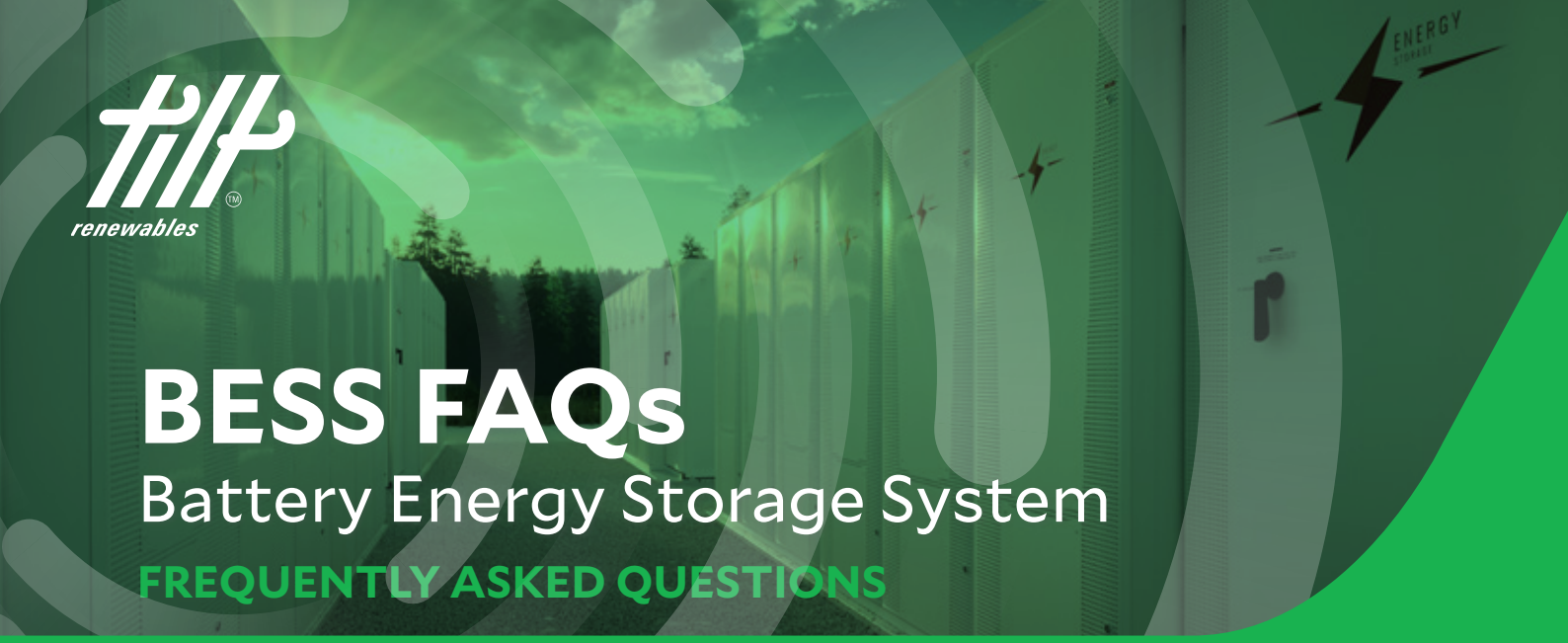


BESS FAQs

Battery Energy Storage System

FREQUENTLY ASKED QUESTIONS

This guide provides general information about how Tilt Renewables develops, builds and operates Battery Energy Storage System (BESS) facilities.

BESS Technology

BESS facilities provide an opportunity to store energy generated from another source. BESS facilities are key to improving grid reliability for energy by storing low-cost electricity (such as renewable energy) when there is an oversupply or during periods of low demand so that electricity is available when demand is higher. BESS facilities can also stabilise the grid during frequency disruptions and help reduce the frequency of blackouts and the need for load shedding in instances of supply imbalance.

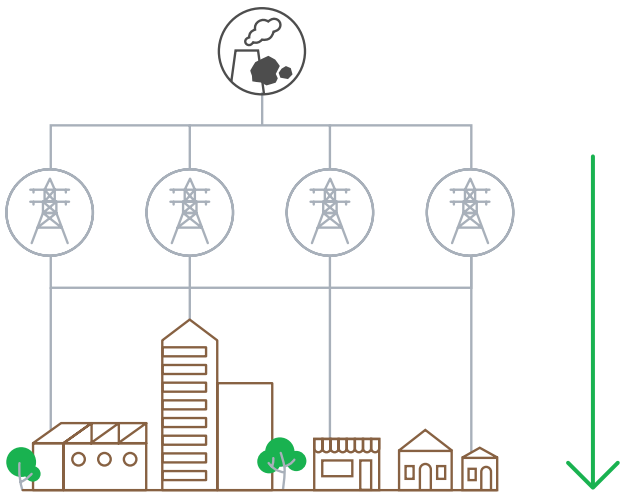
BESS facilities typically consist of several key components including battery units or 'enclosures', inverters and transformers. The final configuration of a BESS facility will depend on the BESS technology, BESS supplier and required output.

BESS facilities most commonly use lithium-ion to store the electricity until it is ready to be distributed to the network, however there are a variety of technologies available to store the electricity including sodium ion, molten-state (such as sodium sulphur) and others.

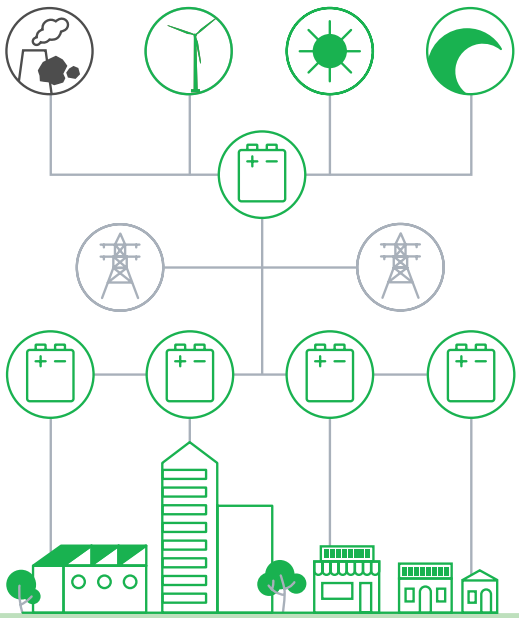
Where possible, BESS facilities are co-located with or near a grid connection point (such as a terminal station), therefore minimising the need for additional connection infrastructure.

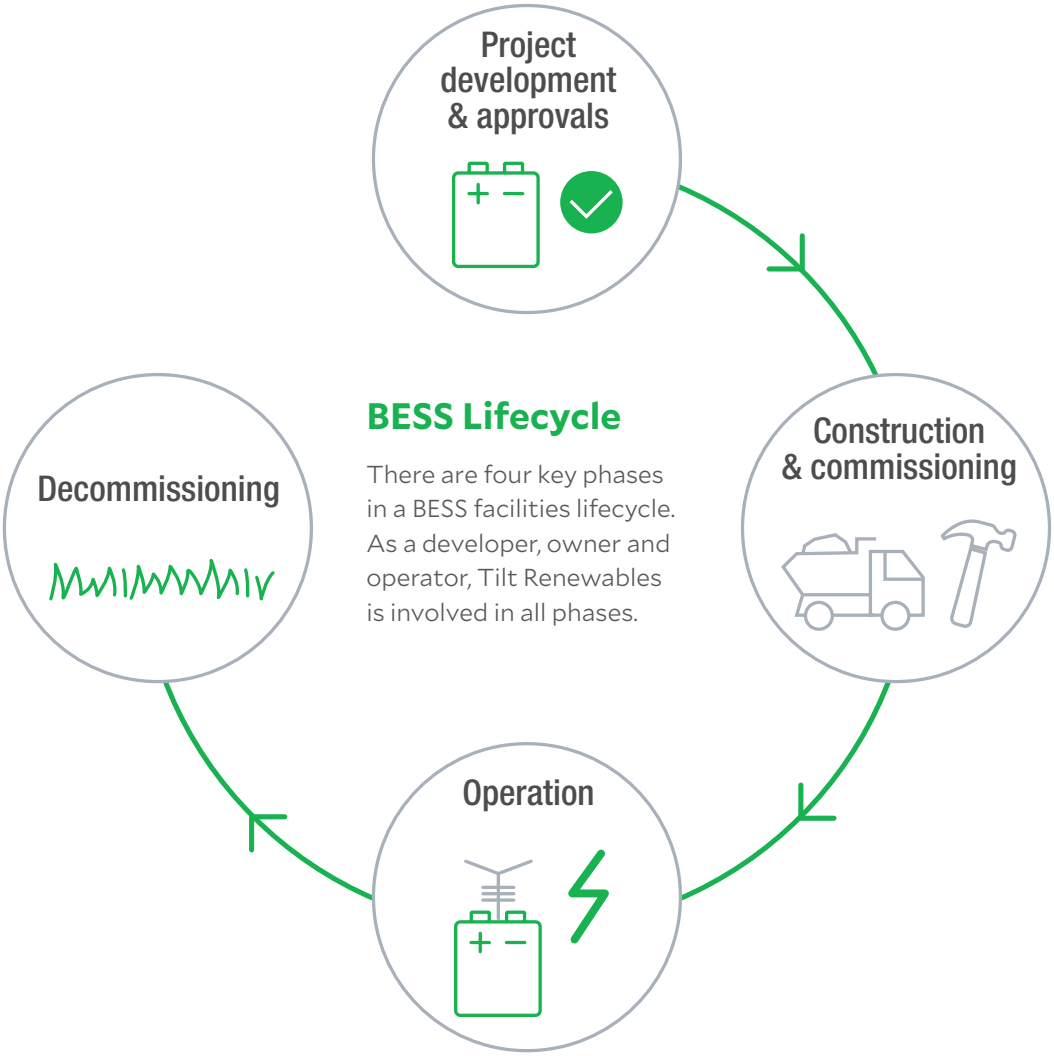
Victoria's energy transformation

Centralised fossil fuel production



Large-scale sustainable production





BESS Lifecycle

There are four key phases in a BESS facilities lifecycle. As a developer, owner and operator, Tilt Renewables is involved in all phases.

Project Development and Approvals

From finding the right location to obtaining approvals and finalising a design – a lot of work goes into developing a BESS. Key activities in BESS development include:

- Feasibility studies
- Grid connection studies
- Site investigations
- Consultation with local Council and government agencies
- Establishing agreements with landowners
- Planning and environmental studies and approvals
- Detailed design
- Preparation of management plans in accordance with the development approval
- Investment decision and raising equity to fund the Project
- Procurement of contractors and components

What's involved in designing a BESS?

BESS facilities are designed in consideration of a range of technical, community and environmental factors including:

- Proximity and connectivity to the grid
- Safety
- Relevant standards, guidelines and legislations
- Constructability – whether the design is practical to build
- Potential environmental and heritage impacts
- Operations and maintenance requirements
- Project costs

What planning and environmental approval process is undertaken for a BESS Project?

Depending on the BESS location, local, state and/or federal government approvals may be required.

What environmental studies do you undertake?

As part of early feasibility of a BESS, we identify key environmental constraints across a project area that informs the BESS design with the aim of minimising environmental impacts where possible.

To support the planning and environmental approvals process for a BESS, detailed environmental assessments are undertaken by technical specialists to assess the potential impacts and associated mitigation measures. The extent to which these environmental assessments are required are based on the location and jurisdiction of the BESS, but typically include:

- Biodiversity
- Cultural heritage
- Noise
- Traffic
- Landscape and visual
- Hydrology
- Bushfire and/or Hazard

Construction and commissioning

At Tilt Renewables, we work closely with our contractors, neighbours, local councils and communities to plan and manage construction responsibly.

We are committed to reducing construction impacts on communities and environment and keeping people safe whilst we work. Some of the ways we do this include:

- Working during standard construction hours where possible
- Monitoring and actively managing construction activities
- Using well-maintained equipment
- Meeting requirements set out in planning conditions, legislation, industry standards and guidelines
- Regular communication with the surrounding community and local Council
- A strong safety culture and clear procedures

How long does it take to build a BESS?

The size of the BESS will typically determine the construction period, however, can typically take between 6 to 12 months.

How do you make sure construction is undertaken responsibly?

There are a range of requirements, standards and guidelines in place to ensure construction is well planned and effectively managed. Requirements are set by government authorities, developed as part of the planning process and built into the construction contract that Tilt Renewables has with the construction contractor.

Management plans are developed to ensure all requirements are understood and addressed.

A Construction Environmental Management Plan (CEMP) provides a 'guidebook' for workers on site. It sets out the approach to managing all aspects of construction including working hours, safety and security, water and dust management, noise and vibration controls and traffic.

Other environmental management plans (e.g. an Environment Management Plan) identifies potential impacts and the strategies and plans in place to manage impacts and meet requirements. It ensures that appropriate environmental management practices are followed.

What should I expect during construction?

TRAFFIC
Peak traffic movements associated with a BESS will occur during construction. A Traffic Management Plan (TMP) is developed in consultation with the relevant road authority to ensure that construction traffic is appropriately managed. We use major highways and main roads where possible and local roads where necessary to access the construction site.

WORKING HOURS
The Environment Protection Agency (EPA) in each state recommends standard construction hours. This is generally around 7am to 6pm Monday to Friday and 8am to 1pm on Saturdays.

NOISE
Construction noise targets are guided by state or territory legislation. If construction activities on one of our projects is expected to exceed the noise targets at any time, we put mitigation measures in place to limit the impact on local residents as much as possible. This may include scheduling works so that noisier activities occur at times when they will have the least impact. Using well maintained equipment and machinery, minimising noise from vehicle reversing beepers, turning off machinery that is not in use and putting speed limits in place to minimise engine noise, are some other measures used to reduce noise from our sites.

SOCIAL AND ECONOMIC
During construction, you may find more people and vehicles around town and on the roads. This additional temporary workforce will assist in providing local towns an economic boost through spending on accommodation, food and local goods and services.

SAFETY
Safety is our first priority. We work closely with our construction contractors and Health and Safety Management Plans are developed to drive safe construction practices and ensure that potential risks are identified, mitigated and communicated to workers. All staff and contractors undertake mandatory training in safety and emergency procedures before starting work on site.

Operation

Grid scale BESS facilities are generally expected to have an operational life of approximately 15 to 20 years and are typically monitored remotely, without the requirement of permanent staff on site. Staff are however required to access the site from time to time to undertake inspection and maintenance activities.

What does a BESS look like?

BESS facilities are typically containerised, modular systems that can be configured based on specific site and capacity requirements. However, BESS technology is continuously evolving, with BESS components becoming increasingly more efficient and compact in size.

If required, BESS facilities can be screened (by either vegetative or artificial means) to minimise any potential visual impacts.

How do BESS facilities connect to the Grid?

BESS facilities connect to the grid either via an overhead or underground transmission connection to a nearby terminal station or substation.

Incident management

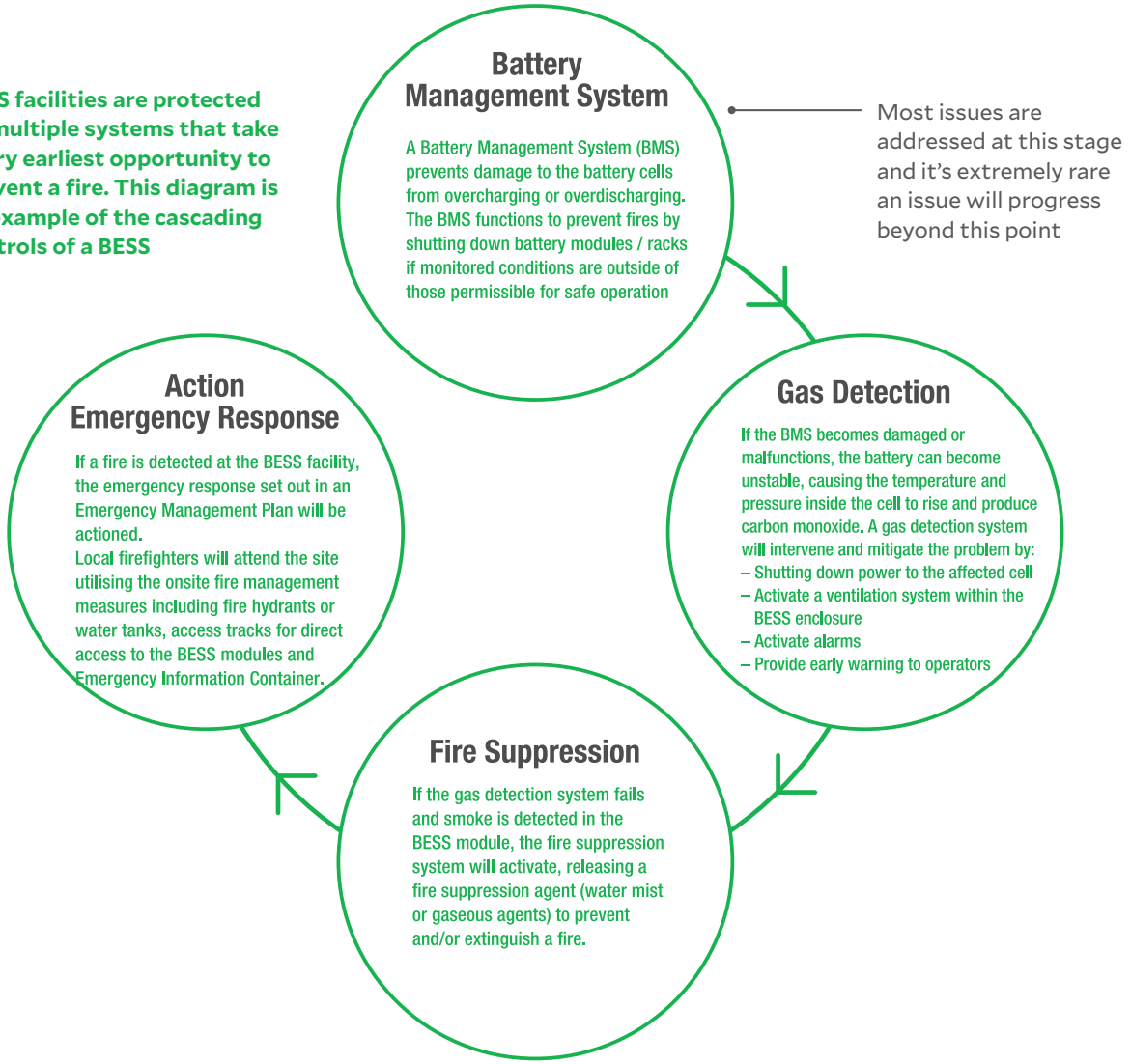
BESS facilities are equipped with Battery Management Systems (BMS) that monitor the operational and fault status of the system for all parameters required to ensure safe operation of the BESS, including State of Charge (SOC), voltage, current, power limits, and temperatures. Parameters are monitored at the appropriate level of the battery cell, module and rack as applicable. The BMS functions to prevent potential fires by shutting down battery modules / racks if monitored conditions are outside of those permissible for safe operation.

Different BESS suppliers have differences in the specific integrated fire monitoring and control systems. However, all BESS facilities must comply with the relevant guidelines, standards and conditions of any issued approval and operate in accordance with the legislation applicable to each BESS facilities jurisdiction.

Risk management of a BESS facility is typically undertaken by way of a Risk Management Plan in conjunction with the relevant fire authority that identifies, assesses and outlines controls for the management of on-site and off-site risks at the BESS facility.

The emergency procedures for a BESS facility are typically developed in conjunction with the relevant fire authority, and outlined in an Emergency Management Plan

BESS facilities are protected by multiple systems that take every earliest opportunity to prevent a fire. This diagram is an example of the cascading controls of a BESS



Managing chemicals

BESS facilities are designed to manage chemicals on site. In the unlikely event of a leak containment measures such as bunding, spill trays and chemical absorbents are in place to capture materials on site. Chemical hazards or 'dangerous goods' are typically identified and addressed by way of a Hazard Assessment and Emergency Management Plan (or equivalent).

Will I be able to hear a BESS?

Like other utility scale facilities, BESS facilities have the potential to generate some sound. The main source of the sound is the cooling fans required to regulate the operating temperature of the individual battery cells. The sound they make is similar to an air conditioning unit or a dull whirring noise.

Detailed noise studies are undertaken by specialist consultants who apply authorised environmental noise guidelines to measure noise levels during project development to ensure that noise generated will be within the applicable noise limits.

Once operating, BESS facilities are required to meet strict noise requirements which are put in place through the planning process and comply with the relevant noise protocols and/or guidelines.

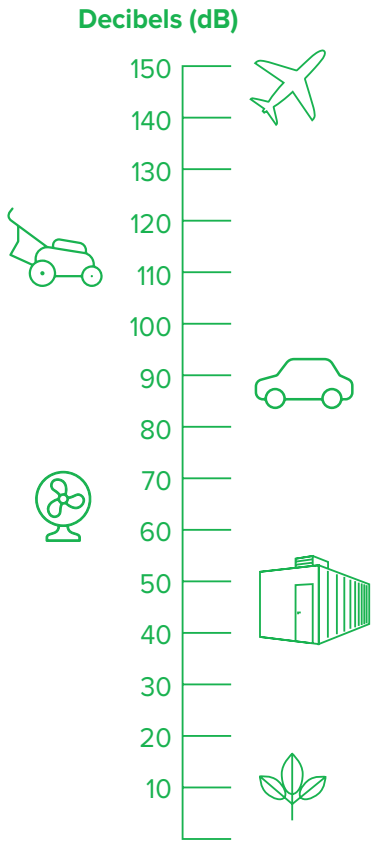


Diagram: Typical BESS noise levels are 45dB approx. 200m from the facility.

What does MW and MWh mean?

MW means megawatts and is the measurement of the rated power capacity of a BESS, being the total possible instantaneous discharge capability starting from a fully charged state. MWh means megawatt-hours and is the measure of the storage duration of a BESS, being the amount of time energy can discharge at its power capacity before depleting its energy capacity. For example, a BESS with 100 MW of power capacity and 400 MHh of usable energy capacity will have a storage duration of four hours.

Decommissioning

When a BESS reaches the end of its life, the facility can be decommissioned and the area returned to its original condition. Decommissioning of a BESS facility will likely involve:

- Dismantling and removing the BESS facility infrastructure
- Removing related infrastructure
- Rehabilitation of the site

The BESS operator will be responsible for the decommissioning of the BESS. Requirements for decommissioning – such as reinstating the land – are set out in contracts with landowners and in planning approvals.

Details of the decommissioning process are typically outlined by way of a Decommissioning Management Plan, that is prepared just prior to a BESS being decommissioned and identifies all infrastructure, equipment, buildings and structures to be removed and details of how these will be removed.

Decommissioning of a BESS facility will be undertaken in accordance with the applicable regulations that govern the safe transport and disposition of used equipment or waste. Where possible, balance of plant material (such as steel and concrete) will be recycled. Whilst inverters, control systems and other electronic equipment may be more challenging to recycle, useful materials from these components can often be recovered.

Whilst the research and opportunities for recycling BESS components is in its infancy, the industry continues to develop processes that are in line with circular economy principles: cradle to-cradle design, achieving 100% recyclability, designing out waste and using recycled inputs.

Employment

Construction in the renewable energy sector creates jobs on site and in businesses that supply the projects, directly or indirectly.

What kind of jobs do BESS facilities create during construction?

Construction creates an economic boost for regional communities by increasing demand for local goods and services. Typical jobs created during construction include:

- General labourers
- BESS installers
- Concrete suppliers
- Accommodation providers
- Local pubs, hotels, food service providers

What kind of jobs do BESS facilities create during operation?

During the operation of a BESS, employment is generally limited to inspection and maintenance activities by the BESS operator.

Is there work for local people and businesses?

We are committed to employing local people and buying local wherever possible. We are always on the look out to build new working relationships in the industry and encourage you to register your services / business on our Goods & Services Register.

Tilt Renewables, as the owner of the BESS facility, will not typically be directly employing workers, this will be done by our delivery partners and contractors (and their sub-contractors).

You can contact them directly when they are appointed or register your interest on our Goods & Services Register and we will pass your details onto the appropriate delivery partner or contractor when appointed.

WORKING WITH COMMUNITIES

What economic benefits can a BESS create for local community?

Local community benefits can include:

- boost to the local and regional economy and local businesses
- jobs during construction
- direct payments to landowners
- wider community benefit sharing such as education and training programs

How do you keep people informed about the Project?

We use a range of tools to keep people up to date. These include:

- Website – dedicated project page
- meetings, phone calls, emails and/or letters to anyone directly affected
- newsletters
- fact sheets
- updates during construction
- meetings with relevant Council, government agencies and community groups

How do you involve communities in planning for, and making decisions about, a BESS?

We are committed to positive engagement practices and ongoing engagement throughout all stages of a project's life – from site selection through to decommissioning. We engage with local councils, landowners, neighbours and surrounding communities as early as possible, keeping people informed and involving people in decisions that they are able to influence, such as benefit sharing initiatives. We also encourage our community stakeholders to sign up to our project newsletters to make sure they stay up to date with projects as they progress.

Contact us:

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