

The background of the slide is a vibrant, abstract graphic. It features a series of overlapping, wavy bands of color in shades of red, orange, yellow, green, and blue, creating a sense of movement and energy. On the right side, there is a bright, multi-colored sunburst or starburst effect that radiates outwards, adding to the dynamic feel of the design.

cisco *Live!*

Let's go

#CiscoLive



The bridge to possible

# The road to Net Zero emissions

Advancing sustainable IT

Justin Cashman, Global Sales Director, Cisco Refresh  
Dr Colin Seward, Director, Sustainability Technology & Data  
BRKGRN-1008



#CiscoLive



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<https://ciscolive.ciscoevents.com/ciscolivebot/#BRKGRN-1008>

# 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
- Bringing it all Together
- Key Takeaways

# The Road to Net Zero



# Why now? What's changed?



Urgent global problem  
How can IT help?



Customer, investor &  
employee pressure



Legislation, reporting  
standards, scrutiny



Business efficiencies  
& new opportunities

*“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<sup>1</sup>

148 countries with a  
Net Zero target<sup>2</sup>



Important purchasing  
factor for consumers<sup>3</sup>

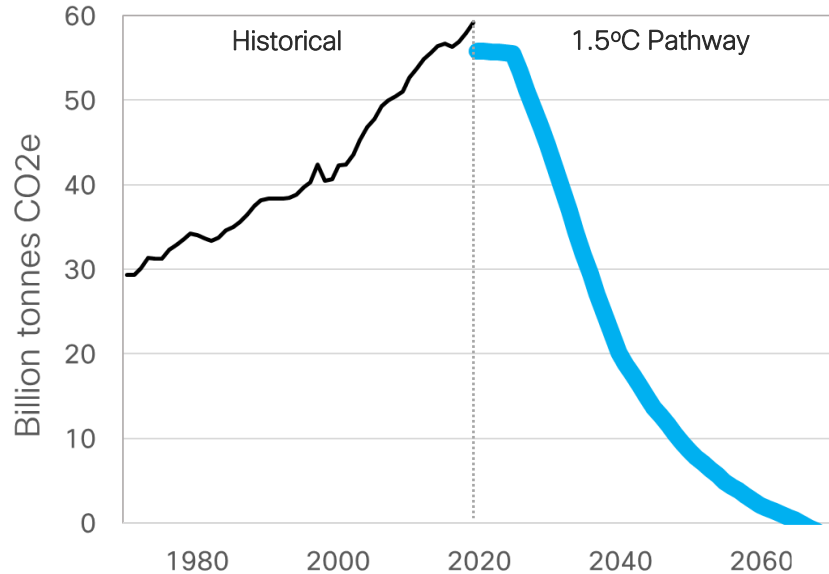
67%

Hiring criteria for 69%  
of workers<sup>4</sup>



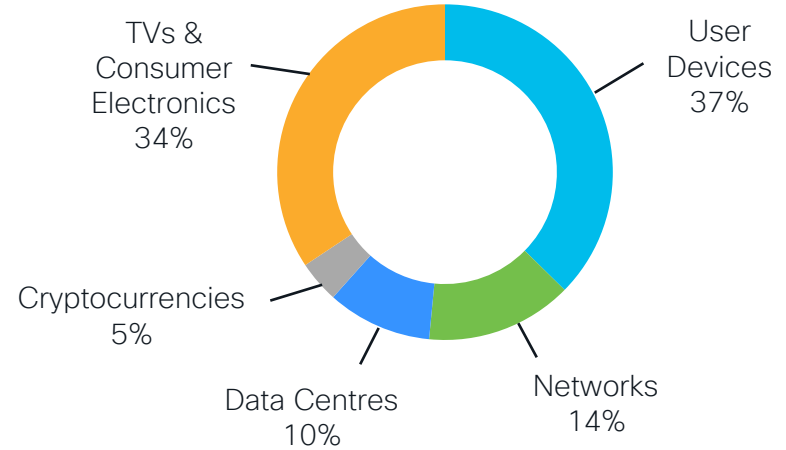
# Putting IT in perspective

Total GHG emissions  
~60 Billion tonnes CO<sub>2</sub>e



Based on data from: EDGARv7.0, Crippa et al (2021, 2022), IIASA (AR6 Scenario database)

Digital GHG emissions  
~1.4 Billion tonnes CO<sub>2</sub>e (2-4% Total)



Digital = ICT + Entertainment & Media

Source: Freitag (2021), Berners Lee (2020), Malmodyn (2018, 2023)

# Dual Responsibility

## “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

15%



## “Sustainability by IT”



- 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), Malmödin (2015)



# Cisco's Goal

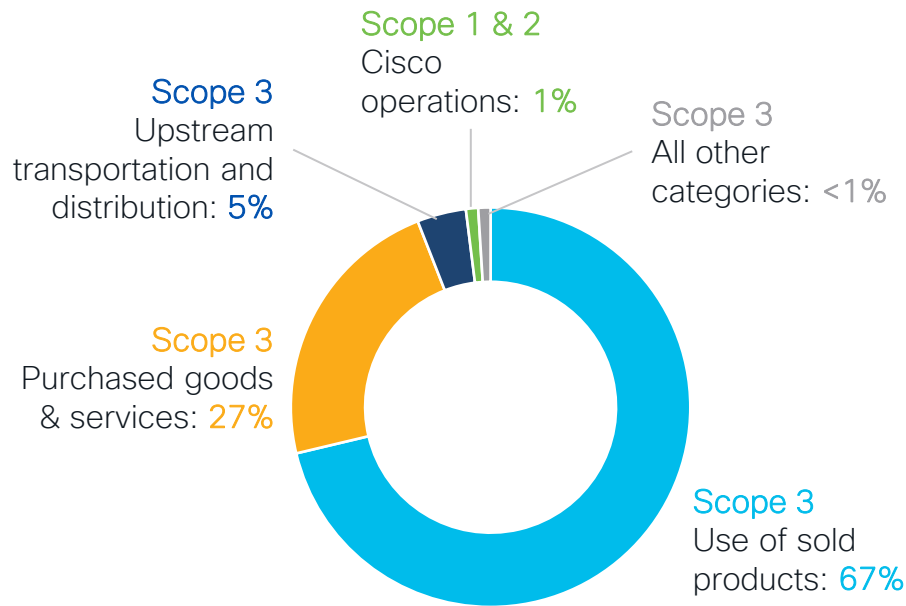
## Net zero GHG emissions across our value chain by 2040

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



DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

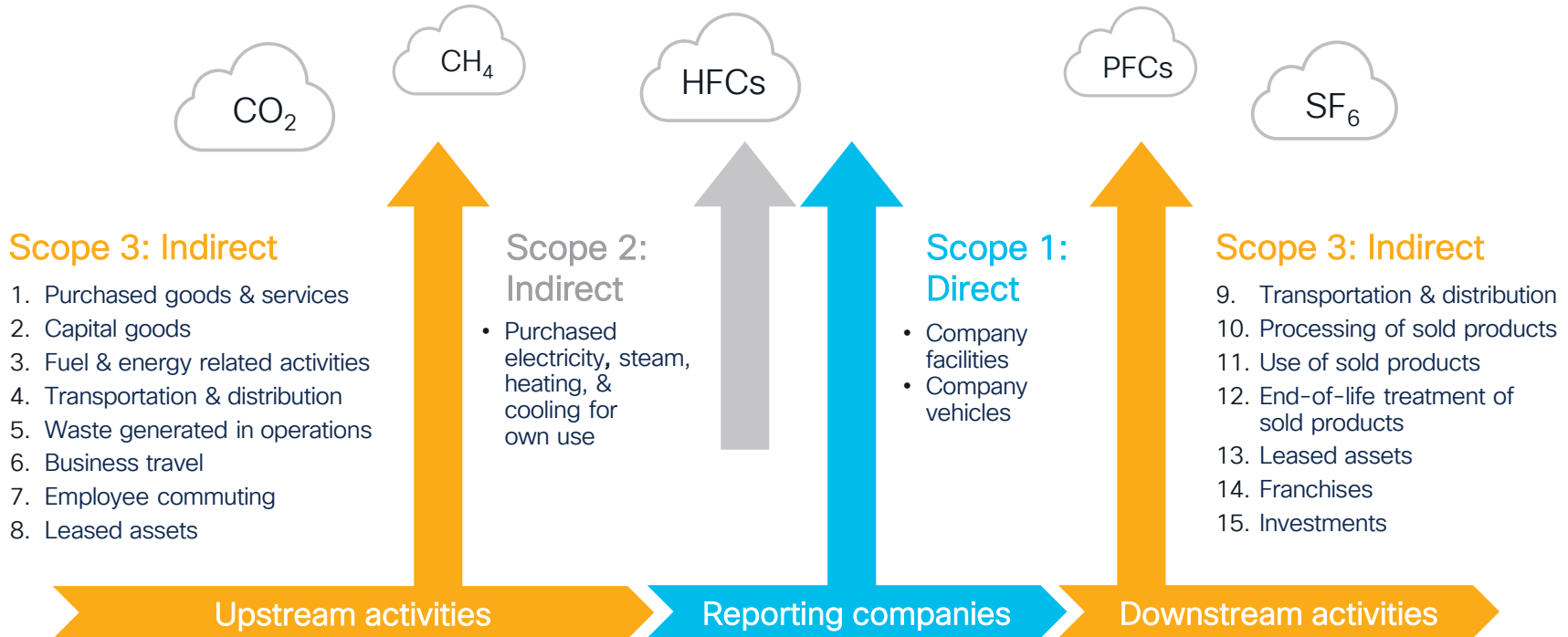
**CISCO** *Live!*



Source: Cisco's Fiscal Year 2022 ("FY 22") Scope 1, 2, and 3 GHG emissions



# What are Scope 1, 2, & 3



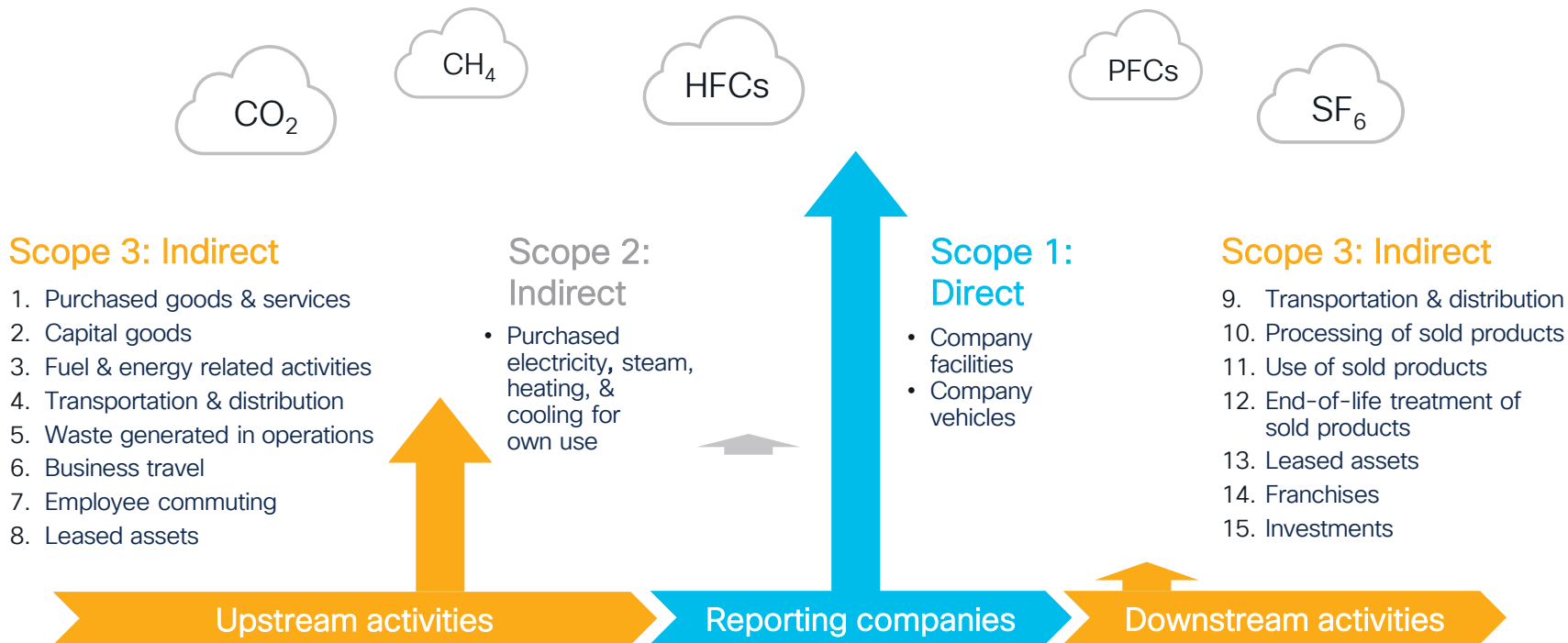
Based on: Greenhouse Gas Protocol, Technical Guidance for Calculating Scope 3 Emissions

# What are Scope 1, 2, & 3 | Cisco



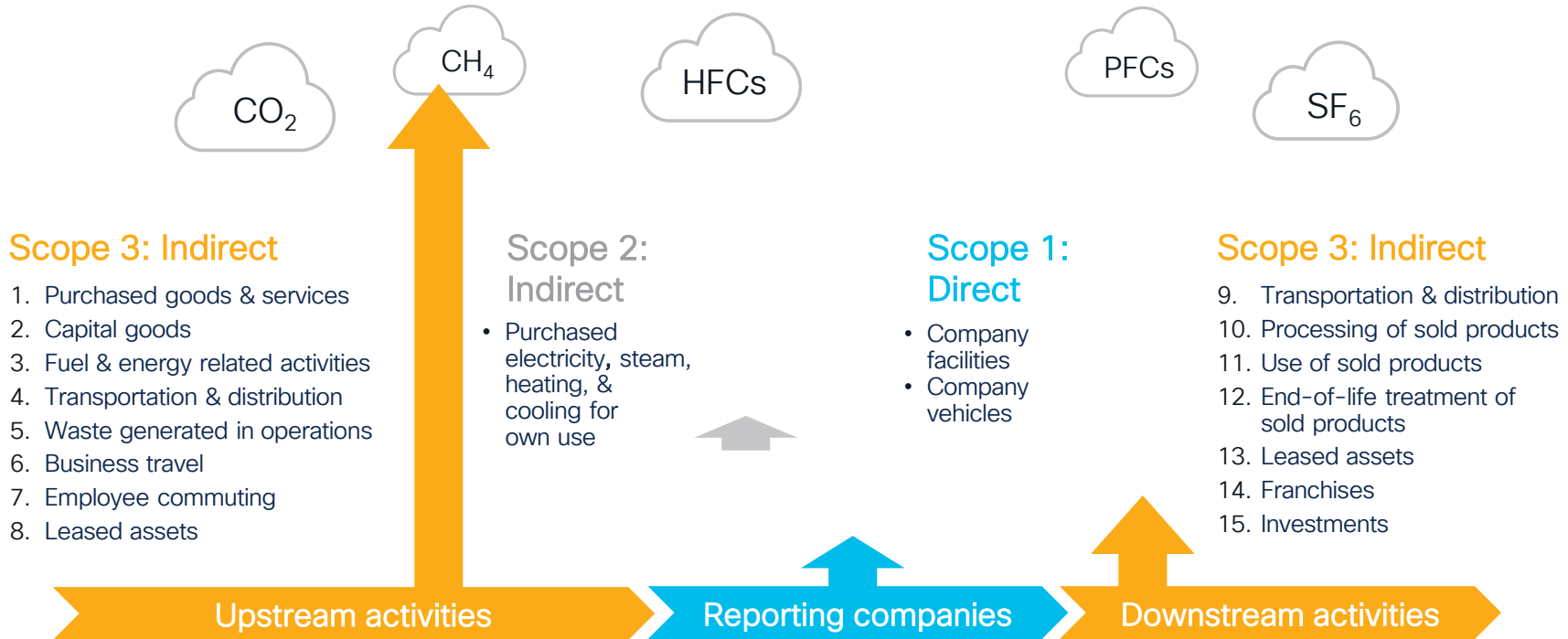
Based on: Greenhouse Gas Protocol, Technical Guidance for Calculating Scope 3 Emissions

# What are Scope 1, 2, & 3 | Transport Services



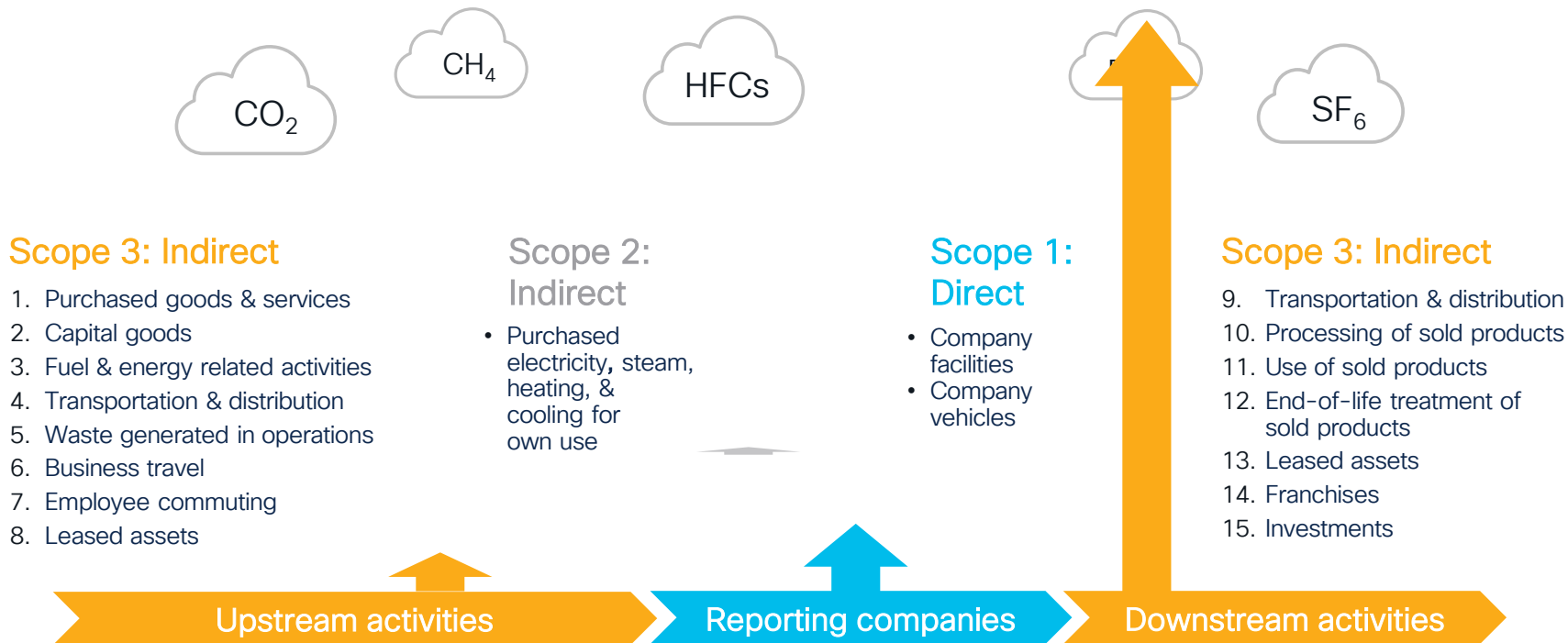
Based on: Greenhouse Gas Protocol, Technical Guidance for Calculating Scope 3 Emissions

# What are Scope 1, 2, & 3 | Food & Beverage



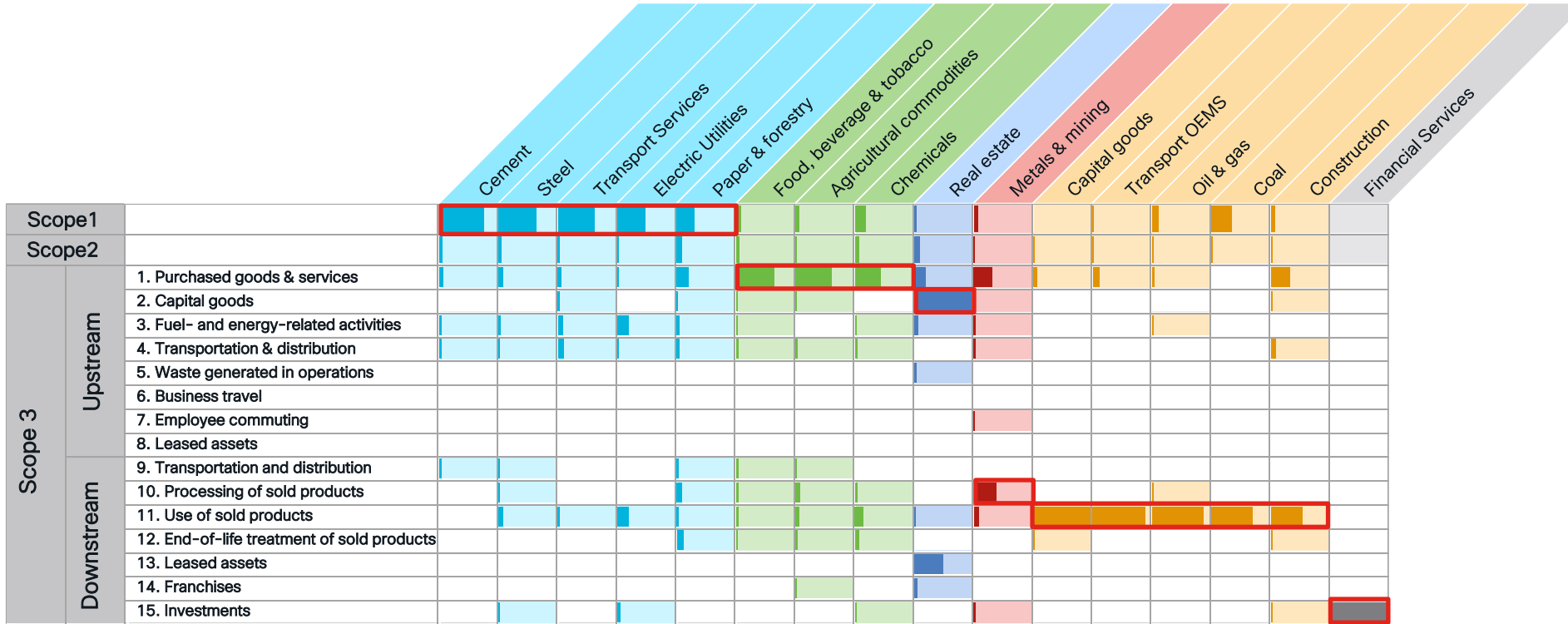
Based on: Greenhouse Gas Protocol, Technical Guidance for Calculating Scope 3 Emissions

# What are Scope 1, 2, & 3 | Oil & Gas

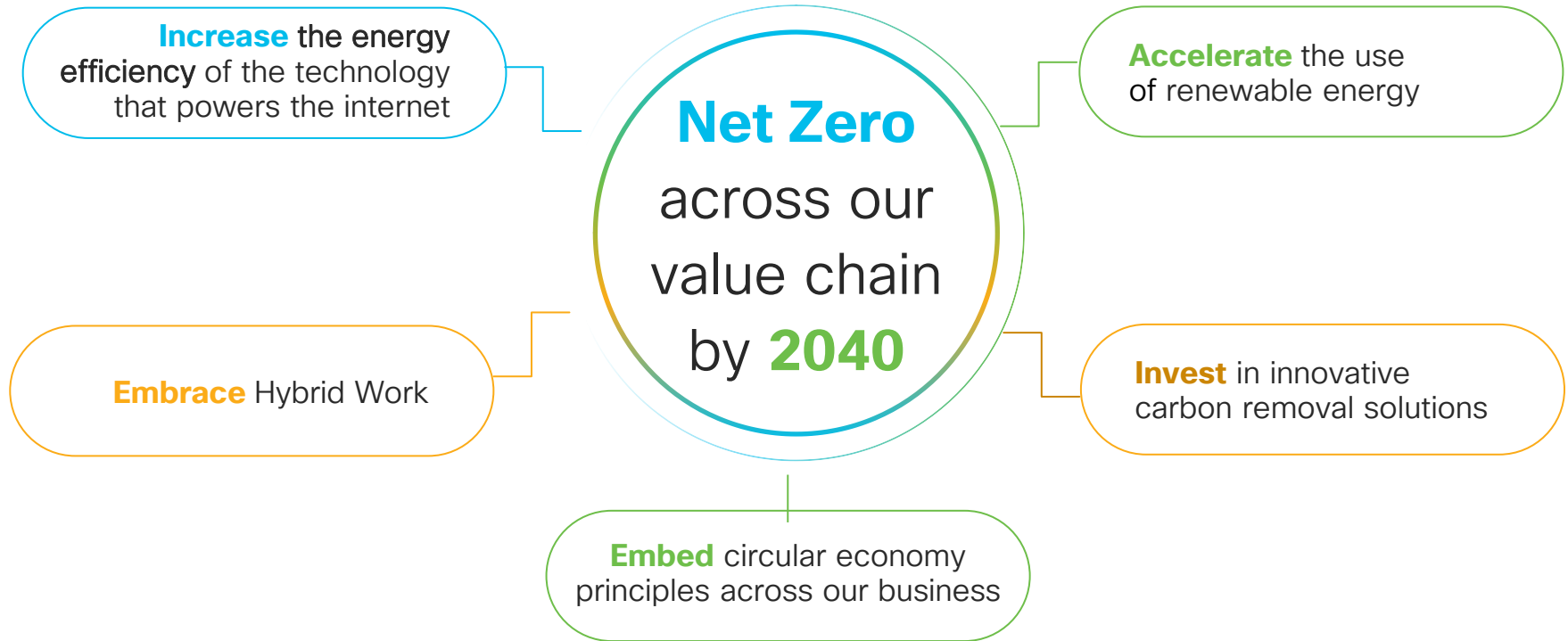


Based on: Greenhouse Gas Protocol, Technical Guidance for Calculating Scope 3 Emissions

# Scope Variation by Industry



# Cisco's strategies to get to Net Zero



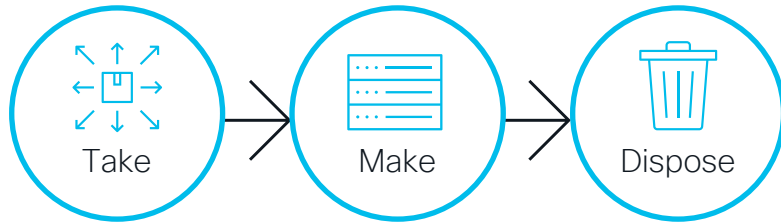


# The Circular Economy mindset

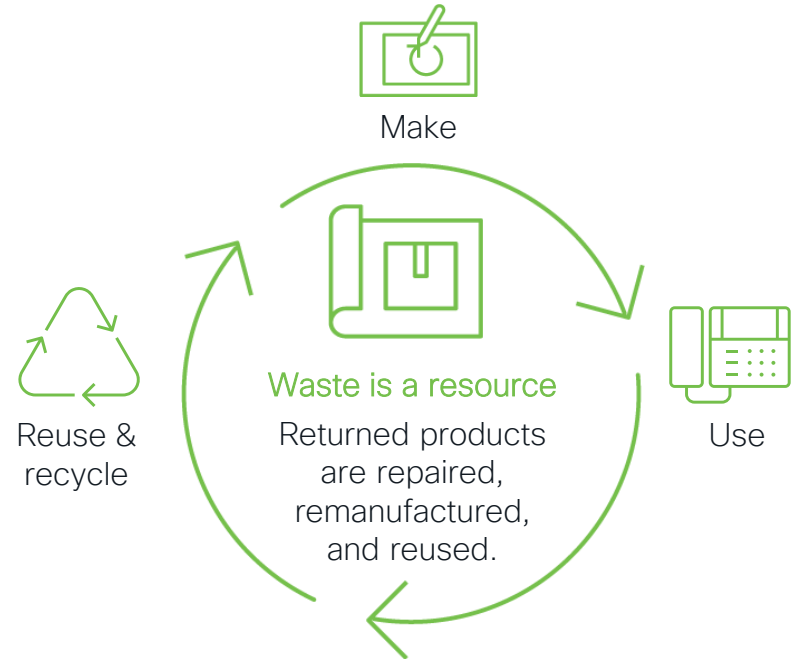


# How we define Circular Economy

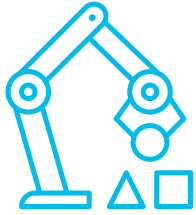
## Linear Economy



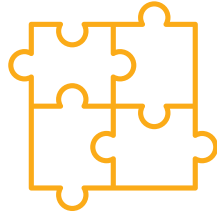
## Circular economy



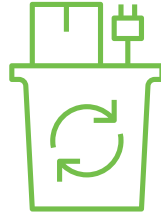
# Make: Cisco's Circular Design Strategy



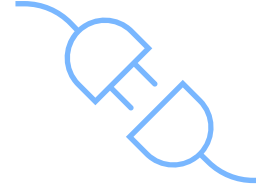
Material use



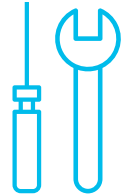
Standardize and  
modularize



Packaging and  
accessories



Smart energy  
consumption



Disassembly,  
repair and reuse



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

# Make: Circularity in our Products and Packaging

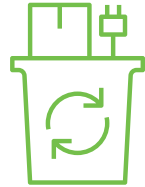
## “No Paint” project

Eliminating oil-based wet paint on Catalyst 9K switches in 2019 has enabled the elimination of **1200 metric tonne of CO2e** to date and approximately **82 metric tonne of hazardous VOCs** (volatile organic compounds) per year



## Rethinking plastic

The majority of accessories for Cisco Meraki products are shipped in **paper-based packaging**, which is made of **70% recycled content**.



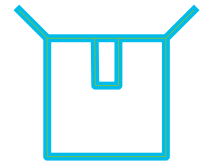
## Design for reuse, repair & recycling

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.

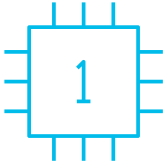


## Fiber-based packaging

The packaging for the Catalyst IR8140 Heavy Duty Router is the first at Cisco to use a **fiber-flute material** in place of the foam cushioning typically required for heavier products



# Use: Innovative Power Efficiency



## Silicon One

The 8201 router with Silicon One consumes **96% less energy** per year, while supplying **35% more bandwidth** compared to the previous router without Silicon One



## IR1101 router

In our modular IR1101 router, **idle power was reduced by 45%** from the previous generation.

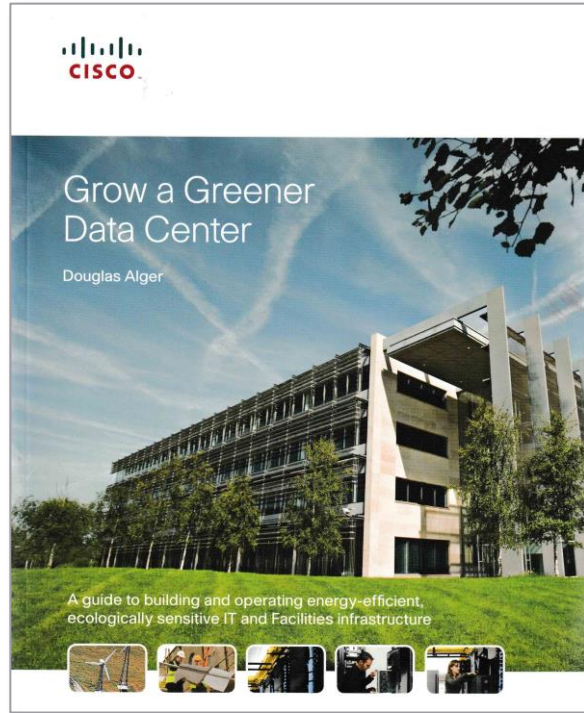
# Cisco's public sustainability goals





So, what about IT? Where do you start?

.... haven't we all been doing this for years?

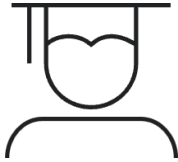


## “Grow a Greener Data Center” by Doug Alger, Cisco Press, 2009

- 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

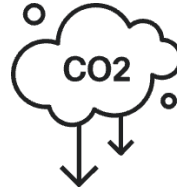


# Building our IT Sustainability Strategy



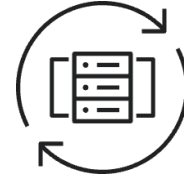
## Researching Industry, viewpoints and standards

- ✓ 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

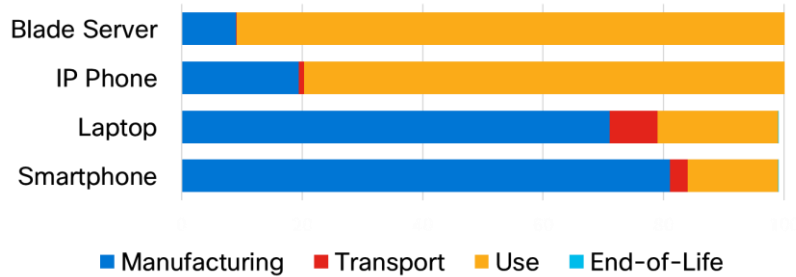
# Internal Resources

- 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

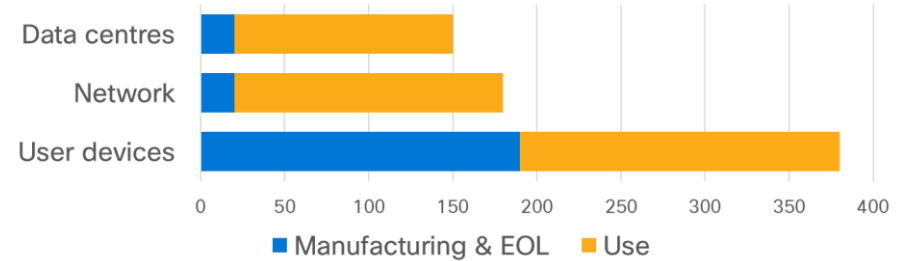


# Carbon Footprint

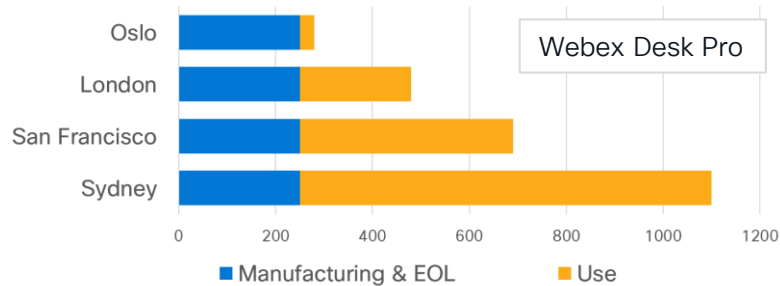
## What it is?<sup>1</sup>



## How many are there?<sup>3</sup>



## Where it is?<sup>2</sup>



## Systems thinking<sup>4</sup>

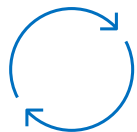


Data Sources: <sup>1</sup>Cisco(2020) & Apple (2022), <sup>2</sup>Cisco (2021), <sup>3</sup>Malmodin (2018), <sup>4</sup>Carbon Trust (2021)

# 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

## Sustainable by Design



- Design principles / Best practices
- Life Cycle & System Thinking
- Review design impact with stakeholders

## Responsible Procurement



- Analyze IT spend
- Prioritize focus areas
- Supplier scorecard / goal tracking
- Supplier Code of Conduct

## Optimization of Operations



- Holistic service view
- Extend life / Improve performance
- Asset utilization / Remove excess
- Automation to scale

## Asset Lifecycle Management



- Consider at design phase
- Process assets to next-best use
- Leverage supplier best practices
- Asset traceability

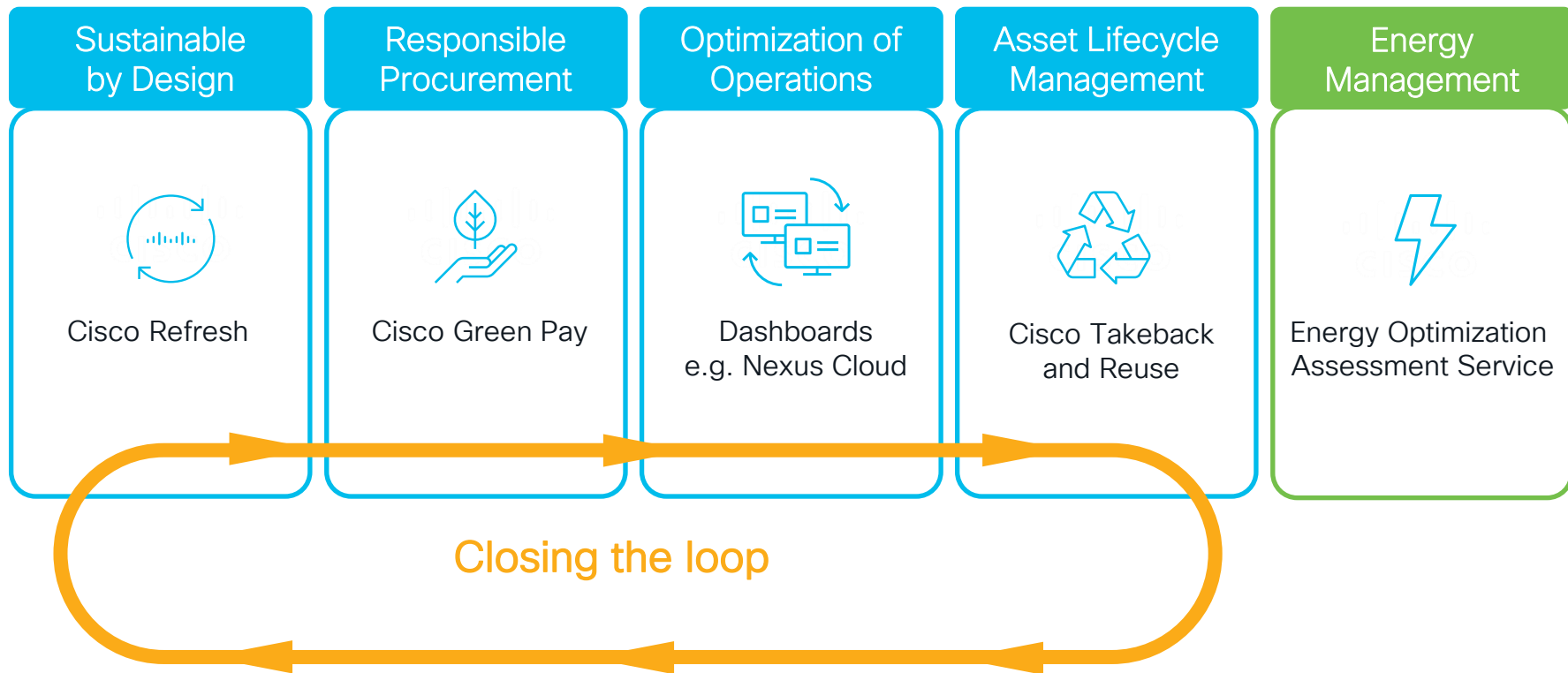
## Energy Management



- Source renewables
- Measure & monitor use / energy visibility
- Improve power efficiency
- Optimize energy consumption

Employee Culture

# Closing the Loop: Suppliers + Customers



# 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



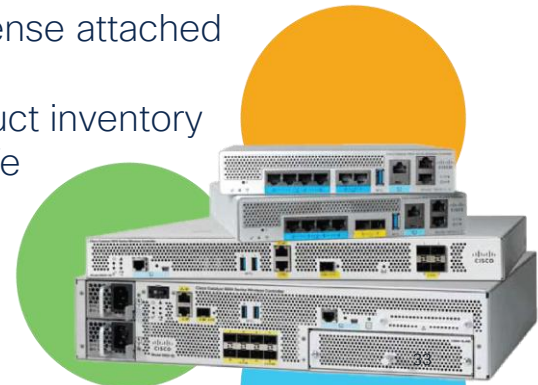
# Remanufactured V Refurbished

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



# 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

# CAPITAL EQUIPMENT PLEDGE

accelerating the  
circular economy



**PACE**  
PLATFORM FOR ACCELERATING  
THE CIRCULAR ECONOMY

## 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

# Leveraging Takeback and Reuse



# Reuse: Product Takeback & Reuse Program

Simple, secure, and sustainable



Free removal and transport of equipment at customer end-of-use. Returned equipment is stored in a secure location and data is cleared from returned hard drives to protect data security. We reuse and recycle nearly 100% of products that are returned to us.

[Watch Video](#)



**Cisco Returns Program**

Available in 100+ countries



**Send IT Back Mobile App**

Available in EU, UK and US



**Work with your Cisco Partner**

Many are certified through our Environmental Sustainability Specialization



**Customer Recycling Solutions**

Available globally; for equipment that cannot be powered on

# 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

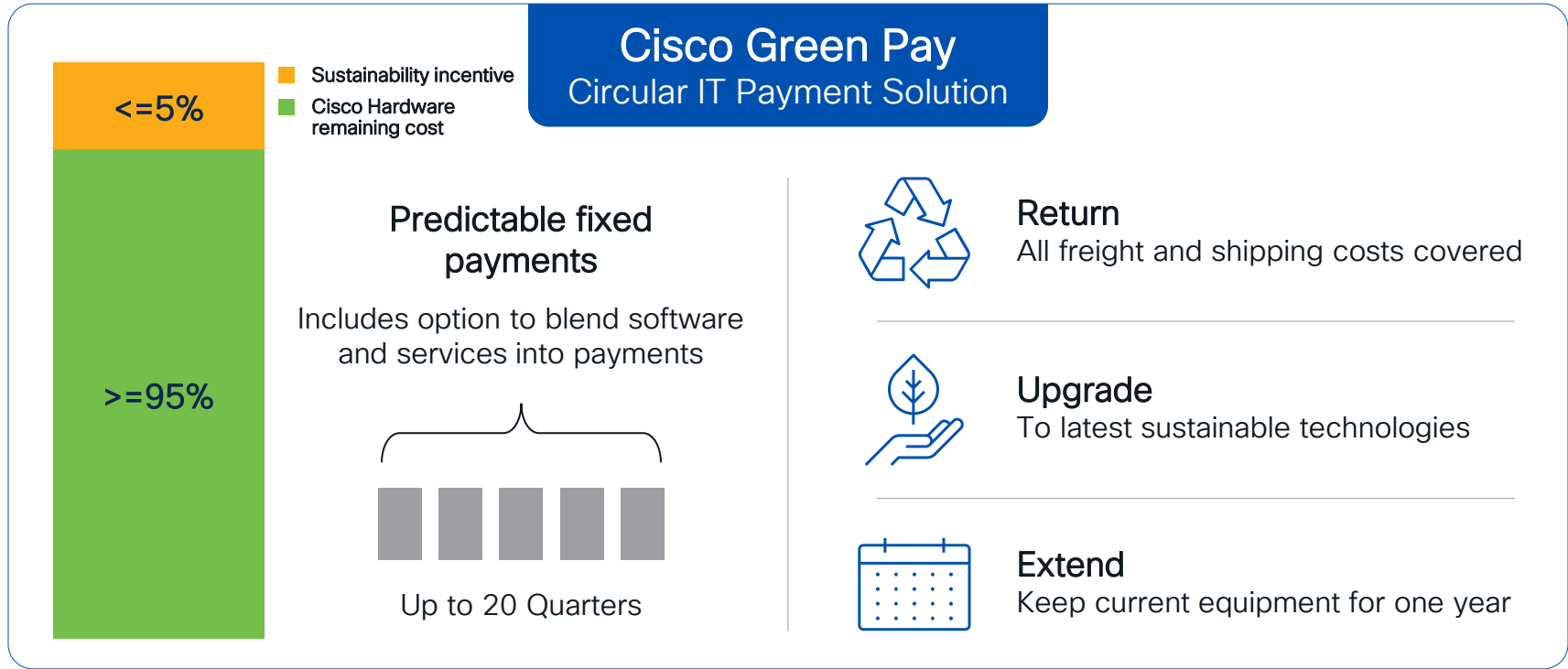


Available in  
select countries in the  
Americas, EMEA and  
APJC





# How does it work?



Bringing it all  
Together



# 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

- Global design standards
- 312% more VM (virtual machines) per blade
- 27% reduction in power (watts) per VM

### Responsible Procurement

- Main DC suppliers sent surveys on carbon emission data

### Optimization of Operations

- 38% fewer data centers from 26 sites to 16
- 23% reduction in data center facility OPEX costs
- ACI everywhere

### Increase Asset Recovery & Reuse

- 43 tons of cabling infrastructure and equipment reused
- 1,813 Cisco UCS servers sold for reuse

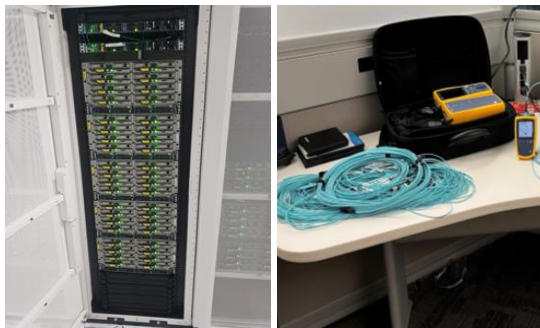
### Energy Management

- 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

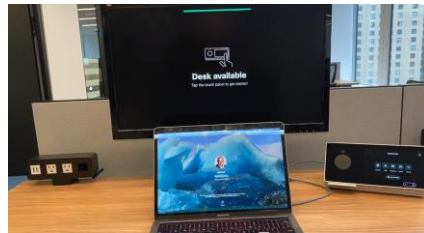


## Cooling Optimization

- 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 4<sup>th</sup> 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

Cisco ESG Reporting Hub

2022 Cisco Purpose Report | GRI | SASB | TCFD | Archive | Index of tables

Q

[Strategy and governance](#)[Integrity and trust](#)[Our people](#)[Our global communities](#)[Supply chain](#)[Environment](#)

## 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 has a purpose to Power an Inclusive Future for All. Our 2022 Purpose Report summarizes how we have brought this purpose to life. The report describes our commitments, goals, progress, and impact for the ESG topics that are significant to achieving Cisco's purpose and are important for our stakeholders. This ESG Reporting Hub includes in-depth information on all reporting topics.

[Purpose Report \(PDF\)](#)



Visit: [cisco.com/go/esg-hub](https://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



# Fill out your session surveys!



Attendees who fill out a minimum of four session surveys and the overall event survey will get **Cisco Live-branded socks** (while supplies last)!

---



Attendees will also earn 100 points in the **Cisco Live Challenge** for every survey completed.



**These points** help you get on the leaderboard and increase your chances of winning daily and grand prizes



# Continue Your Sustainability Education

CISCO *Live!*

Visit the Sustainability Zone for in-depth demos on solutions and programs

Attend Sustainability-Focused Sessions

Visit the On-Demand Library for more sessions at

[www.CiscoLive.com/on-demand](http://www.CiscoLive.com/on-demand)

Review our Sustainability Solutions eBook for more information



Read our eBook to  
Learn More

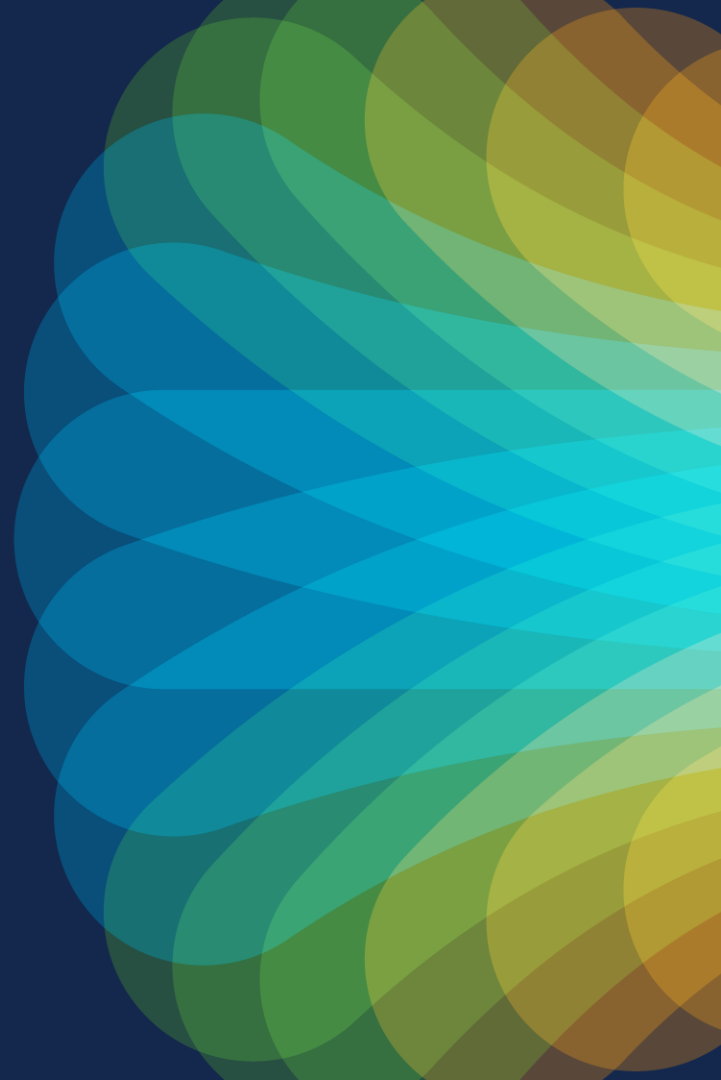


The bridge to possible

# Thank you



#CiscoLive

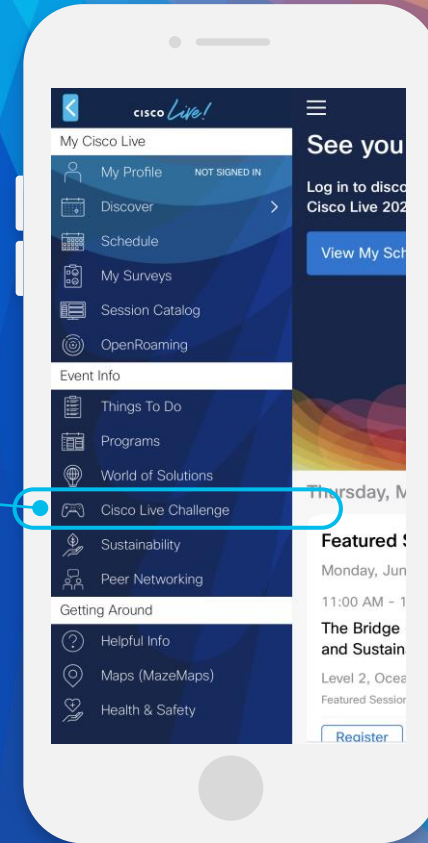
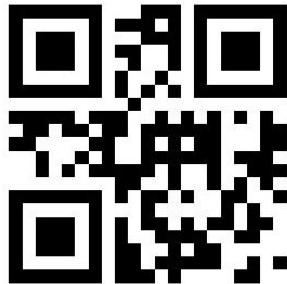


# Cisco Live Challenge

Gamify your Cisco Live experience!  
Get points for attending this session!

## How:

- 1 Open the Cisco Events App.
- 2 Click on 'Cisco Live Challenge' in the side menu.
- 3 Click on View Your Badges at the top.
- 4 Click the + at the bottom of the screen and scan the QR code:



The background is a vibrant, abstract graphic. It features a central bright white light source from which numerous colorful rays emanate, creating a sunburst or starburst effect. The rays transition through a spectrum of colors including yellow, orange, red, and various shades of blue and green. Overlaid on this are several large, semi-transparent, wavy shapes in similar color tones, giving the overall image a sense of motion and energy.

cisco *Live!*

Let's go

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