# Maximizing Efficiency, Reliability, Safety and beyond

## The Ultimate Guide to Annual Maintenance Shutdowns

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# The Unseen Hero of Operational Success

## Imagine a scenario where a single, well-planned break can bring forth a surge in efficiency, sustainability, and safety.

This isn’t a fantasy but a compelling reality in the world of maintenance shutdowns, annual or otherwise.

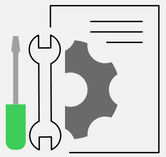
Far from being an inconvenience, these shutdowns are critical opportunities to ensure that systems run smoothly and safely all year round. In an age where critical business outcomes are paramount – safety, reliability, resilience, efficiency and sustainability, understanding and effectively implementing annual maintenance shutdowns can be a game-changer.

# What Exactly is an Annual Maintenance Shutdown?

Annual maintenance shutdowns are designated periods where operations temporarily halt to perform necessary upkeep tasks.

**These encompass a variety of maintenance types:**

## 01 Simple or Basic Maintenance



Involves routine tasks such as inspections, cleaning, testing, and lubrication, which can only be executed during a power shutdown.

## 02 Corrective or Repair Maintenance

Focuses on fixing known deficiencies or issues identified during previous maintenance sessions but left unaddressed due to time constraints.

## 03 Interval or Calendar-Based Maintenance

Entails preventive measures taken at regular intervals, based on assumed operational conditions and the expected lifecycle of components.

As businesses become more connected and digital, the need to rethink maintenance strategies intensifies due to increased business continuity risks and higher downtime costs. The power of Condition-based maintenance (CBM) extends the amount of time between maintenance shutdowns.

# Maintenance optimization with a Condition-Based approach

Condition-based maintenance is similar to predetermined maintenance, except that the interval between maintenance is determined based on operating parameters. Compared with corrective/reactive (break-fix) methods, preventive maintenance savings can reach 12-18%.

This is because unplanned downtime and maintenance make inroads into productivity and profitability. For example, maintenance and downtime account for 25-30% of the total lifecycle cost of a pump.*

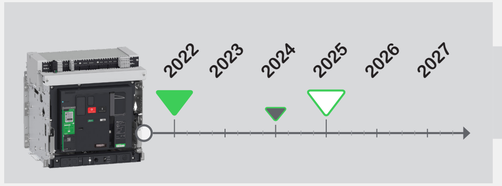
Migrating to condition-based and predictive maintenance might require the installation of dedicated sensors that provide real-time and trended data for key characteristics within electrical distribution equipment.

** Frost & Sullivan, "Data-driven Asset Performance Management White Paper," 2020*

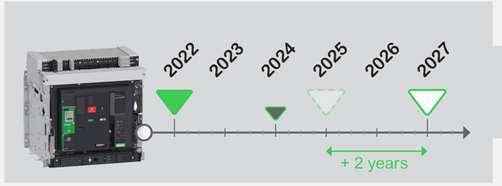
## Scan here...

to download Condition-base maintenance White paper

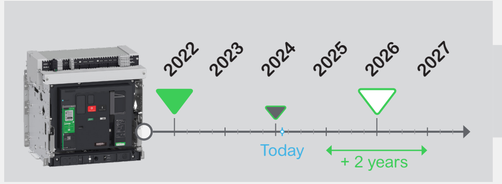
## With condition-based maintenance, the time between two manufacturer maintenance activities can be extended up to 2 years compared to a traditional maintenance




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




The time between two manufacturer maintenance activities can be **extended 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**.

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

▽ *Manufacturer maintenance* ▼ *Intermediate maintenance*

# The Challenges Involved

Initiating a shutdown isn't without its hurdles.

## Here are a few challenges that need careful management:

**Stringent Safety Regulations:** Ensuring worker and equipment safety demands meticulous attention to the latest and ever-evolving safety codes.

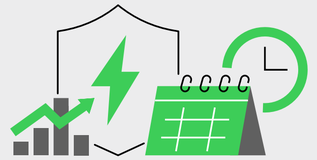
**Labor Scarcity:** Skilled labor for such specialized tasks can be hard to come by, and planning around available resources is crucial.

**Emergency Support Needs:** Unexpected issues can arise, requiring immediate and effective solutions.

**Obsolete Equipment:** Older systems might need extraordinary replacements and robust contingency plans.

**Spare Parts Availability:** Ensuring you have necessary spare parts can be a logistical nightmare.

**Aging Electrical Equipment:** As systems age, maintaining reliability and efficiency becomes increasingly challenging.



Each of these factors necessitates a focused approach to ensure that

**the shutdown**

not only goes smoothly but also delivers significant long-term benefits.

# Turning Challenges into Business Goals

While these challenges are real, they pave the way for substantial opportunities:

**Safety and Compliance:** With everything powered down, it's easier and safer to install new safety measures and ensure compliance with local, state, federal, and code regulations.

**Increased Uptime:** Effectively managed shutdowns can dramatically increase overall uptime, ensuring that systems can respond and recover from disruptions.

**Efficiency and Productivity** uplift by maximizing maintenance shutdowns while minimizing costs and waste for increased demand.

**Sustainability and Upgrades:** Shutdowns offer a perfect opportunity to implement sustainable practices and upgrade systems to modern, more efficient standards.

# Steps to an Annual Shutdown

To truly capitalize on this opportunity, **consider these steps** for a successful annual maintenance shutdown:

STEP 01 **Early Determination of Shutdown Processes**

STEP 02 **Provision for Temporary Power**

STEP 03 **Sequence of De-Energization and LOTO**

STEP 04 **Identification of Concurrent Construction Work**

STEP 05 **Work Crew Scheduling for Safety**

STEP 06 **Avoiding Conflicts Between Scopes and Trades**

STEP 07 **Documenting and Adjusting the Shutdown Plan**

STEP 08 **Shift Changes and LOTO Management**

STEP 09 **Designated Safety Officers**

STEP 10 **Plan for Re-Energization**

By following these steps, facilities can navigate annual shutdowns effectively, minimizing risks and maximizing the potential for sustainable, efficient, and safe operations year-round.

## Avoiding Compressed Timelines

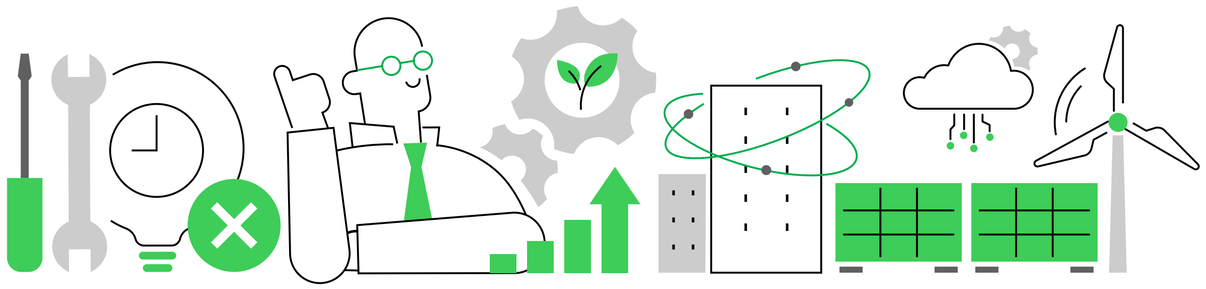
Steer clear of the controversial practice of planning a shutdown and then setting expectations to shorten it by a certain percentage. This often leads to rushed work and increased safety risks. Stick to the original plan to ensure the safety and well-being of all involved.

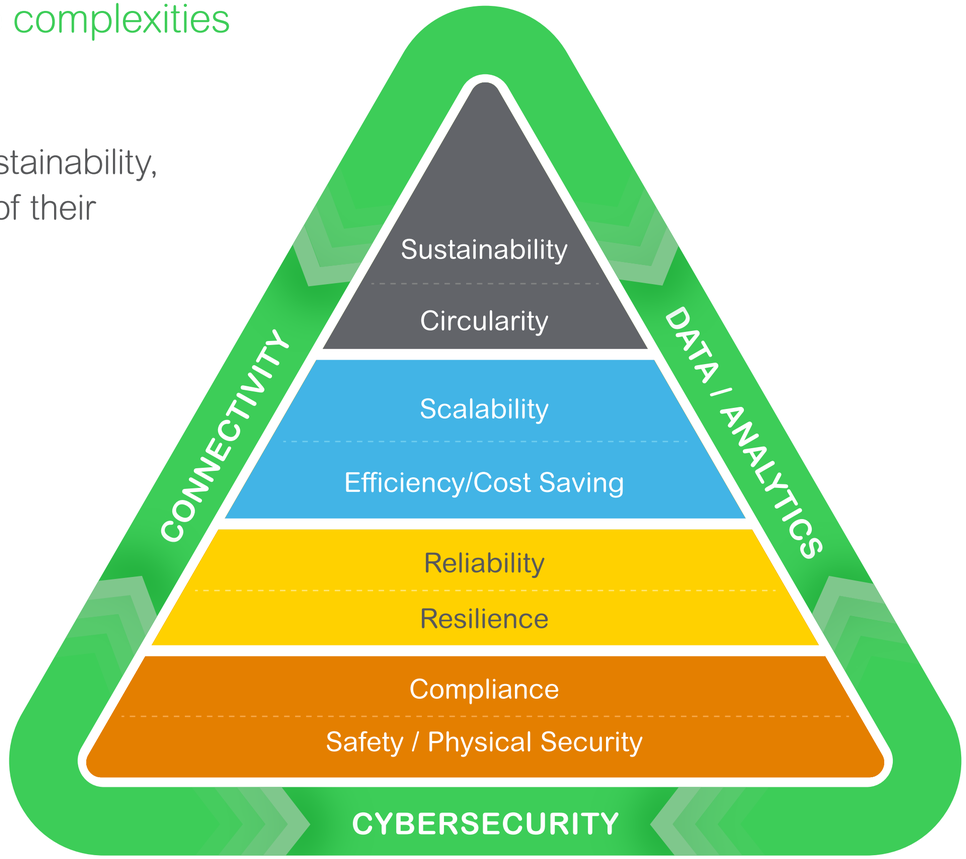
# How Schneider Electric Can Help

## Regardless of the industry and the type of facility you manage, navigating the complexities of a maintenance shutdown can be daunting.

This is where Schneider Electric's Services shine. With our unwavering commitment to sustainability, inclusivity, and innovation, we stand ready to empower businesses to make the most out of their maintenance shutdowns and to achieve critical business outcomes.

Our solutions are designed to not only meet but exceed safety and efficiency standards, thereby fostering an environment where businesses can thrive sustainably. By choosing Schneider Electric, you opt for a partner that places your needs first, ensuring that every shutdown translates into a long-term operational advantage.





# How Schneider Electric Can Help *(cont.)*

Solving Critical

## Business Outcomes with Schneider Electric Services

### Consulting Services
**EcoConsult**

**Digital Twin**
Electrical Digital Twin

**Studies**
Short Circuit, Coordination, Arc Flash

**Audits**
Power Quality

**Design**
Simulation/Modelling

### Field & Digital Services
**EcoCare service plans**

**Maintenance**
Planned-preventive & Condition-based, Sustainability focused, Site Performance

**Proactive Monitoring**
24/7 Monitoring, System Management, Optimization Predictive AI

**Advanced Support**
On-Site and Remote, Alarm Management, Rapid Response Service Level Agreement

**Operations**
Extended Warranty, Spare Parts, Operations Training, Customer Success Mgr

### Circularity & Reparability
**EcoFit our approach to Modernization**

**On-demand**
Repair and fix to extend the equipment life.

**Connect**
Upgrade non-communicating equipment with smart sensors

**Retrofit**
Core components with new technology and comply with new standards

**Replace**
Aging installations with new and natively-connected equipment.

# Embrace the Power of Shutdowns for a Sustainable Future

In conclusion, annual maintenance shutdowns are far from just a routine task. They are crucial periods that—when well-executed—can significantly uplift an organization's safety, resilience, effiency, sustainability... and overall performance. Embrace these opportunities, navigate the challenges with confidence, and ensure that every shutdown becomes a stepping stone towards a brighter, more sustainable future.

**Ready to transform your next maintenance shutdown?**

Connect with Schneider Electric Services and let's make the most of your energy and resources together.

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To learn more information about the
**Annual Maintenance Shutdowns** visit

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