Synergy with Conventional Energy Management Solutions
Your existing energy management system is focused on providing comfort during your facility’s operating hours, however it doesn’t concern itself with when and how much energy your HVAC loads use, which can dramatically affect your monthly utility costs.

The Encycle patented Swarm Logic™ solution provides additional benefits to facilities that currently use a building automation system or an energy management system (“BAS” or “EMS”). Swarm Logic is often compared to other energy management systems and perceived as a replacement, although the intention is to complement your existing system and provide added benefits not already available.

Encycle recognizes that energy costs are a significant portion of your operating expenses and rather than simply follow set points and schedules, Swarm Logic has a unique set of energy savings measures that ultimately reduce your energy costs. Encycle therefore empowers you with greater control of your operating expenses and maintenance budget. No modifications to your existing EMS are required, nor is access to existing networks.

**DEMAND MANAGEMENT**

Swarm Logic’s Demand Management continuously smooths out demand, reducing spikes, which leads to lower metered peak demand. Swarm Logic allows your loads to communicate with each other and minimizes the total demand at any point in time.

In contrast, conventional load-limiting techniques keep peak demand below a pre-calculated threshold. Swarm Logic always strives to reduce peak load, whereas load-limiting techniques are only invoked if the facility nears a predetermined amount. For example, suppose your facility’s energy management system has been programmed to limit your facility at 500 kW. If the facility draws, say, 475kW the EMS will not provide any optimization. In contrast, since it works continuously to minimize demand peaks, Swarm Logic may have been able to operate the building at considerably lower levels, say 450kW or below. Swarm Logic optimizes peak demand all year round, with notably strong results during shoulder seasons. Moreover, Swarm Logic never suppresses loads for lengthy periods of time just to reduce peak demand – it balances demand across a group of loads.

Occupant comfort is a primary consideration in Swarm Logic, which also factors interior temperature into the decision of how much cooling is provided. If the temperature in your building reaches pre-defined thresholds, additional cooling will be provided. As comfort level is unique to every customer, you can configure temperature ranges per zone.
INTELLIGENT DEMAND RESPONSE

Many utilities offer Demand Response programs, where you receive payments or credits for curtailing demand when called upon by the utility. Swarm Logic allows you to implement Intelligent Demand Response by reducing how much each HVAC load operates compared to normal. For example, if a load provides cooling for 2 hours and 30 minutes out of every 3 hours (during afternoon peak periods), Swarm Logic may reduce the cooling provided to 2 hours.

A major benefit of Swarm Logic’s load smoothing activity is that during a demand response event, HVAC units continue to provide cooling (albeit on a reduced basis), therefore the increase in interior temperature and humidity is gradual. This contrasts with conventional temperature setback techniques, where HVAC units are all immediately turned off until zones heat up to the higher set points, by which time relative humidity has increased markedly inside the building. By continuously managing demand, Intelligent Demand Response does not exhibit the typical rebound effect of conventional techniques that cause many loads to kick in simultaneously after a demand response event, setting a higher than normal peak demand for the month.

CONTINUOUS POWER MONITORING

Swarm Logic samples the demand of each load every 5 minutes, which is visible in the Swarm Logic portal. Submetered load data is not typically available “out of the box” with conventional energy management systems.

This provides you with insight into how loads actually operate in your building and how much power they actually draw. In contrast, conventional control systems only indicate when the load was supposedly operating, without determining if it truly was.

This submetered data captured by the Swarm Logic system often leads to rapid identification of equipment faults or suboptimal EMS scheduling. Such cases include loads where one or more stages of cooling no longer function, loads run overnight, or loads all start at once early in the morning. As repairs and replacements have an effect on your planning and facility budget, having full insight into equipment faults, allow you to make the most of your limited maintenance dollars.

The Swarm Logic portal allows one to aggregate sites into portfolios, and easily view the total load across multiple sites, providing “at a glance” feedback on the energy usage across all of your buildings.
Encycle recognizes that you engage multiple vendors to manage your energy and HVAC systems. To promote integration with such vendors, Swarm Logic load information is available through a secure web API. This can be seamlessly integrated into your reporting and monitoring tools, allowing for improved insight into building health and performance.

By giving you options to view data through an EMS or reporting service, you and your vendors are able to identify equipment faults, loads running overnight unintentionally, or other maintenance opportunities that you would of otherwise missed, and initiate corrective actions that much sooner.

By fostering collaboration between Encycle and third party vendors, you are ultimately in the best position to efficiently operate your business.