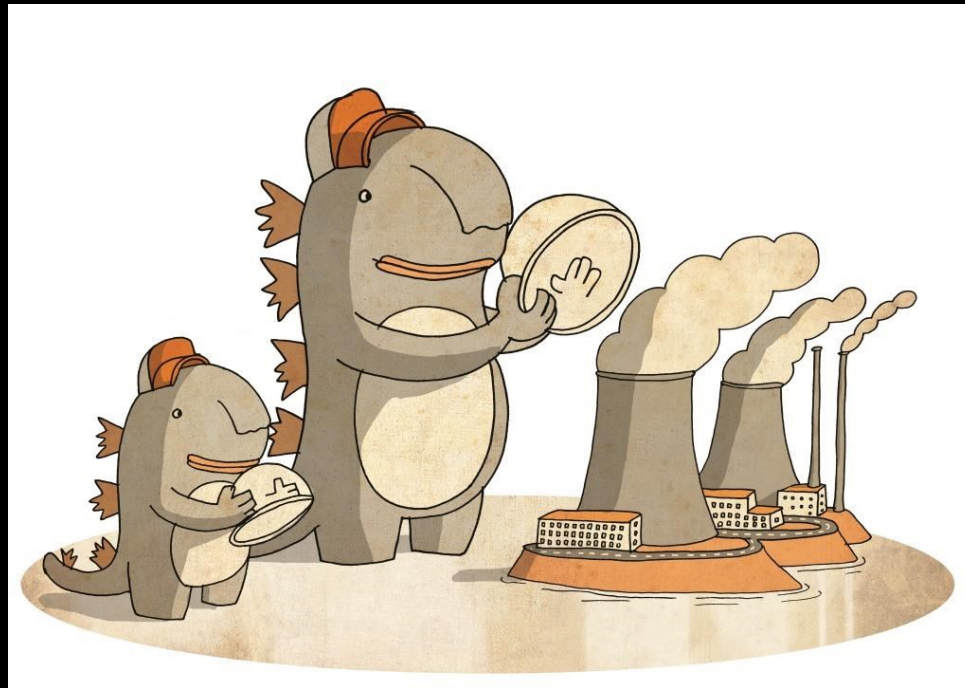


# Orange & Climate Change



Orange

Marc Vautier & Xavier Durieux for IMT RT8 meeting - March 19th 2015

## Orange objectives on climate change



Orange has set ambitious goals to reduce its Energy & CO2 footprint:

1 - Reduce its direct impacts (2020 vs. 2006)

CO2 emission : -15%

Energy : - 20%

2 - Reduce its impacts on customer side

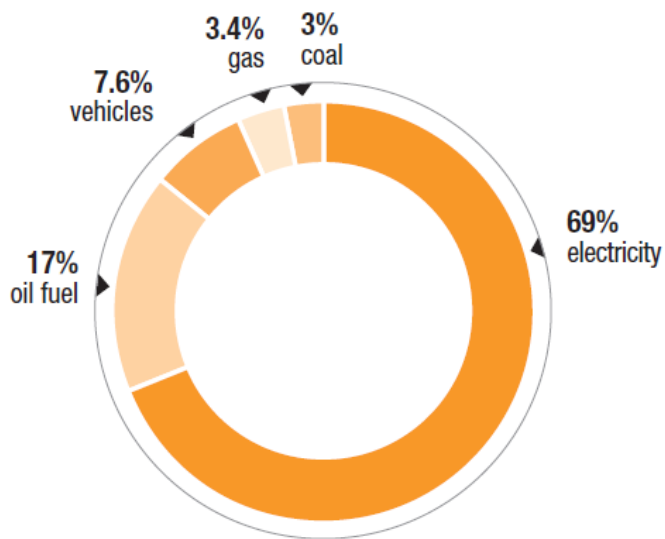
3 - Help its customers to reduce their own impacts

NB: Climate change is the topic of the day, but we are also working on other environmental impacts...

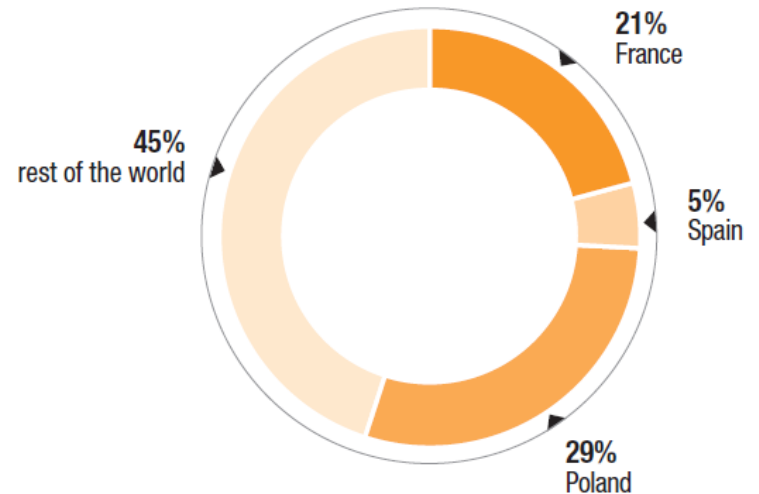
# what is at stake?

1,503,945 metric tons of CO<sub>2</sub> emissions by the Group in 2013

› energy consumption by type



› CO<sub>2</sub> emissions by country

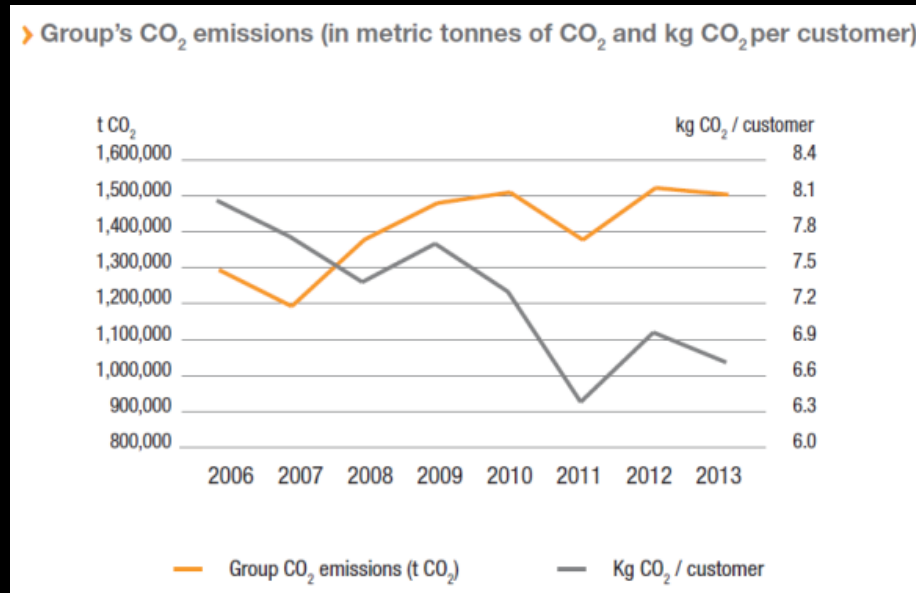


# 1 - Reduce our direct impacts - Actions

- we have defined and deployed operational energy action plans in 22 countries
- These 22 countries represent over 95% of the energy consumed by the Group's technical installations
- Reducing energy consumption by networks and information systems, which account for close to 70% of the Group's total energy consumption: the Green ITN action plan
  - Network: Pooling of Radio Access Network (RAN) equipment (aka "RAN sharing"), RAN renewal (2G & 3G -> 2/3G), Former telephone and data network (PSTN, ATM ... ) dismantling
  - IT virtualization
  - Infrastructure: Extend climatic range in DC from [20°; 24°] to [22°; 24°] (-12% in energy consumption) optimized ventilation systems, opening of new-generation data centers
  - Energy: 2,300 solar stations in 19 countries (15 in the AMEA region), 2k BTS Solar panel solutions to avoid gen set (Orange Africa, 54kT of CO2 spared & 20 million of liters of fuel spared)
- improving the energy efficiency of buildings;
- reducing transport impacts

# 1 - Reduce our direct impacts – Results so far

- A total 600,000 metric tons of CO<sub>2</sub> were prevented in the period 2010-2013 ☺
- And the average emission per customer significantly decreased ☺



- but in absolute terms, network consumption rose 44% from 2006 to 2012 ☹
- 2 main factors:
  - the hike in the number of customers served (up 34% to 178 million at end-2012, from 133 million in 2006\*);
  - the growth of new digital uses, generating more data traffic in our networks and IT systems, and, as a result, higher power consumption.

# 1 - Reduce our direct impacts – what's next?

new avenues to achieve reductions with a 2020 target date:

- for network and IT
  - a plan to gradually replace the network infrastructure and IT systems with less energy-hungry solutions (new network architectures NGPoP, future G5 mobile Network...)
  - improved collaboration with suppliers to design new generation equipment delivering significant energy efficiency gains.
  - plus some low hanging fruits (shut down unused interfaces, low power mode...)
- for energy and infrastructure – R&D
  - Improve building structure to facilitate heat transfer from inter to outside
  - Liquid cooling in telecom equipment
  - 400 Vdc to power telecom equipment (instead of 48V) (field trial) -> More than 10% in energy saving (and less copper, less equipment)
  - Alternative energy powering solution for access network in Europe: Wind turbine, Solar Panel
  - Tests of fuel cell to replace gen set or batteries



## 2 - Reduce impacts on customer side - Home Network

- Reduction of home network device energy consumption

- Relevant low power mode
- Minimize the pic of maximum power consumption



- Increase the life duration of the product toward refurbishing process

- Optimize the box design in order to facilitate the refurbishing
- Choose component with long life duration



- Shell of box with less environmental impacts, inc. CC

- Recycled plastic
- Bioplastic based on brown seaweed (Algopack)



- New activities: software eco design

## 3 - Help customers to reduce their own impacts - Orange Business Services side

- Smart Cities programme:

- improve mobility within cities and contribute to traffic free flow with connected cars. E.g. A partnership deal with Streetline to develop smart parking services in France, giving motorists real-time information on parking availability and how to get to them;
- encourage use of public transport;
- develop smart grids to help power companies to manage energy more efficiently;
- develop services to improve the day-to-day urban experience for citizens and tourists alike;
- Smart Building: support the development of smart buildings for the city of tomorrow.

- Smart Agriculture:

Tens of thousands of connected devices in 30 countries to enable smart agriculture systems (M2M connectivity services to Dacom, an innovative high-tech company that develops and supplies ICT solutions that provide yield optimization to farms around the world)

- telecenters project (with CDD & Regus)

- service eco-design/eco-innovation (a 1<sup>st</sup> pilot project achieved, a 2<sup>nd</sup> one just launched for a forthcoming Cloud based service)



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# Thanks



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