Solving Data Center Challenges in the AI Era

Table of Contents

Section 01

Introduction

Introduction

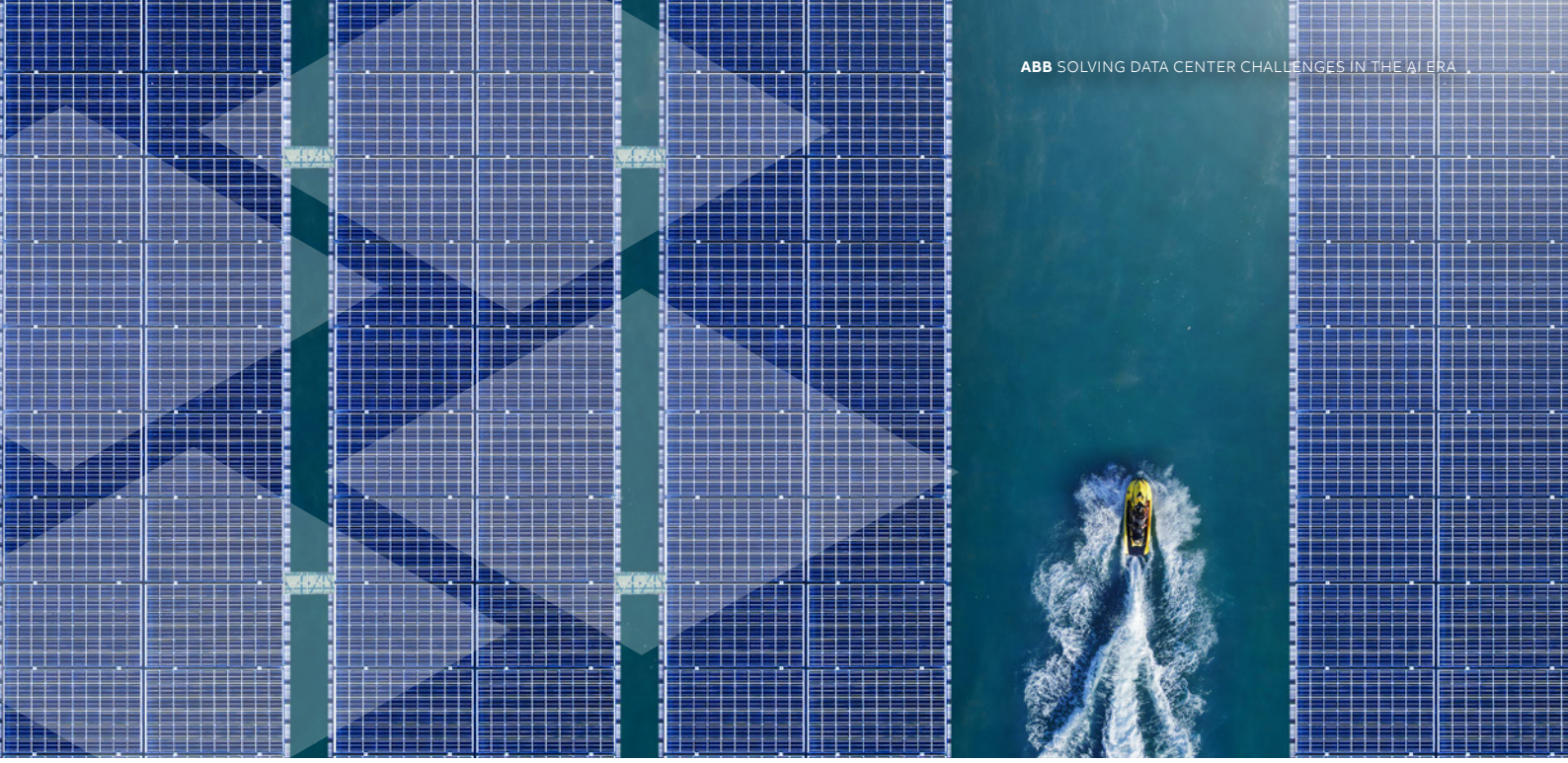
Due in large part to what has been dubbed the 'AI gold rush', the demand for data center services is reaching all-time highs.

The promise of AI has underpinned a dramatic spike in the need for more data center capacity– and the sky's the limit when it comes to growth. AI is competing intensely with cloud for rack space, which will only drive up the value of digital infrastructure real estate.

McKinsey & Co. predicts the data center sector will grow 10% per annum to 2030, with US$49BN to be invested in constructing new facilities – which is arguably a conservative estimate. In Australia, credit rating agency Moody's predicts the data center sector will grow by 20% between 2023 and 2025 with 2038 megawatts of capacity.

This kind of exponential growth is exciting. But it also comes with some daunting challenges – challenges that can quickly blow out operating costs and diminish any gains, short and long-term, from growth opportunities.

And for a sector that depends on delivering rock-solid reliability in the form of uptime to its customers, this creates risks and complexities that need to be understood before they are addressed.



Main challenges

Rising energy demand

AI, particularly generative AI, is notoriously power hungry. As it becomes more embedded into the applications we use every day, data centers will need to meet these new energy demands. According to The International Energy Agency, data center electricity consumption is likely to double by 2026, reaching 1,000 terawatt (TWh) hours. This is equivalent to Japan's electricity consumption for an entire year.

Data centers are already under scrutiny from a sustainability perspective for their high-power consumption. In addition, energy prices are rising. How do data centers meet these exorbitant power demands while also minimising their impact on the environment and OPEX?

Increasing rack density

The construction of new data centers is not keeping pace with demand. As a result, data centers need to fit more compute capacity into existing spaces by using high-density racks.

However, rising power use means that closely packed servers are more prone to overheating. Therefore, data centers need solutions that feature compact design, and provide consistent, reliable power. They also need to maximise energy and space efficiency and deliver fast, effective cooling when needed.

Reducing environmental impact

The rise in energy use and the issue of overheating are making sustainability targets much more difficult to reach. It is no longer acceptable to claim carbon neutral status by simply purchasing carbon offsets , or simply to use more water to cool crowded server racks – investors, customers and the public are much savvier about sustainability, and demand meaningful action.

So, how do data centers achieve net zero or minimise their environmental footprint in the face of these challenges and in the era of AI?

Alternative cooling solutions

Data center performance relies on being efficiently powered and efficiently cooled. High energy use and rack density are making overheating more of a risk, so data centers now need to explore options beyond traditional technologies, such as air conditioning and free cooling.

These include investing in alternatives such as liquid cooling, submersion, optimised airflow systems, rack-level cooling and even architectural design to meet today's challenges.

In this report, we explore how these factors are quickly making traditional data center operational models outdated and contributing to a broader evolution of the sector. The challenges outlined above are significant and require out-of-the-box thinking and new technologies to address, and there are many examples of how this is coming to life in Australia and around the world.

Section 02

Key findings

Key findings

Maximising uptime is complex enough as it is. And it is crucial that solutions to today's challenges support this business goal effectively. Otherwise, a data center's bottom line and growth potential can quickly be eaten up by high energy and labour costs, operational inefficiencies, and clunky, manual processes.

We explore the data center sector's current challenges in more detail and identified three main takeaways:

01 **Start thinking outside the box**
Traditional ways of managing data center challenges are quickly becoming obsolete. Finding solutions requires innovative thinking and being open to new ways of working. Looking to what data centers around the world are achieving can be useful inspiration for new techniques to try at home.

02 **Invest in automation technology**
Soaring power expenses and operational complexity can't be solved by more headcount. Investing in technology that automates energy management and optimises efficiencies can help your data center scale and grow with a healthy bottom line.

03 **Work with a partner with local and global experience**
A technology partner like ABB brings local and overseas expertise in optimising data center performance. We bring a proven track record working closely with clients to develop new, cutting-edge solutions to some of the sector's most pressing issues.

Section 03

The rise of AI

The rise of AI

Artificial intelligence – it's been around for 50 years, but recent years have seen an earth-shattering explosion in its use.

Spanning healthcare, energy, education, manufacturing, engineering, retail, banking and finance, and logistics and transport – absolutely no sector or industry across the globe is untouched by AI, and it is having enormous ramifications on the way we now work.

The skyrocketing demand for AI

An analysis of the impacts of AI carried out by global consulting firm PWC identified over 300 use cases for AI, including automating previously manual tasks like data entry, customer service, manufacturing, financial auditing and bookkeeping, and translation services.

This analysis also estimated that AI would contribute more than USD$15 trillion to the global economy and increase GDP in some developed and emerging economies by up to 26% through automation and increasing productivity.

As its use in our homes, schools and workplaces grows, so too does the infrastructure required to keep AI operating. Alongside data services like entertainment and learning streaming platforms, industrial cloud computing, e-commerce and the Internet of Things (IoT), AI is driving demand for data center capacity at a rate of knots.

A 2023 overview on the US data center market found the growing demand for AI servers and rack space in existing facilities had led to a boom in new data center construction, bucking trends seen in other industries. The report's authors highlighted important hurdles facing AI data centers.

'Growth is increasingly constrained by land and power availability, supply chain challenges and construction delays, not to mention increasing resistance from some local jurisdictions. The complex landscape for the sector affects both established hubs and emerging markets.'

Power consumption has increased by 75% in just two years across one generation of GPUs.

The environmental impacts of the growth in AI

Power usage, and its impacts on sustainability, is another major issue for data centers, given the power demands of AI are much higher than conventional servers. Increased power use in data centers means an increase in the risks associated with overheating, plus an increase in water consumption to minimise the possibility of overheating.

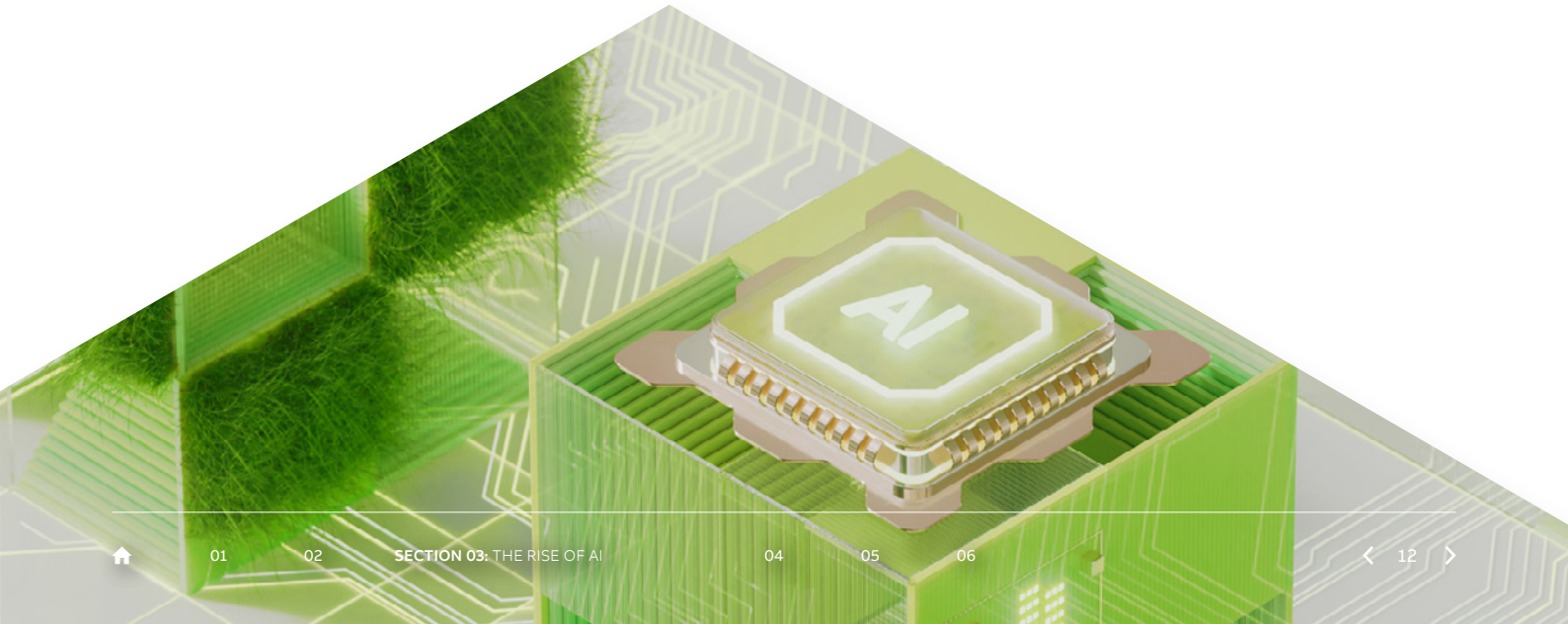
One estimate equates water usage of a mid-sized data center as equivalent to three average-sized hospitals. This raises a number of important sustainability issues and, with ESG considerations on the agendas of many corporations, these issues can't be ignored.

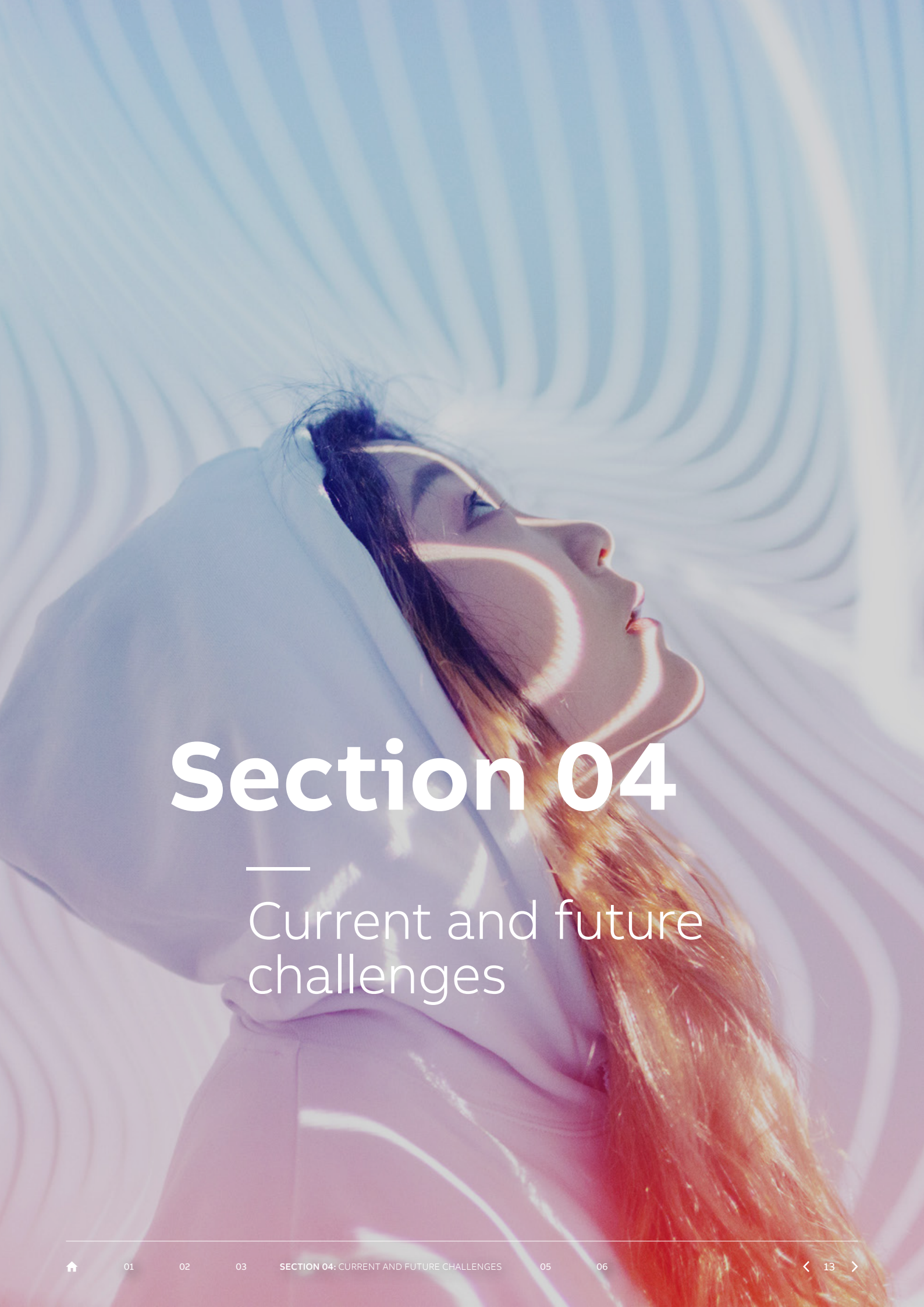
Water cooling is proving unsustainable owing to the sheer volumes required. So, data centers are now exploring liquid-immersion-cooling solutions to minimise environmental impact.

Key takeaways

01 AI has a present power demand of 4GW, with this figure expected to rise to 15GW by 2028. This exponential rise will make sustainability targets more difficult to achieve.

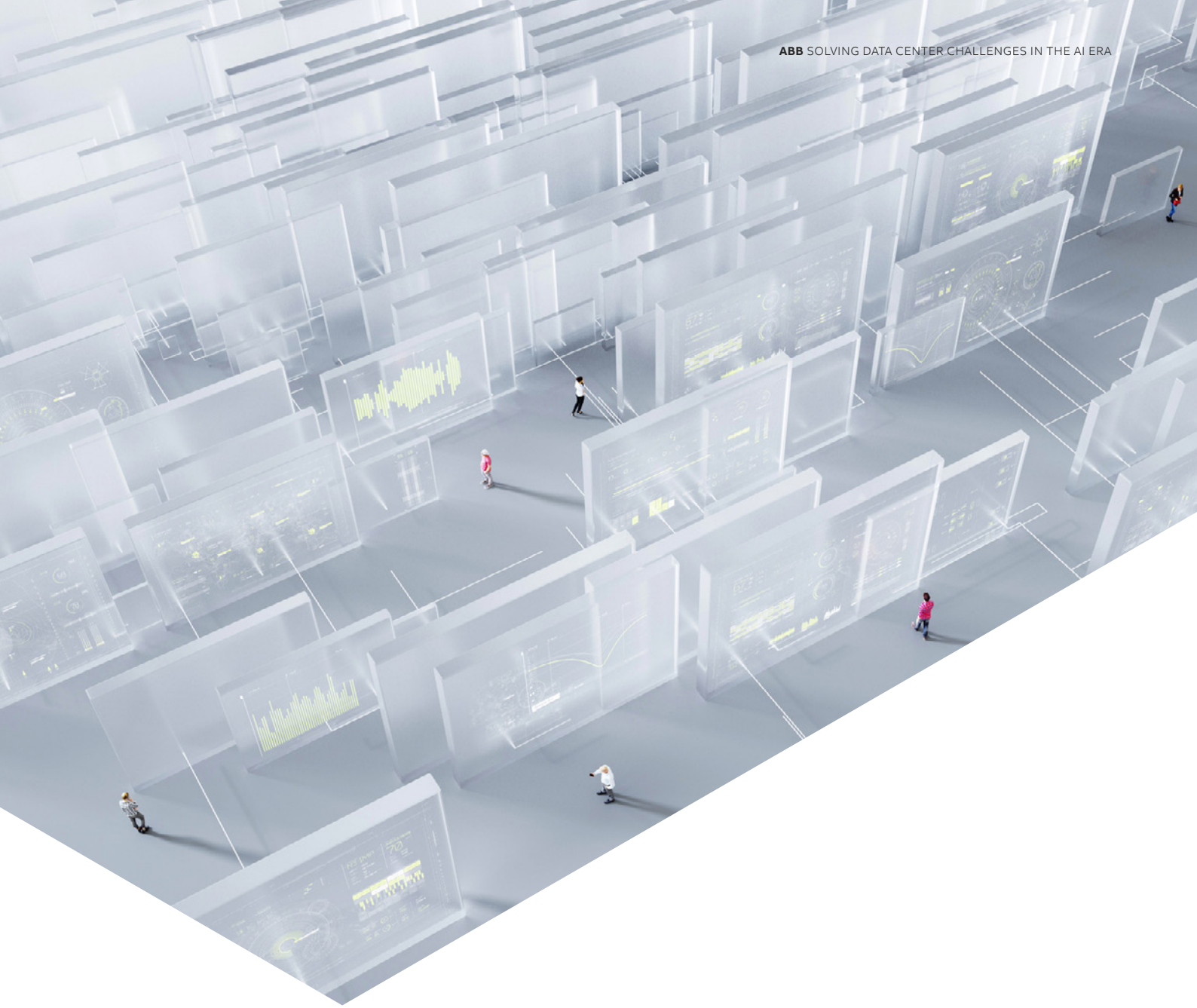
02 Data centers are finding it difficult to accommodate AI-based graphics processing units (GPU) servers and their energy and storage requirements.





Section 04

Current and future challenges



Current and future challenges

Data centers face some serious challenges – and not just with the rise of AI. This includes a skyrocketing demand for new data centers and the availability of land to build them on as AI use increases and competes with cloud data storage for available bandwidth.

Additionally, there is the pool of skilled labour required to effectively manage and operate any new data centers, and the futureproofing of the infrastructure used to keep them operational.

Environmental impact

Much has been made of the adverse impacts data centers have on the environment, and the obstacle they pose to achieving global sustainability targets, like net zero. The International Energy Agency (IEA) calculates that data centers and data transmission networks are responsible for around 1% of energy-related greenhouse gas emissions. Developing more sustainable and energy efficient data centers, sooner rather than later, is essential.

In the US, it is estimated that data center power consumption is expected to reach 35GW by 2030, up from 17GW in 2022. Compounding the issue is the widespread acknowledgement that, to run AI reliably at scale, data centers need to upgrade their critical power infrastructure. However, retrofitting the many existing data centers globally to meet the energy needs of AI data storage is often not a viable option given the huge amounts required.

According to the IEA, data centers consumed approximately 460 terawatt hours (TWh) or 2% of global electricity demand in 2022. The IEA predicts that by 2026, global electricity consumption from data centers, cryptocurrency and AI will rise to between 620 to 1,050 TWh — adding approximately the equivalent energy demand and consumption of Sweden or Germany.

The IEA and Chinese authorities calculate that electricity demand in data centers in China to reach approximately 300 TWh by 2026, rising to 400 TWh by 2030. This energy consumption figure is rising rapidly as 5G networks and IoT expand.

In the European Union (EU), the IEA expected that data center electricity use is likely to rise from its 2022 figure of 100 TWh, or 4% of the EU's total electricity demand, to almost 150 TWh by 2026, as private equity fuels a sharp rise in the number of data centers across Europe.

Power Usage Effectiveness (PUE)

According to data collected by the Australian Government's Department of Climate Change, Energy, the Environment and Water, the average data center in Australia is over 20 years old .

As increasing numbers of organisations across multiple industries in Australia digitalise and shift to cloud computing, and use of Internet of Things (IoT) solutions grows, many are either no longer fit-for-purpose, or 'inefficiently designed' to cope with exponential demand.

Power Usage Effectiveness (PUE) is a major efficiency metric for data centers in terms of both financial and environmental, social and governance (ESG) performance. As a prodigious consumer of electricity – the pressure is on data centers to become more energy-efficient to both reduce operational costs and become more sustainable.

In simple terms, PUE explains how much power a data center uses for computing, versus how much is consumed by its support infrastructure for cooling, lighting, and ensuring an uninterrupted power supply.

Calculating PUE is complex and requires vast amounts of data. If a data center's PUE is 1.25, it means that for every 1 kWh of electricity used by its IT equipment, an additional 0.25 kWh is used for other purposes (like cooling and lighting).

This means the facility is using 25% more power than necessary to run its IT equipment. Understanding PUE helps data center managers with better capacity planning, leading to a more efficient use of resources and smarter scalability.

A low PUE has major benefits for data centers:

- It highlights the overall efficiency of the data center and demonstrates its focus on sustainability;
- Reduced energy consumption means lower electricity bills and greater profitability;
- Improved ESG performance as a higher percentage of the data center's energy consumption is re-routed to more productive purposel; and
- An enhanced reputation and competitive edge as a low PUE helps data centers attract customers who have ESG and sustainability priorities.

There are several ways data centers can improve their PUE. Strategies like smarter design incorporating cutting edge construction materials; efficient cooling and heating technology (including variable speed drives and liquid cooling); and more energy efficient IT hardware are becoming much more important in today's data center design and builds.

The geographical location of data centers in colder climates is also proving to be a significant contributor to improving PUE, with many Scandinavian countries (see Norway's Lefdal Mine case study below) experiencing significant increase in data center construction growth.

Rising Total Cost of Ownership (TCO)

As well as sustainability challenges, when it comes to data centers, the total cost of ownership — the sum of lifetime operational and capital expenses involved in the design, construction and maintenance of data centers, as well as the cost of meeting regulatory and compliance obligations — are prohibitive.

Like the constraints of retrofitting existing data centers for energy efficiency, the lack of physical scalability in early iterations of data center design is now posing a challenge, given these centers were almost exclusively designed to meet existing demand.

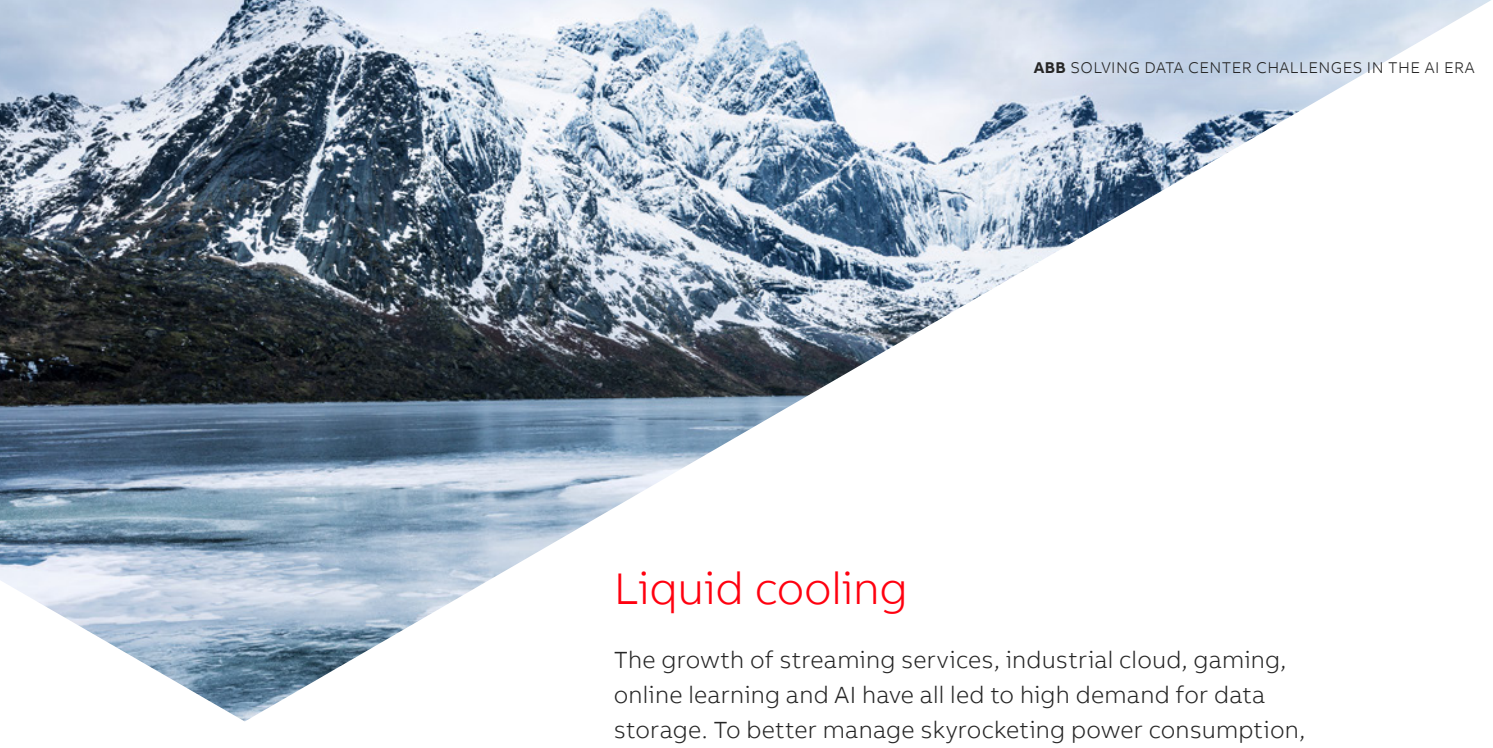
As their storage capacity grows and energy efficiency improves, older data centers are regularly upgrading servers. In many instances, while it is contributing to lower TCO, the savings aren't enough to improve their ongoing viability or reduce their carbon footprint.

Data center owners are increasingly looking for ways to reduce their TCO. An emerging trend in this respect is a shift away from calculating TCO to focus on SCO – Sustainable Cost of Ownership, which is the reduction of operational and capital expenditure by focusing on net zero targets and ESG.

Much of this relies on developments in sustainability technology, renewable energy reliability, and the elimination of waste through design circularity and innovation.

Reducing TCO has also included constructing data centers in locations with low energy prices, and turning to integrated technology stacks that automate many of the essential functions in data centers.

Furthermore, this move provides a vast array of analytics that help extend the life of operating technology and minimise service disruptions.



Liquid cooling

The growth of streaming services, industrial cloud, gaming, online learning and AI have all led to high demand for data storage. To better manage skyrocketing power consumption, data centers have begun to employ high density computing – IT racks that can handle larger amounts of data, per unit of space.

However, high density computing generates a lot more heat, which must be managed to keep IT hardware operating safely. Until recently, air-based cooling has been the industry standard. But today's demands on data centers are making this method increasingly ineffective.

The challenge is to find new and smarter ways of cooling that are more sustainable, resource efficient, and extend the operational lifespan of critical infrastructure to optimise TCO and PUE.

The shift away from air-cooling to liquid cooling is an important transition to reduce data center energy and water consumption. There are several variants being deployed, including evaporative cooling, two-phase immersion cooling and rear-door heat exchangers, but the two main types that can meet the demands of high-density computing are:

- Immersion;
- Liquid-to-chip (also known as direct-to-plate).

Immersion

Liquid immersion cooling involves submerging servers, or in some cases, entire racks of IT components in a purpose-designed container filled with a dielectric (non-conductive) fluid.

With its exceptional thermal conductivity, dielectric fluid can absorb heat more efficiently than conventional fan-cooling, providing a highly effective and sustainable cooling solution for data centers.

A major advantage of this method is that full immersion can absorb heat for several minutes after a power failure without the need for costly and space-consuming back-up pumps.

Liquid-to-chip/direct-to-plate

This method involves circulating cooled liquid on a plate (often referred to as a 'cold plate') around hardware that generates significant amounts of heat. The liquid is then pumped into a heat exchanger, which cools the fluid and recirculates it back across the cold plates.

It is effective because it targets equipment that generate the most heat, such as Central Processing Units (CPUs) and GPUs. Liquid-to-chip cooling is seen as a faster and more efficient way of preventing systems from overheating.

Liquid cooling challenges for legacy data centers

Liquid cooling offers clear efficiency and sustainability improvements compared to air cooling. But there are some important factors to consider when selecting the best option.

While liquid cooling is becoming the default cooling system in greenfield data center design and construction, it isn't ideal for many existing data centers. Limitations of legacy infrastructure such as available floor and rack space and raised floor server rooms make the wholesale transition from air to liquid cooling logistically and architecturally difficult.

The cost of transitioning entirely from air to liquid cooling is also prohibitive for many more established data centers. In response to the infrastructure and cost challenges, many data centers have adopted a hybrid mix of both methods to meet the needs of today's data center customer.

It is worth partnering with an organisation like ABB who bring world-class insights and expertise in data center operation. Legacy data centers can benefit from ABB's best practice approach to using technology and the latest innovations to reduce costs and improve efficiency.

Key takeaways

01 The drastic rise in power and cooling demand from data centers is making it even more difficult to reduce their already hefty environmental footprint.

02 PUE is a critical measure for data centers to improve energy efficiency and make progress on sustainability targets.

03 The increasing complexity of managing this exponential rise in electricity consumption and rack space demand is also adding to TCO. In the race to boost storage capacity and improve energy efficiency, costs are rising, and profits are being squeezed.

04 Growing power demands and high-density racks mean that newer, more effective cooling solutions are required. Data centers will need to transition to liquid cooling; however, this may be more difficult for older data centers.

Section 05

The role of automation and innovation

The role of automation and innovation

Data centers have a daunting task ahead of them. To stay competitive, they need to drastically increase power consumption while reducing their environmental footprint.

Legacy data centers are struggling to provide the rack space needed to keep up with accelerating market demand. They also need to explore more sophisticated cooling options as real estate shrinks and electricity use climbs sharply.

Data centers have historically been run manually, but hiring people based on outdated operational models vis unlikely to keep up with demand and will certainly blow out costs. So, managers need to think outside the box to find solutions.

‘From a size and criticality perspective, modern data centers have much more in common with industrial facilities – power plants and oil refineries, for instance – than they do with commercial buildings. Given this fact, it seems natural that industrial-grade automation systems should be used to monitor and manage data center infrastructure.’

Automation

Most data centers use a combination of Building Management Systems (BMS) and Data Center Infrastructure Management (DCIM) software as their main platforms for operations like power management and heating, ventilation and air conditioning (HVAC). However, an increasing number of industries are shifting to a data-centric approach to management and resource allocation. Applying an insights and analytics-based approach to data center management delivers greater efficiencies, reducing OPEX and CAPEX.

As Richard T. Ungar, ABB’s Program Director, Next Generation Technology, explains, automation recognises the essential role data centers now play, as well as their increasing importance moving forward. ‘The multi-megawatt, custom-built data center behemoths of today grew out of the ‘computer rooms’ and ‘server closets’ that were simply rooms set aside as part of existing facilities,’ he says.

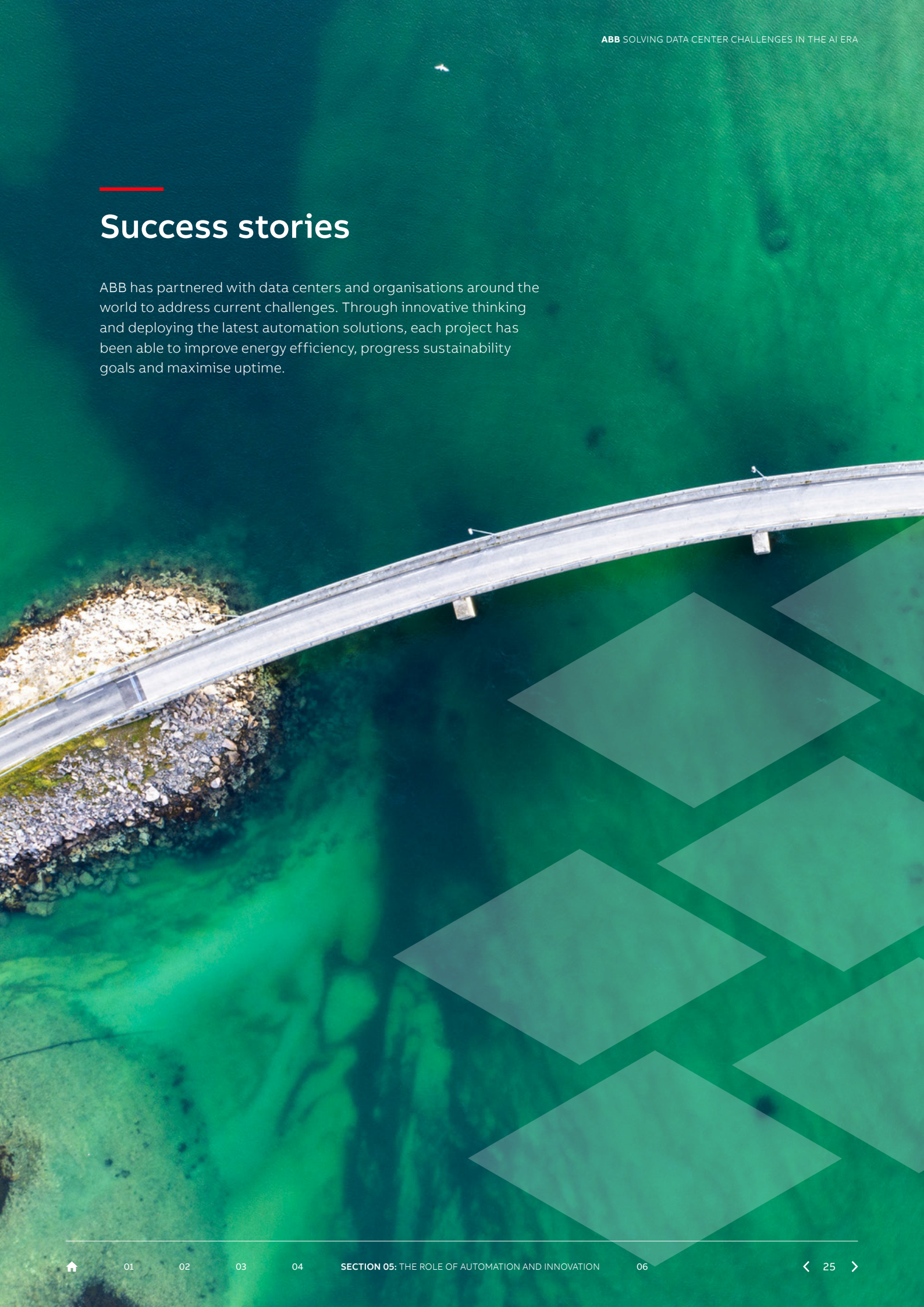
‘Data centers [though] are not just larger, more power-hungry office buildings; [they] manage critical data for global communications, financial transactions, government services, business operations and entertainment,’ he continues.

Automating many of the maintenance and operational tasks of data centers has shown marked improvements in the following areas:

- Improved facility efficiency and cost reduction from automating the monitoring of power and cooling equipment.
- ‘Smarter’ maintenance – with more information on hand, software programs can perform predictive maintenance and identify inefficient and faulty hardware faster for reducing downtime.
- Dynamic load forecasting — using data to anticipate and managing demand.
- Minimising, and in some cases, removing altogether, human error.

Success stories

ABB has partnered with data centers and organisations around the world to address current challenges. Through innovative thinking and deploying the latest automation solutions, each project has been able to improve energy efficiency, progress sustainability goals and maximise uptime.



Lefdal Mine Data Center

Nature and technology combine to deliver up to 40% energy savings

In Norway's north-west, the Lefdal Data Center is housed in a former mine located 100m below ground and plans to become one of the greenest data centers in Europe. It uses 100% renewable hydropower, using cold water from a deep fjord as a natural coolant.

ABB deployed its Safe Plus medium voltage switch gear to work seamlessly with the natural conditions to create a stable, incredibly energy efficient operating environment. As a result, Lefdal Mine Data Center has achieved a PUE of between 1.08 and 1.15 for a 5kW rack, using up to 40% less energy than traditional data centers.

Furthermore, waste heat is pumped back into the local community, and the operational expenditure savings are used to provide better pricing for customers.

Lakeland Community College

Using automation to deliver 100% uptime and reduce energy use by 53%

Located in Iowa in the US, Lakeland Community College needed a new data center with more space, greater flexibility for configuration scalability, and increased energy efficiency. Additionally, the college had to meet new compliance obligations to report energy usage. The college turned to ABB for its Ability™ Data Center Automation solution.

The combination of a new facility and ABB Ability™ Data Center Automation solution allowed Lakeland to maximise its data center layout and smarter cooling configurations to improve energy usage without compromising uptime. This has also helped the college adopt new data center trends and technologies, including shifting many of its servers to the cloud to reduce the number of servers they needed to cool, resulting in lower lowering energy costs.

Since implementation, the college has reported a reduction of energy usage for its data center by more than 53%.

Key takeaways

01 To stay competitive, data centers need to manage current challenges in a cost-effective, energy efficient way. This is where automation technology can help.

02 Innovative thinking is another essential to surviving present market pressures. Work with a technology partner who brings a breadth of experience delivering unique, effective results for customers around the globe on a solution for your business.

Section 06

How a technology and sustainability partner can help

How a technology and sustainability partner can help

A harsh reality: many of the traditional ways that data centers have operated are no longer fit for purpose.

As well as the massive increase in data center demand driven by AI and industrial cloud computing (to name just two factors), guaranteeing reliability without cost blow-outs is a huge concern. Australian data centers are negotiating surging energy prices.

The transition to renewable energy sources — and its adverse impact on existing power grids – presents reliability and cost challenges. And ongoing skills shortages are driving sharp rises in the cost of labour. Newer, smarter ways of managing and operating data centers need to be implemented now.

Partnering with a technology and sustainability expert like ABB can guide your organisation to adopt a more cost-effective and sustainable approach to running a data center for today, and for the future.

ABB's advisory services and portfolio of solutions revolve around using innovation and automation to drive data center efficiencies. This leads to:

- Greater stability in energy supply;
- Greater uptime reliability; and
- Lower cost of ownership – by employing design principles that prolong the life of data center equipment, boost scalability, and reduce OPEX and CAPEX.

Resource efficiency

Modern data center design, construction and operation have, over time, incorporated a stronger emphasis on sustainability. Despite this progress, there is still room to reduce the environmental impacts of data centers. A technology partner can improve your data center's resource efficiency and reduce its carbon footprint.

Increasingly, providers looking to co-locate data centers are scrutinising the performance and sustainability credentials of data center designers. To meet these expectations, the data center industry needs to continue to incorporate innovation driven by AI, remote management, and state-of-the-art data center design and energy management systems.

It also needs to meet the expectations of governments and customers when it comes to transparency about their environmental and sustainability performance.

Partnering with a data center technology provider who understands automation also makes it possible to prove your commitment to sustainability. These solutions provide the evidence you need to convince customers, prospects and third-party suppliers that you are serious about reducing your data center's environmental impact.

HiPerGuard UPS: an industry-first solution

High-density computing has created many efficiency, operational and environmental challenges for today's data centers. ABB's EcoSolutions™ program was developed by drawing on the unique insights and expertise it has collected over the years through partnering with global leaders in the industry.

Products like ABB's medium voltage HiPerGuard UPS and low voltage MegaFlex DPA solutions continue to provide compact, reliable and cost-effective solutions for data centers who want to improve their TCO, deliver efficient PUE ratios, improve space efficiency and lead the industry in sustainability and emissions reductions.

Solutions that provide full transparency across environmental impacts help data centers track and measure their sustainability efforts. They also support adherence to contemporary design circularity principles and international standards

Success story

Telia

Optimising power reliability, efficiency and uptime

ESG is a major focus for many Nordic businesses. The region is a major player in the data center space thanks to reliable power supplies, low energy prices and space scalability, so many operators are also looking at sustainable ways to reduce their center's CO2 emissions without compromising stability and uptime for customers. This was the key objective of Telia's Helsinki Data Center when it began operating in 2018. ABB's solution for Telia's Helsinki Data Center included installing critical power infrastructure including:

- UniGear Digital and UniSec medium voltage switchgear;
- MNS low voltage switchgear;
- A DPA 500 uninterruptible power supply (UPS) system.

ABB's electrification infrastructure, with digital functionality, ensured safe, scalable and reliable power distribution in Telia's mission critical data center from day one. 'Continuous power delivery keeps data centers beating and that system has to deliver power without interruption while simultaneously transferring power efficiently from the high-voltage network to the IT infrastructure at enterprise level.' 'For Telia we wanted to create a scalable electrical distribution infrastructure that could always be backed up to assure reliability through a parallel system that would deliver continuity in the power supply, even if a single component fails,' said Timo Kontturi, Head of ABB's data center segment in Finland, Telia's data center 'will support Finland's digital growth, and we are proud to be part of their ambitious plans.'

Uptime assurance

While the dynamics of managing data center performance is shifting rapidly, the ultimate goal remains the same – achieving maximum uptime.

In today's inter-connected world, uptime is non-negotiable. It protects organisations from business interruption, secures personal or sensitive data from cybercrime and prevents unauthorised access to secure systems and infrastructure. IT downtime can lead to catastrophic consequences for data center customers – the most serious being the loss of trust and irreversible reputational damage.

When uptime means everything, your technology and sustainability provider plays a crucial role to ensure uninterruptable power supply (UPS).

The provision of products designed for maximum uptime performance is one of the many ways a technology partner can help data center managers. As the use of AI grows, and — as we discussed earlier — power demands spike to meet capacity, UPS requirements and protecting critical power infrastructure will arise as new issues.

An innovative way to meet uptime challenges has been the transition from low voltage to medium voltage power protection. This switch delivers sustainable increases in reliability and resilience, and reductions in data center building and operating costs.

It also improves power supply reliability and energy efficiency by incorporating the following objectives as basic design features:

- The ability to cope with the high energy loads demanded by today's data centers (24 kV or more) when supply is disrupted;
- The means to make meaningful contributions to reducing your carbon emissions;
- Long-term system availability to reduce maintenance costs; and
- Scalability to extend its operating life.

Success story

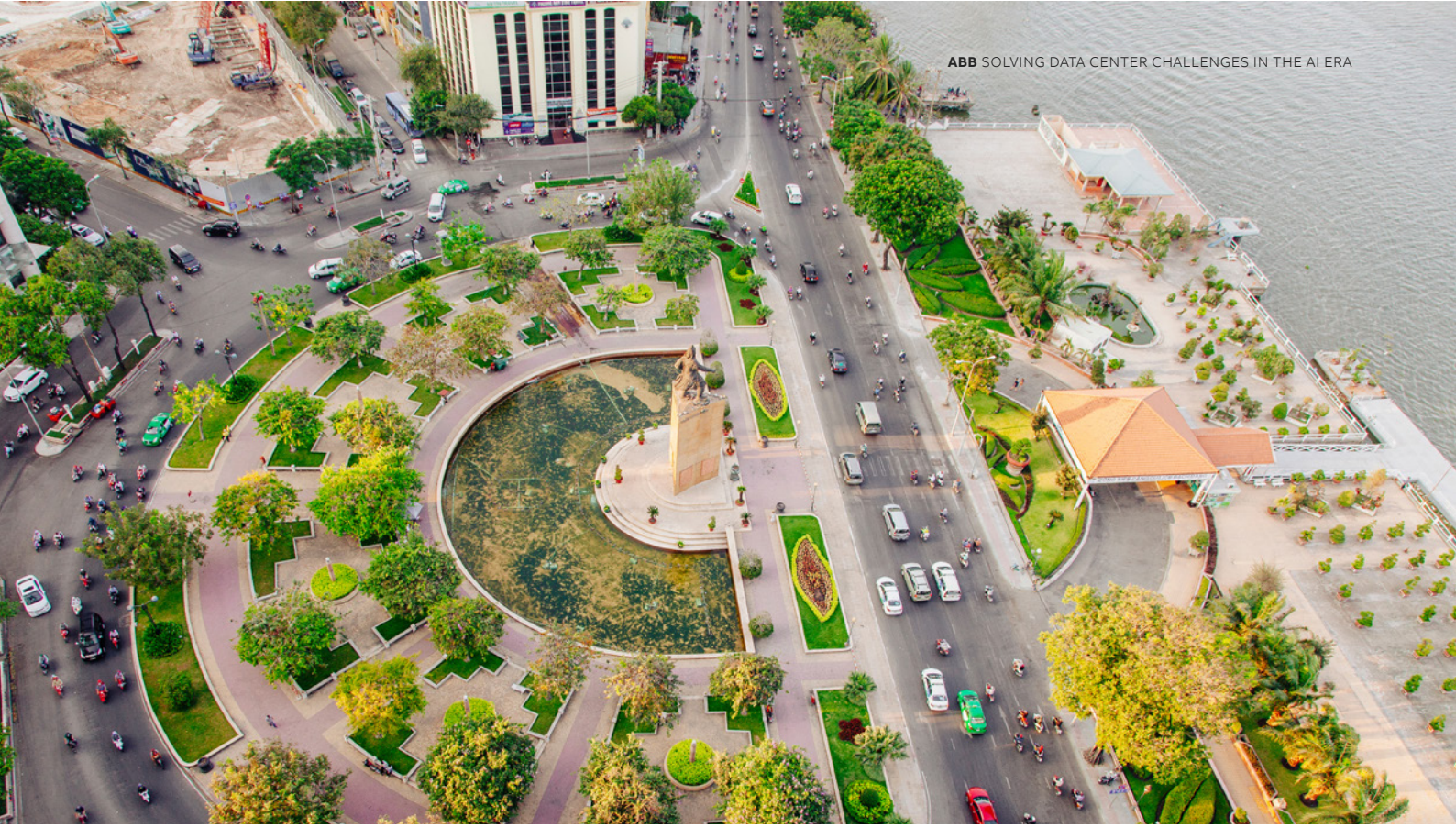
KCY Data Center
Optimising PUE and minimising downtime for a Chinese AI data center

The KCY Cloud Data Center, located in China's Sichuan province, was designed to support the growth and development of AI across China. Boasting a processing power capable of 500 petaflops (500 x 1015 calculations per second), it is one of China's largest data centers. Not surprisingly, delivering a reliable power supply to avoid downtime are the center's top priorities.

ABB supplied KCY with a space-saving solution for the center's power distribution using high-performance circuit breakers, and software designed to improve energy management.

The solution included the installation of ABB's 500mm UniGear ZS1 switchgear, which requires 25% less installation space than conventional panels. ABB's Emax 2 air circuit breakers and Tmax XT moulded case circuit breakers are the core components in the low-voltage switchgear and have also had a major role in helping the KCY Data Center ensure power supply. Their all-in-one digital functionality and compact design also helped to increase the floorspace, deliver more accurate energy management, reduce energy consumption and improve PUE.

ABB, in partnership with the data center's owners – Sichuan Zhongdu Data Technology – helped reduce construction costs, increased the floorspace available for KCY customers and improved TCO.



Success story

CMC Technology Group
Enabling greater workloads and uptime through smart electrification

CMC Technology Group's Tier 3 international-standard data center – Creative Space – is one of the largest data centers in Vietnam. Since coming online in 2021, it's been tasked with supplying the foundation for large-scale ITC services, cloud digitalisation, IoT and Industry 4.0 technology across the country.

Ensuring uptime to keep customers connected is mission critical for Creative Space. ABB was selected as the technology partner to support their data center with the critical power it needs to deliver reliable and efficient 24/7 supply.

ABB's low voltage switchgears used high-end circuit breakers and trip units to boost uptime without sacrificing energy efficiency and power reliability. Ekip Touch and Ekip Hi-touch both provide the highest grid requirements and guarantee high-quality – and simplified – connection to the switchgear. The system seamlessly interacted with ABB's low voltage equipment to meet the reliability and efficiency the customer needed.

For added reliability, the low voltage switchgear was connected to the entire building management system through high-level communications modules: Modbus TCP/IP, and Modbus RS485. These modules made installation and connection simple, and easy for the building operator to remotely manage and monitor the status of the device anywhere, anytime.

Key takeaways

01 A technology and automation partner like ABB understands the challenges of today's data centers and will help you meet your core goals of uptime, energy efficiency and cost reduction.

02 ABB's solutions give your data center the ability to deal with higher energy loads, minimise power supply disruption and reduce maintenance, while also allowing your business to scale.

Get in touch

If you'd like to maximise your data center's uptime, energy efficiency, cost savings, and improve its sustainability credentials, please reach out to our team at ABB and one of our experts will be in touch.

CONTACT US

References

forbes.com/councils/forbestechcouncil/2024/01/22/five-trends-driving-the-booming-data-center-economy-in-2024-and-why-investors-are-taking-notice/

mckinsey.com/industries/technology-media-and-telecommunications/our-insights/investing-in-the-rising-data-center-economy

Australia key driver of APAC data center capacity growth - Strategy - Cloud - Data center - CRN Australia

Global data center electricity use to double by 2026 - IEA report - DCD (datacenterdynamics.com)

Bogus Carbon Credits a 'Pervasive' Problem, Scientists Warn | TIME

PwC's Global Artificial Intelligence Study | PwC

2023 U.S. Data Center Market Overview & Market Clusters | Newmark (nmrk.com)

AI Power Consumption: Rapidly Becoming Mission-Critical (forbes.com)

The liquid future of data center cooling - Data Center Review

The International Energy Agency (IEA)

Data centers | energy.gov.au

dgtlinfra.com/pue-power-usage-effectiveness/#:~:text=Modern%20Data%20Centers%3A%20Target%20a%20PUE%20between%201.2,exhibit%20a%20PUE%20ranging%20from%201.5%20to%202.0

ABB Australia Pty Limited
1 Bapaume Road
Moorebank
NSW 2170
Australia

Phone: 1800 222 435

abb.com

9AKK108469A9628 REV A SEP2024