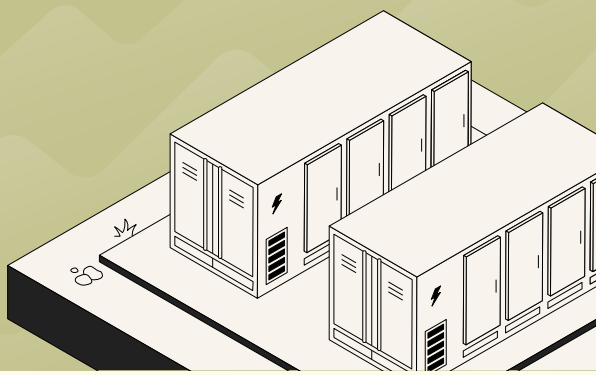
avenis energy

FAQS

Warrenheip Battery Energy Storage System (BESS)



General FAQs

What is proposed?

Avenis Energy is proposing to construct and operate a 240MW Battery Energy Storage System (BESS) in Warrenheip (VIC), located 5 km east of Ballarat CBD and next to the Ballarat Terminal Station. The purpose of the development is to assist the national electrical grid at times of peak demand and in times of emergency.

What is a BESS?

A BESS is an energy storage system that uses a group of batteries to store electrical energy from a variety of sources, including solar. The system compensates for the intermittency of sources, providing backup power to address certain constraints such as weather conditions and lack of grid space. They are crucial to the increased adoption of dispersed energy sources and infrastructure, reducing the risk of widespread power outages.

Why is this Project needed?

VIC has pledged to increase the state's renewable energy penetration to over 65% by 2030 and 95% by 2035. This statewide initiative will bring forward around $9.5 billion in economic activity and create 59,000 jobs over the period to 2035 (Department of Energy, Environment and Climate Change, 2024a). It will also cut annual energy bills on average by $110 (for households) and $3,700 (for businesses) and reduce VIC's carbon emissions by approx. 55 million tons (Department of Energy, Environment and Climate Change, 2024b). Currently, the renewable energy penetration in VIC is 37.8%.

This project will contribute to reaching this target, create new jobs, and will contribute to electricity price reduction and carbon emissions reduction.

Who is Avenis?

Avenis Energy is dedicated to developing large-scale renewable energy projects that deliver clean, green energy into the transmission network, reducing reliance on fossil fuels and helping minimise the impacts of climate change. Avenis prides itself on working closely with landowners, near neighbours, key stakeholders and the wider communities where our projects are proposed.

The Avenis team has significant experience in the renewable energy sector across all elements of the development cycle, from site selection, planning and permitting to engineering, construction and operation. The team has been working together since 2018 and is solely dedicated to the Australian market, with a proven track record of developing high quality community sensitive projects.

The Process

How does the Development Application process work?

The Development Facilitation Program (DFP) is a Victorian Government fast-track planning pathway for strategically significant projects, including large renewable energy and battery storage developments.

Instead of going through the standard council planning process, projects are assessed at state level.

Who approves the project?

Under VIC's new Development Facilitation Program (DFP), the Minister for Planning will decide whether to issue a development approval. Decisions will be able to be made in as little as four months.

When will construction commence and how long will it take?

The construction start date is dependent on a variety of factors, including approval, selecting a construction company and receiving grid connection approvals, negotiation of a Power Purchase Agreement (PPA) and completion of the Financial Close process. Once construction contractors are appointed, works on site are to take approximately 12 months.

How long will this project operate for? What happens after that?

The operational life of the project is expected to be up to 35 years. After this time, the site will either be decommissioned and returned to its original purpose as freehold land or, depending on future energy requirements, the project may be reutilised and upgraded, subject to landowner agreements and existing approvals. be undertaken to evaluate noise levels, any potential impacts, and provide clear mitigation measures to be incorporated into the BESS design to prevent regulatory noise emission levels at close by receivers.

Design Considerations

What does a BESS look like?

BESSs are container-like modular systems that are configured based on site and capacity obligations and can be compared to shipping container-like objects. As technology improves, the systems are becoming increasingly efficient and more compact.

Will there be any noise impact?

Like all large-scale developments, BESS facilities may generate noise, however, due to its location it is not expected to be heard by nearby residents or the community. Studies are ongoing to assess noise levels, the impact this may have on the area, and clear mitigation recommendations.

Will there be any visual impact?

Inevitably, the installation of a BESS will have some effect on the current look of the landscape, though the BESS cubicles are unlikely to emit glare or reflection. The development application process consists of independent technical assessments, and visual impact will be assessed as part of this. If required, BESS facilities can be screened (by either vegetative or artificial means) to minimise any potential visual impacts.

Avenis is committed to working closely with the local community to address any concerns and encourages the community to approach them with any issues that may arise.

Will there be electricity outages during construction?

No outages expected during the construction phase. Once the BESS is operational, it will help to increase the grid stability and reduce outages.

Technical

What type of battery units will be use?

The design is still to be finalised; however, the latest technology will be used at the time of construction. BESS units also can be adapted to utilise updates in technology, and with the battery manufacturer being a global leader in battery research and development, they are well placed to make these adaptations.

How high will the units be?

BESS units will be installed on low-lying structures and are expected to not exceed 5.5m above the natural ground level. It is expected that the project area will be at the same height or lower than other existing features in the landscape.

Will there be electricity outages during construction?

There will be no outages expected during the construction phase. Once the BESS is built and operational, it will help to increase the grid stability.

How will construction traffic be managed?

Access to the development site is anticipated to be from the surrounding road network. During the anticipated 12-month construction period, construction vehicles would range from light vehicles to 26 m B-Doubles. Light vehicles would arrive during AM/PM peaks with heavy vehicle deliveries to be spaced out during the day.

Are there health risks associated with EMF's from a BESS?

EMFs (electro-magnetic fields) are naturally present in the environment. They are present in the earth's atmosphere as electric fields, while static magnetic fields are created by the earth's core. EMF are also produced wherever electricity or electrical equipment is in use (e.g. household appliances like fridges, and powerlines).

The use of electricity in daily life exposes us to low frequency EMF and are not considered a risk to human health (NSW Government 2022). Your kitchen stove has an EMF range of 2-30 milligauss (mG) and your hairdryer 1-70mG. Standing at the edge of a transmission powerline easement would be in the range of 10-50mG, and under a transmission powerline 20-200mG.

The current international standard for human exposure to limit EMF set up the International Commission of Non-Ionizing Radiation Protection (ICNIRP) is 2000mG (NSW Government 2022).

EMFs from a BESS are typically less than household appliances and are not distinguishable from background levels at the site boundary.

Technical and engineering experts, including the Australian Radiation protection and the Nuclear Safety Agency (ARPANSA) have found no known or documented electromagnetic radiation impacts associated with big batteries.

Environmental

Do batteries increase fire risk?

The Project will not increase the risk of bushfires in the area.

How will fire risk be managed on site?

The project layout and design will be compliant with latest CFA design guidelines and model requirements for renewable energy facilities in terms of clearance, accessibility, firefighting water supply, fire break buffer zones, and so on.

Management Plans will be produced prior to construction commencing that will include site-specific Fire, Risk and Emergency Management Plans to address the management of potential fires during construction, operations, and decommissioning.

Are state fire authorities consulted on projects and plans?

Avenis Energy will work closely with the relevant fire service agencies to confirm access requirements for the BESS if there is a bushfire that moves into the area, or if a fire starts in the BESS.

Avenis will continue to seek and take guidance from the CFA to ensure the final design meets all requirements and standards.

Is the site affected by flooding?

Assessments completed to date indicate that the site is not flood prone. In the unlikely event of stormwater flooding, where water may pool from heavy rainfall events, BESS infrastructure is expected to remain stable.

Is there a contamination risk?

A BESS safely stores electricity in sealed battery units housed inside secure containers. It does not burn fuel, produce emissions, or store oil or diesel, so there is no risk of fuel spills or air pollution. The batteries are fully enclosed and designed so their materials cannot leak into soil or groundwater under normal operation. In Victoria, projects must meet strict environmental and safety requirements set by regulators such as the Environment Protection Authority Victoria and comply with state planning and safety standards. With built-in fire protection systems and responsible end-of-life recycling, BESS facilities are considered a safe and clean part of Victoria's renewable energy infrastructure

What will happen to the remaining residual land not used by the BESS site?

The residual land will remain as currently used.

Social and Economic

How will Warrenheip benefit from the Project?

LOCAL JOBS AND ECONOMIC ACTIVITY

Construction creates short-term employment opportunities for contractors, suppliers, and local service providers. During operation, the facility requires ongoing maintenance and technical support, contributing to local economic activity.

INVESTMENT IN THE REGION

The project represents private investment in local infrastructure and contributes to council rates and regional development.

MINIMAL ONGOING IMPACT

Once built, a BESS operates quietly, produces no emissions, and does not require fuel deliveries, making it a low-impact piece of infrastructure compared with traditional power generation.

How many jobs will be created during construction of the project?

Employment opportunities will range from skilled to manual labour, with jobs potentially reaching 80-90 during the peak of construction. Using qualified local contractors is always a key element for Avenis when developing a project, and we intend to work with local service and product suppliers to boost the local economy.

How many jobs will be available during operations of the Project?

1-2 permanent roles are likely to be required for the operation of the project. Maintenance contracts for fence repair, road grading, etc. would also be required and would likely be met by local contractors.

What other benefits will the community receive?

As the project will be operating for 35 years, Avenis is committed to delivering long-term investment in the regions and the communities in which we operate. Engaging with your community is essential to us and ensures that our project offers mutually beneficial economic and social outcomes.

Avenis will be continuing to engage and update all stakeholders that have an interest in – or may be impacted by – the project and will use information gathered to develop the most appropriate community benefit programs that foster positive outcomes and provides value to the local community.

Benefits will also include potential road or intersection upgrades, diversified income within the community through increased revenue to ancillary services such as food and accommodation, and the delivery of clean, zero-emissions electricity to meet the region's energy needs.

Will neighbouring insurance premiums be impacted by the development?

Neighbouring property insurance premiums are not expected to increase because of the BESS development. BESS facilities are designed, engineered, and operated to meet strict safety and environmental standards set by authorities in Victoria, including energy regulators, the Environment Protection Authority Victoria, and relevant planning and building codes.

Modern battery storage systems have multiple layers of protection such as robust enclosures, fire suppression systems, and continuous monitoring. These safety features are like those used in other industrial and infrastructure developments and are specifically intended to reduce risk, not create it.

How will construction traffic be managed?

During construction of the BESS, traffic will be carefully managed to keep local roads safe and minimise disruption. We will develop a Construction Traffic Management Plan (CTMP) in line with requirements set by the Department of Transport and Planning, local council, and VicRoads where applicable.

Will there always be a contact onsite in case of emergency?

A dedicated 24/7 contact will be provided during construction and operations, and an Operations Manager and other staff members will be based near the Project. The Project will also be monitored continously by remote CCTV.

How can local suppliers get in touch?

EMAIL US AT

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avenisenergy.com.au

QUESTIONS AND FEEDBACK

For more information please visit the project website at avenisenergy.com.au/projects/warrenheip

Or complete the feedback survey via the QR code.