



Get started on energy monitoring to lower costs and emissions

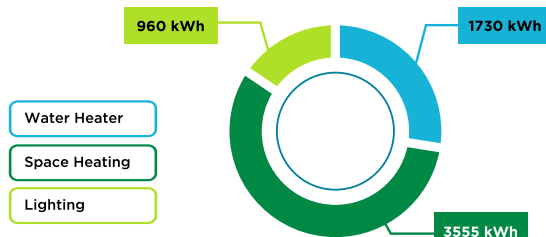
This factsheet for housing providers explains how a building energy monitoring system can help you understand energy use, and how this can save costs and improve operations.

What is a building energy monitoring system?

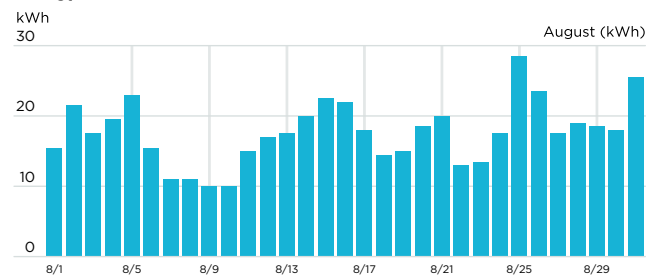
- A building energy monitoring system (BEMS) uses hardware and software to keep track of your building's current and past energy use.
- A BEMS is like a car's speedometer and odometer. The speedometer tells you how fast you are driving; a BEMS tells you how much energy your building is using. An odometer tells you how far you have driven; a BEMS tells you how much energy your building has used in the past day, week, month or year.

This graphic is an example of a BEMS dashboard, which shows the energy use in a building

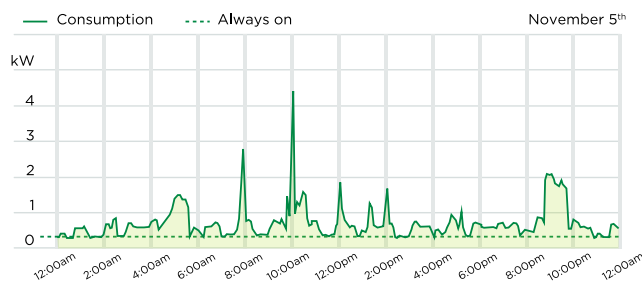
Top devices last week



Energy Over Time



Power over time

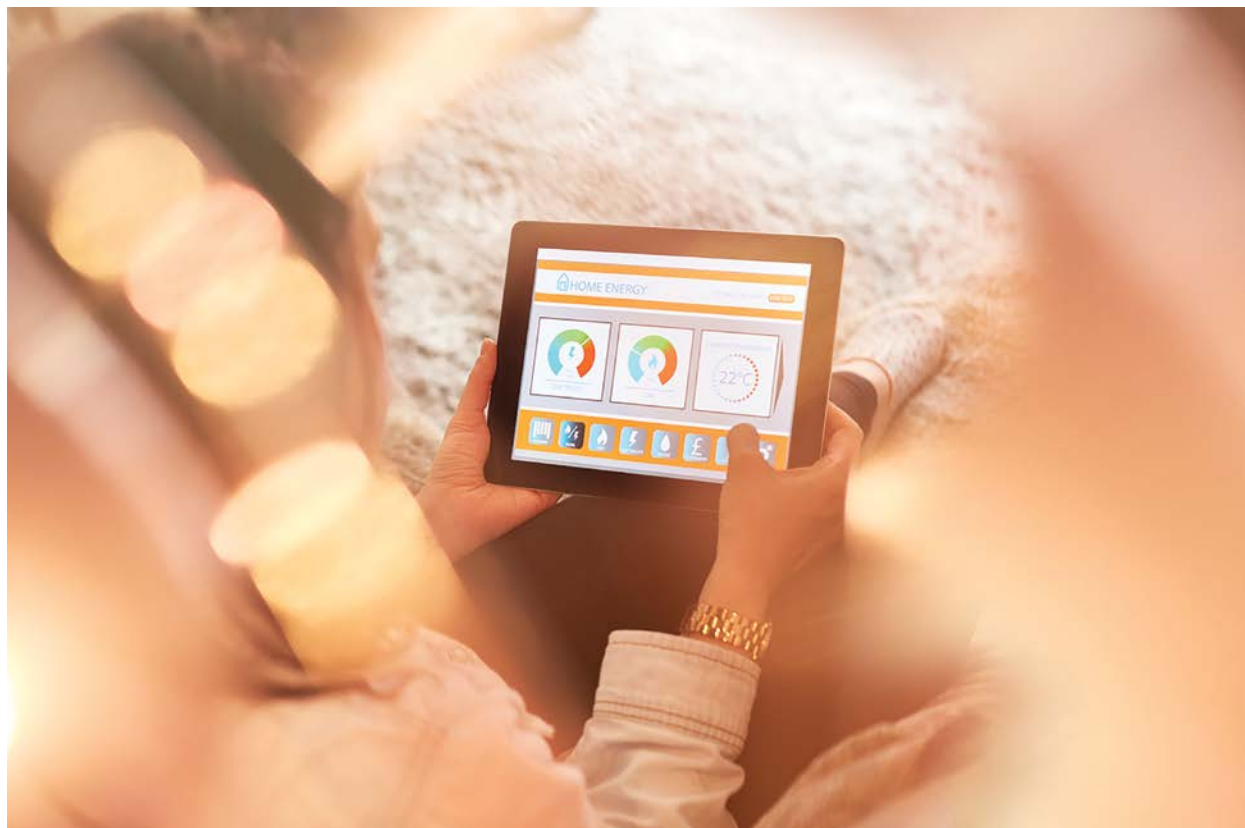


How a building energy monitoring system works

- Most buildings already have meters installed for billing purposes. These meters, installed by local utilities, allow for basic energy monitoring.
- A BEMS adds hardware and software to a basic meter. It provides more detailed monitoring that helps to identify energy use patterns, issues, etc.
- A BEMS also has a utility data acquisition hardware “box” that connects a specialized meter to software. Energy use information is then displayed on a webpage.

Submetering

- It is also possible to submeter different parts of a building. For example, a BEMS can track how much energy is used by individual suites, elevators, or the building’s air conditioning system.
- Submetering can help you understand where energy use might be a problem in the building. It helps you pinpoint the cause of energy overconsumption. Without submetering it’s much more difficult to identify where there is an energy use problem.



Why install a building energy monitoring system?

Energy monitoring makes your energy use visible

- Having almost real-time information on energy use alerts the building operator when energy use is higher than anticipated. Building operators can then fix the issue, which can save on energy costs and reduce greenhouse gas (GHG) emissions. Often, addressing energy issues can also improve resident comfort and quality of life.
- Making your energy use visible also increases resident awareness. This can encourage resident behaviour that conserves energy. You can display energy use information in the building's lobby or share it through a resident newsletter.
- Submetering can help identify if equipment is using more energy than it should. This means building operators can promptly identify and fix common mechanical issues that may otherwise have gone undetected for months or years.

Energy monitoring gives insights into energy costs

- Energy monitoring software can be set up to show daily, monthly and yearly costs of energy use.
- There are benefits to understanding your building's trends in energy use over time:
 - ◆ building operators are alerted when energy use increases; and
 - ◆ data on energy use provides a baseline for measuring reductions in energy use over time, which helps organizations set annual targets for energy reductions.

Energy monitoring gives you the information you need to reduce greenhouse gas emissions

- BEMS software can show the GHG emissions associated with your building's energy use.
- Understanding a building's impact on GHG emissions can be a strong motivator for adjusting behaviour and lowering emissions.

Getting started on installing a BEMS

If you are currently undertaking an energy study, ask your consultant for recommendations on next steps. Your consultant will be familiar with your building's energy use and can help steer you in the right direction.

Talk to a local BEMS provider

- Find a BEMS provider by searching online for providers in your area.
 - You can also ask an industry or provincial building energy efficiency agency for suggestions.
 - You can also find an authorized service provider (ASP) on Measurement Canada's website. Measurement Canada ASPs are required to implement and maintain a quality management system (QMS) to ensure Measurement Canada's standards of practice are met and upheld. You can find a list of all ASPs [here](#).
- When working with a BEMS provider, consider the following:
 - What do you want to meter? Electricity is the most common utility that a BEMS is set up to monitor, but natural gas and water use can also be part of a BEMS.
 - Do you want to submeter? If yes, where? You can set up submetering for individual suites, elevators, corridor lights, the air conditioning system, the heating system, and more.

Fund a BEMS through your Sustainable Affordable Housing project

At the planning and study stages, funding from the [Sustainable Affordable Housing \(SAH\)](#) initiative can support the incorporation of a BEMS into the design and budget of your project. At the capital development stage, SAH can provide the required funding for installing a BEMS.

FCM's Sustainable Affordable Housing (SAH) initiative, delivered by the Green Municipal Fund, supports affordable housing providers to improve their energy efficiency. This is achieved through funding and capacity development support for energy efficient retrofits and new builds. Visit our website to learn more about how SAH can support your project, including how to access a [regional energy coach](#).