The road to Net Zero emissions

Advancing sustainable IT

Colin Seward, Chief Sustainability Office Technology Lead
Charlotte Dolan, Cisco Refresh, EMEA Sales Manager

PSOGRN-1009

Cisco Webex App

Questions?
Use Cisco Webex App to chat
with the speaker after the session

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
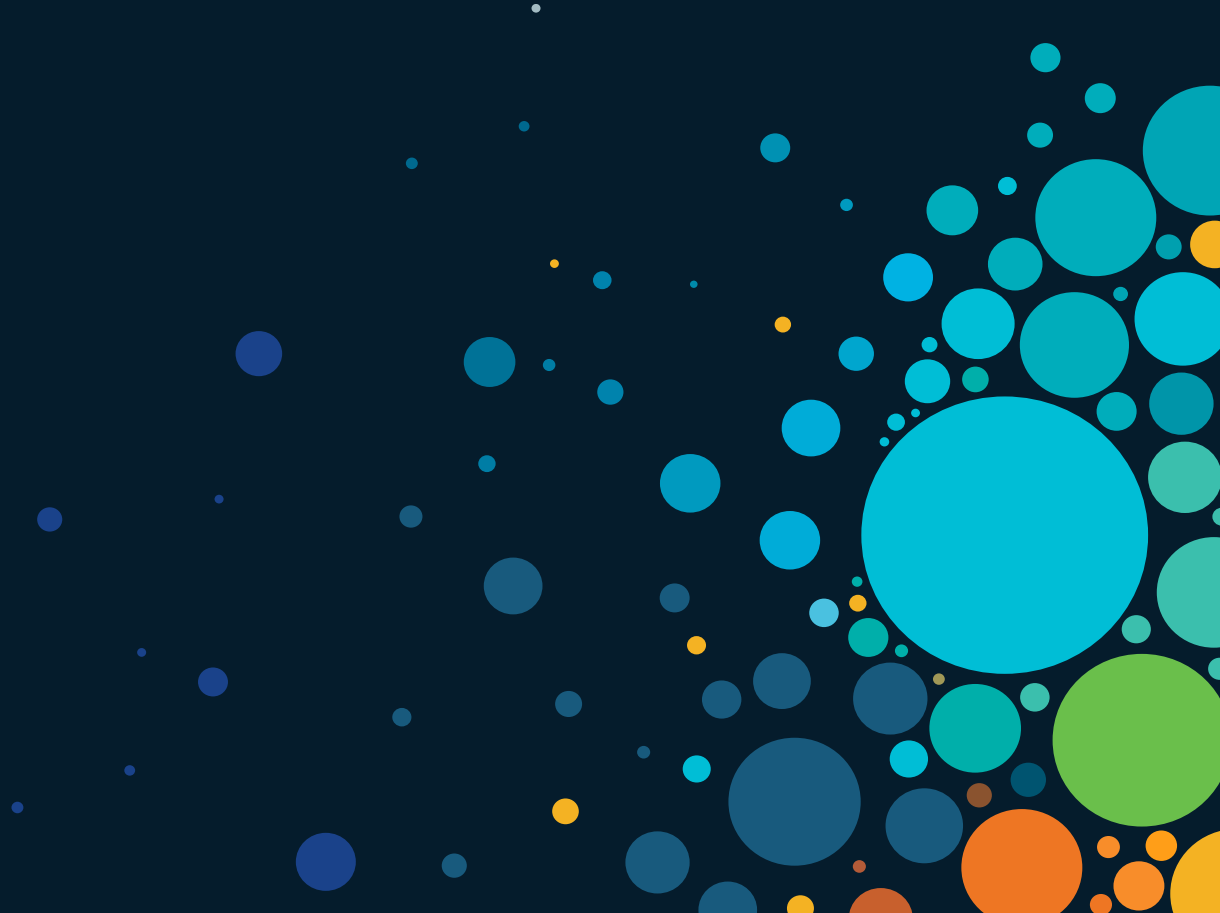4. Enter messages/questions in the Webex space

Webex spaces will be moderated
until February 24, 2023.

Agenda

- The Road to Net Zero

- The Circular Economy mindset

- Building our Sustainability Strategy for Cisco IT

- The role of Cisco Capital: Cisco Refresh & Cisco Green Pay

- Leveraging the Takeback and Reuse program

- Key Takeaways

The Road to Net Zero

Why now? What's changed?

⚠️ Urgent global problem How can IT help?	*"Transitioning to a net-zero world is one of the greatest challenges humankind has faced"* United Nations	# 96% of G250 companies report on ESG or sustainability[1]
👥 Customer, investor & employee pressure		
🔍 Legislation, reporting standards, scrutiny	~140 countries with a Net Zero target[2] **NEWS**	Important purchasing factor for consumers[3] # 67%	Hiring criteria for 69% of workers[4]
$ Business efficiencies & new opportunities		

[1] KPMG (2022) [2] Climate Action Tracker (2023) [3] Mckinsey (2020) [4] Gallup (2021)

CISCO *Live!*
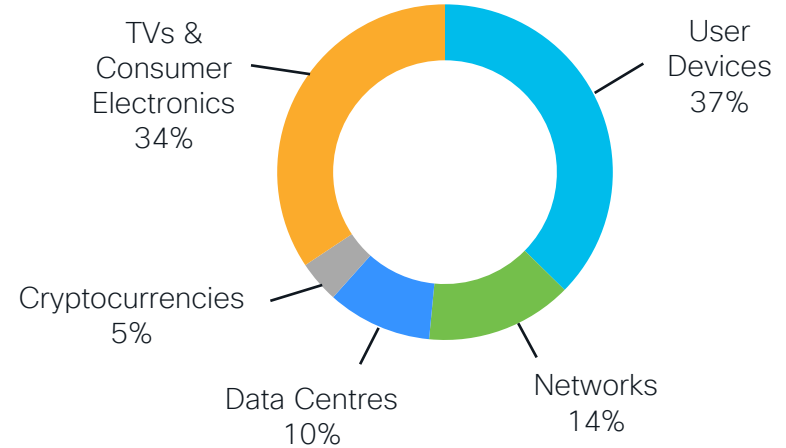
Putting IT in perspective

Total GHG emissions
~60 Billion tonnes CO2e
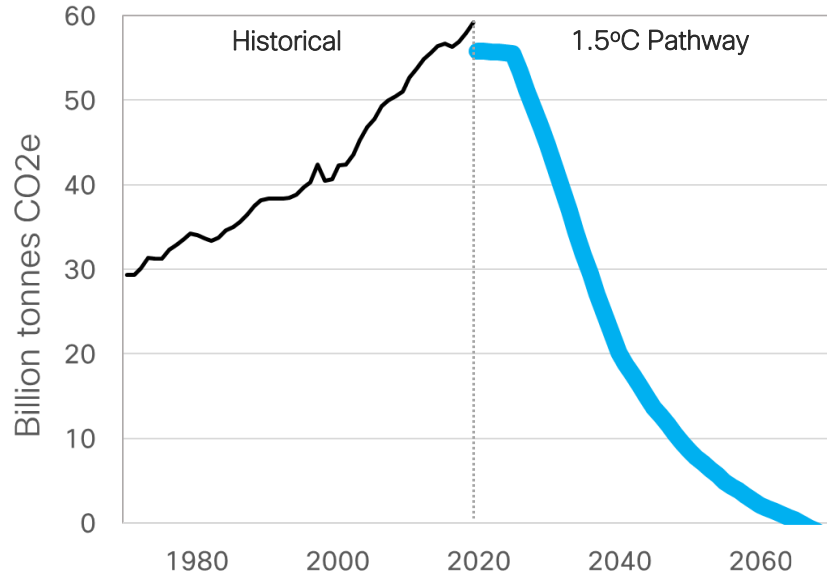
Based on data from: EDGARv7.0, Crippa et al (2021, 2022), IIASA (AR6 Scenario database)

Digital GHG emissions
~1.4 Billion tonnes CO2e (2-4% Total)

Digital = ICT + Entertainment & Media

Source: Freitag (2021), Berners Lee (2020), Malmodin (2018)

Dual Responsibility

"Sustainable IT"

- Renewable Energy
- Greener Data Centre
- Cloud Migration
- Energy Optimization
- Increased Asset Utilization
- Equipment Modernization
- Extended Life
- Remanufactured Equipment
- Supplier Management

2-4%

15%

"IT for Sustainability"

- 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)

Cisco's Goal

Net zero GHG emissions across our value chain by 2040

Our 2040 net-zero goals and near-term targets are approved by the Science Based Targets initiative (SBTi).

SCIENCE BASED TARGETS
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

CISCO *Live!*

Scope 1 & 2
Cisco operations: **1%**

Scope 3
Upstream transportation and distribution: **4%**

Scope 3
All other categories: **<1%**

Scope 3
Purchased goods & services: **23%**

Scope 3
Use of sold products: **72%**
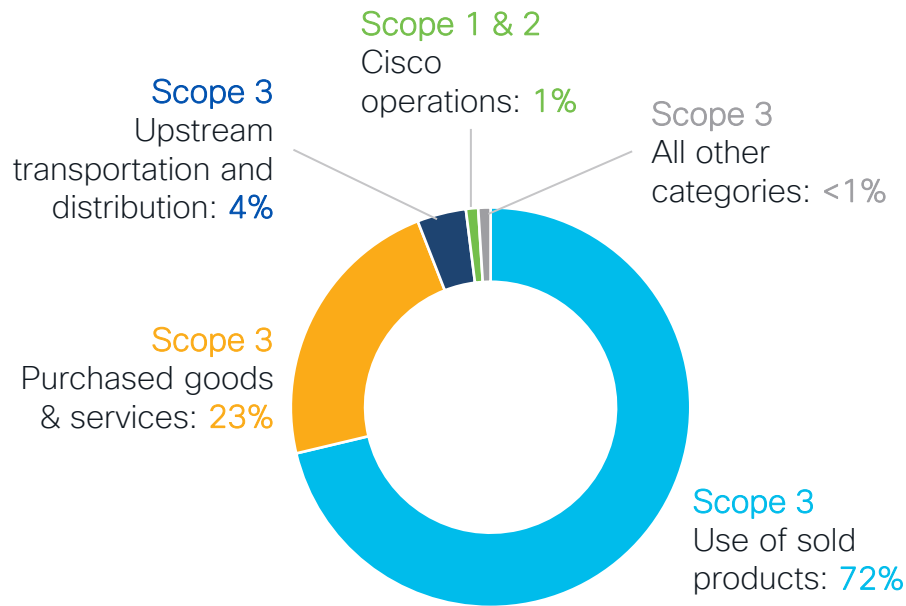
Source: Cisco's Fiscal Year 2022 ("FY 22") Scope 1, 2, and 3 GHG emissions

BRKGEN-1009

What Are Scope 1, 2, & 3

CO_2

CH_4

HFCs

PFCs

SF_6

Scope 3: Indirect

1. Purchased goods & services
2. Capital goods
3. Fuel & energy related activities
4. Transportation & distribution
5. Waste generated in operations
6. Business travel
7. Employee commuting
8. Leased assets

Scope 2: Indirect

- Purchased electricity, steam, heating, & cooling for own use

Scope 1: Direct

- Company facilities
- Company vehicles

Scope 3: Indirect

9. Transportation & distribution
10. Processing of sold products
11. Use of sold products
12. End-of-life treatment of sold products
13. Leased assets
14. Franchises
15. Investments

Upstream activities | **Reporting companies** | **Downstream activities**

Based on: Greenhouse Gas Protocol, Technical Guidance for Calculating Scope 3 Emissions

What Are Scope 1, 2, & 3 | Cisco

CO_2

CH_4

HFCs

PFCs

SF_6

Scope 3: Indirect
1. Purchased goods & services
2. Capital goods
3. Fuel & energy related activities
4. Transportation & distribution
5. Waste generated in operations
6. Business travel
7. Employee commuting
8. Leased assets

Scope 2: Indirect
- Purchased electricity, steam, heating, & cooling for own use

Scope 1: Direct
- Company facilities
- Company vehicles

Scope 3: Indirect
9. Transportation & distribution
10. Processing of sold products
11. Use of sold products
12. End-of-life treatment of sold products
13. Leased assets
14. Franchises
15. Investments
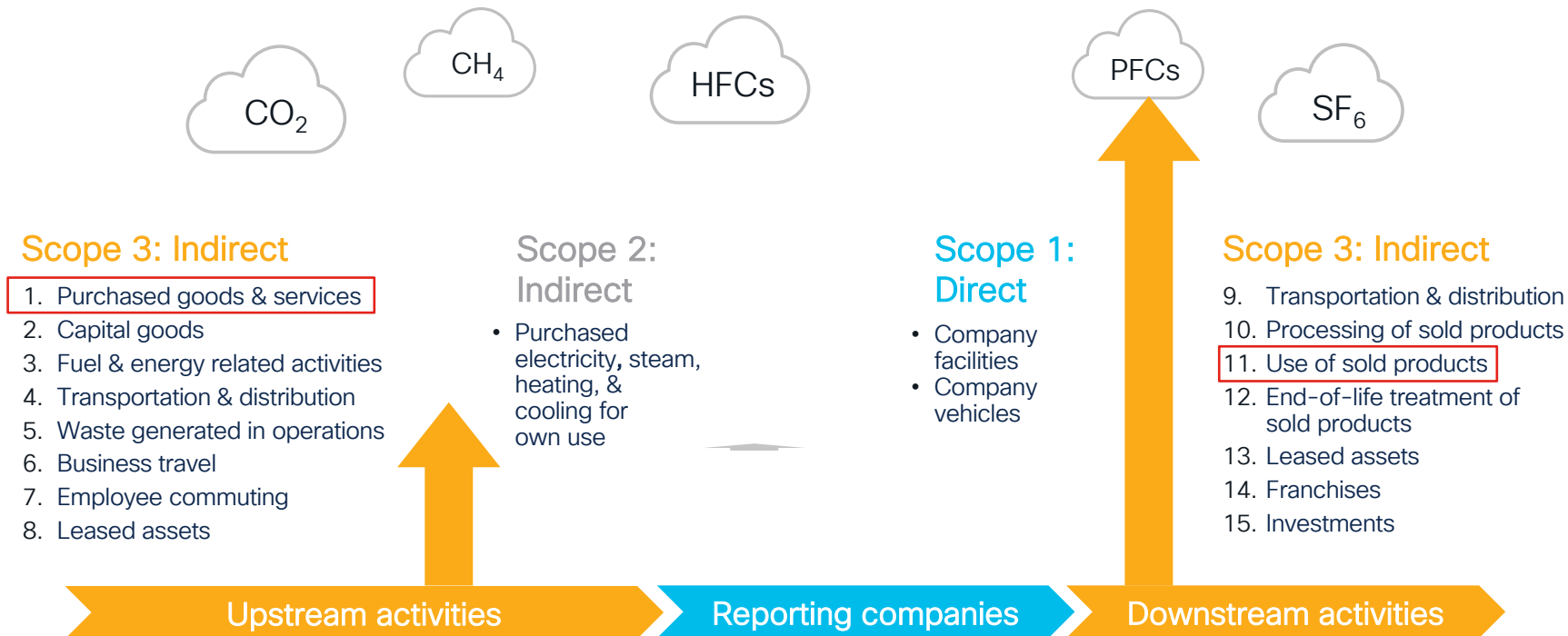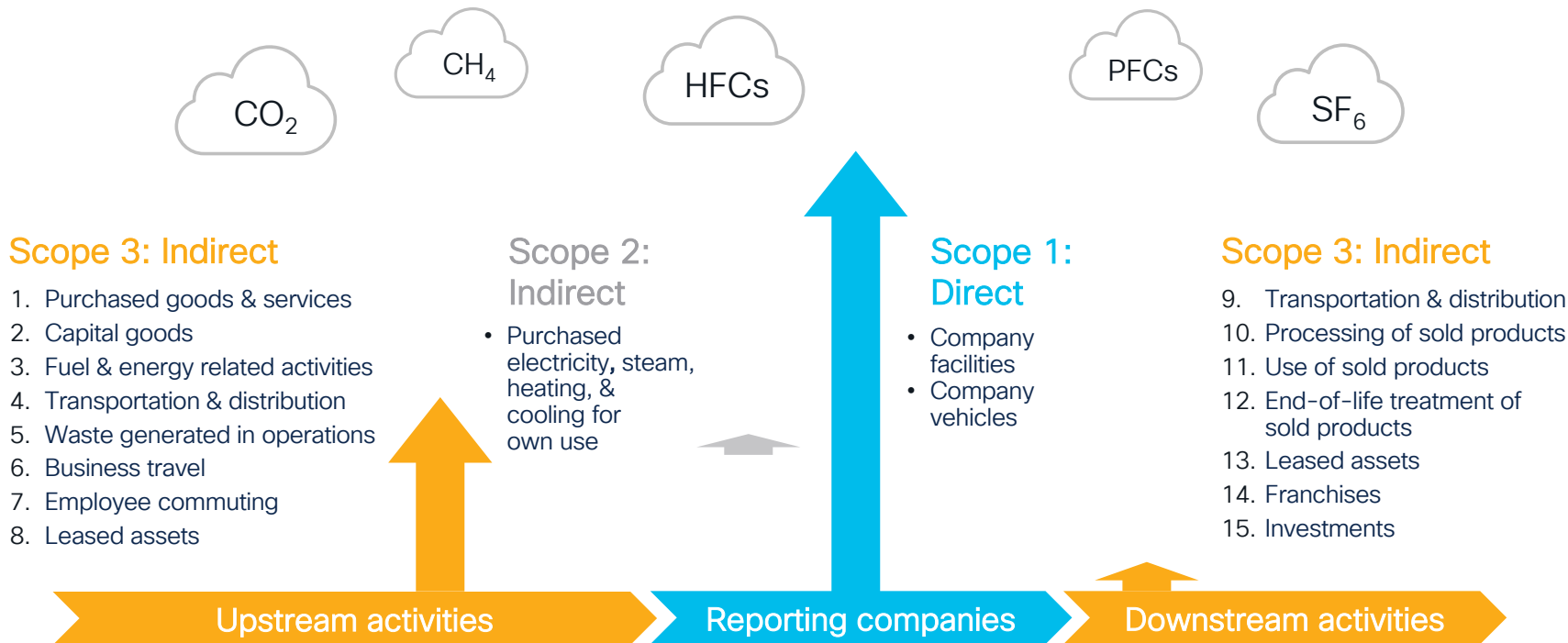
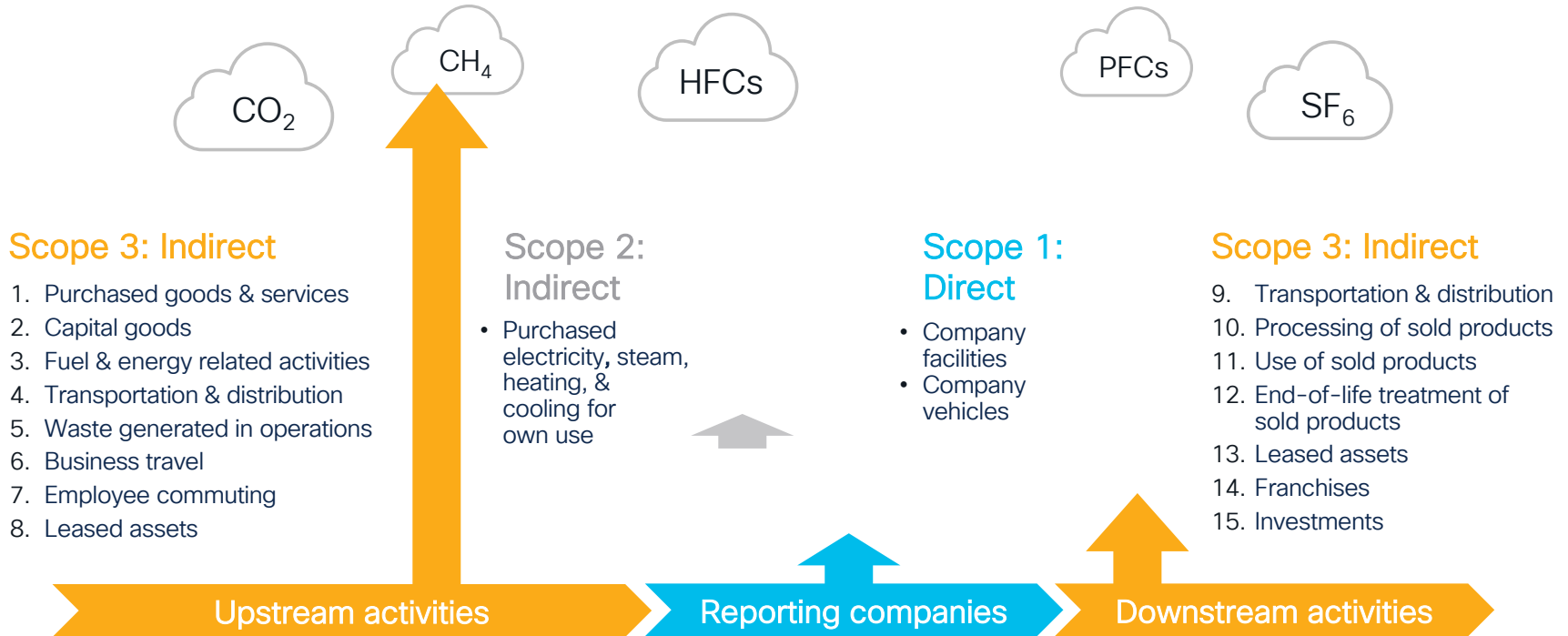**Upstream activities** → **Reporting companies** → **Downstream activities**

Based on: Greenhouse Gas Protocol, Technical Guidance for Calculating Scope 3 Emissions
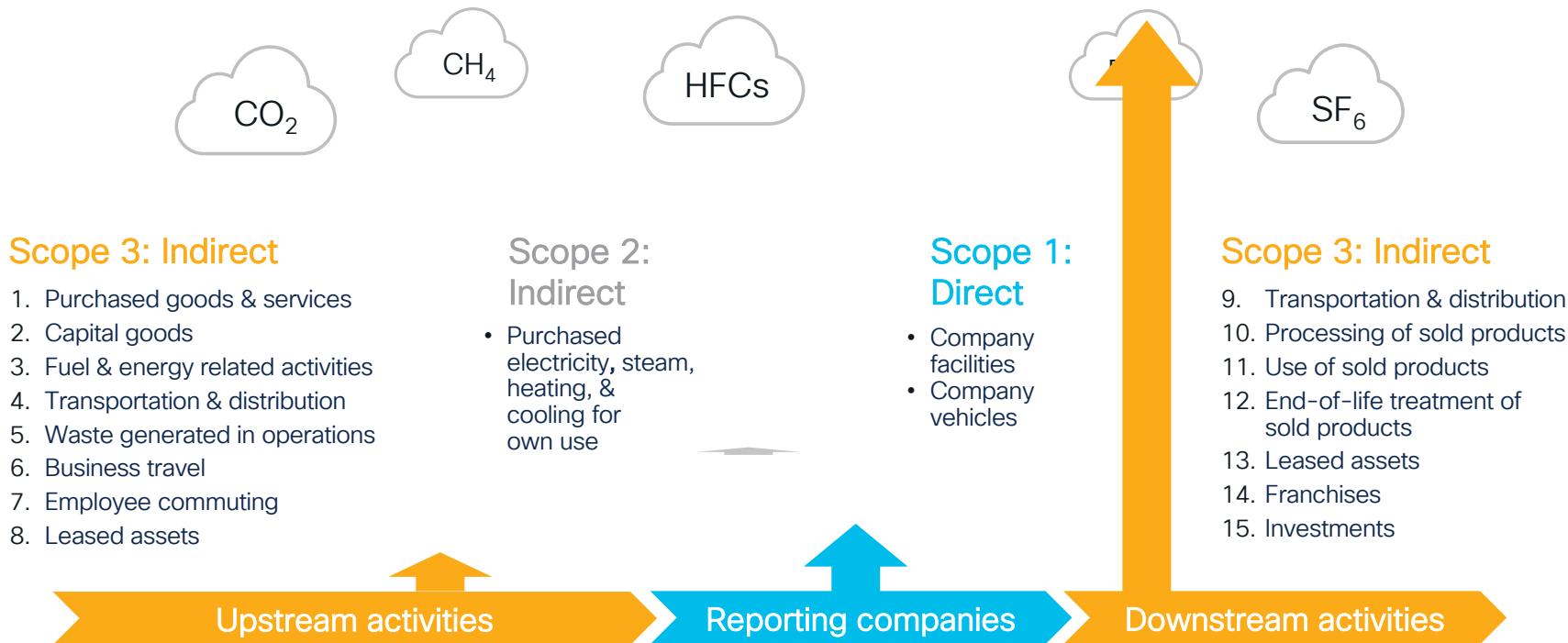
What Are Scope 1, 2, & 3 | Transport Services

CO_2

CH_4

HFCs

PFCs

SF_6

Scope 3: Indirect

1. Purchased goods & services
2. Capital goods
3. Fuel & energy related activities
4. Transportation & distribution
5. Waste generated in operations
6. Business travel
7. Employee commuting
8. Leased assets

Scope 2: Indirect

- Purchased electricity, steam, heating, & cooling for own use

Scope 1: Direct

- Company facilities
- Company vehicles

Scope 3: Indirect

9. Transportation & distribution
10. Processing of sold products
11. Use of sold products
12. End-of-life treatment of sold products
13. Leased assets
14. Franchises
15. Investments

Upstream activities

Reporting companies

Downstream activities
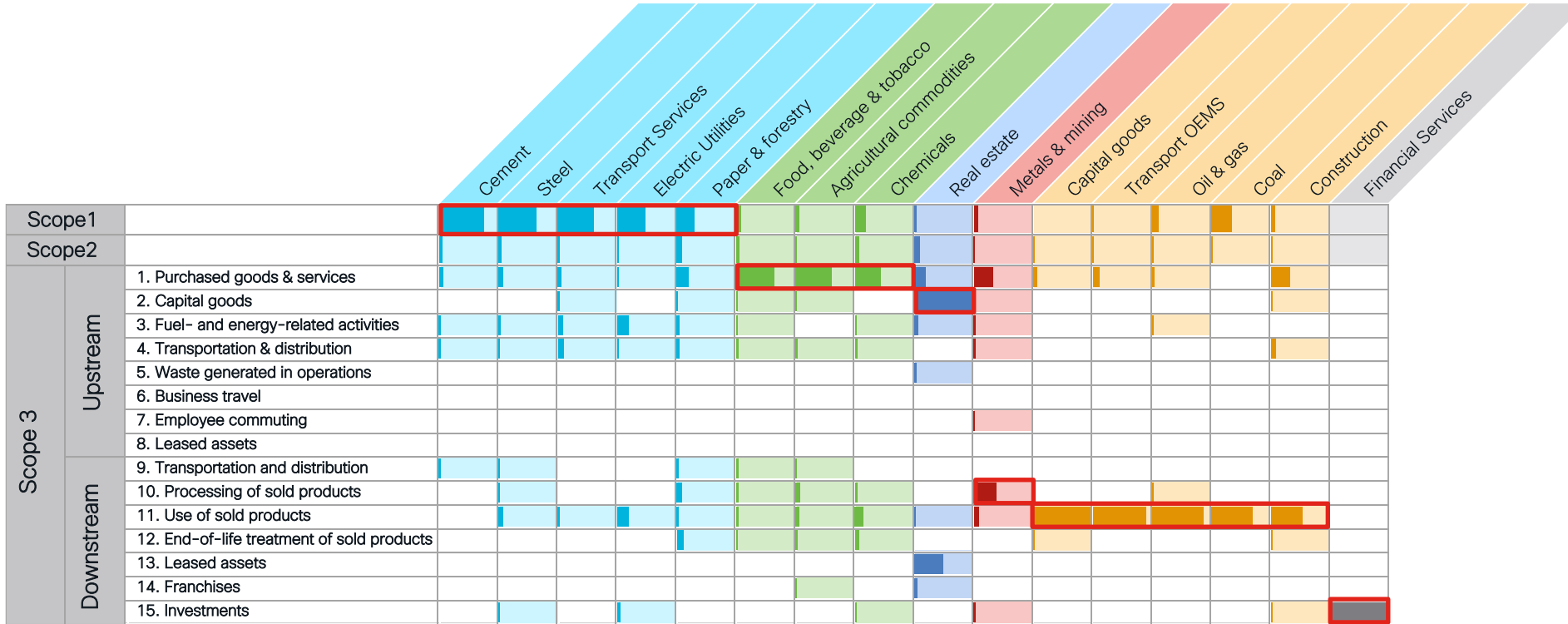
Based on: Greenhouse Gas Protocol, Technical Guidance for Calculating Scope 3 Emissions

Based on data from CDP (2023)

What Are Scope 1, 2, & 3 | Food & Beverage

CO_2

CH_4

HFCs

PFCs

SF_6

Scope 3: Indirect

1. Purchased goods & services
2. Capital goods
3. Fuel & energy related activities
4. Transportation & distribution
5. Waste generated in operations
6. Business travel
7. Employee commuting
8. Leased assets

Scope 2: Indirect

- Purchased electricity, steam, heating, & cooling for own use

Scope 1: Direct

- Company facilities
- Company vehicles

Scope 3: Indirect

9. Transportation & distribution
10. Processing of sold products
11. Use of sold products
12. End-of-life treatment of sold products
13. Leased assets
14. Franchises
15. Investments

Upstream activities

Reporting companies

Downstream activities

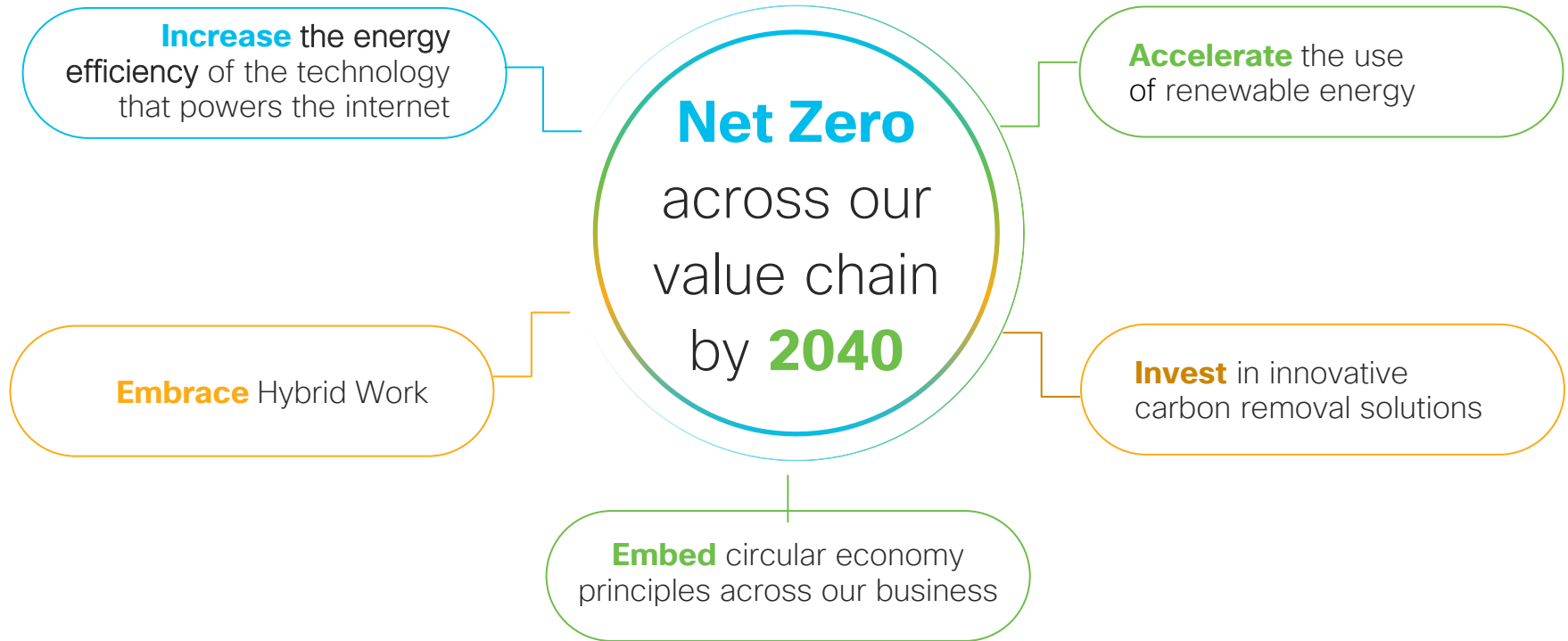Based on: Greenhouse Gas Protocol, Technical Guidance for Calculating Scope 3 Emissions

Based on data from CDP (2023)

What Are Scope 1, 2, & 3 | Oil & Gas
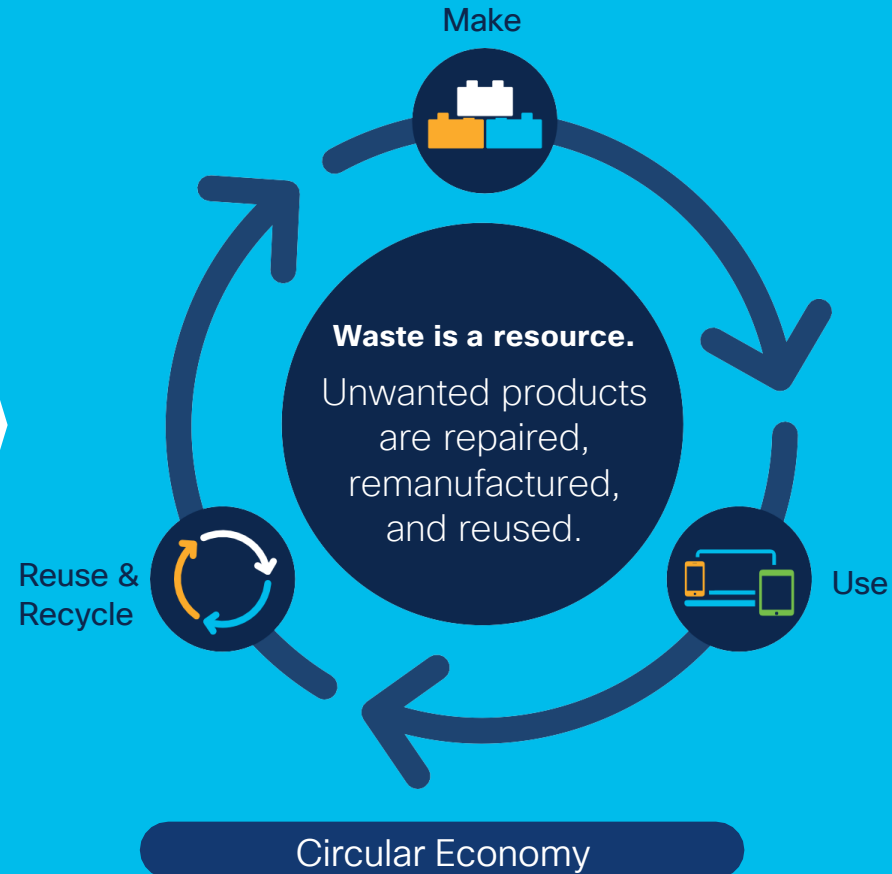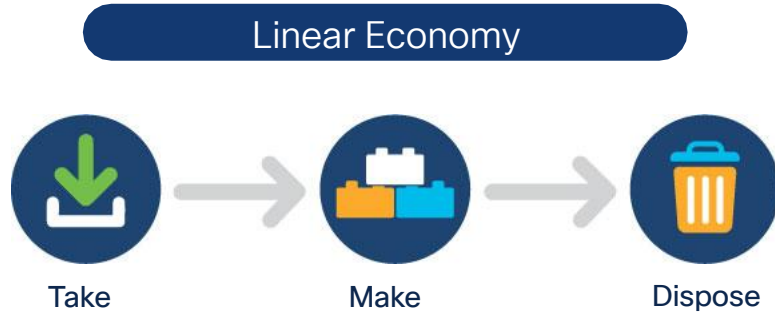
CO_2

CH_4

HFCs

SF_6

Scope 3: Indirect

1. Purchased goods & services
2. Capital goods
3. Fuel & energy related activities
4. Transportation & distribution
5. Waste generated in operations
6. Business travel
7. Employee commuting
8. Leased assets

Scope 2: Indirect

- Purchased electricity, steam, heating, & cooling for own use

Scope 1: Direct

- Company facilities
- Company vehicles

Scope 3: Indirect

9. Transportation & distribution
10. Processing of sold products
11. Use of sold products
12. End-of-life treatment of sold products
13. Leased assets
14. Franchises
15. Investments

Upstream activities

Reporting companies

Downstream activities

Based on: Greenhouse Gas Protocol, Technical Guidance for Calculating Scope 3 Emissions

Based on data from CDP (2023)

Scope Variation by Industry

Based on data from CDP (2023)

Cisco's Strategies to get to Net Zero

Increase the energy efficiency of the technology that powers the internet

Accelerate the use of renewable energy

Net Zero across our value chain by **2040**

Embrace Hybrid Work

Invest in innovative carbon removal solutions

Embed circular economy principles across our business

The Circular Economy mindset

How we define circular economy

Linear Economy

Take → Make → Dispose

Circular Economy

Make

Waste is a resource.

Unwanted products are repaired, remanufactured, and reused.

Reuse & Recycle

Use

Cisco's circular design strategy

Materials • **Standardize** • **Package** • **Power** • **Reuse**

Materials selection

Standardize and modularize

Sustainable packaging & accessories

Smart energy consumption

Disassembly, repair, and reuse

Circularity in our products and packaging

No Paint Project

Eliminating oil-based wet paint on Catalyst 9K will save approximately 300 tons of CO2e and 200 tons of hazardous VOCs (Volatile Organic Compounds) over 5 years.

Fiber-Based Packaging

New Webex Share packaging eliminates plastics, using molded pulp trays and paper to wrap cords and accessories.

Design for Reuse, Repair, & Recycling

UCS-X servers are engineered to be quickly assembled and disassembled. The latest generation uses recycled plastic parts, recycled foam packaging, no wet paint, and has a 62% reduction in powder coat compared to the prior generation.

Product Modularity

This "futureproof" IR1101 router can adapt to 5G by switching out a small module.

Cisco's public sustainability goals

90% absolute reduction in Scope 1 & 2 GHG emissions[4]

100% product return pledge

CAPITAL EQUIPMENT PLEDGE
accelerating the circular economy

50% of plastic used in our products (by weight) will be made of recycled content [3]

80% of our component, manufacturing, and logistics suppliers by spend will have a public absolute GHG emissions reduction target

60% absolute reduction in Scope 1 & 2 GHG emissions worldwide[1]

85% of our global electricity from renewable sources

10 percentage-point improvement in large rack-mounted-equipment system power efficiency [2]

75% reduction in foam used in product packaging as measured by weight[4]

70% of our component and manufacturing suppliers by spend will achieve a zero-waste diversion rate at one or more sites

Net Zero For global Scope 1, 2 & 3 GHG emissions

30% absolute reduction in Scope 3 emissions from purchased goods and services, upstream transportation and distribution, and use of sold products [4]

50% increase in product packaging cube efficiency[4]

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

| 2022 | 2025 | 2030 | 2040 |

CISCO *Live!*

20

So, what about IT? Where do you start?

…. haven't we all been doing this for years?
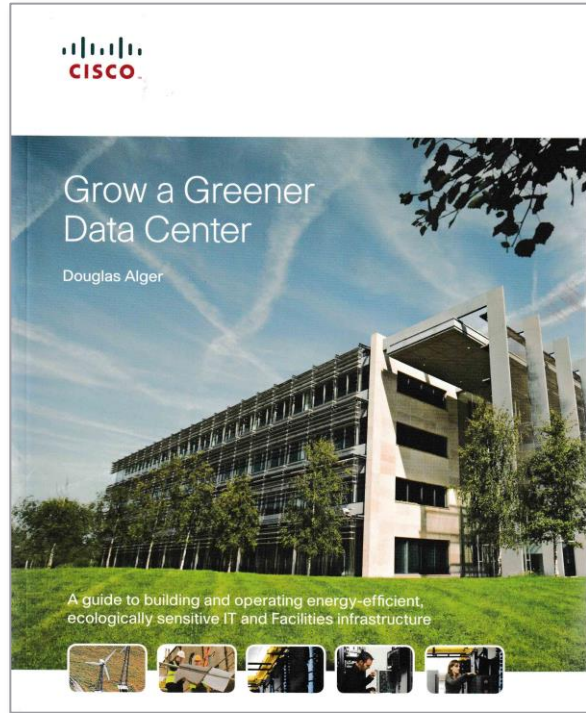
"Grow a Greener Data Center"
by Doug Alger, Cisco Press, 2009

- Explores how to green your DC project
- Offers green strategies for DC technologies
- Presents IT and facilities design strategies that can save $'s
- Reveals financial incentive programs to help pay for green Data Center initiatives
- Outlines Data Center efficiency metrics
- Highlights the lessons of dozens of case studies
- Addresses broader green business practices

Building our IT Sustainability Strategy

Researching Industry, viewpoints and standards

- ✓ Books, videos, scientific papers, specialist training & certification
- ✓ Supplier briefings, peer discussions, analyst reviews
- ✓ UN SDG, IPCC, ITU, GeSI, SBTi, GSMA, CDP, GRI, SASB, TCFD

Understanding our company emissions

- ✓ What goals did we have? Where did we report?
- ✓ Who completed the report? How did they do calculations?
- ✓ What best practices existed? Who can we partner with?

Building our IT Strategy & setting goals

- ✓ What was our IT footprint? Where was the opportunity?
- ✓ Drafted framework & objectives Reviewed with service owners
- ✓ Calculated a baseline, set goals, started to measure progress

Internal Resources

- ESG Team / Reporting
- Circular Economy Team
- Supply Chain
- Reverse Logistics / Cisco Refresh
- Procurement
- Global Energy Management
- Product Engineering / Product Compliance
- Country Digital Acceleration / Sales & Marketing

Cisco's public sustainability goals

60% absolute reduction in Scope 1 & 2 GHG emissions worldwide[1]

85% of our global electricity from renewable sources

10 percentage-point improvement in large rack-mounted-equipment system power efficiency[2]

50% of plastic used in our products (by weight) will be made of recycled content[3]

75% reduction in foam used in product packaging as measured by weight[4]

50% increase in product packaging cube efficiency[4]

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

90% absolute reduction in Scope 1 & 2 GHG emissions[4]

80% of our component, manufacturing, and logistics suppliers by spend will have a public absolute GHG emissions reduction target

70% of our component and manufacturing suppliers by spend will achieve a zero-waste diversion rate at one or more sites

100% product return pledge

CAPITAL EQUIPMENT PLEDGE

30% absolute reduction in Scope 3 emissions from purchased goods and services, upstream transportation and distribution, and use of sold products[4]

Net Zero For global Scope 1, 2 & 3 GHG emissions

2022 | **2025** | **2030** | **2040**

[1] FY07 base year
[2] FY16 base year
[3] Excluding those contained in commodity components sourced from suppliers (e.g., plastic screws, fans, and cables)
[4] FY19 base year

Carbon Footprint

What it is?[1]
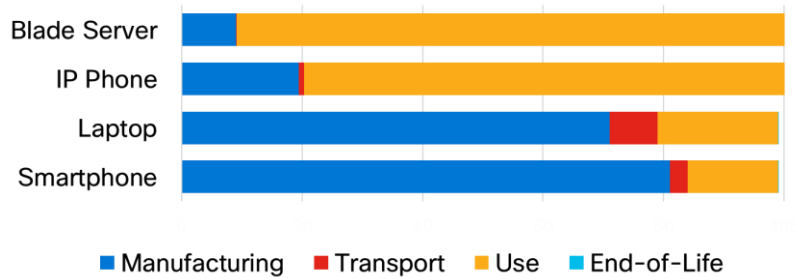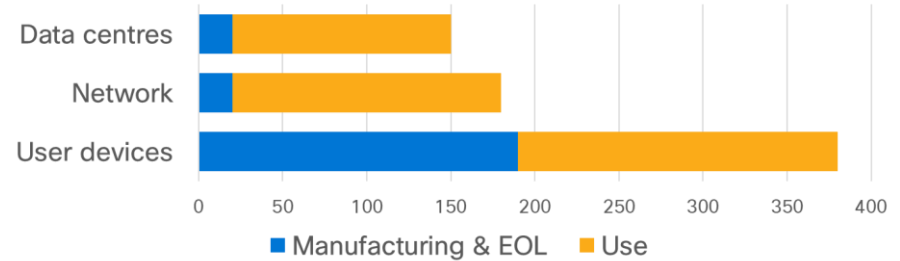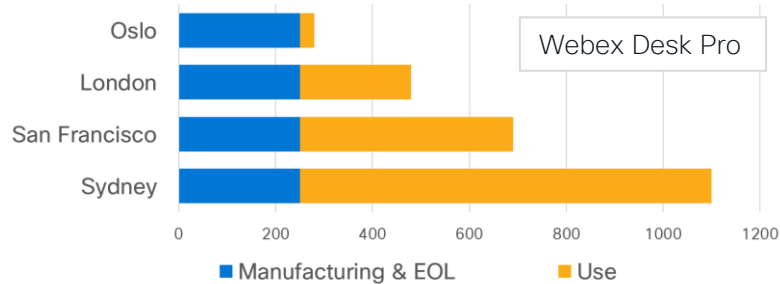
Blade Server, IP Phone, Laptop, Smartphone

■ Manufacturing ■ Transport ■ Use ■ End-of-Life

How many are there?[3]

Data centres, Network, User devices

0 50 100 150 200 250 300 350 400

■ Manufacturing & EOL ■ Use

Where it is?[2]

Oslo, London, San Francisco, Sydney

Webex Desk Pro

0 200 400 600 800 1000 1200

■ Manufacturing & EOL ■ Use

Systems thinking[4]

Data centre — WAN — Wired / Cellular — User device

What did we include in our IT sustainability framework?

Circularity Principles

Focus on key stages of our IT service lifecycle: design, procurement, operations, and asset recovery and reuse
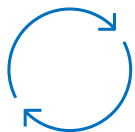
Company Alignment

Align and support corporate strategies and initiatives, and provide data foundation for company reporting

Supported by Culture

Increase awareness of industry standards and Cisco & IT emissions. Unleash employee passion, innovation and creativity

Special Areas of Focus

Alignment with goals for reducing Scope 1 & 2 emissions

Cisco IT Sustainability Framework

Align & Support Company Sustainability Goals & Initiatives

- Net Zero Goals
- Energy efficient products
- Renewable Energy
- Hybrid Work
- Carbon Removal
- Circular Economy
- Reporting

Sustainable by Design	Responsible Procurement	Optimization of Operations	Increase Asset Recovery & Reuse	Energy Management
Design principles / Best practices	Preferred Suppliers	Holistic view / Service reviews	Consider during design	Source renewables
Life Cycle & System Thinking	Supplier Code of Conduct	Maintenance / Extend Life	Leverage Cisco best practices	Maximize efficiency
Review impact with clients	Supplier scorecard	Asset utilization/ Remove excess	Asset traceability	Monitor use

Employee Culture

- Events & Education
- Site Green Teams
- Innovation Challenge
- Cisco Greenhouse
- External Speakers

Systems Thinking with Suppliers

Sustainable by Design	Responsible Procurement	Optimization of Operations	Increase Asset Recovery & Reuse	Energy Management
Cisco Refresh	Cisco Green Pay	Dashboards e.g. Nexus Cloud	Cisco Takeback and Reuse	Energy Optimization Assessment Service

Closing the loop
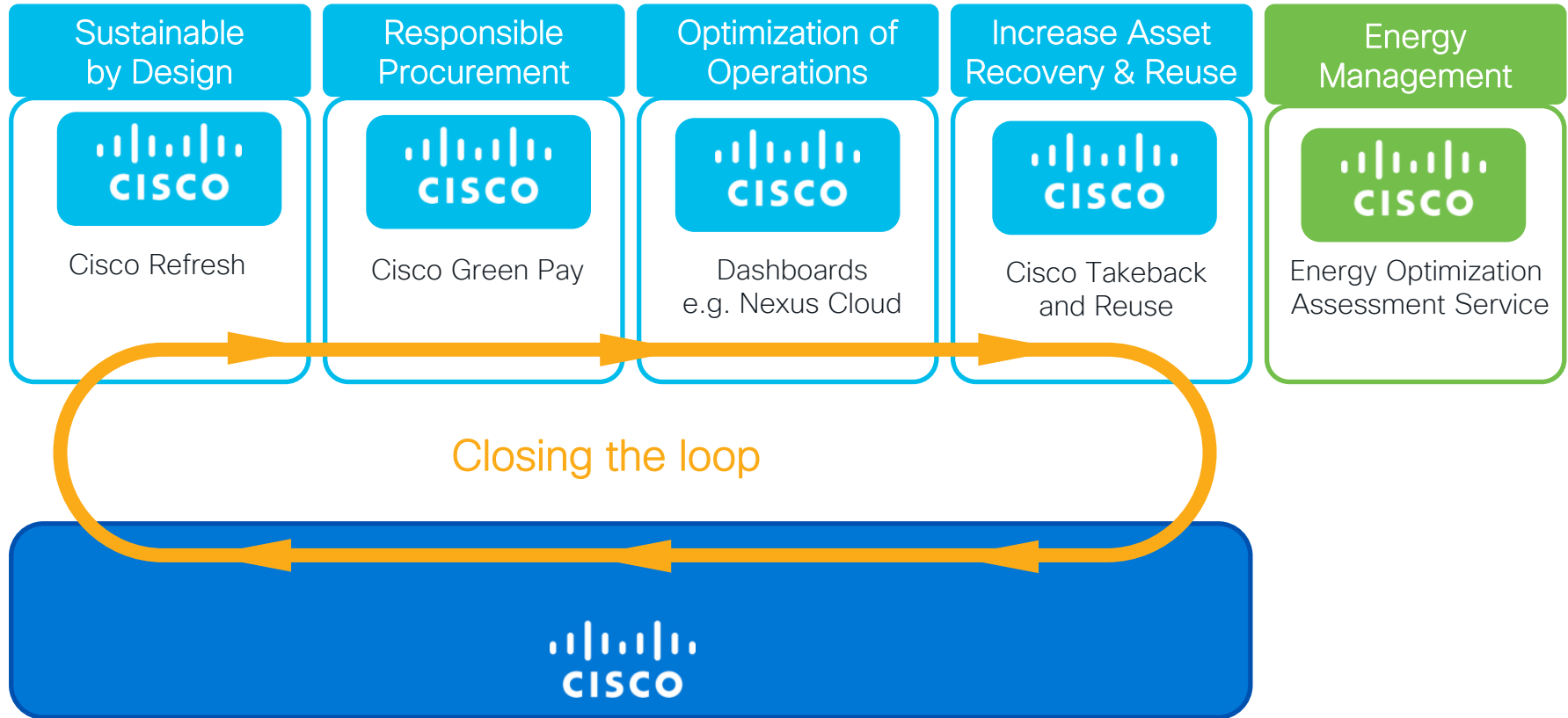
The Role of Remanufactured Equipment

What is Cisco Refresh?

Cisco Refresh is Cisco's pre-owned equipment business. Buying remanufactured products can be a valuable option when – due to budget, timing, sustainability priorities, or other challenges – you need a more flexible alternative.

Cisco Refresh offers certified equipment (current and end of sale) to meet the needs of both current and legacy environments.

Cisco Certified

Channel-friendly

All required engineering upgrades

Same as new Cisco warranty

Same as new Cisco security

SMARTnet eligible

| Switching | Routing | Data Center | UCS | Optical | Wireless | Security |

Remanufactured V Refurbished

A **remanufactured** part is a used OEM part that has been stripped down and restored to like-new quality not only in its appearance, but in its performance, and parts are almost always rebuilt or replaced.

- Highest level of screening, testing and repairing

- Shipped with a valid software license and comes with the same warranty as the equivalent new equipment

- Fully certified and compliant with manufacturers standards

A **refurbished** product is a defective product that has been lightly or never used, returned and then subsequently restored by the manufacturer or a third-party company that specializes in refurbishing.

- Fully functional but may include down version hardware and/or cosmetic imperfections

- No software or license attached

- Excess used product inventory that has a useful life

CISCO *Live!*
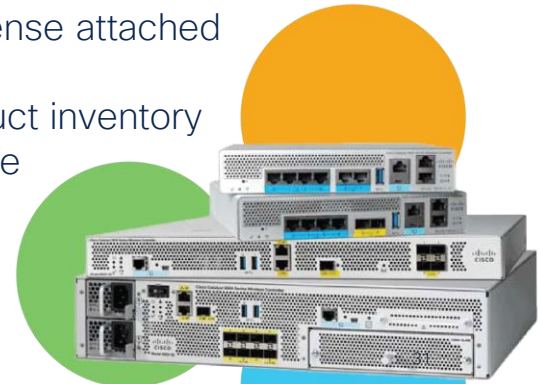
Discover the benefits of Cisco Refresh

Peace of Mind:
Same Cisco quality, performance, and support as for new products

Maximize IT Spending Budget/Low Total Cost of Ownership:
Extremely competitive pricing allows you to get the most from even a very limited technology budget

Optimum Performance: Latest hardware and software upgrades help ensure maximum performance, reliability, compatibility and future scalability

Low Risk:
Same-as-new warranty

Cisco Refresh (Certified Remanufactured)

By region, segment, industry and technology

Region			Segment				
Americas	APJC	EMEAR	Enterprise	Commercial	Public Sector	Service Provider	Small
✓	✓	✓	✓	✓	✓	✓	✓

	Consumer			Industrial			Public Sector			
Technology	Financial Services	Retail	Sports and Entertainment	Energy	Manufacturing	Cities and Communities	Education	Government	Healthcare	Transportation
Networking	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Data Center	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mobility and Wireless	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Collaboration	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Security*	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IoT*	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cloud*	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Software**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

* Cisco Refresh supports the hardware elements of Security, IoT and Cloud, and of which new software can be sold
**Cisco Refresh sells software and licensing as "new", not as –RF

Cisco pledge statement

100% Product return

- Offer comprehensive warranty, replacement, service, and repair for all products to extend useful product lifetime and minimize obsolescence

- Provide product return pickup and transport at no cost for any customer worldwide upon request

- Repurpose returned product, subsystems, components, and commodities, including closed loop return to new product manufacturing

- Establish alternative commercial models that promote product return including: Purchase trade-in, banked credit, leasing, and product-as-a-service

Chuck Robbins
CEO at Cisco

Product Takeback: simple, secure, sustainable

Cisco Takeback & Reuse Program
Our tools were developed to meet your needs based on your equipment location and condition

Cisco Returns Program
Available in 100+ countries

Send IT Back Mobile App
Available in UK, EU and U.S.

Customer Recycling Solutions
Available in 100+ countries

Visit the Cisco Takeback and Reuse Program Website

Cisco Green Pay

Cisco Green Pay
Helps you

Move beyond product ownership, support circularity, and reduce waste — 1

Access Cisco's sustainable technologies — 2

Eliminate up-front hardware acquisition costs — 3

Streamline total project costs into a fixed and predictable payment — 4

Return equipment at no cost — 5

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

Product recovered by Cisco
Free of charge
To be reused or recycled
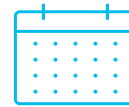
Available through
July 29, 2023

Available in select countries in the Americas, EMEA and APJC

How does it work?

Cisco Green Pay
Circular IT Payment Solution

<=5% — Sustainability incentive

>=95% — Cisco Hardware remaining cost

Predictable fixed payments

Includes option to blend software and services into payments

Up to 20 Quarters

Return
All freight and shipping costs covered

Upgrade
To latest sustainable technologies

Extend
Keep current equipment for one year

Hear from COSENTINO

- From buying to consuming IT:
- COSENTINO's Journey to build more sustainable IT

- When: Thursday, February 9, 13:00
- Where: Impact Theater

- Schedule Now: IMP-2743

CISCO Live!

Bringing it all Together

CISCO *Live!*
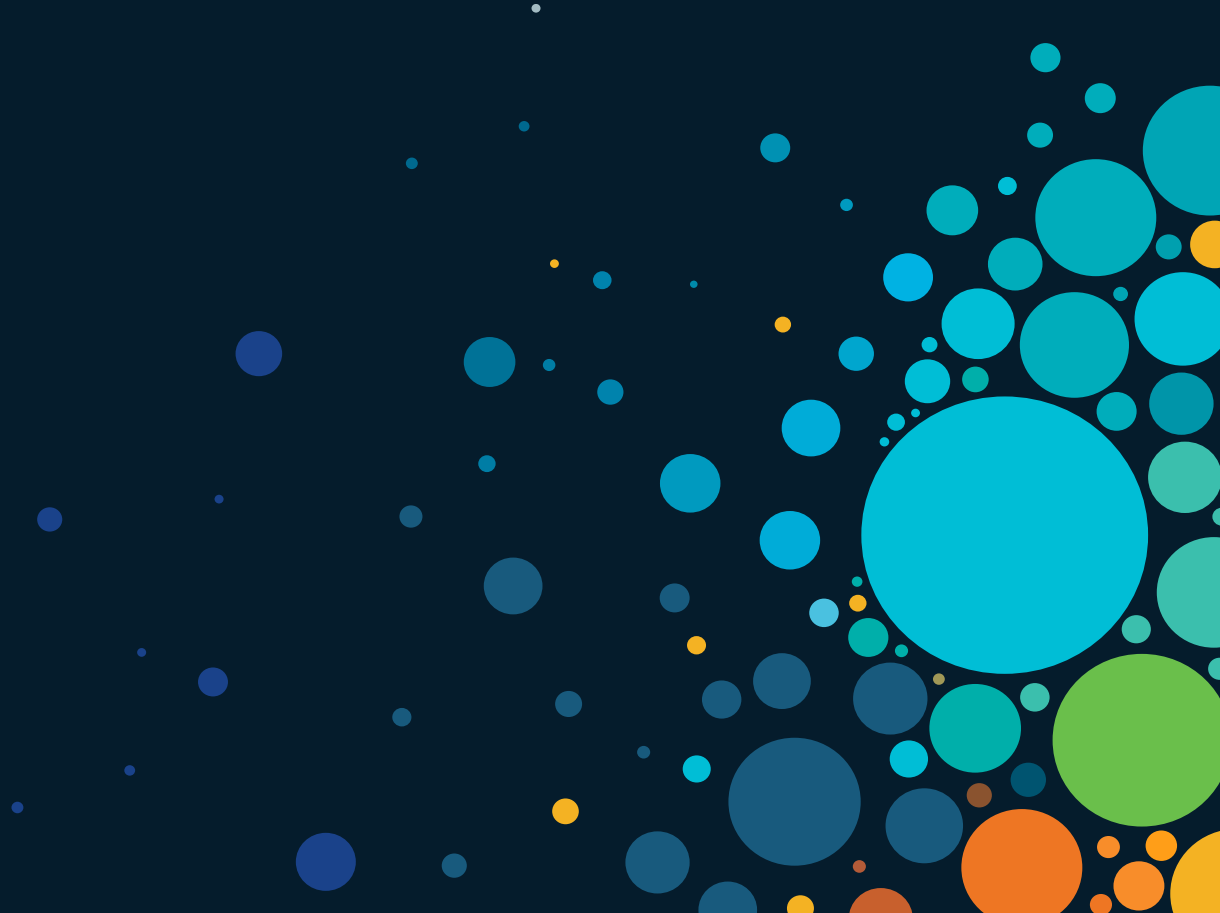
Cisco IT Data Center
Summary of Whitepaper Findings

Align & Support Company Sustainability Goals & Initiatives

- 90% absolute reduction in Scope 1 & 2 GHG emissions

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

Cisco IT Data Center.
Reuse & Energy Management
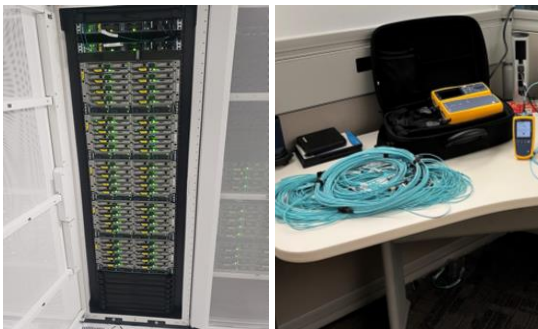
Reuse

- 90% of patch cables recertified
- 1,813 Cisco UCS servers sent to Cisco Refresh for reuse in 2021/22

Clean Energy

- On-site solar panels (~1.8MW)
- Air side economizers reduce energy consumption +50% of time

Cooling Optimization

- Hot air containment
- CRAH hoods, Samurai tiles
- Infrared audits
- Blanking & rack gap panels, tile cut foam
- Monitoring systems

Cisco Penn 1, New York
Smart Buildings for Hybrid Work
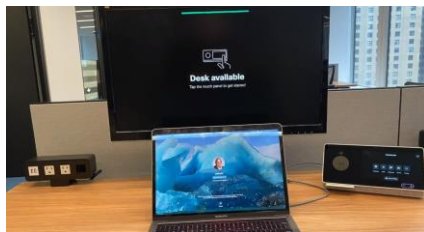
- One Penn Plaza, New York City
- 5,000 square meters; opened April 2022
- Technology was the 4th utility (along with water, gas, and power)
- Outcome driven
  - ✓ Improved user experience
  - ✓ Safety & compliance
  - ✓ Real estate utilization
  - ✓ Automation & optimization
- Cisco Smart Building Framework
  - ✓ 100% collaboration enabled
  - ✓ Catalyst 9300 and 9400 Series Switches
  - ✓ POE devices (lights, shades, desks, cameras)
  - ✓ DNA Center & Cisco Spaces
  - ✓ Environment sensors, energy metering

ESG Reporting Hub & Purpose Report

Visit: cisco.com/go/esg-hub

Key Takeaways

⚠️ **Decade of Action**

📋 **Three steps**

1) Research viewpoints & standards
2) Understand your company goals
3) Build your IT strategy

♻️ **Some concepts to include**

- Dual responsibilities of IT
- Circularity / Systems Thinking
- Energy efficiency / Asset utilization
- Suppliers / Procurement
- Data collection / Reporting

💡 **Cisco offerings that may help**

- New products / solutions
- Cisco Refresh, Cisco Green Pay, Product Takeback Programs
- Energy Optimization Assessment Service

🤝 **Share what you learn**

Complete your Session Survey

- Please complete your session survey after each session. Your feedback is important.

- All surveys can be taken in the Cisco Events Mobile App or by logging in to the Session Catalog and clicking the "Attendee Dashboard" at
https://www.ciscolive.com/emea/learn/sessions/session-catalog.html

Continue Your Education

Visit the Cisco Showcase for related demos.

Book your one-on-one Meet the Engineer meeting.

Attend any of the related sessions at the DevNet, Capture the Flag, and Walk-in Labs zones.

Visit the On-Demand Library for more sessions at ciscolive.com/on-demand.

Thank you

CISCO *Live!*

ALL IN