EFFICIENCY

Playing it cool

Oxford Energy Solutions, Inc. – Woodstock, Canada

How EcoStruxure™ Machine is helping Oxford Energy
revolutionize the refrigeration market

Thinking outside the box

Oxford Energy Solutions Inc. is a Canadian company that's been designing and building refrigeration equipment for agricultural, food processing, industrial, and healthcare customers in the North American market since 2006.

Refrigeration is a relatively conservative sector. Many facilities still run systems that were installed 50 years ago. Maintenance is usually done reactively by replacing broken parts like valves and compressors without addressing bigger issues.

Oxford Energy wanted to change the way refrigeration systems are built and maintained in line with its ethos of energy conservation and sustainability.

"One of the biggest problems we've had was finding the right amount of hardware and software combinations that don't give us any limitations on what it is we want to do today and where we want to go tomorrow," says Ben Kungl, President of Oxford Energy Solutions.

Goal

Modernize 50-year-old refrigeration systems to improve visibility of operating thresholds and increase their flexibility, reliability, and functionality.

Story

Oxford Energy set out to change the way refrigeration systems are built and maintained to make them more sustainable and energy efficient.

Solution

A plug-and-play platform based on EcoStruxure Machine that reduces service, operating, maintenance, and electrical requirements and costs for end users.

Results

- 50–70% savings in energy usage
- Improved equipment reliability and lifecycle
- Drastically reduced operating and maintenance costs for end users
- Remote monitoring and predictive maintenance capabilities

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The perfect setup

The company was looking for a flexible, holistic platform that would enable it to bring its vision of control and integration to the market. After some research, it decided on a full suite of EcoStruxure Machine solutions to provide its customers with more efficient refrigeration systems.

"Schneider has great people behind the products we use and they share our values around energy resilience and sustainability," says Kungl.

At the heart of Oxford Energy's platform is the Modicon M172 logic controller which offers a wide choice of connectivity options to support integration with a variety of building management systems. This ready-to-connect controller requires no on-site programming and enables control of every device in the system.

Another important element is EcoStruxure Secure Connect Advisor, which adds a security layer and helps protect the system. It also comes with an intuitive e-mail notification system that helps pinpoint where issues have occurred and speeds up maintenance which can be done remotely.

"Utilizing Schneider Electric's apps and analytics for predictive analysis prevents a $5 issue from escalating to a $5,000 repair," Kungl points out.

Another important part of the solution is an IPC/HMI controller that brings all this information into a pre-defined set of screens. Combined with the dashboard and server system where Oxford Energy is applying advanced analytics and machine learning, it results in a fully integrated solution.

"The amount of the information that you have at your fingertips, there is nothing on the market that we've seen today that even comes close to this," explains Kungl.

UP TO **70%**

savings in energy needs

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Chilling efficiency

The end result is a system that is connected and aggregates all the relevant data along with historical trends. If something goes wrong, it shuts off and sends a notification before anything detrimental can happen. When combined with machine learning and adaptive predictability, the system is able to inform customers of potential issues before they occur.

Moreover, when refrigeration systems run smoothly they use less energy. "One of our customers was using on average 21 Kw/h and we dropped it to 6 Kw/h," notes Kungl.

Today, Oxford Energy's new refrigeration systems are plug-and-play and can be easily deployed across an entire chain if needed. "We have created an industry first in control, adaptability, robustness, information, and repeatability
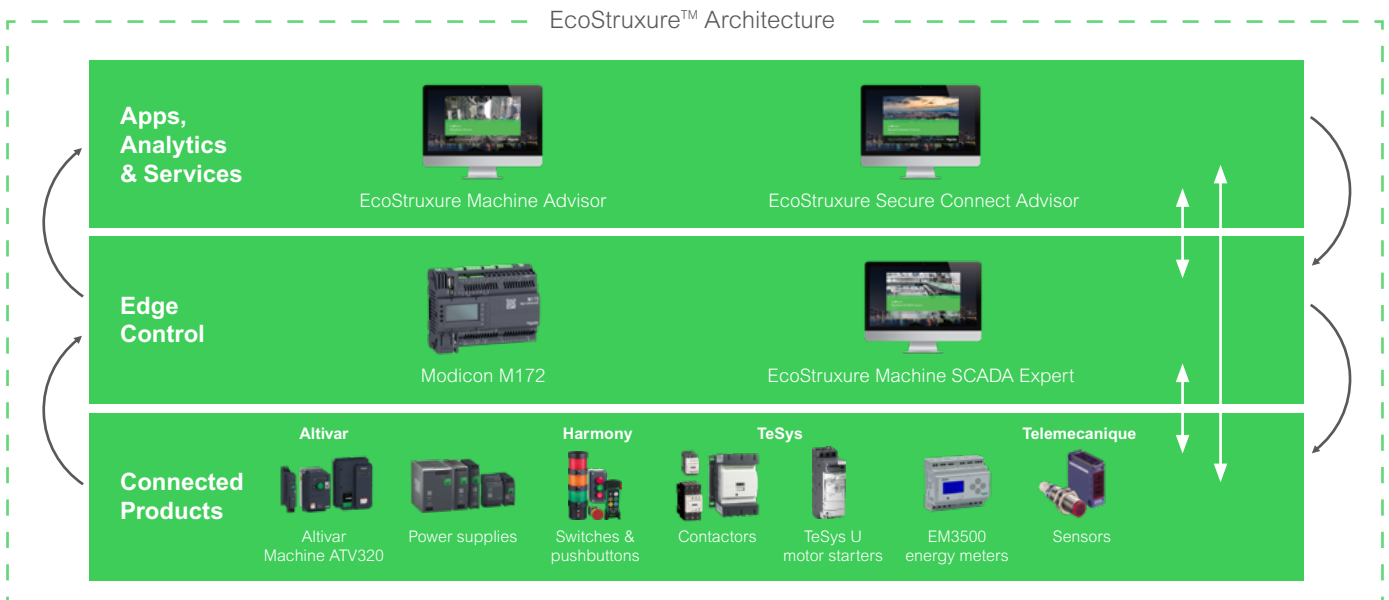
and we were able to develop this and bring it to market within four months. After 12 months, we should have close to 600–700 systems deployed at our customer sites," Kungl added.

There's more to come, as well. Both companies are collaborating on additional projects, including an oil-free compressor which would eliminate the upkeep required with oil management and filtering in refrigeration components.

> "Partnering with Schneider Electric has allowed us to bring our vision of control and integration into the real world."
>
> Ben Kungl, President,
> Oxford Energy Solutions, Inc.

EcoStruxure™ Machine

EcoStruxure™ Architecture

Apps, Analytics & Services
- EcoStruxure Machine Advisor
- EcoStruxure Secure Connect Advisor

Edge Control
- Modicon M172
- EcoStruxure Machine SCADA Expert

Connected Products
- Altivar — Altivar Machine ATV320
- Power supplies
- Harmony — Switches & pushbuttons
- TeSys — Contactors
- TeSys U motor starters
- EM3500 energy meters
- Telemecanique — Sensors

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EcoStruxure™
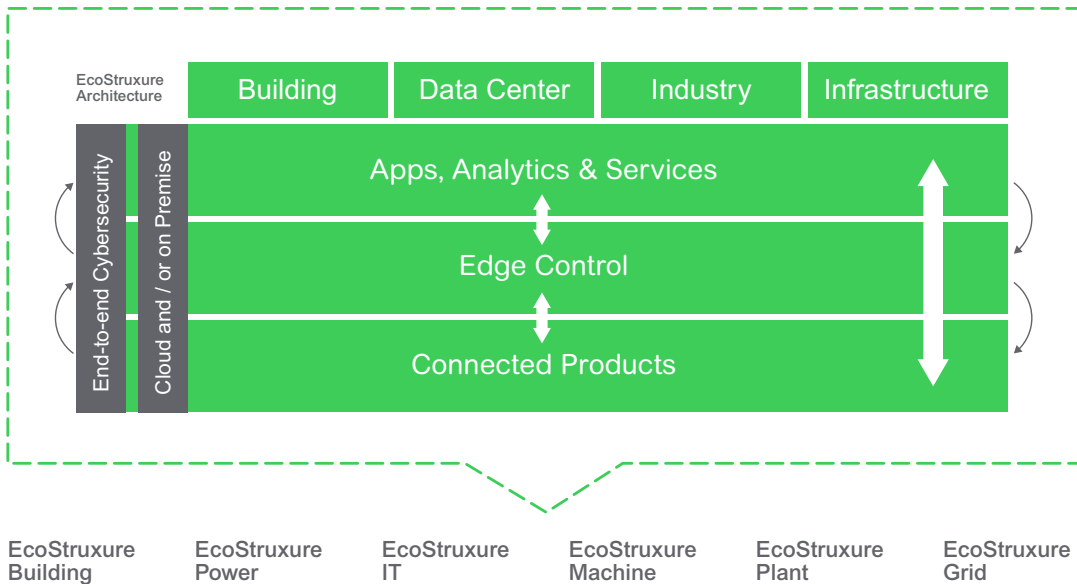## Innovation At Every Level

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 4 End Markets with 6 Domains of Expertise

EcoStruxure Architecture	Building	Data Center	Industry	Infrastructure

End-to-end Cybersecurity | Cloud and / or on Premise

Apps, Analytics & Services

Edge Control

Connected Products

EcoStruxure Building	EcoStruxure Power	EcoStruxure IT	EcoStruxure Machine	EcoStruxure Plant	EcoStruxure Grid

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 Applications, Analytics, & Services for seamless enterprise integration.

Find out more about EcoStruxure

se.com/ecostruxure

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