

Improve your electrical asset management

with EcoStruxure™ Service Plan

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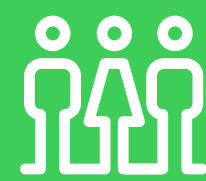


Addressing maintenance challenges

Proper maintenance of electrical assets is mandatory to keep operations at peak performance, but maintaining its uptime can be a challenge.



Reduce downtime in aging infrastructures



Cope with staff shortages and lack of qualified people



Digitize operations with increasingly tight budgets

Did you know?

Three main critical issues for operations managers:

1. Risk of planned or unplanned downtime
2. Loss of time and energy
3. Costs due to maintenance

Source: UMI Market Survey on IoT sensors for optimized maintenance

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Introducing EcoStruxure Service Plan

Save operating time and budget while supporting your business continuity with the right maintenance at the right time.

Today's organizations cannot afford downtime. That's why you **need to shift from a traditional maintenance strategy**, either break-fix or calendar-based, **towards condition-based maintenance, enabled by predictive analytics.**

To make that shift successfully, **you need a trusted partner with deep expertise in energy management and automation.**

From essential support to advanced expertise, EcoStruxure Service Plan is a service plan that combines the power of our EcoStruxure platform with remote and on-site consultancy, as well as dynamically scheduled condition-based maintenance.

In other words, [EcoStruxure Service Plan](#) is a combined field and digital services plan enabled by **condition-based maintenance** that can:

- ✓ **Help prevent downtime** – Through continuous monitoring and predictive analytics, potential issues are identified much earlier and can be addressed before the situation results in unanticipated downtime.
- ✓ **Maximize operational efficiency** – By relying on our qualified on-site and remote experts, your staff can focus on their priorities. By leveraging our condition-based maintenance solution, you can optimize your plant stoppages and increase your business continuity.
- ✓ **Achieve sustainability goals** – Thanks to robust analytics and indexes, Schneider Electric experts can monitor your electrical assets throughout their lifecycle, enabling you to make informed operational decisions to improve your assets' lifespan by up to 25% and gain visibility into your assets' aging so you can choose the right time for renewal.



Introducing EcoStruxure Service Plan (cont.)

Sensors and electrical connected devices are the backbone of an EcoStruxure Service Plan.

Step one in digitizing your electrical operations and moving to EcoStruxure Service Plan is to **equip your critical assets with the proper sensors, communicating protection relays and/or power meters** that can be achieved in two ways:

1. With fairly recent electrical equipment, the sensors will likely be a standard inclusion to the electrical equipment.
2. If you have older equipment in your installed base, you can modernize your equipment with our EcoFit™ Life Extension and replacement services.

Data is collected and sent through the EcoStruxure Panel Server to our innovative EcoStruxure cloud-based digital platform so it can be stored, processed, and analyzed to identify any potential anomalies in the equipment's performance:

- **PowerLogic™ CL110** is the sensor that measures temperature and relative humidity inside rooms or panels.
- **PowerLogic TH110** is the sensor that enables online thermal monitoring on low-voltage (LV) or medium-voltage (MV) bolted connections to help prevent damage due to incorrect connections.
- **PowerLogic HeatTag** is a wireless sensor for early detection of overheating wire insulation or overheating cables.
- **PowerLogic PD100** is a wireless sensor that enables the continuous monitoring of partial discharges in medium voltage switchgear. Based on capacitive coupler technology, it can detect all types of partial discharge (Corona, surface, internal discharge).



**PowerLogic
CL110**



**PowerLogic
TH110**



**PowerLogic
HeatTag**

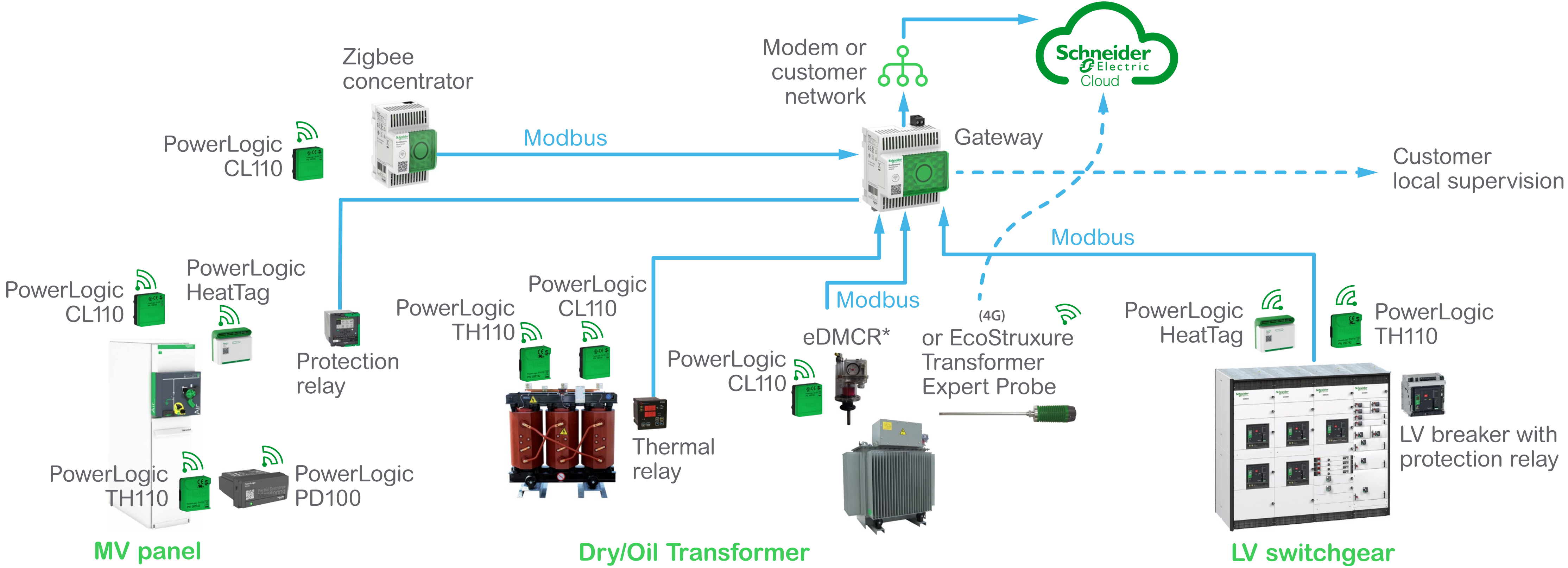


**PowerLogic
PD100**

Explore more about the EcoStruxure Panel Server [here](#).

Introducing EcoStruxure Service Plan (cont.)

Architecture to enable EcoStruxure Service Plan



*Detection, Measurement and Control Relay

Find more information about digital modernization [here](#).
Explore our smart monitoring solutions [here](#).

Introducing EcoStruxure Service Plan (cont.)

We help you optimize your electrical asset management. How?

We've joined the best from a traditional on-site service plan with a digital service plan.

3 Analyze

Our experts from the Connected Services Hub analyze the data and analytics computed by our EcoStruxure platform.

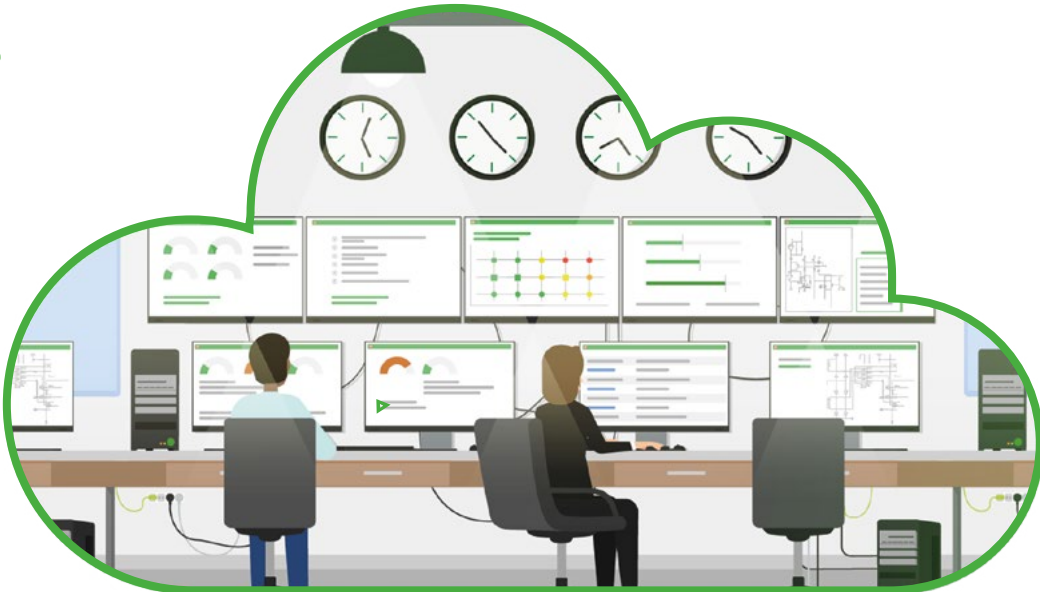


4 Notify

If our experts detect abnormal behavior, they'll notify you and propose a mitigation plan.

2 Monitor and visualize

The environmental and health status of the assets are continuously monitored.



5 Maintain

If the issue is critical, a Services Representative will be dispatched whenever needed.

1 Collect

Data from sensors and communicating devices are collected and uploaded on Schneider Electric Cloud.



6 Advise

You'll get insights and recommendations during a consultative meeting with our experts.

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Introducing EcoStruxure Service Plan (cont.)

Understanding the service plan features, coverage, and benefits

Features	EcoStruxure Service Plan for Electrical Asset Management			
	Prevent	Predict	Plus	Prime
24/7 technical remote support	✓	✓	✓	✓
On-site emergency dispatch	✓	✓	✓	✓
24/7 monitoring and alarming (ambient environment and asset data)	✓	✓	✓	✓
Advanced analytics:				
• <u>Thermal Monitoring and Fire Index</u>	✓	✓	✓	✓
• <u>Asset Health Index</u>		✓		✓
• <u>Partial discharge monitoring for MV switchgear</u>		Option		Option
• <u>Advanced condition-based monitoring for oil transformers</u>		Option		Option
Quarterly reports, asset management consultancy by <u>Connected Services Hub</u> experts		✓		✓
On-site condition-based maintenance:				
• Periodicity shift			+1 year	+2 years
• Dynamic scheduling triggered by <u>Maintenance Index</u>			✓	✓
On-site corrective maintenance:				
• Labor and travel included				✓
• Replacement parts optional				✓
Warranty extension (up to 4 years)*	Option	Option	Option	Option

*Covers only new equipment or new part(s) of modernized equipment

Products covered

Low and medium voltage equipment such as medium voltage switchgear, transformers, LV circuit breakers, and protection relays.



Benefits

- **Simplified operations** with online asset condition monitoring and alarming
- **Help prevent fires** with continuous thermal monitoring
- **Increased asset uptime** with predictive analytics, remote, and on-site manufacturer expertise
- **Faster issue resolution** with 24/7 remote technical assistance
- **Optimized operational budget** with a condition-based maintenance strategy
- **Improved asset's lifetime**, helping to reduce CO₂ footprint

Reinforcing electrical uptime

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Reinforcing electrical uptime

We monitor your electrical assets with **Thermal Monitoring**.

By continuously monitoring the conductor temperature via thermal sensors, the application can detect an abnormal temperature rise in the electrical distribution system:

- The exact location of the hot point is clearly identified
- Alarms aggregated by the software allow early detection of conditions that could cause fire or downtime
- The application helps to detect thermal anomalies due to loose connections



Explore more information about thermal monitoring [here](#).

💡 Did you know?

56% of all electrical fires are due to a lack of proper maintenance.

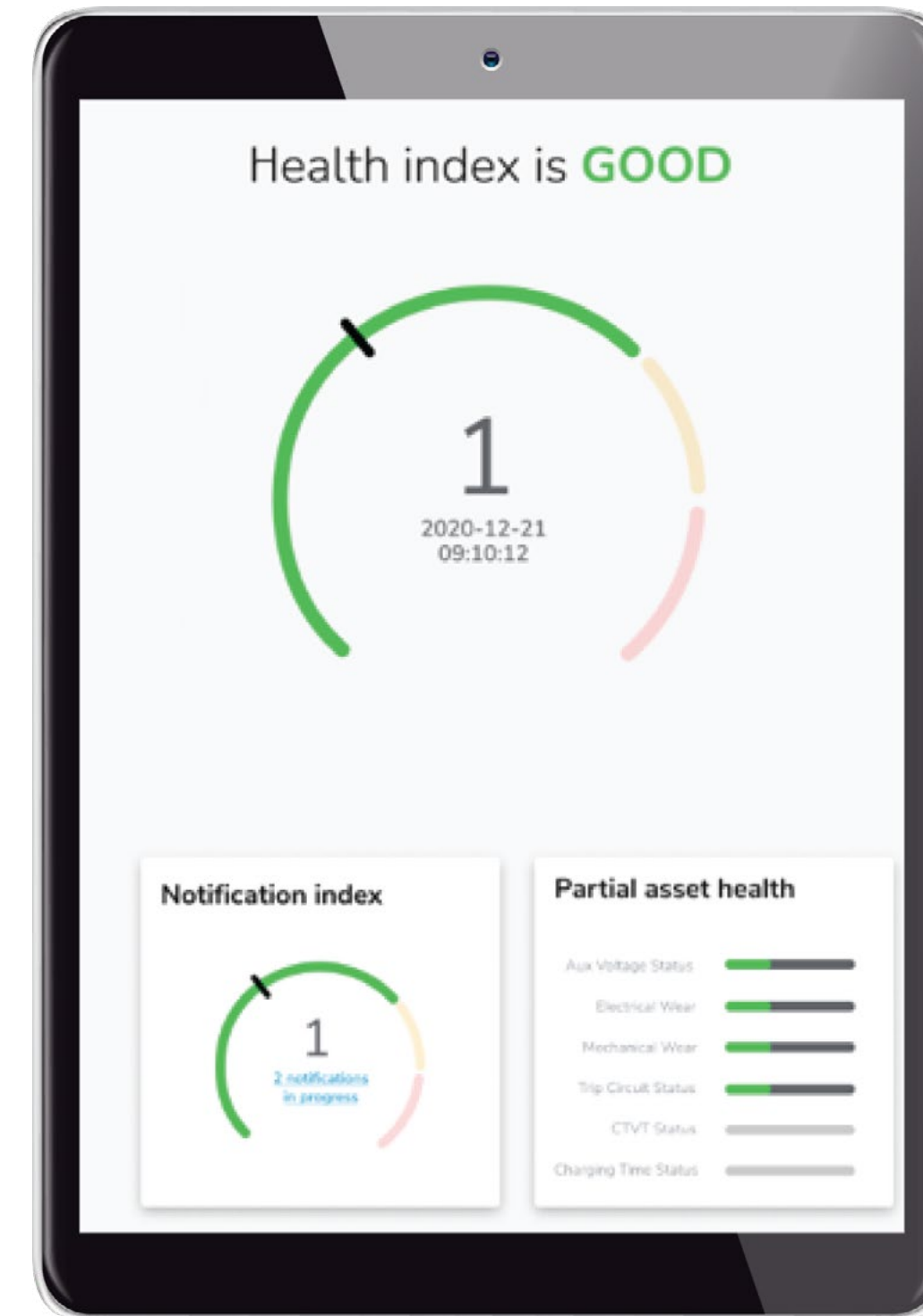
Source: Factory Mutual Insurance

Reinforcing electrical uptime (cont.)

We monitor the health of your electrical assets.

The Asset Health Index helps establish the health of your assets.

- The **criticality of each asset** is defined with each customer, taking into account the impact of potential downtime on their process. The system provides:
 - A Health Index for each connected asset and an overall site Risk Index
 - Advanced analytics enabled by 24/7 asset monitoring
 - Alarm notifications and easy access to data via mobile app and web portal
- When the Asset Health Index evolves, experts from the Connected Services Hub analyze the situation and provide actionable recommendations to help you reduce your risk of downtime and optimize your assets' lifespan.



💡 Did you know?

The **capacity to prevent untimely shutdowns** is the major achievement operation managers expect from a maintenance plan.

Source: UMI Market Survey on IoT sensors for optimized maintenance

With **EcoStruxure Service Plan**, we can help minimize unplanned downtime by up to **75%**.

This percentage is non-contractual and based on Schneider Electric's experience and expertise with respect to main root cause of downtime observed and for which Schneider Electric has developed solutions

Reinforcing electrical uptime (cont.)

Monitor your medium-voltage switchgear with partial discharge monitoring.

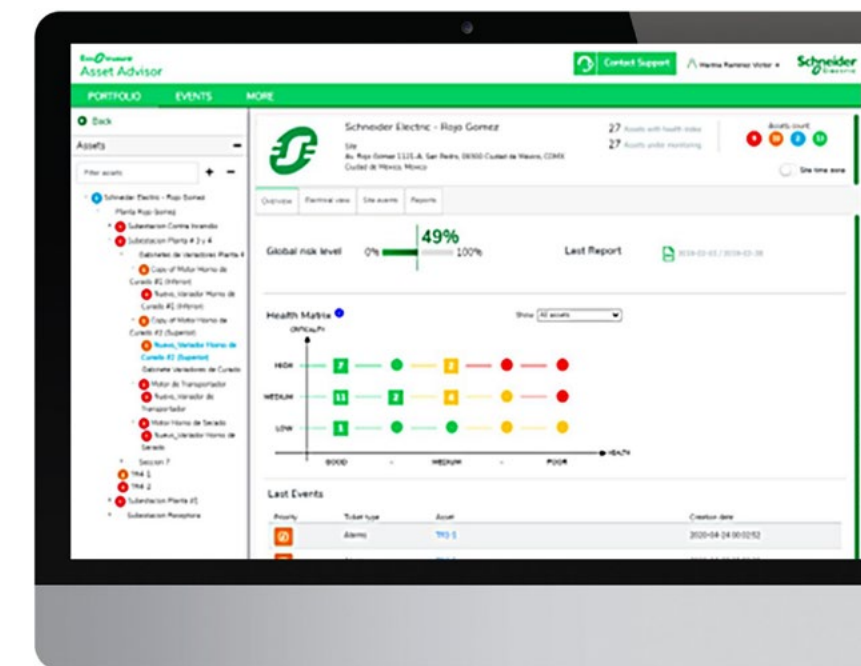
Partial discharge (PD) is a localized electrical discharge that affects insulation, impacting equipment uptime, business operations uptime, and lifespan. PD is an early indicator of equipment degradation.

A partial discharge sensor (PowerLogic PD100) is installed in medium-voltage switchgear with Active Plus connectivity. Based on capacitive coupler technology, **the measurement data is sent wirelessly** through the EcoStruxure panel server cloud gateway to our **cloud-based EcoStruxure digital platform** to store, process, and analyze data.

Schneider Electric can monitor this critical phenomenon as an optional dedicated feature inside your EcoStruxure Service Plan with:

- 24/7 monitoring and alarming with easy access to data via mobile app and web portal
- Dedicated and specific monitoring in our cloud-based EcoStruxure digital platform
- Detection of all types of Partial Discharge (Corona, surface, or internal discharge)
- Advanced analytics to monitor trends and environmental conditions

Our Connected Services Hub experts possess the necessary competencies to address the complex phenomenon of PD. They will take the necessary action and provide valuable insights, analysis, and recommendations to enhance your business continuity and operational efficiency.



💡 Did you know?

Over **25%** of disruptive failures in high voltage (HV) and medium-voltage (MV) equipment are caused by **partial discharge**, and up to 40% if we include dust and smoke which are also root causes of PD. Partial discharge ultimately leads to complete failure of the equipment.

Source: IEEE Standard 493-2007

Learn more about partial discharge monitoring [here](#).



Reinforcing electrical uptime (cont.)

Optimize your transformers' life through advanced condition-based monitoring.

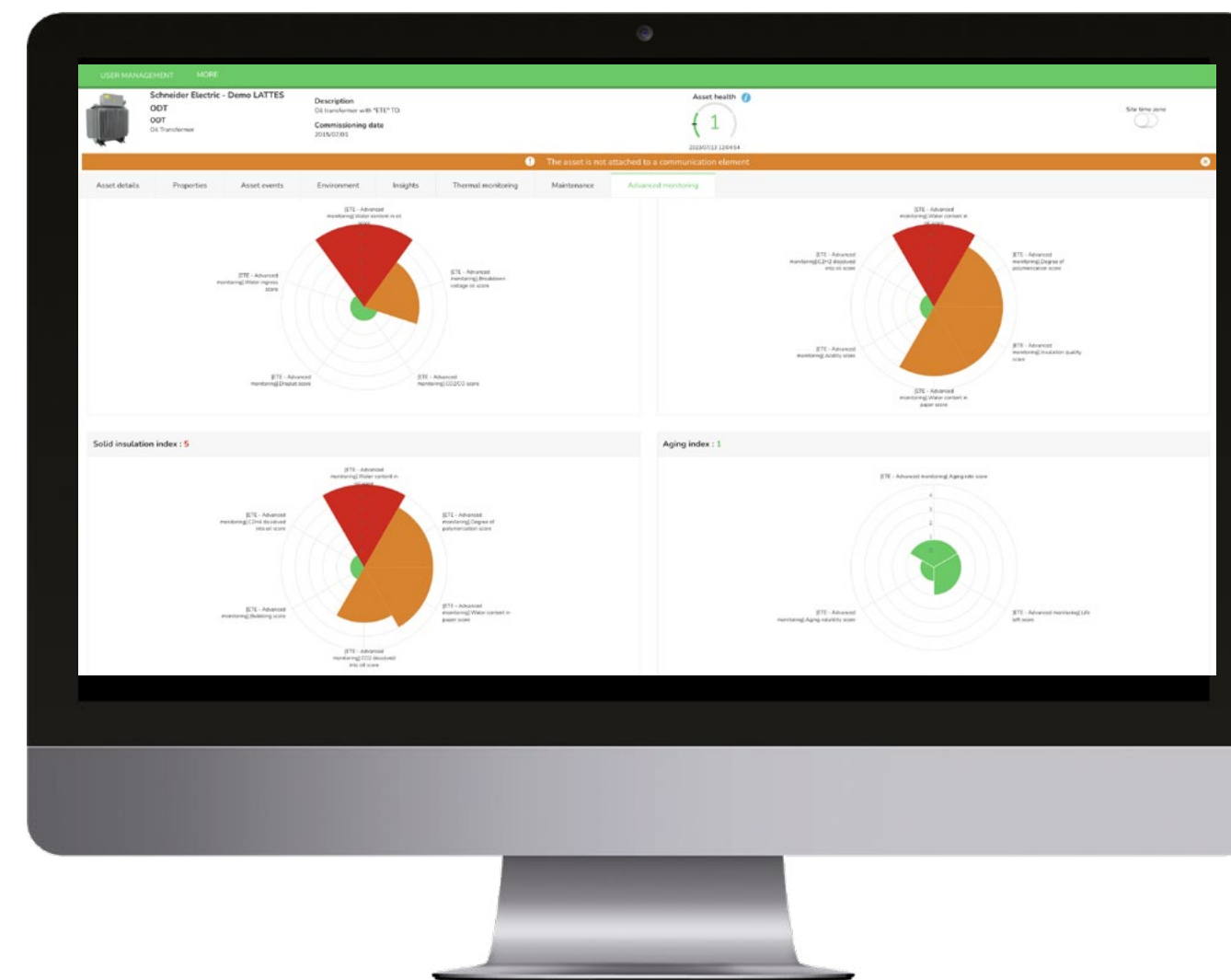
Transformers play a critical role, from electrical generation to consumption, across enterprises and industries. Their downtime can have a huge impact on business continuity and could generate significant unplanned costs.

We will monitor the health of your oil transformers, so that you can act in anticipation. Enabled by advanced condition-based monitoring and Dissolved Gas Analysis (DGA), this is an optional feature inside your EcoStruxure Service Plan.

24/7 remote monitoring and advanced analytics focus on 4 different indicators:

- **Operating risk**
- **Solid insulation risk**
- **Dielectric risk**
- **Aging risk**

If risk increases, our experts from the Connected Services Hub will take the necessary action and provide insights, analysis, and recommendations to improve your business continuity and optimize your transformers' life.



💡 Did you know?

On average, **1** out of every **200** transformers experiences a major failure every year.

Source: CIGRE TB 642, 2015

Reducing electrical fire event probability

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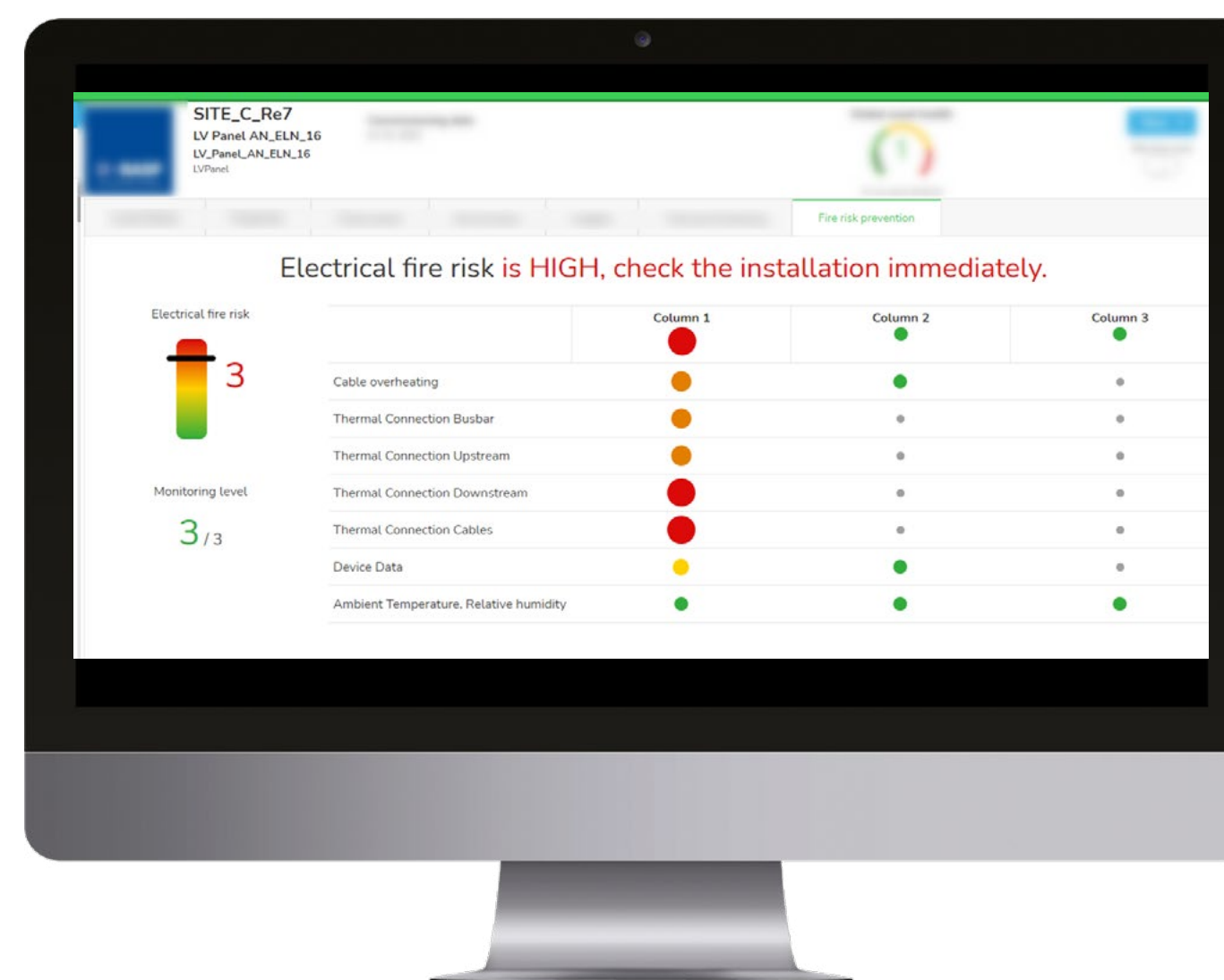


Reducing electrical fire event probability

We monitor your electrical assets with **Electrical Fire Index**.

Electrical Fire Index combined with a Monitoring Level provides extra protection against electrical fire events in your installation.

- Based on field data and advanced analytics enabled by 24/7 monitoring of potential source of fire and localization in the equipment
- You receive alarm notifications and can easily access the data via mobile app and web portal
- When the Electrical Fire Index increases, experts from the Connected Services Hub analyze the situation, and if needed, call you to propose a corrective action and/or an intervention of a Services Representative.



💡 Did you know?

59% of total business interruption losses reported is due to fires and explosion.

Source: Allianz

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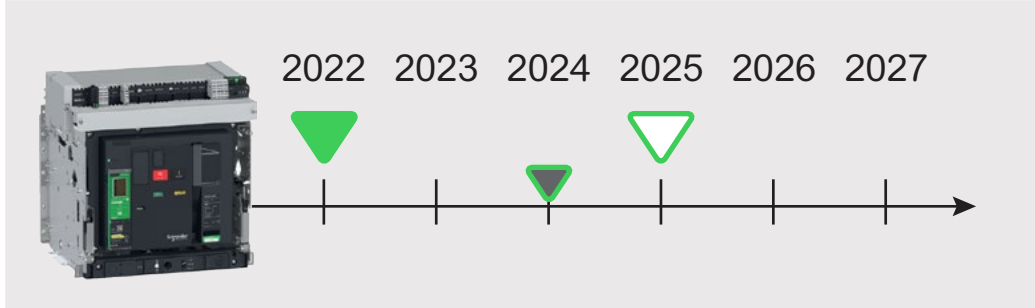
Locating additional resources



Moving to condition-based maintenance

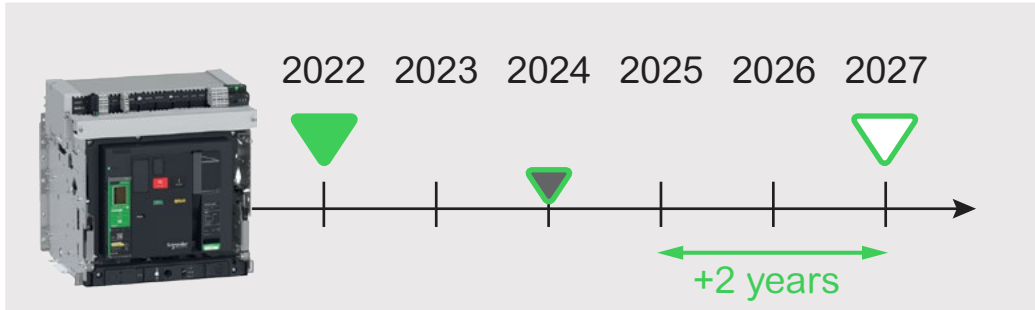
What is condition-based maintenance, and how can it impact your maintenance strategy?

Condition-based maintenance is a **preventive maintenance** method that monitors the condition of equipment to determine which maintenance task needs to be carried out and when. Compared to predetermined maintenance, condition-based maintenance allows greater flexibility. Based on the data available, the time interval between two interventions can be changed as necessary.



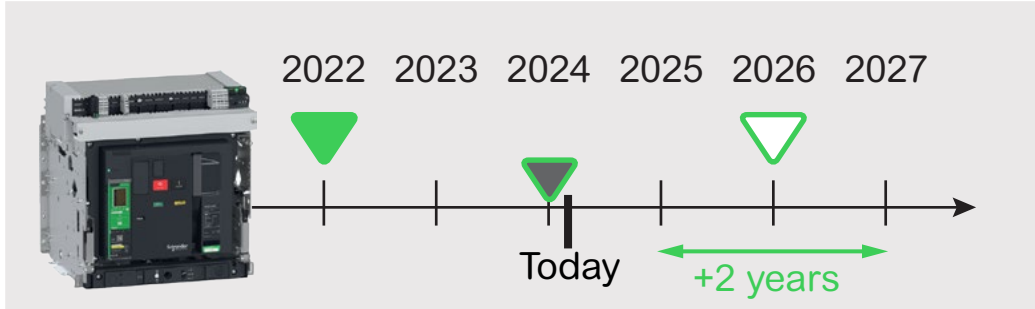
Without EcoStruxure Service Plan

Maintenance activities pre-scheduled every 3 years + 1 intermediate visit every 2 years, regardless of the assets' health.





With EcoStruxure Service Plan

The time between two manufacturer maintenance activities can be **extended by up to 2 years** compared to a traditional maintenance contract.



And, in the case of an abnormal shift in an asset's maintenance index, **experts call you for further investigation.**

 Manufacturer maintenance
 Intermediate maintenance

Depending on the maintenance index value, the expert will **propose to reschedule the next maintenance** activity to avoid downtime.

💡 Did you know?

91% of respondents consider reducing repair time and unplanned downtime as the major goal of their predictive maintenance initiatives.

McKinsey article, Digital Strategy in a Time of Crisis, April 2020

With **EcoStruxure Service Plan**, we can help reduce maintenance activities and planned downtime by up to **40%**, providing a strong financial benefit.

This percentage is non-contractual and is based on Schneider Electric experience and expertise with respect to main root cause of electrical downtime observed and for which Schneider Electric has developed solutions.



Moving to condition-based maintenance (cont.)

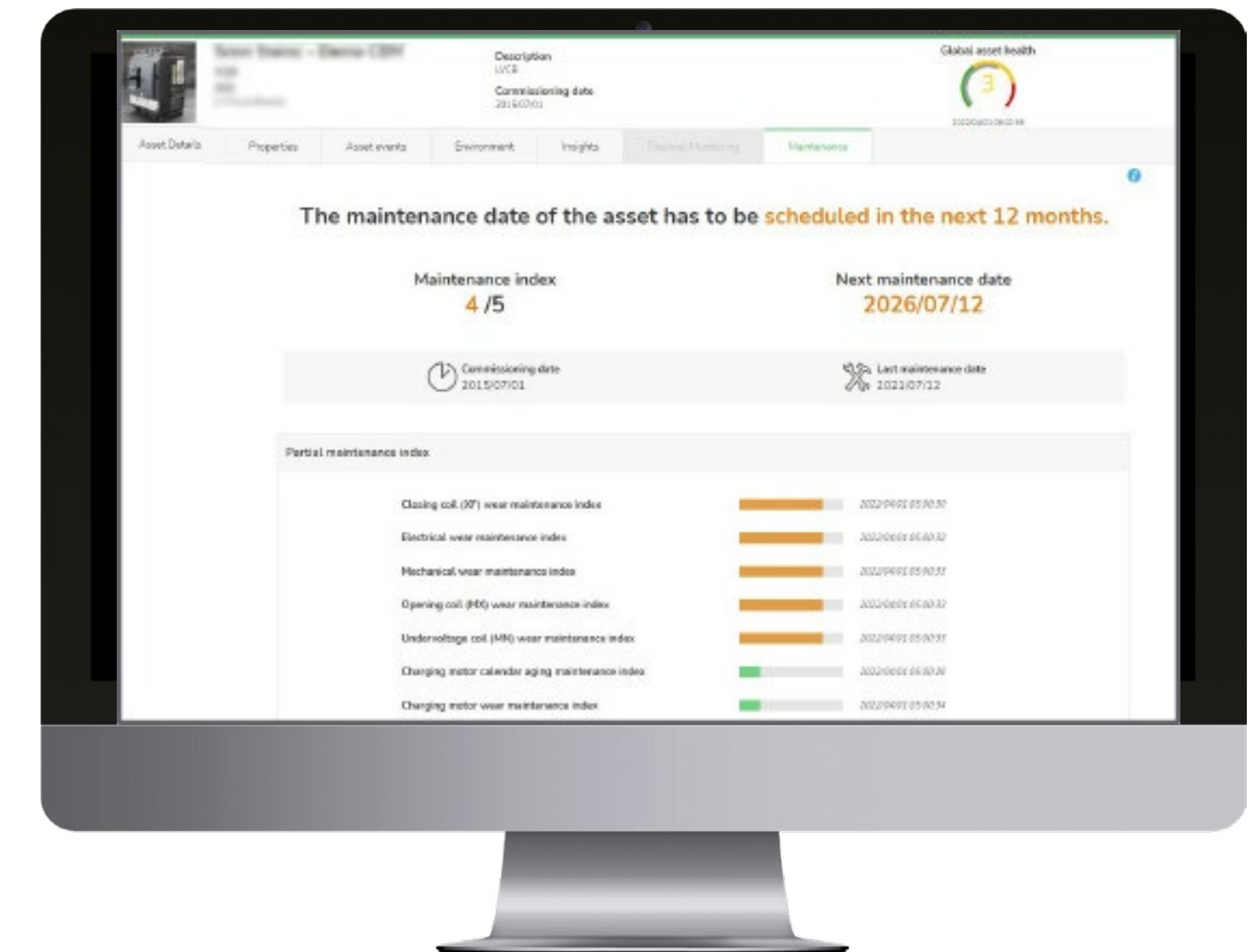
What if something happens? **Maintenance Index** helps prioritize on-site activities.

Maintenance Index moves you from calendar to condition-based maintenance. It is based on stress, wear, and aging indicators of the asset and continuously **controls the date of the next recommended maintenance**.

A maintenance index is provided for each asset and indicates when on-site activities are required to avoid downtime or premature aging. The maintenance index provides:

- Maintenance cycle extension up to 5 years for assets connected to our cloud platform
- Your maintenance schedule and alarm notifications through an easy-to-read dashboard
- More efficiency and insights thanks to analytics and early intervention

If the index indicates a high risk of downtime and/or premature aging, a Connected Services Hub expert contacts you to propose earlier maintenance.



Maintenance Index is available for EcoStruxure Service Plan Plus and Prime.

[Learn more](#)

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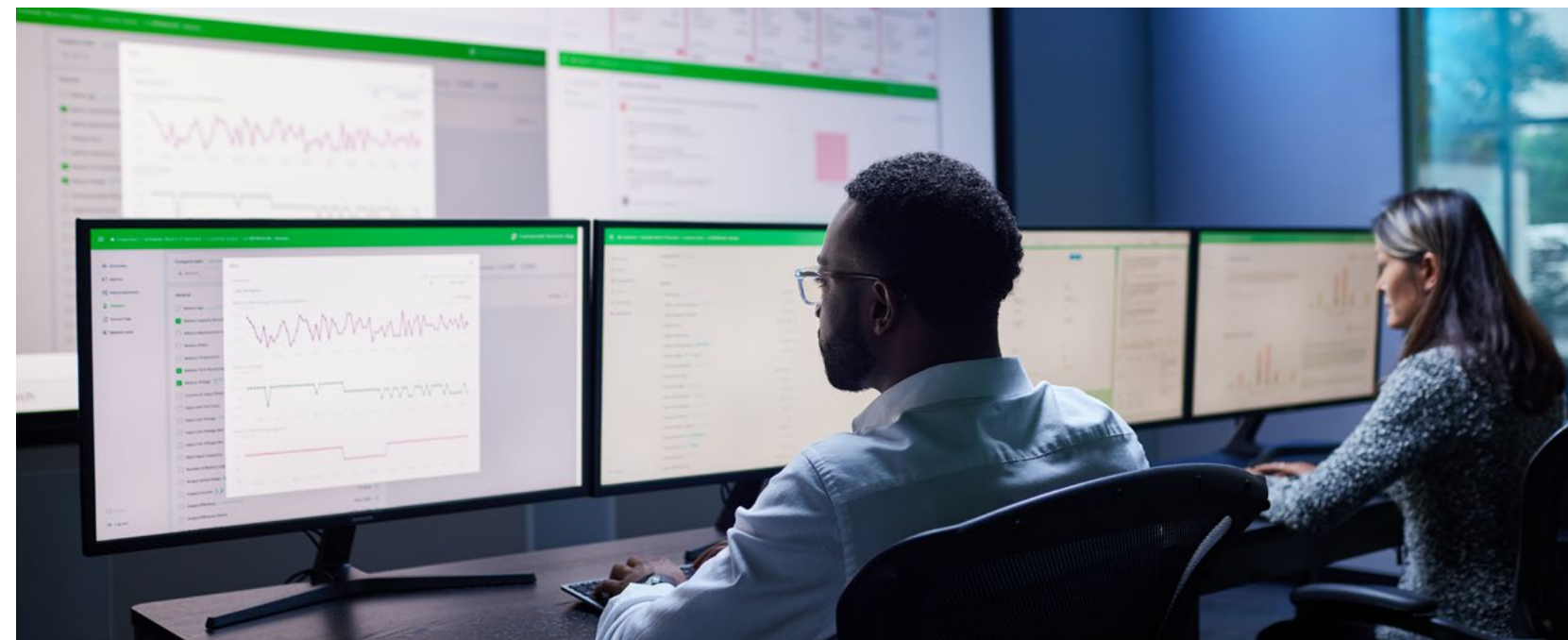
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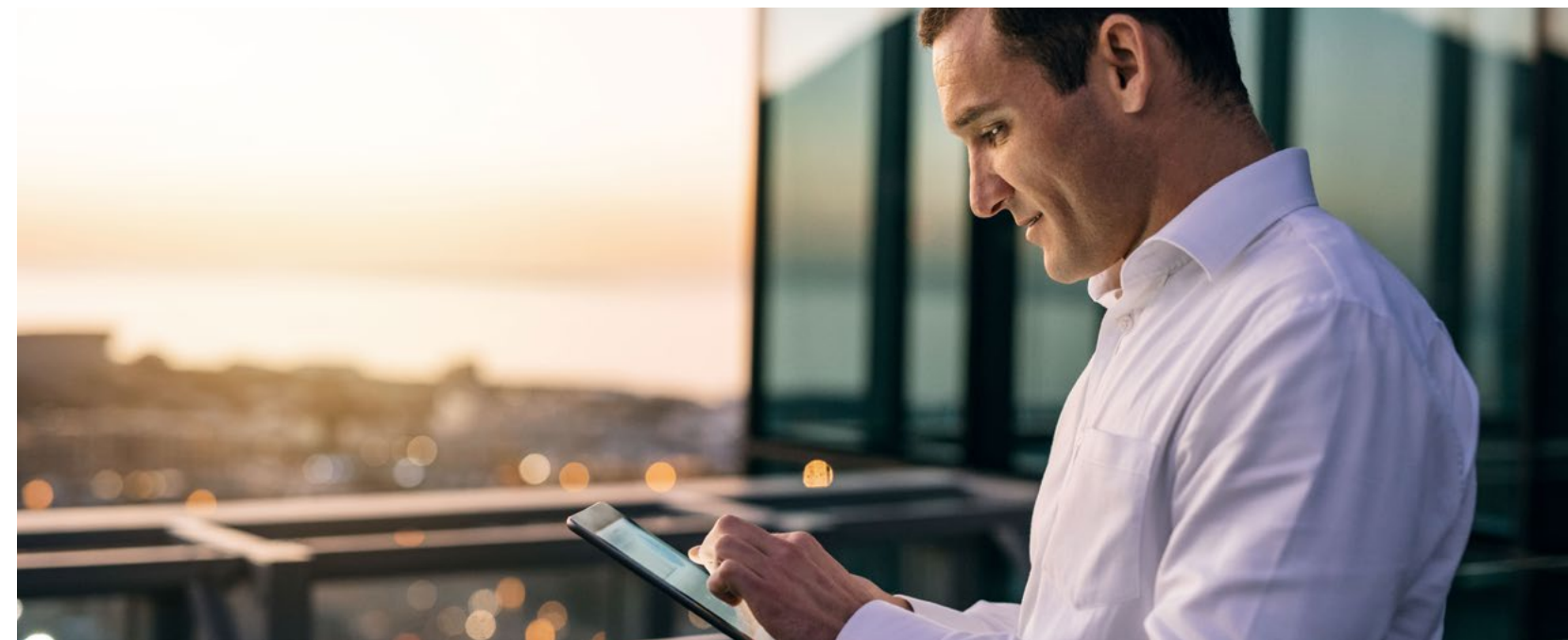
Connected Services Hub as your 24/7 remote experts team

A dedicated and highly skilled team of experts worldwide, available remotely **24/7**, who proactively **monitor, analyze, and troubleshoot** your critical electrical assets by using our innovative EcoStruxure digital platform.



We continuously monitor and support your assets and systems 24/7

- Remote experts monitor and diagnose
- Alarm notification
- On-site intervention if needed



You have visibility and get recommendations from our experts

- Live data available through mobile app
- Quarterly customized reports based on advanced analytics with recommendations
- Annual summary report and consultation meeting on how to improve your assets' performance

💡 Did you know?

Schneider experts from the Connected Services Hub:

- Support over 140 countries
- Deliver 1,200+ expertise reports per year
- Treat 500+ incidents per year
- Provide, on average, **actionable recommendations on 50% of their monitored electrical assets.** Experts deliver just the relevant information at the right time.

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Learning from our customers' stories

Nestlé Nescafé® – Toluca, Mexico

Nestlé, the largest food and beverage company in the world, pioneered the concept of soluble coffee. Sixty percent of Nestlé's soluble coffee production comes from a single factory. At the Nescafé plant in Toluca, Mexico, one million jars of coffee roll off the production lines every day. One of the most popular products made here is Nescafé Clásico™ — “the coffee that all of Mexico drinks,” says Luis Gilberto López Páez, Electrical Specialist at the plant. “The factory works 365 days a year,” he continues. “Therefore, an unplanned stoppage impacts the reliability of the processes,” which can affect what makes it to grocery shelves.

In 2013, Nestlé invested approximately \$125 million to expand this plant, increasing production by 40% and making it the largest soluble coffee facility in the world. At this scale, even modest gains to energy efficiency and service improvements translate to sizable cost savings. Improving the reliability of the facility's electrical equipment would deliver the productivity, efficiency, and maintenance benefits Nestlé sought.

In 2017, engineers from Nestlé and Schneider Electric began a pilot project to evaluate the plant's digital transformation using EcoStruxure. This decision to enlist Schneider's expertise was a natural one, as EcoStruxure solutions are already in place at their production facilities in France and Switzerland.



Goal

Eliminate unplanned stoppages and gain a clearer view of operational efficiency.

Story

When eight unplanned stoppages in one year caused production to falter, the world's largest food & beverage company turned to Schneider Electric.

Solution

Nestlé Nescafé modernized its production equipment by connecting products like LV Prisma panels, Trihal transformers, QDLogic switchboards, PowerLogic sensors, and more to EcoStruxure Asset Advisor, which allows power systems to be visible and remotely managed 24/7 from any device.

Results

- Improved service continuity and asset health
- Reliable, 24/7 remote monitoring of all five electrical substations
- Three unplanned stoppages avoided since EcoStruxure's implementation

[Learn more](#)

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Learning from our customers' stories (cont.)

Azalys, Suez Hélyséo – Carrières-sous-Poissy, France

Azalys is a waste treatment plant responsible for the management and recovery of urban waste in 23 Yvelines municipalities in the Paris region. It belongs to the Valoseine intermunicipal syndicate and is operated by a Suez subsidiary, Helyseo.

Serving an area inhabited by almost 300,000 people, Azalys treats 125,000 metric tons of waste and produces 40 GWh of electricity per year. The plant has been using Schneider Electric equipment since its launch in 1998. So when it was time to modernize the installation, Schneider was an obvious choice for the job.

The project involved installing state-of-the-art RM6 and SM6 switchgear in place of FluoKit units, which were later recycled. The new switchgear is equipped with sensors that measure the temperature and humidity in the modules. This information is collected and sent to the EcoStruxure platform, then analyzed and interpreted by Schneider Electric's Connected Service Hub experts, enabling preventive and predictive maintenance. In addition, substation data, reports, and maintenance recommendations can be consulted in real-time via the mySchneider portal.



Goal

Add capacity to the electrical installation and replace outdated equipment without a lengthy service interruption; enable predictive maintenance.

Story

A waste recovery plant modernized its electrical system while providing continuous services for local communities.

Solution

- Modernization of the electrical substation with connected RM6 and SM6 switchgear
- EcoStruxure Service Plan including data analytics with our EcoStruxure digital platform and remote monitoring by experts from the Connected Services Hub

Results

- System modernization performed in four days, synchronized with the annual production shutdown
- Implementation of predictive maintenance to ensure the continuity of waste treatment and energy production services

[Learn more](#)

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Learn more about how EcoStruxure Service Plan can increase the reliability and uptime of your facility's electrical infrastructure:

Web

[EcoStruxure Service Plan for Electrical Asset Management](#)

White papers

[Benefits of Shifting from Traditional to Condition-based Maintenance in Electrical Distribution Equipment](#)

[Data-Driven Asset Performance Management](#)

[How Modernization with Connected MV and LV Switchgear Unlocks Stronger Business Continuity](#)

[Services in the Age of IoT](#)

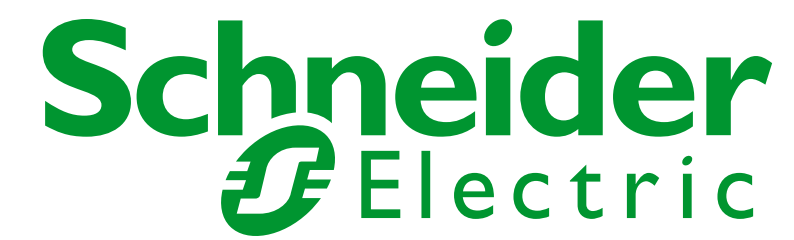
Blog posts

[Electrical Fire Protection vs. Prevention: Risk Management Based on Smart Sensing](#)

[Maintenance of the Future driven by 3 condition-based maintenance programs, enabling plan safety, cost savings, and sustainability](#)

[The benefits of moving from traditional to condition-based electrical asset maintenance](#)

Life Is On



To learn more about EcoStruxure Service Plan, visit

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