

Slash your HVAC energy costs, reduce CO<sub>2</sub> emissions and extend the life of your rooftop units. Quickly. Easily. And with a remarkably short payback period.



## Tap into the Energy Saving Potential of Your Rooftop Units

When it comes to cutting building energy consumption and carbon emissions, there's no doubt that your biggest opportunities revolve around your HVAC system. Your HVAC units account for nearly half of your electrical usage, so even small increases in their energy efficiency can make a big difference to your bottom-line.

Imagine what cutting HVAC energy use by 15-25% could mean! This is the value offered by Swarm Logic® from Encycle.

Swarm Logic does for your HVAC rooftop units (RTUs) what modern technology has done for lighting. It makes them smart, connected and vastly more efficient – because with Swarm Logic, your RTUs are no longer dumb. Instead, they can now communicate, collaborate and make informed, intelligent decisions about precisely when and how they should be operating to achieve the best possible efficiency.

Optimally suited for both large and small commercial and industrial buildings with energy loads in the 50kW to 5MW range, Swarm Logic brings you the best possible energy savings, at a low cost and with a surprisingly fast payback.

**Typical Demand and Consumption  
Reduction Through Swarm Logic**

**15-25%**

### What's the Buzz?

Inspired by the swarm intelligence of honey bees, Swarm Logic leverages the elegant simplicity of biomimicry to make your RTUs behave in a way that best benefits the overall operation of your buildings. Leveraging Encycle's multi-patented algorithms and technology, sophisticated analytics, and modern telemetry, Swarm Logic establishes a wireless network among your RTUs that enables them to communicate among themselves autonomously.

Although each unit has limited information, with Swarm Logic the connected group has the intelligence to respond holistically – self-organizing and synchronizing themselves in a way that enables RTUs to simultaneously detect each other, red-flag unnecessary consumption and automatically optimize electricity usage by controlling the aggregated whole as one unified, coordinated group.

Instead of operating in isolation, your RTUs can now work intelligently together – delivering cooling when it makes most sense based on cost, the unique parameters of your buildings and the comfort needs of your occupants.



## Start Saving Money – with EASE

You can start reaping the energy efficiency benefits of Swarm Logic immediately with our Energy as a Service by Encycle™ program. EASE minimizes the capital outlay needed to deploy Swarm Logic and eliminates the burdens of technology deployment, management, implementation and operation. We do it all this for you as part of our Encycle 360 program, which also delivers the detailed HVAC performance and savings reports you need to manage your buildings much more intelligently.

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**"With Encycle's controllers installed, my HVAC units are working smarter than ever, reducing our peak demand and consumption without the need for me to monitor or adjust settings. EASE frees up my time to concentrate on other facets of operations. Encycle also provides my service technicians with valuable real-time insight into HVAC performance. It just works!"**

— Fred DiNapoli, Director of Facilities, Harkins Theaters

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## Big Results; Small Investment

Not only can Swarm Logic save you up to 25% in HVAC energy costs but it can do so swiftly, giving you:

### UNPRECEDENTED ROI



With Swarm Logic, overall energy costs are lower because RTUs run only when they are needed. Peak demand charges are reduced through automatic balancing of loads. High savings plus low capital costs bring industry-leading ROI. In fact, some of our customers achieve payback in less than a year.

### SIMPLE TO INSTALL, FAST RESULTS



Swarm Logic is an inexpensive, simple-to-install solution that works independently – even with the building control systems you already have in place — to reduce your energy consumption and improve your demand response results, in most cases very significantly.

### AUTOMATED & MONITORED 24/7

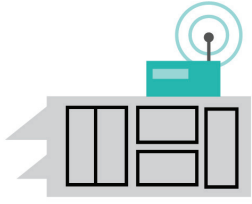


The Swarm Logic system is fully automated - with no need for personnel overhead on your part. Plus, our 24/7/365 operations team continuously monitors your entire building, identifying faulty or underperforming equipment, mitigating risk, extending equipment life span, cutting maintenance costs, reducing outages and minimizing bounce-back following demand response events. This is all done as part of our Encycle 360 program.

### ADVANCED ANALYTICS AND REPORTING



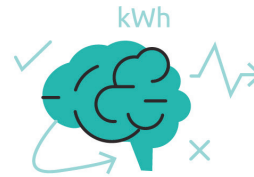
Supporting the core of Swarm Logic is a robust set of analytics tools and reports. Quantify feedback from your occupants with real insights into your building and RTU operations before committing to costly onsite emergency work. Get comprehensive organization-wide and site-level savings data for all your Swarm Logic-enabled buildings.



Swarm Logic is installed with your smart thermostats, or with Swarm Controllers on RTUs to gather power readings and status.



Swarm Logic-enabled RTUs communicate wirelessly, sharing information among themselves every few minutes.



Swarm Logic uses shared data to determine the most efficient operating schedule for each RTU.



Consumption and control data are exchanged with Encycle's secure, cloud-based control center and used to update the web portal

## Make Energy Efficiency Easy

There are many options for taking advantage of Swarm Logic. It can be deployed using your existing smart thermostats – or by adding small, inexpensive controllers to your RTUs. You can also take advantage of Swarm Logic through several Encycle technology partners. The choice is yours.

- **Swarm Controller™** - Small controllers installed on each RTU work together to form a wireless network, each communicating with each other 24/7/365. Each Swarm Controller applies the Swarm Logic control decisions to its RTU to maximize cost savings.
- **SwarmStat™** - Leveraging existing Wi-Fi IOT thermostats installed at your facility, Swarm Logic control decisions are sent via the cloud to each thermostat to synchronize their electricity consumption.
- **Swarm Service™** - Leverages Swarm Logic via a cloud-based software API that enables control of your RTUs via third-party building management systems and other Encycle energy management partners.

FOR MORE INFORMATION ON SWARM LOGIC OR OTHER ENCYCLE SOLUTIONS, CONTACT:  
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