

# SUSTAINABILITY

## Innovating climate- positive results

EcoDataCenter, Falun, Sweden

EcoDataCenter reimagines sustainability,  
with EcoStruxure™.

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**Schneider**  
Electric



EcoStruxure for Cloud & Service Providers is part of the Connected Products, Edge Control, Apps, Analytics, & Services portfolio of the Schneider Electric™ IoT-enabled architecture: EcoStruxure™ IT.

### EcoDataCenter at a glance:

- Operating in Falun, Sweden
- World's first climate-positive data center
- Among the top sustainability innovators of 2015 (Sustainia100)
- Has mutually beneficial relationship with neighboring pellet mill

### Ahead of the sustainability curve

From single-rack solutions to wholesale setups, EcoDataCenter provides both colocation services and high-performance computing (HPC). The company believes it has a responsibility to be socially and environmentally accountable when it comes to new data centers — which drives its very mission statement. Located in Falun, Sweden, EcoDataCenter operates with an emphasis on climate-positive solutions — for clients, communities, and the environment.

“We’re changing the way data centers are conceived and built,” says Mikael Svanfeldt, Chief Technology Officer, EcoDataCenter. “We do this by pushing designs that are simultaneously highly sustainable and energy efficient.”

Svanfeldt explains how energy efficiency can be a shared effort. “This data center is also part of a unique energy ecosystem. We send surplus, low-grade waste heat to our neighbor, the local biofuel facility and pellet mill. Our repurposed heat is stored in the facility to help it operate in the colder months of the year, ultimately using less fossil fuels to make heating pellets.”

The newest data center was designed to be EcoDataCenter’s greenest and most future-forward build yet. In need of a partner with shared sustainability priorities, EcoDataCenter turned to Schneider Electric. “With the knowledge and technology on Schneider’s end, and the ambition from ours, it’s a good match for an efficient and green facility,” Svanfeldt reports.

## Goal

Focused on sustainability, EcoDataCenter wanted to build an exemplary climate-positive data center at the heart of its HPC colocation in Falun, Sweden.

## Story

In need of safe and reliable power management that would ensure customer-server uptime and energy efficiency, EcoDataCenter partnered with Schneider Electric.

## Solution

Schneider integrated EcoStruxure for Cloud & Service Providers and EcoStruxure IT Advisor, granting access to Schneider’s Connected Services Hub, dedicated to 24/7 troubleshooting.

## Results

- With four 99%-efficient Galaxy™ VX UPSs, the data center can support 3,750 kW of customer load.
- Connected sensor and meter monitoring allows greater facility temperature control.
- The data center achieves new levels of efficiency, with an EER of 132 and a PUE of 1.15 by reusing low-grade waste heat.

## Climate-positive outlooks

Because of the Nordics' cooler climate and culture of renewable energy like solar, wind, and hydropower, the region proved ideal for EcoDataCenter to achieve new environmental standards. "With a high focus on sustainability and security, our ambition is to become the leading data center operator in the Nordics in the coming five years," says Svanfeldt.

EcoDataCenter runs a climate neutral facility through its whole life cycle. From their renewable energies, efficient design, recycling of heat, and the contribution to the pellets production - EcoDataCenter is on its way to reaching true climate positivity.

"For us, 'climate positive' means adding to an energy system in a way that offsets the need for oil and gas. We capture as much heat as we can from our server rooms, and that same heat is sent to Falu Energy and Water," explains Svanfeldt. "Sustainability is the pillar of EcoDataCenter. It's right in our name. But all data center operators should have a responsibility to consider the footprint of operating for 15 to 25 years."

EcoDataCenter has maintained highly competitive pricing as a direct result of much lower energy costs. "Still, we're quite a young company," Svanfeldt continues, "and every day poses new challenges. Using Schneider Electric helps us make informed decisions on exactly how we would create our newest data center."

## Seeing green through EcoStruxure

Schneider integrated EcoStruxure for Cloud & Service Providers into EcoDataCenter's new build. With EcoStruxure as an open architecture, Svanfeldt was able to seamlessly connect Schneider and third-party hardware, software, and monitoring through the platform's analytics and services.

"Schneider Electric has supported us in putting this colocation together. EcoStruxure is a platform that unifies our products to provide genuine insight on how our data center is operating, and a range of



critical products are now joined through IT Advisor. That's medium-voltage switchgear, Galaxy VX UPS units, Masterpact MTZ breakers, scroll compressors, CRAH units, lithium-ion batteries, Uniflair chillers, and more. End to end, this system contributes to our facility's climate-positive outcome."

Many of the above integrated technologies bear Schneider's "Green Premium" label; meaning they are designed for environmental transparency, lifecycle assessment, and end-of-life instructions.

"Schneider's turbo core compressor chillers also play a huge role," says Svanfeldt. "Even during very humid summer days we still ensure efficient, reliable, and sustainable air conditions from the redundant cooling system."

## Low consumption gives back

The resulting data center has a seasonal design power usage effectiveness (PUE) value of 1.15. This is markedly low, given the fact that EcoDataCenter uses two-end

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redundancy with several layers of capacity on each end. The data center cooling also achieves an energy efficiency rating (EER) of 132 using Schneider Electric’s CRAH units in normal-operation mode.

“In terms of efficiency and reliability, Schneider has helped us succeed through innovative design and well-tested technical systems,” explains Svanfeldt. “Within EcoStruxure architecture, four Galaxy VX UPSs at 1250 kW each, support customer load with the possibility to run the UPSs in the 99% efficient EConversion Mode. This gain in efficiency frees up energy that can be utilized by customers as well as reduce the cooling need of electrical rooms.”

With the monitoring, efficiency, and connectivity that EcoStruxure provides, Falun’s latest data center also makes sustainable contributions outside of business.

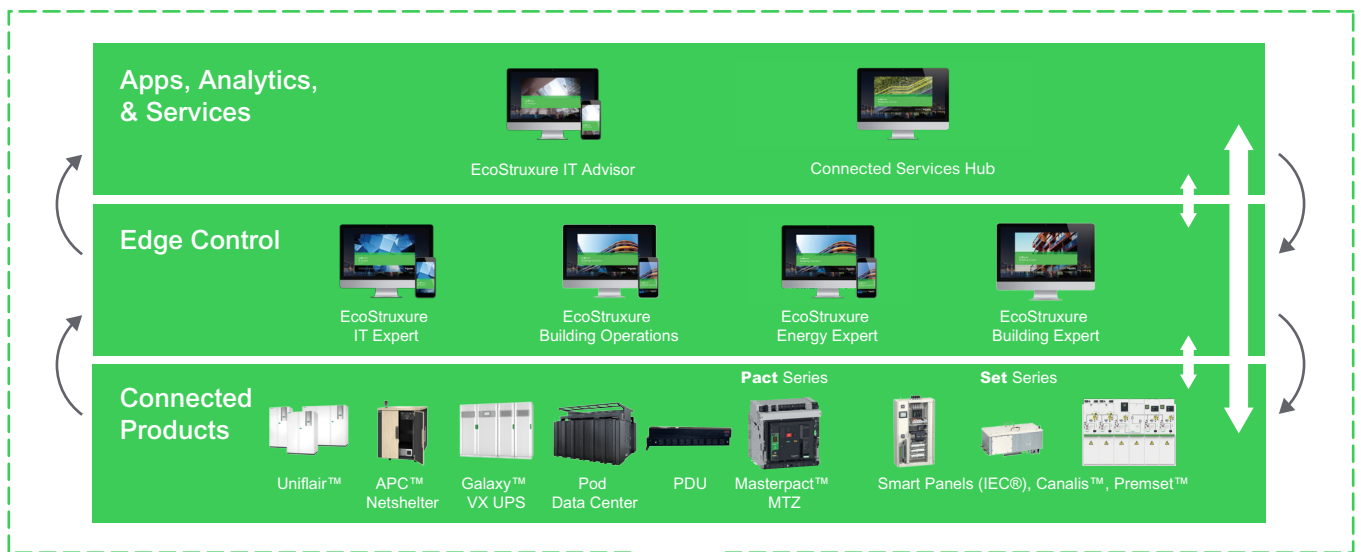
As a key member of its local energy circle, EcoDataCenter wants to make sure they give something back to the community, offering contract jobs, workplaces, and other opportunities to those benefiting from the data center’s climate positivity.



“By doing so, we get a deep commitment from the community,” says Svanfeldt. “It goes beyond doing away with fossil fuels. These people are helping build something in their hometown that they can feel proud of.”

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EcoStruxure™  
Architecture

# EcoStruxure™

## Innovation At Every Level

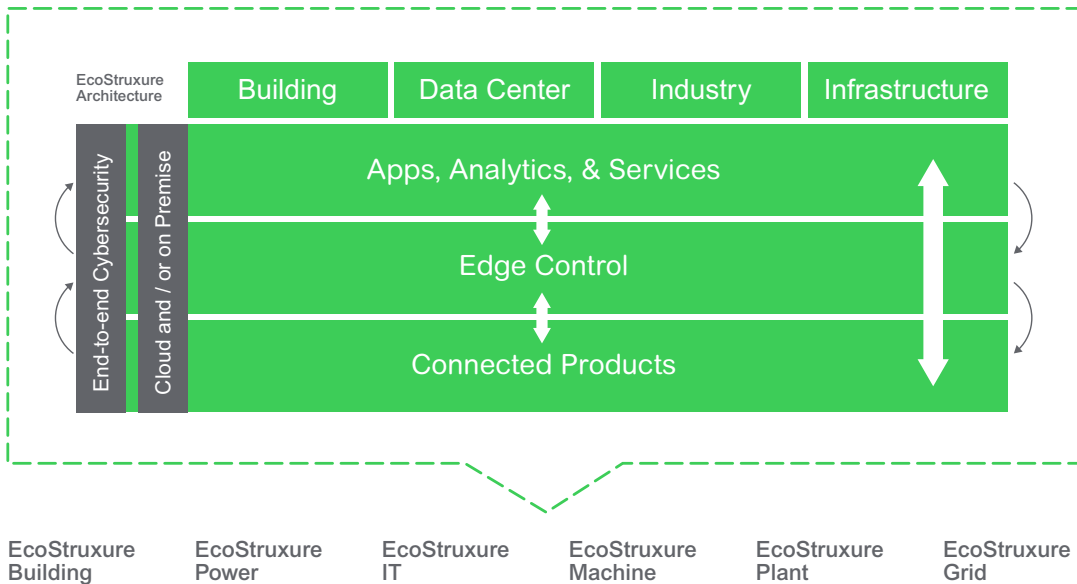
### IoT-enabled solutions that drive operational and energy efficiency

EcoStruxure is Schneider Electric’s open, interoperable, IoT-enabled system architecture and platform.

EcoStruxure delivers enhanced value around safety, reliability, efficiency, sustainability, and connectivity for our customers.

EcoStruxure leverages advancements in IoT, mobility, sensing, cloud, analytics, and cybersecurity to deliver Innovation at Every Level including Connected Products, Edge Control, and Apps, Analytics & Services. EcoStruxure has been deployed in 480,000+ sites, with the support of 20,000+ system integrators and developers, connecting over 1.6 million assets under management through 40+ digital services.

### One EcoStruxure architecture, serving four End Markets with six Domains of Expertise



#### Connected Products

The Internet of Things starts with the best things. Our IoT-enabled best-in-class connected products include breakers, drives, UPSs, relays, sensors, and more. Devices with embedded intelligence drive better decision-making throughout operations.

#### Edge Control

Mission-critical scenarios can be unpredictable, so control of devices at the edge of the IoT network is a must. This essential capability provides real-time solutions that enable local control at the edge, protecting safety and uptime.

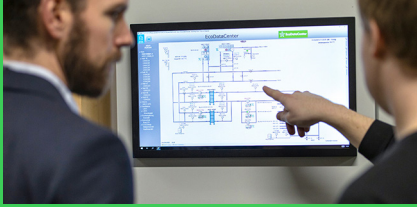
#### Apps, Analytics, & Services

Interoperability is imperative to supporting the diverse hardware and systems in building, data center, industry, and grid environments. EcoStruxure enables a breadth of agnostic Apps, Analytics, & Services for seamless enterprise integration.

Find out more about EcoStruxure.

[se.com/ecostruxure](https://se.com/ecostruxure)

# Learn more



EcoStruxure IT Advisor



EcoStruxure Building Operation



The Galaxy UPS series



UniFlair™ Chillers



Cloud & Service Provider solutions



Software and Services

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