

Carbon Footprint update for NHS in England 2015

- Reduction of 11% in carbon emissions between 2007 and 2015
- The carbon footprint of the NHS in England is 22.8 MtCO₂e in 2015
- Updates include using the latest international carbon intensity factors
- Carbon relating to building energy use has decreased by 4% since 2007
- However the Sustainable Development Strategy identifies 28% reduction by 2020 in line with Climate Change Act target



Contents

Introduction	2
NHS England footprint 2015 – summary	3
NHS 10% target – summary	4
Appendix 1 – Overview of major changes for the 2015 update	5
Appendix 2 – Glossary.....	7

Introduction

Since 2008 the move towards a more sustainable health system has been supported by the development of a carbon footprint for the NHS in England. A series of footprints have been published relating to 2004, 2007, 2010, 2012 and now for 2015¹. This consumption carbon footprint includes emissions from building energy use; travel to and from sites; as well as goods and services purchased by the NHS. This hybrid approach covers scopes 1, 2 and 3 as identified by the GHG Protocol². The best available methods have been used, including directly measured data where this is available and supplemented with average carbon intensities from an input-output model.

Every dataset has been updated based on the most recent Defra guidance³ alongside the HM Treasury Green Book supplementary guidance for greenhouse gas appraisal⁴. These footprints form a useful understanding of both the scale and changes in emissions over time. To ensure changes to the footprint are represented accurately the whole time series has been updated.

The Climate Change Act 2008⁵ target of an 80% reduction by 2050 has been overlaid with the time series from 1990. A combination of backcasting and forecasting has been used based on the detailed datasets. Carbon budget targets⁶ have also been overlaid showing the scale of change required to meet the Climate Change Act 2008.

Consumption carbon footprint – includes embedded carbon emissions from goods and services as well as direct carbon emissions e.g. through burning fossil fuels.

Input-output –using an input-output model carbon intensities have been calculated using expenditure and carbon emissions from different economic sectors.

¹ Sustainable Development Unit NHS carbon footprint publications, available at: <http://www.sdu.nhs.uk/corporate-requirements/measuring-carbon-footprint/nhs-carbon-footprint.aspx>

² Greenhouse Gas Protocol accounting tool, available at: <http://www.ghgprotocol.org/>

³ Defra reporting guidance, available at: <https://www.gov.uk/measuring-and-reporting-environmental-impacts-guidance-for-businesses>

⁴ HM Treasury Green Book Supplementary Guidance valuation of energy use and greenhouse gas emissions for appraisal. Available at: <https://www.gov.uk/government/publications/valuation-of-energy-use-and-greenhouse-gas-emissions-for-appraisal>

⁵ Climate Change Act 2008, available at: <http://www.legislation.gov.uk/ukpga/2008/27/contents>

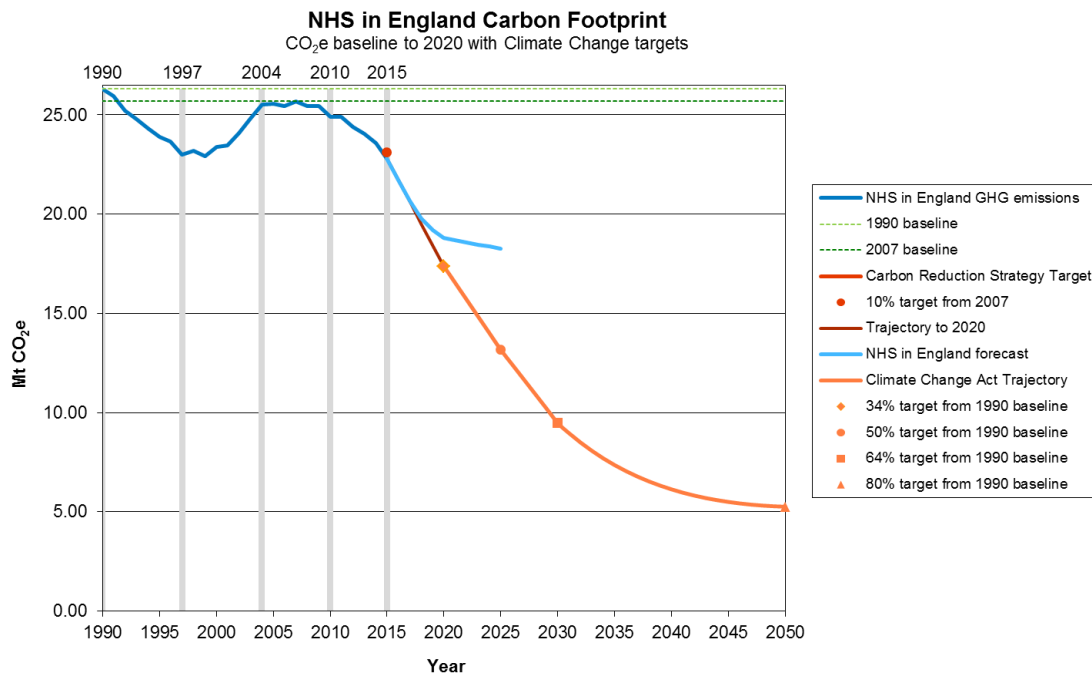
⁶ Carbon Budgets, available at: <https://www.gov.uk/government/policies/reducing-the-uk-s-greenhouse-gas-emissions-by-80-by-2050/supporting-pages/carbon-budgets>



This report updates the NHS carbon footprint and shows an 11% reduction between 2007 and 2015 compared to a target of 10% reduction. A broader carbon footprint for the NHS, public health and social care footprint has been published alongside this update.

NHS England footprint 2015 – summary

The carbon footprint of the NHS in England for 2015 is 22.8 MtCO₂e. The latest methods have been used in line with Defra’s recommendations. Improvements in the method used for measurement mean this is higher than previous calculations (see Appendix 1 – Overview of major changes for the 2015 update for more information).



Between 2007 and 2015 there has been an 11% reduction in carbon emissions. This is in the context of an 18% increase in inpatient admissions over the same period.

Further reductions will be required for the NHS, public health and social care sector to be in line with the Climate Change Act 2008 targets. Further information can be found in the Carbon Footprint summary Health and Care Sector update 2015⁷.

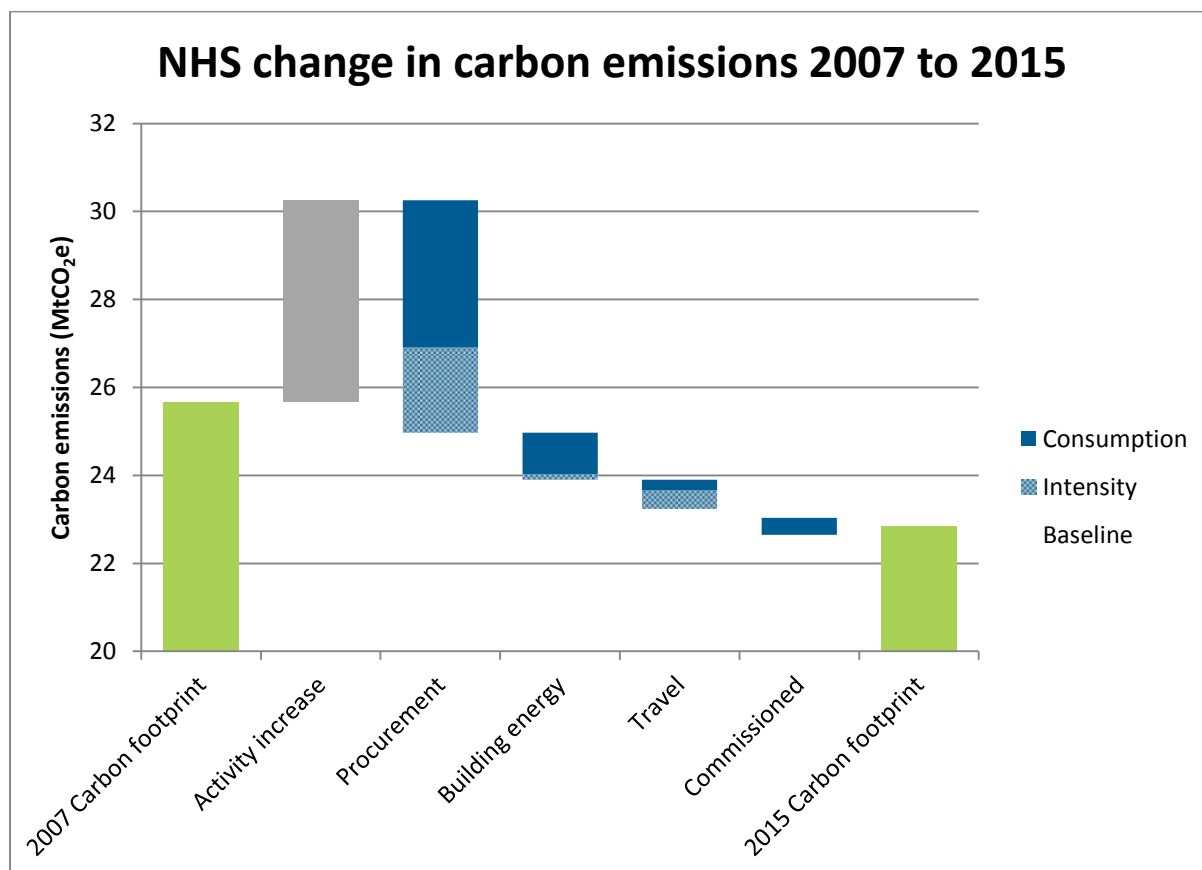
⁷ Carbon Footprint summary HCS update 2015, SDU, 2016. Available at: www.sduhealth.org.uk/report

NHS 10% target – summary

The Carbon Reduction Strategy 2009 identified a 10% reduction between 2007 and 2015 being crucial to be on the right trajectory for the Climate Change Act 2008 target of 80% reduction by 2050. The NHS has achieved an 11% reduction over this period:

	2007 MtCO ₂ e	2007 MtCO ₂ e activity adjusted	2015 MtCO ₂ e	Change MtCO ₂ e	Percent change	Change MtCO ₂ e including activity	Percent change
NHS in England	25.7	30.2	22.8	2.9	11%	7.4	33%
Procurement	15.8	18.6	13.3	2.5	16%	5.3	40%
(of which Pharmaceuticals)	5.7	6.8	3.5	2.2	38%	3.2	91%
Building Energy	4.8	5.7	4.6	0.2	4%	1.1	23%
Travel	2.9	3.4	2.8	0.1	5%	0.7	24%
Commissioned outside NHS	2.1	2.5	2.2	-0.1	-3%	0.3	14%

Activity has increased by 18% over the same period, shown in grey in the graphic below along with the breakdown of contributions to the carbon reduction. The main contributions have been from reduced expenditure on goods and services giving an overall reduction in emissions from procurement of 16%. Building energy use and travel have reduced by 4% and 5% respectively.





Appendix 1 – Overview of major changes for the 2015 update

To maintain alignment with the latest methods and information available a number of changes have been included in the 2015 update:

Update	Previous 2012 (MtCO ₂ e)	Updated 2012 (MtCO ₂ e)	Change (MtCO ₂ e)	%
Revision of Meter Dose Inhalers footprint in line with NAEI reporting	1.4	0.8	-0.6	-44%
National Travel Survey breakdown of staff, patient and visitor travel by mode	2.4	1.9	-0.5	-21%
Pharmaceuticals carbon intensity improvement	3.7	3.0	-0.7	-19%
Inclusion of GP, Dentists and CCG buildings	4.1	4.6	0.5	12%
Improved estimate for other procurement	10.1	10.9	0.8	8%
Commissioning	2.3	2.4	0.1	5%
Business travel	0.8	0.8	0.0	0%
Total	24.7	24.3	-0.4	-2%

Initial calculations for Meter Dose Inhalers have been revised in line with national reporting by NAEI.

Travel survey information has been updated with travel modes for patients, visitors and staff commute.

Pharmaceuticals figures have been updated including additional information provided by pharmaceuticals companies however the level of information provided has not altered the overall pharmaceuticals carbon footprint significantly.

Premises of GPs, Dentists and CCGs were previously excluded from the carbon footprint of buildings, this has now been estimated and included.

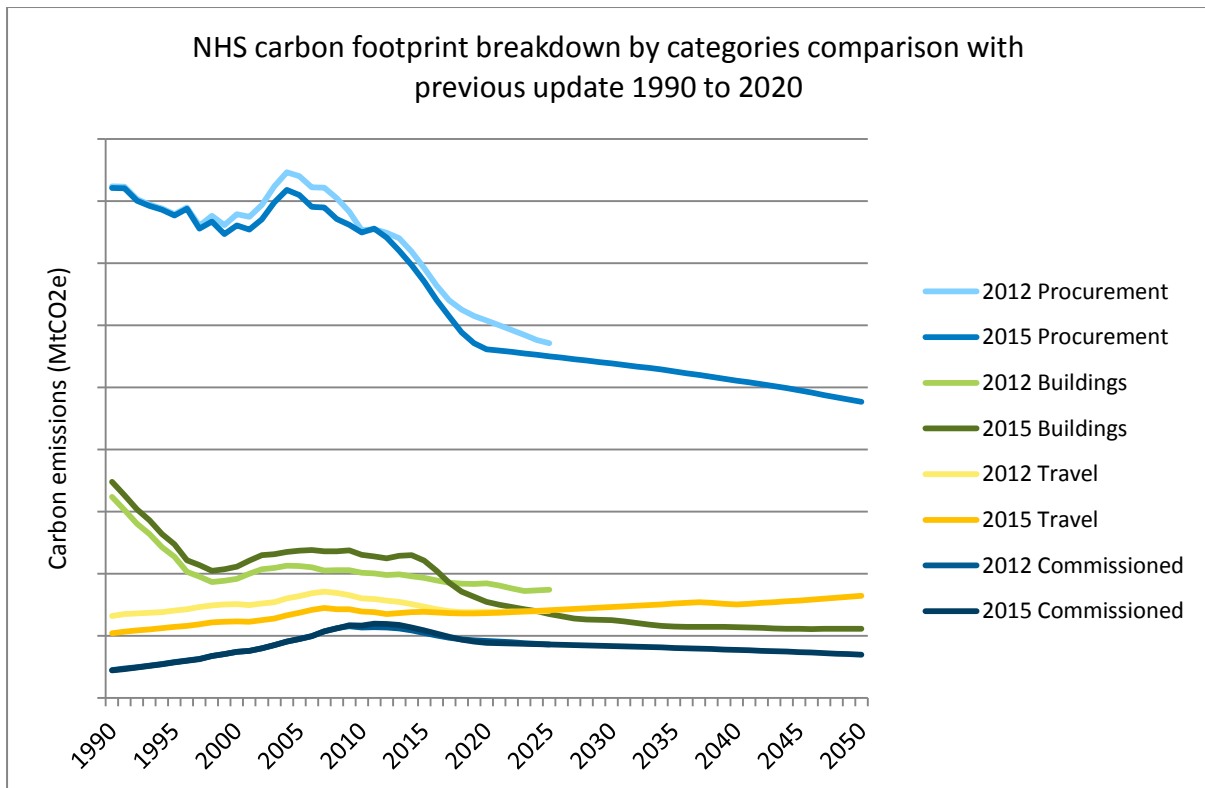
Other updates were made to the carbon factors for procurement, commissioning and business travel to align with the latest information published by Defra.

The forecast has also been extended to 2050 with the use of the following datasets:

- Green book for electricity factors
- HM Treasury Public Expenditure Statistical Analysis



The graph below shows the breakdown of the changes between the methods used in 2012 and 2015 over the whole time series:





Appendix 2 – Glossary

Carbon footprint – carbon emissions, carbon and carbon footprint have been used interchangeably in this document to mean the carbon dioxide equivalent greenhouse gas emissions. The carbon dioxide equivalent greenhouse gas emissions is a standard measure of the impact of various activities on climate change.

Carbon intensity – carbon dioxide equivalent emissions per pound spent for an economic sector

Consumption carbon footprint – includes direct carbon emissions e.g. through burning fossil fuels as well as embedded carbon emissions from goods and services bought.

Defra – Department of Environment, Food and Rural Affairs produces the UK consumption carbon footprint and guidance on carbon footprinting.

Embedded – embedded carbon emissions is a term used for the carbon emissions generated from the manufacture, transport and provision of services and in this case includes all goods and services bought by the NHS.

Input-output – carbon intensities have been calculated using an input-output model. This uses expenditure and carbon emissions from different economic sectors (using SIC codes) to calculate the embedded carbon emissions in purchased goods and services for each economic sector.

MDI – Meter Dose Inhaler used for the treatment of asthma and Chronic obstructive pulmonary disease (COPD).

Procurement – in this document this is referring to goods and services purchased by the NHS.

RoW – rest of world: the carbon intensity input-output model uses four world regions: UK, EU, China and RoW.

SIC – Standard Industrial Classification: The Office for National Statistics (ONS) publish the SIC codes to classify economic sectors.

Travel – movement of people to and from NHS sites including patients, visitors, staff commute and business travel



Sustainable Development Unit
Victoria House
Capital Park
Fulbourn
Cambridge
CB21 5XB

e: england.sdu@nhs.net
w: www.sduhealth.org.uk
t: 0113 8253220

Twitter @sduhealth

Document published January 2016

 Sustainable Development Unit
Working across the NHS, Public Health and Social Care system