
cisco Live!
Let's go

The bridge to possible

Your Kick-Start for the Sustainability Journey

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PSOGRN-2201

What this Session ...

... is about?

- Key metrics during the use of your solution
- Practical ways to achieve sustainability outcomes that will help you meet your sustainability goals
- How Cisco can help to achieve your sustainability goals

... is NOT about?

- It is not about Tools
- Convincing you that Sustainability is important

“Which KEY actions will you perform for a more sustainable future”

Esther Roure Vila
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“Actionable Insights!!”

Marisol Palmero
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“We’re all part of it!!”

Agenda

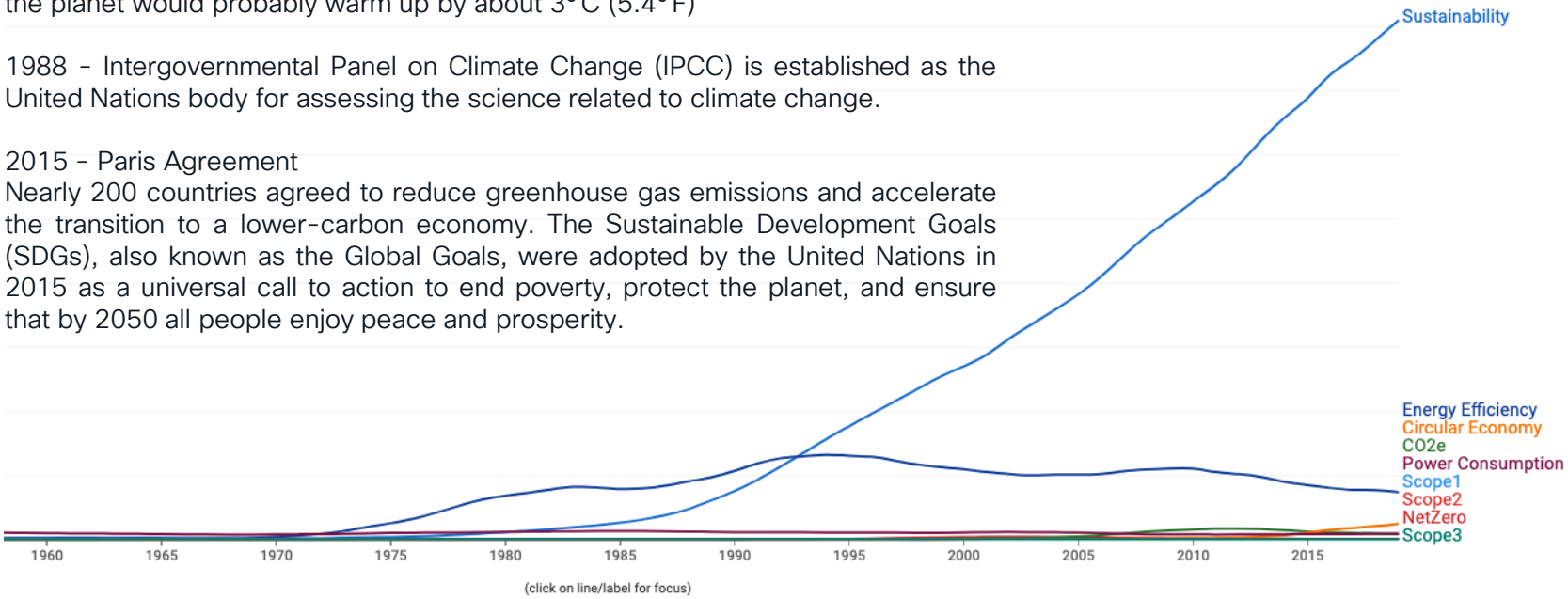
- Introduction
- Net Zero Goal
- Achieving Sustainability Outcomes
- Conclusion

Sustainability, New Buzzword? ... or Business Driver?

1979 – U.S. National Academy of Sciences reached a consensus that when CO2 reached double the pre-industrial level, sometime in the following century, the planet would probably warm up by about 3°C (5.4°F)

1988 – Intergovernmental Panel on Climate Change (IPCC) is established as the United Nations body for assessing the science related to climate change.

2015 – Paris Agreement
Nearly 200 countries agreed to reduce greenhouse gas emissions and accelerate the transition to a lower-carbon economy. The Sustainable Development Goals (SDGs), also known as the Global Goals, were adopted by the United Nations in 2015 as a universal call to action to end poverty, protect the planet, and ensure that by 2050 all people enjoy peace and prosperity.



Reference: https://books.google.com/ngrams

What do people mean when they talk about “Sustainability”?

“Sustainability meets the needs of the present generation without compromising the ability of future generations to meet their needs”

(Brundtland, 1987)

Source: https://www.globalgoals.org/goals/

Carbon and greenhouse gas (GHG) emission reduction strategies are at heart of sustainability efforts

You will hear them classified as “Scope 1, 2 or 3” emissions, along with efforts to become “net zero”

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Net Zero: How?

Personal reflexion

Trip to Cisco Live	Emissions lbs	Emissions kg
Flight Barcelona to Amsterdam	420.0 lbs CO_2e	190.509 kg CO_2e
Flight Amsterdam to Barcelona	420.0 lbs CO_2e	190.509 kg CO_2e
Total round trip	840.0 lbs CO_2e	381.018 kg CO_2e

Source: SAP Concur Travel Solutions
1lbs = 0,453592 kg

Absolute zero

Carbon credits

Carbon Removal

Net Zero: How?
Personal reflexion

Beef (beef herd) – 26.5 kg CO_2e per 100g of protein [3]

VS

Pulses (legumes, chickpeas, lentils, beans, etc.) – 0.4 kg CO_2e per 100g of protein [3]

381.018 kg CO_2e /26.1 kg CO_2e ~ vegetarian 15 days

Trip to Cisco Live	Emissions lbs	Emissions kg
Flight Barcelona to Amsterdam	420.0 lbs CO_2e	190.509 kg CO_2e
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Total round trip	840.0 lbs CO_2e	381.018 kg CO_2e

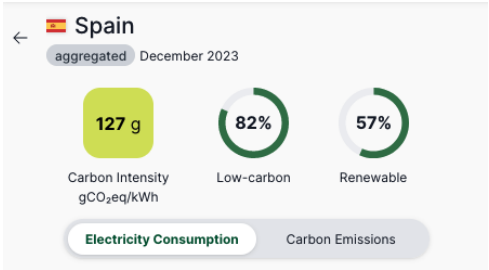
Source: SAP Concur Travel Solutions
1lbs = 0,453592 kg

Verified Carbon Standard
A VERRA STANDARD

1 TREE SEQUESTERS 22 LBS OF CO2 ANNUALLY

84 Trees

381.018 kgCO_2e / 127 gCO_2e/kWh [2]
= 3,000.15 kWh



12 Solar Panels

Esther's house SEMS Portal

Source:
[1] https://onetreeplanted.org/pages/tree-facts
[2] https://app.electricitymap.org
[3] https://breakingboundaries.count-us-in.com/methodology

Do you Have a Net Zero Goal?

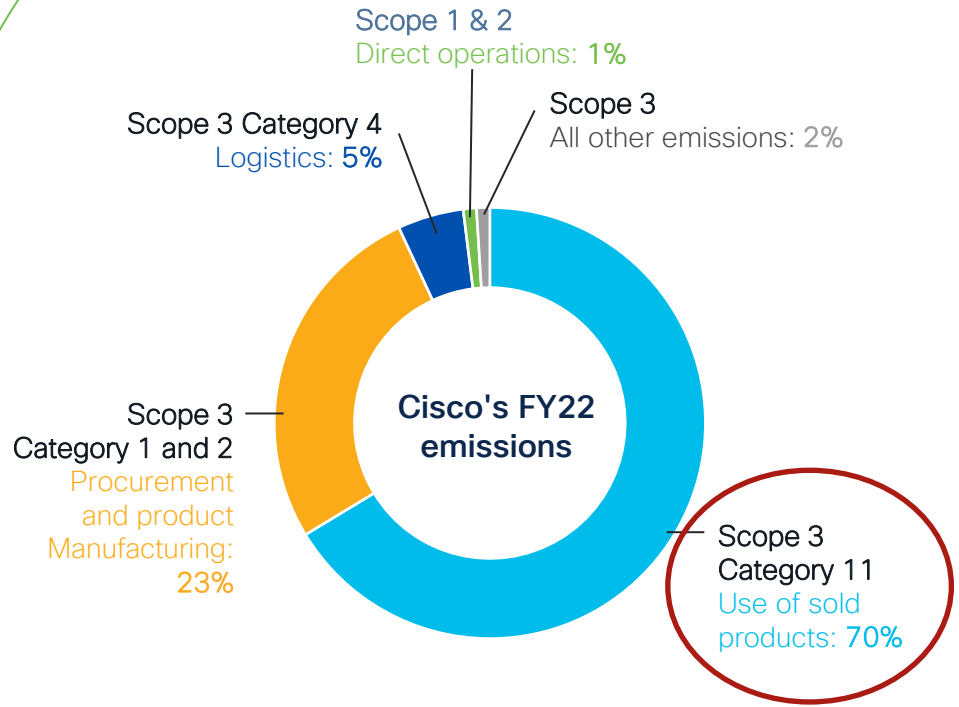
Cisco's Goal

Net Zero Across our Value Chain by 2040

SCIENCE BASED TARGETS
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

Our 2040 net-zero target is approved by the Science Based Targets initiative (SBTi).

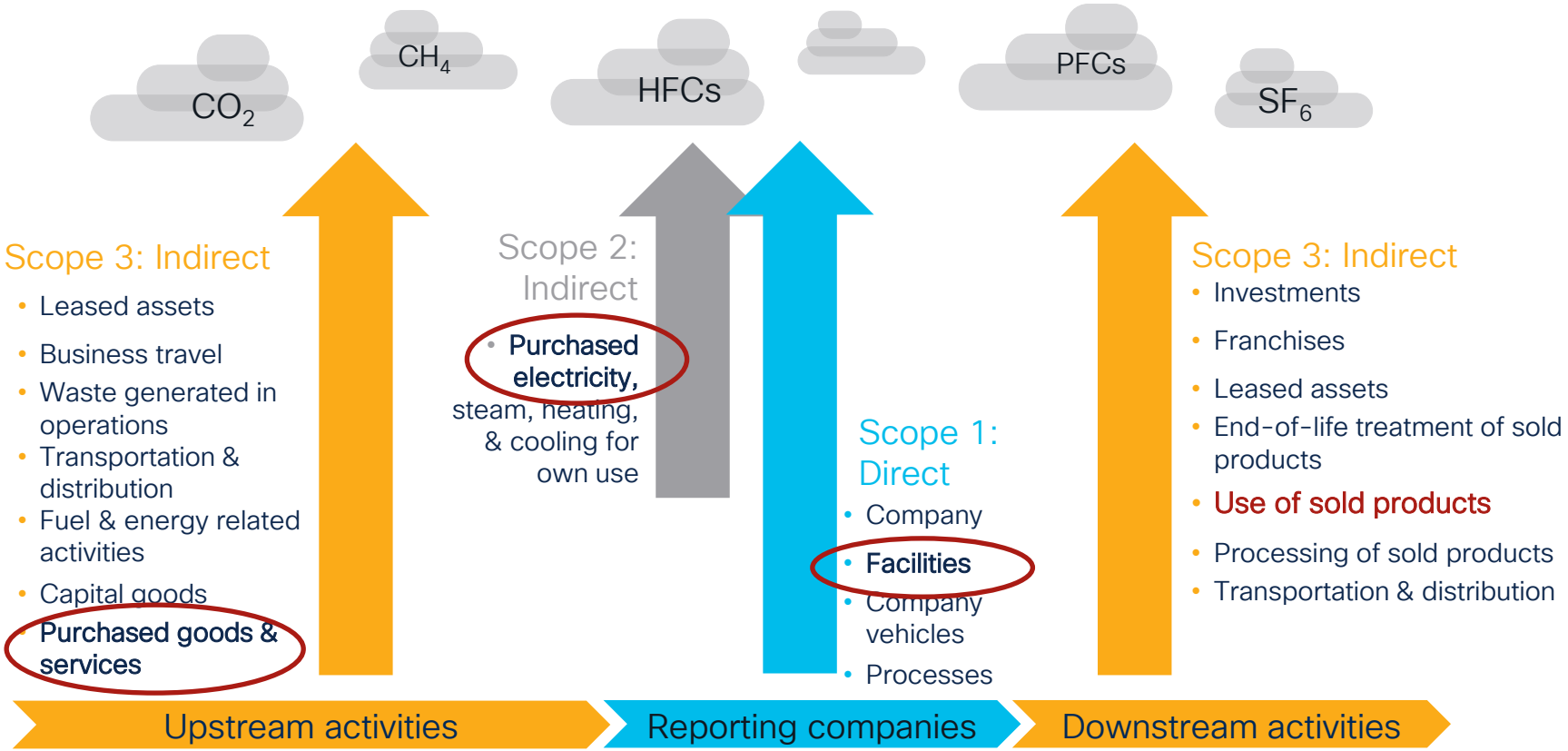
For more detail, see the ESG Hub: cisco.com/go/esg-hub
For more detail on emissions reduction strategy, goals, and data.



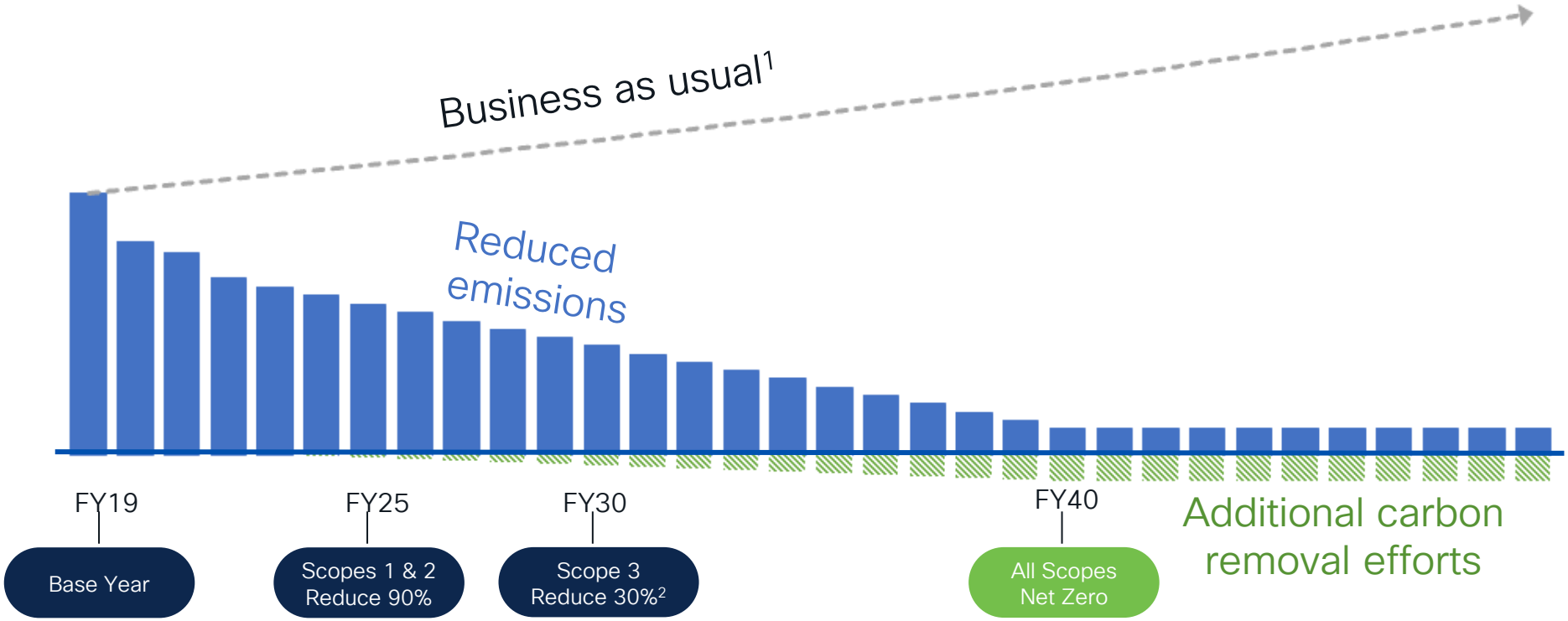
Note: Numbers may not add up to 100% due to rounding

Source: Cisco 2023 Purpose Report, Page 36

What Is Scope 1, 2 & 3 for Me?



Net Zero Emissions Roadmap



[1]This chart is for illustrative purposes only. BAU assumes a 1.7% annual growth across all scopes of emissions, based on 2022 European Commission data showing the average yearly percentage growth of CO2 emissions between 1990 and 2021

[2] From purchased goods and services, upstream transportation and distribution, and use of sold products

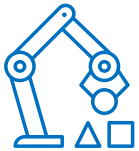
Our Carbon Footprint

Product Use

The use of the products we sell produces emissions accounted for in Scope 3. This includes emissions from the energy our products consume during customer use.

70%

Product Manufacturing and Procurement



Manufacturing and warehousing of Cisco components, products, and services produce upstream emissions that are accounted for in Scope 3.

23%

Logistics

Transportation and distribution of our products in the value chain produce emissions that are accounted for in Scope 3.

5%

Direct Operations

Emissions from the operation of Cisco facilities (electricity, fuel for heating and cooling, etc.) are accounted for in Scope 1 & 2.

1%

Scope 3

Scope 1 & 2

Source: Cisco 2023 Purpose Report, Page 36

NOTE: Other value chain activities (e.g. waste and business travel) are also accounted for in Scope 3, but do not represent a large share of emissions. Percentages shown may be rounded.

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  - “Sustainability **by** IT”
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At what stage are you in your journey today?

Sustainability end-to-end

Transformation Strategy

- Strategy and operational readiness
- Stakeholders' engagement
- Business drivers
- Key objectives
- Governance structure
- Required capabilities
- Prioritized use cases
- Support sustainability initiatives with technology utilization

Sustainability in IT

2-4%*

- Renewable energy
- Greener data centre
- Cloud migration
- Energy optimization
- Increased asset utilization
- Equipment modernization
- Extended life
- Remanufactured equipment
- Supplier management

Sustainability in IT

15%*

- Connected transport
- E-work / hybrid work
- E-health
- E-learning
- E-commerce
- Smart buildings
- Smart grid
- Smart agriculture
- Smart manufacturing

Based on Exponential Roadmap 1.5.1 (2020), Smarter 2030 (GeSI 2015), Malmodin (2015)

Example of IT Sustainability Priorities

Strategic Imperative	Objective	Success Metric/Outcomes
Circular Consumption	Reuse Recycling	50% product recycling FY23 90% product recycling FY24 10% product reuse
Green House Gas (GHG) reduction	Real-time data on Green House Gas (GHG)	40% reduction FY23 60% reduction FY24 80% reduction FY25 90% reduction FY26 10% GHG capture FY26
Green IT Infrastructure	Reduce Energy Consumption	30% reduction FY23 40% reduction FY24 No increase in power consumption FY25
Green IT Infrastructure	Resource Optimization Capacity Management	Exactness of Capacity Forecast Capacity Adjustments
Environmental protection	Tech as an Enabler	Optimize office utilization Business continuity Travel reduction

For Examples Purposes Only. Based on Hypothetical Data, Not Actual Customer Data.

Active Cisco Environmental Goals

Date goal announced	Goal topic	Goal	FY23 progress (against base year unless otherwise specified)
August 2019	Energy/GHG	80% of Cisco component, manufacturing, and logistics suppliers by spend have a public, absolute GHG emissions reduction target by FY25.[4] See Supply Chain Environmental Stewardship for details.	92%
July 2019	Product and packaging materials	100% of new Cisco products and packaging to incorporate Circular Design Principles by FY25.[5]	27% meeting circular design criteria
		Reduce foam used in Cisco product packaging by 75%, measured by weight, by FY25 (FY19 base year). [6] See Packaging for details.	22% reduction
		Increase product packaging cube efficiency by 50% by FY25 (FY19 base year).[7] See Packaging for details.	65% cumulative improvement
		70% of Cisco component and manufacturing suppliers by spend achieve a zero-waste diversion rate at one or more sites by FY25.[8] See Supply Chain Environmental Stewardship for details.	60% by spend with at least one certified site
October 2022	Product and packaging materials	50% of plastic used in our products (by weight) will be made of recycled content by FY25.[9]	24%

Learn more about emissions reduction strategy, goals, and data. Cisco ESG Reporting Hub

Strategic Imperative

Objective

FOR REFERENCE

Challenge

Solution

How

1.
2.
3.
4.

Reference

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Transformation Strategy

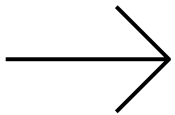
From ESG goals to actions

Challenge

Sustainability goals

Solution

Business goals
Stakeholder
Technology
Capabilities



Sustainability
Transformation
Roadmap

How

1. Cisco CX sustainability framework – IDC Spotlight
2. Sustainability Priority Assessment
3. Industry use cases: Portfolio explorer
4. Cisco CX Empowers Sustainability with Expanded Services

Transformation Strategy

From ESG goals to actions

Challenge

The board of directors has identified sustainability goals, but understanding their impact on our organization and figuring out how we can meaningfully contribute is challenging. Notably, while 63% of global companies consider sustainability important, only 37% have clearly defined their specific goals and objectives. (1)

Solution

Incorporate sustainability into business goals, considering stakeholder perspectives and using ESG metrics in performance indicators.

Utilize technology to integrate ESG considerations across the organization and to enhance sustainability initiatives.

Identify and build required capabilities to achieve set goals.

Combine all sustainability aspects into one strategy, assembling the necessary team and resources to create a comprehensive Sustainability Transformation Roadmap.

How

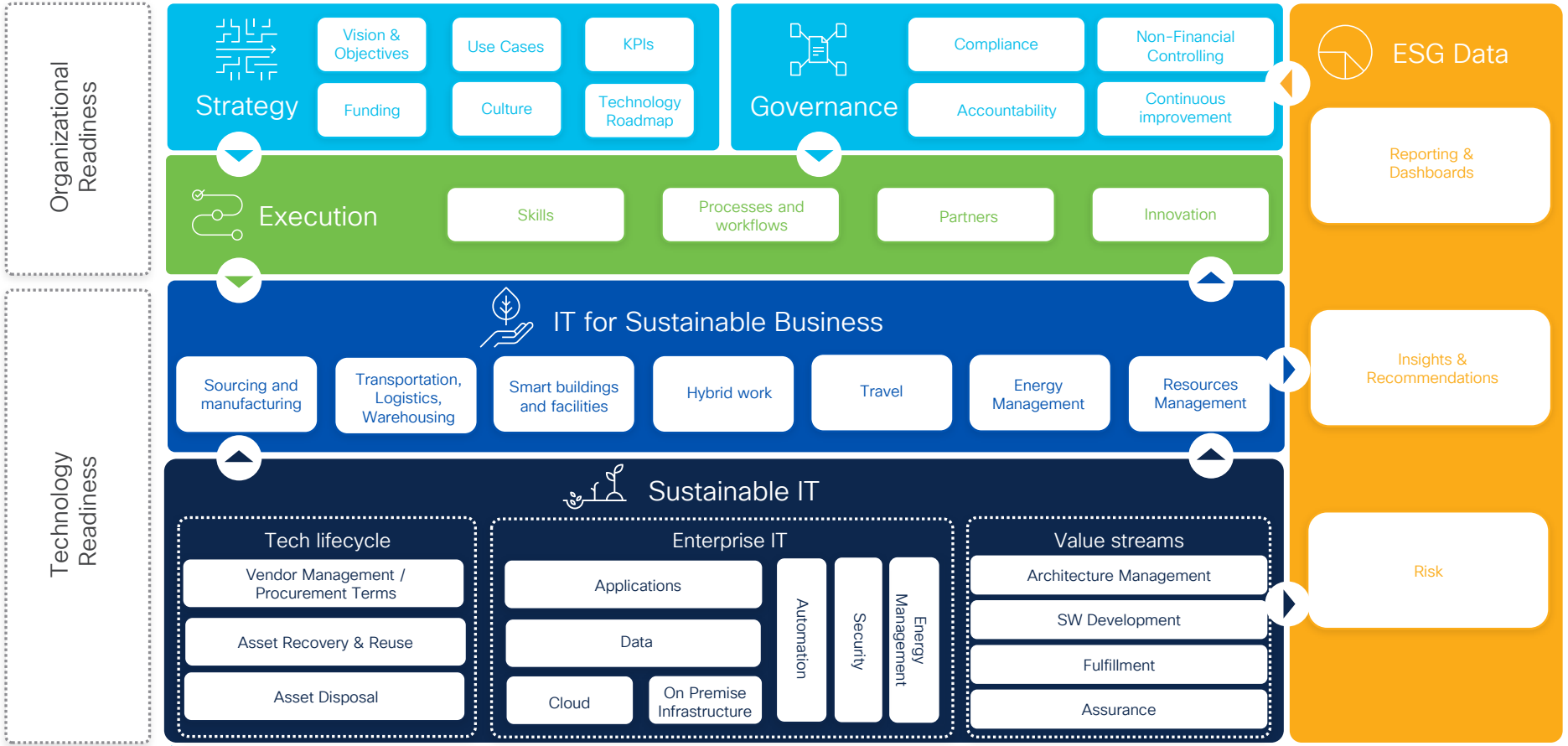
1. Cisco CX sustainability framework – IDC Spotlight
2. Sustainability Priority Assessment
3. Industry use cases: Portfolio explorer
4. Cisco CX Empowers Sustainability with Expanded Services

Reference

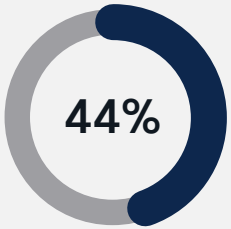
(1) IDC #US50136823 2023
"Enabling Sustainability Through Investments in Technology Is Critical to Driving Business Value"

Cisco Customer Experience

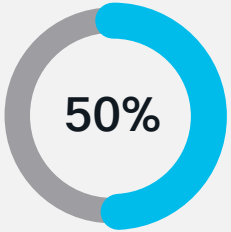
Sustainability Framework



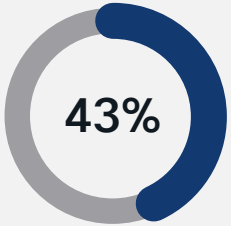
What Do Analysts Say About Sustainability?



of all stakeholders are embracing digital technologies to achieve their sustainability goals.



will allocate budget and resources to sustainability.



will require assistance in making sense of data to measure sustainability.

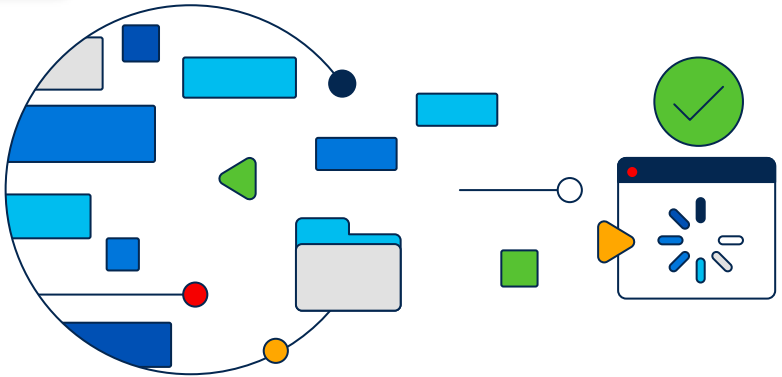
Transformation Strategy

Regulatory on environmental sustainability

Challenge

ESRS
CSRD
EED

Solution



How

1. Observability Solutions
2. Public funding
3. Sustainability Priority Assessment
4. CX Lifecycle Services

Reference

ESRS: European Sustainability Reporting Standards
CSRD: Corporate Sustainability Reporting Directive
EED: Energy Efficiency Directive

Cisco's Public Funding Capture Office

Helping identify grants, loans, and tax credits for your sustainability efforts

Funding is available for climate-friendly IT upgrades.

Governments around the world are recognizing the importance of implementing sustainable practices in the public and private spheres. Guided by the 2015 Paris Climate Accords, 190 countries around the world are working to (1) reduce emissions; (2) build climate-resilient infrastructure; and (3) promote regional & international cooperation through 2050.

In order to actualize these goals for individual public sector, commercial, enterprise, and service provider organizations, grant makers are directing hundreds of billions of dollars into new funding schemes over the next decade. These investments represent an unprecedented opportunity for public and private sector organizations to leverage the power of green technology to transform their operations, reduce their footprint, and contribute to the global effort for more sustainable development

Cisco can help you capture it.

Many organizations know that grants, loans, and tax credits are available but are unsure of where to begin or how to maximize their success. The Cisco Global Public Funding Capture Program provides industry leaders like you with public funding information, customized research, and direct support that will help develop project ideas, get technology-rich projects funded, and usher in a better future for innovation, productivity, and engagement.

To get started, contact your Cisco Account Manager or send us an email at: global_funding@external.cisco.com.

Major Themes of Public Funding for Sustainability

- Protect & restore habitats and species
- Reduce emissions & accelerate carbon capture
- Transition from fossil-fueled energy systems
- Create circular, climate-resistant economies
- Install green & disaster-resilient infrastructure
- Build energy-efficient cities
- Promote climate-neutral industrial investments
- Enable research, development & innovation for new climate technologies

Regulatory intensity on Environmental Sustainability
continues to increase across the globe

Illustrative, not exhaustive

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Circular Economy

Reuse & Recycling

Challenge

Solution

- Eco-system
- Business Model
- Asset management

How

1. Asset Management Services
2. CX Cloud Asset & Coverage
3. Takeback & Reuse Program
4. Cisco Green Pay offers a 5% incentive on Cisco hardware, predictable payments for five years, and free product returns.

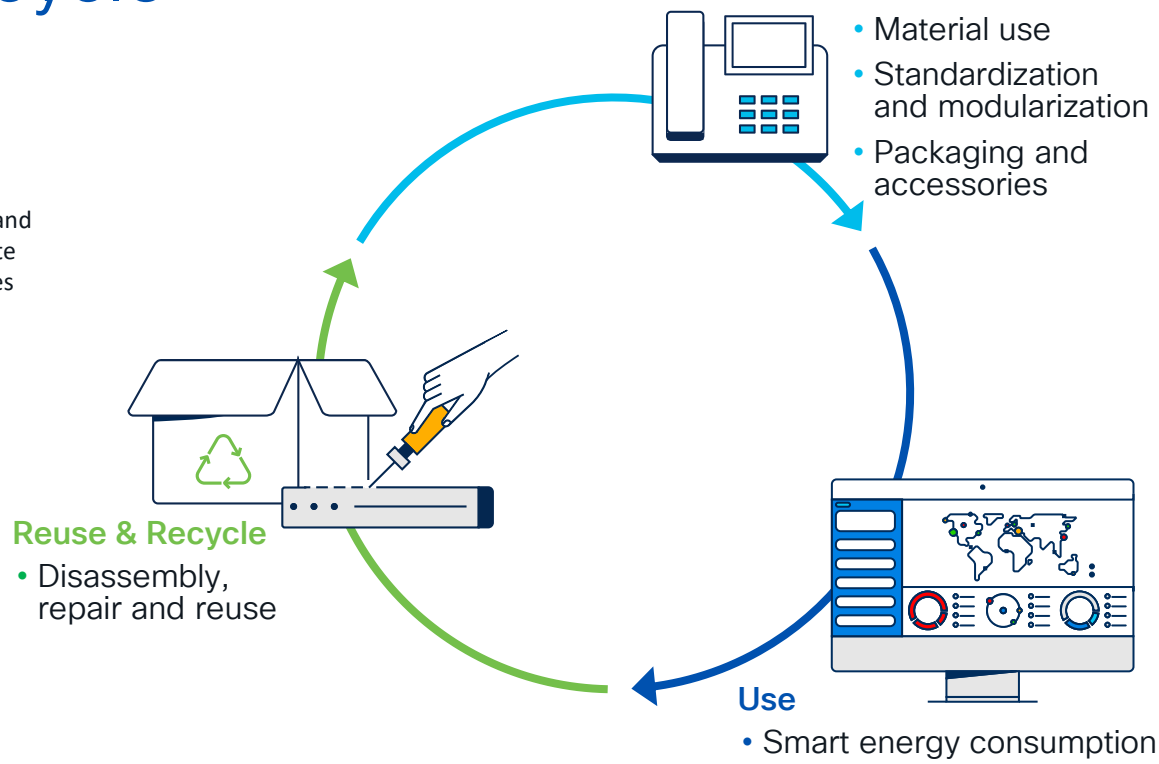
Reference

E-Life: Documentary, https://www.waterbear.com/watch/e-life

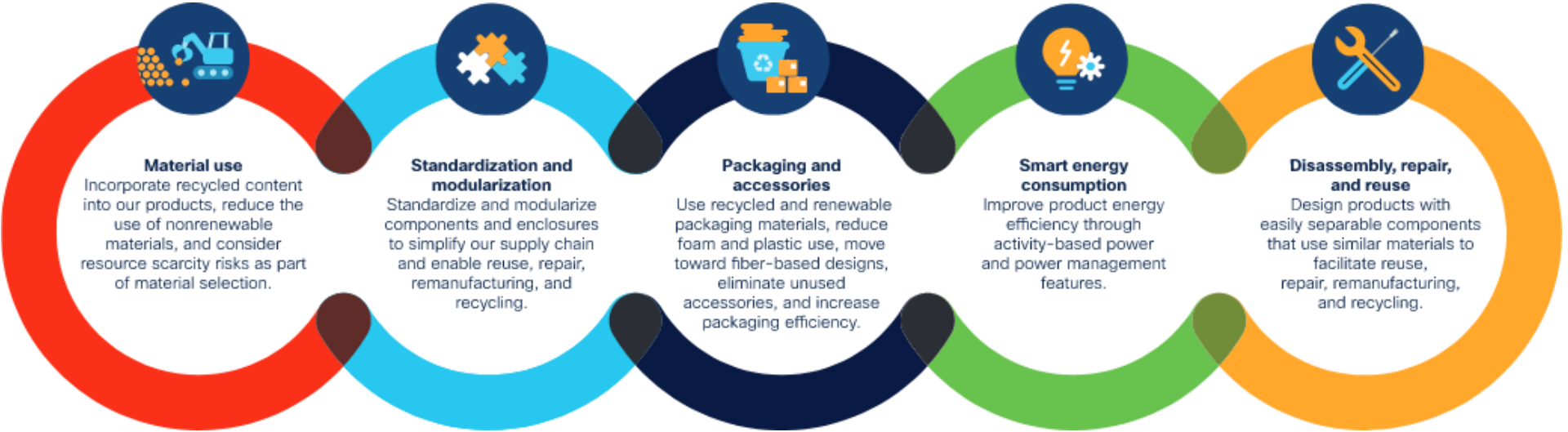
Circularity in the Product Lifecycle

100%

of new Cisco products and packaging to incorporate circular design principles by 2025



Make: Cisco's Circular Design Strategy



100% of new Cisco products and packaging to incorporate circular design principles by 2025

ESG Hub Product sustainability

Circular Thinking in Cisco Products

ESG Hub Product sustainability
SEAL Sustainable Product Award

Feedback request

Proposal for sustainability profile, exemplary for reference only, subject to change.

CISCO PRODUCT SUSTAINABILITY PROFILE

UCS-X

Un/Box the future

Overview

It's any box you need, and more. The Cisco UCS® X-Series Modular System powered by Intersight is an adaptable, future-ready system engineered to simplify IT and innovate at the speed of software. The system now includes Cisco UCS X-Fabric Technology.

Sustainable by design

Recycled materials

Plastic parts use **post-consumer recycled resin**

Modular

Modular, upgradeable design helps to future-proof the device

Sustainable packaging

Offers **multipack options** to reduce packaging for high-volume orders

Energy-efficient

Minimizes energy use via cooling algorithms and high-efficiency, Titanium-rated power supplies

Accessory opt out

Customers can **opt out** of unneeded product accessories, minimizing waste

Easy repair

Easy to upgrade and repair – standard screws enable quick disassembly, supporting repairability and recyclability

Embedding sustainability through the product lifecycle

MATERIALS COMPLIANCE

Cisco has policies and procedures in place to comply with applicable product-related laws and regulations

Learn more

SUPPLY CHAIN SUSTAINABILITY

Cisco works to uphold human rights, promote worker well-being, and minimize negative environmental impacts in our supply chain

Learn more

PRODUCT TAKEBACK AND REUSE

Return end-of-use gear for free in a simple, secure, and sustainable way. Certified remanufactured products are available through Cisco Refresh

Learn more

Certifications

The UCS-X is a modular product. The UCS X210C M6 Compute Nodes are both Energy Star certified and have achieved an EPEAT Bronze rating.

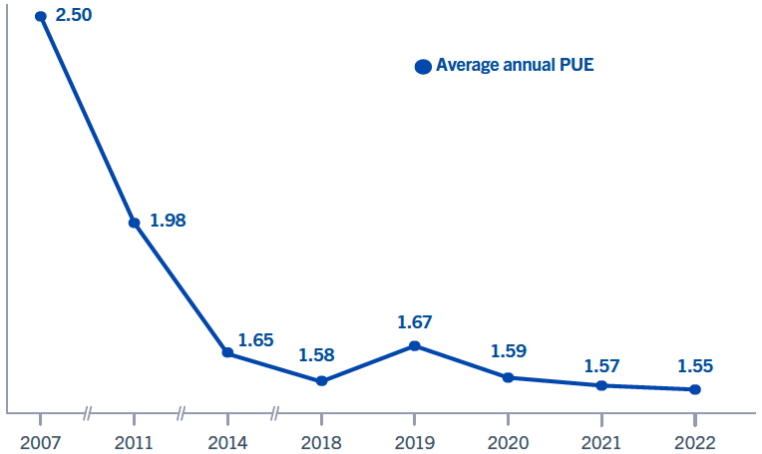
Power Usage Effectiveness (PUE)

Operations and Temperature Regulation Efficiency

Challenge

$$PUE = \frac{\text{Total facility power}}{\text{IT equipment energy}}$$

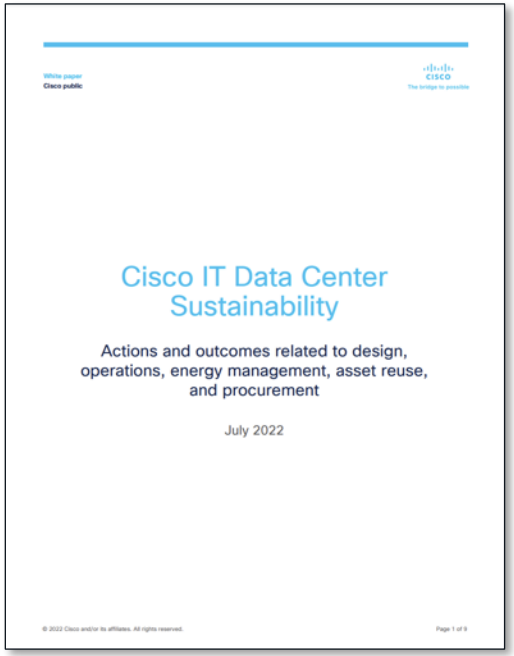
Solution



How

1. Customer reported 44% Data Center cooling energy savings enabled by visibility from Meraki MT sensors
2. Meraki environmental monitoring Marketplace
3. UCS X-Series ability to incorporate liquid cooling technology
4. Energy Optimization Advisory Services

Cisco IT Sustainability Framework


White paper
Cisco public

Cisco IT Data Center Sustainability

Actions and outcomes related to design, operations, energy management, asset reuse, and procurement

July 2022

Cisco IT Sustainability Framework

Align & Support Company Sustainability Goals & Initiatives

- Cisco Goal of Net Zero for Scope 1, 2 & 3 by 2040

Sustainable by Design	Responsible Procurement	Optimization of Operations	Increase Asset Recovery & Reuse	Energy Management
• Global design standards • 312% more VM (virtual machines) per blade • 27% reduction in power (watts) per VM	• Main DC suppliers sent surveys on carbon emission data	• 38% fewer data centers from 26 sites to 16 • 23% reduction in data center facility OPEX costs • ACI everywhere	• 43 tons of cabling infrastructure and equipment reused • 1,813 Cisco UCS servers sold for reuse	• 100% of US DC power and 72% DC power globally from renewables • Reduced average DC monthly power capacity by 40%.

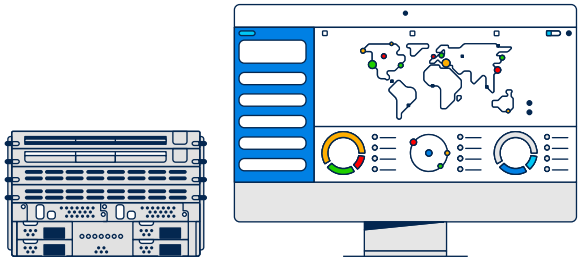
Employee Culture

- 90% of patch cables recertified

Telemetry Specification

Real-time Data

Challenge



Solution

- Transparency, Consistency and Integration
- Single Source of Truth
- Single Platform vs API
- Alignment with Regulatory Compliance

How

1. Cisco CX Telemetry Specification covering Power Consumption and Energy Efficiency - POWEFF
2. Work towards hardware and software portfolio, providing CO2eq
3. Enable API access for different data storage/controller systems
4. Work extended to Circular Design Principles and Sustainability Data Foundation

Reference

ESG Hub Product sustainability
Cisco CX Empowers Sustainability with Expanded Services

Telemetry Specifications

Recommendations & Certifications

ITU-T **L.1310** (09/2020)

TELECOMMUNICATION STANDARDIZATION SECTOR OF ITU

Parameters	Loading	80 Plus	Bronze	Silver	Gold
Efficiency	20%	80%	82%	85%	87%
	50%	80%	85%	88%	90%
	100%	80%	82%	85%	87%
Power Factor	50%	90% (@100% load)	90% (across the full range)		

SERIES L: ENVIRONMENT AND ICTS, CLIMATE CHANGE, E-WASTE, ENERGY EFFICIENCY; CONSTRUCTION, INSTALLATION AND PROTECTION OF CABLES AND OTHER ELEMENTS OF OUTSIDE PLANT

Energy efficiency metrics and measurement methods for telecommunication equipment

EUROPEAN COMMISSION

COMMISSION RECOMMENDATION

of 16.12.2021

on the use of the Environmental Footprint methods to measure and communicate the life cycle environmental performance of products and organisations

ATIS-0600015.03.2016

Energy Efficiency For Telecommunication Equipment: Methodology For Measurement And Reporting For Router And Ethernet Switch Products

Sources:
https://www.clearesult.com/80plus/
https://www.itu.int/rec/T-REC-L.1310/en
https://environment.ec.europa.eu/
https://bregroup.com/products/breeam/
https://webstore.ansi.org/standards/atis/atis0600015032016

Product Sustainability in Data Sheets

Sustainability Topic		Reference
General	Information on product-material-content laws and regulations	Materials
	Information on electronic waste laws and regulations, including our products, batteries and packaging	WEEE Compliance
	Information on product takeback and resuse program	Cisco Takeback and Reuse Program
	Sustainability Inquiries	Contact: csr_inquiries@cisco.com
Material	Product packaging weight and materials	Contact: environment@cisco.com

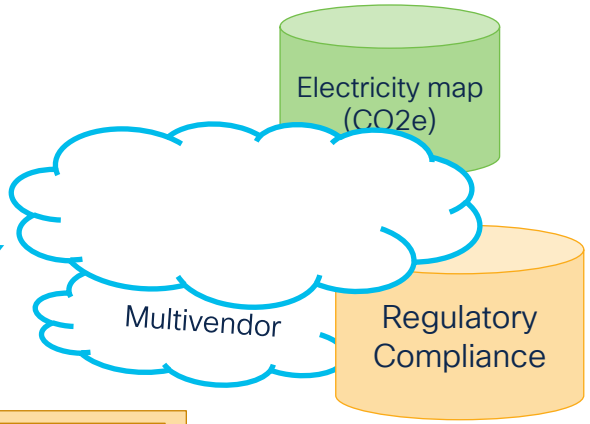
Information about Cisco's environmental, social and governance (ESG) initiatives and performance is provided in Cisco's CSR and sustainability reporting. (1)

(1) Cisco 8000 Series Routers Data Sheet

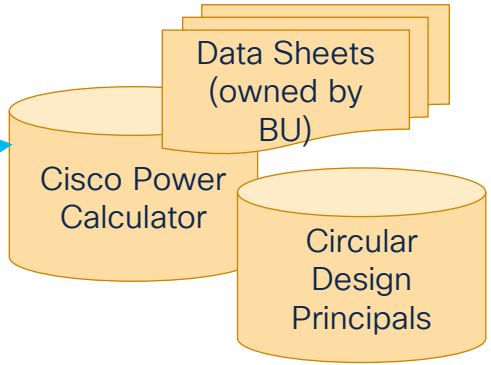
Telemetry Specifications

"Telemetry" is defined for most of the platforms in different forms:
Show commands, MIBs, YANG modules, ...
different transport mechanisms:
SNMP, RESTConf, NetConf, ...

Business bring us to new needs for Telemetry



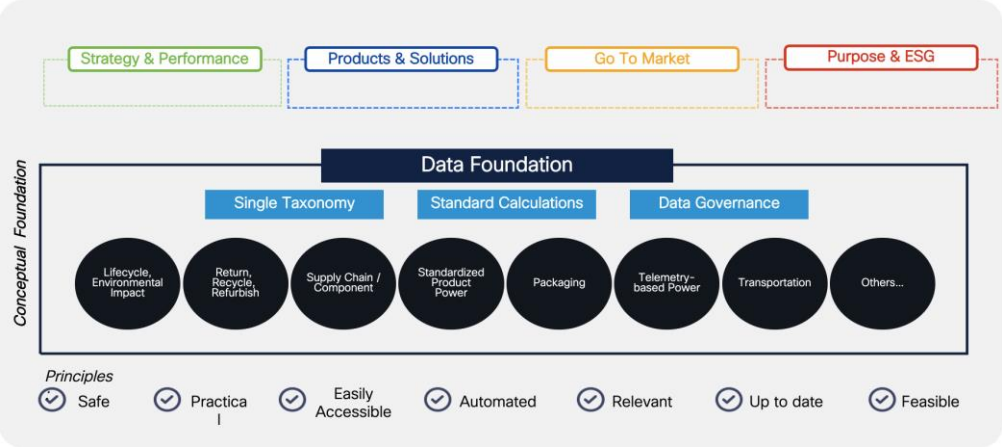

```
router#show energy-efficiency
   Input Power(watts):      1100
   Used Power(watts):       900
   CO2e(gr):                X
   Traffic(watts/packts):   X
   Energy Efficiency:       81%
```



Source:
https://app.electricitymaps.com/map

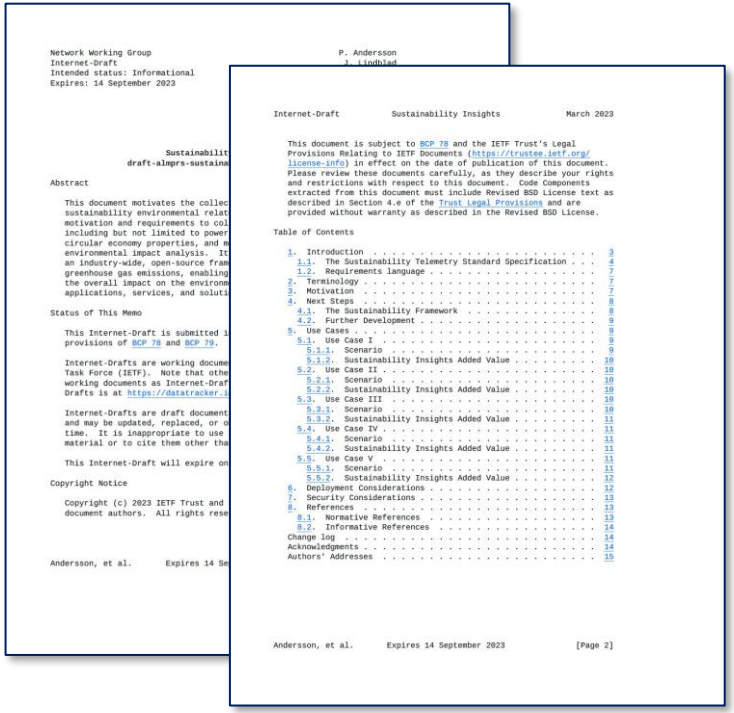
Data Strategy

Sustainability Data Foundation (SDF)



Industry Standardization

IETF116: Sustainability Insights
IETF118: POWEFF



Network Working Group
Internet-Draft
Intended status: Informational
Expires: 14 September 2023

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J. Lindblad

Abstract

Status of This Memo

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Andersson, et al. Expires 14 Se

Internet-Draft Sustainability Insights March 2023

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Table of Contents

1. Introduction . . . 3
1.1. The Sustainability Telemetry Standard Specification . . . 4
1.2. Requirements language . . . 7
2. Terminology . . . 7
3. Motivation . . . 7
4. Next Steps . . . 8
4.1. The Sustainability Framework . . . 8
4.2. Further Development . . . 9
5. Use Cases . . . 9
5.1. Use Case I . . . 9
5.1.1. Scenario . . . 9
5.1.2. Sustainability Insights Added Value . . . 10
5.2. Use Case II . . . 10
5.2.1. Scenario . . . 10
5.2.2. Sustainability Insights Added Value . . . 10
5.3. Use Case III . . . 10
5.3.1. Scenario . . . 10
5.3.2. Sustainability Insights Added Value . . . 11
5.4. Use Case IV . . . 11
5.4.1. Scenario . . . 11
5.4.2. Sustainability Insights Added Value . . . 11
5.5. Use Case V . . . 11
5.5.1. Scenario . . . 11
5.5.2. Sustainability Insights Added Value . . . 12
6. Deployment Considerations . . . 12
7. Security Considerations . . . 13
8. References . . . 13
8.1. Normative References . . . 13
8.2. Informative References . . . 14
Change log . . . 14
Acknowledgments . . . 14
Authors' Addresses . . . 15

Andersson, et al. Expires 14 September 2023 [Page 2]

https://datatracker.ietf.org/doc/draft-almprs-sustainability-insights/
https://datatracker.ietf.org/doc/draft-opsawg-poweff/

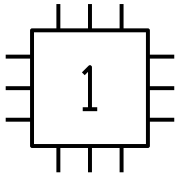
Revolutionary Power Efficiency

Reduce Power Consumption and Resource Optimization

Challenge

Solution

- Higher Power Efficiency
- More capacity
- Smart Energy Consumption
- Decrease transportation footprint



How

1. Cisco 8201 routers consume 96% less energy annually than the NCS 6008, while supplying 35 percent more bandwidth. (3)
2. NPU Power Modes: Based on network traffic and power consumption requirements
3. Dynamic Power Management: Optics power allocation will not be added at card level allocation.
4. Cisco UCS X9508 Chassis: Modularity, Size, Power, Cooling. (2)

Reference

(1) https://www.iea.org/reports/data-centres-and-data-transmission-networks
(2) The power of innovation
(3) Cisco 2021 Purpose Report, page 80

Seamless Migration

Reduce Energy Consumption and Space

Challenge

Solution

Network transformation and consolidation:

- Reduction in power and rack space through upgrades to newer platforms.
- Network modernization for increased longevity and capacity.
- Automation of configuration migration.
- Cost savings and time reduction in migration.
- Decrease carbon footprint.

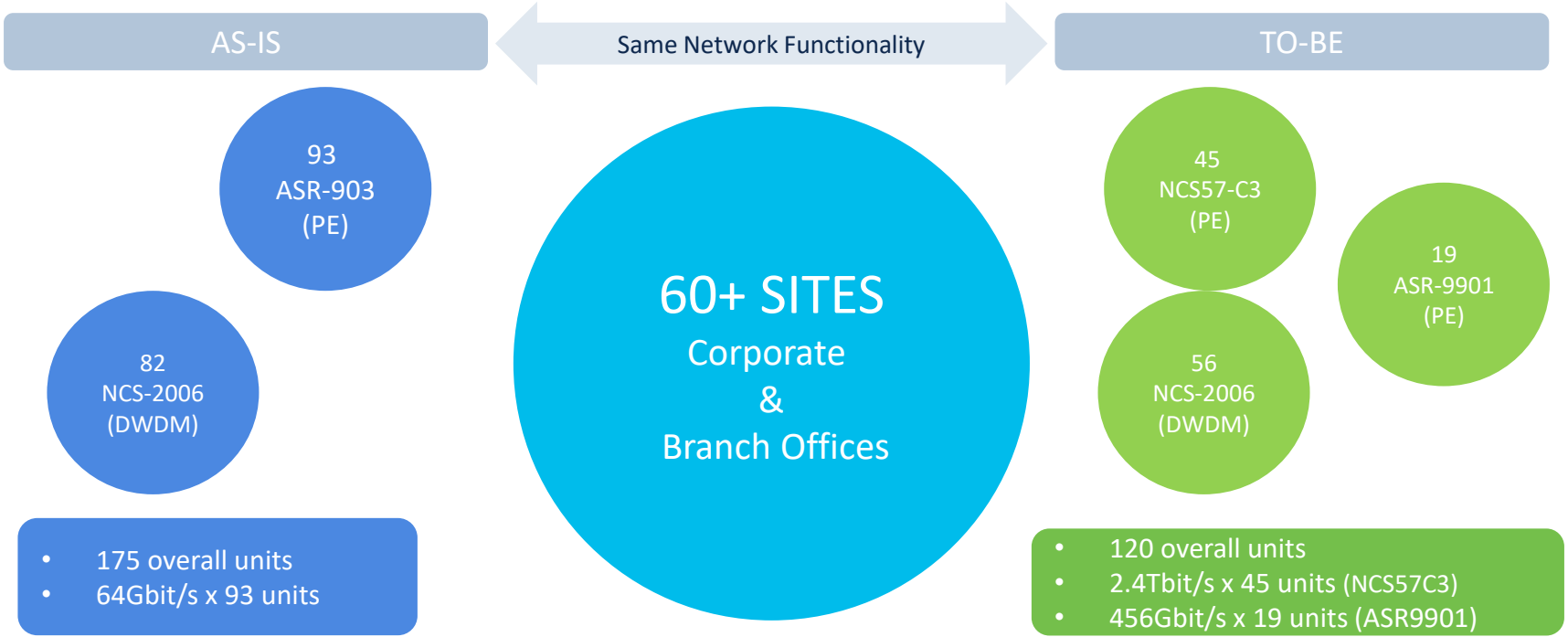
How

1. Cisco Network Services Orchestrator accelerate the configuration migration of the Core and Edge nodes in an automated methodology
2. Cisco Business Critical Services Support through LAB testing, MOP documents and SW validations ensured mitigation of risk.
3. 8000 and NCS 5500 Series have a five-year TCO savings of 87% over the first-gen routers and 66% savings over the second-gen routers.(1)
4. Automation Services

Reference

(1) ACG Research White Paper: The Requirements and Economics of Core Routing Networks

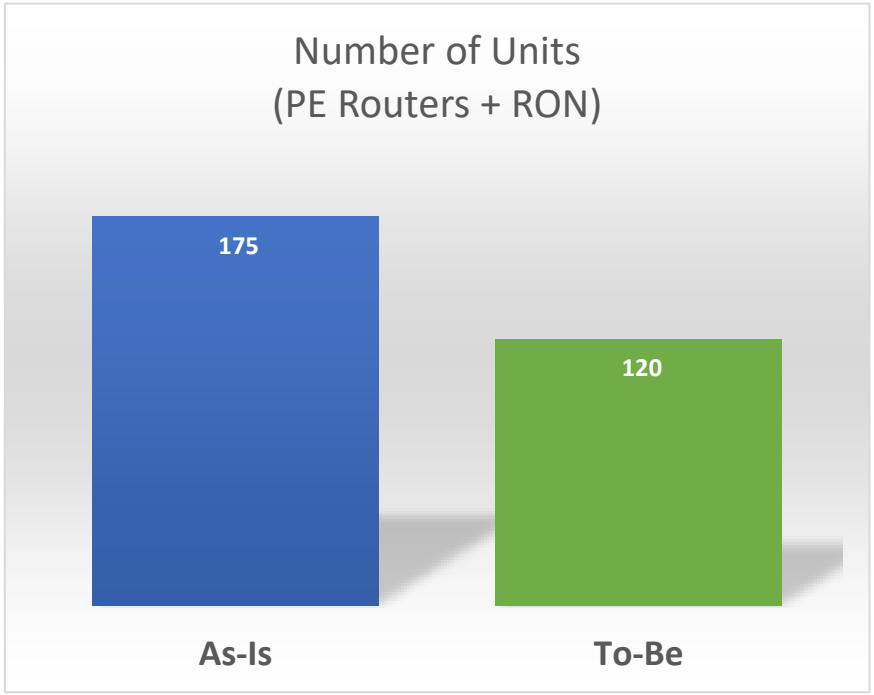
Boost Network Performances & Simplify Operations by Adopting New Architecture Designed for Identified Sites

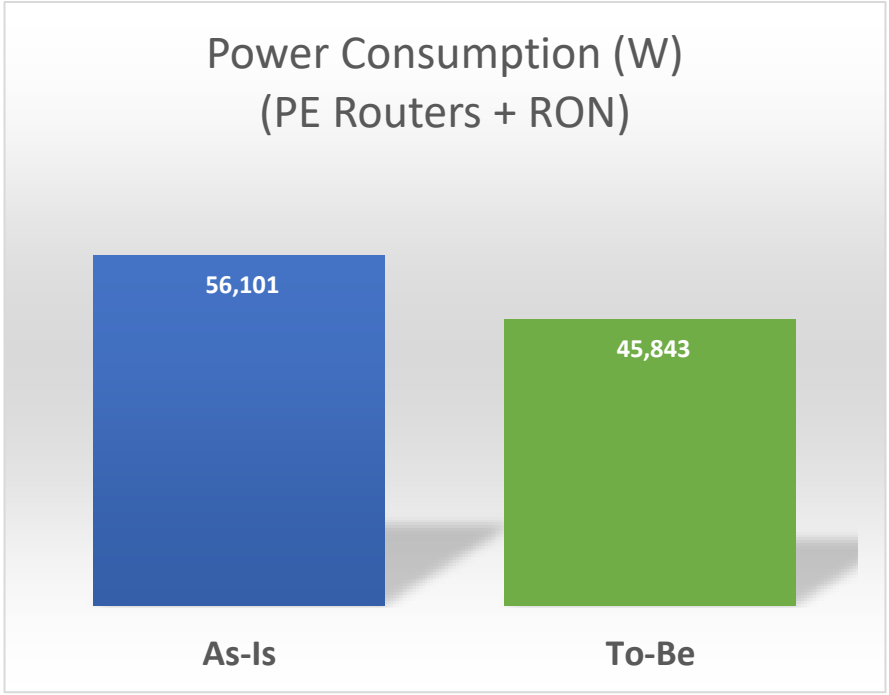


Reference:
https://www.cisco.com/c/en/us/products/collateral/routers/asr-903-series-aggregation-services-routers/data_sheet_c78-685686.html
https://www.cisco.com/c/en/us/products/collateral/routers/asr-9000-series-aggregation-services-routers/datasheet-c78-740540.html
https://www.cisco.com/c/en/us/products/collateral/routers/network-convergence-system-5500-series/ncs-57C3-fixed-chassis-ds.html

Sustainability Metrics Improvement

Data obtained from lab setup by Product team
Power reported is measured on idle state and all ports in shutdown mode

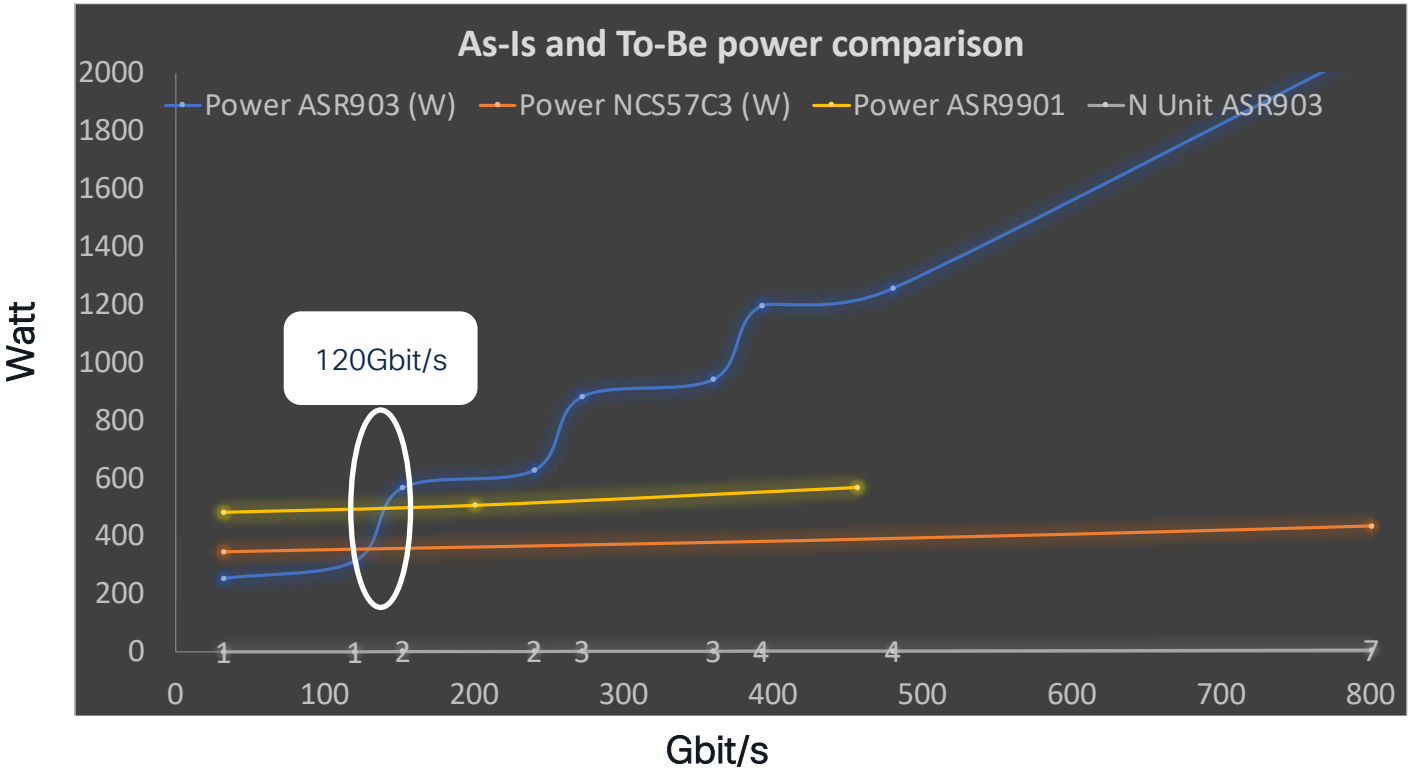




-31%

-18%

Energy Efficiency



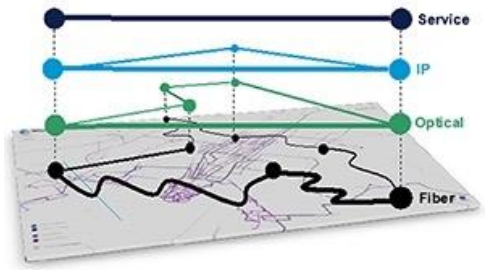
- Max throughput ASR903 adopted for testing in lab is 120Gbit/s
- As-Is ASR903 in production has lower performances (64Gbit/s)
- Throughput higher than 120Gbit/s requires additional ASR903 platform to scale, generating higher power consumption beside implementing only 1 new generation router

Note: Graphical representation from previous slide

Network Convergence

Routed Optical Networking (RON)

Challenge



Solution

- Fewer devices & eliminate transponder
- Maximizes wavelength / fiber atotal TCO savings of 46%:
  - 35% CapEx reduction, and
  - 57% OpEx reduction
- Customer savings on space and power (overall footprint) have been ~80%[3]

How

1. Solutions for IP Optimized Optical Transport
2. Routed Optical Networking Architecture Transformation Advisory Service – consisting of a planning service, a solution validation service, and CX support services
3. Cisco Silicon One

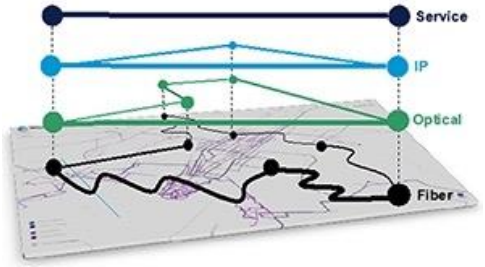
Reference

1. The Business Benefits of Automation and Orchestration White Paper
2. Understanding the value of modern end-to-end IP/MPLS transport networks
3. ACG Research: The Economic Benefits of IP Transport at 400G

RON “Dynamic” Inventory

Resource Optimization and Real-time Data

Challenge



Solution

Cisco's Routed Optical Networking (RON) solution introduces a new approach that amalgamates the IP and optical domains. This unification aims to simplify aspects of the network such as design, operations, engineering, planning, and management. (1)

How

1. Understand how layers/domains are connected to each other
2. Improve agility for new services: Understand inventory hierarchy
3. Correlate network faults to customer impact: Reduce the MTTR
4. Lower Operational cost: Optimized based on the current state and even prediction

Reference

(1) Solutions for IP Optimized Optical Transport

Auto Capacity Management

Resource Optimization & Capacity Management

Challenge

Solution

Capacity and performance management helps network managers achieve new business objectives and consistent network availability and performance.
Differentiate services based on KPIs, related to sustainability: Service visualization and carbon footprint per service and detection of abnormal energy consumption taking corrective actions.

How

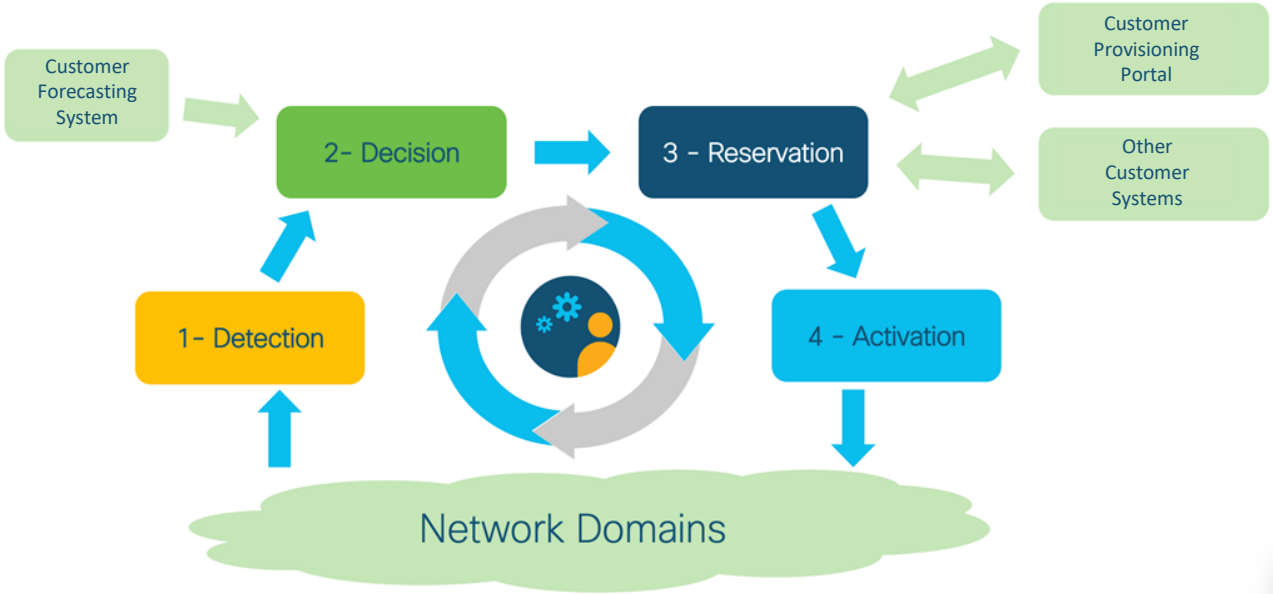
1. Detection of the need of capacity expansion
2. Decision logic to decide what action should be taken on detected elements requiring capacity expansion
3. Reserving and provision the network elements selected for expansion
4. Activation of the elements previously selected completes the process of adding capacity to the network. Automation Services

Reference

Automation Services

Auto Capacity Management

Business Process



Integrated Components

Cisco:

- NSO (Network Services Orchestrator)
- UOP (Unified Operation Portal)
- BPA (Business Process Automation)
- WAE (WAN Automation Engine)

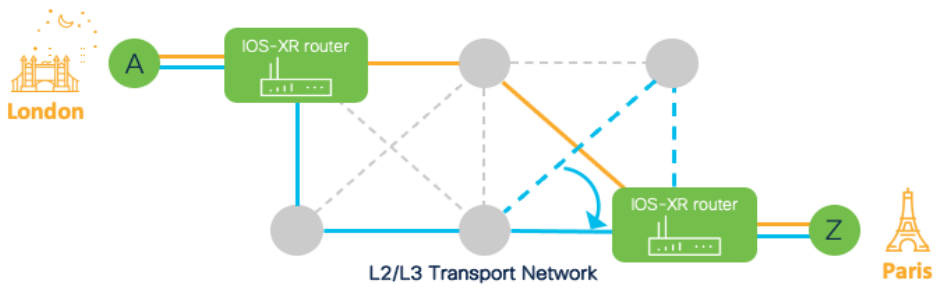
Customer:

- PP (Provisioning Portal)
- FS (Forecasting System)

Network Transport

Power Optimized

Challenge



Solution

- NIMs are powered off when not needed, reduce energy costs, and cooling requirements, and reduce GHGs emissions.
- Regulatory compliance.
- Reputational benefits. Customers and investors like working with companies that are taking concrete steps to reduce GHGs, and GHG reduction is starting to become mandatory in some countries.

How

1. Cisco WAN Automation Engine
2. Cisco Network Services Orchestrator accelerate the configuration migration of the Core and Edge nodes in an automated methodology
3. Skylight Performance Analytics
4. Automation Services

Reference

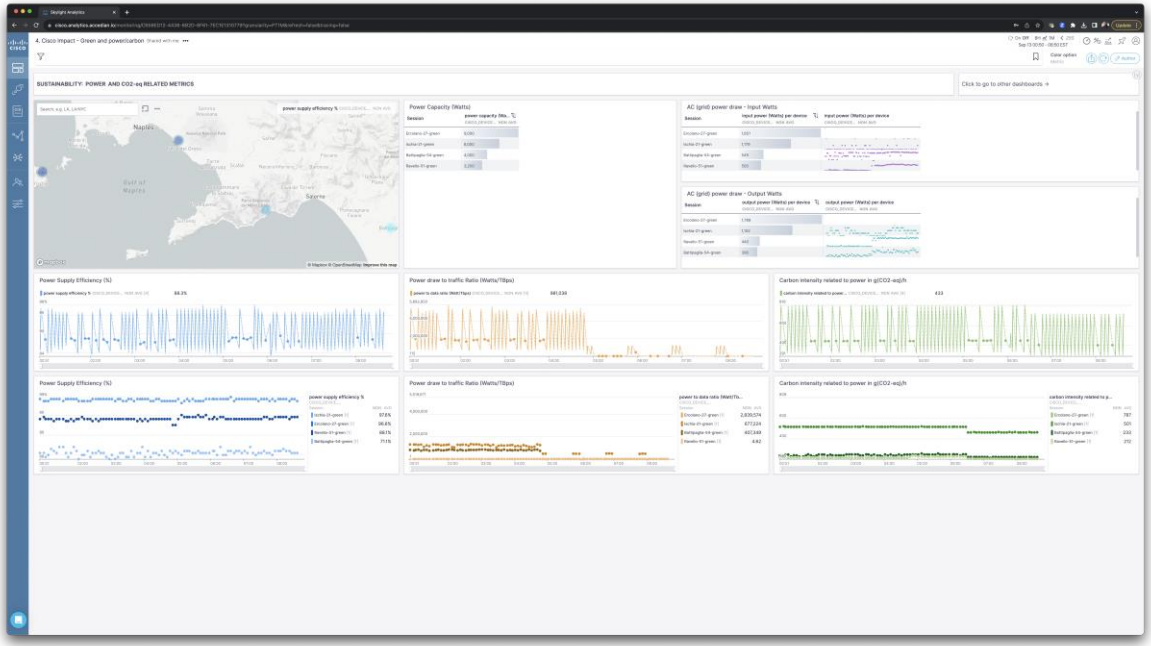
Network Sustainability and Performance? no conflict

Optimize Power Consumption Demo

Green Path: End-to-End Service KPI Insights

Network Transport, from planning to carbon optimized routing

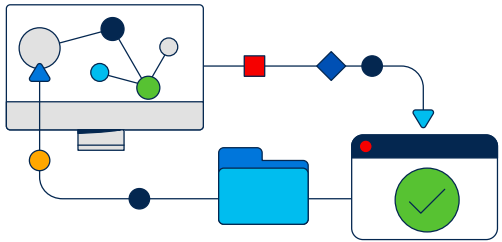
- Visibility of the power/carbon footprint of services over time
- Derive greater insights from the combination with other performance assurance metrics
- Make this information available to customers in an end-customer portal
- Take well-informed optimization decisions to reduce power consumption and lower OpEx of services



Zero Touch Provisioning (ZTP)

Travel Reduction and Time to Market

Challenge



Solution

ZTP helps IT teams quickly deploy network devices in a large-scale environment, eliminating most of the manual labor involved with adding them to a network.

ZTP reduces operating costs, and it is in line with Sustainability Initiatives. It helps to prioritize the right number of resources are used at the right time:
reduce waste, increase process efficiency and save energy:

ZTP covers Day0, Day1 and Day2 Services

ZTP can contribute to environmental, economic, and social sustainability, making it a good inclusion in a business's sustainability priorities.

How

1. Reduced time to get network devices operational
2. Multiples sites can be deployed in same time
3. Multivendor support Service Change
4. Automation Services

Reference

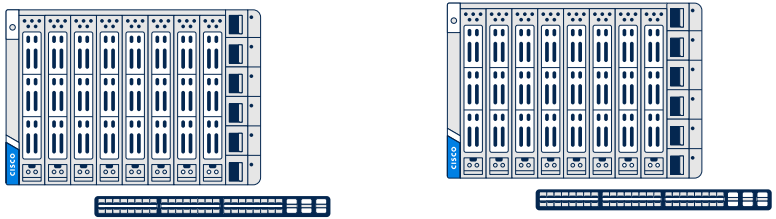
McKinsey Report - A future that works: Automation, employment, and productivity

ServiceNow Survey - Work at Lightspeed

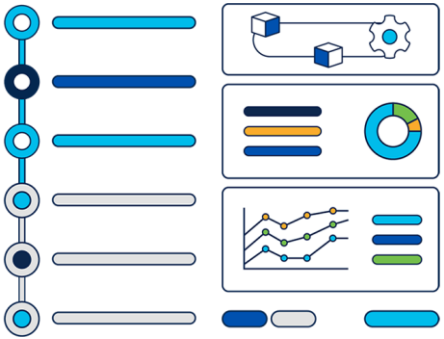
Workload Optimization

DC Cost Optimization

Challenge



Solution



How

1. Cisco Intersight Workload Optimizer study indicated that we are reducing resource utilization (CPU and memory) by 20% whilst maintaining performance. (2)
2. Cisco Services for Cisco Intersight Workload Optimizer
3. Data Center Ask the Experts (ATXs) Sessions

Reference

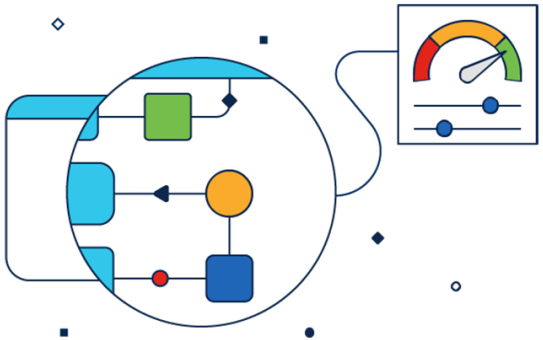
[1] September 2022 Data Centres and Data Transmission Networks Tracking report from the International Energy Agency (IEA)
[2] The Forrester Total Economic Impact™ Study commissioned by Cisco (February 2021

GHG Monitoring and Assurance

Real-time Data on Greenhouse Gas (GHG)

Challenge

Solution



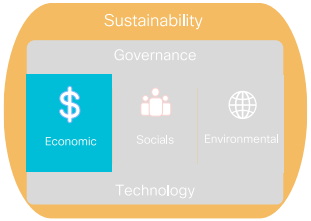
How

1. Migrating ASR1001-HX to C8500-12X provides 60% power reduction per Gb/s (1)
2. C8500 Intelligent thermal management schemes based on module complexity and installation altitude
3. Powering smart buildings. 90W Power over Ethernet enables a reduction in energy waste
4. Business Critical Services
   Cisco Migration Support Services

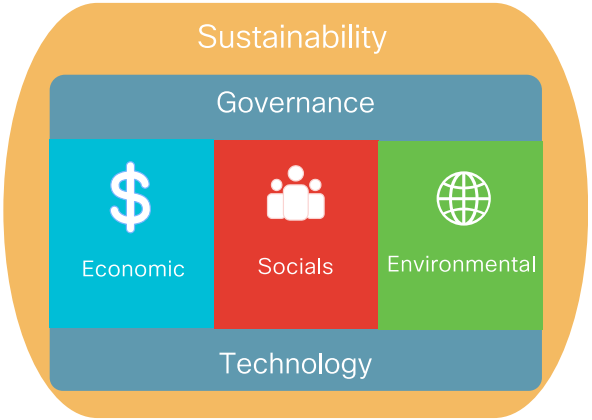
Total Sustainability Cost of Ownership

Identify Best Solutions

Challenge



Solution



How

1. Cisco Power Calculator
2. Environmental Sustainability Estimator in Partner Experience Platform
3. CX Energy Assessment Advisory Services
4. MT40 Smart power controller

Reference

Sustainability as a Business Driver – BRKGRN-1650

Towards Total Sustainability Cost of Ownership

of a Data Center Solution

Estimated Investments and expenses (thousands of €)		Now	Year 1	Year 2	Year 3	Year 4	Year 5
One-Off Costs (Capex)	Infrastructure	10,782	6,000	12,335	18,268	34,365	10,782
	Implementation Services	526	286	473	729	1,290	526
Recurring Costs (Opex)	Power & cooling	-	2,898	4,330	6,961	10,937	18,646
	Services & Operations	-	643	917	1,312	2,003	3,391
Sustainability	Estimated Internal Carbon Price Spain	-	77	78	97	180	337
	Estimated Internal Carbon Price Netherlands	-	300	301	375	698	1309
	Total	11,309	7,497	14,535	21,583	39,688	6,883

For Demo Purposes Only. Based on Hypothetical, Not Actual Customer Data.

Agenda

- Introduction
- NetZero Goal
- Achieving Sustainability Outcomes
  - Transformation Strategy
  - “Sustainability **in** IT”
  - “Sustainability **by** IT”
- Conclusion

Decarbonization

Digital Transformation Across the NetZero Lifecycle Future

Challenge

Solution

- Measurement and Reporting
- Big Data Analytics
- Cloud
- Internet of Things
- Digital Twin
- AI/ML
- Blockchain
- Drones & Imaging
- Augmented/Virtual Reality
- 5G
- Automation & Robotics

How

1. Identify goals, strategy and initiatives
2. Full-Stack Observability
3. Hybrid work
4. Smart solutions, Industrial IoT Solutions

Smart Building

Optimize Office Utilization

Challenge

Solution

Penn1
VR Experience

How

1. PoE-powered lighting with Catalyst switches
2. DNA Spaces for location analytics, ISE, DUO security
3. Meraki MV and Webex end device sensors
4. Smart Buildings Advisory Design Services. Why Smart Buildings are Becoming a Transformative Necessity

Reference

(1) Ellen Macarthur Foundation Fact Sheets
(2) A Smart Building Designed for the Future

Smart Buildings for Hybrid Work

Singapore - Cisco Office

Retrofit existing space

Leverage existing ports and Wi-Fi
Upgrade to PoE switching infrastructure
Add Endpoints: Cisco + Partners
Maximum real estate utilization

New York - Penn1

Penn1
VR

Tenant build-out

Converge building OT environment
Reduced power consumption and costs
Improved user experience
Data and insights

London - 22 BishopsGate

New build

Smart BMS, HVAC, CCTV
Converged IT, OT and energy management
Visibility and automation drives power efficiency
Reduce CapEx and OpEx

Hybrid Work

Business Continuity and Travel Reduction

Challenge

Solution

How

1. Cisco Webex Teams
2. Cisco Webex Board facilitates real-time design adjustments
3. Transitioned operations to fully remote in a single day
4. Cloud collaboration for your business.

Hybrid Work

Social Inclusion

Challenge

Solution

How

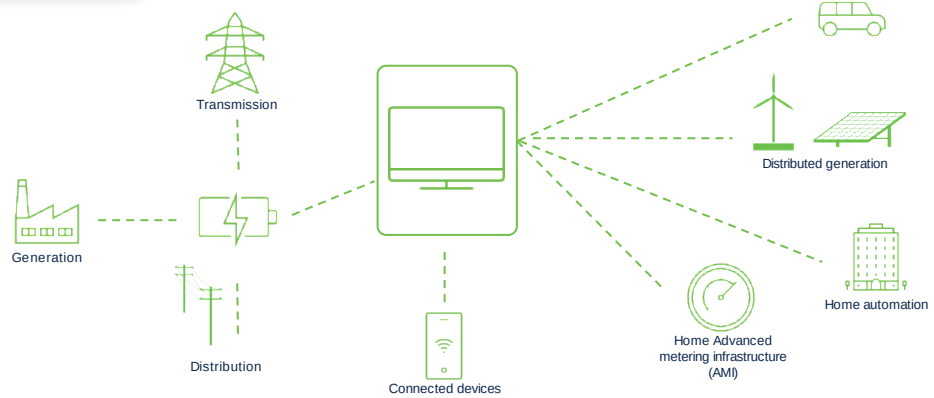
1. Tools and Video Conferencing Resource Utilization
2. Organization Work-life & Culture
3. Employees Career Growth, Well Being & Satisfaction
4. Hybrid Work-Sustainability Culture

Clean energy transition

Utilities Digitalization

Challenge

Solution



How

1. Cisco IoT Digital Utilities
2. Cisco Talos Intelligence tracking
3. Portfolio explorer for utilities
4. Security strategy advisory

Reference

(1) Digitalising Europe's Grids to Power the Energy Revolution, Diane Mievis
(2) Cisco Paper Digitalisation Of Energy

Enabling the Energy Transformation

Customer Examples

Design

- ✓ Designing the critical network infrastructure of the national grid operator.
- ✓ Project spanning across Security, IoT and Networking architectures.

Smart Grid

- ✓ Shifting to Smart Grid
- ✓ Developing a Multi-Utility OT Network Reference Architecture
- ✓ Future proof distribution network

IT | OT

- ✓ Supporting expansion.
- ✓ Segregation of IT & OT infrastructure to secure and streamline operations.
- ✓ Roadmap to migrate IT workloads to cloud.

Architecture | OT | Security

- ✓ Securing networks of wind turbines and electrical systems.
- ✓ Reducing cyber attack risks.
- ✓ Enabling the potential of digitization.

Next Gen batteries

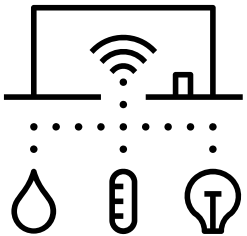
- ✓ Accelerating the use of technology in their giga-factories to produce next-generation batteries for a fossil-free future.
- ✓ Scaling up their production.

Water management system

Digital Water Solutions

Challenge

Solution



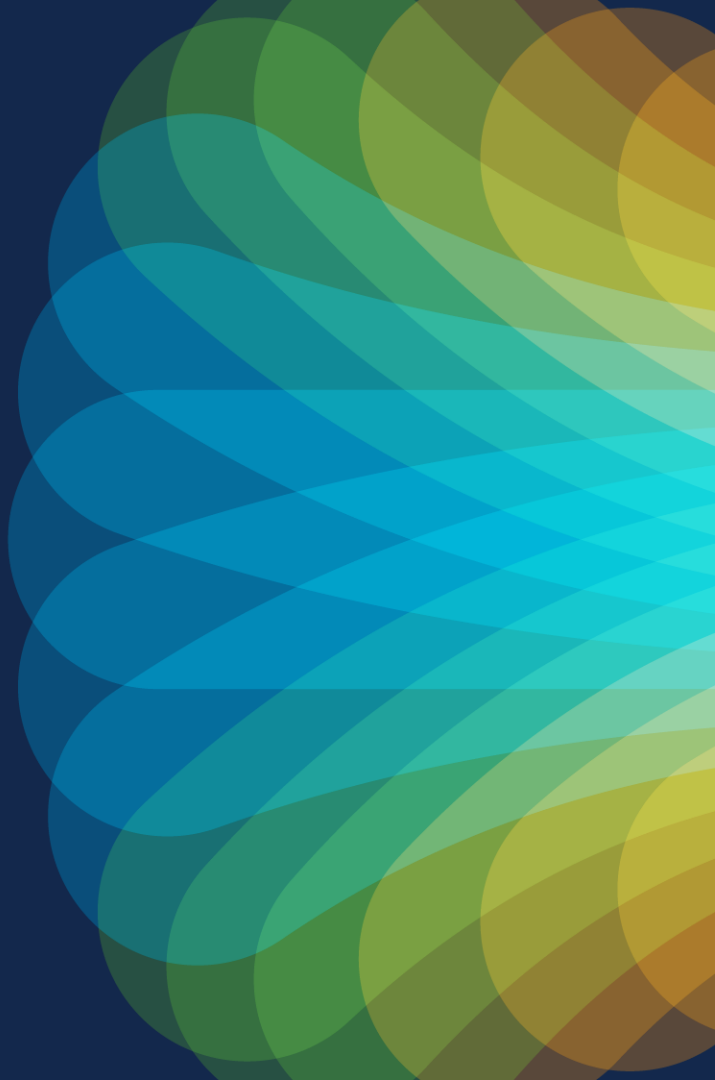
How

1. Modernizing and protecting water infrastructure
2. Cisco and Rockwell Automation Save Water
3. Portfolio explorer Water utilities
4. Security strategy advisory

Reference

(1) Water Infrastructure and Investment

Conclusion and Key Takeaways



Summary

- ✓ NetZero and Scopes
- ✓ Practical ways to achieve Sustainability Outcomes
- ❑ Translate your goals to actions

Reference

Sustainability

Sustainability

Cisco has set a goal to reach net zero greenhouse gas (GHG) emissions across its value chain by 2040. Cisco products and technologies can help to reduce energy consumption, which can result in a reduction of GHG emissions and waste, improve energy efficiency, and enable more circular business models. Together, Cisco solutions and longstanding focus on sustainability can help business and IT make the right choices now with an eye towards a more sustainable future.

If you are unable to attend a live session, you can watch it in the On-Demand Library after the event.

Monday, February 5 | 2:00 p.m.

TECGRN-2760

Design Thinking Working Session on Journey to Sustainability

Tuesday, February 6 | 8:00 a.m.

PSOGRN-1776

Best practices in sustainability leadership: Learn from Cisco's experts

Tuesday, February 6 | 11:45 a.m.

PSOGRN-1712

Sustainable Product Design: How designing with sustainability in mind can help your organization make progress on its climate goals

Tuesday, February 6 | 2:15 p.m.

IBOGRN-2229

Actionable Ideas to unlock sustainability

Tuesday, February 6 | 3:15 p.m.

PSOGRN-1848

Best Practice for a Sustainable Hybrid Workplace

Wednesday, February 7 | 10:10 a.m.

PSOGRN-2878

Assessing the Maturity of your Technology Capabilities and Accelerating your Sustainability Journey

Wednesday, February 7 | 12:30 p.m.

PSOGRN-2322

Re-imagine property and buildings using the network as a sensor

Wednesday, February 7 | 12:30 p.m.

DEVNET-2844

Measure and report network CO2eq emissions

Wednesday, February 7 | 2:50 p.m.

PSOCX-1389

Accelerate Your Sustainability Outcomes for a Greener Future

Wednesday, February 7 | 3:45 p.m.

PSOGRN-2446

Driving Sustainability Excellence: Exploring Key Data Considerations and Metrics Modeling Approaches

Thursday, February 8 | 9:45 a.m.

ITLGEN-1420

IT's Role in Data Driven Sustainability

Thursday, February 8 | 12:00 p.m.

PSOGRN-2201

Your Kick-Start for the Sustainability Journey

LABMER-2278 (Walk-in Lab)

Sustainability, Simplified with Cisco Meraki

Sustainability Demos in Showcase

NETWORKING

Design Smarter Workspaces

Build a more resilient, safe, and sustainable workplace with Meraki cameras and sensors. In this demo you'll learn how to revolutionize surveillance with intelligent, cloud-managed smart cameras and feel like your spaces have a sixth sense thanks to our sensors.

Create Smart, More Sustainable Buildings

Chart your path to smarter, more sustainable buildings with Catalyst and Meraki. Combine the power of Catalyst 9000 and Meraki switching infrastructure with Cisco Spaces and the Meraki IoT platform to manage and measure energy consumption and intelligently automate systems based on occupancy, schedule, and current environmental conditions.

Win with High-Performance DC Switches

Explore the benefits of the Cisco Nexus 9808 Switch, which is designed to keep you ahead of changing application architectures, data growth, and sustainability priorities. These switches deliver scalability and investment protection with 1/10/25/50/100/400G multispeed ports, while enhancing security and visibility with streaming telemetry, advanced analytics, and line-rate encryption (MACsec).

NETWORKING Compute

Leveraging Cisco UCS X-Series

Join us to learn about Cisco UCS X-Series, a modular server system managed from the cloud. You'll see how it meets the needs of modern applications and improves operational efficiency, agility, and scale through an adaptable, future-ready, design. We'll showcase the entire UCS X-Series portfolio and the 100G 6536 Fabric Interconnect.

MIG

Routed Optical Networking and Automation

Discover how Routed Optical Networking offers a simplified transport architecture through physical and service layer convergence. This architecture lays the groundwork for layer convergence via Private Line Emulation (PLE) and the use of high-speed Digital Coherent Optics (DCO). This architecture, paired with automation, facilitates multilayer, multivendor service lifecycle management, providing clear visibility and network assurance. This expedites the deployment of new services and results in reduced CapEx and OpEx.

- Energy Efficient Infrastructure
- Energy Management
- Sustainable Design

cisco Live!

Learn More!

Sustainable Solutions eBook

Sustainable CTO Report

IDC CIO Whitepaper

Intelligent Buildings

Learn more: ESG Reporting Hub & Purpose Report

Welcome to the Cisco ESG Reporting Hub

Here, you will find relevant information and data related to many aspects of our environmental, social, and governance (ESG) initiatives, performance, and policies.

Cisco's Purpose is to Power an Inclusive Future for All. Our FY23 Purpose Report summarizes how we are bringing this purpose to life. The report describes our commitments, goals, progress, and impact for the ESG topics that are significant to advancing Cisco's purpose and are important for our stakeholders. This ESG Reporting Hub includes in-depth information on reporting topics.

FY23 Purpose Report (PDF)

Visit: cisco.com/go/esg-hub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The bridge to possible
Thank you
cisco Live!


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Let's go