# The Flinders **GREEN** SHEET

*The Flinders Ranges Council "Green Sheet" aims to raise community awareness about the environment by providing useful information and tips to residents and businesses in the Council region. The Flinders Ranges Council "Green sheet" will be produced quarterly. We are open to any suggestions and ideas that can help to produce this document.*

## This months topic: House Batteries

**January 2018**

*What are house batteries?*

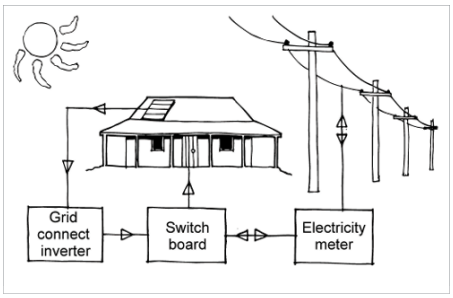
Batteries and other energy storage devices store energy so that it can be used when needed. In a stand-alone power system, the energy stored in batteries can be used when energy demand exceeds the output from renewable energy sources like solar (e.g. on a cloudy day) and wind (e.g. on a still day).

Inverters and other energy conversion devices turn energy from one form to another. An inverter in a grid connected renewable energy system converts direct current (DC) electricity from solar panels or a wind turbine into alternating current (AC) mains power.

Any renewable energy system also includes switches, circuit breakers and fuses to ensure it is electrically safe and to allow major equipment to be isolated for maintenance.

A grid connected renewable energy system converts DC electricity from a power source, such as solar panels, to AC mains power and feeds it into the grid. It usually consists of the energy source, an inverter and a meter.

Battery banks connected to the grid, with an appropriate inverter, may work as an uninterruptable power supply to make energy available during a power outage for all or some of the electrical loads in a home or business.


## Did you know.....

- Lead-acid batteries are often used in renewable energy systems.
- Lithium batteries, though more expensive than lead-acid, are becoming more affordable and can have a much longer life.
- Nickel iron batteries are harder to find and less efficient than lead-acid or lithium ion but have very long lives.
- Flow batteries (zinc bromine and vanadium redox) and flywheel batteries can be used in renewable energy systems but are complex and expensive.
- Most batteries are composed of a number of cells. In stand-alone power systems, the battery bank voltages commonly used are 12V, 24V, 48V or 120V.
- Batteries can be supplied as a mono-block but usually come as individual 2V cells which are assembled into a complete battery on site.

The Powell Gardens in Quorn are managed by a small group of dedicated volunteers with a wide and varied range of skills and knowledge on local native plants. If you are interested in more information on growing natives at home, head down to a Powell Gardens working bee to learn about planting in local conditions. These are held on the second Sunday & fourth Thursday of every month at 9am.

Reduce... Reuse... Recycle...

## Tips for battery use:

- Use the correct size and type of battery specified by the manufacturer of your device.
- Store batteries, in their original packaging, in a dry place and at normal room temperature until ready to use.
- Replace all used batteries in your device at the same time. Insert batteries properly, with the plus (+) and minus (-) terminals aligned correctly. CAUTION: Some equipment using more than three batteries may appear to work properly even if one battery is inserted incorrectly.
- Keep all batteries in a safe place away from children and pets, particularly the smaller sized batteries.
- Where possible, recycle your batteries where communities offer recycling or collection programs. You can contact Council for information about the disposal options in your area.
- Remove batteries from equipment while it is being powered by household (AC) current.


## Q & A .....

### Where can I dispose my old household batteries?

The Flinders Ranges Council have a disposal bin that is available in the office for you to put old household equipment batteries in for recycling.

Batteries contain materials such as lead and acid that are harmful to the environment. When replacing a battery bank, dispose of the old batteries at a battery recycling station or other suitable site. Metals inside batteries can be valuable and many recyclers will pay for old batteries.

Alkaline batteries can be safely disposed of with normal household waste. Never dispose of batteries in fire because they could explode.
Alkaline batteries are composed primarily of common metals—steel, zinc, and manganese—and do not pose a health or environmental risk during normal use or disposal.

It is important not to dispose of large numbers of alkaline batteries in a group. Used batteries are often not completely dead. Grouping used batteries together can bring these live batteries into contact with one another, creating safety risks.

### Coming up in future issues

- Native Plants
- Misunderstood Species
- Green Shopping

**If you have any suggestions for topics for future issues please let us know.**

## Green Sheet Challenge:

Instead of throwing away household batteries that you no longer need, bring them into the Council office and Council will recycle them.

Please let us know how you went with this months challenge!
Would you like to see a particular topic covered next month, or do you have some suggested green living tips?
Please send your ideas to greensheet@frc.sa.gov.au or 'Greening the Flinders', PO Box 43 QUORN 5433