The bridge to possible

Accelerating Renewable Energy Deployment at Scale

Sielen Namdar | Global Sustainability Lead for Industries
Cisco

PSOIND-1011

Cisco Webex App

https://ciscolive.ciscoevents.com/ciscolivebot/#PSOIND-1011

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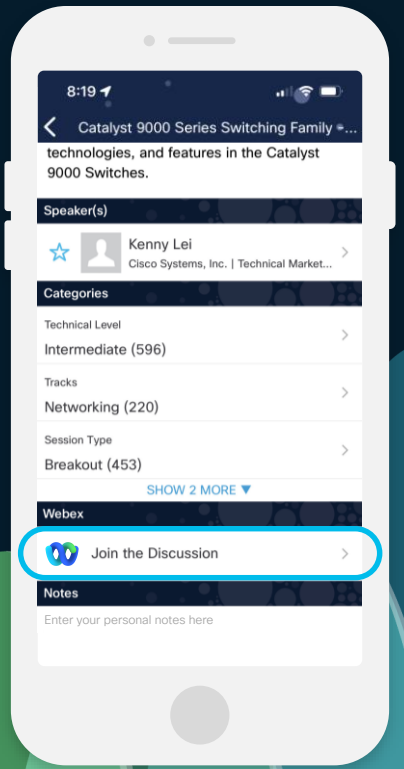
How

1. Find this session in the Cisco Live Mobile App
2. Click “Join the Discussion”
3. Install the Webex App or go directly to the Webex space
4. Enter messages/questions in the Webex space

Webex spaces will be moderated by the speaker until June 7, 2024.



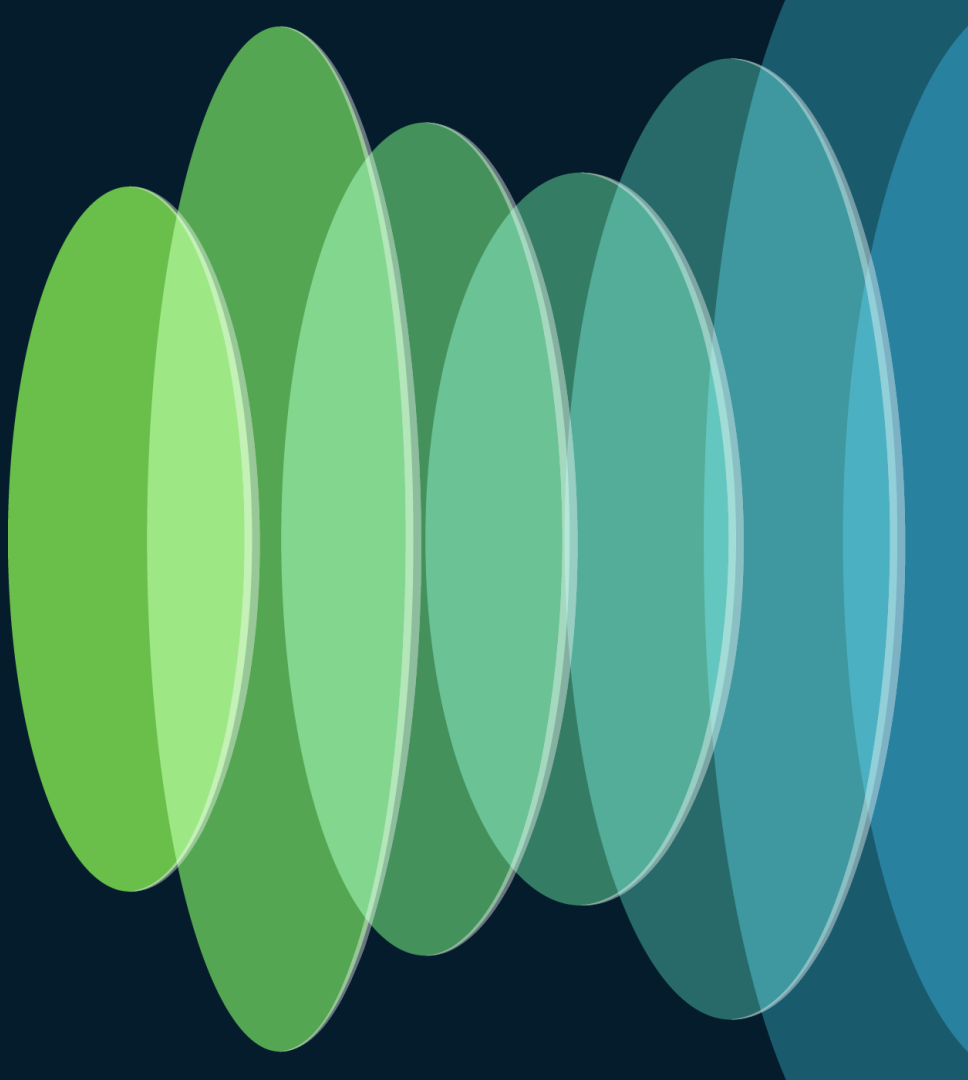
“Clean energy technology investment expected to reach nearly US $800B in 2024 and US $1T by 2030.”

S&P Global

Agenda

- Renewable energy trends
- Renewable energy for Cisco operations
- Cisco renewable energy solutions
- Customer case studies
- Funding opportunities
- Call to action

Renewable energy trends



Renewable energy challenges & opportunities

At COP 28, 118 governments committed to **tripling renewables** and doubling the rate of energy efficiency improvements by 2030.
McKinsey

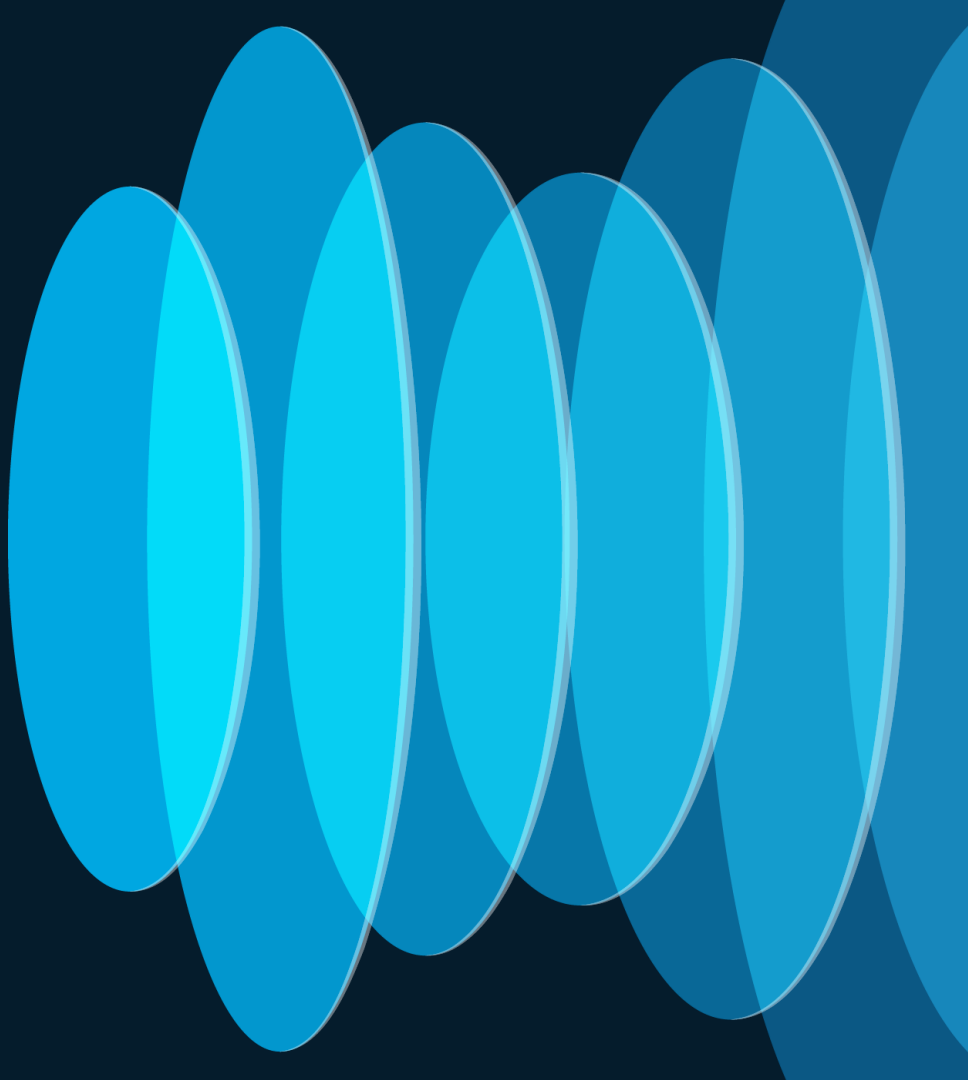
Global installations of wind and solar will reach **one terawatt** (TW) in the next two years, taking global installations to 3.5 TW.
S&P Global

Integrating renewable energy sources to power grids could have challenges: shortage of physical capacity to accommodate supply/demand in locations with best resources, and network instability due to a lack of real-time management of voltage fluctuations.
McKinsey

Renewable energy deployments at scale have many requirements

- Reliable connectivity for generating energy in all environments
- Ability to scale and manage power generation for thousands of wind turbines and solar farms
- Safety and cybersecurity to prevent attacks
- Resilient Integration to the existing electrical infrastructure
- Operational efficiency, reliable uptime, reduced monitoring and maintenance costs, third party condition-based monitoring
- Ability to deploy and manage remotely with limited IT skills
- Regulatory requirements and power purchasing agreements, as-a-service, etc.

Renewable energy for Cisco operations



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Cisco's Net Zero Goals

Net zero across our value chain by 2040

Near Term Targets:

- 90% reduction in Scope 1 and Scope 2 GHG emissions by 2025
- 30% reduction in Scope 3 by 2030*

*Scope 3 emissions from purchased goods and services, upstream transportation and distribution, and use of sold products by 2030

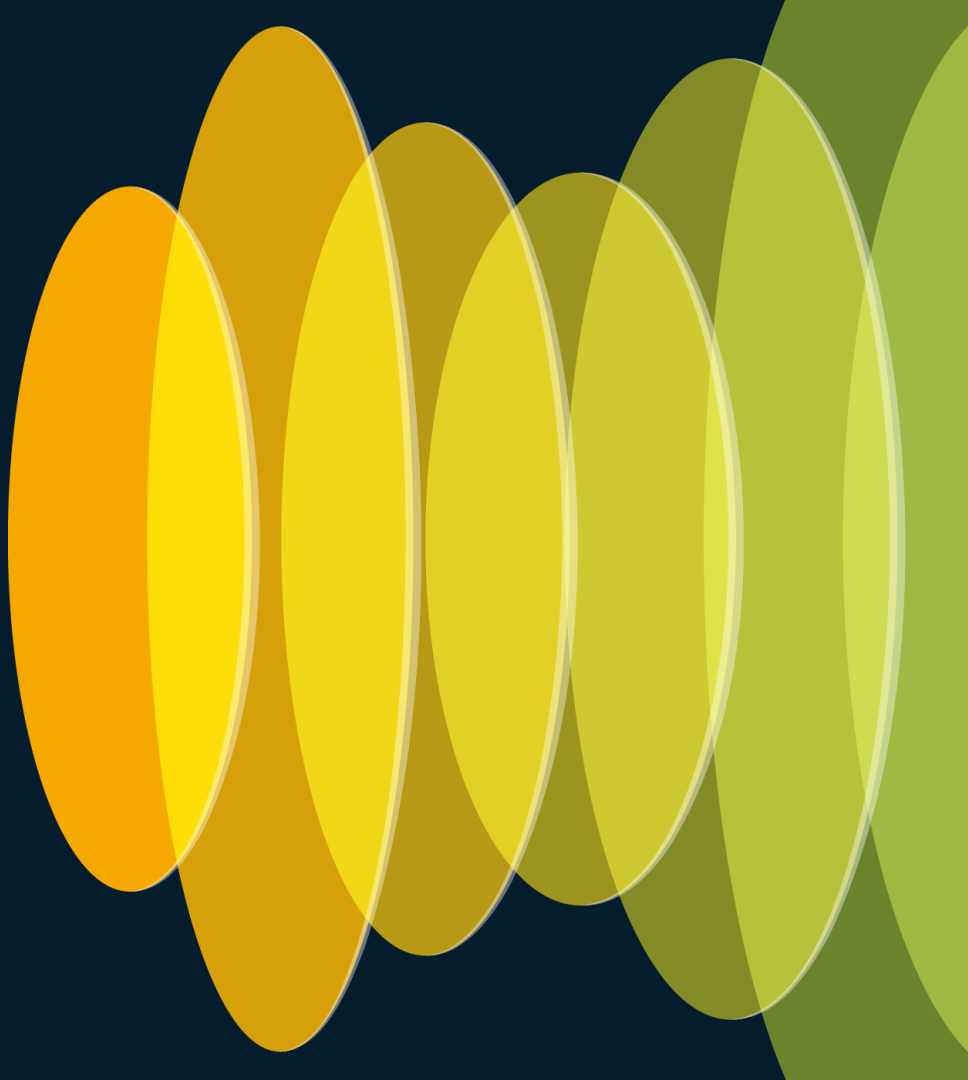

Cisco is on track to achieve 100% renewable electricity
by FY2025 to eliminate scope 2 emissions globally.

Solar VPPA agreement in Spain

- Executed 15-yr, 37-MW virtual power purchase agreement (VPPA) at a fixed price
- Supply 100% of Cisco's EU renewable energy needs (60,000 MWh/yr) from solar energy
- Help Cisco meet its 90% FY25 scope 1-2 GHG reduction goal
- A cost-effective approach
- Selected Ignis Energia as supplier through competitive RFP process

For more, see our blog post

Cisco renewable energy solutions



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Sustainability in utilities

Sustainability

Cisco's purpose includes helping to ensure a sustainable and regenerative future for our planet. We support utilities customers to reduce their own environmental footprints as well as support sustainability for their customers using our technology, with key sustainability use cases highlighted below.

Electric utilities

- Distribution automation (DA)
- Substation automation
- Substation wireless
- Advanced metering infrastructure (AMI)
- Distributed energy resources
- Electric vehicle charging

Water utilities

- Water SCADA system modernization
- WAN modernization for water
- Asset visibility and cybersecurity
- Leak detection
- Digital twin

Industrial networking

- Utility WAN
- Network automation
- Public/private LTE FAN
- Wi-SUN FAN
- LoRaWAN
- Point-to-point secure wireless

Operational security and safety

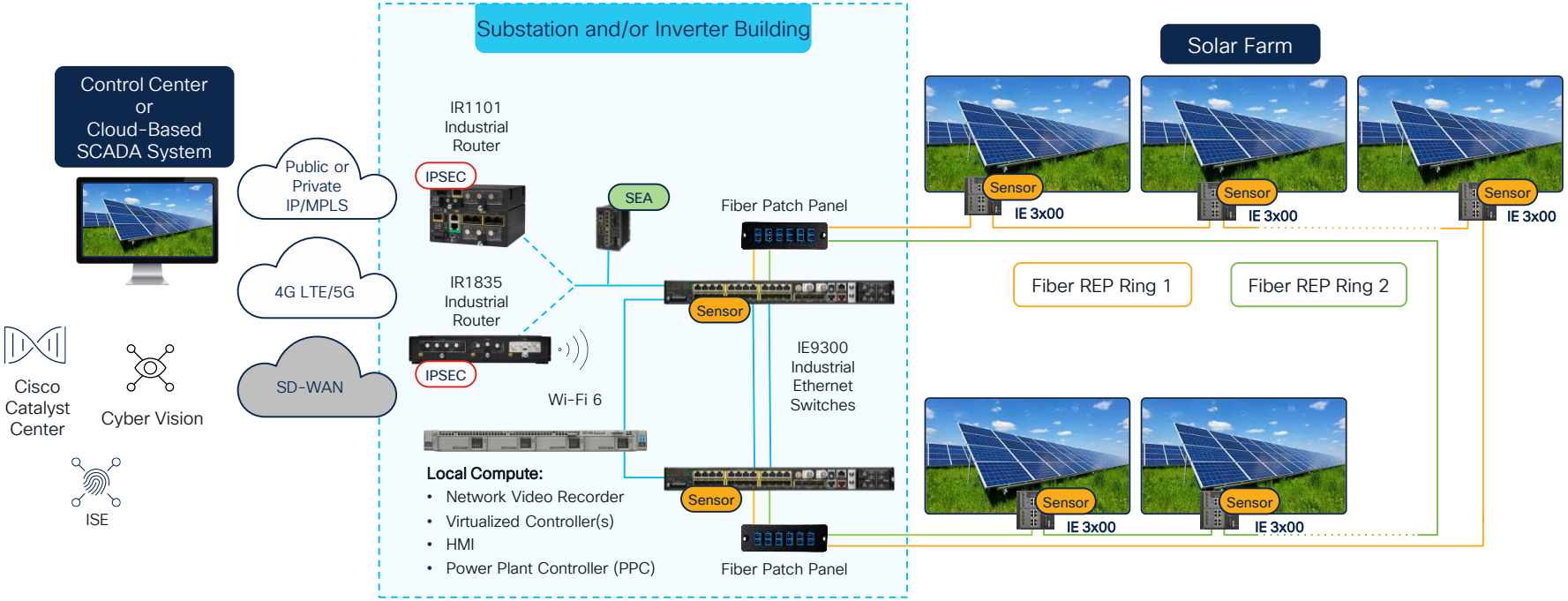
- Cybersecurity
- Asset visibility
- Video surveillance

Secure connected workforce

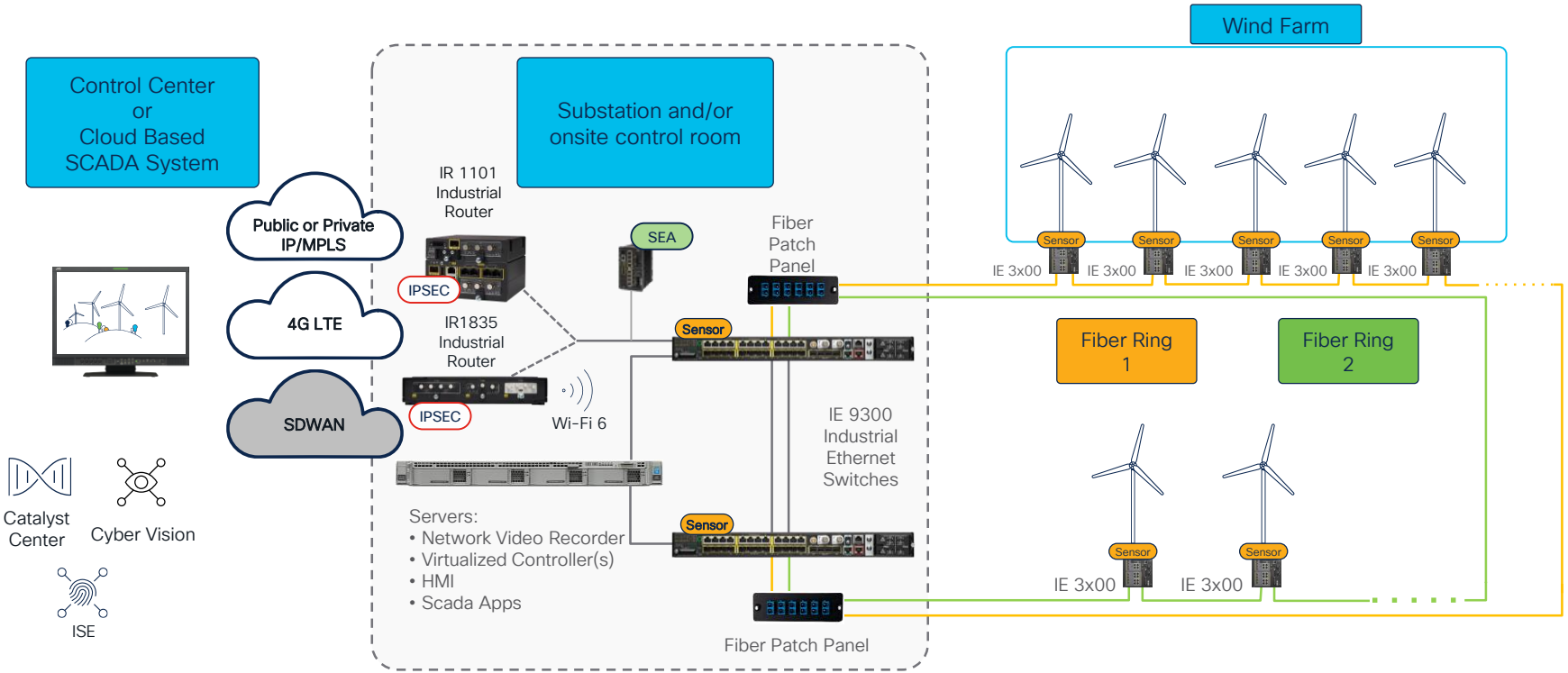
- Remote mobile worker
- Mobile fleet management

Learn more:
Cisco Industry Portfolio Explorer, Utilities

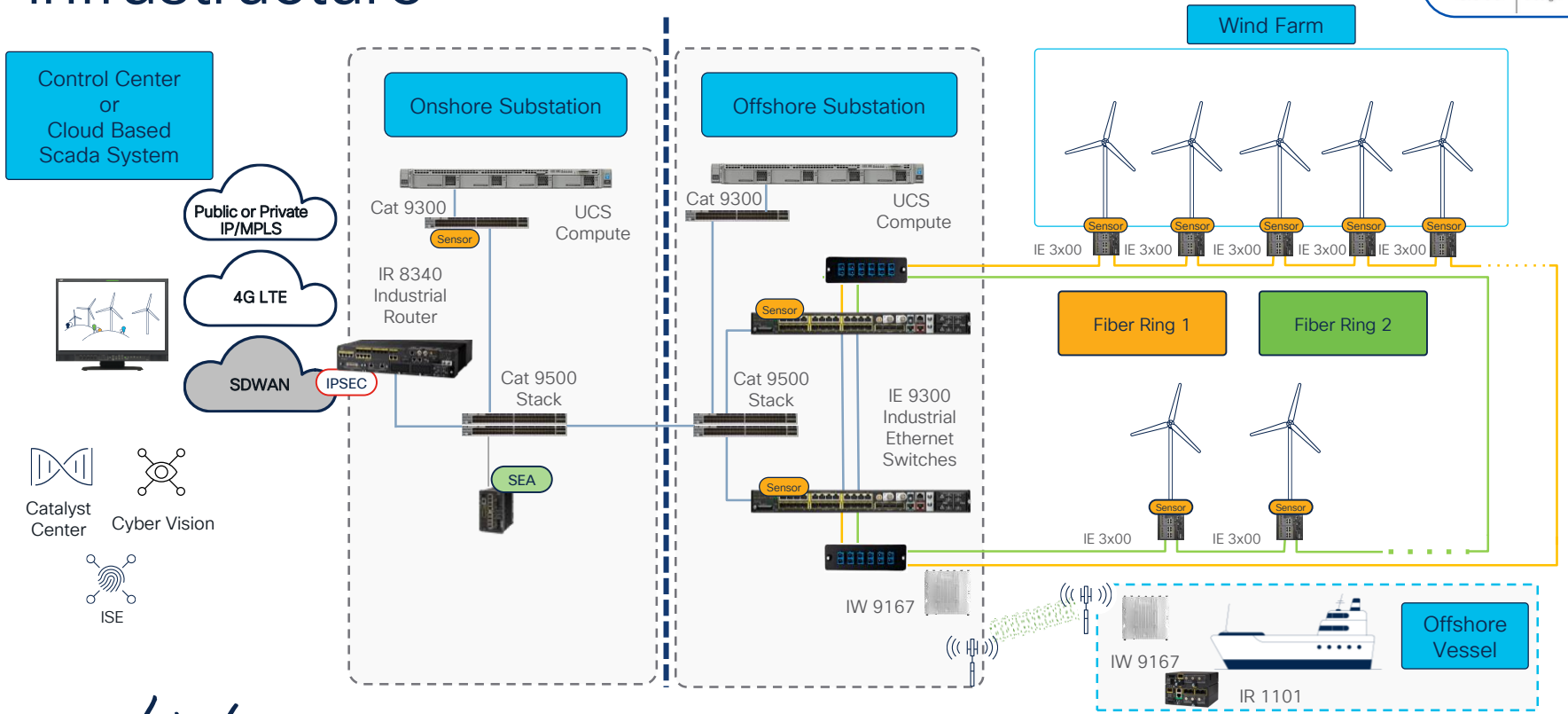
Cisco end-to-end solutions provide better visibility and uptime for your solar farm infrastructure



Cisco end-to-end solutions provide better visibility and uptime for your onshore wind farm infrastructure



Cisco end-to-end solutions provide better visibility and uptime for your offshore wind farm infrastructure



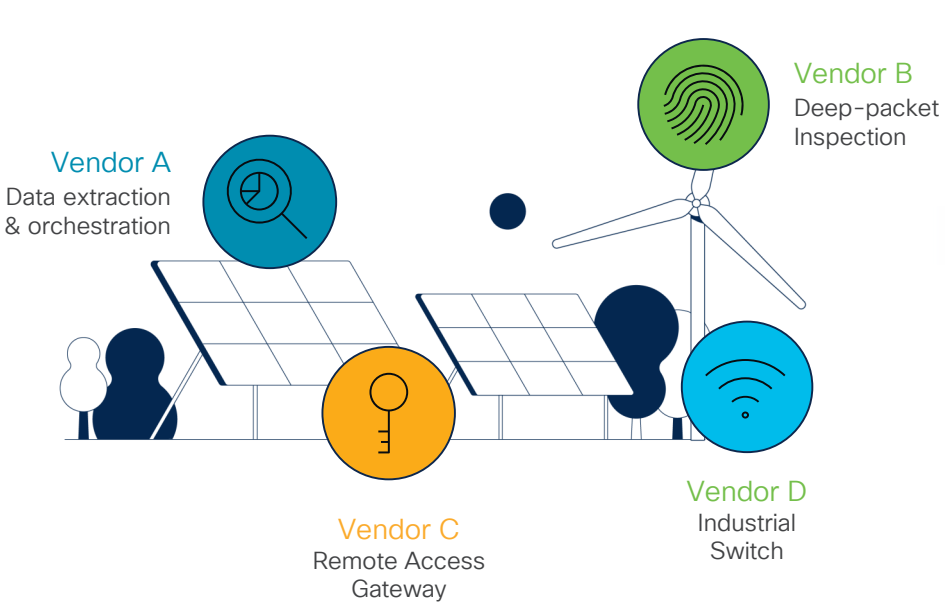
The market is fragmented by a patchwork of solutions from different vendors

Shadow IT & Security Risk

Complexity

Hard to Scale

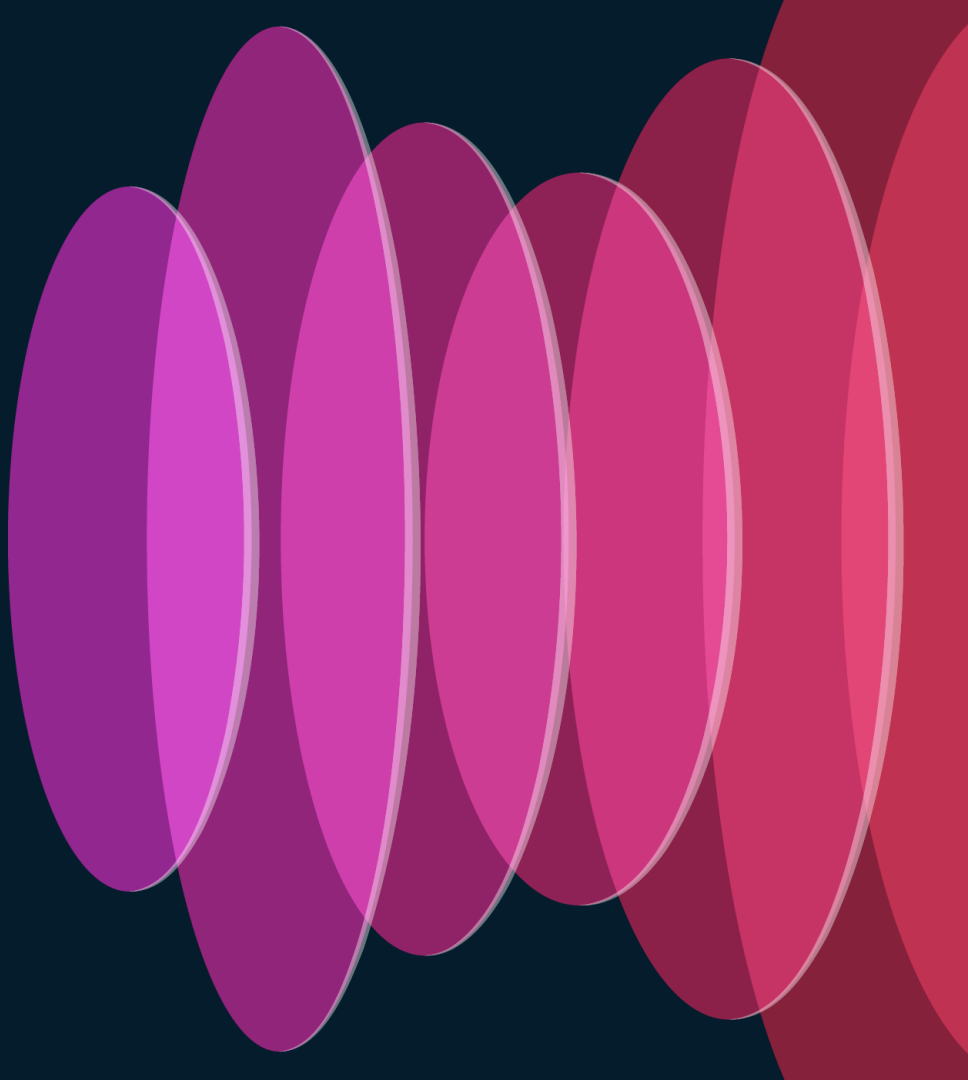
Cisco is on a journey to help customers go to scale by replacing point hardware/software solutions



Cisco industrial networking with built-in services

Eliminating complexity by converging functionality as software features on our industrial networking portfolio

Customer case studies



Supercharging offshore wind power

Challenges

- Reliable communications connectivity easily deployed for offshore wind farms
- Secure networking communications for offshore wind farm deployments
- Adapt deployments for various sizes and locations, in rugged environments
- Support industry requirements for cost and deployment efficiencies

Cisco solutions

- CVD for Power Utilities and Renewable Energy
- Cisco Ultra-Reliable Wireless Backhaul
- Cisco Industrial Routers
- Cisco Cyber Vision
- Cisco Industrial

Results

- Simplified deployment with standardized architecture designs (CVDs) that are modular and repeatable
- Enhanced security with end-to-end multilevel security capabilities
- Flexibility to scale for wind farm sizes, future services, and applications
- Improved procurement, provisioning, and operations to reduce cost

"The offshore environment is a very unique place with very unique challenges. We need a tried and tested network infrastructure that covers all elements of our operations and maintenance and provides a secure way for those elements to communicate. And that's exactly what Cisco developed with us for the [Cisco Validated Design guide]."

Andrew Blair
Lead Telecoms Engineer, ScottishPower Renewables

Secure connectivity for the world's largest offshore wind farm

Challenges

- Robust network infrastructure for 350 offshore Wind Turbines to withstand extreme conditions; Endpoints include cameras, sensors, locks, alarms
- Collect up to 1400 data points using sensors that are not monitored by turbine OEMs to help isolate issues and drive predictive maintenance

Cisco solutions

- Securely connected 350 Wind Turbines with Cisco industrial network consisting of IE3200 and IE3300 DIN rail switches in the turbine base and nacelle; plant IT network as a secondary network in parallel to turbine OEM control network
- Fiber rings deployed in hierarchical topologies with REP redundancy to ensure sub-second convergence
- Cisco industrial IE4010 rackmount switches deployed in floating substations for aggregating fiber rings

Results

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Solar farms connectivity

Challenges

- Standardized IT equipment
- Ruggedized industrial IT hardware to fit critical environments
- Facilitate the installation and implementation of each new solar farm efficiently

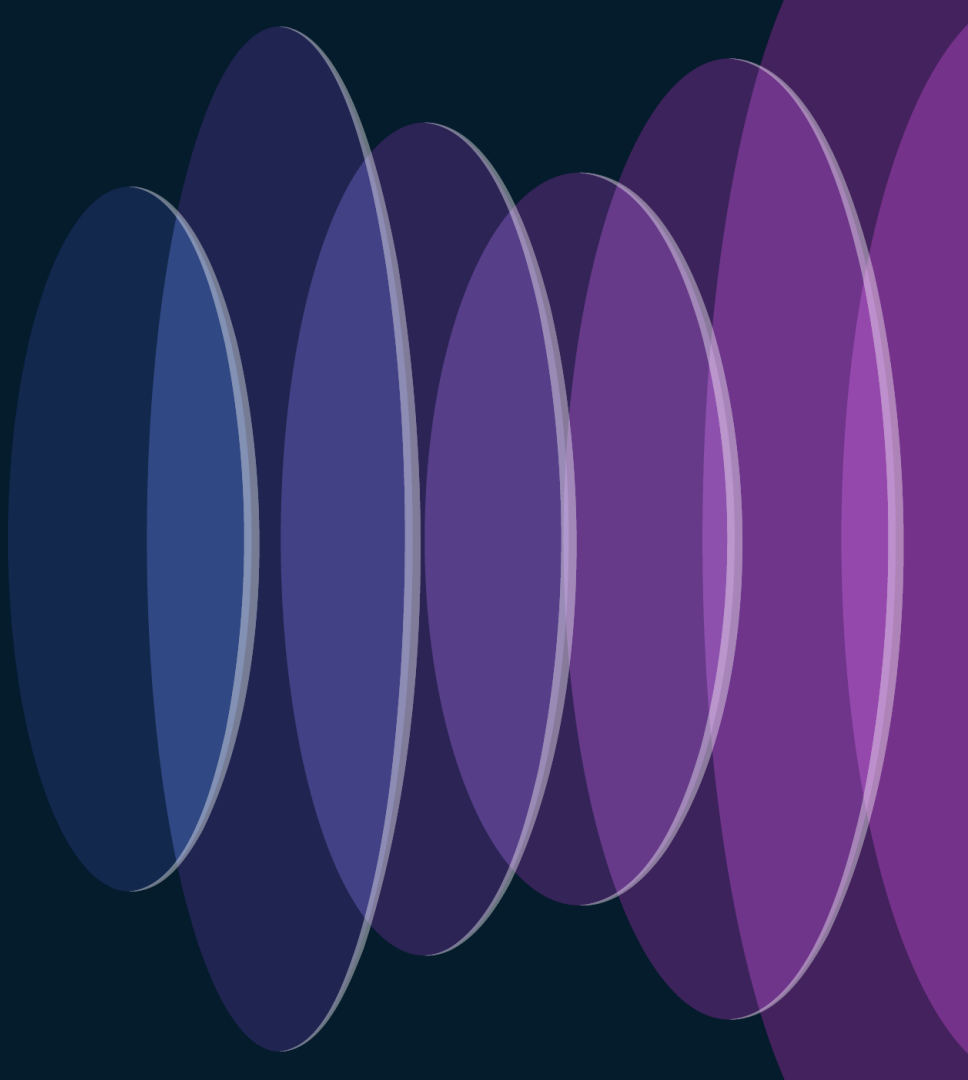
Cisco solutions

- Industrial ruggedized switches: Cisco® IE2000 and IE4000
- Industrial ruggedized routers: IR807 and IR809
- Industrial firewalls: Cisco ISA3000
- Centralized network management platform: Cisco Prime

Results

- Setting up a secure and ruggedized IT infrastructure
- Optimization of installation time and costs
- Facilitation of farm management around the world
- Optimization of operations with data insights

Funding opportunities



CDA program overview

CDA is a strategic partnership with national leadership, industry and academia to accelerate the national digitization agenda and create new value for the country, its businesses, and its citizens.

The program works with public & private sector agencies across a variety of sectors, including:

CDA is Cisco's commitment to co-invest with business and partner support to develop digital solutions that can be scaled nationally and globally to:

grow GDP | improve operational efficiently | modernize national infrastructure | ensure security

create jobs | educate the workforce of the future | drive Cisco's inclusive future for all

Cisco Green Pay: IT payment solution

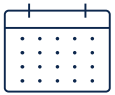
Helps customers

1. Move beyond product ownership, support circularity, and reduce waste.
2. Access Cisco's sustainable solutions and technologies.
3. Eliminate up-front hardware acquisition costs.
4. Streamline total project costs into a fixed and predictable payment.
5. Return equipment at no cost.

Cisco® Green Pay is a flexible IT payment solution that enables customers to support circularity and helps them address their sustainability initiatives.

up to **5%** sustainability incentive from the outset.

At the end of the term, the product is recovered by Cisco free of charge so it can be reused or recycled.

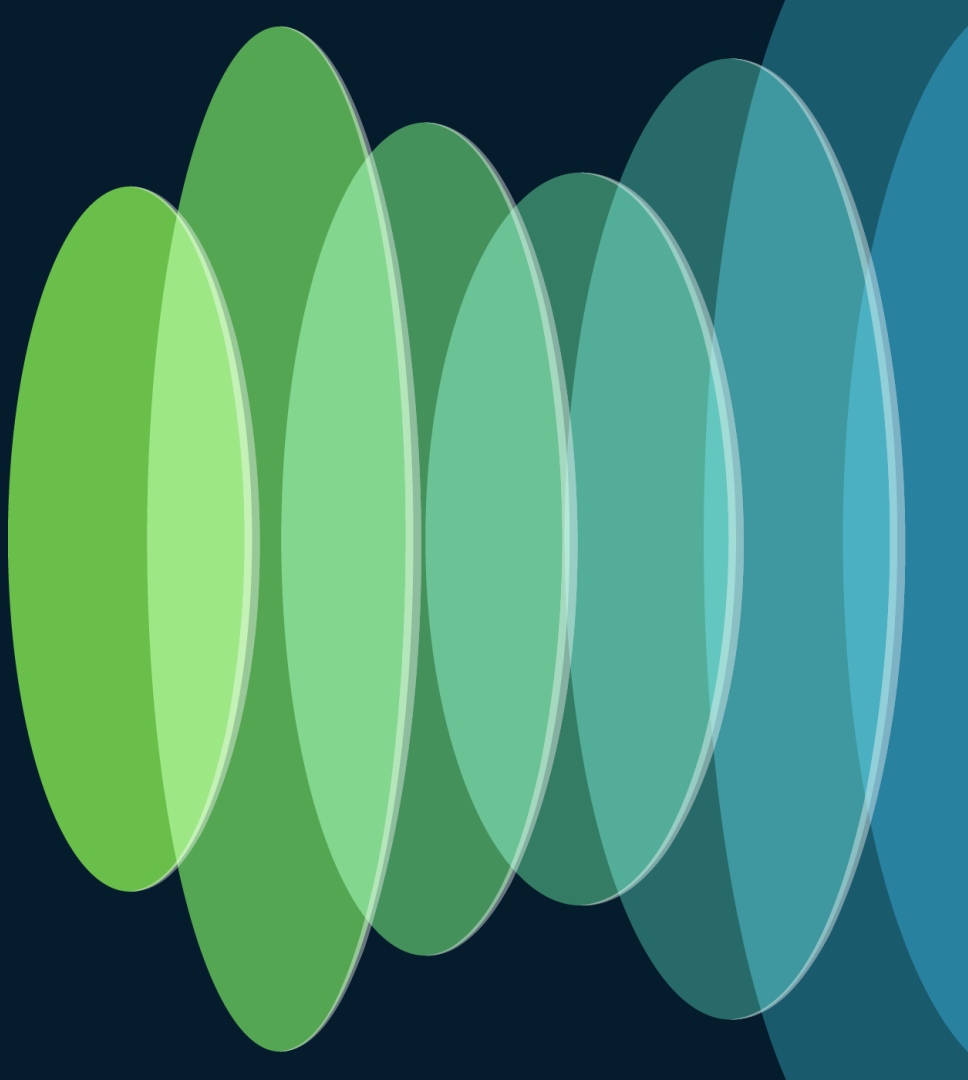


Available through

July 26, 2024

Available in select countries in the Americas, EMEA and APJC.

Call to action



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Earn 100 points per survey completed and compete on the Cisco Live Challenge leaderboard.

Level up and earn **exclusive prizes!**

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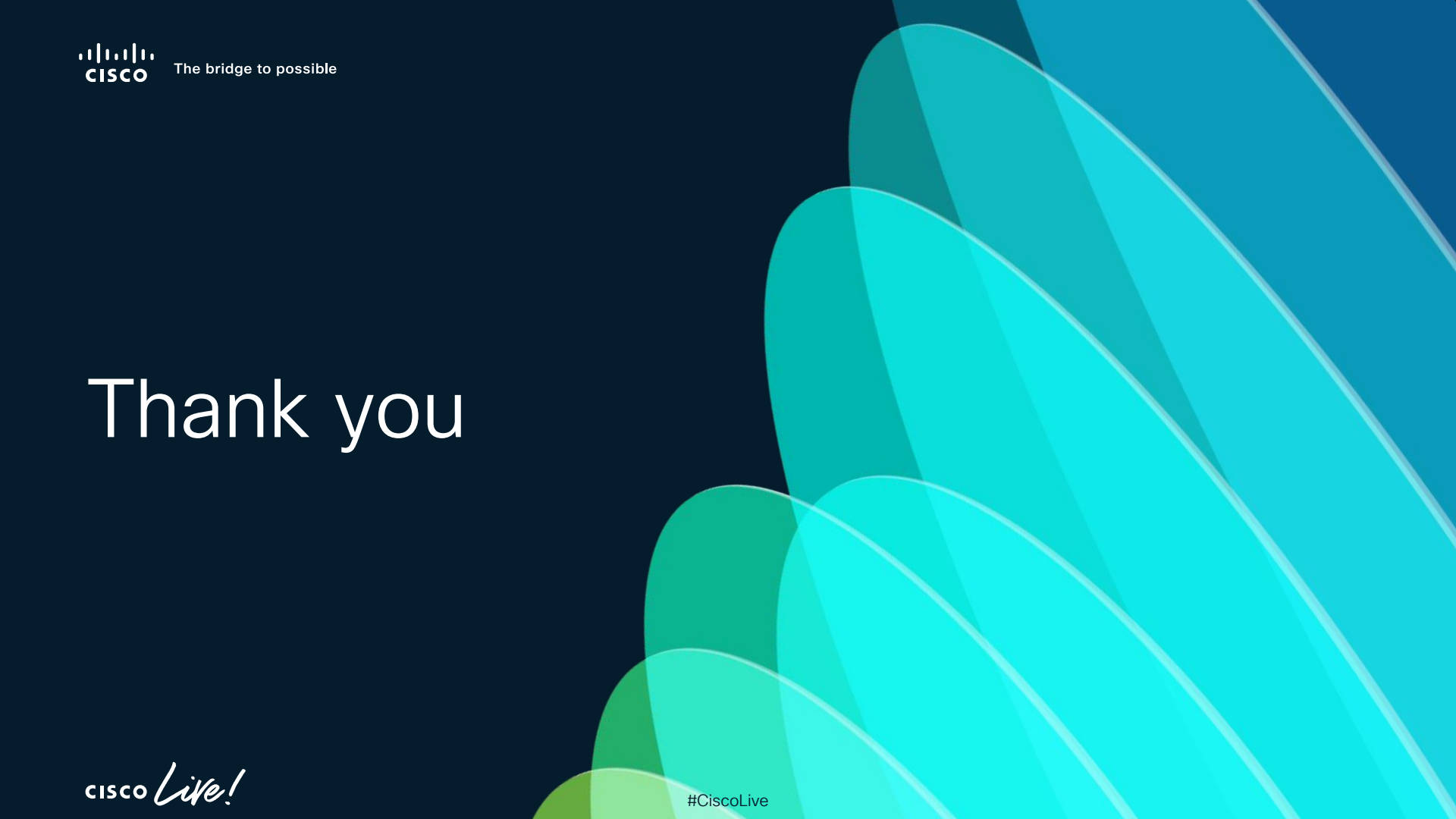
Call to action

- Visit the Sustainability Zone at Cisco Showcase for sustainability demos and our industry booth
- Book your one-on-one Meet the Engineer meeting
- Attend the interactive education with DevNet, Capture the Flag, and Walk-in Labs
- Visit the On-Demand Library for more sessions at www.CiscoLive.com/on-demand
- Reach out to us:
  - CXC and workshop on renewable energy solutions
  - Funding solutions: CDA, Green Pay
  - Check out our renewable energy CVD page

Contact me at: sienamda@cisco.com


The bridge to possible
Thank you
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