



Sustainability and IT

Impactful planetary technology leadership

Niklas Sundberg | SVP, CIO & Author | 2023-06-08



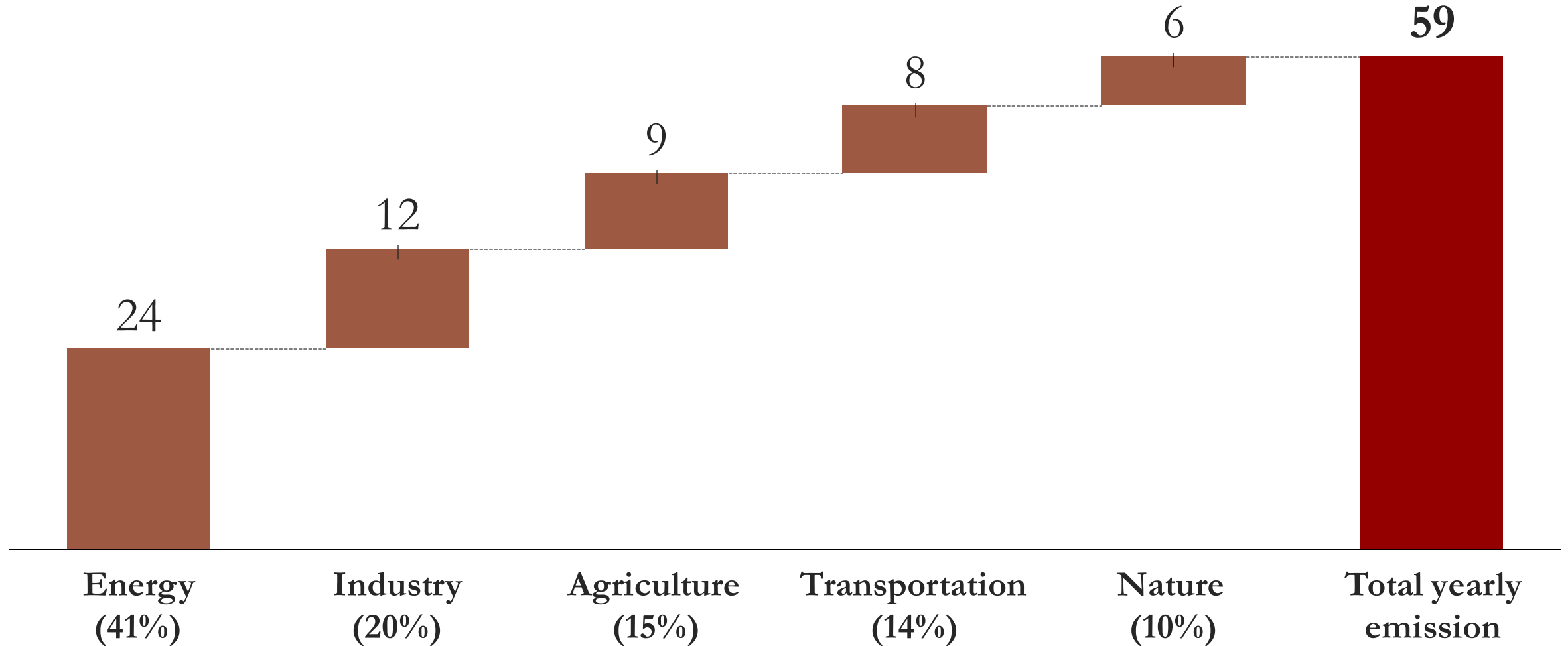
Educate | Inspire | Activate





How our global greenhouse gases emission add-up

CO₂ (Gigatons)



Global expected electricity demand

40 000 TWh

by 2030
(~ 25 000 TWh 2020)

Global expected electricity demand ICT

8 000 TWh

by 2030
(3-4% of total today)

Technology impact



1-2% of the world's energy is consumed by data centers



The number of devices is expected to reach **55.7** billion in 2025



57 million tons of e-waste were generated worldwide in 2021



Sustainable IT



**Sustainability in IT
“Footprint”**



**Sustainability by IT –
“Handprint”**



**IT for Society –
“Heartprint”**

Carbon Emission - Taxonomy

Scope 1

Scope 2

Scope 3

Normal Taxonomy

Direct Emissions

Owned Assets

- Facilities
- Equipment
- Vehicles
- Onsite landfills

Indirect Emissions

Energy Purchased

- Purchased electricity
- Purchased heating
- Purchased cooling

All other Indirect Emissions

3rd Party

- Transportation
- Distribution
- Waste
- Energy and fuel
- Leased assets
- Travel

Sustainable IT Taxonomy

Direct Emissions

Owned Assets

- Operator activities

Indirect Emissions

Energy Purchased

- Purchased electricity
- Purchased heating
- Purchased cooling

All other Indirect Emissions

3rd Party

- IaaS / PaaS / SaaS
- Software, Hardware, & Professional Svc. Providers
- Leased IT Equipment

Questions for technology leaders

Strategy &
Transformation

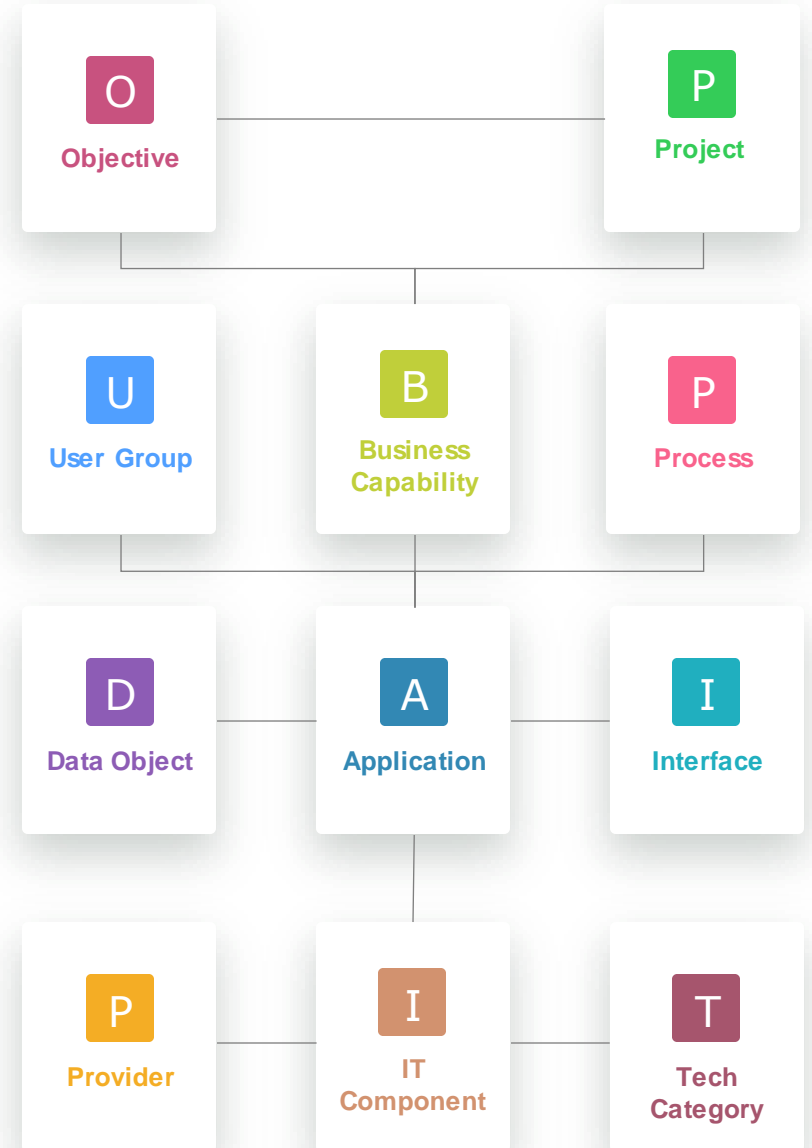
- Which Sustainability Development Goals need which business capability?
- How to bring the roadmap to sustainability alive?

Business
Architecture

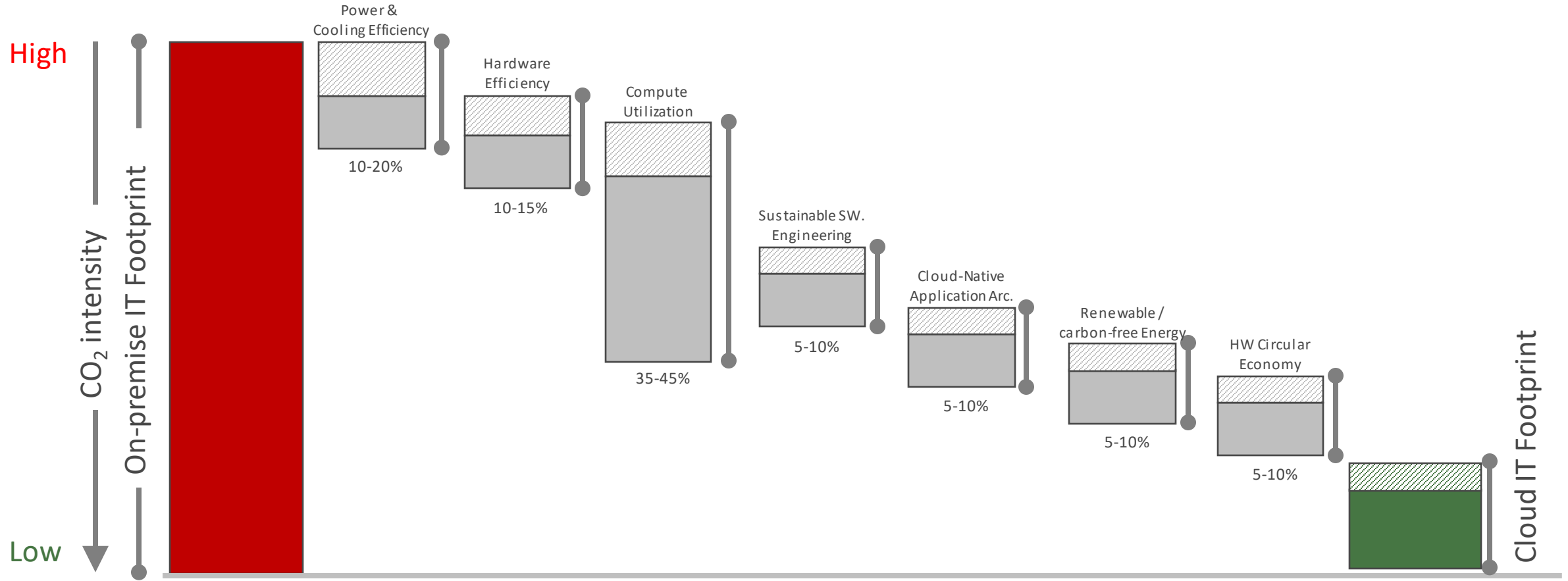
Application &
Data
Architecture

- What is the baseline of my IT landscape?
- Which applications can be rationalized?
- What is the migration strategy?
- What is optimized for cloud?

Technical
Architecture



Carbon emission reduction potential by moving from on-premise to cloud

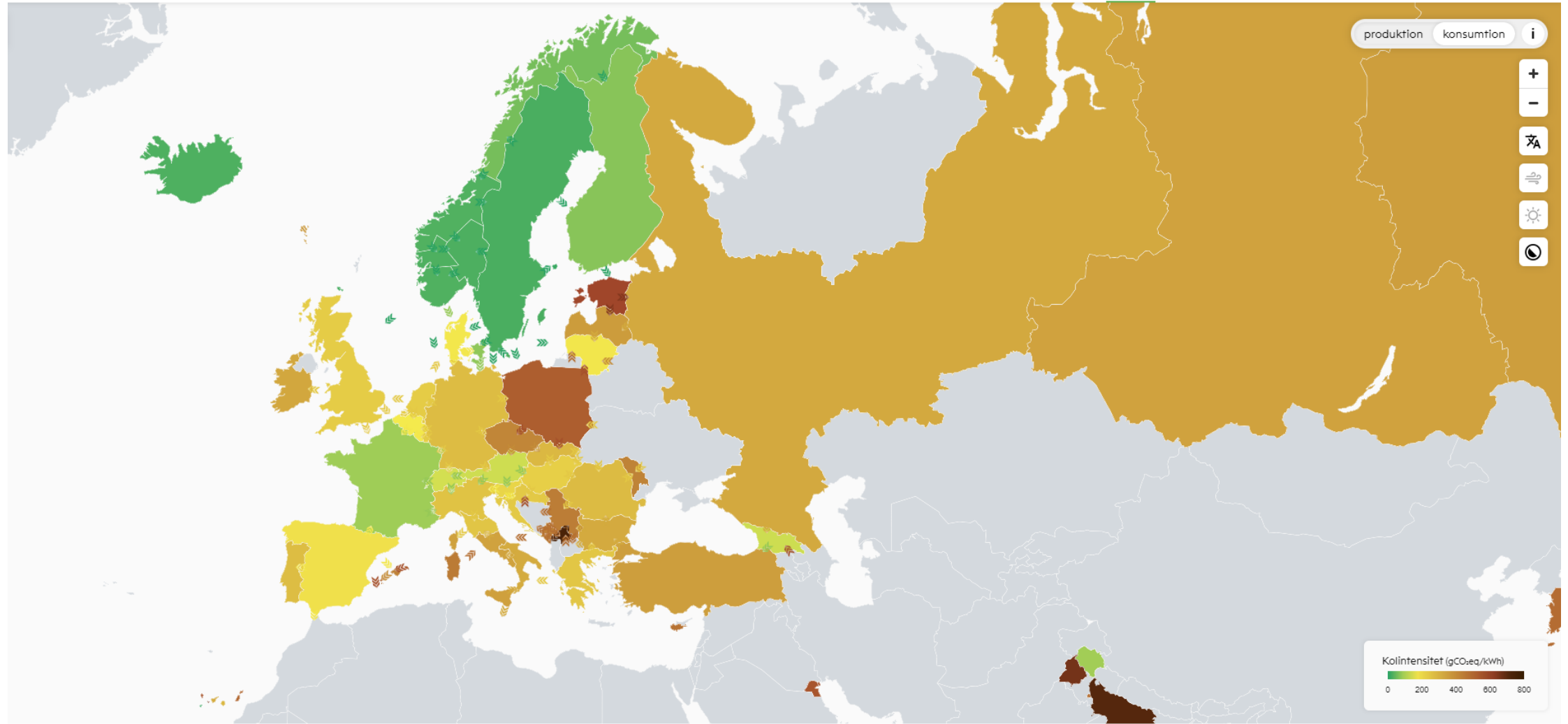


Where we place our workload can differ tremendously!

Choose renewable energy sources!

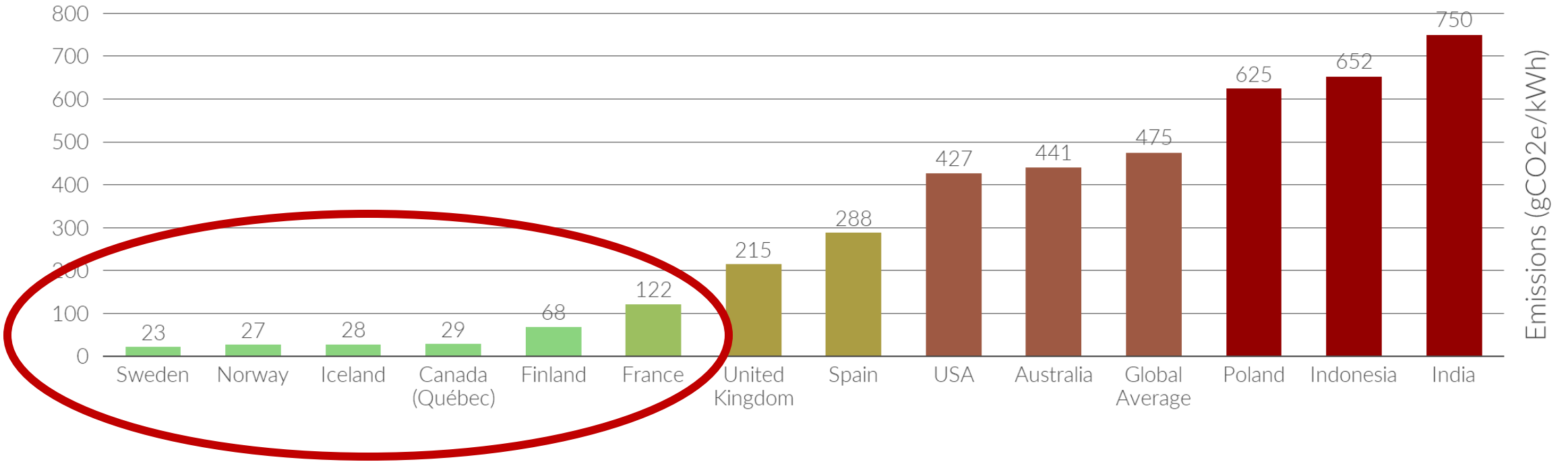
electricityMap

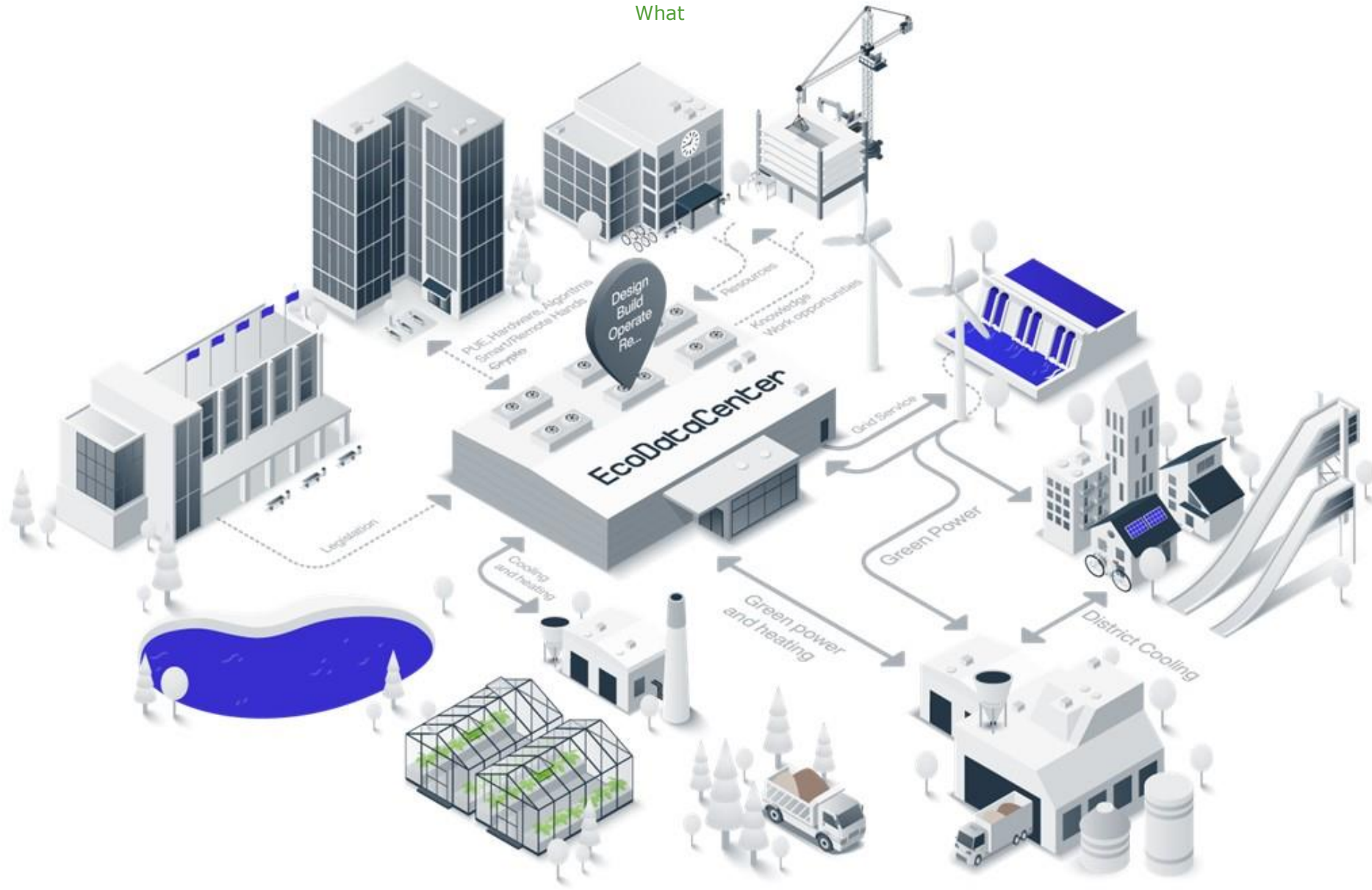
Live We're hiring! 2 Open Source Blog Get our data



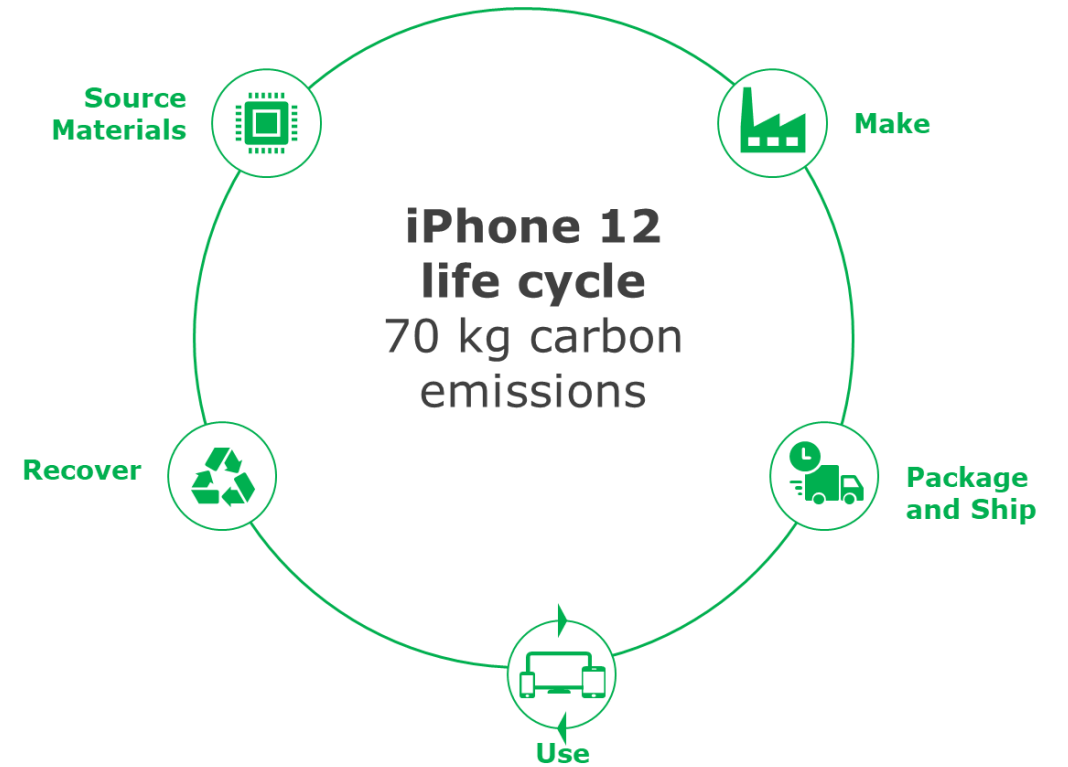
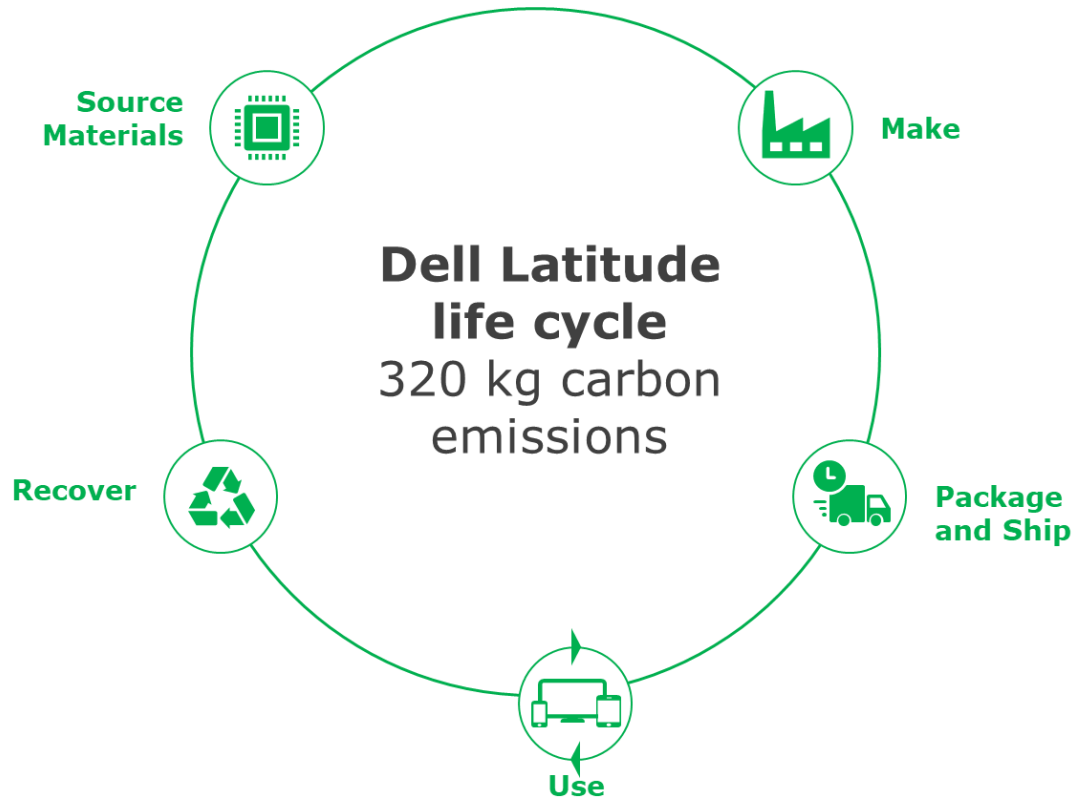
Distribution of carbon intensity across countries

Optimization opportunities by 20X and 30X





CO2 emission from our IT equipment

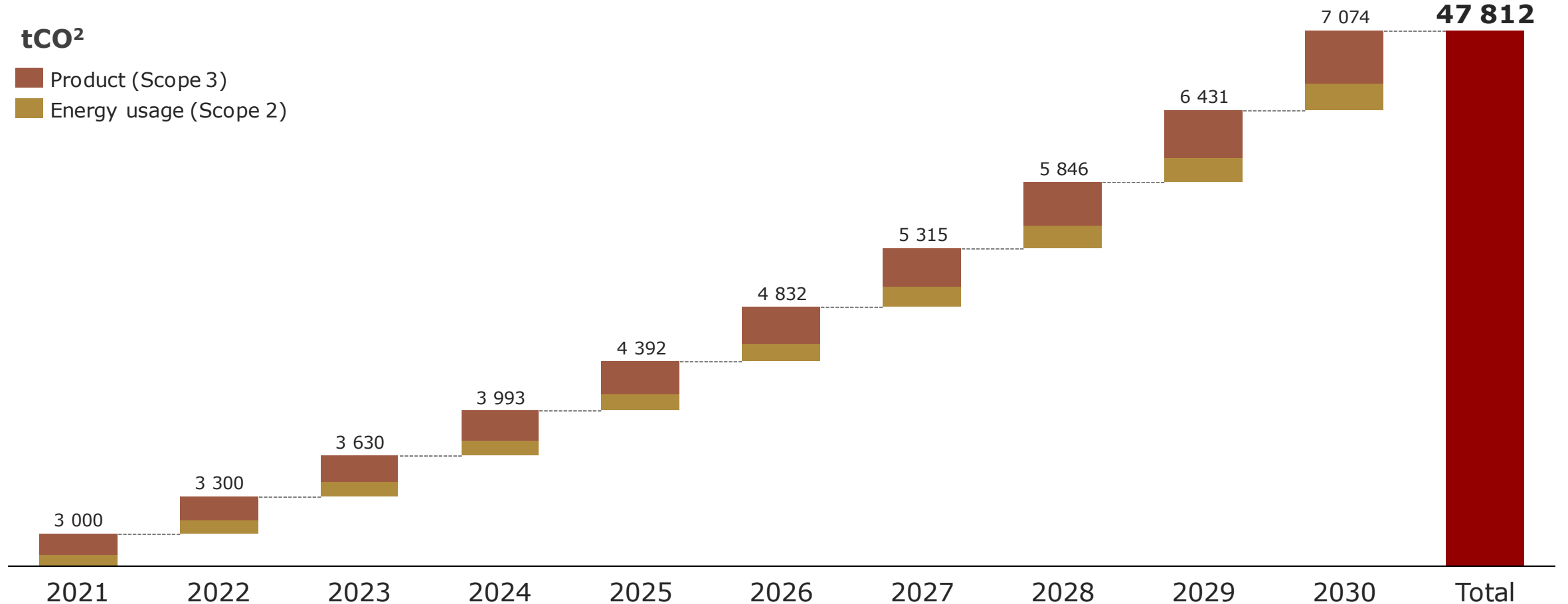


Computer CO2e over 10 years

Scenario if we don't become more circular in managing our IT equipment

tCO²

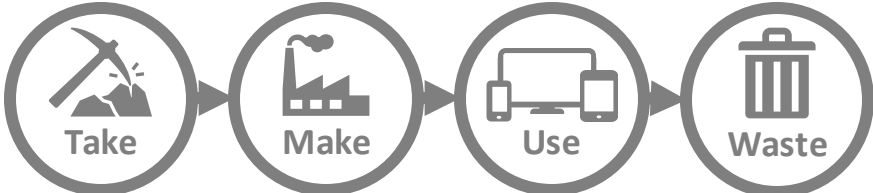
- Product (Scope 3)
- Energy usage (Scope 2)



- 1.) Assumption 300 kg/CO2e per laptop over a three year period (200 kg/CO2e Production (Scope 3), 100 kg/CO2e in Energy (Scope 2))
- 2.) Assumption that we replace 10 000 laptops every year (1/3 of our estate)
- 3.) Assumption 10% equipment growth YoY
- 4.) Based on an assumption that we don't change our strategy management of IT equipment

Transition from a linear to a circular economy

Linear Economy



Circular Economy



Steps to a sustainable future

Sustainable IT Strategy



Assess our impact

Get started by measuring and monitoring our IT environmental footprint.



Accelerate progress

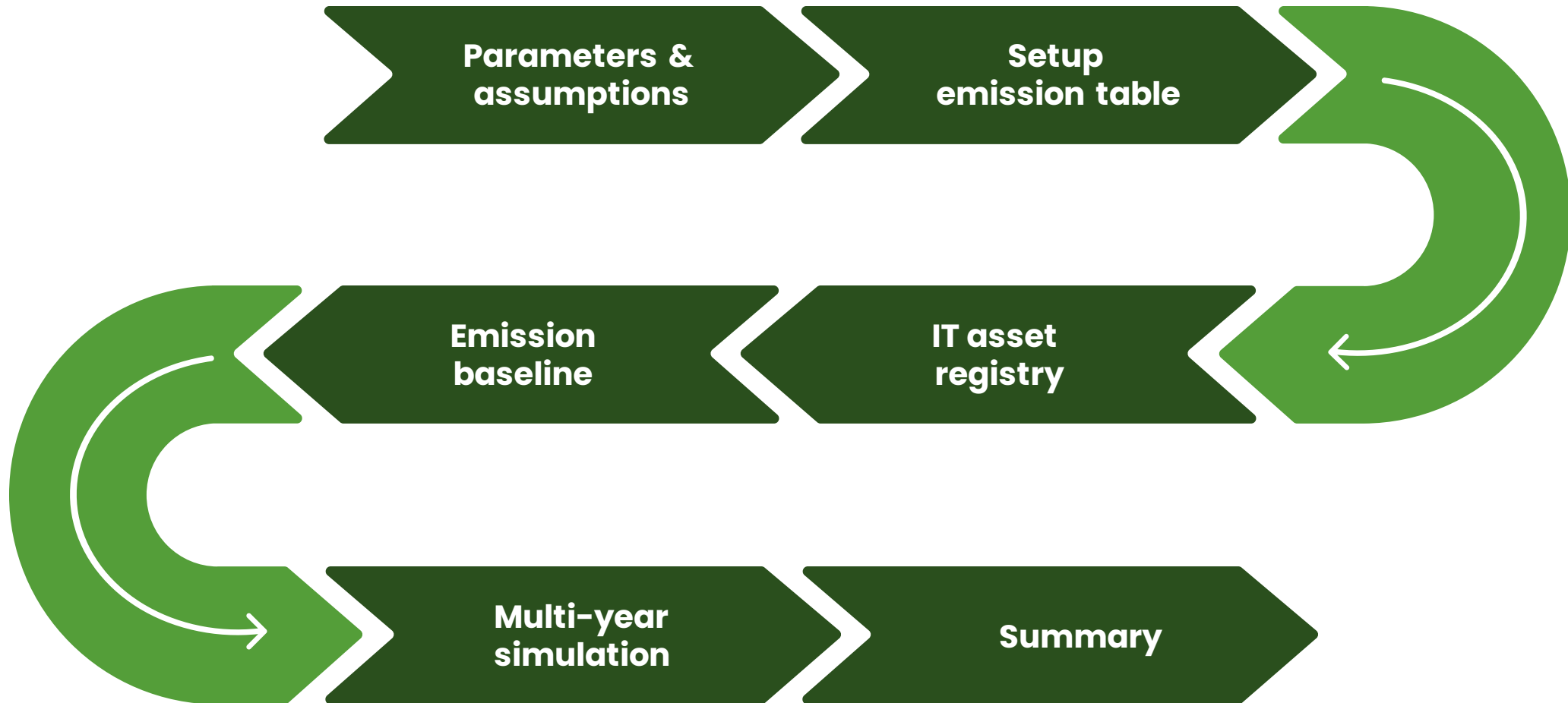
Adopt a Green IT Strategy structured approach to accelerate progress & minimize the CO₂ impact



Transform our business

Reimagine our business systems and business models while meeting the needs of our planet

Establishing an emission baseline and simulate a target state



Sustainable IT CO2e baseline

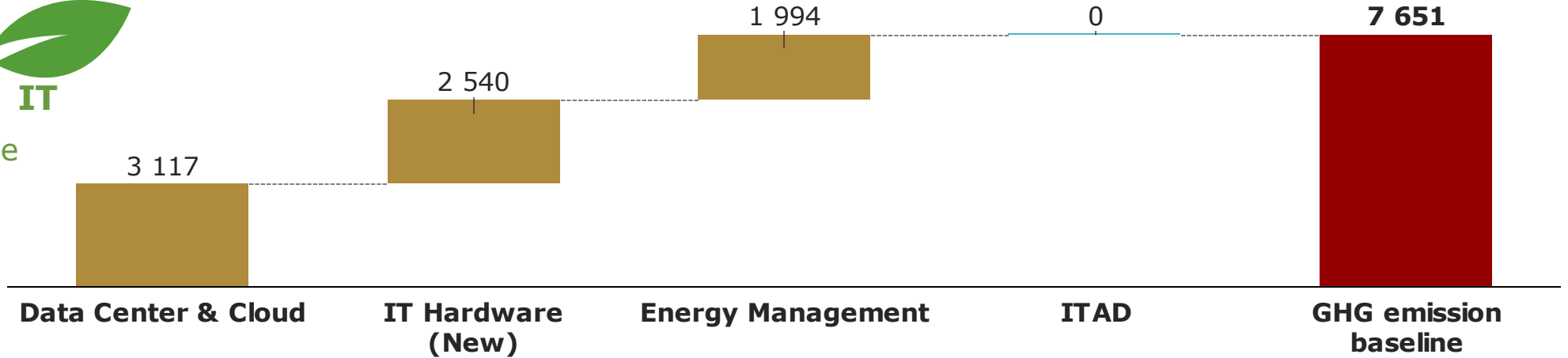
Model company – 10 000 employees

CO₂ (Tons)



SUSTAINABLE IT

Emission baseline



What is in our emission baseline?

1000 local server(s)
 1000 global DC server(s)
 1000 cloud server(s)
 SaaS applications not included

2500 notebooks high energy
 New 2000 desktops
 New 3750 monitors
 New 5000 smartphones
 New 1000 tablets
 Device-as-a-Service (DaaS) not used.
 Accessories (keyboards, docking station, mouse, etc) not included

Electricity to power end user IT equipment
 120 location(s)

0 refurbished or recycled IT assets

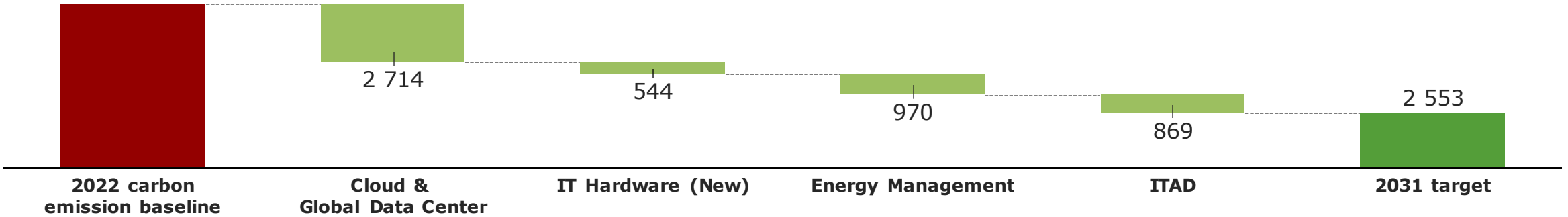
Sustainable IT CO2e – enabling direct abatement

Model company – 10 000 employees

Direct abatement from Sustainable IT

CO₂ (Tons)
7 651

Non-exhaustive – 10 priority use cases considered across 4 key areas



Example use case impacts

Rationalize & migrate servers in Local DCs to Global DCs or Cloud
Application & server rationalization

Sustainable requirements in MSA & RFP Vendor
Green certified vendors (EPEAT, TCO Certified, e-Star)
PC as a Service / Green Leasing
Prolong the lifespan of IT hardware

Energy efficiency
Low-carbon electricity utilization

IT asset disposition to refurbish and recycle IT hardware
Carbon credits

Baseline emissions

~3 112t

~2 540t

~1 994t

~ 0t



2023



Assess current & target state



Understand your action areas



Plan next step



Thank you! Let's connect.

A digital business card for Niklas Sundberg. At the top is a circular profile picture of a man in a suit. Below the photo is his name, 'Niklas Sundberg', followed by his title: 'Senior Vice President & Chief Information Officer at ASSA ABLOY Global Solutions | ex-Gartner | Purp...'. At the bottom of the card is a large QR code. The card is presented on a dark grey background that looks like a tablet screen.