



DISCUSSION FORUM ON
LIFE CYCLE ASSESSMENT

Environmental Footprint of Swisscom's service portfolio: approaches used and results

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Overview on ambitions and goals



Climate protection

We have two ambitious climate goals.

1

We are reducing our own ecological footprint - by 2025, not only our company, but all our work will be climate-neutral.

2

Hand in hand with our customers, we want to enable a positive CO₂ contribution of 1 million tonnes per year.



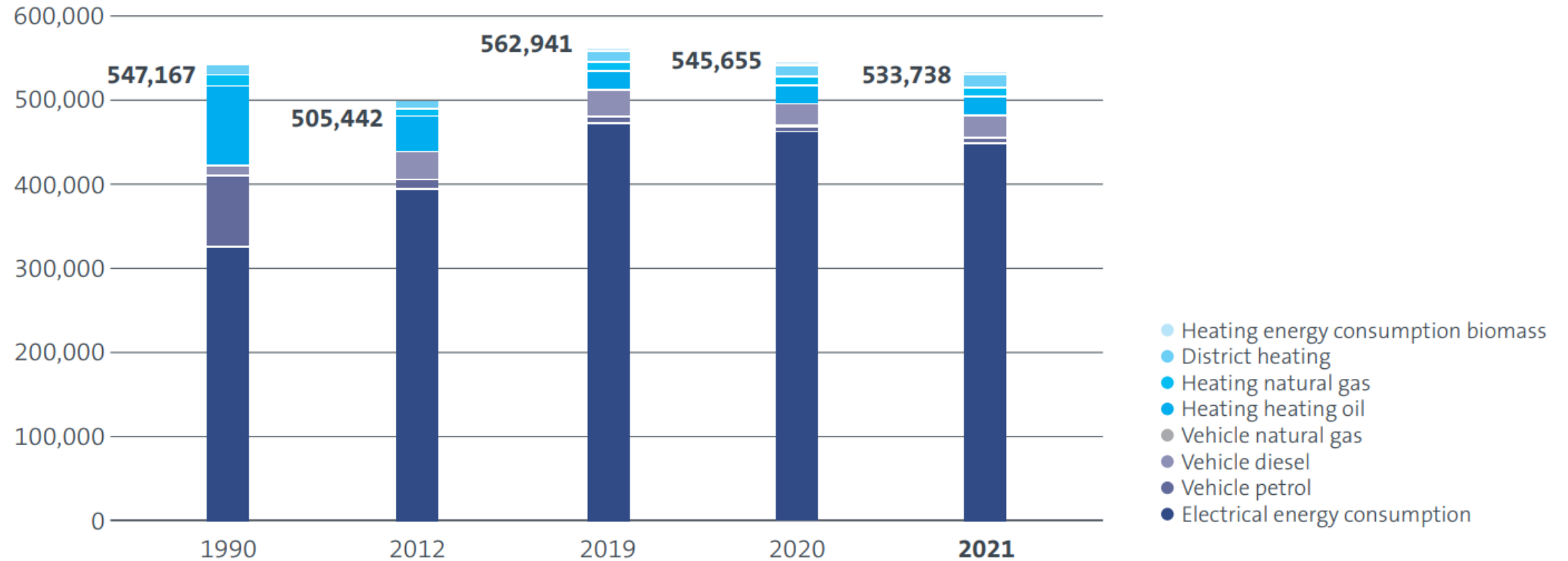
Footprint



Swisscom energy mix in Switzerland

Swisscom covers 100% of its electricity needs with a mix of renewable energy sources

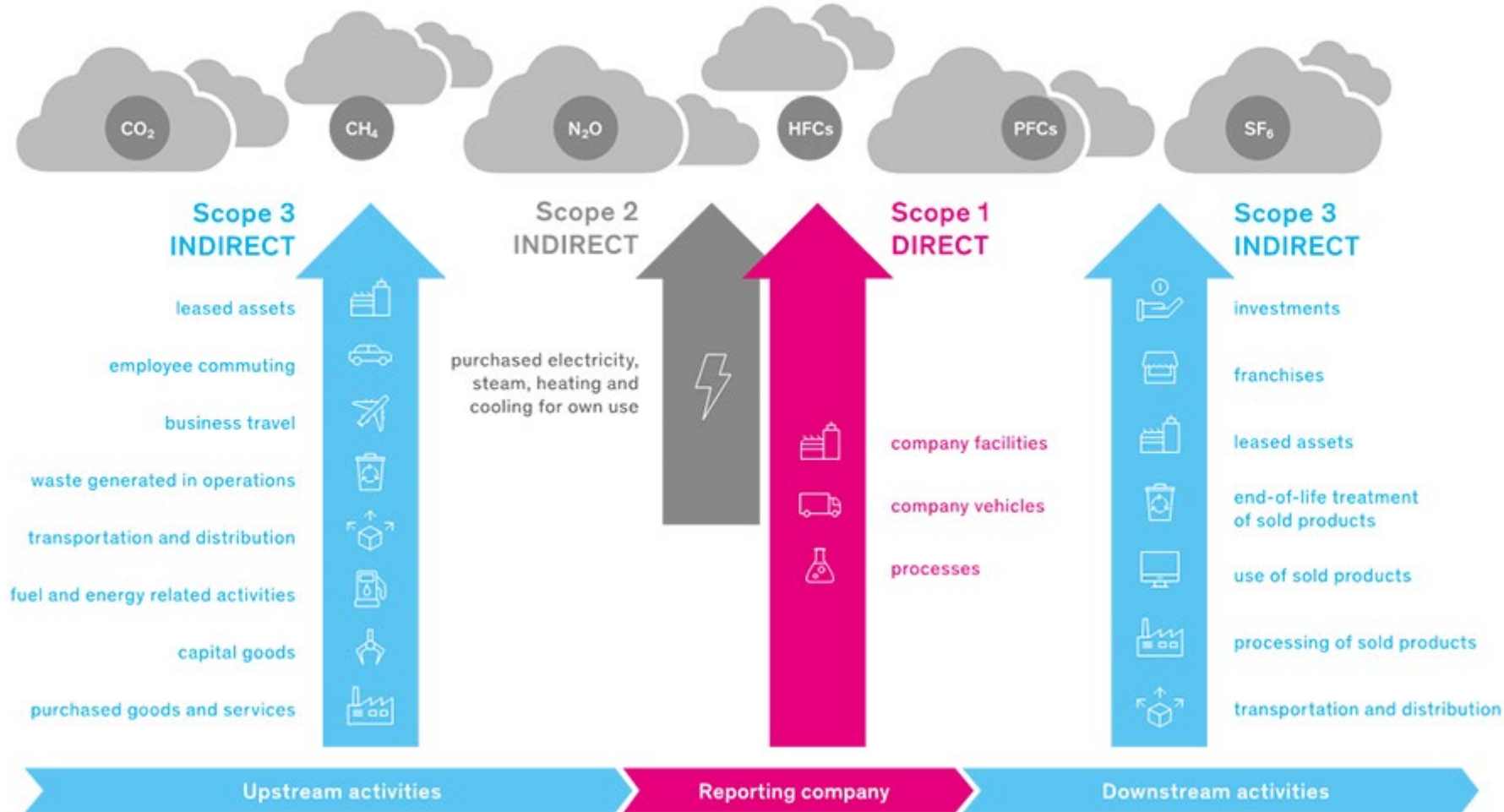
in Megawatthours MWh





Swisscom GHG emissions scope 1-3 in 2021

in accordance with ISO 14064



Scope 1:
14kt CO₂ eq

Scope 2:
0 kt CO₂ eq

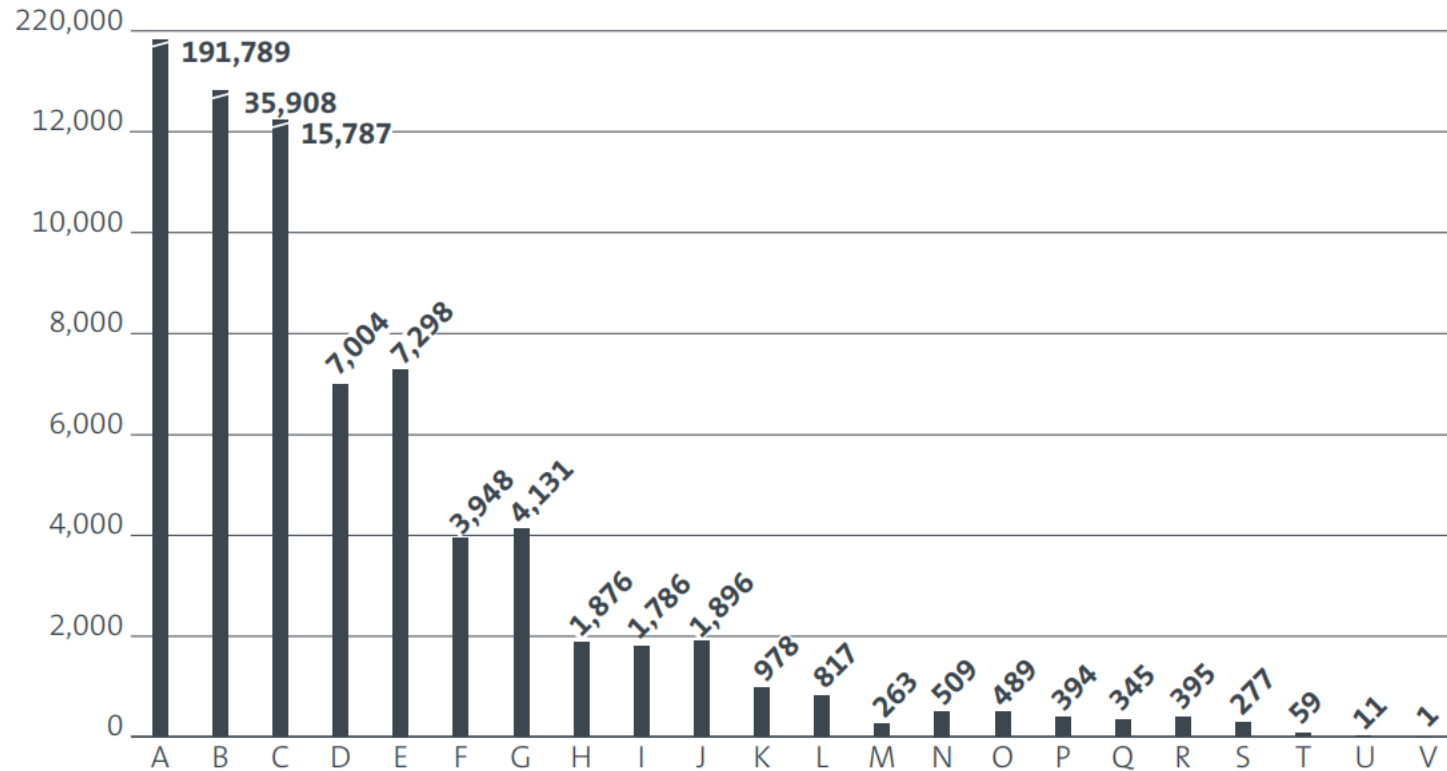
Scope 3:
276 kt CO₂ eq



All Scope 3 emissions by GHG category

purchased goods and services are by far the largest category

in tonnes CO₂ eq.



- A = Cat. 1 Purchased goods and services
- B = Cat. 11 Consumption of sold products
- C = Cat. 4 Upstream transportation and distribution
- D = Cat. 8 Upstream leased assets

- E = Cat. 3 Provision of electricity
- F = Cat. 2 Capital goods
- G = Cat. 7 Employee commuting (car)
- H = Cat. 15 Investments
- I = Cat. 5 Waste generated in operations
- J = Cat. 3 Provision of vehicle fuels
- K = Cat. 9 Downstream transportation and distribution
- L = Cat. 3 Provision of heating oil
- M = Cat. 6 Intercontinental flights
- N = Cat. 6 Car journeys to meetings
- O = Cat. 3 Provision of district heat
- P = Cat. 3 Provision of natural gas
- Q = Cat. 7 Employee commuting (public transport)
- R = Cat. 12 Disposal of the end devices
- S = Cat. 6 European flights
- T = Cat. 6 Rail travel in Switzerland
- U = Cat. 3 Provision of biomass
- V = Cat. 6 International rail travel



The path to climate neutrality 2025 at Swisscom

essential levers to reduce the footprint



Energy-efficient infrastructure

Fresh air cooling in fixed and mobile networks - use of new technologies.



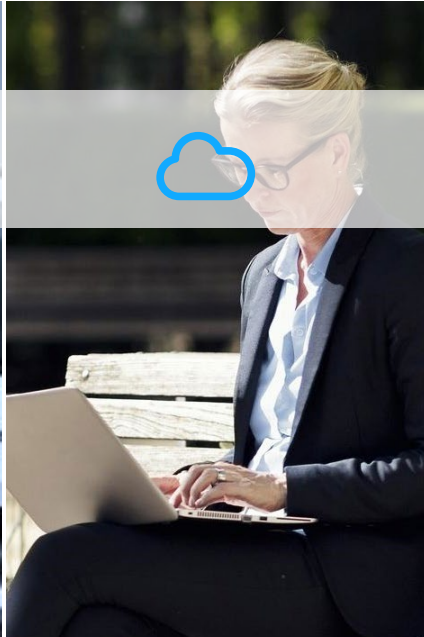
Renewable energies

Supply the network with 100% renewable energy -
Construction of solar plants



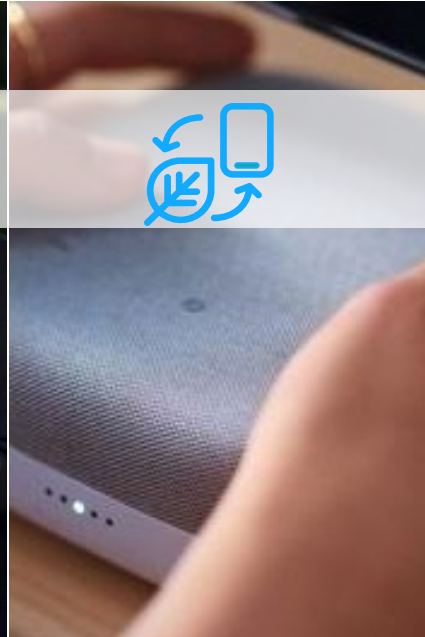
Sustainable mobility

Electrification of the entire vehicle fleet



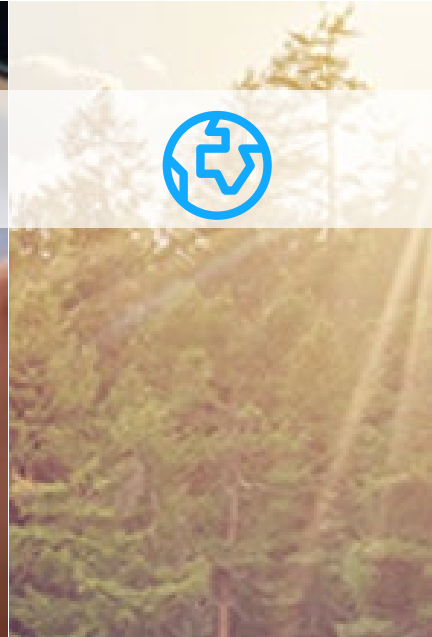
Climate-friendly working

Exploiting the advantages of digitisation



Sustainable supply chains

Recyclable own products / optimise the carbon footprint of the supply chain



Carbon Capture & Storage

Investing in high-quality projects with reliable CO2 reduction



Footprint and Circular economy of products



Circular Economy Framework

Governance			
	<ul style="list-style-type: none">Internal CE	ICT Industry	Regulation
		<ul style="list-style-type: none">SupplierPeers	<ul style="list-style-type: none">EUSwitzerland
Swisscom Circular Economy			
Products	Trading goods Standard Mobile devices, etc.	Own brand products TV-Box, Internet-Box, WLAN Box	Network Infrastructure / data center
Projects	<ul style="list-style-type: none">Mobile Aid (+ B2B)Mobile Buyback (+B2B)RefreshedRepair	<ul style="list-style-type: none">DesignRefurbishment (Rec4All)ReusePackaging ReBox	<ul style="list-style-type: none">RecyclingRemoval
Operations	Operations reuse and recycling, paper consumption, CO2 Scope 1-4, waste management, Energy efficiency, mobility, food		
Communication	External (public, Customers, marketing communicatinos, etc) Internal (awareness)		

Swisscom own branded products

TV



Internet



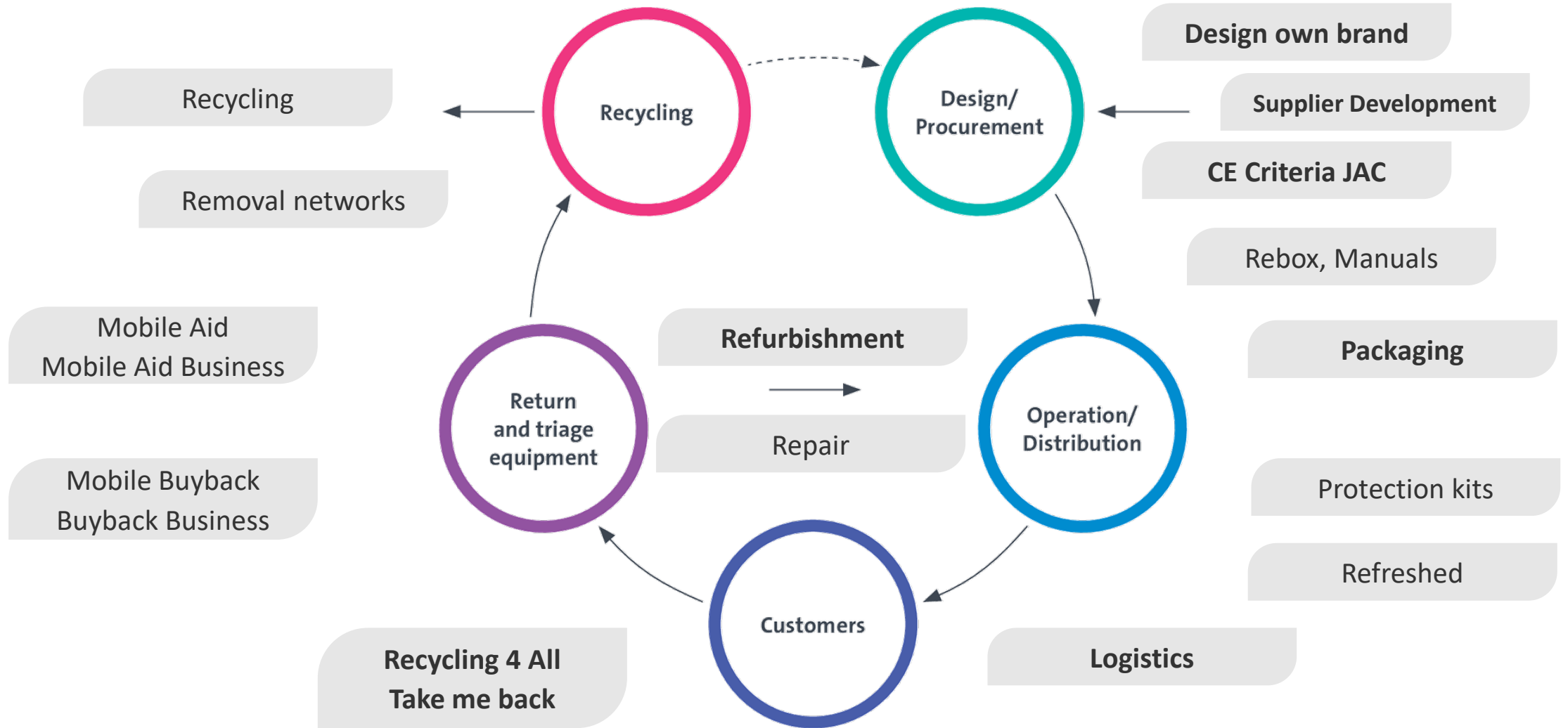
Home network





Circular Economy @ Swisscom

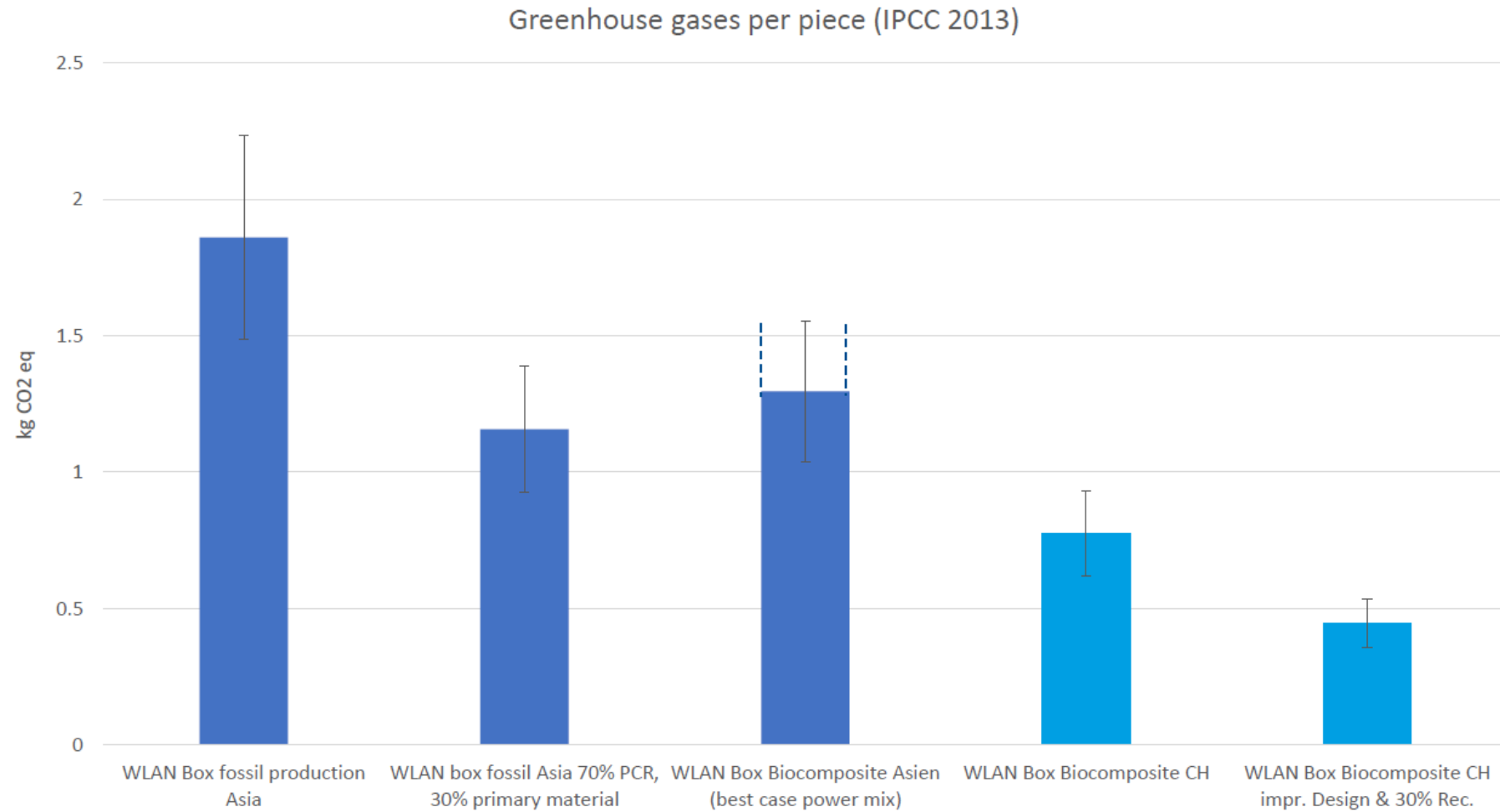
Programmes that contribute to Circular Economy





Own brand product Design

LCA on a Swisscom own brand product housing





Recycling 4 All

New logistics for refurbishment – CO₂ reductions through reduction of scope 3 emissions



Status quo

Various notifications, not clear what to with or how to return old devices.



Measures

Uniform, clear and targeted notification of customers with uncomplicated return services.



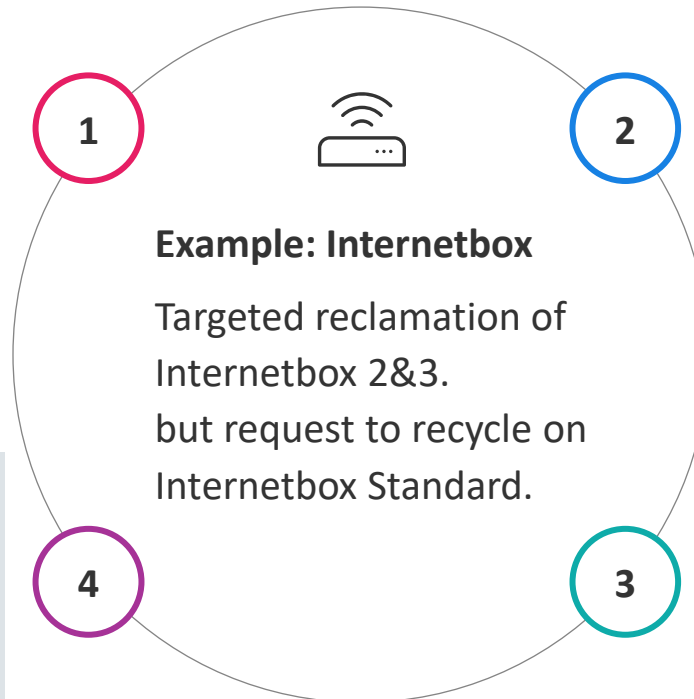
Impact

Cost savings and **CO₂-emissions reduction by 1'600 t through reduced logistic effort and reuse of second-hand devices** as replacement equipment.



Target

Equipment that is still usable finds its way back to us. The rest is disposed of directly by the customer.





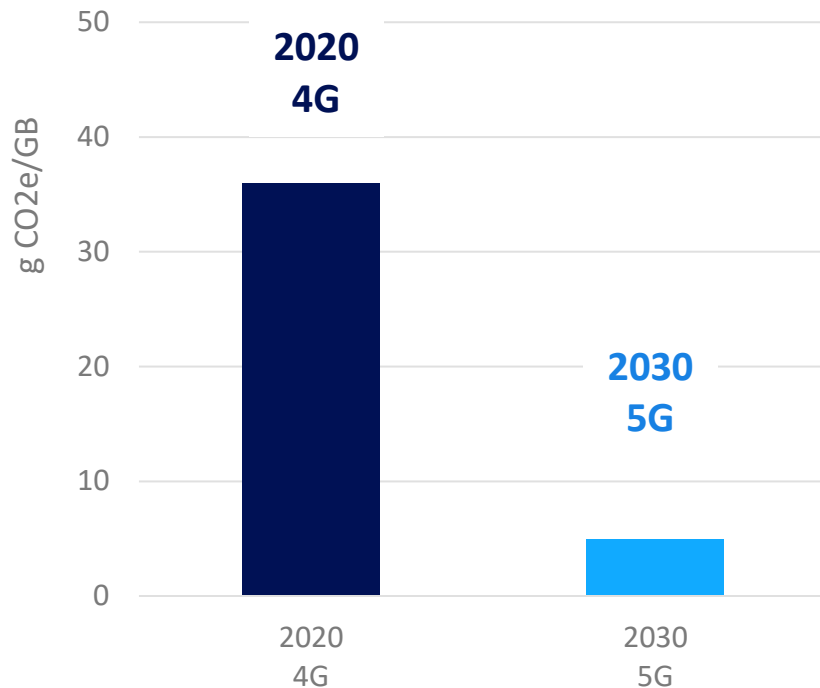
LCA on data transmission by different type of networks



Greenhouse gas efficiency of 4G and 5G

Production and operation of 4G/5G mobile network infrastructure, (the functional unit is 1 GB of data transmitted)

Production and operation of 4G/5G mobile network infrastructure



2020: 4G

- In Switzerland in 2020, roughly 538.8 million GB of data are transmitted via 4G networks per year.
- Data transfer via 4G networks causes roughly 36.0 g CO₂e per GB in 2020.

2030: 5G

- In Switzerland in 2030, 5G networks are expected to transmit 4.0 billion GB of data per year.
- **Data transfer via 5G networks is expected to cause roughly 4.9 g CO₂e per GB in 2030; or 86% less than 4G mobile networks in 2020.**



Bringing all efforts to the customers in climate neutral subscriptions



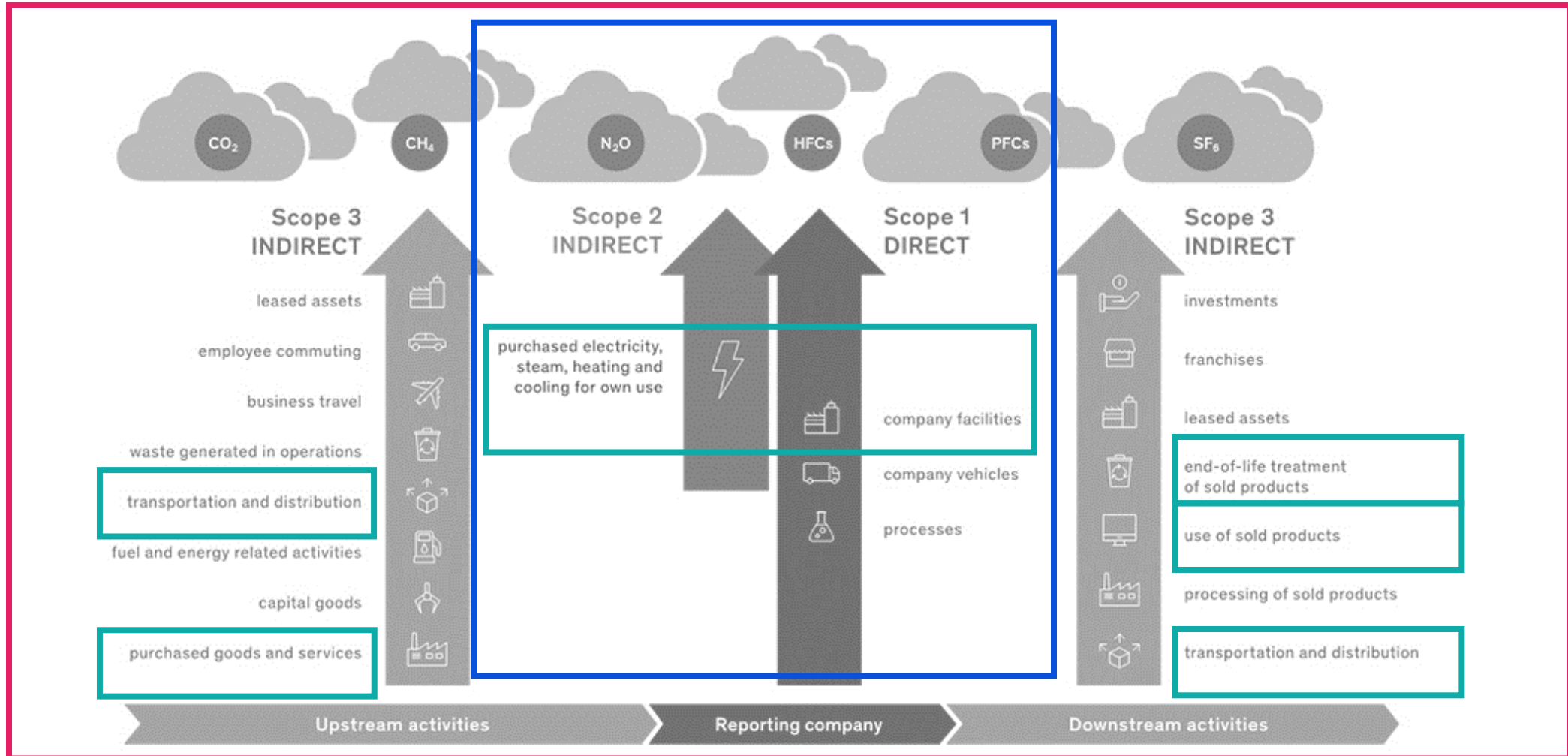
Swisscom's climate neutral subscriptions





Swisscom's climate neutral goals by scope

climate neutral subscriptions to be certified with PAS 2060:2014 (based on ISO 14064 inventory)





Summary

Three overarching questions



1) The biggest challenge concerning the analysis of the service was ...

To scope climate neutral subscriptions by bringing enduser hardware, network, operations and customer behaviour together

Three overarching questions



2) My main recommendations are

... for the choice of functional unit of an enduser device

Reduce to the max – to the smallest possible piece such as the housing

...for the choice of system boundaries of a complex service such as a subscription

Use existing data and don't re-calculate the basics

Three overarching questions



3) I see the following major differences between LCAs of services & common LCAs of products:

With the product, it is much easier to choose a small functional unit

Services, on the other hand, are often more complex and the extrapolation of small units can quickly lead to large deviations.



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Infos

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