



The carbon abatement potential of ICT

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BT

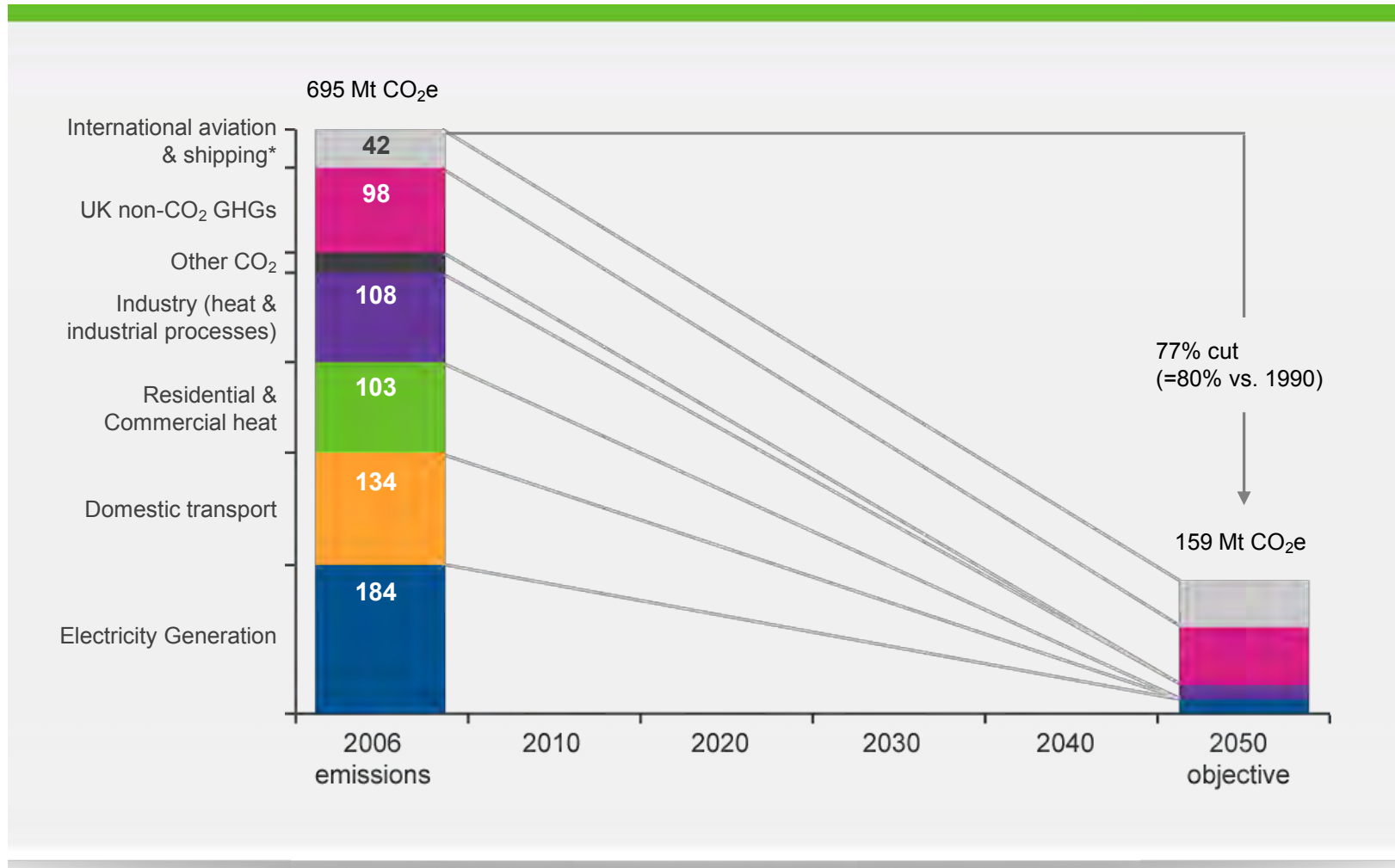
23rd January 2012

Agenda

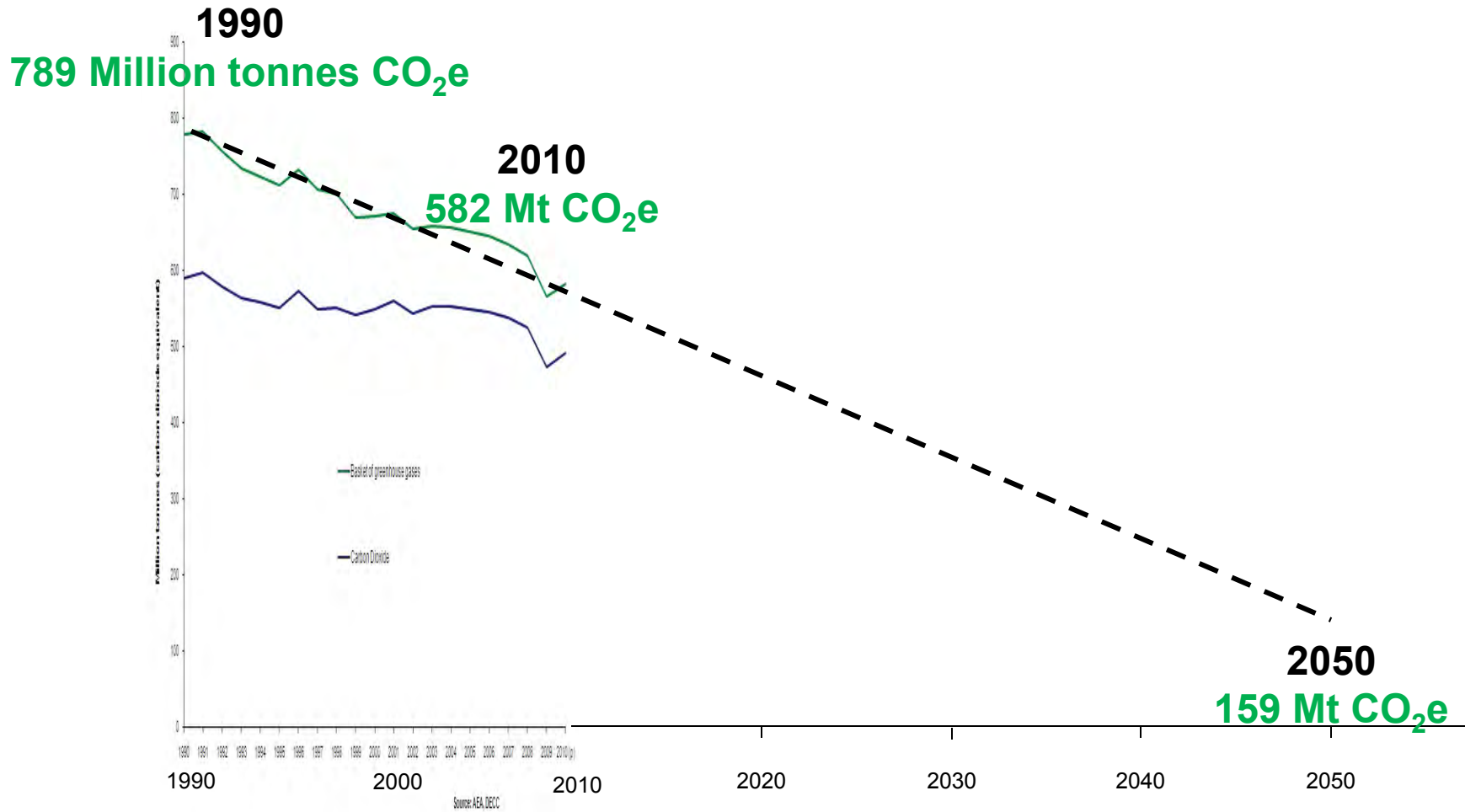
- BT's commitment to sustainability
- ICT and carbon reduction
- Measuring the carbon footprint of ICT
- Assessing the Carbon Impact of Superfast Cornwall
- Carbon Impact Assessments

Responding to climate change – the scale of the challenge

The move to a low carbon economy will be as impactful as the industrial revolution



So how are we doing?



BT's commitment to sustainability

A better business
↻
A better future

- ▶ Driving broadband-based consumer services
- ▶ Being the 'Brand for Business' for UK SMEs
- ▶ BT Global Services – a global leader
- ▶ The wholesaler of choice
- ▶ The best network provider

▶ A responsible and sustainable business leader

CUSTOMER
SERVICE
DELIVERY

COST
TRANSFOR-
MATION

INVESTING
FOR THE
FUTURE

A better
business

A better
future

Honesty

Agility

BT's commitment to sustainability

Protecting our environment

We set our first
carbon reduction
target back in 1992



Some of our headline achievements

- A reduction in the carbon intensity of BT's global business by 54% compared to 1997
- 2.3% reduction in global energy consumption to 2.7 TWh
- Fleet mileage reduced by 15% and associated CO₂e emissions by 12% in the year
- Cutting over 33 million kilometres and 6,700 tonnes of CO₂e from company car travel
- Eliminated the annual need for over 607,000 face to face meetings avoiding £80m in travel costs and 24,300 tCO₂e
- Implemented building energy management system in 2000 largest buildings
- Installed over 6000 smart meters to measure 99% of UK electricity consumption
- BT ranked 44th out of 2100 participants in the CRC Energy Efficiency Scheme; 1st in the ICT sector



ICT and carbon reduction

Smart 2020 and the role of ICT

- Smart 2020 Report: concluded that ICT has the potential to reduce the carbon emissions of other sectors by 15% globally; equivalent to 7.8Gt CO₂e.

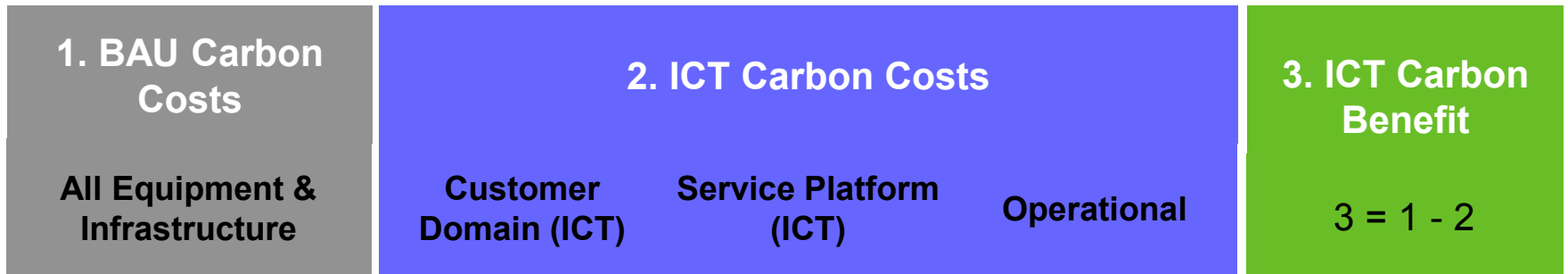
*“ While the sector plans to significantly step up the energy efficiency of its products and services, ICT’s largest influence will be by enabling energy efficiencies in other sectors, an opportunity that could deliver carbon savings **five times** larger than the total emissions from the entire ICT sector in 2020.”*

Smart 2020
Enabling the low carbon economy in the information age
The Climate Group



GeSI

- GeSI Carbon Abatement Methodology
 - Considers the carbon benefit of deploying an ICT solution to replace a “business as usual” solution



- For example, Telepresence (videoconferencing) to replace flying to attend face-to-face meetings:
 - Global solution with Telepresence suites in 17 countries
 - 2.3 hours use per day
 - Reduced overall carbon emissions by 89%



GeSI
GLOBAL e-SUSTAINABILITY
INITIATIVE



Measuring the carbon footprint of ICT

Product Carbon Footprinting

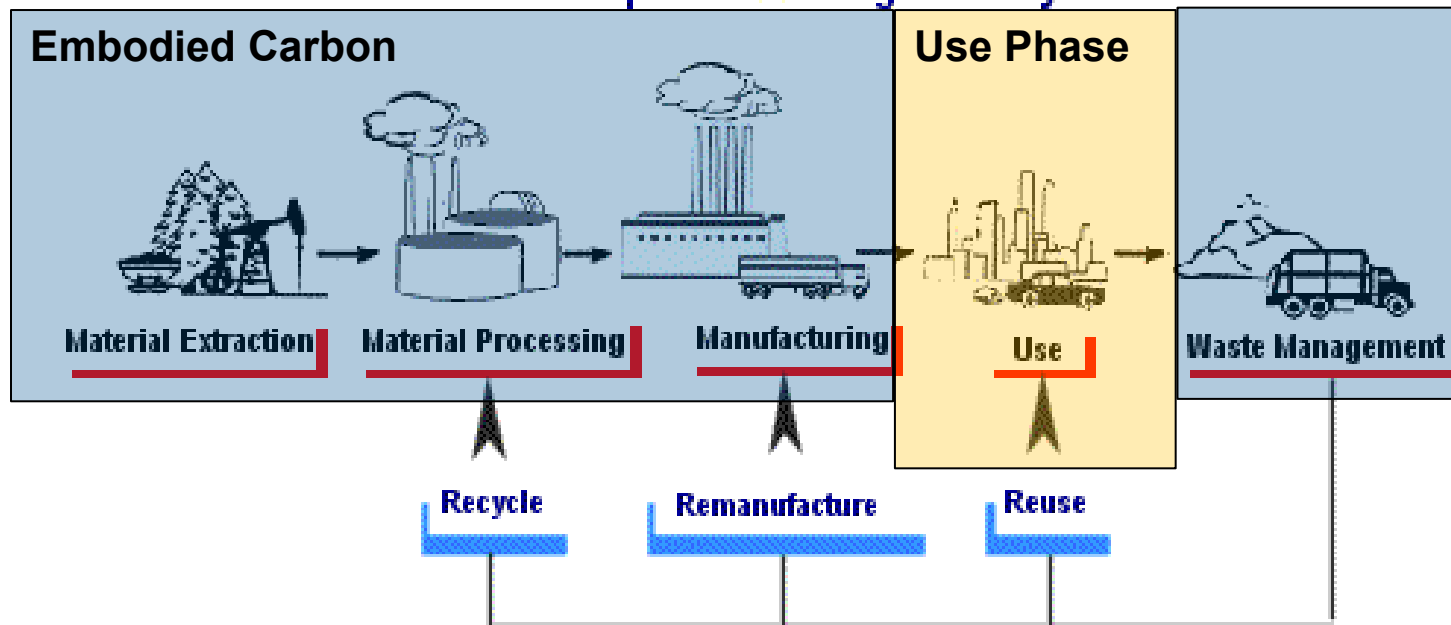
Product Carbon Footprints

- Taking the full life cycle into account

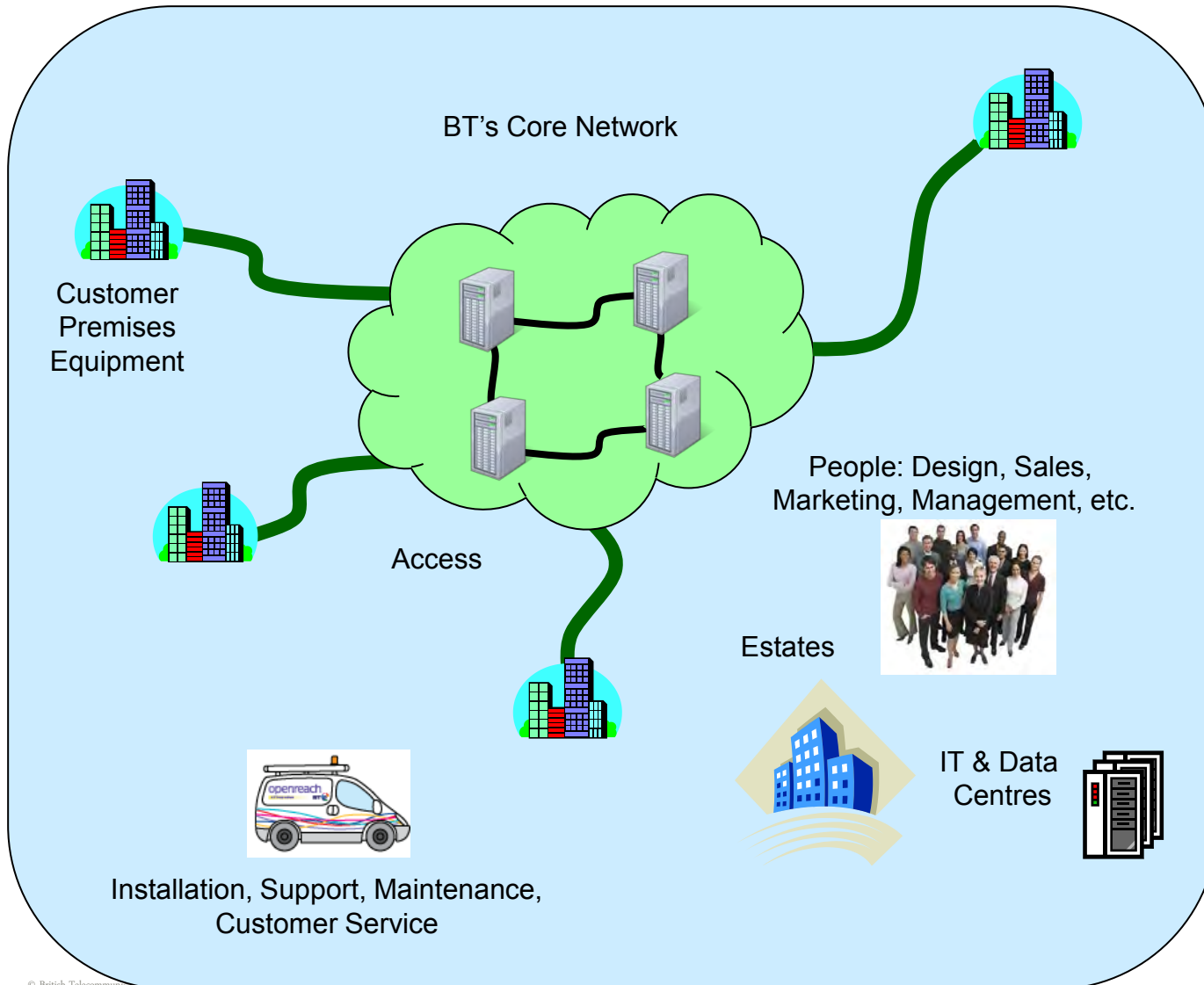
PRODUCT LIFE CYCLE ANALYSIS

(LCA)

Flow of product through society



Carbon Footprinting Communications Solutions



- Carbon emissions of BT's core network
- Carbon emissions of the access network
- Carbon emissions of Customer Premise Equipment
- Carbon emissions from operations and service wrap including people, estates, IT, vehicles etc

BT's carbon footprinting methodology

		Carbon Costs				
		Customer Domain	Service Platform	Operational		
Use Phase	a	End-user or customer-premises equipment (CPE) eg. servers, switches, routers, video conferencing, IP phones, etc.	b	Network and ICT service platforms supporting or connecting Customer Domain equipment	c	Labour and non-ICT infrastructure (BT estate, fleet, etc) for the installation, delivery and maintenance of the networks and in-life customer services such as call centres, help desks and support
	Embodied	d	e	f		
		Embodied carbon associated with the Customer Domain including passive ICT infrastructure (e.g.racking, cabling, etc.)	Embodied carbon associated with the Service Platform including passive ICT infrastructure	Embodied carbon associated with Operational and service delivery functions		

Carbon Footprinting the London 2012 solution

- BT is one of six Sustainability Partners working with LOCOG to help minimise the environmental impact of London 2012
- Reference footprint for the 2012 Games: 3.2 million tonnes CO₂e, of which about 50 ktCO₂ were attributed to technology
- BT's methodology used to estimate the carbon footprint of the communications solutions as 29 ktCO₂e



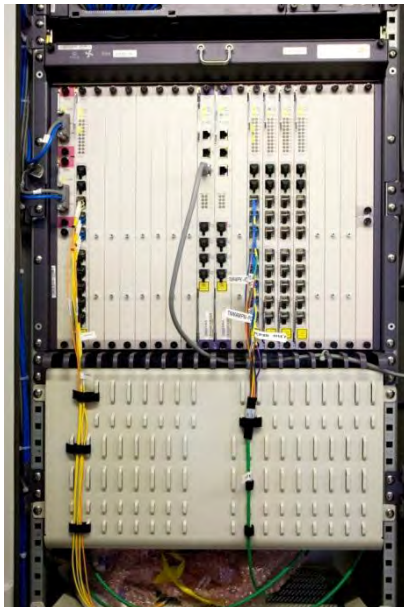
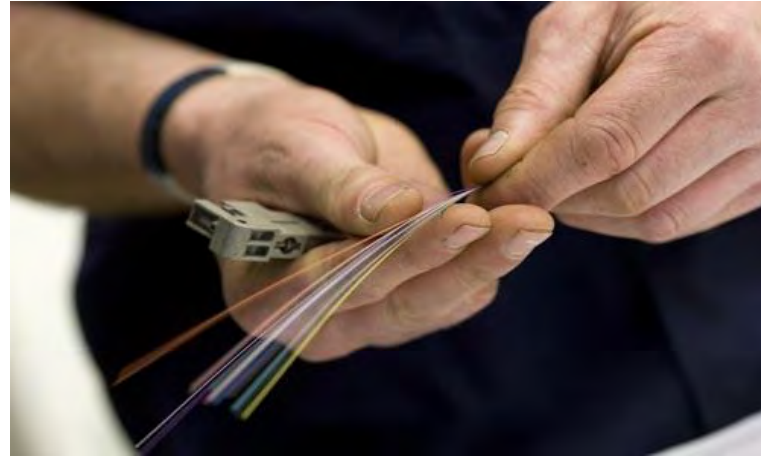


European Regional
Development Fund
Investing in your Future



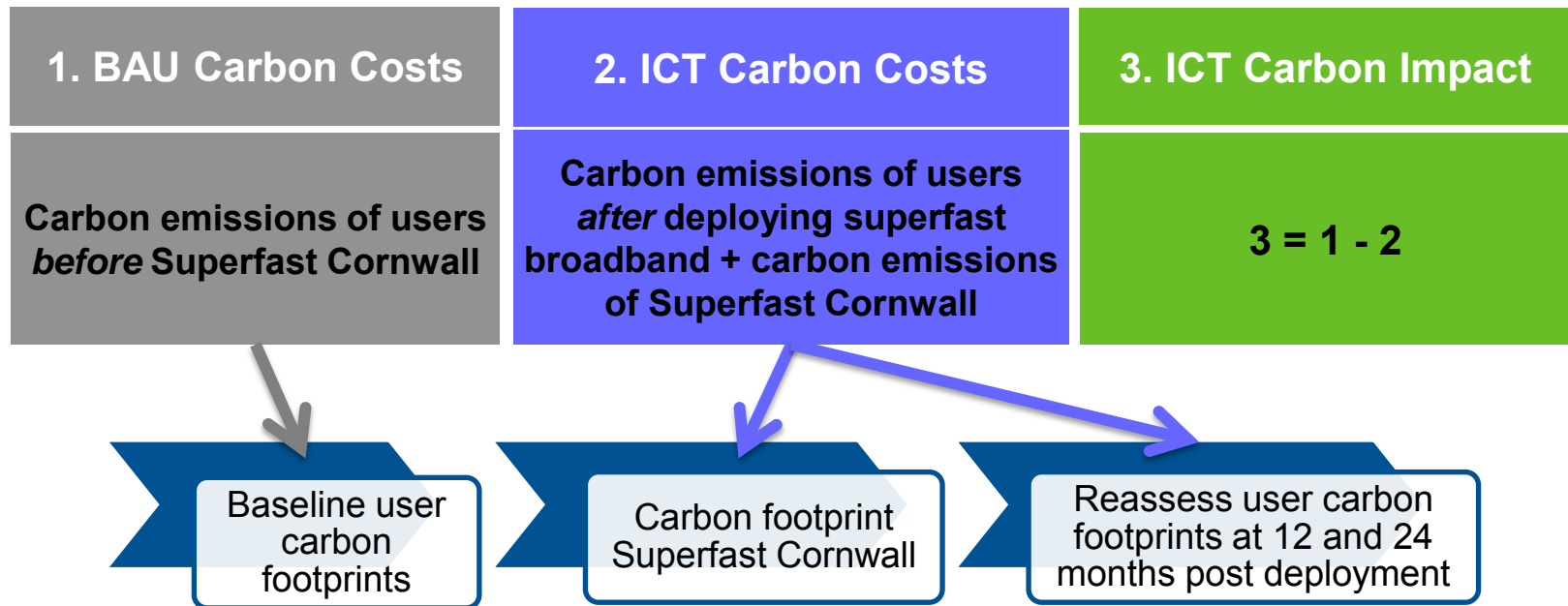
Assessing the carbon impact of superfast broadband

What is Superfast Broadband?



Assessing the Carbon Impact


- The “Carbon Impact” is the “Business As Usual” carbon costs (i.e. the emissions before availability of superfast broadband) minus the carbon costs of the Superfast Cornwall



Estimating the baseline

- Web-based carbon calculators
- Accessible on the Superfast Cornwall, ClearAboutCarbon and Visit Cornwall websites

Welcome House Flights Car Motorbike Bus & Rail Other Fuel Secondary Results My Pledge



Household carbon footprint calculator

Enter your consumption of each type of energy, and press the Calculate button

Your individual footprint is calculated by dividing the amount of energy by the number of people in your house.
To calculate your full household footprint, select "1".

How many people are in your household?

Electricity: kWh

Natural gas: kWh

Heating oil: litres

Coal: tonnes

LPG: litres

Propane: litres

Wooden pellets: tonnes

Calculate Household Footprint

Total House Footprint = 6.86 tonnes of CO₂ **Offset Now**

2.71 tonnes: 5000 kWh of electricity in United Kingdom [\[remove\]](#)
4.15 tonnes: 22600 kWh of natural gas [\[remove\]](#)

< Welcome **Flights** >

Business Calculator

Language: English (United Kingdom)

Welcome Building Flights Car & Van Vehicle Fuel Bus & Rail Results



Welcome to the Business Carbon Footprint Calculator

First, please tell us where your business is based: [\[why?\]](#)

Country:

How many employees do you have? **Save**

are typically based on annual emissions from the previous 12 months.
To calculate your carbon footprint for a different period use the calendar boxes below (optional):

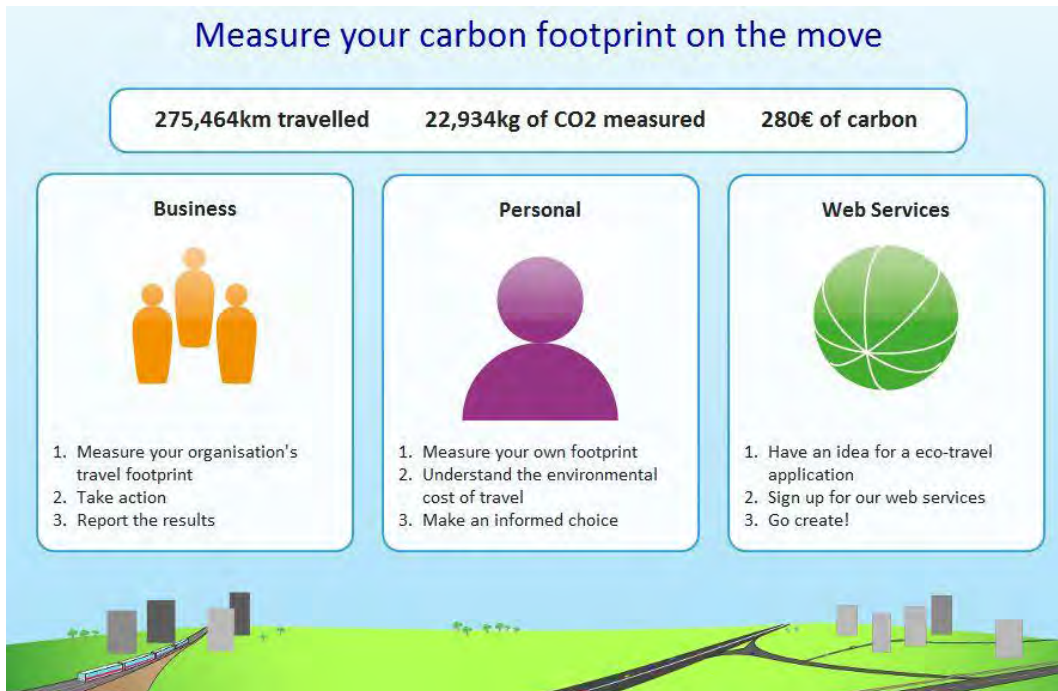
from to **Save**

Click the tab above to calculate the part of your business emissions you are most interested in, e.g. Building, Flights, Car & Van, Vehicle Fuel, Bus & Rail. Click the Results tab to calculate the full carbon footprint for your business.

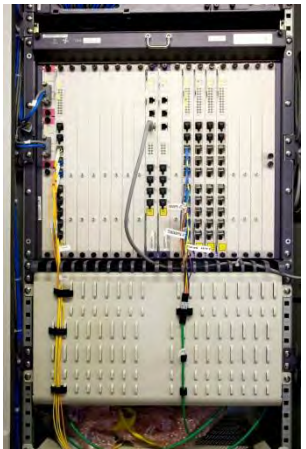
<http://www.superfastcornwall.org/carbon-calculator.html>

Travel Diary

- Record details of journeys made across a typical week or month
- Currently evaluating smartphone app which automatically tracks travel and calculates the carbon footprint
- Data extrapolated to give an annual forecast



Carbon Footprinting Superfast Cornwall



Initial estimate:
approx. 6–10 W per
superfast broadband
line

=> 31–52 kgCO₂e
Offset by a reduction
in car travel (150g/km)
of 130 – 215 miles

Sustainability Advisory Services

Carbon Impact Assessments

Carbon Impact Assessment

Assess your business and build a picture of your carbon footprint from the ground up ...

People

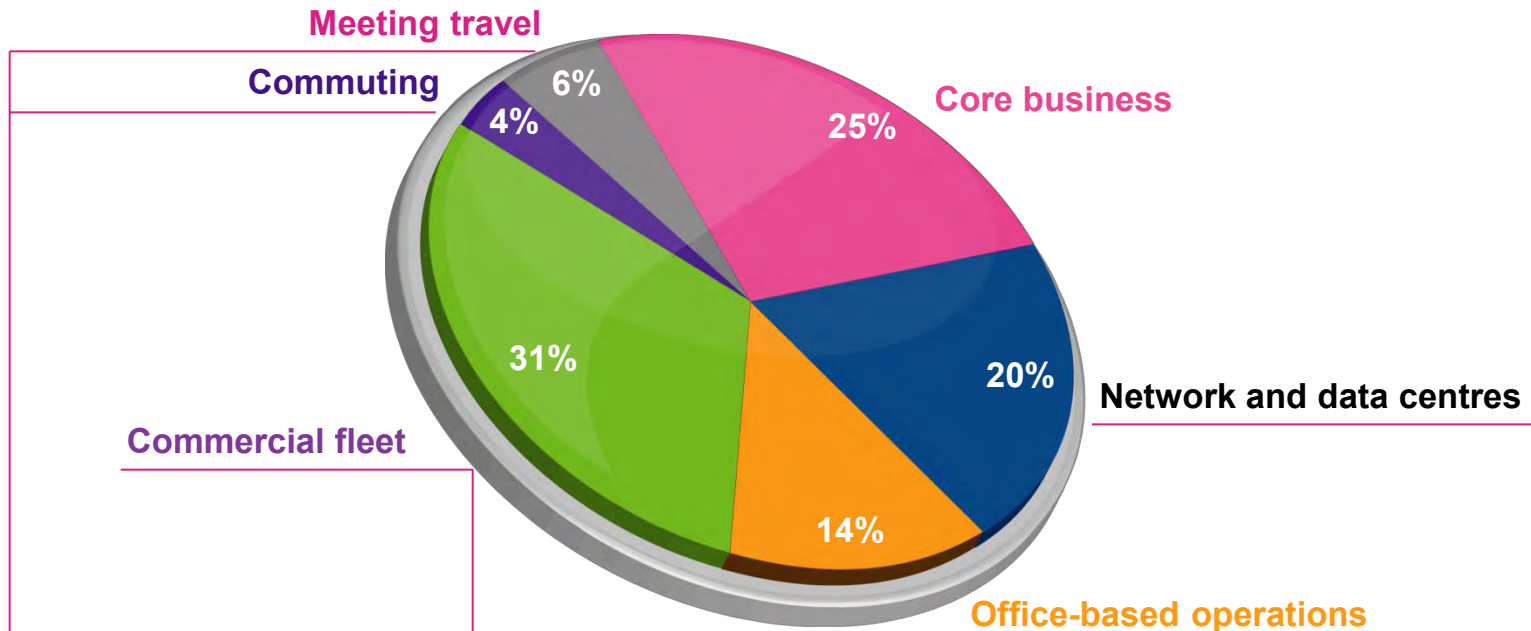
Laptops, mobile devices, personal printers, business travel, commuting ...

Procurement

Third-party services, equipment, print, transport services

... to provide a baseline from which positive action can be taken
...to identify BT solutions which can help to reduce your carbon footprint
...and quantify the carbon benefit resulting from those solutions

Carbon Impact Assessment: Recommendation



- Conferencing
- Flexible working
- Contact centre services

- Field Force Automation
- Radio Frequency Identification (RFID)
- General Packet Radio Service (GPRS)

- Flexible working
- Contact centre services
- Paperless processes
- Voice and data efficiency

- Data centre services
- Server virtualisation
- Best practice advice

Case Studies

BT Workstyle Managed Services and Conferencing deployed with Suffolk and Kent County Councils



Workforce

- Travel reduced by 10% in first year
- £750,000 saved in travel costs in first year
- Associated 400 tCO₂e reduction
- 25% reduction in accommodation costs
- Reduction in energy costs and associated carbon emissions



Homeworking:

- BT has approx 10,000 homeworkers
- Net annual savings per employee: 1.4 tCO₂e
- Principally as a result of reduced travel but with some reduction in office energy usage and an increase in home energy usage (up to 27%)
- Teleconferencing: eliminated annual need for over 607,000 face to face meetings avoiding £80m in travel costs and 24,300 tonnes CO₂e

Case Studies

- Virtual Data Centres enable an organisation to meet corporate IT requirements without owning physical assets and provide the flexibility to increase capacity requirements in line with peak demand.
- City of Edinburgh Council
 - 600 physical servers reduced to 160 virtual and 130 physical
 - 170 desktops virtualised
 - Estimated 680 t CO₂e emissions reduction
- Field Force Automation is a scheduling and appointment management system for field workers which helps to maximise the efficiency of a mobile workforce.
- Enables field force to access corporate data and applications where they need them, in the field
- Northumbrian Water deployed FFA resulting in:
 - 20% reduction in mileage associated carbon emissions
 - 10% increase in engineer productivity



Data Centres



Field Force Automation

