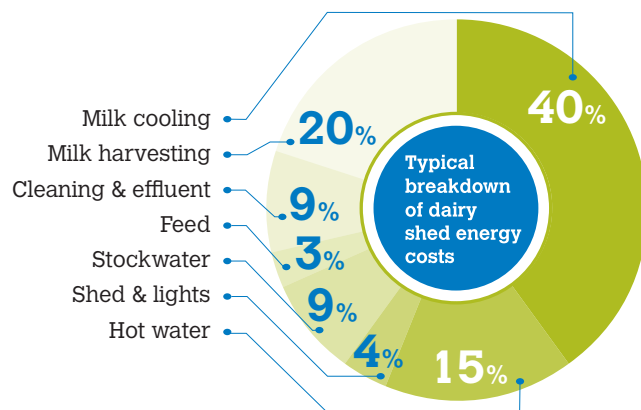


Typical breakdown of dairy shed energy costs

The key energy use areas are: milk cooling, milk harvesting and hot water heating.



Graph courtesy of NBA Consulting

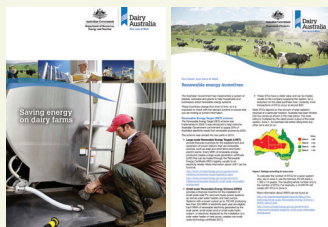
Be realistic about the role of renewable energy in reducing your electricity costs.

The timing, peak load and reliability of electricity in a dairy can be tricky to meet with most renewable energy options.

However, there are many other strategies to help reduce energy use and reduce costs.

For more information, visit:

frds.dairyaustralia.com.au/events/smarter-energy-use/



Resources include:

- > Saving energy on dairy farms booklet
- > Renewable energy technical factsheets



DairySAT, the environmental self-assessment tool, also has a module on energy use.

Visit: www.dairysat.com.au

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Dairy Australia Ltd ABN 601106227
Level 5, IBM Centre
60 City Road Southbank VIC 3006
T + 61 3 9694 3777 F + 61 3 9694 3888
E enquiries@dairyaustralia.com.au
www.dairyaustralia.com.au

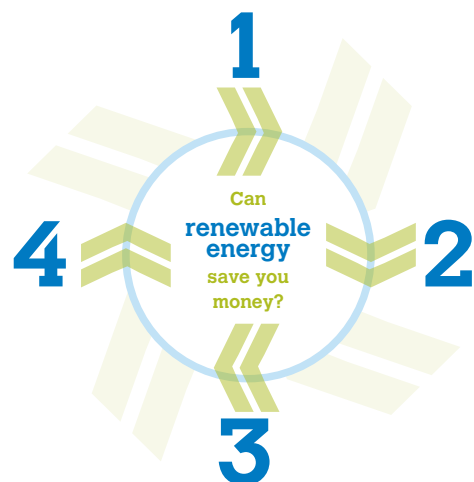


Is renewable energy right for my farm?

Helping you to make an informed decision about the feasibility of renewable energy options



Can renewable energy save you money?



1 **Find**
the energy leaks

2 **Reduce**
the energy needed

3 **Pay less**
for your energy

4 **Offset**
remaining energy
needs with renewable
energy, if cost-effective



Retro-fitting renewable energy in your dairy can cut your power bill, but the return on investment can be a long time coming.

The greatest return on investment can be from implementing simple energy saving changes, which may have immediate benefits.

Follow the process on the reverse side of this poster to learn how to identify potential energy and financial savings for your farm and evaluate whether there is an opportunity to further offset energy costs using renewable energy.

To help you navigate the sales talk, we have provided the questions to ask any renewable energy sales consultant.

If they can not provide you with all of the answers, they may not be the best person to provide advice for your farm.



Is renewable energy right for my farm?

Existing dairies
- Start here

1

Find the energy leaks

Have you completed an energy assessment for your farm?

YES

NO

Contact

Dairy Australia or visit
[frds.dairyaustralia.com.au/
events/smarter-energy-use/](http://frds.dairyaustralia.com.au/events/smarter-energy-use/)
for more information about
on-farm energy assessments

Building a new
dairy - Start here

Reducing energy consumption for milk cooling, milk harvesting and hot water production provide the greatest energy savings.

Consider these factors:

Milk cooling: Adequately sized plate coolers, double-bank plate coolers, cooling towers, glycol cooling.

Milk harvesting: Variable-speed drives for vacuum and water pumps, aiming for short milking times if practical.

Hot water: Optimise water use and temperatures, off-peak heating, insulating pipes and cylinders, heat-recovery or solar water heating systems.

2

Reduce the energy needed

Have you implemented ways of reducing energy use in the dairy?

options include:

- > Hot water systems
 - Adequate volume to hold hot water for two milkings
 - Cylinder in good condition and maintained including electrical cords
 - Insulation on pipes
 - Thermostat set not higher than 85°C
- > Milk cooling
 - Precooling size and efficiency
 - Refrigeration plant location and maintenance
 - Condenser unit location and condition
 - Dairy equipment maintenance and condition and length of milking
 - Timing and infrastructure maintenance of water pumping

YES

NO

For more information

about reducing energy use see the Dairy shed energy saving checklist on page vi of the **Saving energy on dairy farms** booklet available at:
[frds.dairyaustralia.com.au/
events/smarter-energy-use/](http://frds.dairyaustralia.com.au/events/smarter-energy-use/)

3

Pay less for your energy

Have you looked at your current energy plan and compared it to other options in the market? Is your energy supplier offering the best deal?

Load shift! It is generally cheaper to move energy use to off-peak tariffs overnight than it is to offset peak energy use with renewable energy. For example, investigate using off-peak power to charge bulk volume of hot water

YES

NO

For more information
about comparing energy plans see page 2 of the **Saving energy on dairy farms** booklet.

For more information

about improving energy use and savings in the dairy farms refer to the **Saving energy on dairy farms** booklet.

4

Offset the remaining energy needs with renewable energy

4.1 Physical feasibility:

If you are approached by or are seeking a renewable energy supplier or consultant, ask them to demonstrate the following points:

- > Can a renewable energy system be connected to your existing grid supply? You may be restricted to the generation capacity of a system (Single Wire Earth Return (SWER)). If so local voltage can pose problems.
- > Will they come to your farm site to measure the voltage and line resistance during the preliminary investigations?
- > For solar systems, will they conduct a site-specific survey including taking into consideration shading? This is crucial for correct system design.
- > Will they design a system to match your energy use profile? Real-time energy use data is available for sites fitted with smart meters or the consultant can install energy monitoring equipment to get this data. Knowing your real time energy use is crucial to understand how much energy you will self-consume from a renewable source, which will impact on the size of the system you should install and your return on investment.

YES

NO

Beware!

Proceed with extreme caution. They may be inexperienced or offering unproven technology, which could be unsuitable for your business.

For more information

about renewable energy generation options see the fact sheets on solar, wind and hydro power for dairy farms available at:
[frds.dairyaustralia.com.au/
events/smarter-energy-use/](http://frds.dairyaustralia.com.au/events/smarter-energy-use/)

4.2 Economic feasibility:

Compare the energy generated to the tariff it will offset.

- > The value and return on investment will depend on the value of the tariff the renewable energy offsets.
- > Offsetting peak energy use will offer a better return on investment than offsetting off-peak tariffs.
- > Do not be tempted to shift reliable off-peak usage to on-peak times to use renewable energy like solar where energy output varies day to day. This may be an option for more reliable and predictable generation systems such as hydro.
- > Remember to take into consideration total cost including full capital requirements, installation etc.

NO

Beware!

You may end up paying more for renewable energy when the capital investment required is taken into consideration.

YES

Renewable energy!

We recommend you get two to three quotes or opinions from various service providers. Independent advice is always best.
A written contract may help to ensure the installer delivers and demonstrates the full service you are expecting before final payment.

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