

Energy monitoring and energy audits



Use energy monitoring to benchmark your performance and see the impact of your energy efficiency efforts and investments.

For most people, their only energy monitoring is via the quarterly electricity bill that provides little insight or ability to improve energy performance. Better and more timely energy monitoring can be accessed using the smart phone app from an energy retailer to check the previous day's consumption or consumption trend. However, this will only provide general guidance.

For more insightful and beneficial monitoring, there are three main types of monitoring systems:

- Solar PV-based systems.
- Main circuit board-based systems.
- Full dairy shed monitoring systems – that look at process parameters as well as energy.

Solar PV-based systems

Systems that are sold with solar PV installations, such as the one from Victron Energy below, can give you easy visuals of the solar PV performance along with dairy shed energy loads. These systems may have limited trend reporting and analysis capabilities.

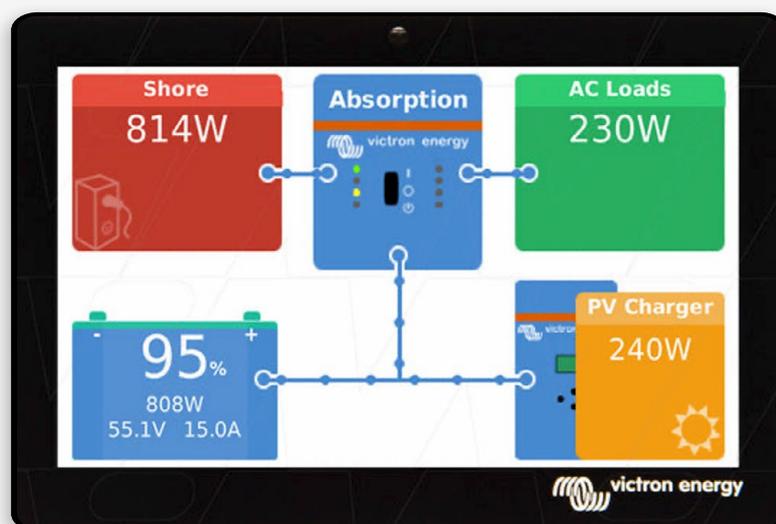


Image courtesy of Victron Energy.

Main circuit board-based systems

Systems that work with your main electrical distribution board – such as those from Simble and Wattwatchers – give real-time insight into the energy usage for different electrical circuits.

These systems can be ideal for understanding the performance of energy efficiency changes,

such as improving the milk pre-cooling or installing a heat recovery system, as they can show the results of the change. An example display from a Simble system is shown below. Typical annual costs for this kind of monitoring are \$1,000 to \$2,000, plus an initial set-up cost of around \$1,000.



Dairy shed monitoring systems

The next level in monitoring is systems with dashboards that monitor energy and show relevant non-energy metrics such as weather, and can provide alerts when excessive energy is being used. An example of such a system from Arcoflex is shown below.

