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Seizing the Digital Revolution

A guide to how Schneider Electric EcoStruxure™ Power can position electrical contractors for new, recurring services business.



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Opportunity is Knocking

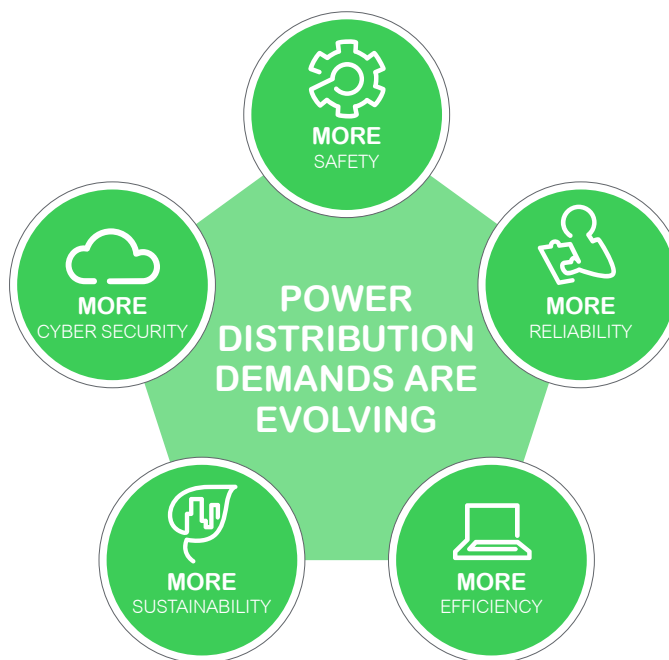
Digitization is bringing new challenges to virtually all companies today, essentially forcing them to implement new technology in order to remain competitive. The same trend represents a watershed moment for electrical contractors in that it presents significant opportunity for those who understand how to seize it.

The reason is simple: digital technologies increase demand for always-on power. And digitization is everywhere. Studies show that by the year 2025 the world will have 10 times more connected devices than it does people. And the digital generation – those who have grown up in a world surrounded by easy access to digital technology – will comprise 75% of the workforce by 2025. Their expectations for continued access to technology will be high.

We're also witnessing a trend toward more decentralized power production and distribution, driven by renewable energy sources. It's estimated that 70% of new energy production will be from

renewable sources by the year 2040. That requires rethinking how we monitor energy performance and reliability.

To keep pace with all this change, your customers will have to put a premium on power like never before; outages will have far more serious consequences when just about everything a company does requires reliable electrical power. Customers will need trusted experts to help them meet the challenge.



Outages will have far more serious consequences when just about everything a company does requires reliable electrical power.

Forward-thinking electrical contractors have an opportunity to fill that void and become trusted advisors, if they take the right steps to educate themselves on the opportunity and how best to meet it.

Schneider Electric has the answer: the EcoStruxure™ Power for Small and Medium non-critical buildings platform, and the EcoXpert™ program for contractors. In this guide, you'll learn what EcoStruxure power is all about and how by becoming an EcoXpert, you will be prepared to seize the opportunity that the digital revolution presents.



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Preparing for a digital world

As they witness digitization growing all around, electrical contractors have to assess their own readiness to take on the challenge. Do you have the teams in place who understand what those challenges are?

If not, you face a choice: maintain the status quo, and risk being left behind, or learn the new skills required to position yourself for lucrative new opportunities.



The design choices that go into construction, including for the electrical infrastructure, can reduce operating costs for the life of the building.

The opportunity is indeed large, because ongoing operations account for 75% of the cost of a commercial or industrial building over the course of its life, meaning initial construction costs are only 25%. But the design choices that go into construction, including for the electrical infrastructure, can reduce operating costs for the life of the building.

Electrical contractors who can influence those design choices stand to profit by providing benefits for two key stakeholders:

- **Building owners** get:
 - reliable power
 - lower operating expenses (OpEx)
 - a safe and healthy workplace for tenants
 - compliance with local and national regulations
- **Building managers** get help in:
 - maximizing uptime for building electrical components and infrastructure
 - optimizing operational costs



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New challenges require new tools

Dealing with these new challenges will require contractors to adopt a new toolset, but Schneider Electric has the answer.

EcoStruxure™ Power for Small and Medium non-critical buildings is a technology platform that delivers comprehensive monitoring and control of electrical systems, along with advanced analytics and services – specifically for non-critical commercial and industrial buildings with less than 5000A main service entrance.

It provides key **benefits for customers**, including:

- Safer, more reliable, and more efficient power distribution
- Increased energy efficiency, leading to reduced costs
- A simple, scalable platform that can address a variety of applications

The platform also provides significant **benefits for you**, the electrical contractor, including:

- A new, recurring revenue stream from connected electrical distribution systems
- Becoming a more valuable, trusted advisor to building owners, managers and end customers

No longer will you complete one job and just move on to the next; your customers may rely on your services for the life of their buildings.



EcoStruxure™ Power is a technology platform that delivers comprehensive monitoring and control of electrical systems, along with advanced analytics and services.



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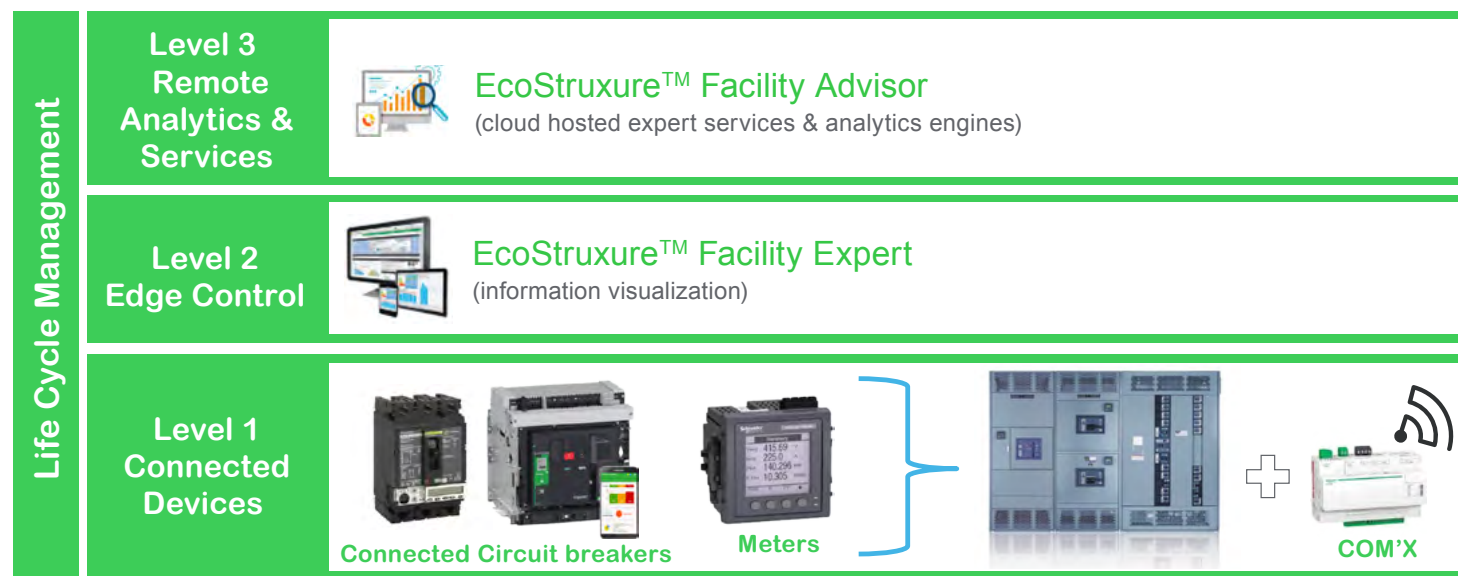
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EcoStruxure™ Power: How it works

Let's dive in to understand how EcoStruxure Power for Small and Medium non-critical buildings is able to deliver on those promises.

The platform uses a three-leveled architecture, as follows:

- **Level 1** comprises smart, connected devices including circuit breakers, meters and sensors that report data on their status to a cloud-based data collection and analysis engine
- **Level 2** is the [EcoStruxure Facility Expert](#), which provides for information visualization: it's a monitoring platform that provides insights into energy consumption and asset status for single or multi-site buildings
- **Level 3** is EcoStruxure™ Facility Advisor, a cloud-based tool that uses an advanced analytics engine to inform benchmarking, trend reporting and data analysis, to provide recommendations for predictive and preventative maintenance.



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Level 1: Smart, connected devices

The latest electrical equipment and components are capable of communicating status data in real time, which is crucial to providing optimum performance and uptime. The idea is to take advantage of Internet of Things (IoT) technology, where the end components are the “things” that send status and alert data to a centralized, cloud-based collection point.

Examples of smart, connected devices include:

- **Circuit breakers** with electronic trips, embedded metering, predictive alarming with indicators for contact wear, number of operations, operating hours, power and energy management
- **Power meters** that monitor harmonics to prevent excessive heating and premature failure of transformers, detect fluctuations in current pull, and perform time stamping to aid in troubleshooting
- **Data loggers and energy servers**, such as Schneider Electric Com'X, that log all essential data and automatically push it to a hosted platform or enable download for report generation
- **Schneider Electric I-Line Smart Cell**, which enables modular integration of communications and metering in a reduced footprint
- Other assorted power, water and gas meters as well as sensors for temperature, humidity, moisture and the like

The point here is you have a choice: keep installing traditional “dumb” electrical systems, and be left out of the digital revolution, or step up your game with new smart products that enable a new world of monitoring, reporting and management capabilities. This is where your ability to influence the electrical infrastructure choices made in the construction phase can improve the ongoing operational efficiency and reliability for the life of the building.



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Level 1: Smart, connected devices

With knowledge of how smart, connected devices can reduce operational costs for the life of the building, you can influence the electrical infrastructure choices made in the construction phase. You'll be able to make a business case for how these devices can improve operational

efficiency and reliability for the life of the building. For a small investment up front, the building owner and tenants will benefit from not only reduced power costs, but a more reliable power infrastructure – exactly what the digital age requires.

Mid Size Buildings: Single or Multi-site Applications



SENSING



MOBILITY



ANALYTICS



CLOUD



CYBER SECURITY

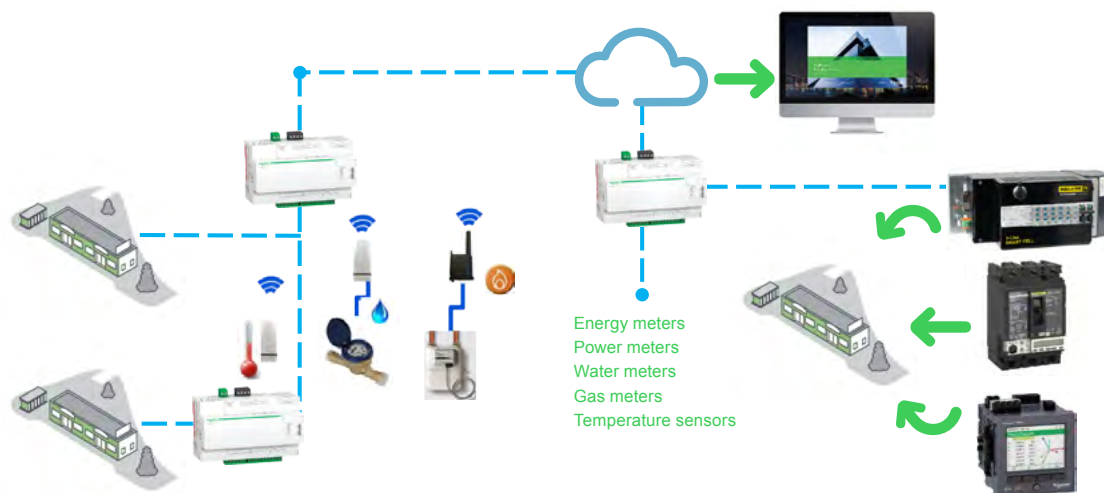
Remote Analytics
& Services



Edge Control



Connected
Devices



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Level 2: EcoStruxure™ Facility Expert

The [EcoStruxure Facility Expert](#) is a Web-based portal to all your connected sites, enabling you to monitor energy status and the health of electrical assets at each location.

Facility Expert leverages the data that connected devices send to the cloud to give you control over electrical operations, for a single site or for multiple sites. From a simple Web browser, you get insights into energy

consumption and asset status. The tool can also help you better control energy costs for customers, by enabling you to see which components are drawing an inordinate amount of power, for example. And it helps increase maintenance efficiency, by issuing alerts and pointing you to the components that need attention, including their exact location – a significant time-saver for field personnel.

Mid Size Buildings: Single or Multi-site Applications



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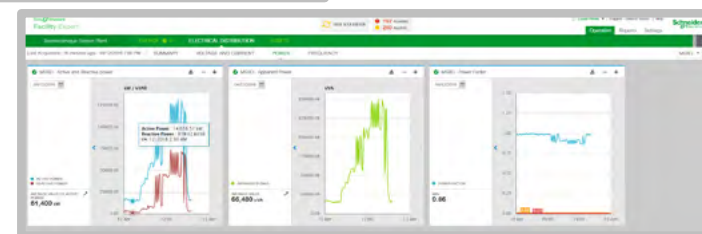
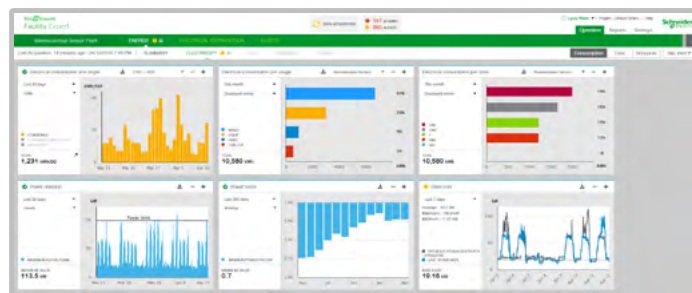
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Level 3: EcoStruxure™ Facility Advisor

EcoStruxure Facility Advisor is the top level of the architecture, where advanced analytics tools are applied to a central pool of data from all connected devices – again from one building or many.

Facility Advisor enables key benefits and capabilities including energy management and asset monitoring, specifically tailored for small to medium, non-critical buildings. It also enables monthly or semi-annual reports

that **reveal insights and recommendations that are simply not available with traditional, non-connected equipment.**

For example, Facility Advisor enables you to establish benchmarks for what constitutes “normal” performance of your electrical infrastructure, and individual components of it. Then it can alert you when conditions arise that are outside of the norm.

Mid Size Buildings: Single or Multi-site Applications



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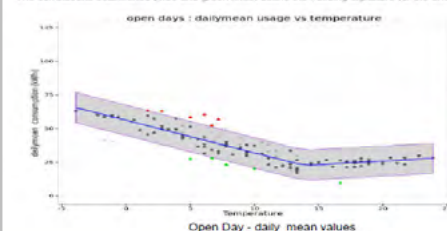


Connected
Devices

Building signature – Daily monitoring

Building Signature View

On the diagram below we have plotted the energy consumption versus the external temperature obtained from a local meteorological database. The correlations established (blue and green lines) define the building signature (or the energy base-line).



Comments

Analysis

The correlation is clear : we can see the external temperature effect on the site's energy consumption according to three well identified periods : winter - mid-season and summer.

Red days are identifying over consumptions over the period (see details on the synthesis page).
Green days are identifying under consumptions over the period (see details on the synthesis page).

Recommendations

Abnormal days identified (more especially red marked) require investigations to identify which equipments or usages (heating and/or process) were operating and were producing over consumptions during these days.

Thus, modify the operating schedule of these equipments will allow to improve the situation, make improvements and realize potential savings.

And also identify what usages (heating and/or process) did not work the days of lower consumption (green days), and if possible extend this mode the remaining time.

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KPI

Number of day over the tunnel : 6
Number of day under the tunnel : 5



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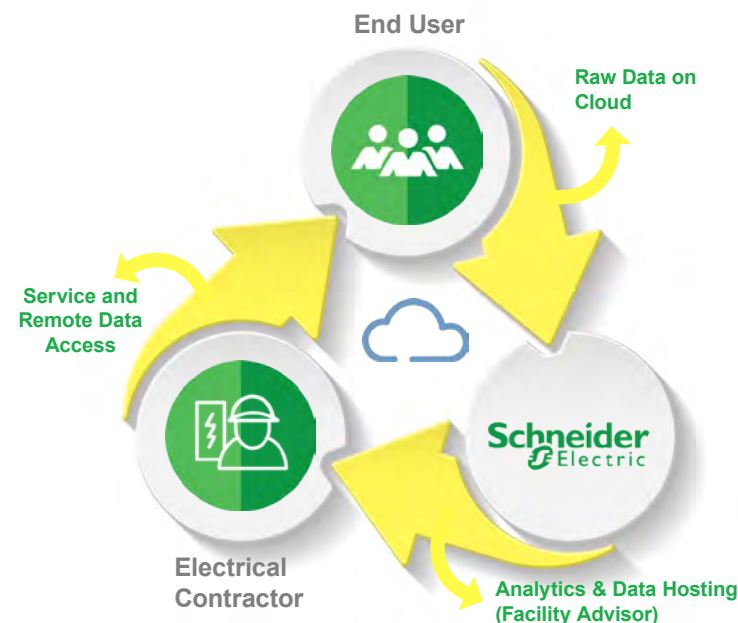
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Putting it all together

As a whole, the EcoStruxure™ Power Small and Medium non-critical buildings platform enables electrical contractors to create a new line of business: becoming a service bureau for your customers.

The platform delivers a number of capabilities that will help make you virtually indispensable to your customers, including:

- **Instant alerts** when issues arise, enabling you to repair problems before they result in damage to customers. Imagine if you can alert customers to problems such as:
 - A tripped breaker that cuts off power to the main kitchen refrigerator of a K-8 school on a Friday night
 - A water leak after hours in an office building
 - Abnormal energy consumption during off hours in a light manufacturing plant, raising the risk of fire
- **Real-time status** of all critical assets and loads, to reduce property damage and minimize business interruptions
- The ability to **share data** with your team so everyone receives information in real time and stays connected, even in the field; and field personnel know what needs to be fixed prior to arriving at the job, so they can be prepared accordingly – and fix the problem in one trip



- **Access** to all relevant information — including dates, documentation, photos, voice memos and the like — to share with field engineers on their mobile devices for faster troubleshooting and repairs
- The ability to **download preventive maintenance plans** and receive task reminders to optimize operations
- **Generation of maintenance reports** in a single click to document that the job is done and reduce administrative tasks



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Putting it all together

EcoStruxure™ Facility Advisor also gives you access to Schneider Electric experts who can examine the trend analysis reports and other data Facility Advisor generates and make recommendations on infrastructure improvements aimed at increasing efficiency and reliability. You can then take those recommendations back to the customer, helping them save money and avoid downtime – and by the way, you get all the credit.



Advanced analytics also help enable predictive maintenance. For example, you can get alerted when a smart circuit breaker has been tripped so many times that it's likely to fail soon – ensuring it's replaced before it results in a service interruption.

Taken together, all of these capabilities will make you a trusted, indispensable advisor to your customers – while generating a new, recurring revenue stream for your company.

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EcoXpert™ Connected Program

Gaining all of these benefits is within reach to those electrical contractors who join the EcoXpert Connected Power Program and get certified in the EcoStruxure™ Power platform.

Getting certified means you will fully understand how to harness the power of actionable data to establish and/or grow a services business. You'll gain expertise in how to deliver connected electrical distribution systems in non-critical buildings and enable powerful measurement capabilities. You'll also learn how to manage connectivity to optimize operations and deliver energy savings to customers, while gaining access to the powerful capabilities inherent in Facility Advisor.

Do you have what it takes?

Becoming an EcoXpert is not the career path for all electrical contractors. If you're content with the status quo and living from one job to the next, that's fine.

But many contractors are looking for something more. You may have what it takes to become an EcoXpert if you're:

- Interested in adopting a strong service business, with recurring maintenance contracts that generate consistent, predictable revenue
- Are an early adopter, comfortable with applying new technology to your business
- Have or can acquire IT capabilities, to connect devices and integrate with cloud-based services

- Have customers that are a fit for the EcoStruxure Power Small and Medium non-critical buildings platform, including:

- Warehouse and light industrial
- Multi-site retail, franchise organizations
- Office buildings
- Supermarkets
- K -12 and higher education
- Government buildings
- Industrial Buildings with 5000A or less main service entrance

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EcoXpert™ Connected Program

You decide: Status quo or digital revolution

The digital revolution is here and there's no going back. You've just got to decide whether to take advantage of it to create new business opportunities – or let it pass you by.

The Schneider Electric EcoXpert Connected Power program gives you the tools you need to create a new line of business, while helping customers gain control of their energy costs and improve efficiency, to save on OpEx

over the life of their buildings. You'll also be able to help them improve the reliability of their equipment as well as maintenance operations, to increase uptime and prolong the life of their assets.

To get started, visit our [Contractor Portal](#) to learn more about how to get certified through the Schneider Electric EcoExpert Connected Power Program.



The EcoXpert Connected Power program gives you the tools you need to create a new line of business, while helping customers gain control of their energy costs and improve efficiency.



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Additional Resources

SOLUTIONS:



[EcoStruxure™ Power](#)

CONNECTED DEVICES:



[Molded Case Circuit Breakers](#)



[Metering](#)



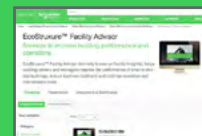
[Smart Systems](#)

EDGE CONTROL PRODUCTS:



[EcoStruxure™ Facility Expert](#)

APPS, ANALYTICS & SERVICES PRODUCTS:

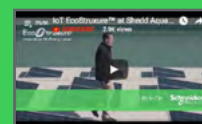


[EcoStruxure™ Facility Advisor](#)

CASE STUDIES:



[LaHacienda Tortilla Factory](#)



[Shedd Aquarium](#)

WHITE PAPERS:

[How to Design an Efficient Metering System](#)

[Introduction to EcoStruxure™ Facility Advisor Services](#)

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