or lease transactions;
- provide data centre customers with timely and relevant information on the energy performance of the facility they are considering or contracting;
- allow the opportunity for ratings to take into consideration requirements dictated by new technologies such as AI, including the likely increase in energy to power them.

AirTrunk also suggests that the CBD program should only require the disclosure of the NABERS energy rating and the NABERS Renewable Energy Indicator, as these are the most relevant and useful metrics for data centre customers and stakeholders.

AirTrunk argues that these metrics would provide a comprehensive and comparable measure of the energy efficiency and the renewable energy use of data centres, which are the key factors that affect their environmental impact and operational costs.

AirTrunk does not support disclosing other information, such as Scope 1 emissions from on-site activities (for example gas use, diesel use and refrigerants) or a tenancy lighting assessment (TLA), as these are either negligible or irrelevant for data centre energy performance.

Views on the use of minimum energy performance standards for data centres

The government is also investigating the future use of minimum energy performance standards (MEPS) to improve the energy efficiency of any commercial buildings that do not respond to disclosure.

MEPS could require specific buildings to meet base level requirements, such as a particular star rating, by a specified date in the future.

AirTrunk does not support the use of MEPS for data centres, as it would impose unnecessary regulatory burden and stifle innovation and competition in the sector.

AirTrunk contends that MEPS are not suitable or effective for data centres, for the following reasons:

- Data centres are already subject to market forces and customer demands that drive them to achieve high levels of energy efficiency and sustainability.
- Data centres are highly diverse and complex facilities, which makes it difficult to set and apply uniform and fair standards across the sector.
- Data centres are constantly upgrading and improving their technology and processes, which makes it challenging to monitor and enforce compliance with MEPS.
- Data centres are sensitive and critical infrastructure, which requires careful and cautious intervention to avoid any adverse impacts on their reliability and security.

AirTrunk believes that the CBD program, if implemented appropriately, would be sufficient and preferable to MEPS, as it would provide information and transparency to the market,

and encourage voluntary and continuous improvement in data centre energy efficiency and sustainability.

Conclusion

AirTrunk appreciates the opportunity to provide input to the government consultation on the expansion of the CBD program to include data centres.