Hewlett Packard Enterprise

SUPPORTING TELCO IN ACHIEVING SUSTAINABILITY

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NGA Green G Chair

EUCNC | 6G Summit

Grenoble, France ▪ 7-10 June 2022

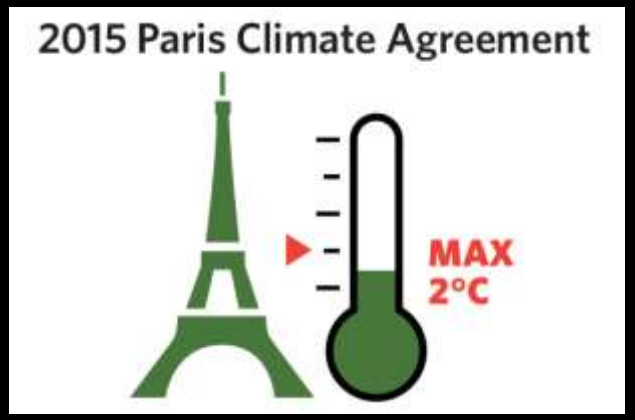
CLIMATE CHANGE

1.5 billion people directly affected by drought this century, 2/3 worldwide population by 2025, and the economic cost estimated at $124bn

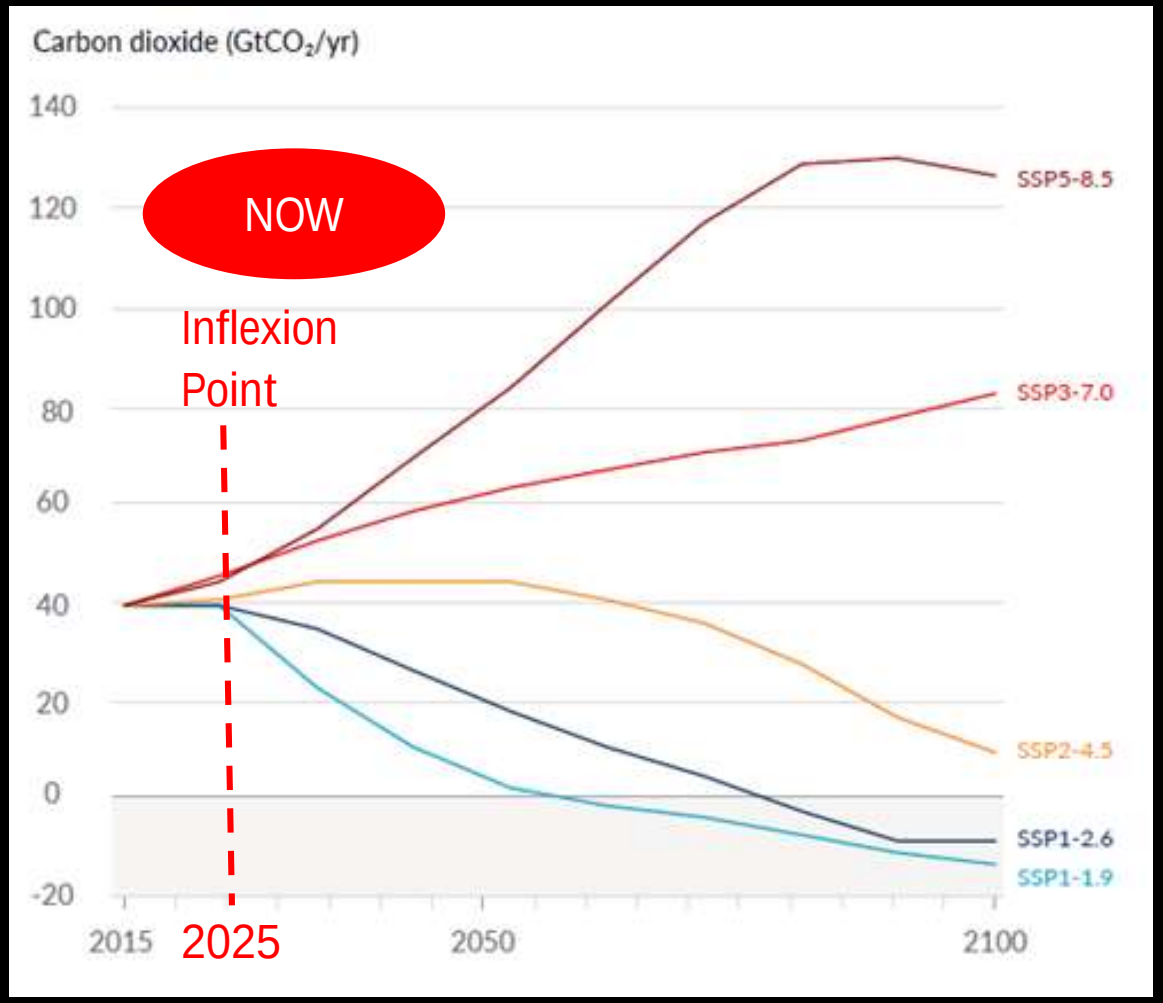
Wildfires and more & more frequent BIG Fires emitted 1.76 billion Tonnes of carbon globally in 2021, That's equivalent to more than double Germany's annual CO2 emissions

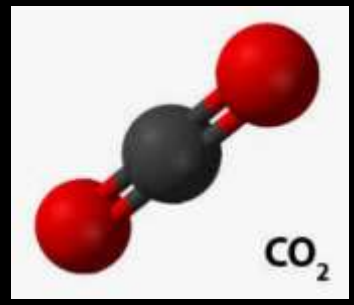
IPCC says that daily extreme precipitation events will likely intensify by about 7% for every 1 degree Celsius (1.8 degrees Fahrenheit) that global temperatures rise.

TARGET



WE NEED TO REDUCE CO2 EMISSIONS !!





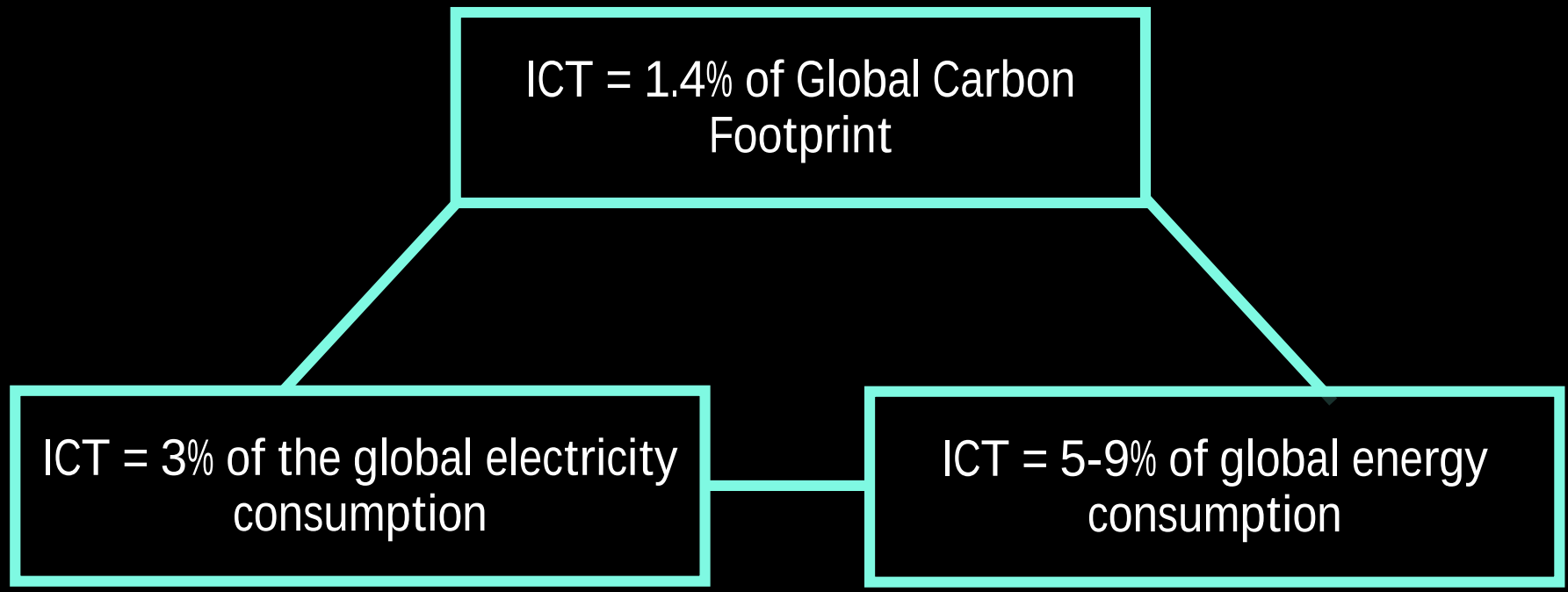
CO2 keeps increasing
Temperature > 5 degree

Decrease CO2
After 2050

Decrease CO2
NOW for < 2 degree C

Source: IPCC AR6, Aug 2021

REDUCE ENERGY & CARBON FOOTPRINT OF ICT



ITU & ICT SUSTAINABILITY – DECREASE GHG BY 45% BY FROM 2020 TO 2030

ITU released a new standard in February 2020. The standard aims to reduce ICT's GHG emissions by 45% from 2020 to 2030, and net zero by 2050.

source: L.1470 Greenhouse gas emissions trajectories for the information and communication technology sector compatible with the UNFCCC Paris Agreement

Europe target is -55% by 2030 compared with 1990.

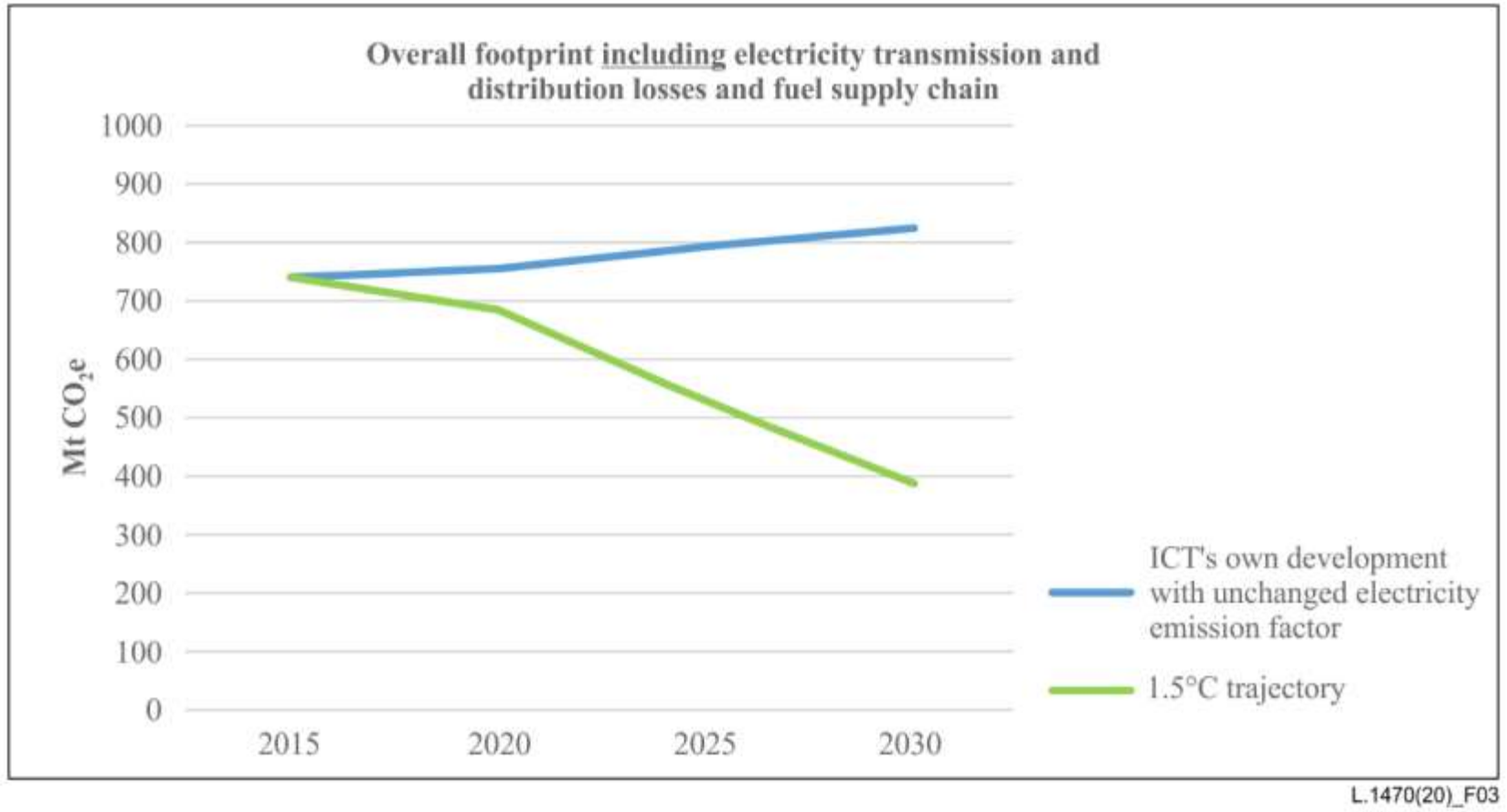
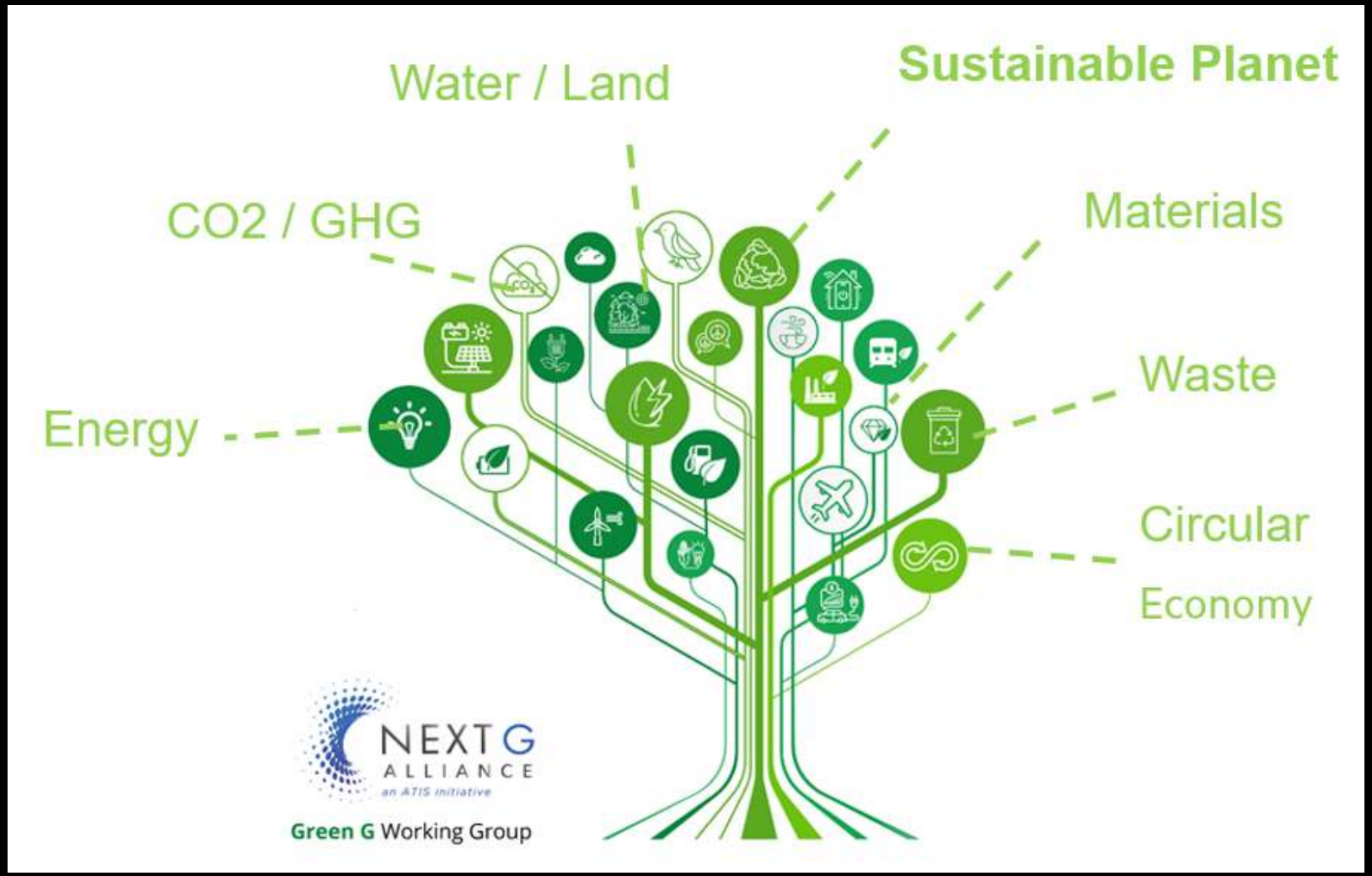


Figure 3 – ICT sector trajectory including electricity grid losses and supply chain (perspective A)

ENVIRONNEMENT SUSTAINABILITY IS MORE THAN CO2



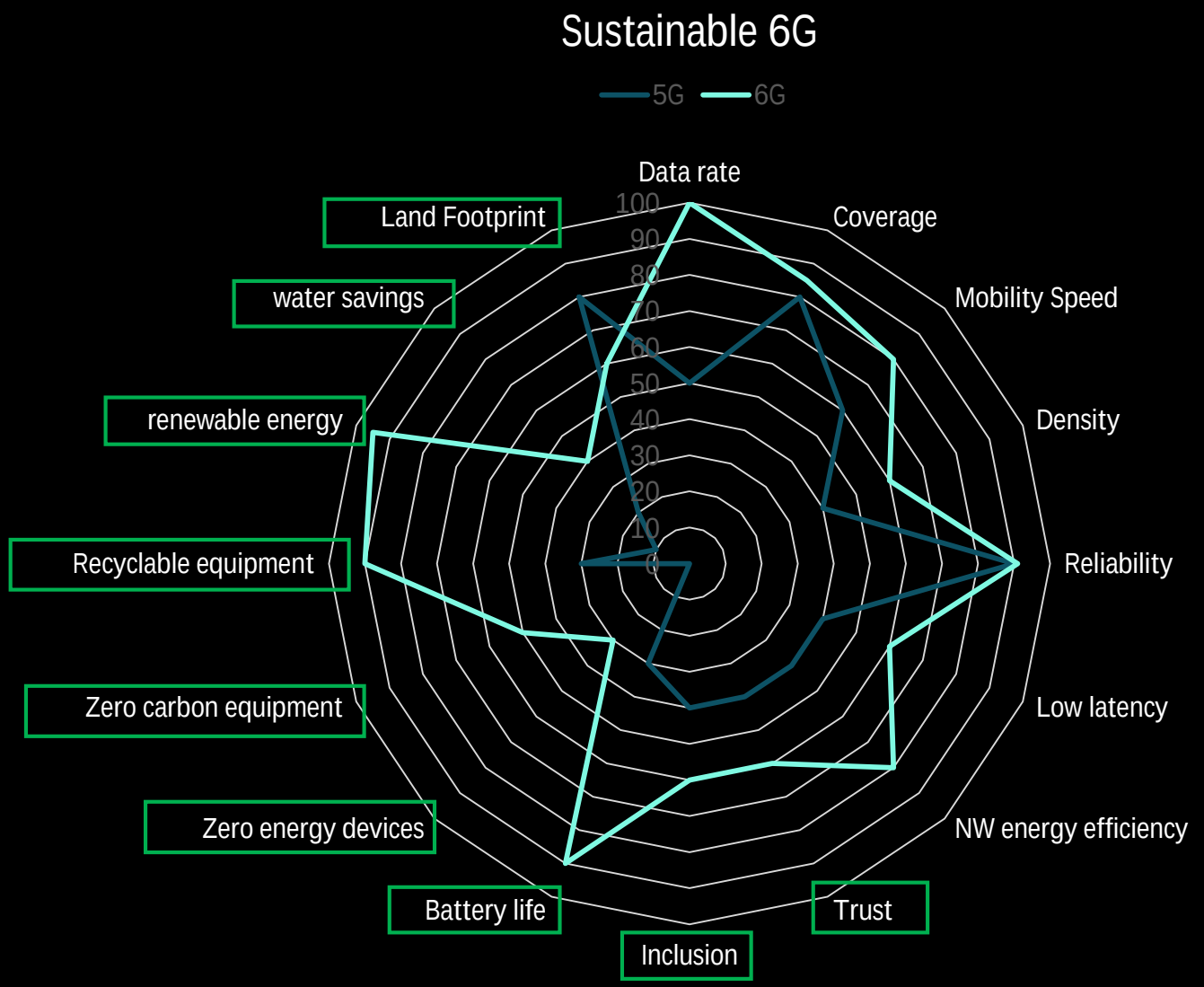
Chair: MP Odini, HPE
Vice Chair:
Colleen Josephson, Vmware
Micaela Giuhat, Microsoft

NGA Green G White Paper

TYPICAL SUSTAINABILITY KPI

CO2	Water	Material	Recycle
Net Zero carbon emissions Net Zero GHG emissions Use renewable energy Compensate remaining	Reduce water consumption Avoid water stress area Filter & Recycle water Do not reject hot water Enhance cooling systems	Use sustainable material Limit rare earth minerals Recycle & use recycled Control extraction to be fair Avoid locations unsafe	Recycle products Control recycling chain to be fair and safe Use recycled equipments Work with partners that recycle

PATH TO SUSTAINABLE 6G



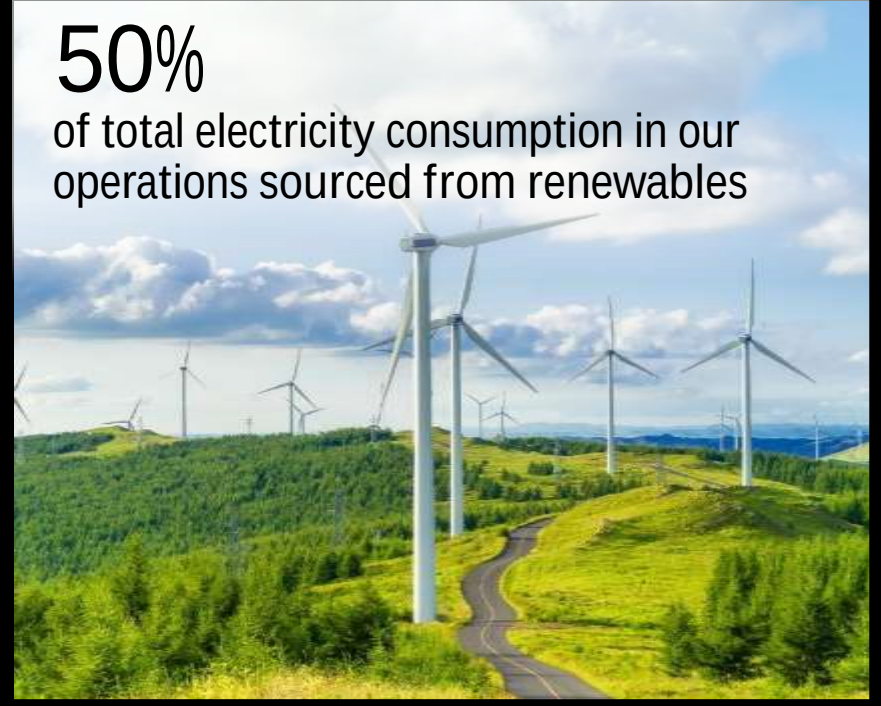
5G Focus
Data rate
Coverage
Mobility speed
Density
Reliability
Low latency
NW energy efficiency
Security

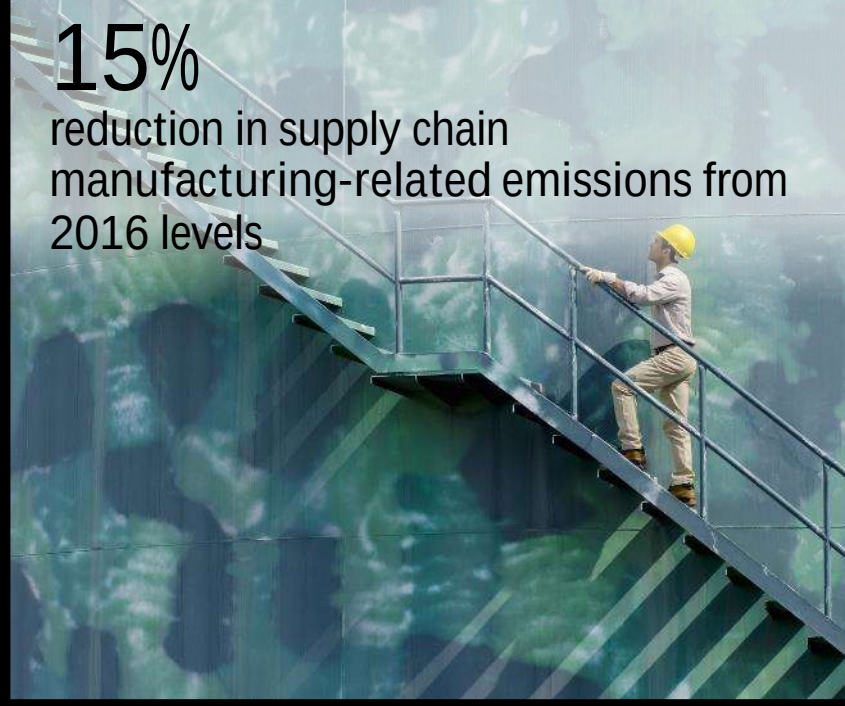
New with 6G:
Trust
Inclusion
Battery life
Low power devices
Zero energy devices (ZED)
Zero carbon equipment
Recycling
Water savings
Renewable energy
Reduced Land Footprint

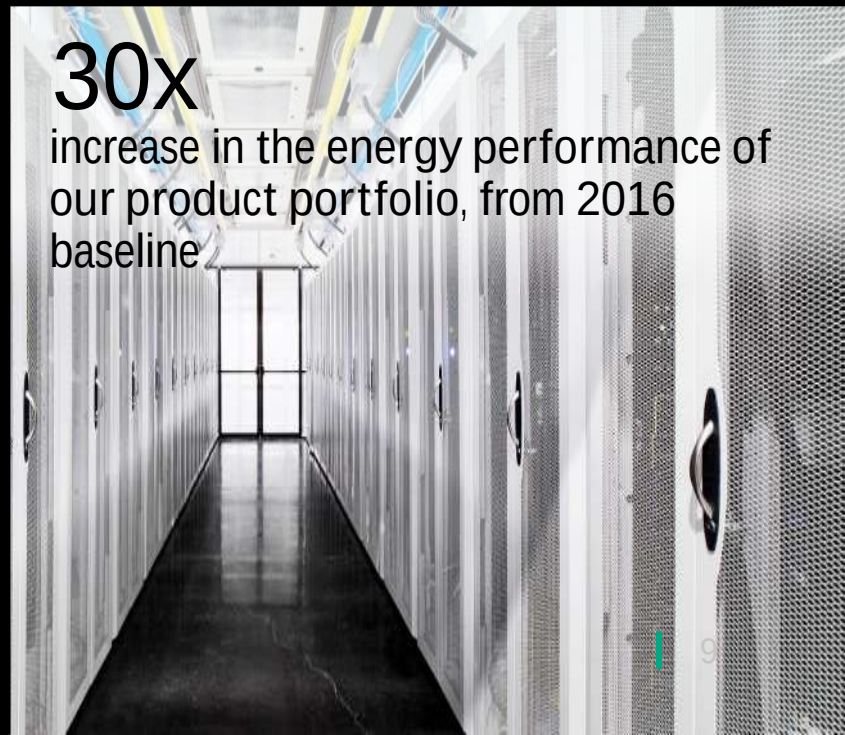
HPE CLIMATE GOALS

We are committed to becoming carbon neutral across our value chain by 2050, with intermediate targets set for 2025

Learn more about our goals in our Living Progress Report







OUR COMPLETE LIFECYCLE APPROACH

We address sustainability impacts across the IT lifecycle

CARBON FOOTPRINT AND CIRCULAR ECONOMY

Hewlett Packard Enterprise

Data sheet

Check if the document is available in the language of your choice.

HPE PRODUCT CARBON FOOTPRINT

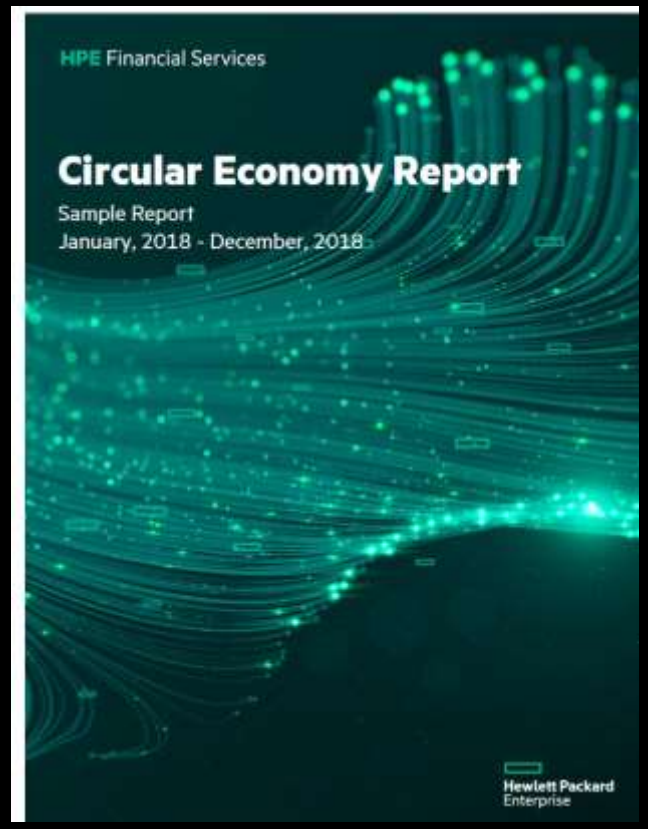
HPE ProLiant DL360 Gen10 server

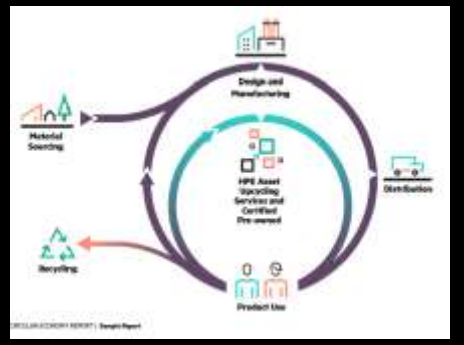
At HPE, we recognize the imperative to minimize our industry's environmental footprint, as well as the opportunity to help position other businesses and industries to enable a low-carbon economy. As we strive to increase compute power, drive efficiency, and lower the carbon intensity of our solutions, we must first start with quantifying the carbon footprint of our products. The product carbon footprint (PCF) sums up the total greenhouse gas emissions generated by a product over the various stages of its lifecycle. At HPE, we calculate the emissions associated with the extraction, production, and transportation of our products using the Product Attribute to Impact Algorithm (PAIA).[1] Read more about our approach to the circular economy.

PRODUCT CARBON FOOTPRINT

The goal of the PCF is to identify the lifecycle phases of the product and where the impact is greatest. This information is critical to manufacturers, like HPE, in order to manage environmental and social programs that will have the most impact across the life of the product.

It is essential to emphasize, as PAIA points out in its instructions,[1] that this product carbon footprint data sheet was not designed to compare different results from different suppliers.

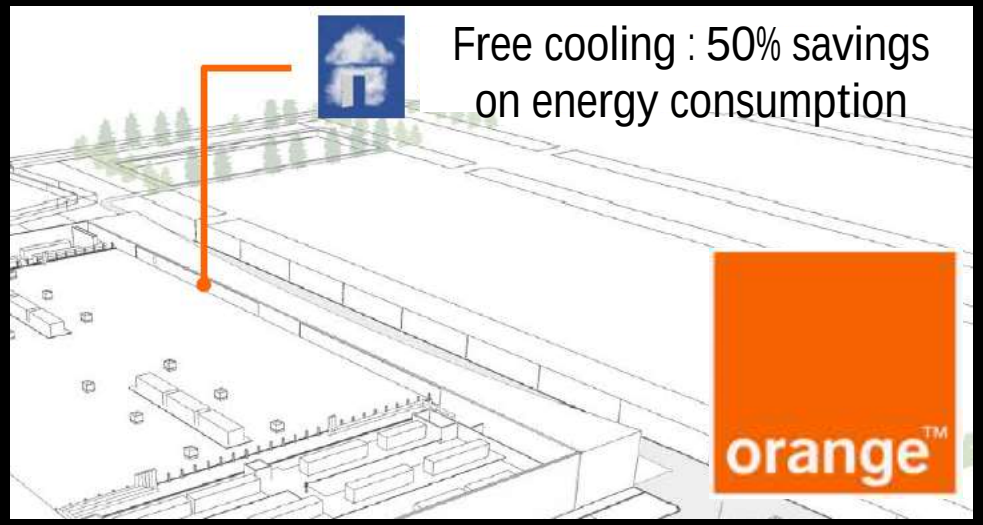




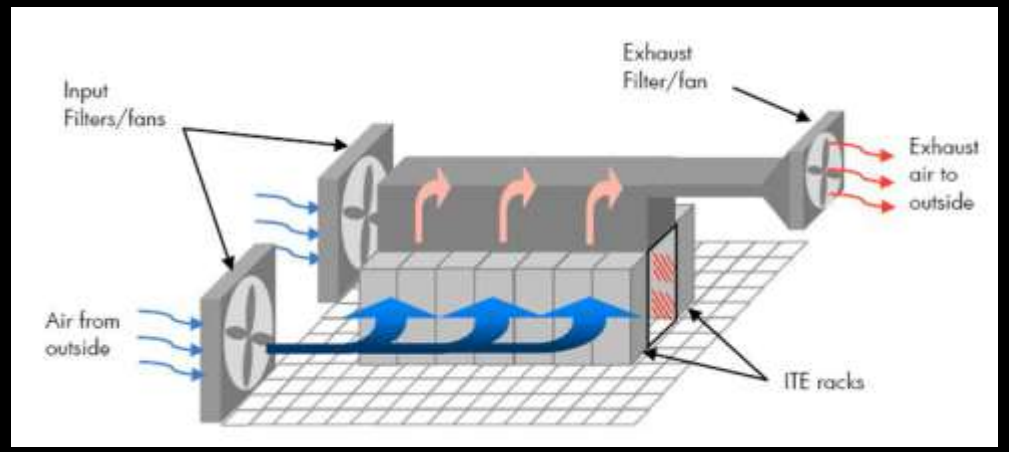
INNOVATION – FREE COOLING

Between 30 and 55 % of a data center's energy consumption goes into powering its cooling and ventilation systems — with the average hovering around 40 percent. *In short, a data center's cooling costs can approach, equal or even surpass the cost of powering the IT equipment it houses. Source: Research Paper*

Ex: Orange Brittany Data Center

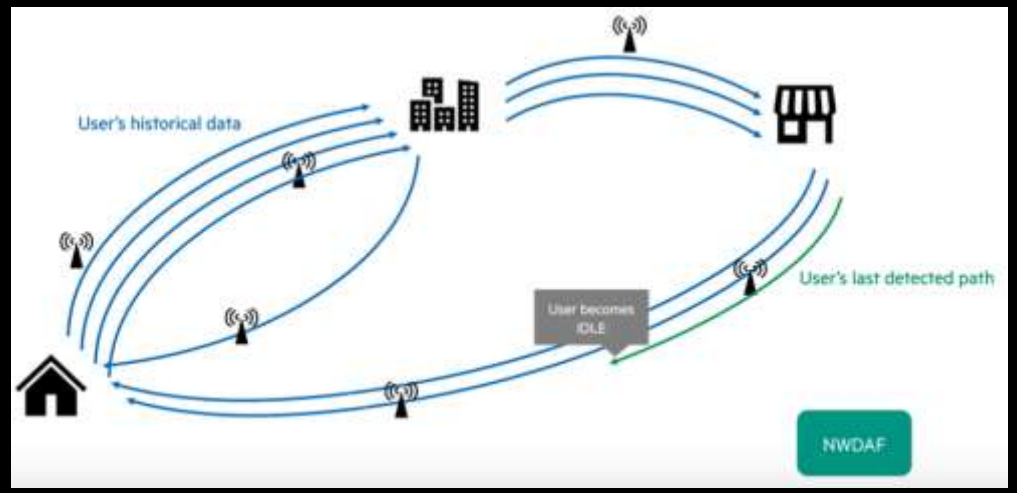


ALTERNATIVE
FREE COOLING



USE AIR
From
OUTSIDE

INNOVATION - 5G PAGING OPTIMIZATION FOR GREEN G



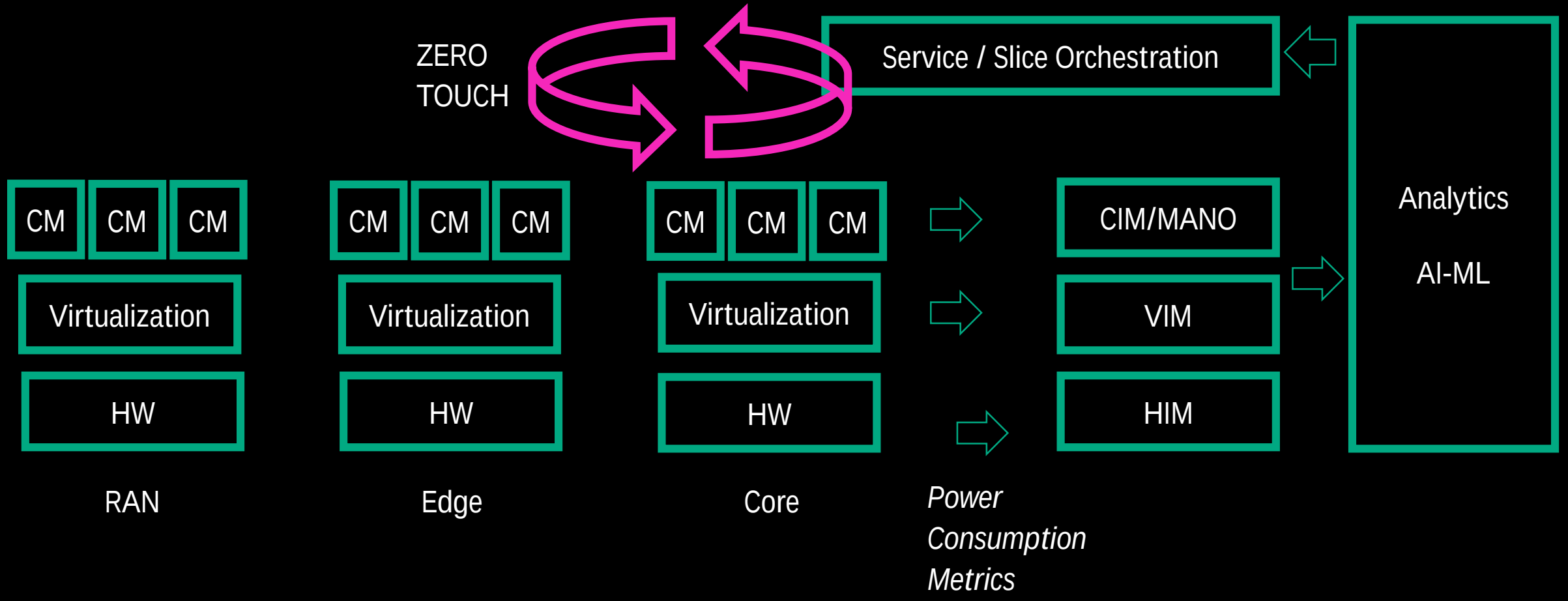
In 4G paging consumes 30% of MME energy footprint
And Device TAU (Tracking Area Update) drain batteries

In 5G, device sleep mode is a new 3GPP feature that preserves device energy.

But then device needs to be located and paged by the network to transfer a call. This consumes energy at the network and RAN level.

With AI and Machine Learning in the network, the location of the mobile can be predicted by analyzing the historical data of the mobile device mobility across different cells and areas. This can be used to optimize paging in a targeted cell and reduce the energy spent by the network. This capability can be implemented in a 5G NWDAF AI function.

INNOVATION – CLOSED LOOP AUTOMATION & NET ZERO



ACCELERATING YOUR DIGITAL TRANSFORMATION

TECHNOLOGY | EXPERTISE | ECONOMICS | SUSTAINABILITY