

Energy Networking Systems

Supercharge the Network with Power & Cooling



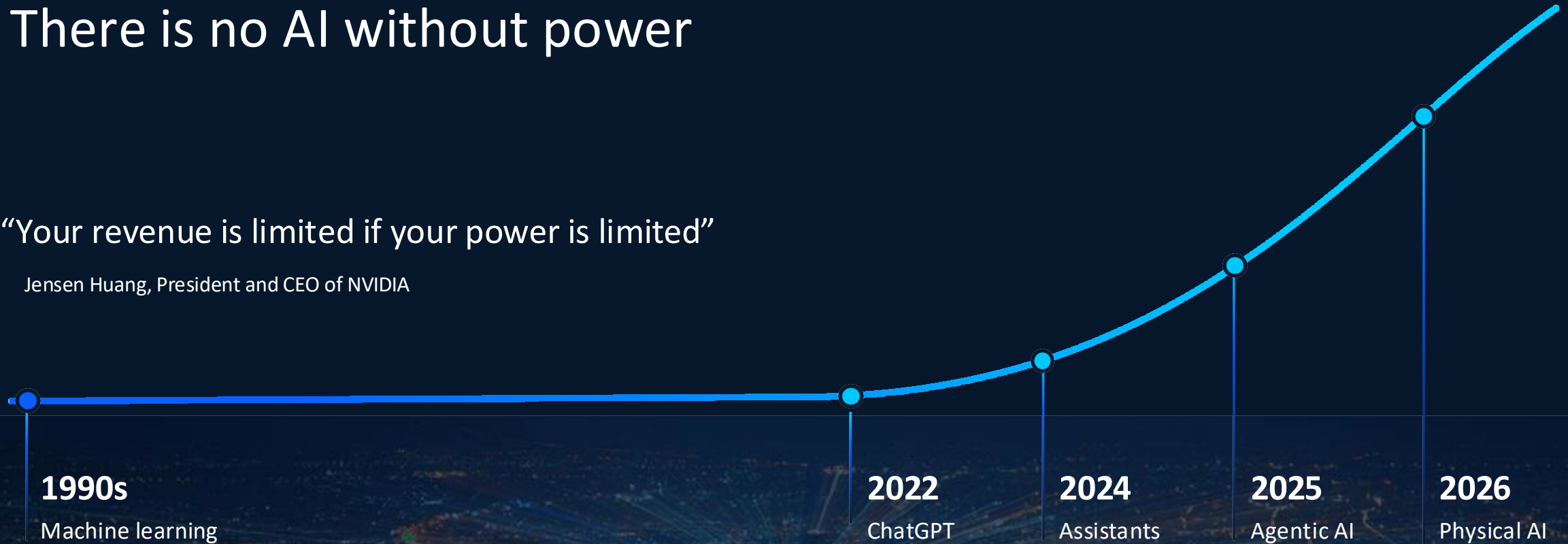
Denise Lee
VP, Energy Networking Systems

The pace of AI innovation

There is no AI without power

“Your revenue is limited if your power is limited”

Jensen Huang, President and CEO of NVIDIA



Key findings



79%

Orgs are making AI the top investment priority

28%

Orgs say outdated infrastructure is holding back ability to deliver ROI

31%

Orgs feel fully equipped to control and secure agentic AI systems

26%

Orgs have GPU infrastructure available for current and future workloads



Converging to Accelerate Progress

GOVERNMENT

| INDUSTRY GROUPS

| PRIVATE SECTOR

Engineering Alliances

Accelerating Technology Innovation Ecosystems

More
information
here



AI-Ready Data Center

Retrofit for air-cooled
data centers

Immersion cooling
For data centers



Future-Proof Workplaces

Touch safe high-
voltage power

Low-voltage last mile
power distribution



Low Energy Testing Lab

OT Certification | Solution Interop Testing | Data API Testing | MEP Training Technical
Validation (OT & IT) | Standardization & Scale

Powering and Managing the Network

Energy Networking Systems



Cisco Solutions Enabling Sustainability

Innovating new
technologies to reduce
emissions



AI-Ready Data Centers

Optimize for
efficiency, visibility,
performance
and cost



Future-Proofed Workplaces

Energy efficient
networks powering,
connecting and
securing the building

Digital Resilience

Security, assurance, and observability
across the entire digital footprint

Energy Management

Energy Management

Advancing sustainability in IT

Visibility & reporting

See

power telemetry and consistent GHG metrics across global on-premises, cloud, and edge environments

Report

GHG emissions and track against environmental goals

Insights & analytics

Analyze

data driven insights to identify anomalies and ways to reduce waste and maximize efficiency

Benchmark

against peers and/ or industry best standards

Control & automation

Control

consumption and emissions with software optimizations and innovations

Automate

workflows with AI based recommendations and virtual assistant to achieve sustainability goals

ENERGY METRICS

Energy
consumption



GHG emissions



Carbon intensity



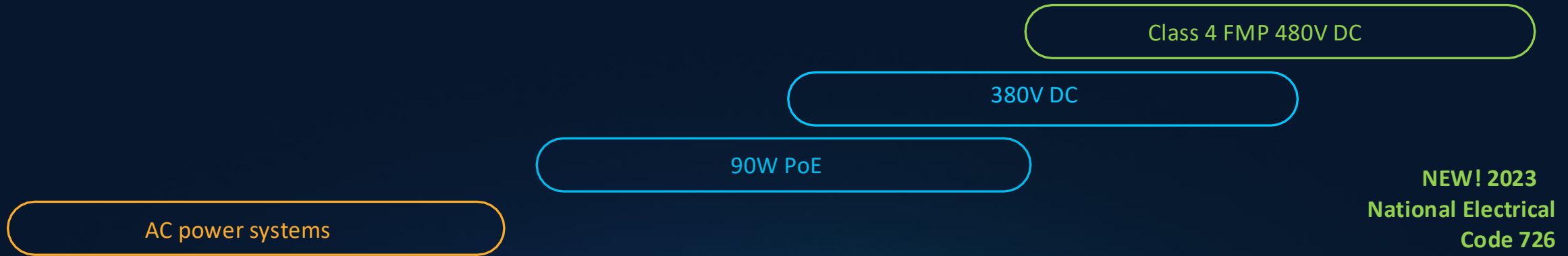
Energy mix



Energy cost

Fault Managed Power | FMP

Creating energy networks that connect and distribute power more simply,
safely, securely and sustainably



AC power

Alternating current



DC power

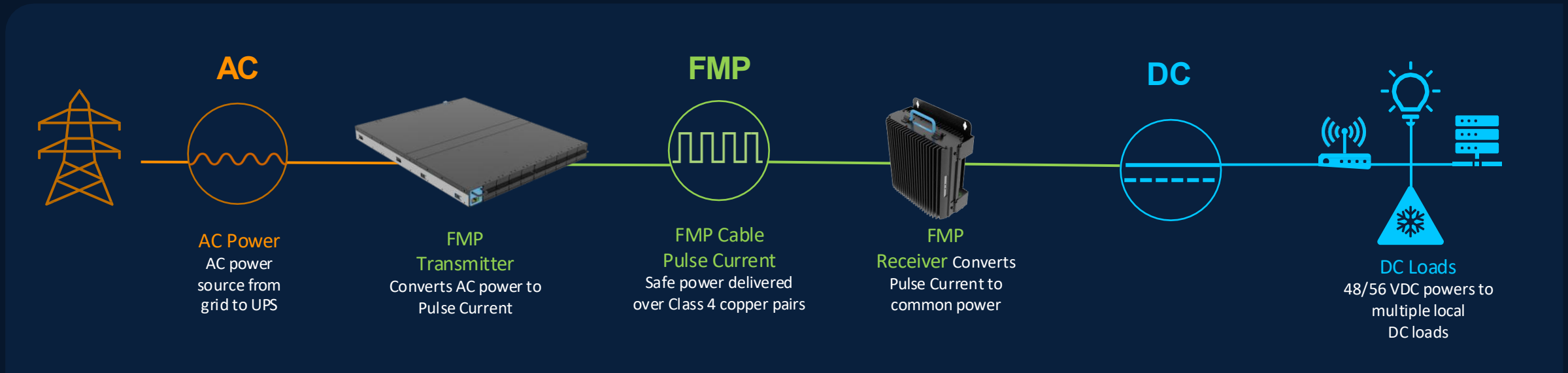
Direct current



FMP power

Fault managed power

How does FMP work?



System is constantly monitoring for all faults (UL-1400-1)

Turns power OFF instantly to mitigate against shock or fire hazards taking 2 ms or less to respond to a fault Automatically restarts if the fault is cleared

Fault Managed Power

Distributed network with centralized power



Enhanced Fault Detection and Isolation



Improved Energy Efficiency and Reduced Conversion Losses



Optimized Energy Storage Integration Preventing Overload



Optimized Energy Flow and Load Balancing



High-Voltage DC and Low-Voltage Power Distribution



Minimized Downtime and Maintenance Costs



Microgrid Support and Distributed Energy Systems



Increased Network Resilience and Reliability



Compliance with Smart Grid and IoT Technologies



Does not require certified electrician skillset



Reduces Capex and Opex costs

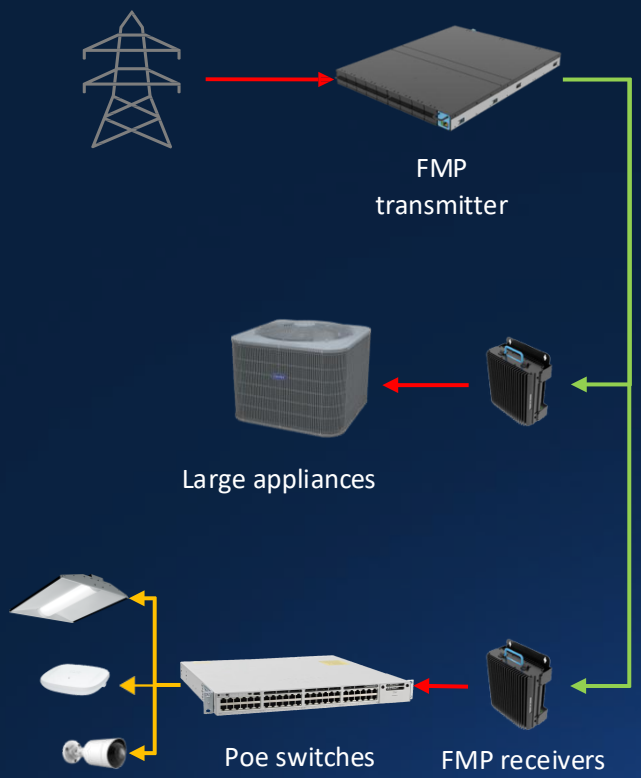


Touch Safe <450v DC Arc Safe to 800v DC

FMP 3 primary use cases

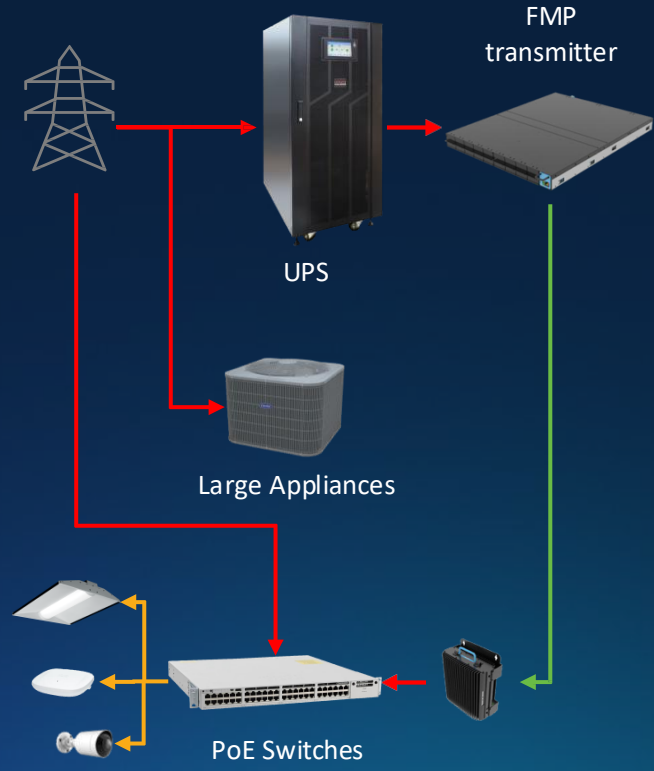
1

Primary power distribution



2

Centralized backup of critical infrastructure

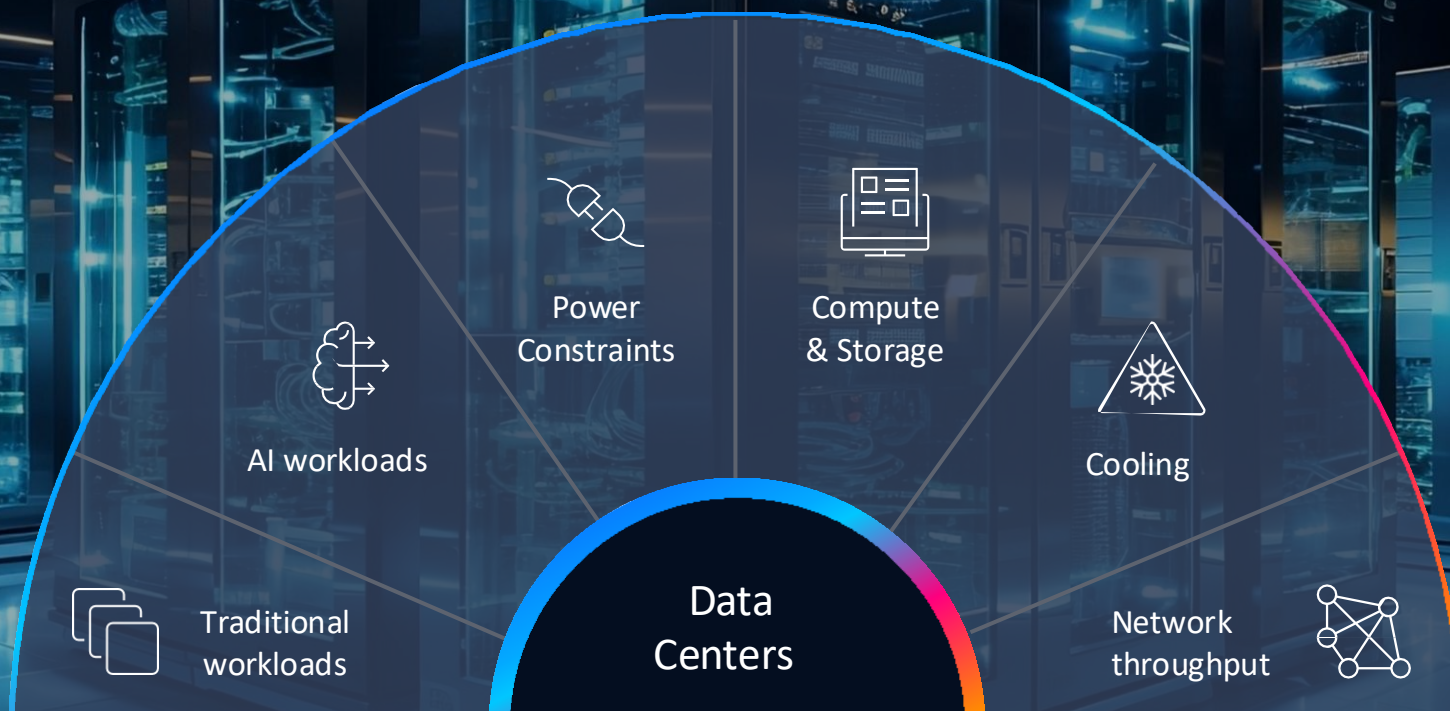


3

Extended reach with copper / fiber hybrid cabling



Challenges for Retooling & Cooling Data Centers



Cost Pressures

Cooling Strategy

Power Demands

Security Concerns

Demand for Speed to Scale



Building the AI-ready data center

Powers all
workloads

Scales for
exponential growth

Secures the
entire stack

Unifies
management

Liquid cooling
integration

IT/OT in the AI Data Center

01

Energy Networking Systems

FMP delivers HVDC (High Voltage Direct Current) to AI servers- safer, faster, cheaper, smarter. Giving Cisco early access to infrastructure planning to influence overall reference architecture designs integrating power, cooling, optics, orchestration and overall cluster architectures.

02

Smart Building capabilities in a Data Center Footprint

Just as a smart building deploys occupancy sensors to dim lights or adjust temps, Support Space in data centers functions as a PoE-enabled network hub for auxiliary zones—leveraging PoE-powered controls and BMS (Building Management Systems) in admin offices and staging areas to support connectivity, collaboration, and IoT via WiFi APs, VoIP systems, and sensors for lighting, shading, and HVAC—while maintaining real-time visibility for NOC/SOC teams.

03

Energy Management Integration

While not the core of power/cooling (that's Gray Space), enable energy management through monitoring, decision-making, and oversight. They aggregate real-time data, enforce policies, and optimize via BMS and AI tools. As the "control brain," they support sustainable efficiency without disrupting White Space IT.

AI-Ready data center

A smart building with unique power and cooling requirements



White space

The primary operational area housing servers, storage, and networking devices. It's the "usable" or customer-facing space



Support space

Auxiliary areas for operations, including administrative, security, and logistical functions, critical for overall facility management



Gray space

The backend support area for mechanical, electrical, and plumbing (MEP) systems that power and cool white space operations

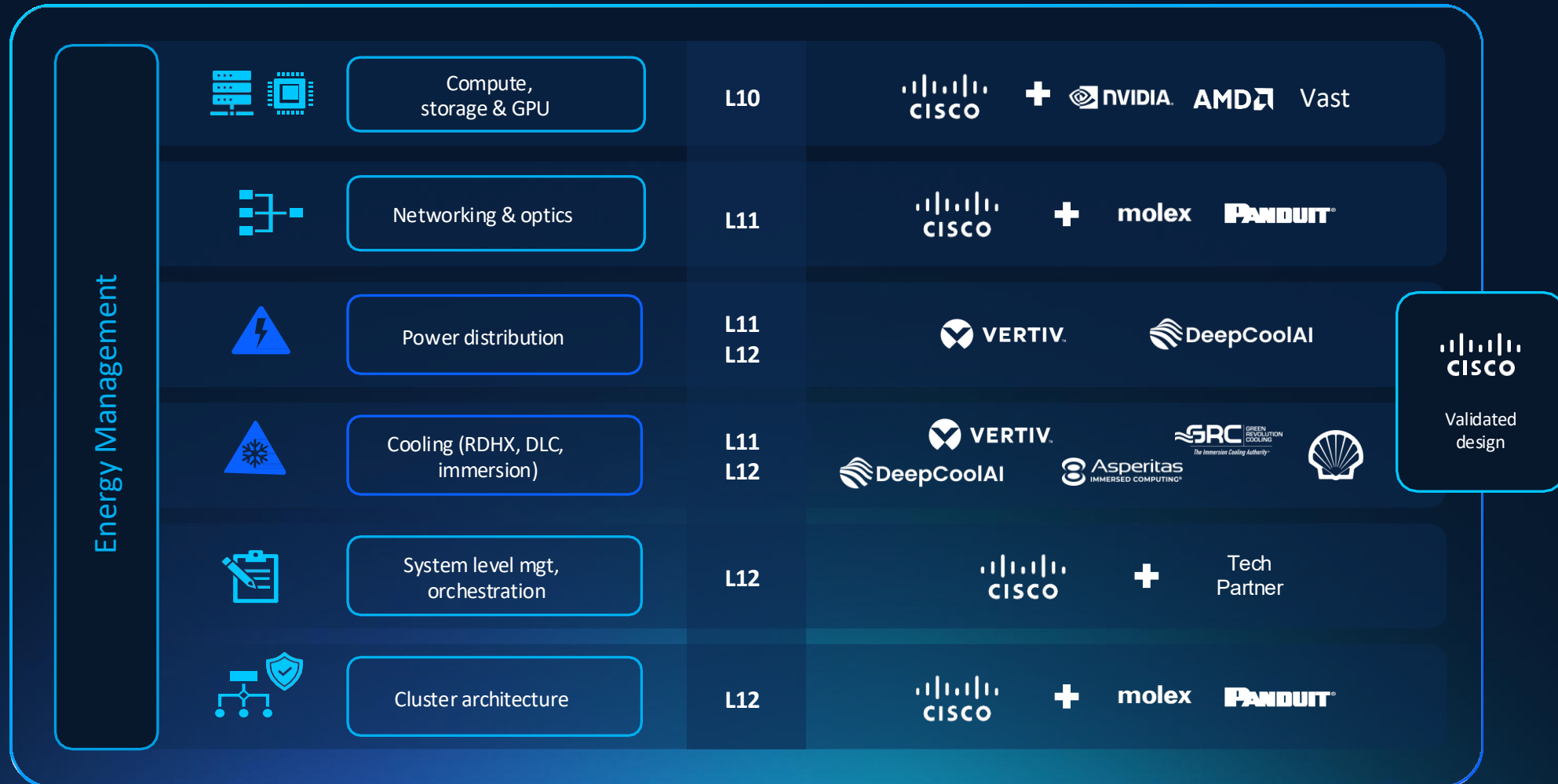


Blue space

An emerging space focused on water management and liquid-based cooling systems

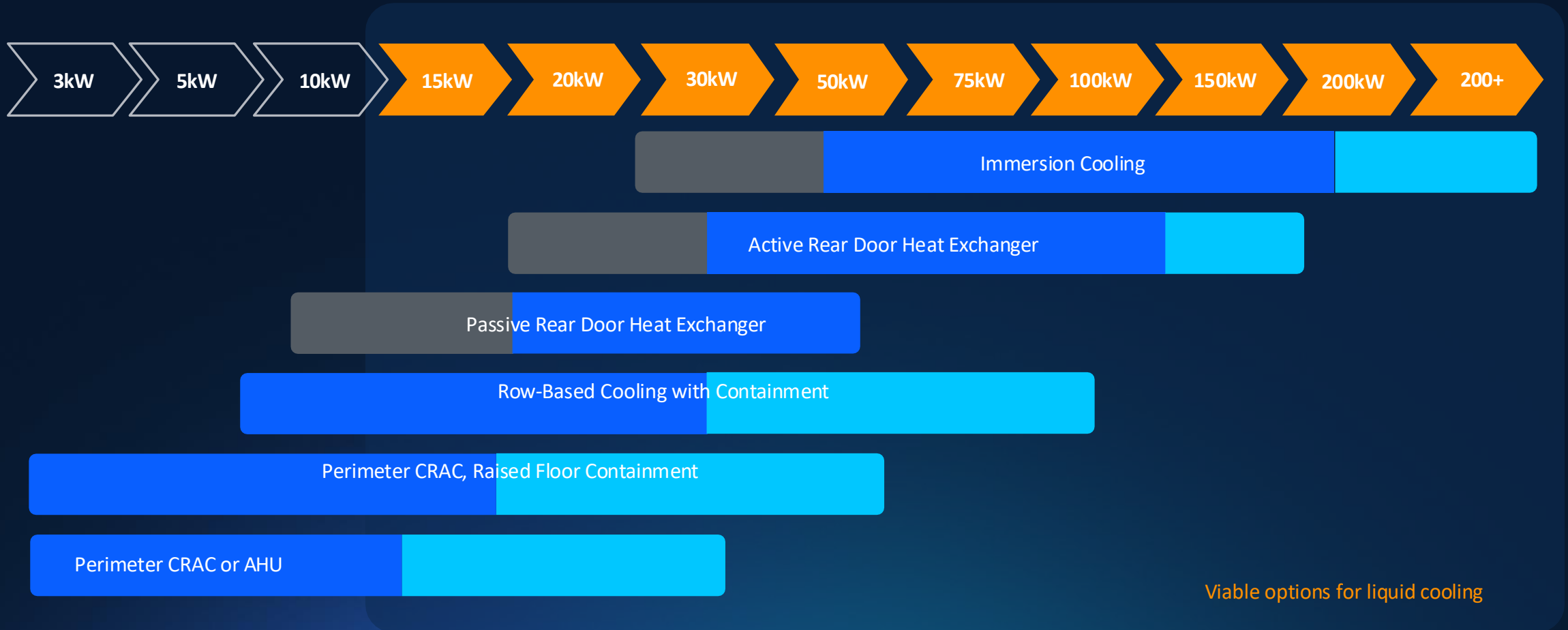
Architecture design for data center

Power and cooling integration



Liquid Cooling vs. Air Cooling

How thermal management systems are evolving



Source: [Vertiv](#)

Lower boundaries by design for efficiency or use case

Upper boundaries for extreme densities, rack size typically increases

Multiple technologies can be combined for hybrid solutions

Liquid cooling solutions

Advancing sustainability outcomes in the data center

Rear-Door Heat Exchanger

40-70 kW per rack



Direct Liquid Cooling

150 kW per rack



Cisco Nexus 9300 51.2T 64-port 800G
OSFP Liquid Cooled Switch

Immersion Cooling

250 kW per rack



Proof of concept

Immersion cooling for Cisco Unified Edge - Featured in the Showcase



Immersion cooling with
Engineering Alliance Partners



Target customers

Mining

Industrial
Manufacturing

Utilities

Logistics

XE's moderate thermal load doesn't require immersion, but it excels at isolating the system from harsh environments and mitigating noise

Features

Environmentally
isolated

Built-in A/B PDU
5.5 kW, single-phase 110/220V with
locking inputs

Patch panels for all cabling to
ensure seamless connectivity

Liquid cooling benefits

Advancing sustainability outcomes in the data center

Improved cooling efficiency

Higher heat transfer enables rapid removal of heat generated by high-performance AI hardware

Provides consistent cooling across components reducing hotspots from air cooling

Flexibility to scale

Supports adoption of new technologies and power-hungry AI workloads

Smaller footprint and more efficient rack design with less reliance on air cooled infrastructure

Sustainable outcomes

Lower Carbon Footprint with reduced energy consumption and maintains consistent temperatures

Repurpose waste heat captured for building heating or other processes

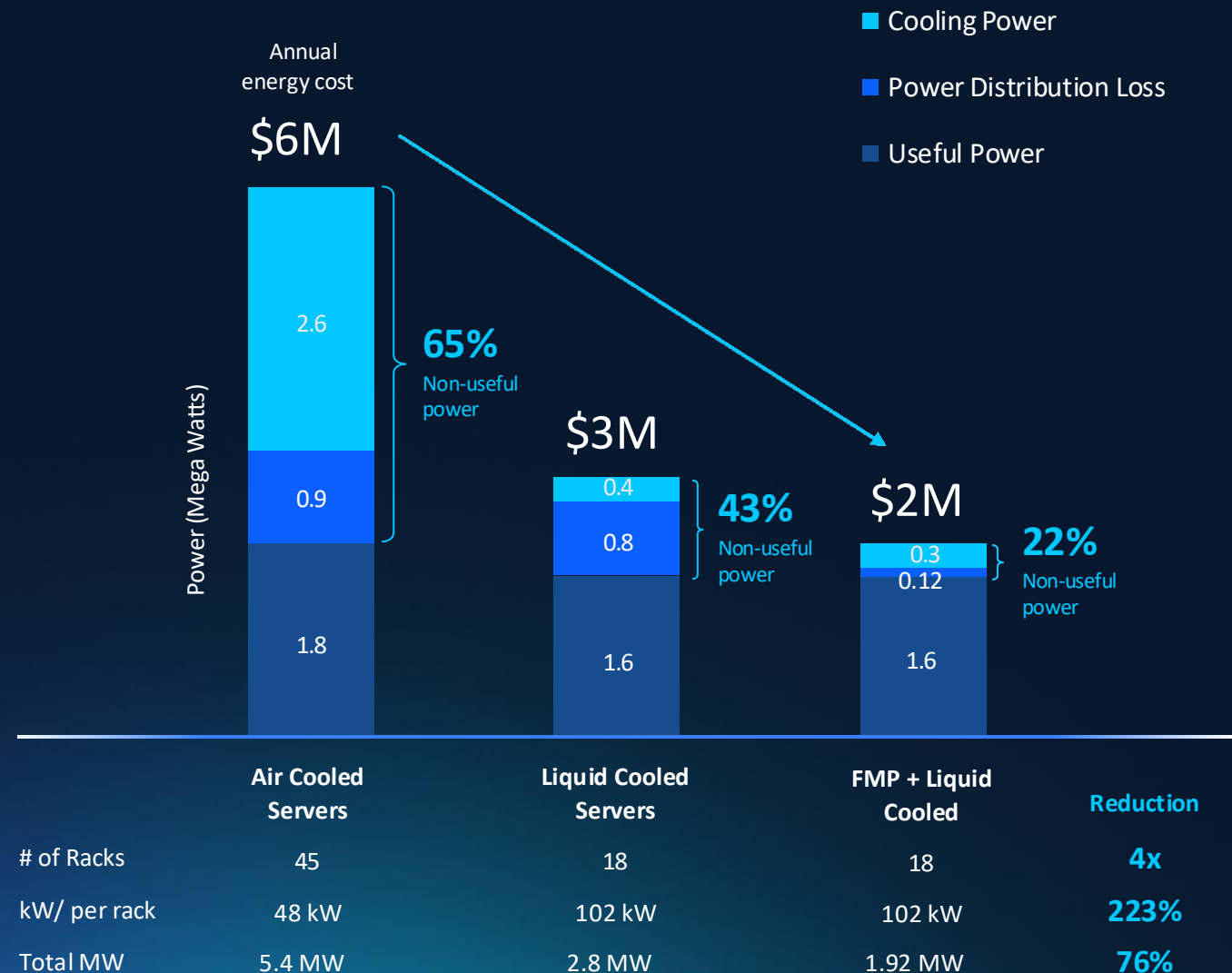
USE CASE

Enterprise data center | 5MW

Liquid cooled + FMP powered data center

76% Energy
cost savings

2.3x Amount of compute for
same amount of energy



"The cost and power savings figures presented are for illustrative purposes only. Scale and magnitude of savings based on location and other variables and might not be achievable in all cases."

Challenges to Modernizing Buildings



Cost Pressures

HVAC Efficiency

Power Demands

Security Concerns

Employee Experience



Modernizing Real Estate

Data Driven
Analytics

Energy Efficient &
Space Saving

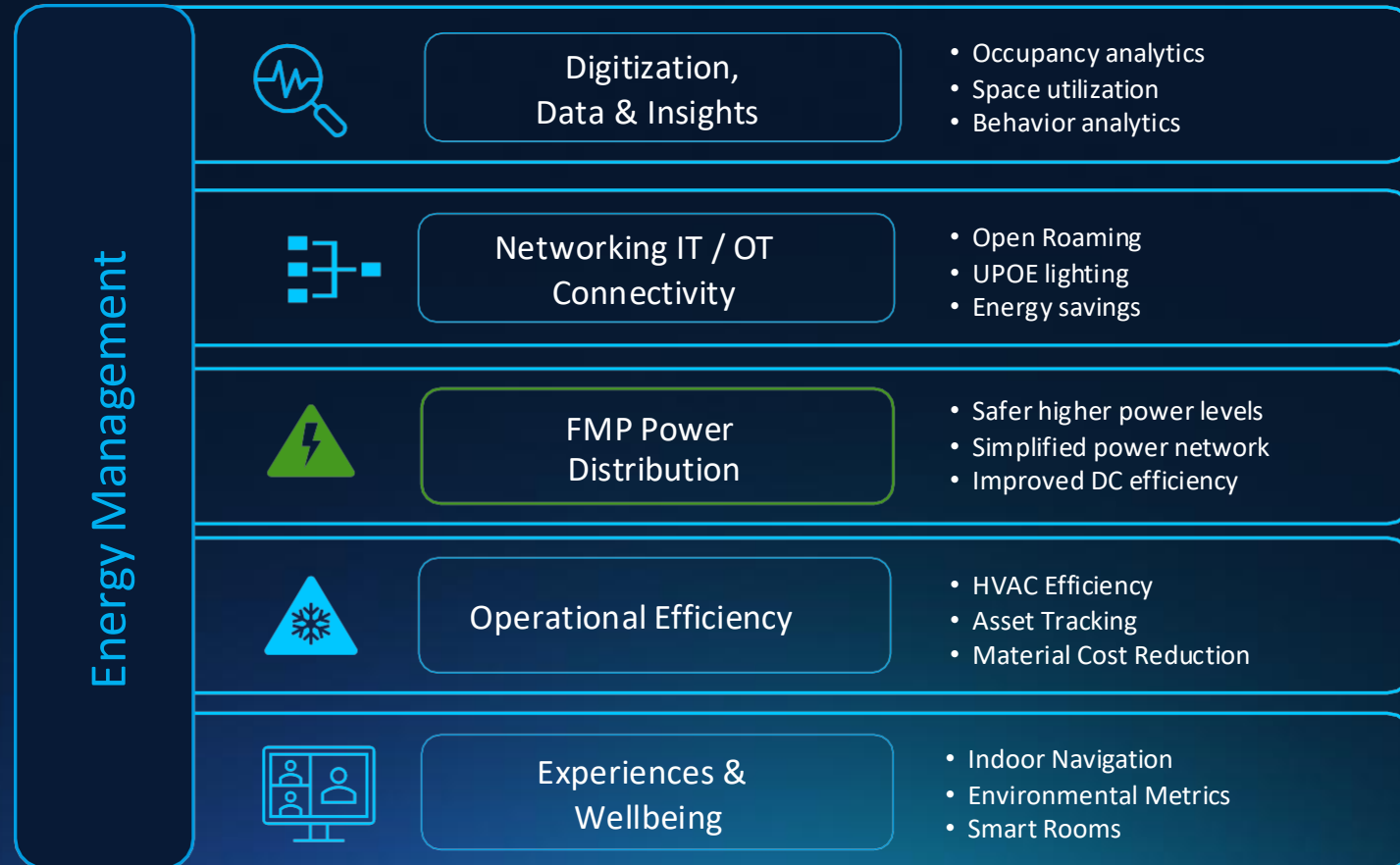
Consolidated
IT / OT

Improved
Experience

Regulatory
Compliance

Architecture Design for the Modern Workplace

IT and OT Network Integration

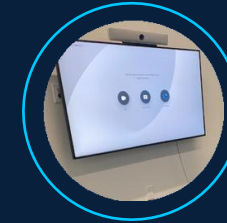


Integrated Experiences

The network has become the common infrastructure for smart building processes managing IT & OT systems



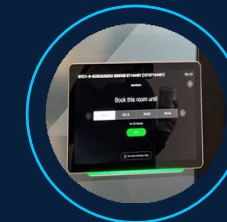
Meraki Cameras
Floor occupancy & tripwire
(macro floor plate loading)



Cisco Room Kit
People count, Ambient Noise



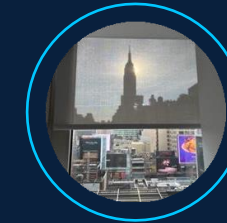
Cisco Wi-Fi AP
People count, people's physical location to track their journey through the office



Cisco Navigator
Temperature, Humidity & TVOC



Air Quality
Meraki and 3rd party sensors for CO2, temperature, humidity, TVOC & PM2.5



Shading
Shading sensors for Lux level to help maximize daylight, manage visual comfort & heat load



Occupancy
3rd party sensors for people count



Lighting
Low voltage lighting powered by PoE is both more efficient and be powered via solar.



BMS Systems Existing building owner systems for HVAC, fire, access control, and more

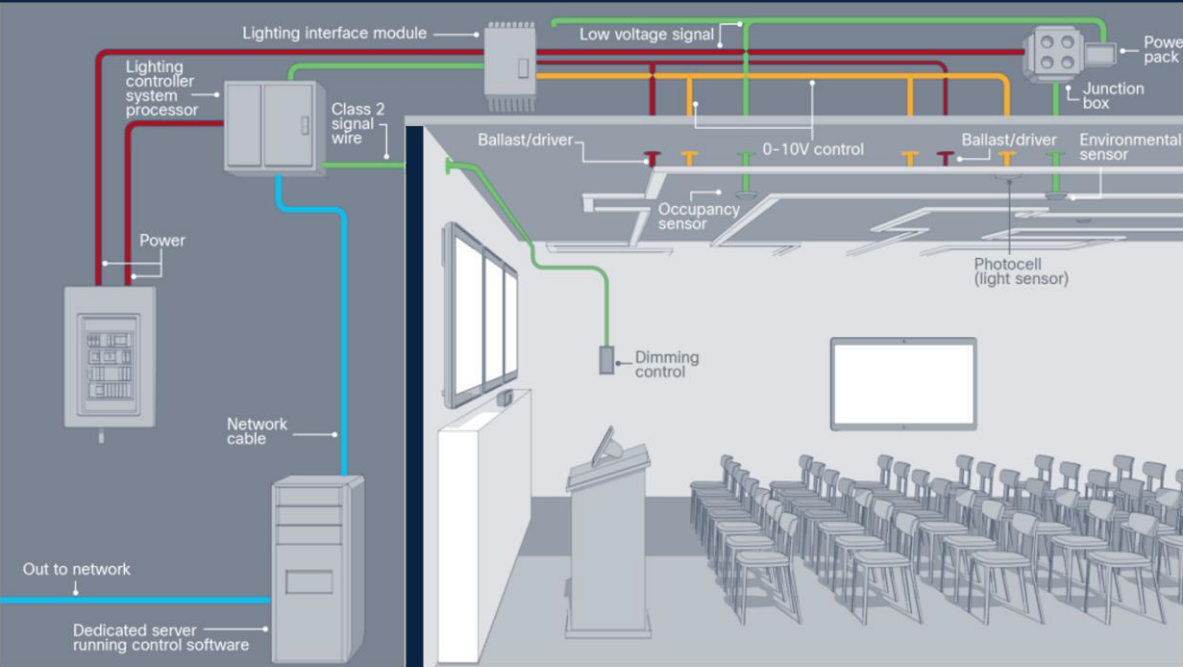


Energy Metering Customer owned circuit or submetering systems.

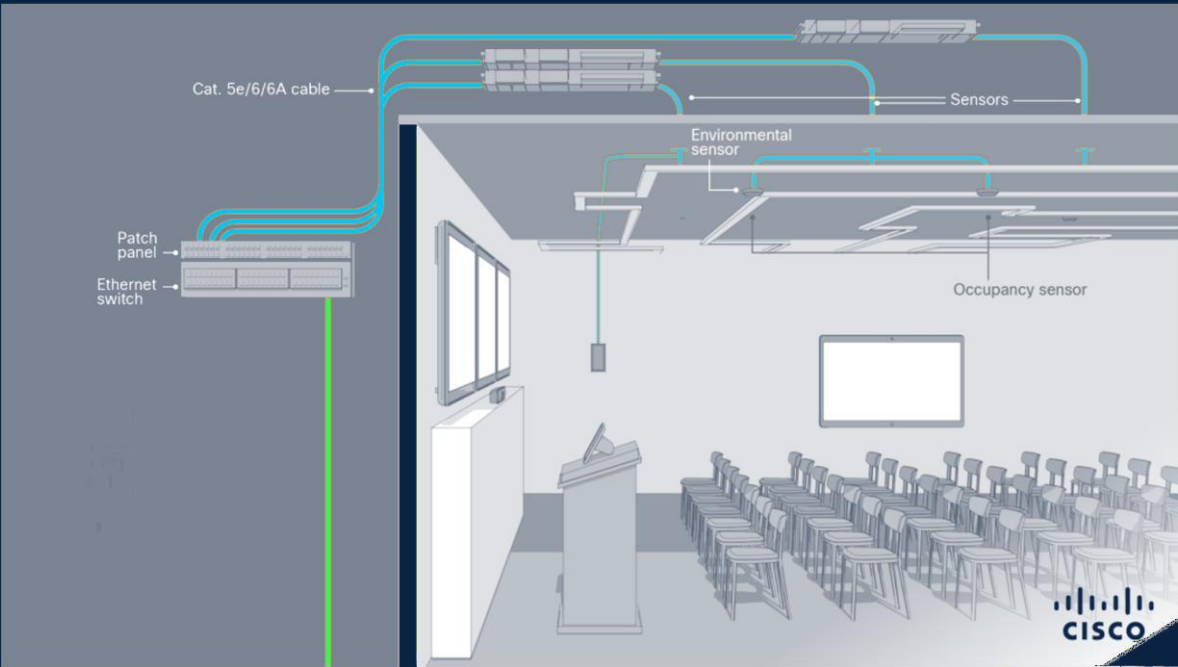
FMP Before and After

Future-Proofed Workplaces

BEFORE



AFTER



Powering the Network: Fault Managed Power

Advancing Sustainability in the Campus

Energy Efficient & Touch Safe

Enable **safe delivery** of higher power levels over longer distances

Improve **energy efficiency** through DC power distribution

Distributed, Optimized Network

Reduce **complexity** in power infrastructure deployment

Support increasing **power demands** of modern applications such as AI

Cost Saving & More Sustainable

Simplify **renewable energy integration**

Reduce costs for Capex and Opex

USE CASE

PANDUIT®

Workplace 3 Buildings
+ 20 Remote Locations

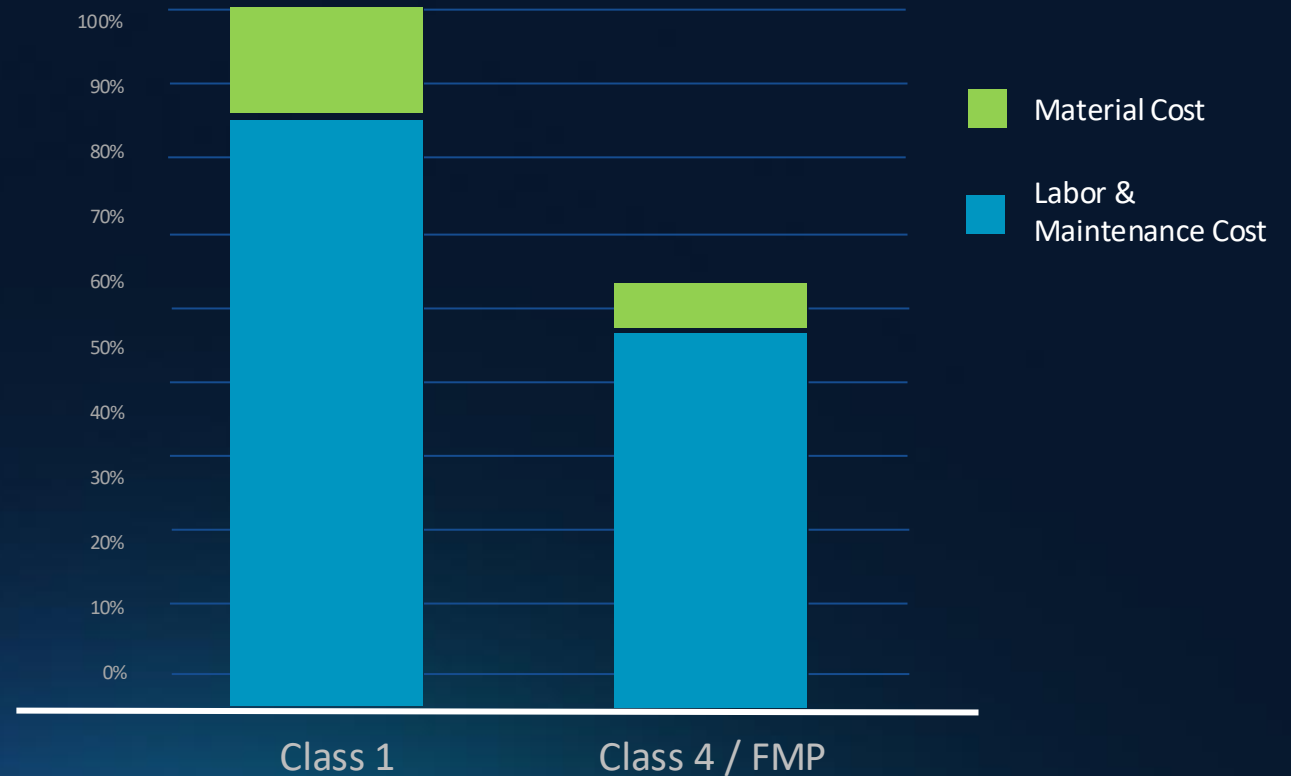
FMP power to PoE
switches for security
cameras and monitors

22%

Capitol cost
savings

78%

Annual maintenance
cost savings



FMP 480v DC Power distribution is safer,
cheaper and faster to deploy



Project Edison

Accelerating adoption of
FMP with strategic
accounts

View our splash page to
learn more



Energy Networking Systems

Project Edison



Accelerate FMP adoption in strategic accounts

Welcome to the Future of Power Distribution

Technology Transformation
Join us on the journey to revolutionize power distribution with Fault Managed Power (FMP)

FMP is Touch Safe High Voltage DC
Up to 450VDC and delivers power over long distances, offering greater efficiency and safety than traditional systems

Energy Networking
We are building a portfolio to bring power delivery to the same secure and intelligent level as data networking has been for over 40 years

Start Small, Think Big

9 Month Program
Project Edison is an accelerator to drive adoption of FMP with strategic accounts (through Nov 2026)

Hands-on-Experience
Get your Proof of Value (PoV) to demonstrate tangible business value and build confidence in new technology

Together, We Power Progress

Collaborate and Connect
We are building an ecosystem of partners and customers to share insights and accelerate innovation

Continuous Support
Access resources, white-glove support, and incentives designed to fuel your success every step of the way



Fault Managed Power
The Evolution of DC Power Distribution: Standards, Deployments, and Applications for Low and High Voltage Systems

Learn More About FMP

[Read the FMP White Paper](#)

[Watch the FMP Alliance Podcast on LinkedIn:](#)

[Ask the Expert Series](#)



Sign Up & Get Started Now

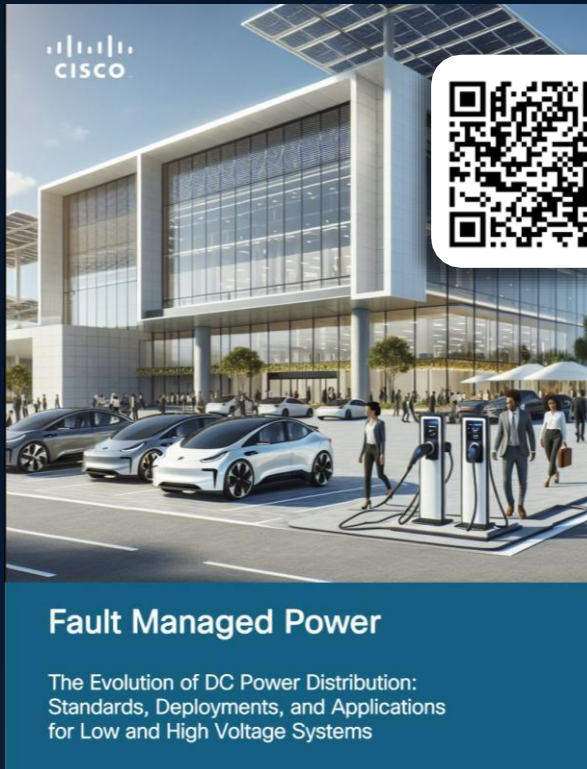


"I never did a day's work in my life, it was all fun."
Thomas Edison

Learn more

Fault Managed Power

Industry perspectives from energy experts



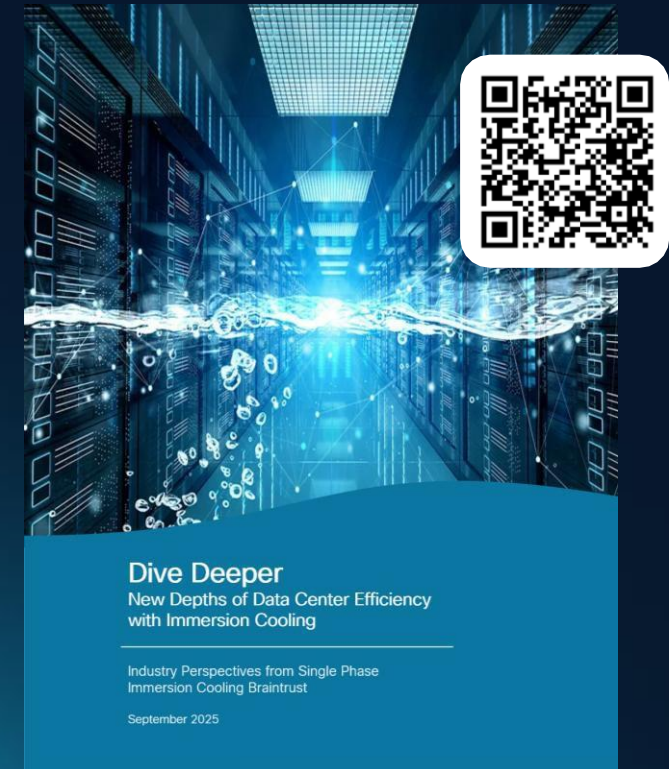
Intelligent Building

Industry roundtable from IT/OT experts



Immersion Cooling

Industry perspectives from single phase
immersion cooling braintrust



Complete your session surveys



Complete your surveys in the Cisco Events app.



Complete a minimum of 4 session surveys and the overall event survey to receive a unique Cisco Live t-shirt.

(from 11:30 on Thursday, while supplies last)

Continue your education



Visit the Cisco Showcase
for related demos:

Fault Managed Power

Future Proof Workplace Area

Liquid Cooling

AI Ready Data Center Area



Book your one-on-one
Meet the Engineer
meeting

Visit the Technical
Solutions Clinics to
discuss your technical
questions



Attend the interactive
education with DevNet,
Capture the Flag, and
Walk-in Labs



Visit the On-Demand
Library for more
sessions at

[CiscoLive.com/On-Demand](https://ciscolive.com/on-demand)



**Contact
me here**

Thank you



