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**WSIS « ICTs and Clean Technologies for Climate
Change: Enabling the net zero transition »**

ITU Geneva 17 th March 2023

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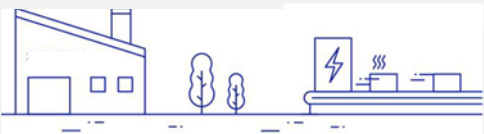


Orange is committed to the "Net Zero Carbon" methodology which is based on the following 3 pillars and using ITU Methodology ITU-T L.1470



Scopes 1, 2, 3 refer to different headings in an organisation's greenhouse gas (GHG) emissions balance

<p>Scope 1</p> <p>Direct emissions</p> <p>E.g. company's therm vehicles or diesel generat</p>	<p>Scope 2</p> <p>Indirect emissions</p> <p>E.g. electricity consumption</p>
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Scope 3


All other indirect emissions upstream (logistics, company suppliers) and downstream (company customers)




- A. Reduce its induced emissions on scopes 1, 2 and 3 (IPCC recommendation: around 90% by 2040)
- B. Reduce outside its scope: contribute to the reduction of other companies' own emissions (avoided emissions)
- C. Develop sequestration and capture: sequester residual emissions that cannot be reduced.



Objectives in line with the IPCC / SBTi recommendations and the Paris climate agreement:



limit average global warming to +1.5°C in 2100 compared to pre-industrial levels (1850)



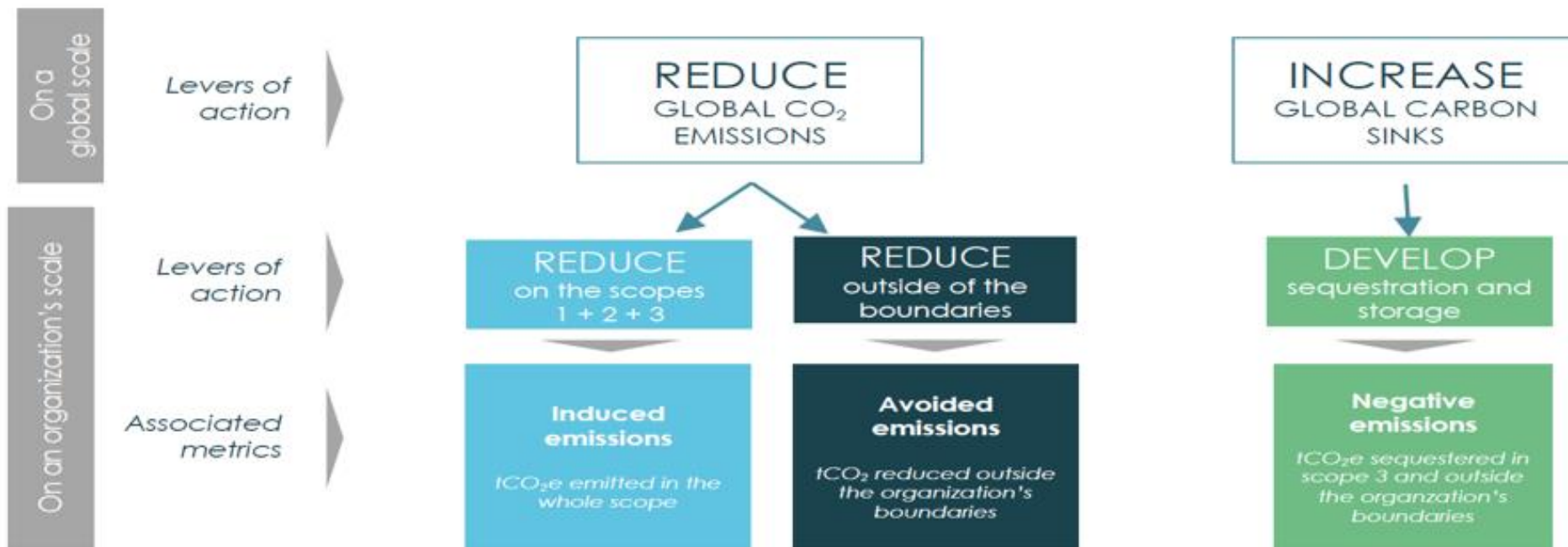
 Collective of companies including major groups such as Engie, RATP, EDF, L'OREAL, Orange, Groupe BPCE, UNIMA, REMADE, HAVAS PARIS ...

Be Net Zero Carbon in 2040

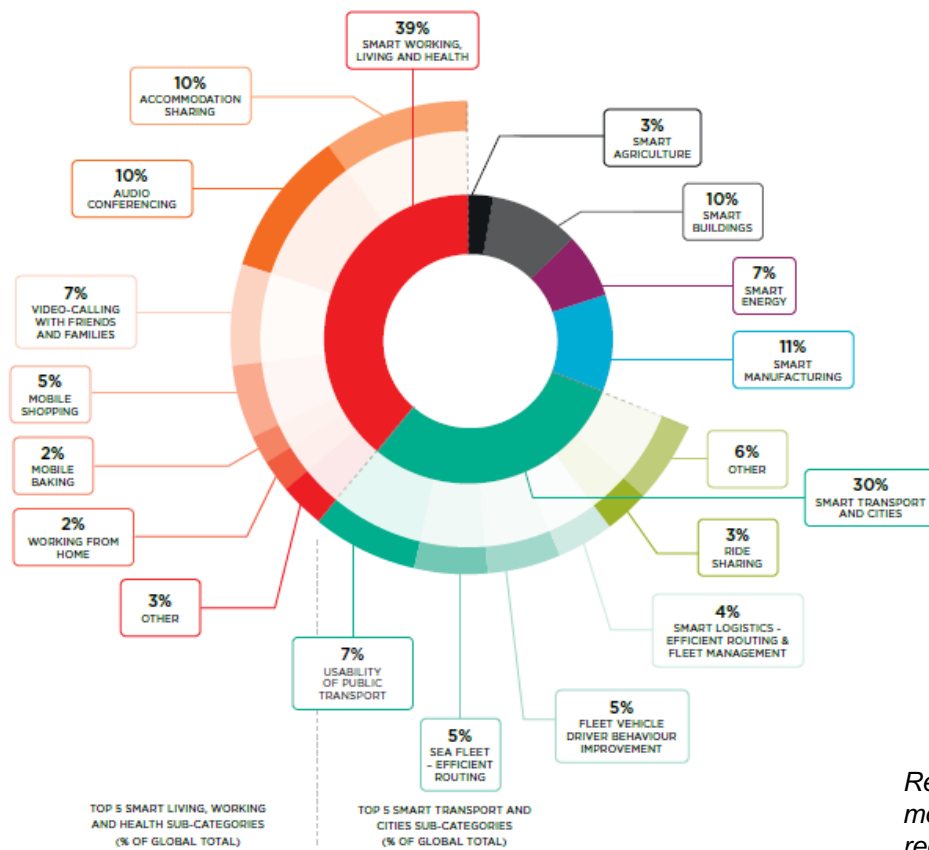


ARTICULATING CORPORATE AND GLOBAL CARBON NEUTRALITY

From the global net zero to corporate action



Digital offers solutions for reducing carbon emissions in all sectors



- In 2018, according to the GSMA, mobile networks enabled a 2.135 MT reduction in global emissions (that's 10x more than the emissions from the networks themselves)*
- By 2030, GESI estimates the potential for emissions reductions through digital technology in other sectors (smart agriculture, smart cities, remote working, etc.) at 20%.

Réf. GSMA – « The Enablement Effect » - The impact of mobile communication technologies on carbon emission reductions

How Orange is making IoT the driving force of environmental and societal transition

Orange is committed to building a sustainable and responsible IoT at each stage of the value chain and is also supporting the emergence of IoT for green solutions by :

- offering **IoT solutions** to serve societal and environmental issues : Orange Energie, Smart metering...
- **Leveraging the potential of 5G** to massify solutions for the environment: smart agriculture, smart city, industry, etc.
- **Leveraging AI and Edge Computing** to improve the energy management of IoT objects and services
- **Strengthening our partnerships** with committed players & stimulate the ecosystem to accelerate the development of green and responsible IoT solutions.

84% of IoT technology applications were addressing, or could potentially address, the UN's Sustainable Development Goals (WEF)

Bring enhanced connectivity to our work and personal lives

help save resources and reduce unnecessary costs

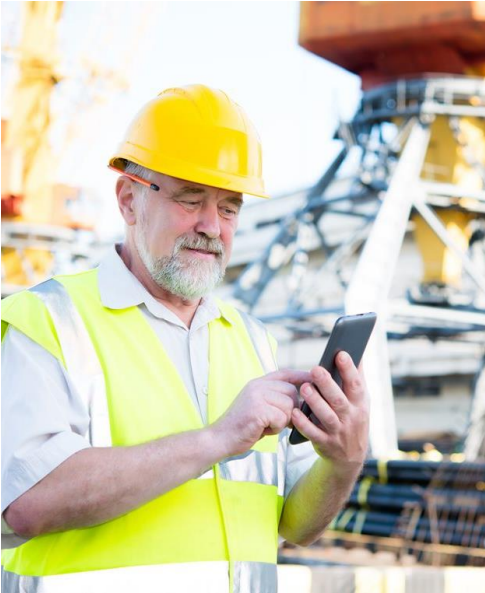
to the benefit of everyone.





46 % of companies say monitoring environmental conditions & improving resource efficiency are the two biggest drivers behind their adoption of IoT solutions

(Inmarsat research)







Some concrete Orange use cases illustrating how the IoT helps reduce the environmental footprint



Smart Water Management		<p>Measure, alert, intervene in real time to: reduce waste, improve water quality, optimize interventions, prevent flooding, optimize irrigation</p> 
Smart Metering	The IoT, big data and AI at the service of the preservation of energy resources	<p>Monitor consumption in real time and in detail (energy, water) in real time to optimize meter readings and ultimately optimize consumption, monitoring the filling rate of tank trucks to avoid empty travel, etc.</p> 
Smart Waste		<p>Optimize waste collection services and reduce travel or adapt traffic schedules.</p> 
Smart Tracking		<p>A tool that can be seen as serving the circular economy within the industry: Optimize activities and reduce the use of resources (raw materials, travel, etc.), prevent incidents (monitoring of hazardous materials, etc.) Optimize fleet logistics: intelligent rotation of trucks according to fill rates, monitoring of their utilization rates to anticipate interventions, etc.</p> 

Vision IoT Global

Illustration use case

	<p>Smart building Smart Home Energy</p>	<p>Optimize energy management. Buildings and houses. Real-time monitoring of consumption, analysis of consumption, lifestyles, habits, etc. to help building operators (B2B) and consumers (B2C) to be informed of their consumption, better manage their equipment and reduce their energy consumption .</p>	 <p>Around 30 % saving</p>
	<p>Smart Cities</p>	<p>The IoT is at the heart of the challenges of the low-carbon city by making it possible to optimize all of these consumptions and resource needs: lighting, urban traffic / transport / mobility, thermal management of buildings, flow management, garbage collection ...</p>	 <p>66 % energy-savings for public lighting</p>
	<p>Smart Harbour</p>	<p>Streamline the service chain, flows, unloading of containers... Improve traceability, improve safety and limit incidents... The IoT, AI and Big Data will also be a real lever for developing the circular economy that can arise within ports: the diversity of activities can promote exchanges, complementarities, synergies</p>	

Orange has carried out a study to reduce its impact on biodiversity using the GBS methodology (Global Biodiversity Score) - Standardization on going with ITU and ICTs solutions , as for Climate , could monitor Biodiversity Impacts

Implications of the results for developing coupled actions for climate and biodiversity.

Examples of actions to be implemented and opportunities to develop joint climate-biodiversity compensation actions

Type of impact	Impact mitigation	Actions to compensate for impacts	Opportunity to couple with climate actions
Direct impacts			
Land use	Probably little room to reduce this impact	Any habitat restoration projects in the areas concerned	Yes, if the project includes habitat restoration
Ecotoxicity	Demonstrate the implementation of good practice to reduce pollution risks; Use of certified materials or application of good practice standards	Specific projects for the restoration of aquatic ecosystems	Yes, if the project includes the restoration of aquatic ecosystems
Carbon emission	Identify good practice in some units and extend to other units	Carbon project	Yes, if the project is in the impacted areas
Value chain impacts			
Land use	Use of certified materials or application of best practice standards	Projects in areas from which the materials originate	Yes, if the project is in the impacted areas and contributes to habitat restoration

ICT Part of the solution : Protecting biodiversity

Orange – CREA UNFCCC Momentum for Change Prize at Bonn COP23

- The Mont-Blanc Research Centre for Alpine Ecosystems [studies the impacts of climate change on the Alps, particularly in terms of biodiversity](#)
- Since 2014, Orange has provided CREA with the means [to measure altitude snow level fauna and flora behaviours, data collection equipment and various support](#) so that data is made available to scientist networks
- [Joint creation of a 3D atlas of Mont Blanc](#)
- Orange employees volunteer to help CREA

Orange Marine – Argo New project on climate and biodiversity in the Oceans

- Launched in 2000 by the UNESCO Intergovernmental Oceanographic Commission (IOC) and the World Meteorological Organisation (WMO), the Argo international programme is [an essential element of the global ocean observation system](#) put in place to track, [understand and forecast the role of the ocean in the planet’s climate](#).
- As part of the Euro-Argo programme, our cable boats help [install standalone beacons to evaluate ocean condition in real time](#)





Thank You