





# Contents

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SMART INDUSTRY

# The new energy ecosystem

The global energy landscape is shifting. Advances in digitalization and control mean the way operational managers approach challenges like sustainability, efficiency and evolving regulations is changing for good.

The time has come to future-proof your facility with smart energy solutions designed to optimize visibility, enhance control and create operational value.

## Introducing the MNS solution range

The result of 30+ years' experience in digital switchgear, MNS Digital is a smart, scalable low-voltage switchgear. Its connected, internet of things (IoT) based technology allows remote operation and monitoring and enables condition-based maintenance. In short, it helps you drive value at every point of the value chain.

## The smart way to sustainability

Smart and digital switchgear allows you to monitor energy use so you can get greater visibility to help inform sustainable choices.

It can connect to ABB Ability™, which will use the data you collect about your energy usage and turn it into insights. You can then use these to make better decisions to optimize your operations, schedule predictive maintenance, and improve sustainability while reducing your carbon footprint.







ABB ELECTRIFICATION & THE MNS PLATFORM

# Writing the future of electrification with MNS

## A legacy of innovation

As the world's largest low voltage switchgear OEM with unmatched domain expertise and support in more than 30 countries, ABB Electrification truly is your local partner.

## MNS Low Voltage Switchgear

The MNS portfolio provides comprehensive scalability, from cost-effective energy distribution to high-end systems providing digital twin solutions.

MNS Digital combines the latest advances in smart electronics, edge computing and cloud technology to create a low-voltage switchgear solution with built-in intelligence.

## MNS Pro and digital twins

The digital journey with MNS starts with MNS Pro, designed for using advanced digital tools in ABB Ability. As well as assisting with pricing and general arrangement layouts, this configuration tool allows you to use Building Information Modeling (BIM) to create a digital twin.

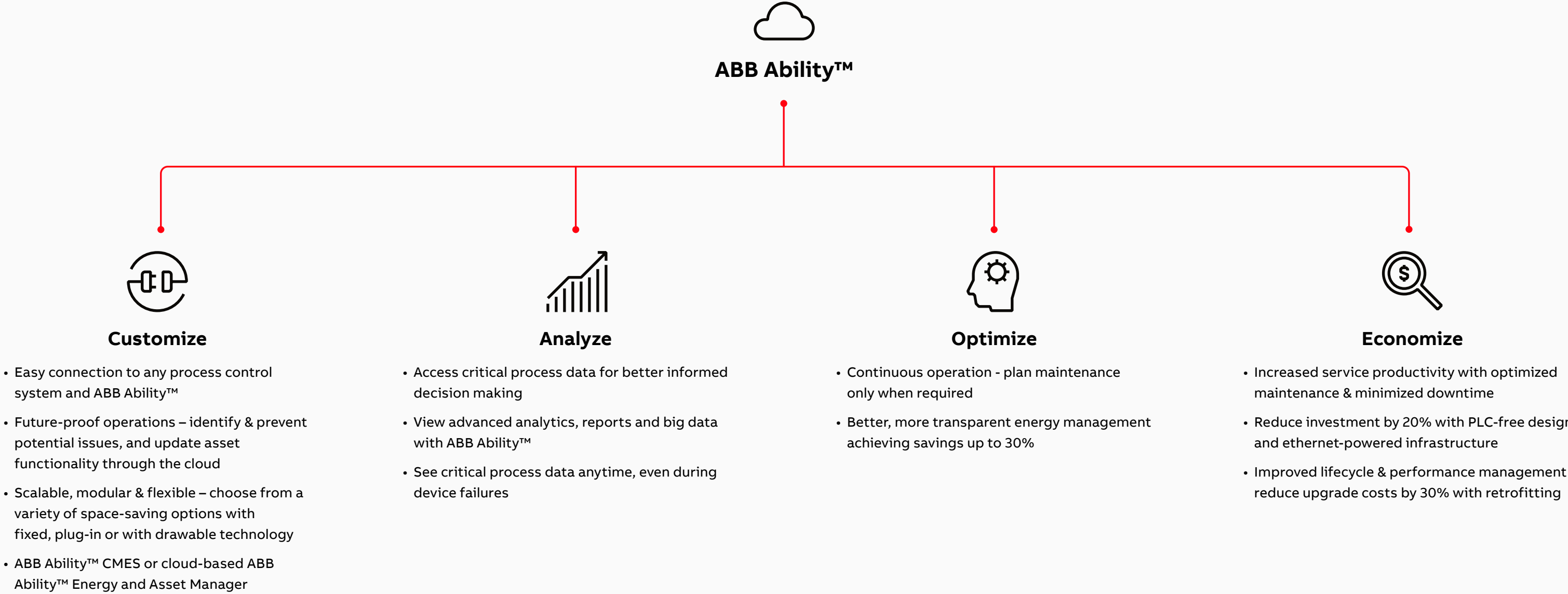
Utilize digital twin capabilities in ABB Ability™ to help optimize performance and identify any issues or maintenance requirements, and also schedule predictive maintenance.





# MNS Low Voltage Switchgear Digital

ABB Low Voltage Switchgear Digital gives you access real-time data from across operations. Its intelligent sensors connect your assets to ABB Ability™ CMES or cloud-based ABB Ability™ Energy and Asset Manager for ultimate visibility and control.





CMES

# ABB Ability™ Condition Monitoring for electrical systems (CMES)

Identify & manage problems before they occur

The ABB Ability™ CMES is an innovative on-premise monitoring platform that allows you to monitor and manage electrical distribution systems in real time.



## Meeting traditional challenges



Reducing OPEX & CAPEX



Reducing unplanned downtime



Increasing availability & reliability



Maximizing safety



## Creating digital opportunities



Future proofing with simple upgrade management



Optimal sustainability with asset management



Process optimization. Enabling predictive maintenance



Lowering cost of ownership with optimized power management



Utilizing big data with remote diagnostics



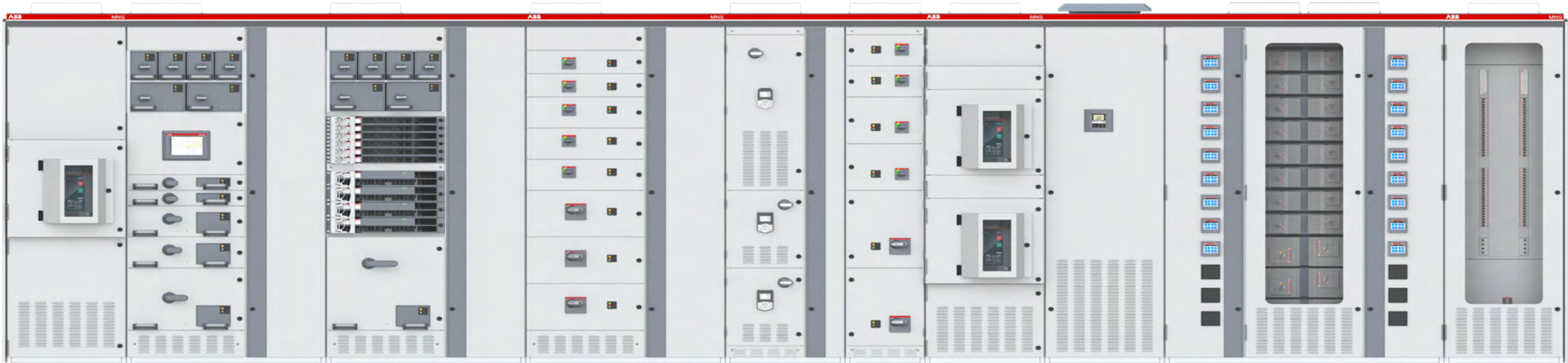
Robust response to climate change by optimizing efficiency & power usage





ABB ELECTRIFICATION & THE MNS PLATFORM

# Scalable solutions to ensure asset availability



Incoming, Motor Control, Variable Speed Drives,  
Softstarters and Energy Distribution

Power Factor  
Correction

Compact

Sub & Final  
Distribution



## MNS: the switchgear that sees everything

Connect your intelligent devices, MNS’ smart device family forms the backbone for your data collection.



## ABB Ability™ CMES

Diagnose issues and ensure availability with on-premise condition monitoring and predictive maintenance.



## ABB Ability™ Energy and Asset Manager

All your real-time data, alarms, events and trends visualized in the cloud. Maximize productivity & reduce OPEX.





SERVING YOUR INDUSTRY

# Meeting your industry’s challenges

Discover how the MNS platform can help your industry lower energy consumption and meet its unique efficiency and sustainability challenges.

4

MNS is certified to IEC 61439-2 and IEC 61641, to ensure safety, quality, and reliability across all applications.





MNS DIGITAL

# MNS Features

Take a look inside the highly customizable MNS set-up.



## Explore MNS Digital

For more information  
click on the sections  
below







MNS DIGITAL

# MNS Digital Solutions

It's never been simpler to unlock your operation's digital potential. Connect your MNS with any of the digitally-enabled solutions below and start making billions of better decisions.



## Explore MNS Digital

For more information  
click on the sections  
below



# Meet the MNS Low Voltage portfolio

Discover a switchgear solution that fits your facility’s needs.

1



## Front accessibility

- The standard for digital switchgear monitoring and maintenance.
- Space saving design with back-to-back or duplex arrangement.

**Ideal for withdrawable or decentralized motor control centers**

2



## Space-saving

- Designed to deliver a footprint reduction of up to 25%.
- Maximum height utilization, optimized functional unit design & combined cable compartment

**Ideal for sub-distribution**

3



## Rear accessibility

- Great for facilities with separated operation and cable termination areas
- Reduce width and access cable termination from the rear without derating.

**Ideal for power and main distribution**



## Different designs, same unmatched benefits

- Safety protection that exceeds standard requirements
- Reduced operational expenditure via maintenance-free bus bar design
- Increased availability via modular design. Option to use withdrawable, plug-in, compact or fixed functional units
- Reliable, flexible and scalable





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EMAX 2 CIRCUIT BREAKERS (ACBS)

# Power distribution solutions

Power distribution for the global energy network is shifting. Advances in digitalization are enabling management of increasing number of electrical loads through advanced analytics to ensure continuous, safe, and reliable energy distribution.

## SACE Emax 2

This all-in-one solution can cope with any grid conditions, thanks to its advanced functions. With four sizes available, you're assured of high performance even in compact environments. It supports eight communication protocols, so it will integrate perfectly into all automation and energy management systems. It's also easy to use and maintain.

## ABB Ability

Use this suite of solutions to connect to the cloud to create insights from your data, which you can use to help reduce costs and optimize your operations. It includes ABB Ability™ Energy and Asset Manager, a state-of-the-art cloud solution that integrates energy and asset management in a single intuitive dashboard, allowing you to monitor use and improve maintenance management.



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SMART DIGITAL MOTOR CONTROL CENTER

## Process control solutions

MNS Digital MCC is a safe, simple-to-use means of optimizing your processes while reducing your capital expenditure. It gives you all the solutions you need to tailor your motor starting requirements across your installations.

Direct online motor starting provides a cost-effective and compact design for an optimized footprint. For control and protection, smart relays ensure enhanced availability and provide fundamental data for condition monitoring.

90 percent of all motors are used in full speed applications, where a variable speed drive (VSD) offers limited process value. The optimal compromise between a direct online and a VSD is to control start up speed and torque using the PSTX softstarter. Where the process requires premium motor control, with precise speed and torque, opt for ACS 880 with direct torque control (DTC).

When coupled with Emax 2 and Tmax XT circuit breakers, plus temperature monitoring technology, 24/7 data analysis and collection is possible with ABB Ability™ CMES or ABB Ability™ Asset Manager without interfering with other operation or control applications.





# We're committed to ongoing service

With over 1.7 million low voltage switchgear cubicles installed worldwide, ABB offers unparalleled global support from installation to commissioning and beyond.

## Custom service agreements

Unplanned downtime and shutdowns are a huge - but avoidable - drain on profits.

With one of ABB's custom service agreements, you can incorporate services ranging from emergency call-outs to predictive maintenance. No matter your facility's needs, we'll work with you to ensure production remains optimal throughout your solution's lifecycle.



Support Agreement (Power care)

ABB Ability™



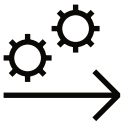
### Start-up services

- Installation and commissioning
- Training
- Spares and consumables



### Maintenance services

- Maintenance
- Repair
- Digital Twin



### Upgrade services

- Engineering and consulting
- Extensions/Upgrades/Retrofit
- End of life service
- Replacements





# Ready for enhanced visibility and control?

- Optimize operations and add value with real-time data
- Industry 4.0 opportunities made simpler and scalable
- All the benefits of ABB's broad digital portfolio, ongoing service, and domain expertise

You can see it all with MNS Low Voltage Switchgear



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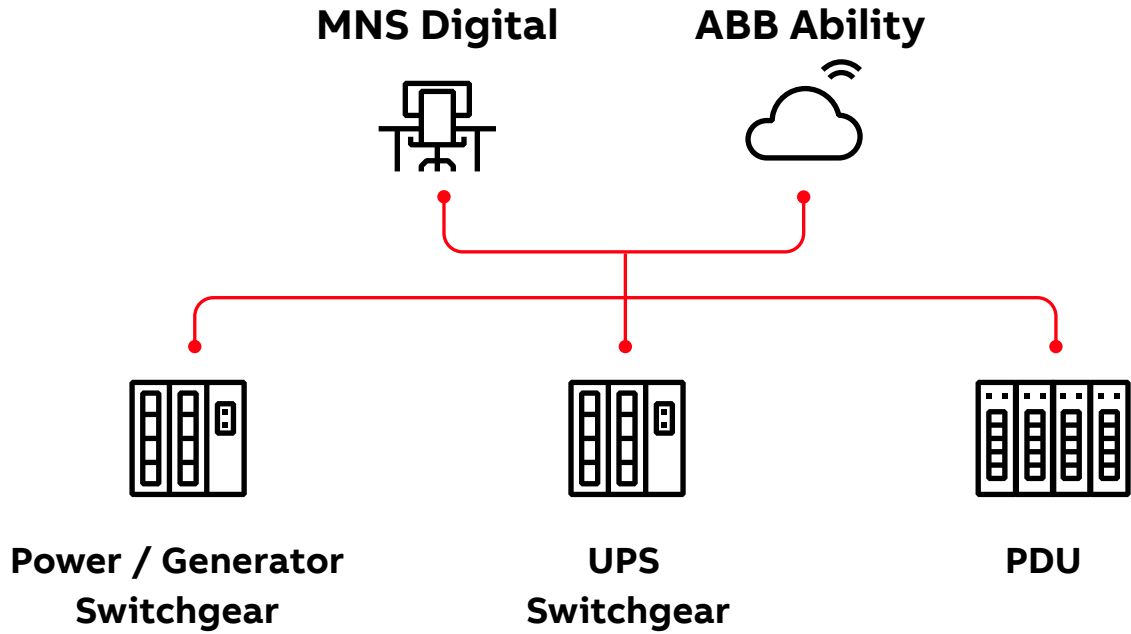
# Data Centers

## Challenges

- Maintaining maximum availability following your customers’ demand
- Conserving space

## MNS Solution

- Secure power with a dedicated MNS product line that will keep your customers online
- A complete digital solution for all applications from power distribution to server supply
- The proven technology in MNS Compact and PDU, and ABB Ability™ ensures asset availability you can rely on
- Comprehensive certification to ensure highest possible availability

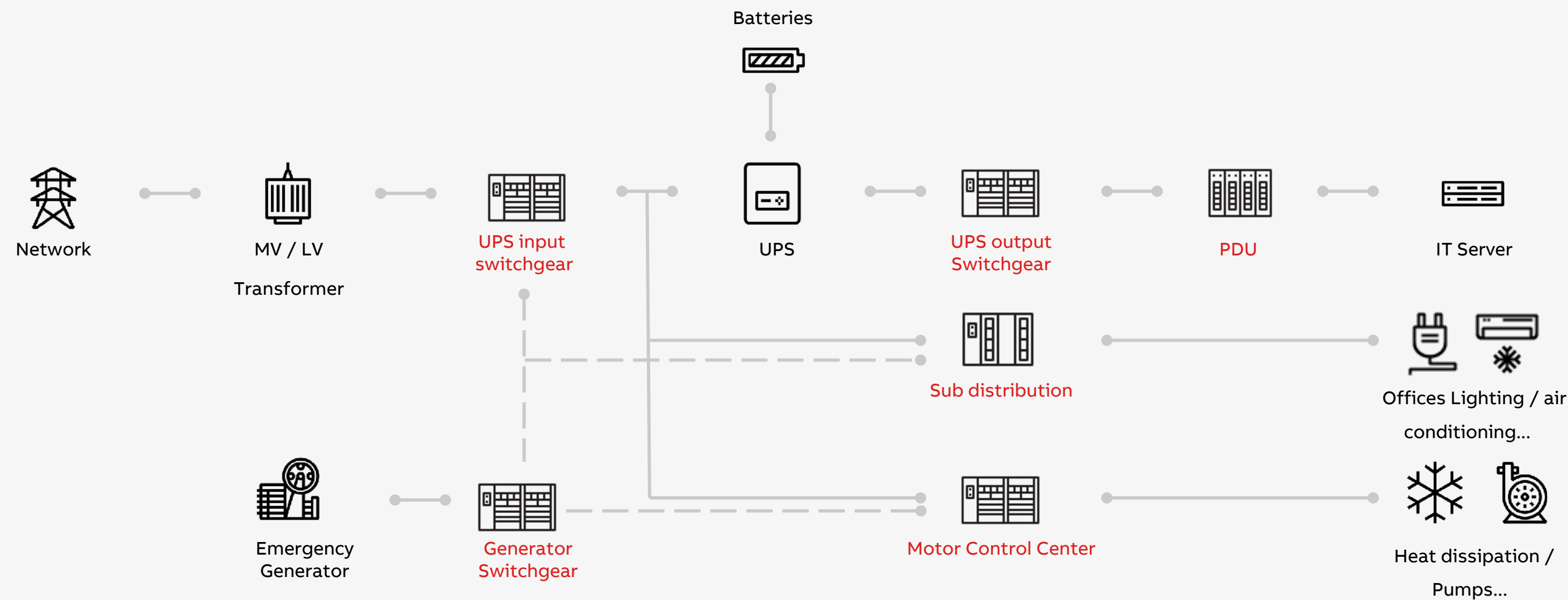




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# Data Center electrification infrastructure

Benefit from a complete digital solution that powers all applications, from building management (heating, lighting, and so on) through to IT servers.





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# Buildings & Infrastructure

## Challenges

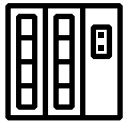
- New builds face increasing sustainability and energy consumption regulation
- Infrastructure needs to handle new economies and population expansion
- Climate change demands a robust response and reduced emissions

## MNS Solution

- ABB Ability™ is your one-stop platform, providing real-time insight that allows you to meet sustainability demands with ease and transparency
- MNS 3.0 and ABB Ability™ provide robust solutions for predictive maintenance and energy management
- The proven technology in MNS Compact and Fixed, and ABB Ability™ ensures asset availability you can rely on

MNS Digital

ABB Ability



Power / Generator  
Switchgear

UPS  
Switchgear

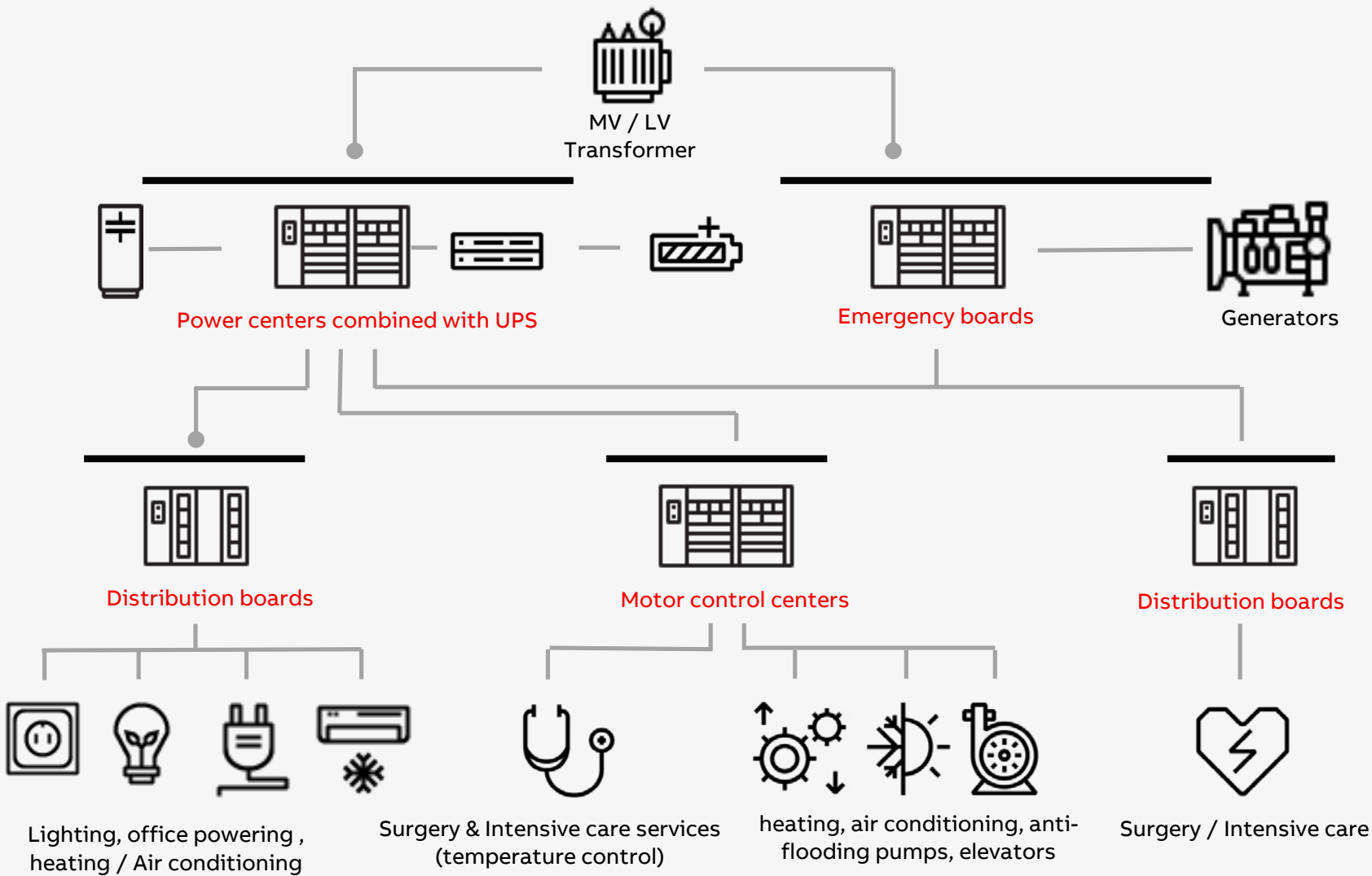
Emergency  
Switchgear





# Buildings & Infrastructure electrification infrastructure

Hospitals

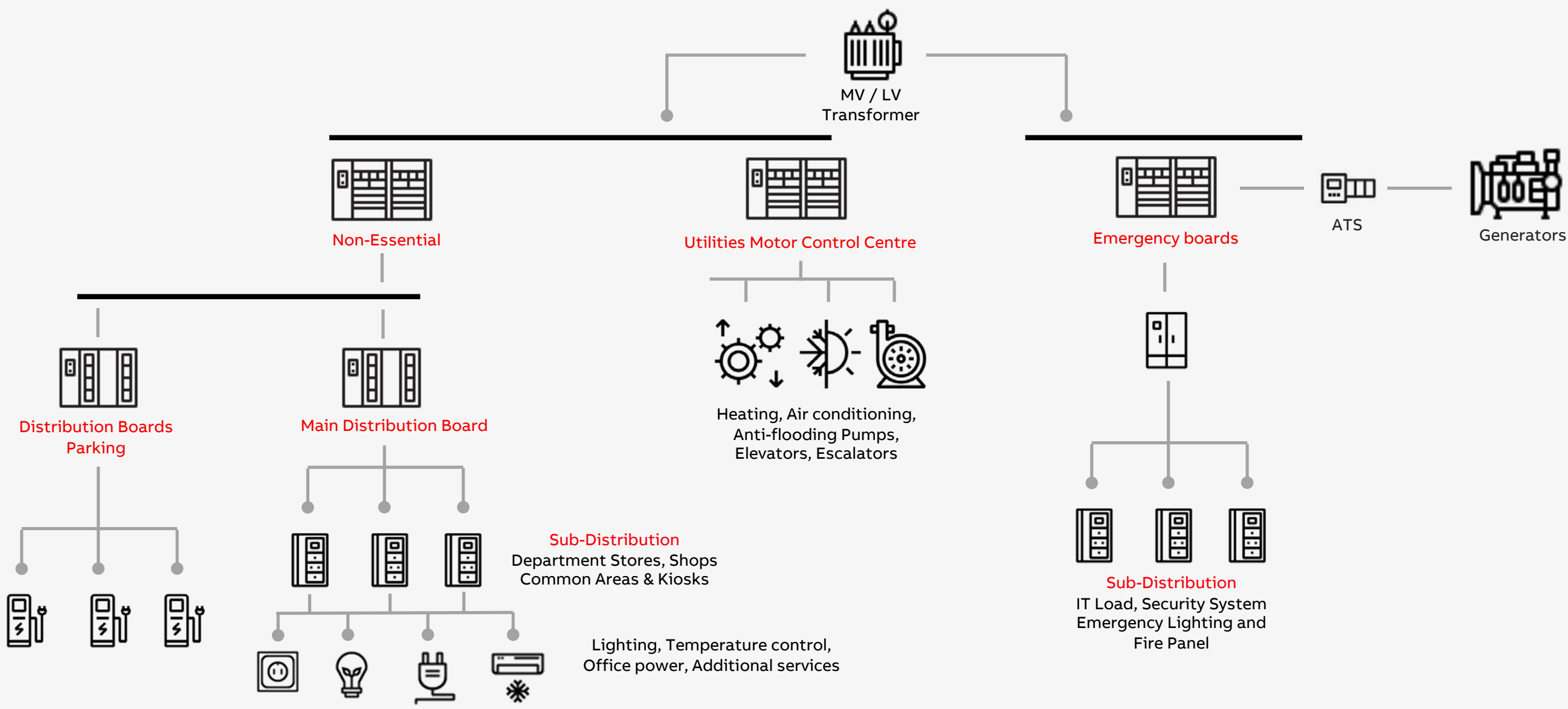




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# Buildings & Infrastructure electrification infrastructure

Hospitals





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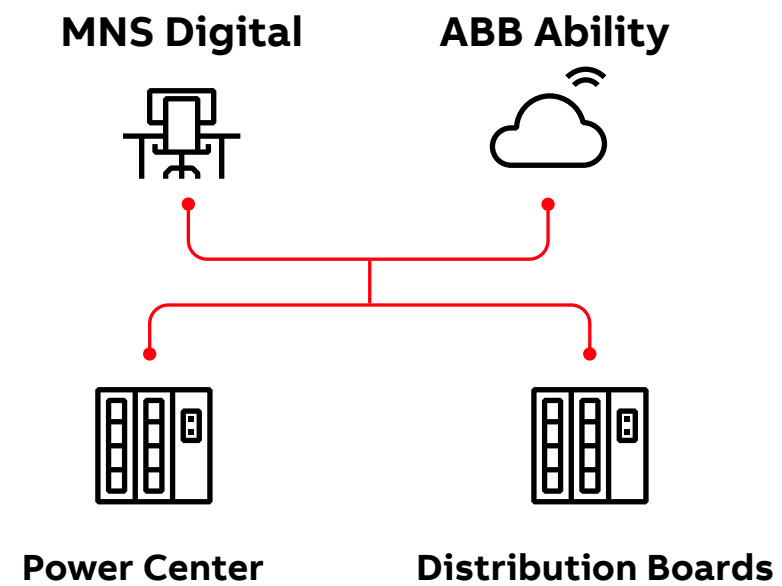
# E-mobility

## Challenges

- Uninterrupted charging power provided to electrical buses and cars at any time for fast charging and availability

## MNS Solution

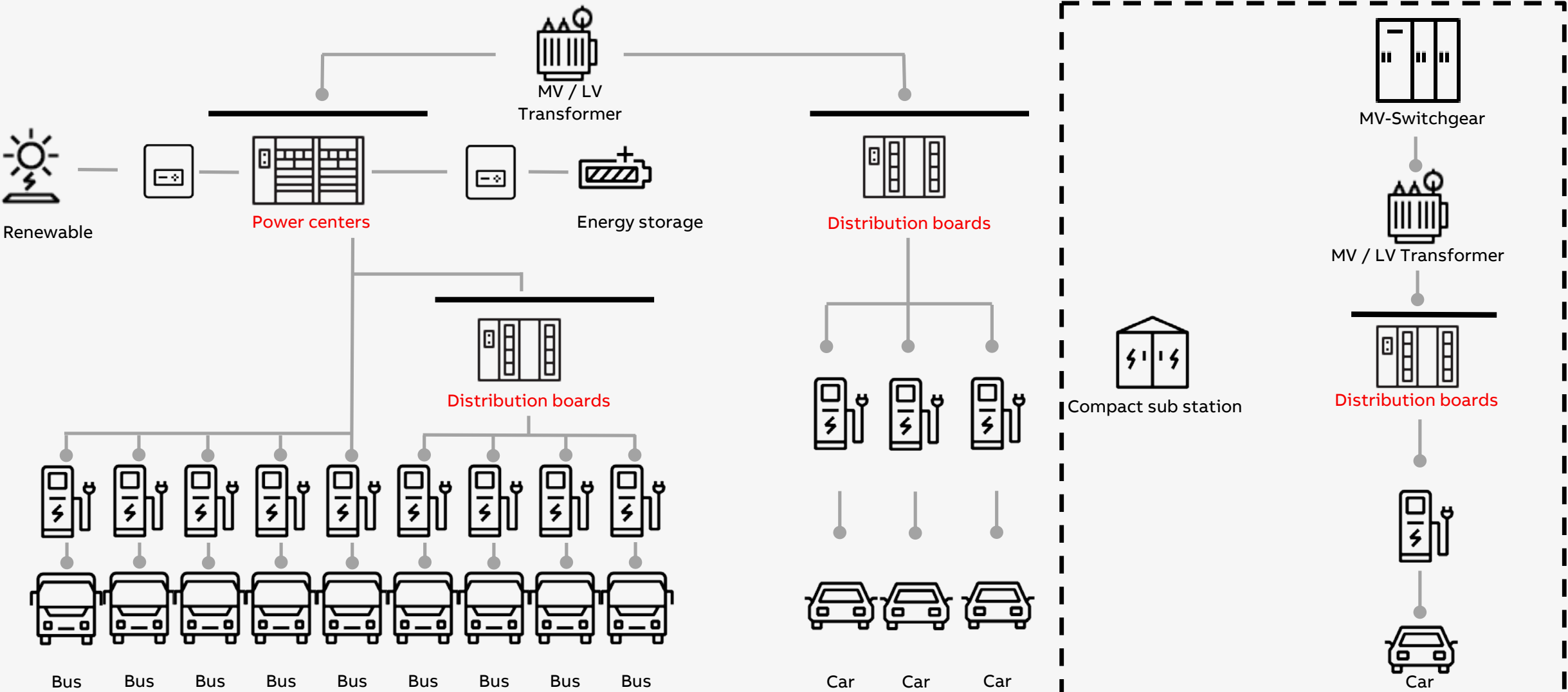
- MNS allows continuous monitoring to maximize the reliability of power distribution
- The proven technology in MNS Compact and Fixed, and ABB Ability™ ensures asset availability you can rely on





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# E-mobility electrification infrastructure





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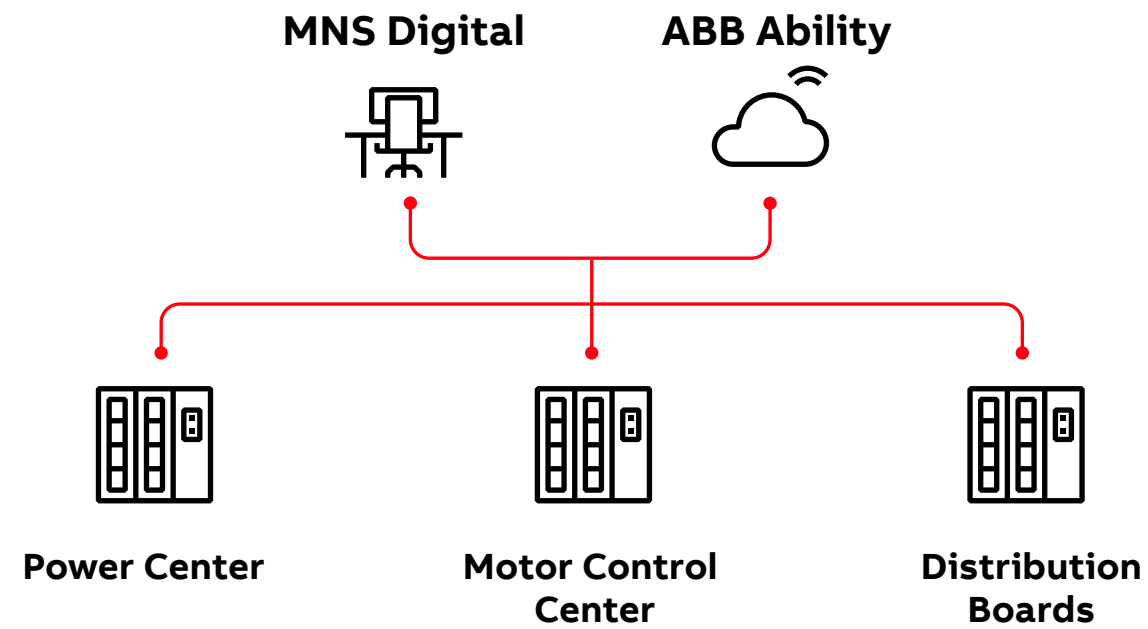
# Food & Beverage

## Challenges

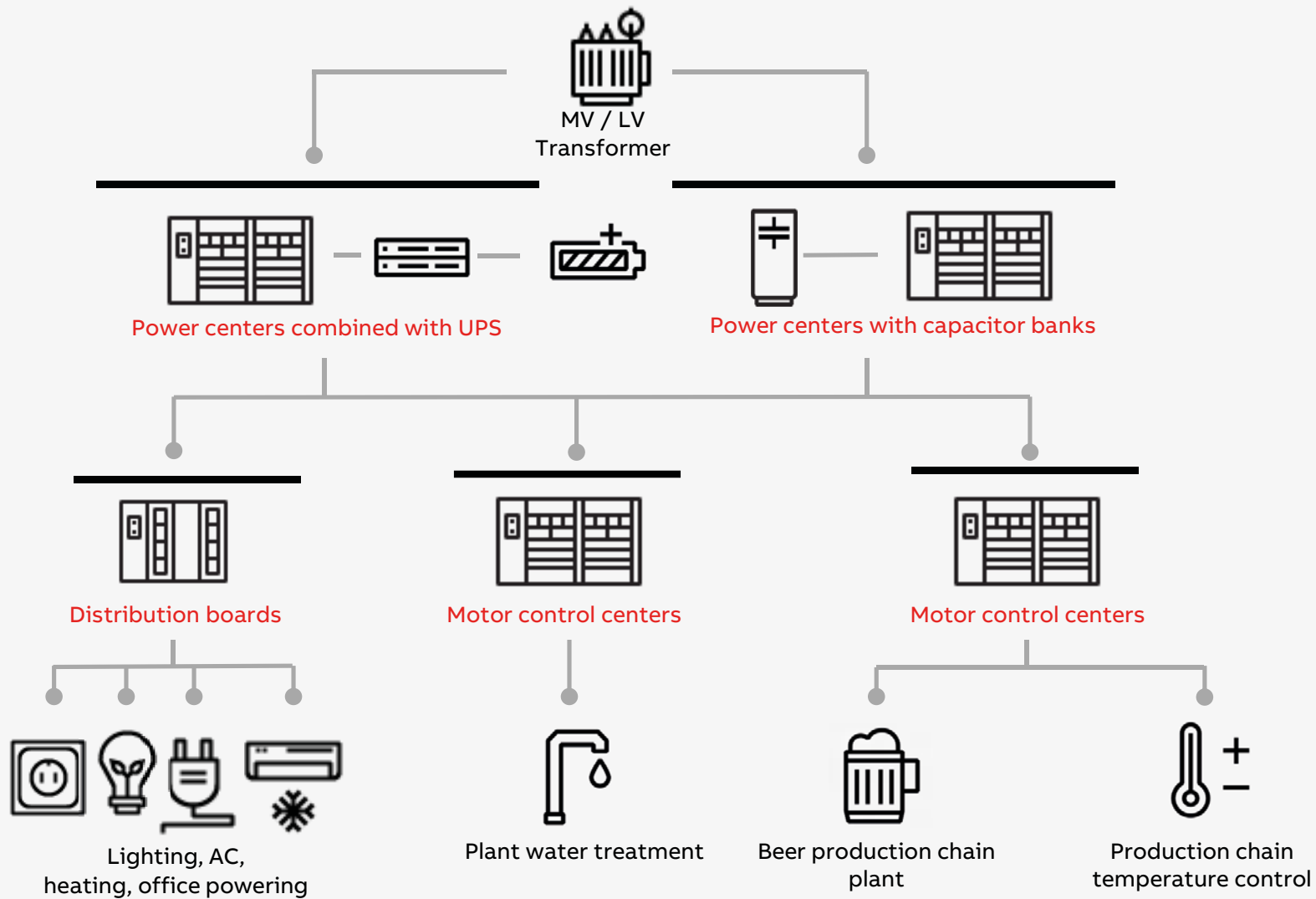
- Preventing wastage by maintaining high availability and continuous operation across production
- Ensuring safety and creating cost savings that scale

## MNS Solution

- Enable process optimization through ABB Ability™ and predictive maintenance interfaces.
- MNS scalable and space saving solutions for energy distribution, motor starting and power quality reduce total cost of ownership by extending asset lifecycles



# Food & Beverage electrification infrastructure





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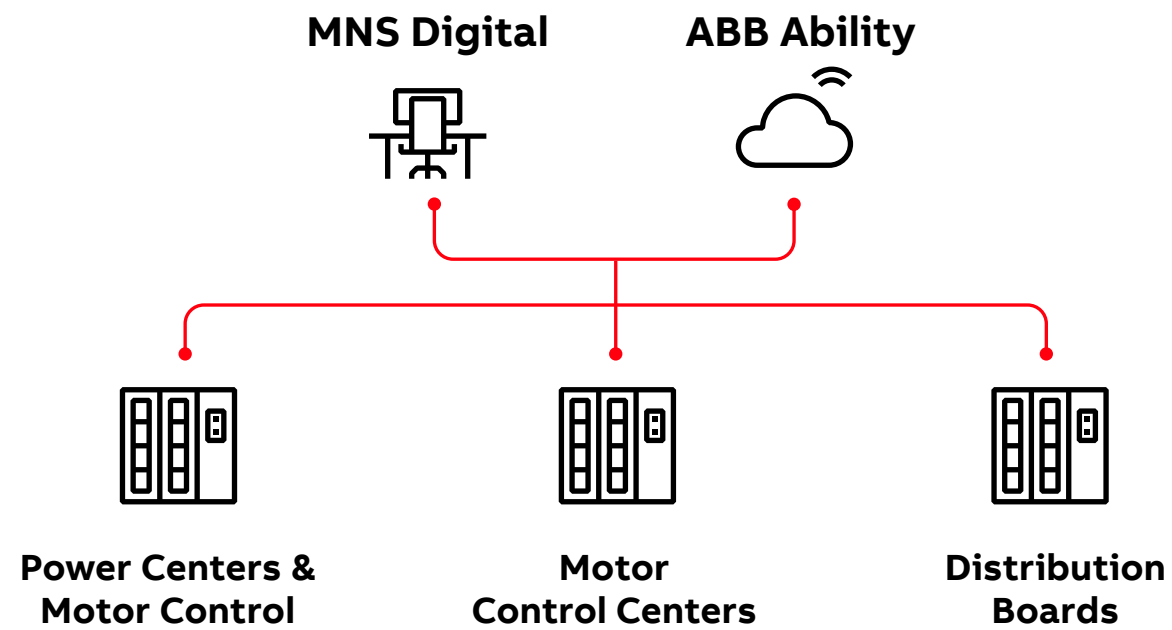
# Chemical, Oil & Gas

## Challenges

- Ensuring safety, reliability and availability remain uncompromised
- Addressing climate change with alternative energy solutions that ensure greater sustainability and efficiency

## MNS Solution

- The MNS portfolio's predictive maintenance and energy efficiency monitoring reduces OPEX and downtime
- Free up operatives to explore new opportunities in efficiency and sustainability

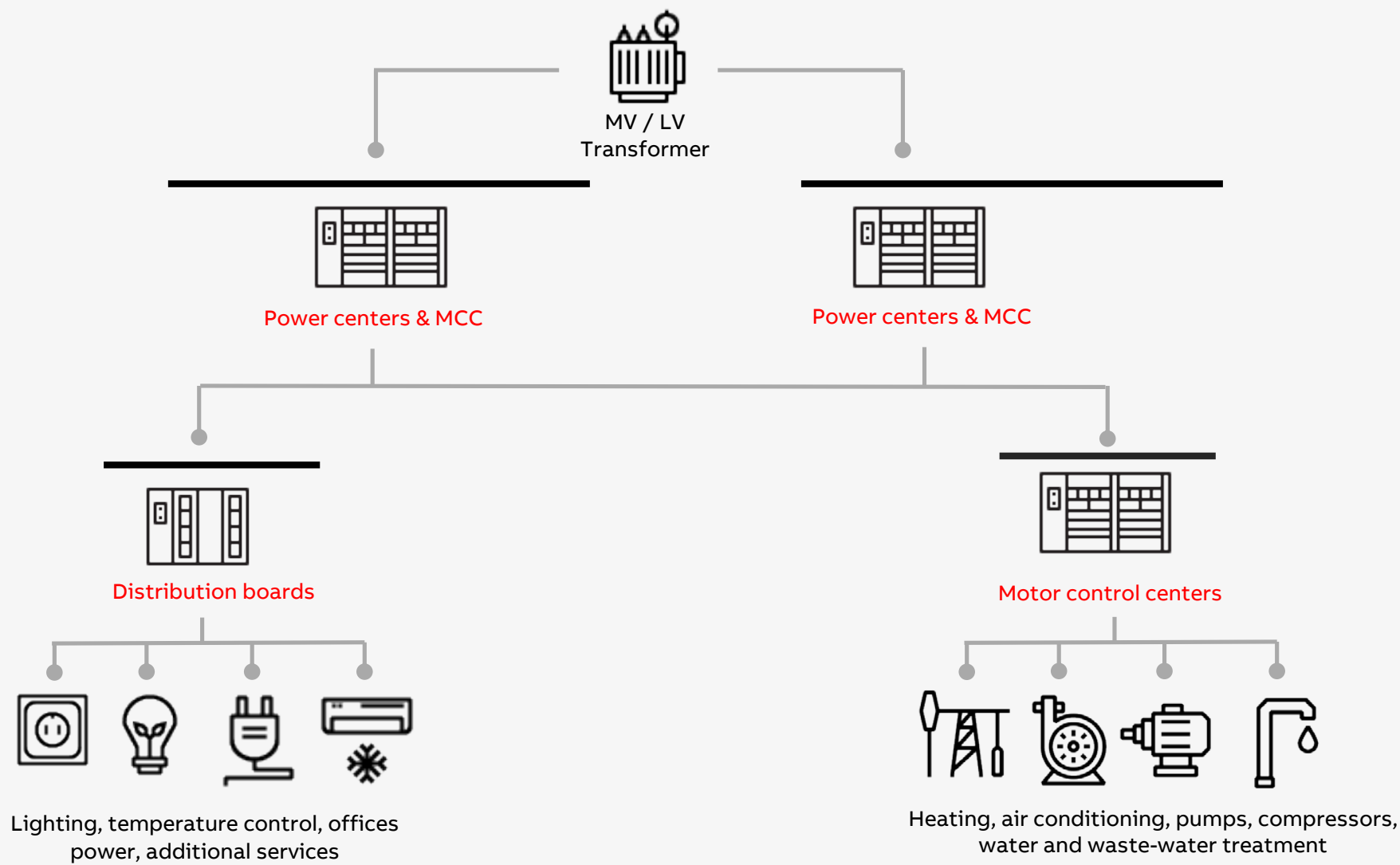






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# Chemical, Oil & Gas electrification infrastructure





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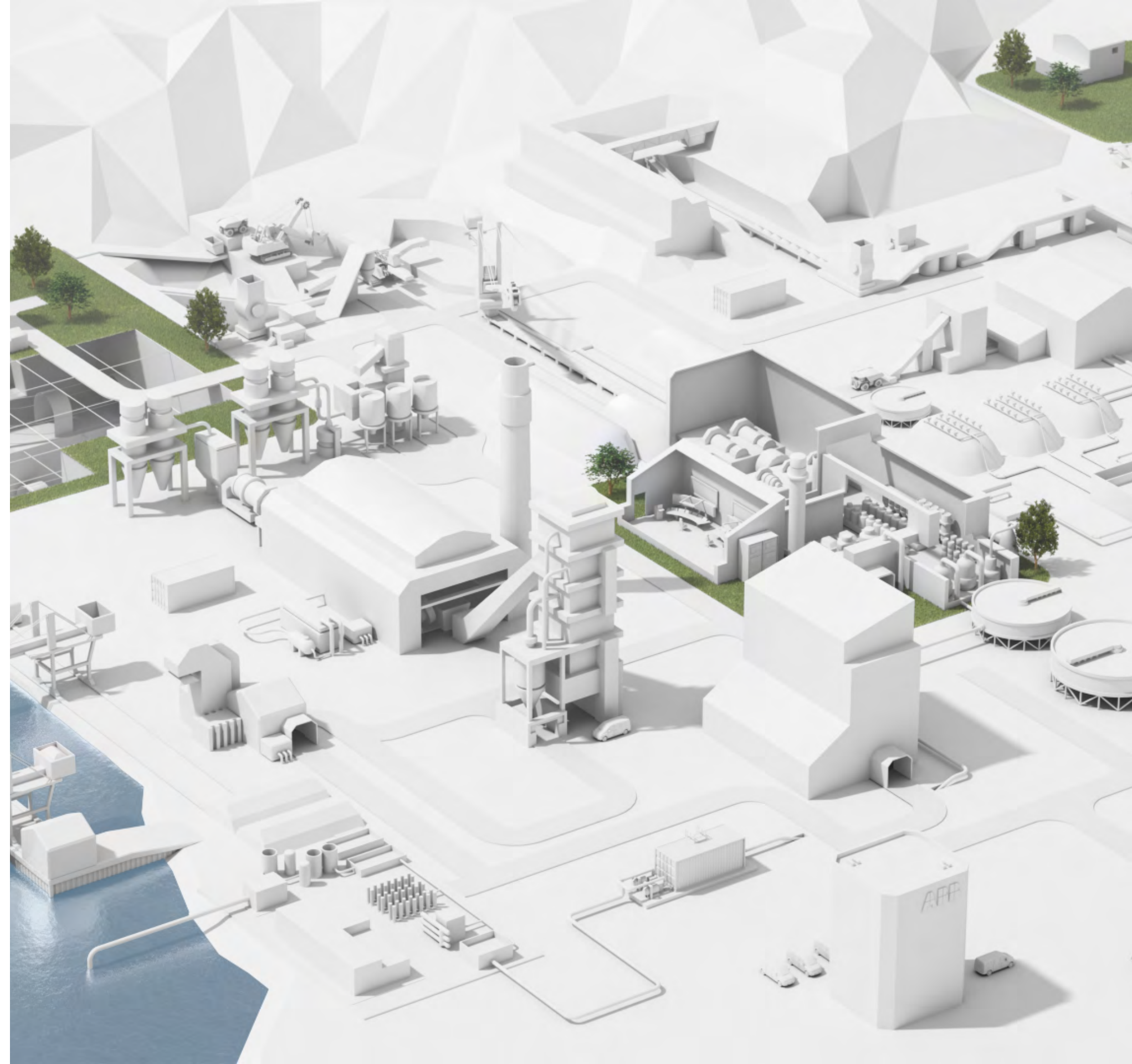
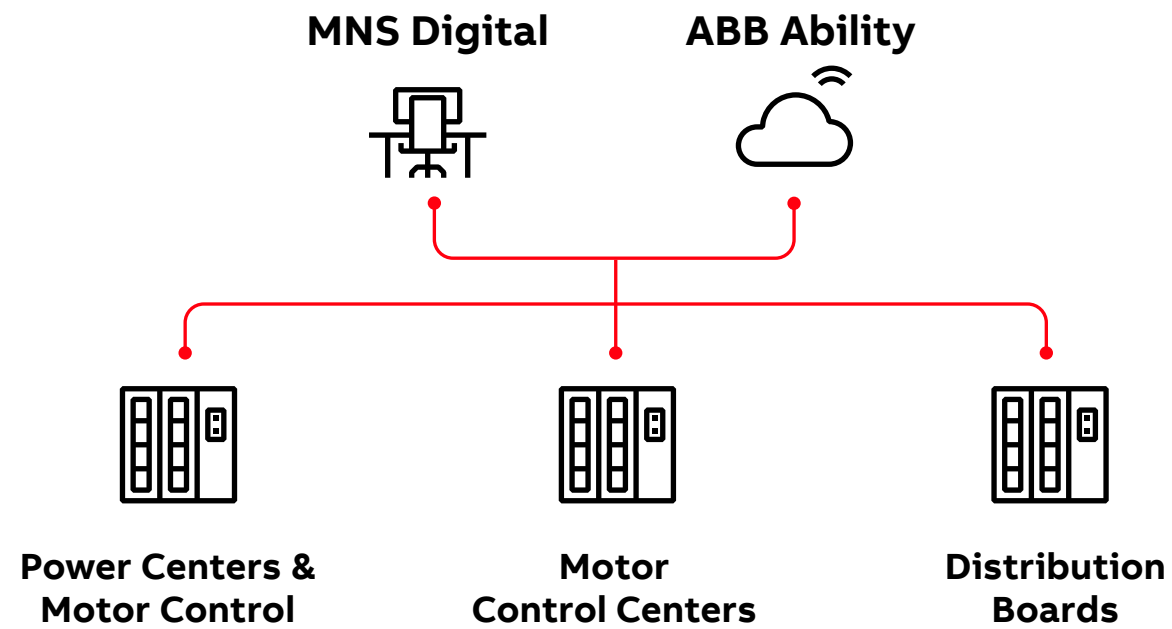
# Mining

## Challenges

- Meeting escalating standards for reliability, safety and productivity
- Committing to sustainability and reducing your overall carbon footprint

## MNS Solution

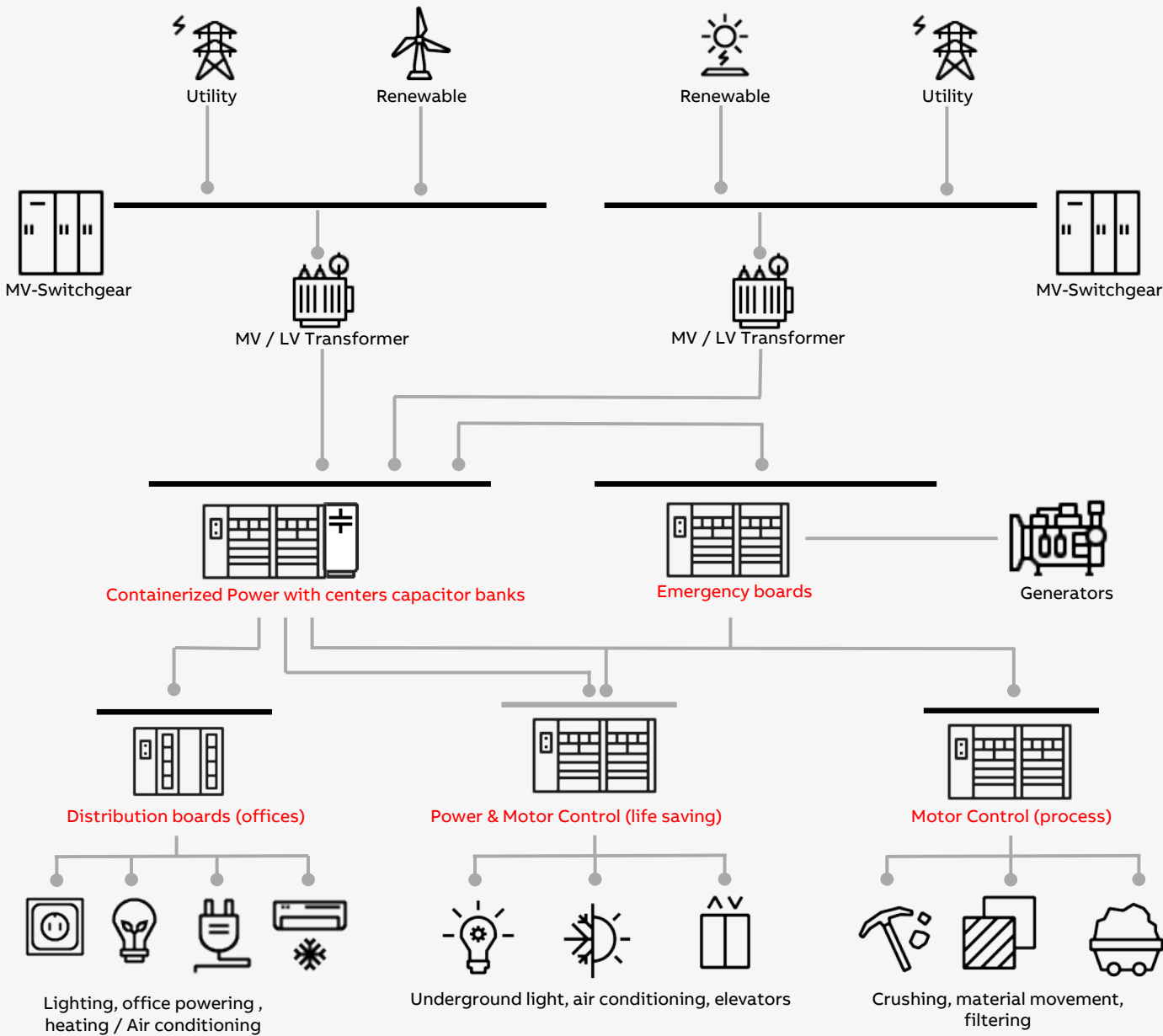
- MNS 3.0 works with CMES to provide predictive maintenance and remote diagnostics to optimize efficiency and reduce downtime
- Unlocking your facility's data increases transparency and reveals opportunities for improving sustainability measures





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# Mining electrification infrastructure





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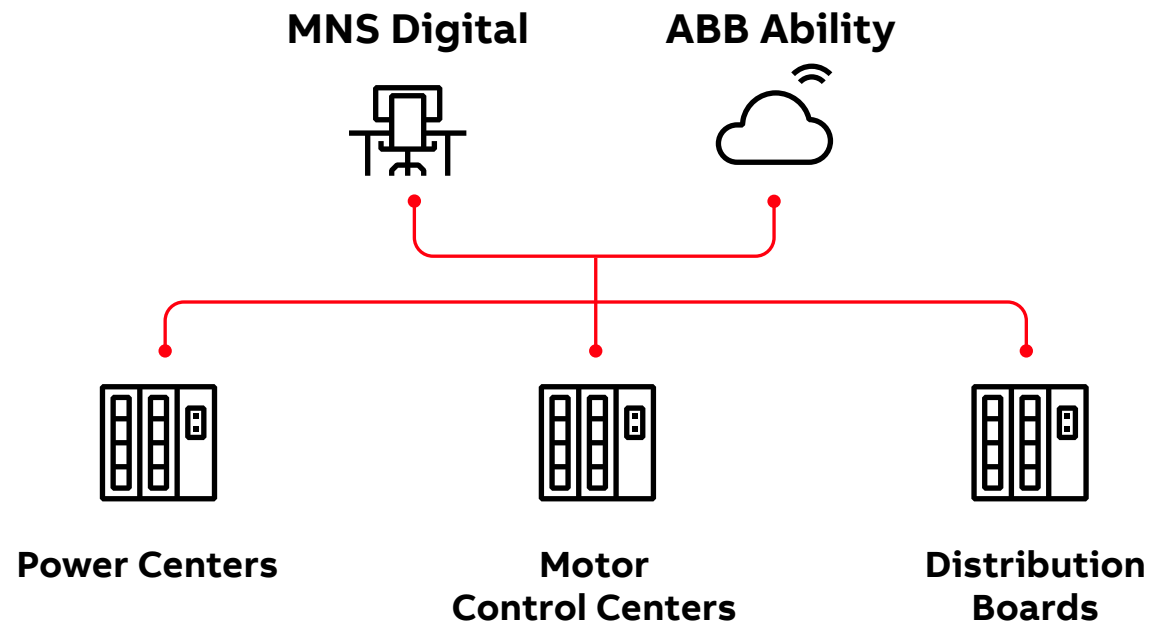
# Marine

## Challenges

- Responding to trends shaping the industry: propulsion and power, smart shipping, big data and analytics
- Optimizing loading efficiency
- Reducing fuel consumption

## MNS Solution

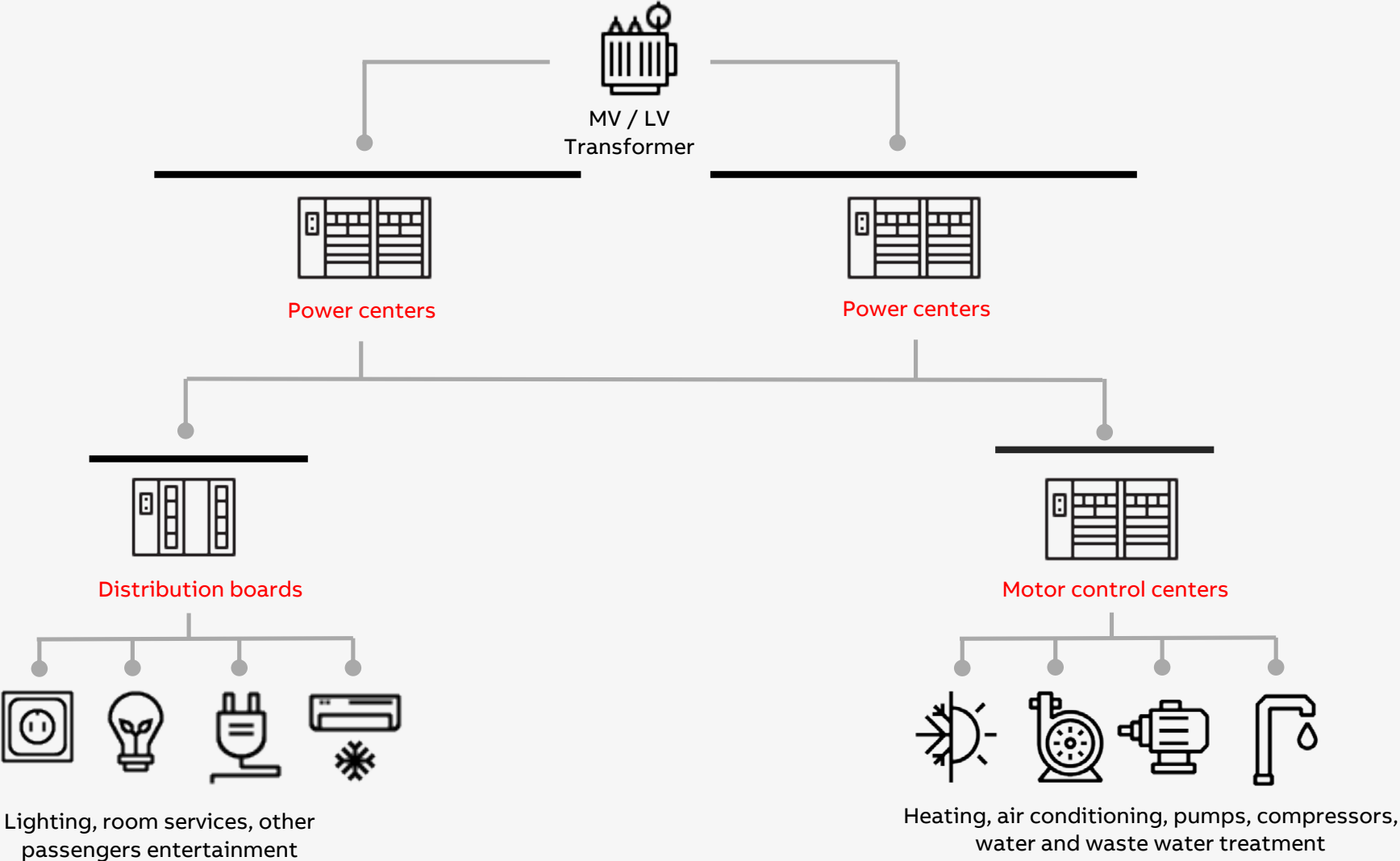
- MNS 3.0 works with CMES to provide predictive maintenance and remote diagnostics to optimize efficiency and reduce downtime
- Unlock the data you need to optimize engine loading and reduce fuel consumption
- ABB Ability™ provides a shore-charging solution designed to reduce noise and overall carbon footprint





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# Marine





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# Pulp & Paper

## Challenges

- Increasing productivity, improving safety and reducing waste
- Maintaining cost efficiency with existing assets

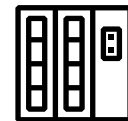
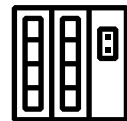
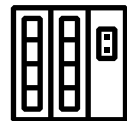
## MNS Solution

- MNS 3.0 and ABB Ability provide a digitalized platform that improves the efficiency and reduces waste across production
- Retrofitting existing switchgear with MNS Digital can reduce CAPEX by 30%
- Digitalization could save the pulp and paper industry an estimated USD 20 billion by 2025

**MNS Digital**



**ABB Ability**



**Power Centers**

**Motor  
Control Centers**

**Distribution  
Boards**





ALL INDUSTRIES

# Pulp & Paper electrification infrastructure

