



# Voltalis Optimizes Home Energy Management



## The Challenge

To create a smart home energy management device that enables power systems to rely less on emission-heavy power plants while providing a smart way to save energy.



## The Solution

Sustainability trailblazer Voltalis created smart home energy management devices that monitor and control the energy consumption of heating/cooling equipment in real-time (known as distributed demand-side management).

The devices are powered by Silicon Labs' Zigbee wireless MCU EFR32MG21 and are connected to a gateway featuring EFR32MG21 as the Zigbee network coordinator. The data and wireless capabilities then allow Voltalis to manage appliances' consumption remotely.



## The Result

In partnership with utility providers, landlords and local authorities Voltalis connect smart boxes to heating/cooling appliances. This is free of charge to consumers. When the power grid needs flexibility Voltalis can aggregate short consumption reductions amongst thousands of devices without impacting anyone's comfort.

## A Win-Win Approach to Sustainability

Energy depletion has long been a topic of heated discussion among world leaders, and while strides have been made, solutions seem to move slower than the damage done to our planet. Energy production has been slowly moving away from centralized grids – such as nuclear plants and gas power – to a more distributed system that leverages (often local) renewable energy. But even renewable sources come with their own sets of challenges: intermittent energy is hard to manage; and while carbon-intensive production addresses flexibility needs, it is heavily polluting (CO2 emissions).



Voltalis, a leader of residential demand response, recognized these issues and decided to flip the source of flexibility by enabling energy systems to be steered on the demand side rather than on the supply side, as it's been traditionally done in the past 50 years or so.

The European company installs smart home energy management devices onto heating/cooling appliances, that allow them to briefly reduce the consumption when needed – a decision informed by real-time data collected through a gateway via our Zigbee and Thread EFR32MG21 SoCs (Series 2), which feature:

- High performance, low power and secure solutions
- 2.4 GHz wireless SoCs optimized for line-powered Zigbee, Thread and Bluetooth mesh applications
- Common specs, include Zigbee and Thread Radio, Bluetooth Low Energy Radio, rich analog and digital peripherals, and powerful MCU and memory options

Chosen due to its ability to communicate over long-range and mesh networking capabilities, the EFR32MG21 SoCs now serve as the heart of the Voltalis solution, as their entire product software is embedded on the Silicon Labs' chipset. Such a tight-knit software-chip relationship calls for hands-on customer support to ensure not only proper functionality but also a clear understanding of what is possible to achieve with the chipset – two promises fulfilled by the Silicon Labs team.

## **Unique Business Model Powers the Future**

The result of such a partnership is a smart box solution that reduces energy consumption and drives energy transition – all at no cost to the end consumer. Instead, Voltalis partners with energy markets to address timely policies and regulations, to guarantee a better future. The markets are in turn saving energy, making it a win-win all around and creating a self-sustainable business model that allows Voltalis to bear all the costs of supply, installation and maintenance of the box.

Because this approach benefits both power grids and end consumers, Voltalis has already installed 150,000 households in France and Europe. They will focus the next five years on installing one million homes in Europe and Asia, including 500,000 homes in France by 2024. Already present in six countries (France, Belgium, Finland, the UK, Slovenia and Sweden), Japan will soon follow in the Asia Pacific market.

We are all eager to see Voltalis take the world by storm. For more information on Voltalis, visit [group.voltalis.com](http://group.voltalis.com)

