

Digital services

A guide to how connected experts help you make data-driven decisions for your facilities to run continuously, efficiently, and sustainably.

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Life Is On

Schneider
Electric

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Identifying and overcoming today's operational challenges

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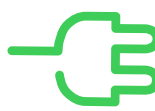


Face operational challenges with an all-electric, all-digital future

Whether you operate small- to medium-sized buildings or large critical facilities, you face more challenges than ever before.

Growing business and profit margins requires keeping control of uptime, safety, capital expenses (CapEx), and operating expenses (OpEx). And, like most organizations, you may have also made aggressive sustainability commitments – possibly even targeting net-zero – while complying with emissions regulations.

These new goals may require you to rethink some aspects of your infrastructure and processes.

At Schneider Electric, we believe that the all-electric, all-digital vision of [Electricity 4.0](#) can be your fastest route to greater sustainability, efficiency, and resilience, including:

-  Replacing fossil-fuel-based loads with electric
-  Taking advantage of cleaner and decentralized energy sources
-  Digitally connecting your critical energy and process assets

Depending on your situation, making this important transformation may present further challenges.

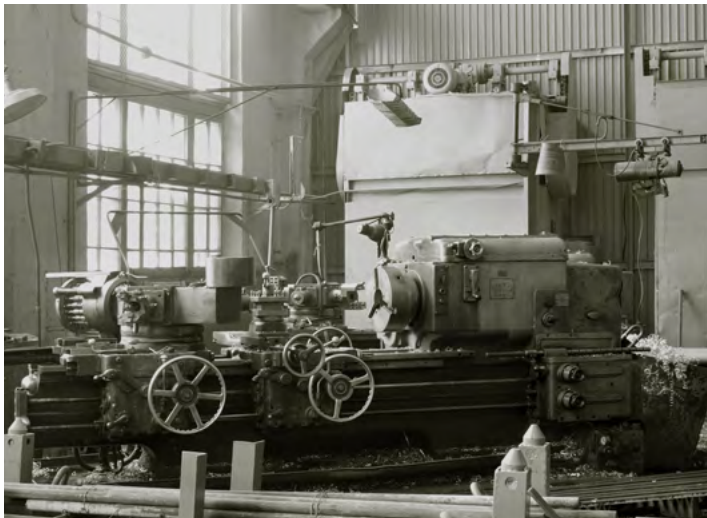
[Learn more](#)

Source: World's largest money manager says sustainable investing surge to continue," CNBC, January 2021

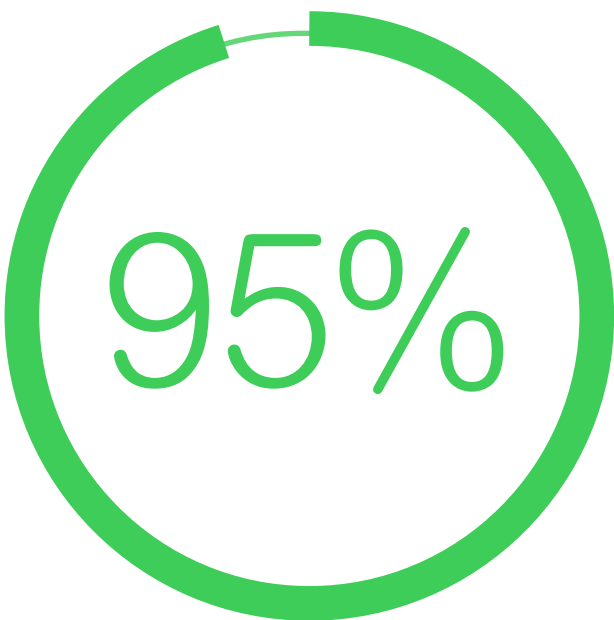
Recognizing barriers to achieving new gains

Several common technical and organizational barriers may slow your facilities' push forward.

Aging infrastructures



As equipment and systems age, their safety and reliability is impacted. You may need to repair or replace more equipment and components, potentially at an increased cost due to supply chain shortages. Additionally, improving sustainability can be more challenging in older facilities.



of electrical distribution remains non-connected.

Source: Schneider Electric, internal survey results

Bigger, more complex infrastructures



As facilities get larger, so does the complexity of their interconnected systems, including the continuing convergence of information technology (IT), operational technology (OT), and physical infrastructure control systems. The increasing use of automation and embedded technology also creates more power-sensitive loads. As a result, many assets have electronic components with different life spans, depreciation rates, operating scenarios, and maintenance requirements.

24.1 billion

IoT devices by 2030 will produce large amounts of data requiring an understanding of what to do with it.

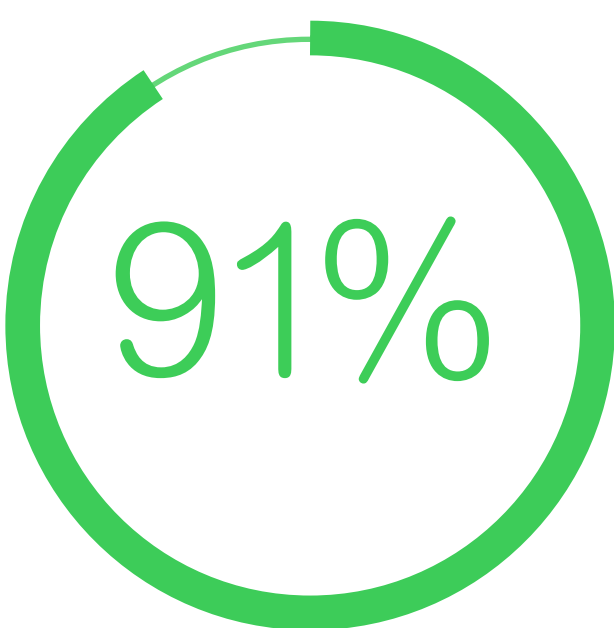
Source: transformainsights.com

Recognizing barriers to achieving new gains

Shrinking and less experienced facility teams



You may lose experienced people due to retirement or need to replenish resources after scaling back during the pandemic. As operational demand ramps up, hiring has become more difficult due to shortages in skilled workers within electrical, facility, plant, and cybersecurity management. Digital education has also been slow; meaning smaller in-house teams with less experience may find themselves with a greater scope of responsibilities across multiple facilities.



of facility managers report a gap between the knowledge and skills their team has vs. what they need to excel.

Source: 2021 FM Training Outlook Survey, ProFMI

Increasingly stringent environmental regulations



Governments recognize that every business impacts the environment. Companies are now forced to become more sustainability-oriented by complying with multiple new regulations or risk facing fines. To meet these legal obligations, facility teams and owners must understand various complex environmental laws.

125 of 154 developing countries are formulating and implementing national climate adaptation plans.

Source: unstats.un.org

Overcome barriers with connected experts

Facing these growing responsibilities with fewer resources leads to:

- Higher risks of downtime
- Increasing costs for equipment, maintenance, and spare parts management
- Limitations to organizational growth and greener facilities

Fortunately, there is a way to fill this gap.

This guide explains how Schneider Electric connected experts help you:

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Digitalization – the first step to success

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Digitalization is the first step to success

Today is about creating smart facilities

Leading global organizations have embraced the IoT-based digital transformation to create smart buildings and factories that can support data-driven decision-making to fuel greater:

- Sustainability
- Efficiency
- Productivity
- Resiliency

Simplify your digital transformation by using the native or retrofit connectivity offered by the newest electrical, building, and process equipment. Digital solutions should offer modular IT architectures with simplified product portfolios that can scale and adapt to your needs, creating a future-proof connected infrastructure.

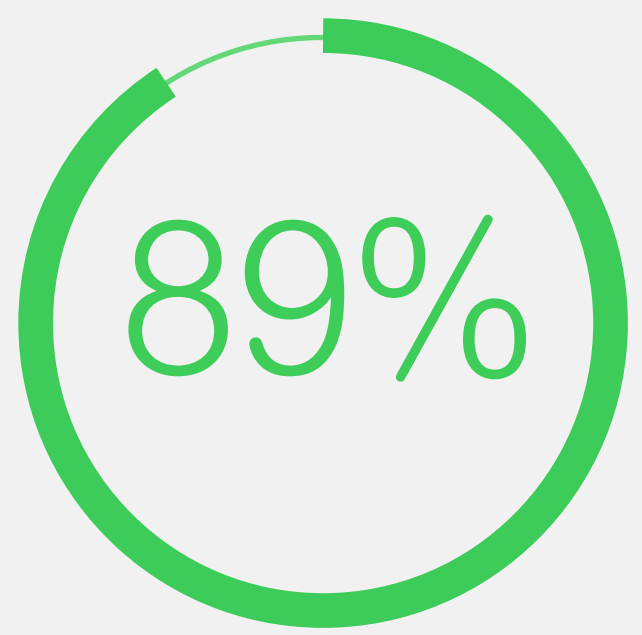
While the data shared with edge-based applications can help your team locally manage power, building, and microgrid systems, the enhanced cloud connectivity creates exciting new possibilities.

Tomorrow is about AI and ML technologies to enhance smart facility functionality

The power of cloud-hosted analytics applied to ‘big data’ advances rapidly thanks to artificial intelligence (AI), machine learning (ML), and augmented reality (AR) technologies.

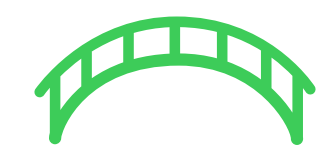
These technologies offer profound insights that empower your team to transition from a reactive approach to power and asset performance management to more predictive, condition-based strategies to help:

- Reduce the risk of downtime
- Lower the cost of maintenance
- Extend the life of assets
- Optimize spare parts management



of respondents said services helped achieve objectives.

Source: IDC survey



The key to taking your facility today into the future, is with a trusted partner.

More about partnership 



The role of a trusted partner

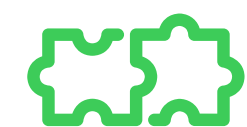
Maximize the value of digitalization

A trusted partner, like Schneider Electric, can help transform data into actionable insights. We help maximize the value of digitization to optimize your processes and business value.

1. **Connect** to every important asset and system

With your unique business goals in mind, we audit and recommend cost-effective methods to connect additional meters, sensors, or other devices or equipment, including:

- Meters, circuit breakers, relays, and other devices within medium- and low-voltage switchboards and switchgear
- Transformers
- Thermal and environmental sensors
- Data center secure power and cooling systems
- Industrial medium- and low-voltage variable speed drives and motors (or DCS integration to access drive and motor data)
- Lighting automation systems
- Refrigeration units
- Building management systems



Offering **agnostic hardware brand support**, Schneider Electric can seamlessly integrate it into your existing digital infrastructure.

Augment your team's expertise without adding personnel



More about maximizing the value of big data 

The role of a trusted partner

Maximize the value of digitalization

Augment your team's expertise without adding personnel

2. **Collect** critical data from across your enterprise

Understanding data is crucial in helping you take the next step to grow your business. At its most basic, data is the collection of different facts (e.g., numbers, measurements, and observations) translated into a form that computers can process. While seemingly simple, today's data is changing the world we live in and the way we work.

The key to its value is collecting the right data from the right places. Our EcoStruxure™ solutions continuously and efficiently capture critical data from sensors and equipment throughout electrical infrastructures, sending it automatically to the cloud.

3. **Analyze** big data to gain important insights

The more data available at your disposal, the more knowledge you will gain.

But, collected data must be analyzed and converted into meaningful insights to help you uncover new opportunities and avoid risks by making informed decisions and taking the right actions. This is where advanced analytics from EcoStruxure apps and services come in.

Learn how to augment your team's expertise 

The role of a trusted partner

Maximize the value of digitalization

Your team may lack specific expertise in energy efficiency, equipment maintenance, cybersecurity, or other critical domains.

Our Schneider Electric experts provide 24/7 remote monitoring of facility infrastructure to help maintain your assets and systems, prevent and quickly recover from failures, ensure your connected infrastructure is always secure, and more.



Stay focused on your business, and let us do the rest.

Augment your team's expertise without adding personnel


Our experts can help you reach your goals faster. We'll help digitize your infrastructure and transform your data into optimized power, asset, and sustainability management processes by:


- **Augmenting your in-house professionals** with the advanced analytics and expertise you need to meet your unique business commitments successfully.
- **Providing peace of mind** that some of the most experienced specialists in the world are helping watch your facilities 24/7 to maximize your data and minimize human error.
- **Extending your on-site support** with flexible and scalable services that can adapt along with your operations.


Schneider Electric helps you achieve critical operational outcomes



Once your operational infrastructure is digitized, connected to the cloud and the data it's analyzing, Schneider Electric continuously monitors your facilities to help you achieve the specifically defined outcomes you have for your organization, including:

 **Optimize operations while ensuring safety and comfort.** Our experts use condition-based strategies to identify and diagnose power and asset issues, avoid cyber threats, and predict failures. Your team can be more proactive so you can avoid unscheduled downtime or damage. We'll help you more quickly respond and recover if an inevitable failure occurs. Our experts will also act as a second set of eyes to help ensure facility safety and comfort.

 **Maximize financial efficiency.** We apply advanced analytics, AI, and product and application expertise to processes like condition-based maintenance and continuous commissioning, helping optimize asset performance and lifespan while saving energy. In addition, digitized maintenance logging and reporting streamline computerized maintenance management systems (CMMS) and regulatory requirements to create greater efficiency for your facility team.

 **Decarbonize operations.** We use intelligent algorithms and extensive sustainability experience to help you electrify fossil-fuel-based loads, reduce energy consumption, fully profit from microgrids and renewable energy, efficiently manage electric vehicle (EV) charging, and optimize energy purchasing and sustainability programs. We'll help you extend the life of your assets by reducing equipment replacements and, in turn, your raw materials consumption.

1 – Corporate Knights press release
2 – IntenCity video

How do we do it? Let's take a closer look in [Chapter 3](#) 



Achieve operational outcomes with data and analytics

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Digitalization – the first
step to success

**Achieve operational outcomes
with data and analytics**

4 ways that digital services
meet your needs



Connected Services Hub – Bridging analytics and expertise

Our connected experts operate by our global hub of highly skilled Schneider Electric engineers help you get the most from your data and infrastructure. These professionals are trusted domain experts in electrical power distribution, power quality, energy management and procurement, HVAC, automation, sustainability, IoT, AI, and cybersecurity.

At a fraction of the cost of adding new full-time staff, our Connected Services Hub creates a single point of contact for 24/7 access to global leaders with prodigious combined experience in customer business, process, and equipment intimacy and knowledge.

Connected Services Hub offers a comprehensive catalog of services for your unique operations and outcomes.



Connected Services Hub experts provide actionable recommendations

on **50%** of their monitored electrical assets.

Source: Internal Schneider Electric data

Let our digital services team do the monitoring, troubleshooting, and investigation allocation.



Analytics, AI, and Expertise: Deep layers of insight

Analytics and AI fuel digital services. We use data science to help you move to the next level with your facility data.

We've developed nearly **500 analytics algorithms** currently operating for our advisor platform.

Machine learning (ML) is helping to continuously optimize and improve our analytics.

It enables our experts to remotely evaluate the health of a subcomponent for indicators like electrical and mechanical contact wear. For example, we use over 30 analytics on a single MasterPact low-voltage circuit breaker.

AI enables a higher vision by aggregating and analyzing extensive data sets.

AI tools like ML offer the unique capability to continuously deliver insights into your operations' safety, efficiency, and sustainability, including processes like managing spare parts.



Discover examples of our analytics and business benefits

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Your ecosystem of flexible services

Partnering with Schneider Electric's digital experts means **working with a single vendor** that offers a large, flexible, and scalable scope of services to take your power, asset, and sustainability performance to the next level:

Power reliability

Asset management

Energy efficiency

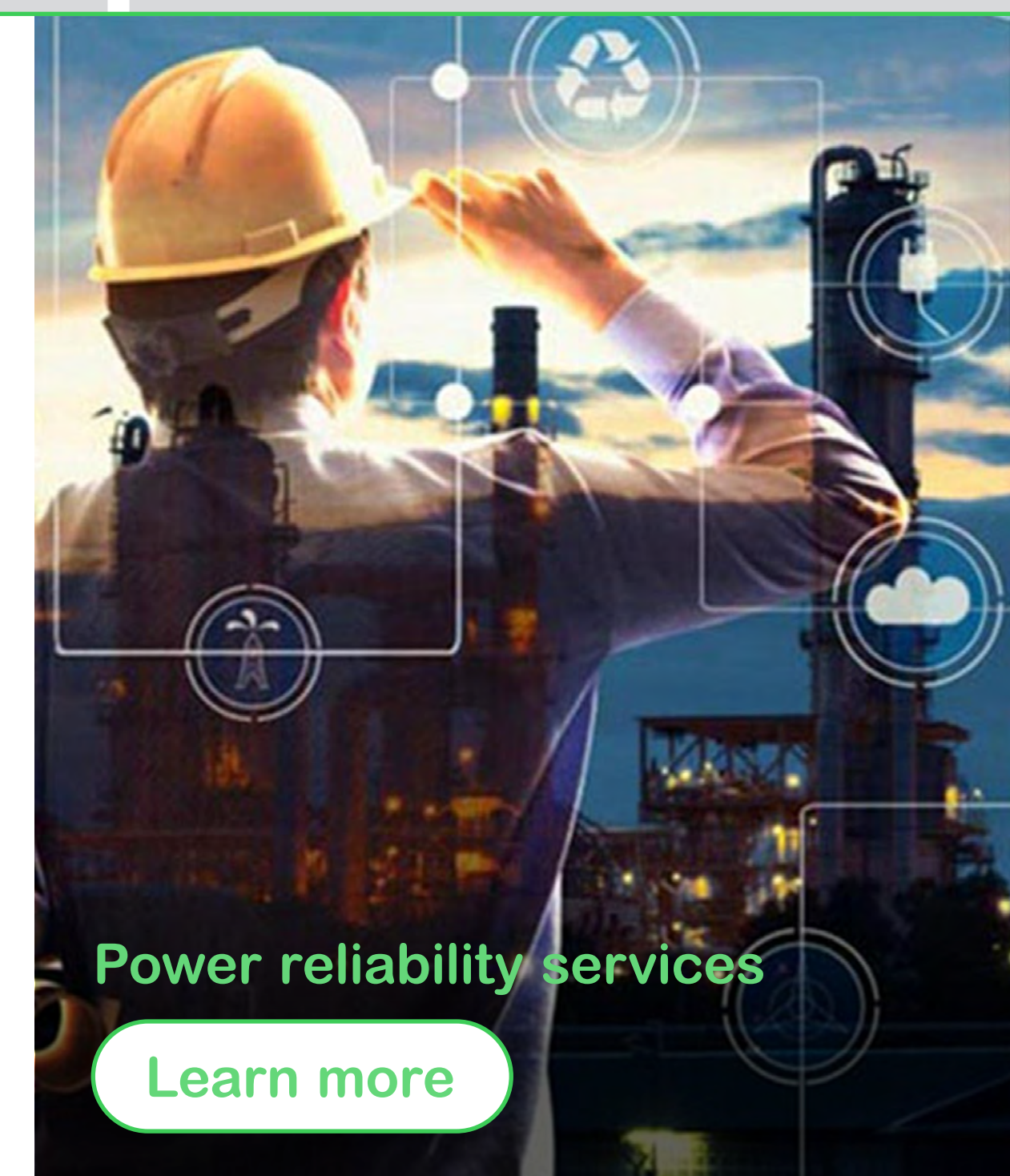
Workforce empowerment

Power reliability

Staying competitive in today's marketplace requires power reliability to keep operations running. Power management systems are critical to ensuring this, but their complexity can make it challenging for your team to make data-driven decisions to maximize infrastructure investments.

Schneider Electric IoT-enabled condition-based services can help:

- **Verify metering devices** are correctly installed and configured.
- **Monitor electrical system** conditions around the clock.
- **Reduce risks** by identifying problems early.
 - Example – Excessive harmonics that can waste energy, accelerate asset aging, and cause heating in equipment.
- **Extend the life** of your power-related assets.
- **Benefits:**
 - **Up to 20%** increase in uptime
 - **Improve power reliability** and spare capacity with expert recommendations
 - **Up to 15%** reduction in maintenance costs



Power reliability services

[Learn more](#)

Your ecosystem of flexible services

Partnering with Schneider Electric’s Digital Services means **working with a single vendor** that offers a large and flexible scope of services to take your power, asset, and sustainability performance to the next level:

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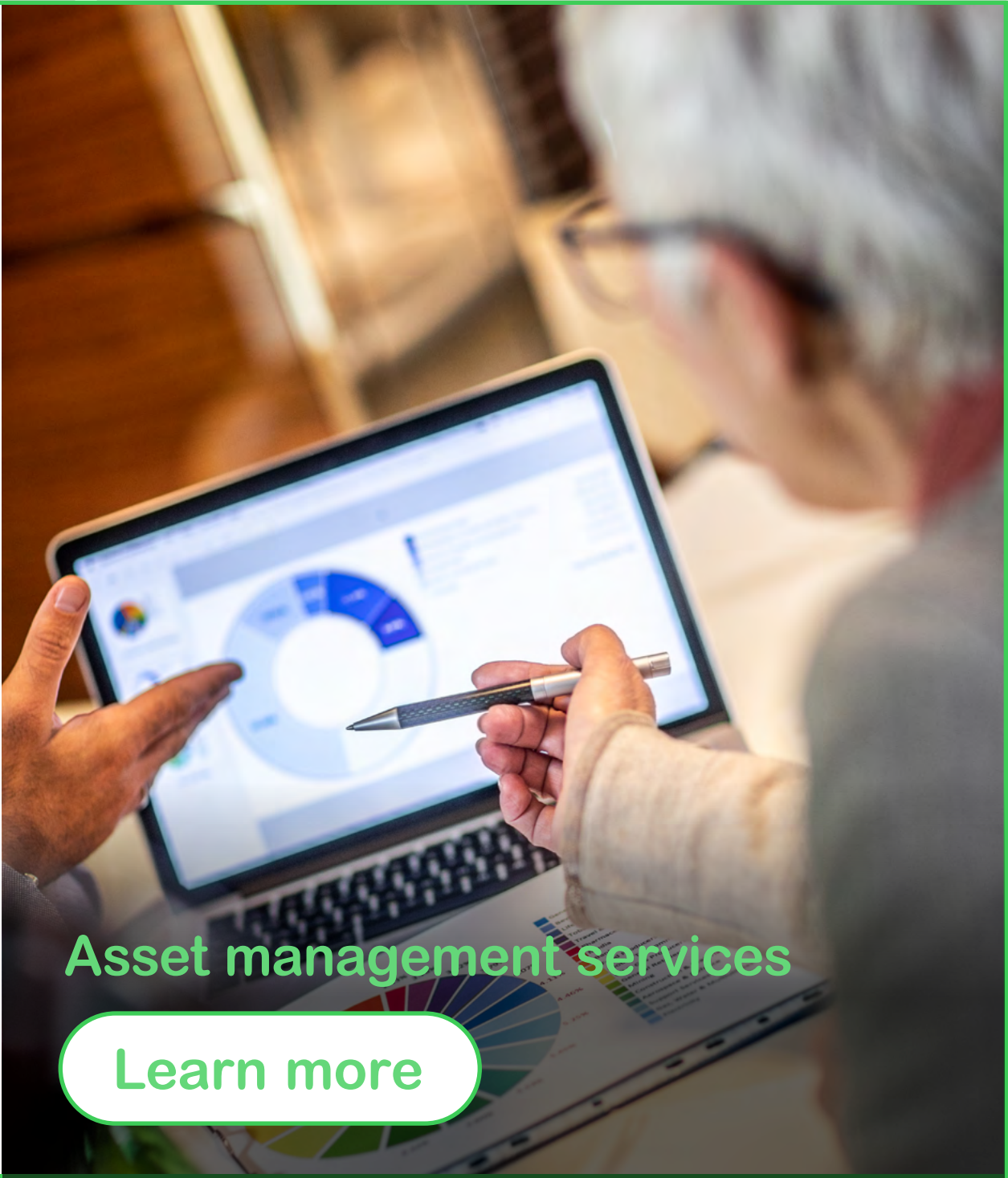
Energy efficiency

Workforce empowerment

Asset performance management

Our team of experts use digital technologies, remote expertise, and on-site maintenance to increase your facility's reliability, cost efficiency, and asset lifecycle management to help you:

- **Monitor and visualize assets** 24/7, including electrical distribution, secure power, and cooling.
- **Enable predictive maintenance** based on usage, temperature, loading, transformer discharge trends, etc. – to optimize lifecycles, anticipate failures, and reduce unplanned downtime.
- **Respond to risks faster** thanks to prioritized alarms and powerful root cause analysis.
- **Optimize portfolio-wide maintenance** by benchmarking performance, leveraging best practices, reducing site visits through prioritized maintenance activities, and using spare parts.
- **Identify how to optimize circuit loading**, such as rebalancing motor loads, reconfiguring transformers, etc.
- **Benefits:**
 - **Up to 75%** reduction in electrical failure risks mitigated, minimizing unplanned downtime
 - **Up to 40%** reduction in asset maintenance activities and planned downtime



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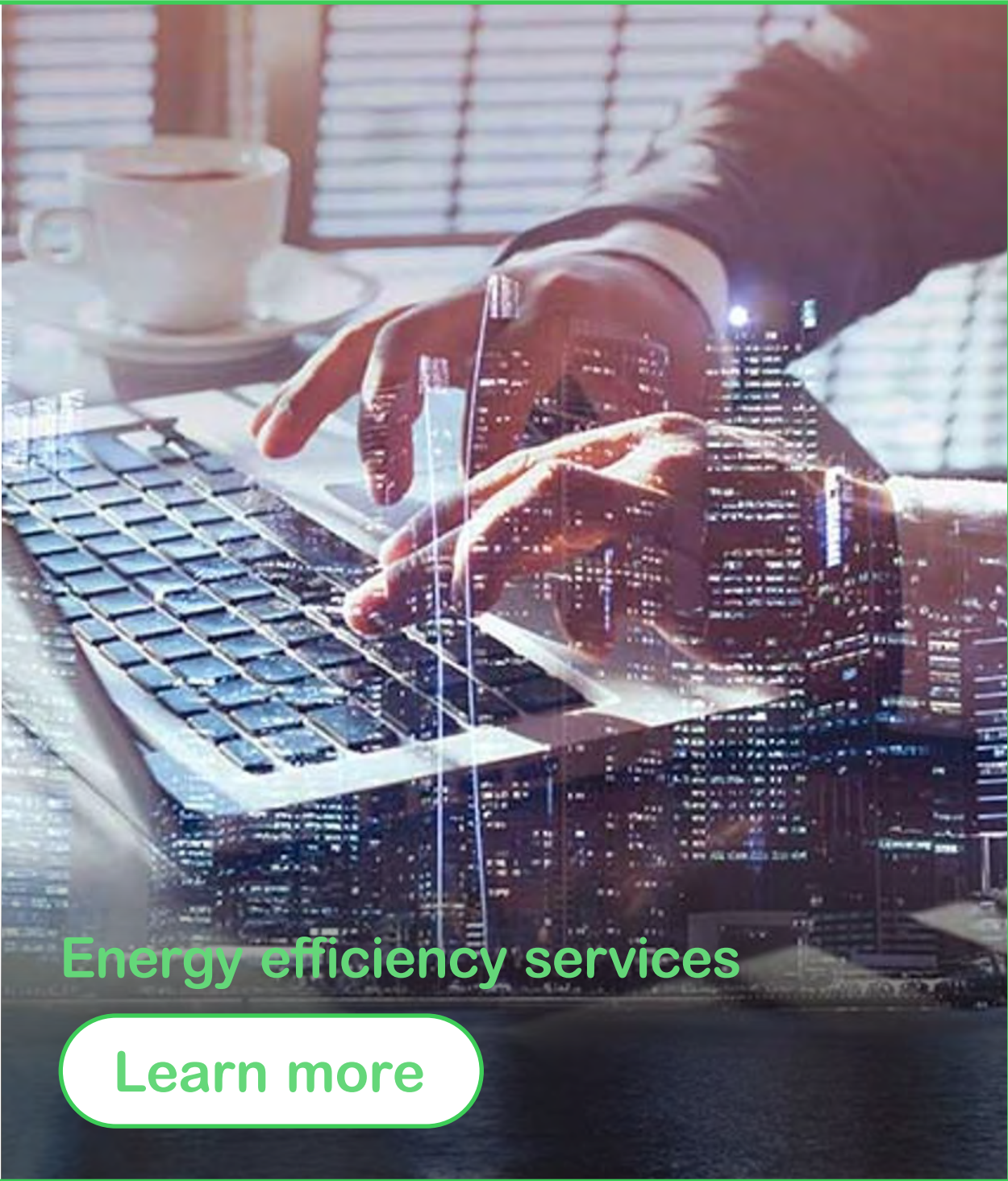
Energy efficiency

Workforce empowerment

Energy efficiency

Your facilities have massive, untapped energy efficiency potential. We’ll help you design and implement a strategy to build a business case for enterprise efficiency, accelerate results across your global portfolio, and continuously optimize efficiency performance.

- **Align efficiency and corporate goals**, secure buy-in from executives and stakeholders, and develop an opportunity profile and financial plan.
- **Achieve 15-30% operational and energy savings**, drive change by scaling energy efficiency results across your entire portfolio of sites, and ensure ongoing performance and savings.
- **Monitor sites for efficiency opportunities**, identify the cause of comfort and maintenance issues and extend asset and equipment life and performance.
- **Manage your energy and sustainability footprint** by capturing resource data on supply, demand, and sustainability in one place.
- **Take advantage of AI and expertise** to track energy efficiency projects, optimize energy procurement and commodity risk management, and streamline sustainability reporting.
- **Benefits:**
 - **25%** savings in the industry sector
 - **20%** in the buildings sector
 - **Up to 31%** savings in the transportation sector



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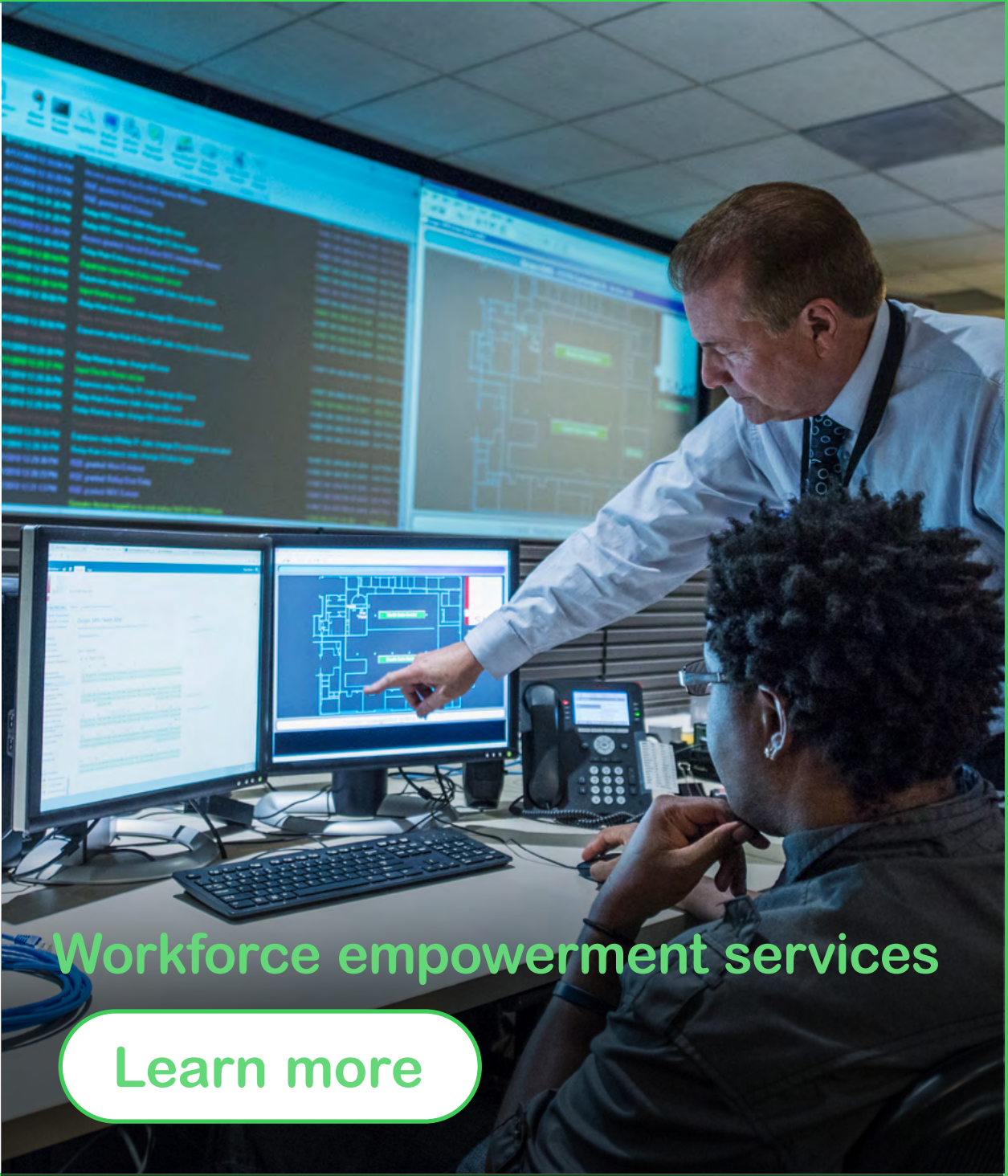
Energy efficiency

Workforce empowerment

Workforce empowerment

Today's workforce needs to make smarter, faster, and more efficient decisions. Our digital services leverage enterprise data capture, advanced analytics, and cloud-based technologies to empower your team with actionable intelligence anywhere they need it.

- **Provide and share deeper understandings** to optimize processes and improve operations.
- **Use data-driven insights** to improve decision-making and operational profitability.
- **Connect multiple facilities and share best practices** using secure web-based communications to access remote operations and maintenance expertise.
- **Benefits:**
 - Offer digital tools – like AR – that attract the next-generation workforce while increasing retention and productivity
 - Reduce onboarding time and support effective change management
 - Increase employee safety
 - Capture and retain operational know-how



[Learn more](#)

Connected Services Hub recommendations drive results

4 ways that digital services meet your needs

4 ways that digital services meet your needs

Digital services augment your in-house team to extend expertise and support. Our expert team creates an integrated set of services tailored to your business and operational outcomes.

We are committed to delivering services that you will find simple to access, reliable, adaptable, and scalable.

1. Customized for your unique requirements

Service architects help define the optimal architecture, platform, and bundle of modular services to fit your needs and expectations, for your:


- Business** – Whether you are responsible for an industrial, commercial, data center, or alternative large or critical operation facilities, we help maximize value for your singular goals.
- Technology** – We use dedicated practices to support what you have on-site today and future-proof assets and systems for tomorrow.
- Choice of service providers** – We collaborate to determine the ideal channels to deliver value to your business. For example, our team can provide remote monitoring and analytics expertise while you continue your relationship with a local [EcoXpert](#) partner to provide on-site services. Building winning global and local partnerships is our priority.

2. Customized for your smart infrastructure


3. Customized for the level of service you need

4. Customized for your team

Case Study | Nescafé plant boosts reliability



Case Study | Guardian Glass ensures power performance



4 ways that Digital Services meet your needs

1. Customized for your unique requirements

2. Customized for your smart infrastructure

3. Customized for the level of service you need

4. Customized for your team

Case Study | Nescafé plant boosts reliability

The Nestlé Nescafé Toluca, Mexico factory runs 365 days a year, producing 60% of the company's soluble coffee – so downtime is not an option, especially when these disruptions could cost \$52,000 per hour.

Schneider Electric digital services delivers 24/7 remote monitoring for all five electrical substations. This has helped:

- Improve visibility
- Avoid three stoppages
- Use predictive maintenance to move from an annual to a biannual schedule, improving productivity.

Plant electrical specialist Luis Gilberto López Páez also appreciates that, “EcoStruxure Asset Advisor allows me to visualize my electrical equipment from the comfort of my home.”

[Learn more](#)

4 ways that digital services meet your needs

1. Customized for your unique requirements

2. Customized for your smart infrastructure

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Case Study | A leading glass manufacturer, Guardian Glass, uses EcoStruxure Power to ensure reliable power performance.

The challenge

- Restore power factor levels to regain utility credits
- Provide visibility to overall energy use and power grid problems
- Replace capacitor banks with a reliable solution

The solution

- Apps, Analytics, & Services: Prime Digital Service Plan with EcoStruxure Power Advisor and a Power Quality Maintenance Plan
- Edge Control: EcoStruxure Power Monitoring Expert
- Connected Products: VarSet capacitor banks, PowerLogic™ meters

The results

- Upgrading to VarSet capacitor banks realizes a three-point power factor gain
- EcoStruxure Power Monitoring Expert enables 24/7 observation of energy performance
- Monthly utility credits equaling about 4% of a monthly electricity bill

[Learn more](#)

4 ways that digital services meet your needs

1. Customized for your unique requirements

If you need to modernize connectivity, choose our best-in-class, trusted [EcoStruxure IoT platform](#) for a cyber-secured, open, scalable, and future-proof solution.

Its non-disruptive, simple implementation ensures business continuity while its interoperable foundation supports smart operations and cloud connectivity for digital services.

We will consult with you to determine if the appropriate infrastructure is in place to deliver the required data.

2. Customized for your smart infrastructure

Benefits of EcoStruxure



Core capabilities for connectivity and intelligence

- Uses standards-based communication protocols.
- Smart devices to perform native analytics for control decisions.

3. Customized for the level of service you need



An interoperable foundation for smart operations

- Assists with building applications such as monitoring, visualization, and control systems for implementing smart operations across your enterprise.

4. Customized for your team



Infrastructure for cloud-connected digital services

- Leverages scalable Microsoft® Azure IoT technology.
- Delivers value-added digital services to help optimize your operations.



Case Study | Boston Scientific HQ gains efficiency and savings



Learn about two service levels



4 ways that digital services meet your needs

1. Customized for your unique requirements
2. Customized for your smart infrastructure
3. Customized for the level of service you need
4. Customized for your team

Case Study | Boston Scientific HQ gains efficiency and savings

Boston Scientific engaged Schneider Electric Digital Services to reduce energy consumption and improve sustainability at their Massachusetts campus by:

Quickly troubleshooting and pinpointing operational issues, which has delivered a

40% reduction in avoidable fault related costs.



Identifying several required repair measures, including adjusting errant temperature sensors, stuck dampers, new control sequences, and chronic low chilled water temperature differential.



Overall the company has achieved an annual cost savings of **\$30,000 – \$40,000**.

[Learn more](#)

4 ways that digital services meet your needs

1. Customized for your unique requirements
2. Customized for your smart infrastructure
3. Customized for the level of service you need
4. Customized for your team

We offer the flexibility and value of subscription-based plans, with options that ensure you pay only for the scope of service you need:

Level 1 - Keep track of equipment and system health through preventive maintenance

- Get remote visibility of asset and system conditions across multiple sites.
- A 100% dedicated domain expert providing 24/7 remote monitoring, smart alarming, and instant notifications to help you anticipate maintenance needs and manage day-to-day operations.
- We analyze and troubleshoot every event, offering consultation to help you reduce operational costs and de-risk operations to improve facility resiliency.

Learn about Level 2



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We offer the flexibility and value of subscription-based plans, with options that ensure you pay only for the scope of service you need:

Level 2 - Maintain and optimize your equipment through predictive maintenance

- A team of domain experts will help you maximize the business value of AI and ML to enable condition-based maintenance and recommendations to optimize capital costs.
- We analyze trends in your equipment conditions to help prevent future failures.
- We will propose a long-term maintenance strategy and help continuously optimize your strategy based on changes at your facilities to improve performance and extend your asset's lifecycle.

Learn about on-site support



4 ways that digital services meet your needs

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Recommended on-site support

Schneider Electric, with local EcoXpert partners, offer custom on-site support to complement your choice of Level 1 or Level 2 services.

We use a highly integrated approach to 24/7 analytics monitoring to identify new opportunities to reduce risks and improve operations, while local service personnel augments your facility team to support maintenance tasks and respond to urgent events.

The result? Improved maintenance efficiency, fewer failures and downtime, and longer asset life.



4 ways that digital services meet your needs

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Digital experts share all customized insights and reports with your team

You will enjoy a powerful user experience, with data and key performance indicators presented in a user-friendly way that makes it easy to determine the best course of action.

Metrics are customized for your team to optimize how to best deliver value to your organization. For example, evaluate performance based on reactivity time, reliability improvement, the total cost of ownership (TCO), reduction of additional external technical support, seconds to identify a failure, improvement in the mean time to repair (MTTR), planned maintenance percentage (PPC), etc.



Learn about multiplying value with integrated services



4 ways that digital services meet your needs

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Multiplying value with integrated services

The broad expertise of Schneider Electric multiplies benefits across your operational goals, including:

- **Resolving power quality issues** to improve energy efficiency and reduce the impact of aging on equipment, so your asset manager doesn't have to purchase replacements so soon.
- **Identifying if data center cooling is running too cold**, and optimizing settings that can help you reduce energy consumption, extend equipment life, and reduce your carbon footprint.
- **Managing the firmware versions** inside your connected devices, which, in turn, will help keep cyber protection up to date.

Schneider Electric uniquely has the cross-domain expertise and integrated services to deliver on all of these outcomes.

Case Study | RSA data center improves response time

Monitoring and troubleshooting time was reduced to minutes, not hours.

Handle short outage with extended battery run to 22 minutes.



4 ways that digital services meet your needs

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Case Study | RSA data center improves response time

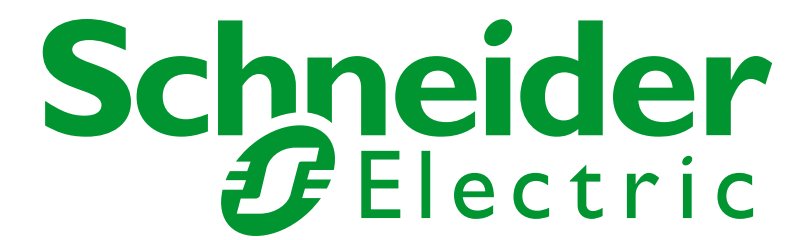
Retirement Systems of Alabama (RSA) operates a 300-rack, 44,000 sq. ft. colocation data center supporting high-profile customers. RSA wanted to ensure the facility had the most resilient power and cooling infrastructure available.

Schneider Electric digital services is an extra set of eyes monitoring the data center 24/7, giving administrative staff peace of mind and reducing troubleshooting time from hours to minutes. Jeff Gardner, Critical Facility Manager, notes that service bureau representatives “handle everything for us, from the dispatch to the ordering and delivery of parts.”

[Learn more](#)



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To learn more about the Schneider Electric's **digital services** visit:

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Schneider Electric

35 rue Joseph Monier
92500 Rueil-Malmaison, France
Tel : +33 (0)1 41 29 70 00

