Tungkillo Compute and Energy Hub FAQ

About this FAQ

This FAQ sets out Quantum DC's current design assumptions and preliminary estimates as at 31 October 2026. Independent specialist studies are being completed for the development application, and the information here will be updated as they are finalised. Every specialist report lodged with the application will be published on the PlanSA portal during public notification, other than Aboriginal heritage information that is confidential under the Aboriginal Heritage Act 1988.

Who is Quantum DC?

Quantum DC is the proponent for the Tungkillo Compute and Energy Hub.

Quantum DC is an Australian company that develops compute and energy hubs: large-scale data centre precincts co-located with new energy supply.

What is being proposed?

The proposal includes:

- A large-scale data centre (approximately 1,200 MW of capacity at full development)
- On-site gas-fired generation (gas turbines)
- Two new substations.

Where is the project site?

The site is located at 312 Collins Road, Tungkillo and comprises five lots totalling approximately 220 hectares of land.

How much of the land will be used?

Approximately 120 hectares of the 220-hectare site will have infrastructure built on it. The remaining land will remain undeveloped and could continue to be used for grazing.

How long will construction take?

The project is expected to be built in three stages, with the first stage operating from 2028 and full development by about 2031. Each stage adds about 400 MW of capacity.

Why is this location being considered?

The site was chosen because the Murray Bridge, Tungkillo and Tailem Bend corridor is a strategically significant network position.

The existing ElectraNet 275 kV transmission lines cross the site, which allows a direct connection to the electricity network without new transmission lines.

The site is also close to the Tungkillo substation, an existing high-pressure gas pipeline to the north and fibre optic cables, is about 1 hour from Adelaide Airport and accessible by public roads.

Were other locations considered?

Yes. Quantum DC has assessed sites across South Australia's 275 kV transmission network against the same criteria: existing high-voltage transmission lines on or beside the land with network capacity available, access to an existing high-pressure gas pipeline and to fibre, cleared grazing land with relatively few nearby dwellings, and public road access. Tungkillo was selected because it meets all of these. In particular, the 275 kV lines already cross the property, so the hub connects without new transmission lines across other land.

Is this the largest data centre in Australia, or one of the largest in the world?

No. It is one of a number of gigawatt-scale data centre campuses now proposed in Australia and it would not be the largest: larger campuses have been proposed elsewhere in Australia and overseas, and the largest campuses under construction overseas are two to four times its size.

Are the Palmer Wind Farm and the Tungkillo BESS associated with the project?

No. The Palmer Wind Farm and the Tungkillo BESS, both currently under construction, are not associated with the project.

Will the data centre be powered by diesel generators?

No. The data centre is not designed to rely on diesel generators for back-up power. It is backed up by its connection to the transmission network on two separate circuits, the on-site gas-fired generation and contracted battery storage elsewhere in the network. The only diesel generation currently proposed on the site is a small unit to start the gas turbines if the grid is unavailable and a small standby unit at the gas receiving facility; neither powers the data centre.

Water requirements

How much water will be used?

Operations: A permanent connection to SA Water's potable mains is not proposed. The project proposes to harvest rainwater from the roofs of the data halls and store and treat it on site. This will be the main source of water for ongoing operations.

The data centre will use closed-loop, direct-to-chip liquid cooling with air-cooled heat rejection.

Water within these loops is recirculated rather than continuously consumed. Each 400 MW data hall will contain approximately 12 megalitres (12 million litres) of water-based coolant in its cooling system once filled.

Construction: Building the project will require water, as is standard for all construction projects, for earthworks, dust control and concrete among other requirements. Construction water requirements are currently being assessed. The assessment will be submitted to SA Water for review, and the findings will be made available on the PlanSA portal with the development application.

Will the project use groundwater or affect local bores during operations?

The project's primary operational water source is rainwater harvested from the roofs of the data halls, and operations do not rely on groundwater.

Will water be taken from the River Murray?

No. The project does not propose to take water from the River Murray, directly or by acquiring water allocations from local irrigators. External water suppliers for construction and commissioning are still being investigated, and the source of any water carted to the site will be confirmed as part of that process. Mains water in this district is drawn from the River Murray by SA Water, so any proposal to cart water from SA Water's network during construction would be assessed with SA Water first.

Will the project affect water supplies for local residents?

Not for its operations. A permanent connection to SA Water's potable mains is not proposed. The project's primary operational water source is rainwater harvested from the roofs of the data halls.

Any proposed use of SA Water's network during construction, including through commercial water carriers, would be assessed in consultation with SA Water so that impacts on existing customers are identified and managed.

Power requirements

How will the hub be powered?

The hub will be connected to the electricity network through a new connection to the existing ElectraNet 275 kV transmission lines that cross the site.

Quantum DC will contract new renewable energy (wind and solar) from suppliers elsewhere in South Australia to supply the project, and will build gas-fired generation (gas turbines) on the site, which runs to firm that supply when wind and solar output is low, not continuously.

Battery storage on the site is not part of this application. The battery projects co-located with and next to the site are being developed separately by other parties and are subject to their own approvals.

How much electricity will the hub use?

At full development the hub will have a capacity of approximately 1,200 MW, delivered in three stages.

When fully operating, the first two data halls are expected to use around 6,500 gigawatt hours of electricity a year.

The project is designed so that wind and solar supply around 80% of the electricity the data centre uses, with the on-site gas-fired generation supplying around 20% when wind and solar output is low. The greenhouse gas assessment lodged with the application reports emissions using the national accounting method, which does not credit contracted wind and solar, so its figures are presented on a different basis from this design objective.

Will the project affect power supplies for local residents?

No. The project brings its own supply to the market. New renewable energy will be contracted for the project, firmed by contracted storage elsewhere in the network and by the gas-fired generation on the site.

The aim is for the project to add to South Australia's electricity supply rather than draw on the supply that homes and businesses rely on.

Are new overhead transmission lines proposed?

No new long-distance transmission lines are proposed. The project substations will tie into the existing transmission lines within the site.

What about electromagnetic fields (EMFs) from the 275 kV transmission lines? Will they affect people or animals?

The new substations and the connection to the existing lines sit within the site, so no measurable increase in electromagnetic fields is expected beyond the site boundary.

Any electrical infrastructure associated with the project will be required to comply with the relevant Australian standards and regulatory requirements, and technical assessments will be undertaken as part of the planning process to confirm this.

Community benefits

Will there be benefits for the local community?

Quantum DC wants the project to deliver real and lasting benefits for the Tungkillo, Mannum and Murray Bridge communities, and wants to hear from the community about where support would make the most difference.

It should be noted that unlike renewable energy projects, data centres are not exempt from council rates, so the data centre will pay council rates to Mid Murray Council for the life of the project, which is expected to be 30 years or more.

Will the hub create local jobs?

Up to 600 people are currently estimated to be employed during construction, and about 200 people on an ongoing basis once operational. These are Quantum DC's current estimates and are being confirmed by independent economic modelling, which will be made available on the PlanSA portal as part of the development application.

Quantum DC intends to use local contractors and suppliers wherever it can, and intends to speak with the new Murray Bridge Technical College about apprenticeship opportunities as part of the community engagement process.

Residential amenity

What about noise from the facility?

Noise is expected during the construction period and would be managed via standard construction practices.

During operation the main sources will be the cooling plant on the data halls and the gas turbines when they are running. The gas turbines run to firm the hub's supply when wind and solar output is low, not continuously, which limits ongoing noise.

A specialist noise assessment is being prepared for the development application, covering both construction and operation. It will identify the measures needed to meet the required noise levels at nearby homes, such as equipment selection, enclosures, screening and operating controls.

What about air quality and greenhouse gas emissions from the gas turbines?

An air quality assessment is modelling emissions from the gas turbines, including on the days they run hardest, against the South Australian and national air quality standards at the nearest homes. A separate greenhouse gas emissions assessment covers construction and operation, including the on-site gas-fired generation.

Both reports will be lodged with the development application and published on PlanSA. The turbines run to firm the hub's supply when wind and solar output is low, not continuously, and the gas-fired generation will require its own generation and environmental licences from the State's regulators in addition to planning approval.

Will local roads be affected?

Heavy vehicle movements are expected around the site, mainly during construction. A traffic and transport assessment for the development application, covering site access, road safety and traffic management, is being prepared. It has already identified likely improvements, including widening at the Terlinga Road and Harrogate Road intersection, safety barriers and signage on Collins Road, and a cap on the speed of project vehicles on local roads. These are proposals at this stage and are subject to agreement with the Department for Infrastructure and Transport and Mid Murray Council.

Quantum DC intends to fund the road improvements the project requires, and expects to agree a road condition survey and repair arrangement with Council before construction starts. The preferred main access to the site is from Harrogate Road rather than Black Heath Road.

Will the Lavender Federation Walking Trail and the Lavender Cycling Trail be affected?

Both trails run along Collins Road past the site. Quantum DC has made contact with South Australian Recreation Trails Inc, which manages the trails, and will work with them on access and safety along Collins Road during construction and operation. Trail users will be kept informed of any temporary changes.

Will the development increase light levels in the surrounding area?

The facility will require operational lighting for safety and security. A lighting assessment and strategy are being prepared to ensure lighting is designed and managed appropriately and to minimise impacts on nearby properties and the surrounding rural environment.

Environmental and other matters

Will the project affect farming land?

Yes. The project will be located on land that is currently used for grazing. The site has a limited natural water supply, so it is not suited to more intensive farming such as growing crops. While some areas will accommodate the proposed infrastructure, approximately 100 hectares will remain available for grazing, so that use can continue across a substantial portion of the property.

Will the project impact bees and pollinators?

Specialist studies covering biodiversity, native vegetation, water, air quality and emissions, bushfire risk and other environmental matters are being completed for the development application. These studies will identify measures to avoid, minimise and manage impacts on flora, fauna and surrounding land uses.

Will native vegetation be impacted?

The majority of the site is grassland due to historical grazing. However, a small pocket of native vegetation has been identified in the north-east corner of the site, and scattered trees stand within the development footprint.

Quantum DC intends to preserve the north-east pocket and is not planning to build any infrastructure in it. The site layout is being designed to retain trees where practicable. Some scattered trees within the development footprint are likely to be removed; any clearance is assessed under the Native Vegetation Act 1991 and offset through the Significant Environmental Benefit scheme, and the extent will be set out in the ecology report lodged with the application. Native vegetation and biodiversity reports will be prepared as part of the development application.

How will biosecurity risks and weeds be managed during construction?

Construction activities will be subject to environmental management requirements. These may include measures such as vehicle wash-down procedures, weed management and site controls designed to minimise the spread of pests, diseases and invasive species.

How will bushfire and fire risks be managed?

Bushfire risk will be assessed as part of the development application. The project will be required to meet the relevant fire safety, emergency management and planning requirements. Appropriate fire prevention, detection and response measures will form part of the facility design.

How will wastewater and stormwater be managed?

Wastewater from staff amenities will be treated in an on-site wastewater treatment plant, with the treated water applied to land within the site under the required wastewater works approval. No wastewater is proposed to be discharged to creeks or watercourses. Water used to fill and clean the cooling systems is kept separate and is either reused on site or removed by a licensed contractor. Stormwater from roads, hardstand and car parks is not collected for reuse; it is directed to detention basins designed to hold and treat runoff so that flows leaving the site during rain are managed to pre-development rates. A stormwater management framework and flood assessment are being prepared by specialist engineers for the development application.

Flood modelling for the 1 in 100 year event is being completed, and the site layout is being refined so that buildings and electrical infrastructure sit outside the modelled flood extent.

How will emergency incidents be managed?

The project will be required to comply with the applicable safety and emergency management requirements.

Detailed operational procedures and emergency response plans will be developed before operation, in consultation with the relevant authorities.

Will the development's lights affect the River Murray International Dark Sky Reserve?

A lighting assessment is being developed for the development application.

The township of Tungkillo is located within the River Murray International Dark Sky Reserve. The project site is outside the Reserve, about 5 kilometres beyond its south-western boundary.

Will Aboriginal cultural heritage be considered?

Yes. A specialist Aboriginal cultural heritage assessment is being undertaken to identify and protect cultural heritage values and to inform consultation with the relevant Traditional Owner groups.

Quantum DC will also engage with First Nations groups as part of its community engagement.

Planning assessment process

Has an application been lodged?

No. No development application has been lodged yet and no decision has been made on the assessment pathway.

The proposal must go through a formal planning assessment process before any decision is made, and community feedback, local and state government advice and the technical studies will all be considered as part of that process.

How will the application be assessed?

Quantum DC intends to apply to the Department of State Development for Crown Sponsorship of the project.

The decision on sponsorship rests with the Department, which consults other State Government agencies before it decides.

If Crown Sponsorship is granted, the development application would be assessed under the Crown development and essential infrastructure provisions of South Australia's Planning, Development and Infrastructure Act 2016.

Under those provisions the application is referred to Mid Murray Council and State Government agencies for comment and placed on public notification for a minimum of 15 business days, during which anyone can make a written submission.

The State Commission Assessment Panel (SCAP) then considers the application and the feedback received, and the Minister for Planning makes the final decision.

Will technical studies be publicly available?

Yes. The technical studies submitted with the development application would be available during the formal notification period through the PlanSA portal, other than Aboriginal heritage information that is confidential under the Aboriginal Heritage Act 1988.

How will early feedback be used?

Feedback received through early engagement will be considered by the project team in finalising the development application.

Early engagement feedback will be summarised in a What We Heard report, published on the Quantum DC website and submitted as part of the development application package provided to the assessing authority. As this is not a formal submission process, individual responses will not be provided to feedback received through the early engagement.

What happens next?

Following completion of the early community engagement activities, the project team will finalise the technical studies and supporting documentation required for the development application. Quantum DC will also finalise and submit its request for Crown Sponsorship to the Department of State Development.

The Crown Sponsorship request will then be considered by the Department of State Development. If Crown Sponsorship is granted, the development application will be formally lodged and the statutory assessment process will commence.

As part of that process, the application will be referred to relevant State Government agencies and the local council for comment and will be placed on public notification for a minimum of 15 business days.

How can I provide formal feedback?

When the development application is lodged, statutory public notification will follow, providing an opportunity for you to make a formal written submission. This feedback will be considered by the decision-maker as part of the assessment process.

Where can I get more information?

- Attend a community information session to learn more about the proposal.

  Sessions will be held at the Mannum Leisure Centre, 51 Adelaide Road, Mannum, on

  Friday 20 November (10 am to 12 noon) and

  Saturday 21 November (11 am to 1 pm, and 2 pm to 4 pm).

  The venue can accommodate approximately 200 seated attendees. As capacity is limited, entry will be available on a first-come, first-served basis.

- Visit quantumdc.com.au/tungkillo for project information, the community fact sheet and to register for project updates.

- Contact the project team through URPS on 08 8333 7999 or engage@urps.com.au.

- Access the development application and the technical studies on the PlanSA portal during the statutory public notification period.