Slide 1

Guidance for use of this resource

This bank of slides is a record of an educational resource developed by the NHS SDU (www.sdu.nhs.uk) with support from the UK Department of Health. It was used as part of a specific research project with UK public health registrars between February and April, 2010. The objective of the research was to build the research base on how to most effectively help health professionals, nationally and internationally, engage with the important and urgent issue of health, healthcare and sustainability.

The slide set was last updated on 30 June, 2010. Sustainability in healthcare is a very fast-moving field, and therefore resources such as these become quickly outdated and superseded. Therefore please do not use the slide-set as a stand alone resource. Instead, we would suggest that you use this historical record to help shape whatever awareness programme or event you are developing.

Most of these slides are being updated on a regular basis since this research was done. This is mainly because new research, new legislation and new perspectives are emerging constantly. We would therefore urge you to use this slide set only to help shape your thinking but not as a gold standard, up-to-date resource. The SDU would be very happy to help you with specific resources (material, people, organisations), and in particular to help the whole health and sustainability community share knowledge about how to raise awareness and motivate action. Please contact David Pencheon at: david.pencheon@sdu.nhs.uk

Please note: this resource has been developed with NHS resources. Materials based on this resource should be cited: "NHS Sustainable Development Unit, 2010, [www.sdu.nhs.uk] - used with permission."

www.sdu.nhs.uk

DH Department of Health

NHS Sustainable Development Unit

Slide 2

This photograph: Car in rural flooding: Car drives into verge in 3ft of water, 43 mm of rain in one day, 20th July 2007, Oxfordshire, England.

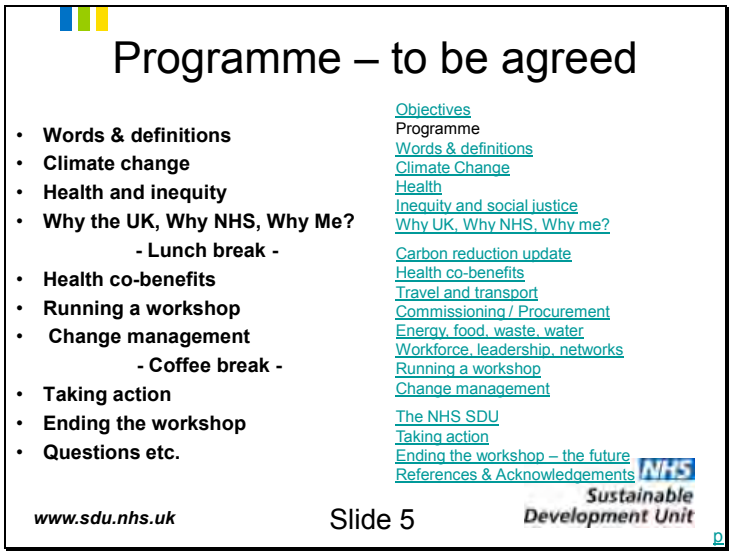
This slide set was developed by the SDU with DH support, and was piloted with more than 200 public health registrars in 15 sessions in every region of the UK, between February and April, 2010. This final version (July 2010) is the result of ongoing feedback and suggestions from this group, for which the SDU is grateful.
It is a supporting resource for increasing competence in raising awareness about climate change, carbon, sustainable development and health, amongst health professionals. It concentrates on ways of communicating the evidence, and the need to act with both individuals and organisations.

Instructions:
• Do not use the whole slide set. Begin with the objectives of your presentation and ONLY select and adapt those slides that are relevant to your audience.
• Most of the slides have notes below them which provide further information and sometimes suggestions as to how to present the slide.
• The slides are mainly designed to help others give similar talks- that is, to cascade the process. The slides to a particular audience – e.g. an executive team, will be slightly different for obvious reasons. Although even in these audiences, there may be some people who you may wish to work with subsequently so that THEY can give a similar talk to their colleagues/team.

Slide 3

Notes for the presenter:
These are just suggestions; select your own objectives for the session (again, 3 is a good number!), depending on your audience.
Participants will be frustrated if you don't cover things that they are expecting or are interested in. So spend a few minutes going around the room asking for participants' objectives, and ask your co-chair or a participant to write them up on the flip-chart/whiteboard. Then you can tailor your session appropriately.

Slide 5

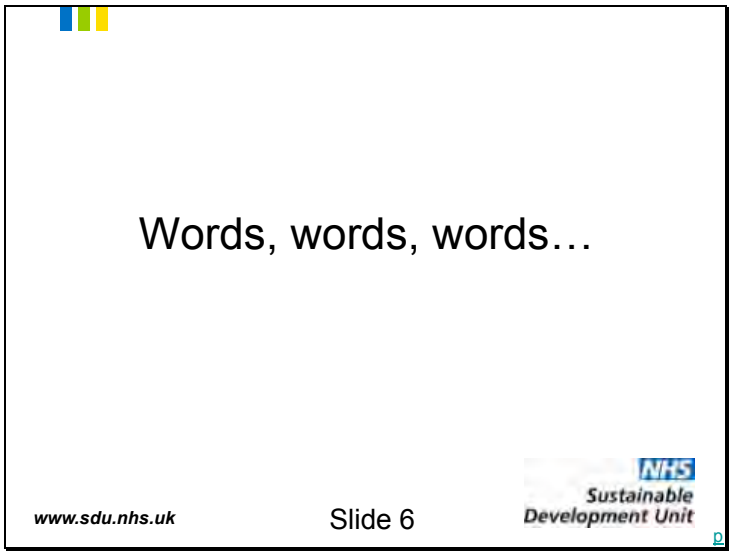


Notes for the presenter:

• Following on from the last slide, this is the point at which, together with your audience, you might decide on the programme for the session. (The programme on the left is just one example). Once again, do not use the whole slide set (there are 76 slides!!).

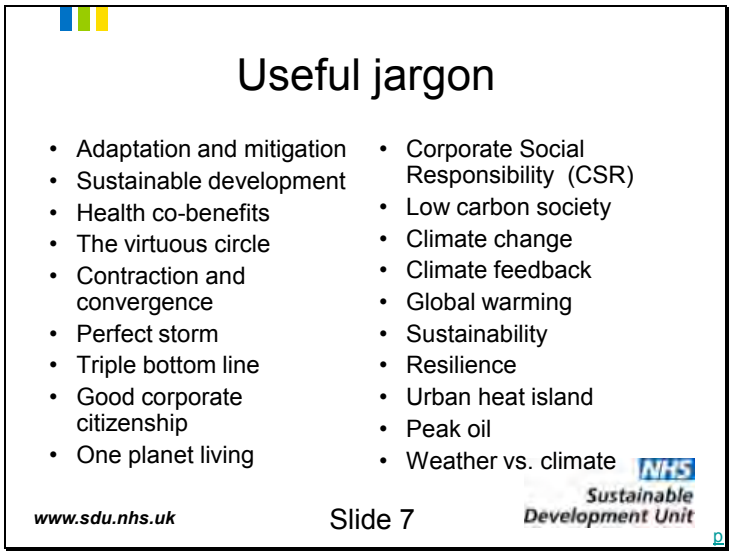
• Note that the slide set is arranged as a series of hyperlinks (the column on the right) so that it can be navigated easily. (Clicking on the p in the bottom right hand corner will take you back to this slide).

Slide 6



Words and definitions

Slide 7



Note for the presenter: Practice explaining these terms (and any others that you feel are relevant) in advance, and have examples to illustrate the concepts, wherever possible.

There is a ***Glossary*** (Slides 72-76), which covers most of the terms. Further, some of the key concepts are covered in later slides (e.g. *sustainability* in slide 8; *adaptation and mitigation* in slide 10; *the perfect storm* in slide 28; *health co-benefits* in slide 40). Also, 'good corporate citizenship' and the 'virtuous circle' are described and illustrated on page 24 of 'Saving Carbon, Improving Health' NHS Carbon Reduction Strategy for England (January 2009).

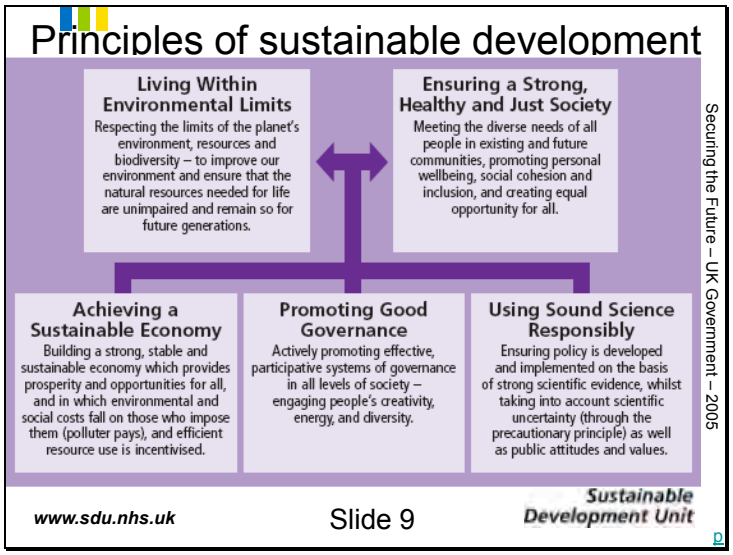
Slide 8

Notes for the presenter: It is important for you and your participants to consider the difference between **climate change** and **sustainability,** as they are quite different concepts. (1-2 minutes of discussion in pairs/small groups usually works well here)

What is the first lesson on: advocacy on climate change?? … Its: *Don't mention climate change!*
At the SDU we talk very little about **climate change** (an urgent ecological problem) and much more about **sustainability** (which can be much more effectively framed as a broader concept, as a set of solutions)

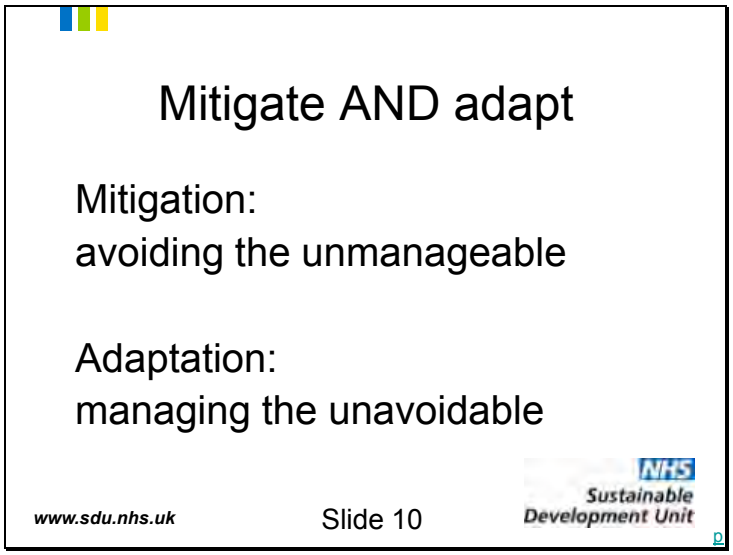
Note: the definition on the slide reminds us that it is not just about the future but also the *present* – most consequences are being borne by people in much poorer countries NOW.

Slide 9



This is UK Government policy: Securing the Future – UK Government (2005)

Slide 10



Mitigation:
Action to reduce the emissions of greenhouse gases (e.g. carbon dioxide, nitrous oxide, methane, ozone, chlorofluorocarbons) as a means of slowing the rate of human-induced climate change.

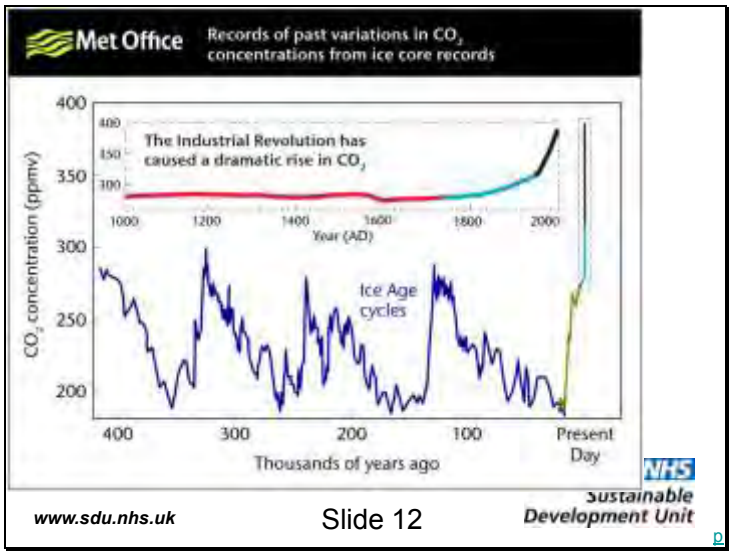
Adaptation:
Changes to behaviour or practice to take into account and adjust to the impacts of climate change. Adaptation may seek to take advantage of, or avoid the threat from, climate change impacts.

Notes for the presenter: This is another important definition; and the key message is that we need *to address BOTH mitigation and adaptation*

Slide 11

Notes for the presenter:
There are 14 slides in this section – again, don‘t use them all! Initially just show perhaps 4 to 6 slides which are most appropriate for your audience; then you can show further slides if needed, in response to questions/comments.
In our experience, slide numbers 14,15,16 (which could also be used first in this section), 21 and 22 are the most popular.

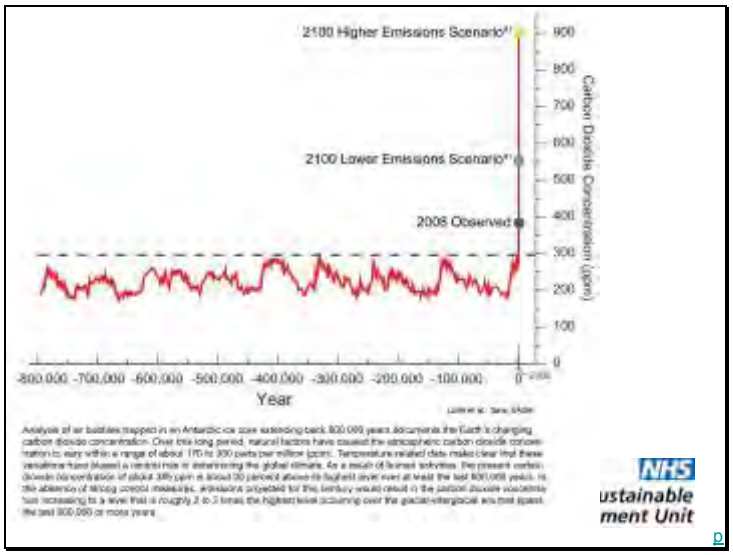
Slide 12



Notes for the presenter:
You will need to explain the basic science of climate change, in 3 or 4 simple steps. The Met Office does this well – see: ‗Explaining the evidence of climate change' where this image was taken from, at: http://www.metoffice.gov.uk/climatechange/science/controversy/facts.html (Last accessed: 5 July, 2010).

This slide shows that: ‗CO_2 concentrations in the atmosphere are rising. They have increased by about 38% since industrialisation began, from 280 ppm (parts per million) to 387 ppm. Two-thirds of that increase has occurred in the last 50 years. CO_2 levels are now 30% higher than at any time over at least the last 800,000 years.'

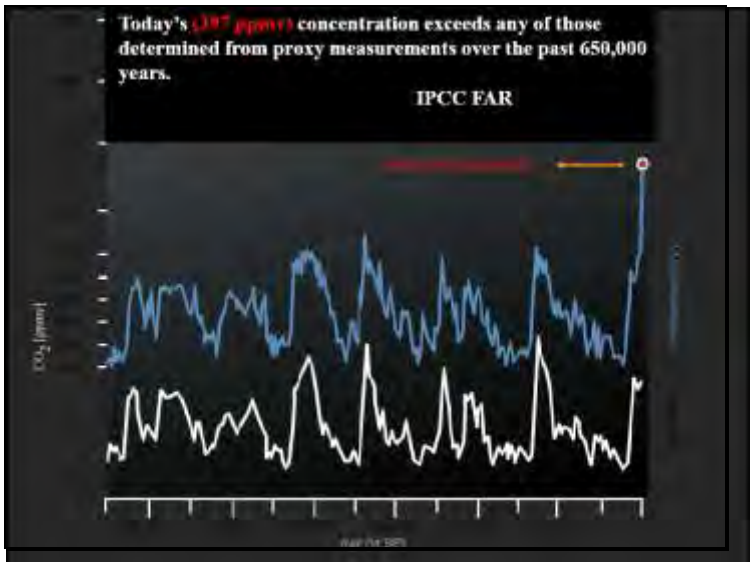
Slide 13



This slide shows the Earth‘s CO2 concentrations over the past 800,000 years and then the projected emissions (higher and lower emissions scenarios) for this century.

Source: United States Global Change Research Program. Available at: http://www.globalchange.gov/publications/reports/scientific-assessments/us-impacts/full-report/global-climate-change (Last accessed: 5 July, 2010).

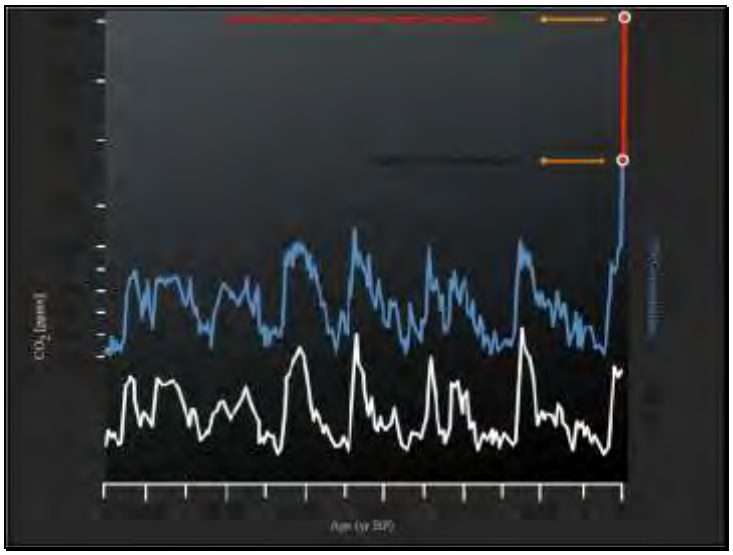
Slide 14



This slide is from: ‗The Direct and Indirect Impacts of Climate Change on the Oceans' by Drew Harvell, Ecology and Evolutionary Biology, Cornell University. Available at: http://www.eas.cornell.edu/cals/eas/news-events/upload/SEEES2-Harvell-Climate-Change-in-Sea.pdf (Last accessed: 6 July, 2010).
The source is IPCC FAR (Intergovernmental Panel on Climate Change's Fourth Assessment Report).

It is quite similar to the past two slides, but includes temperature (the white line) to illustrate that CO2 (the blue line) and temperature have risen and fallen almost in parallel, over >600, 000 years. The current *rate of change* (the gradient of the blue line) is *unprecedented*.

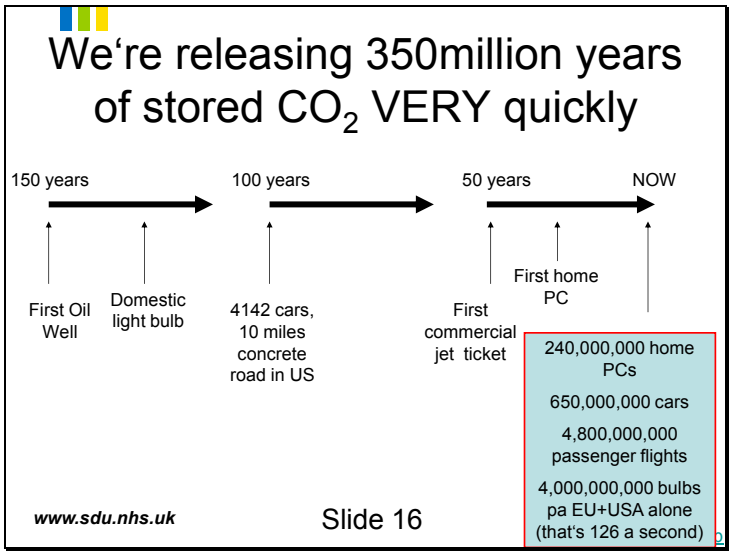
Slide 15



This slide is from: „The Direct and Indirect Impacts of Climate Change on the Oceans‘ by Drew Harvell, Ecology and Evolutionary Biology, Cornell University. Available at: http://www.eas.cornell.edu/cals/eas/news-events/upload/SEEES2-Harvell-Climate-Change-in-Sea.pdf (Last accessed: 6 July, 2010).
The source is IPCC FAR (Intergovernmental Panel on Climate Change‘s Fourth Assessment Report).

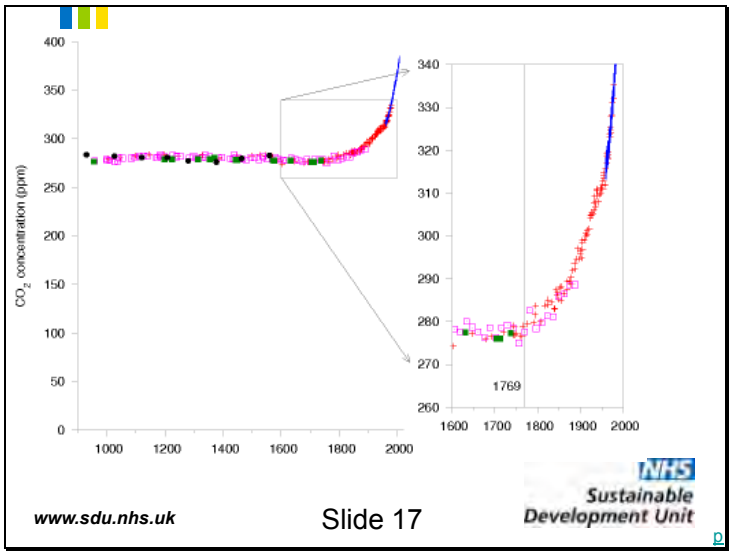
This builds on the last slide, showing where the CO2 concentration will be after 45 more years of the current energy use patterns.

Slide 16



Notes for the presenter:
This is an useful slide to illustrate how humans have caused the recent „explosion" in CO2 emissions. *Practice using the custom animation.*
Thanks to Hugh Montgomery (UCL).

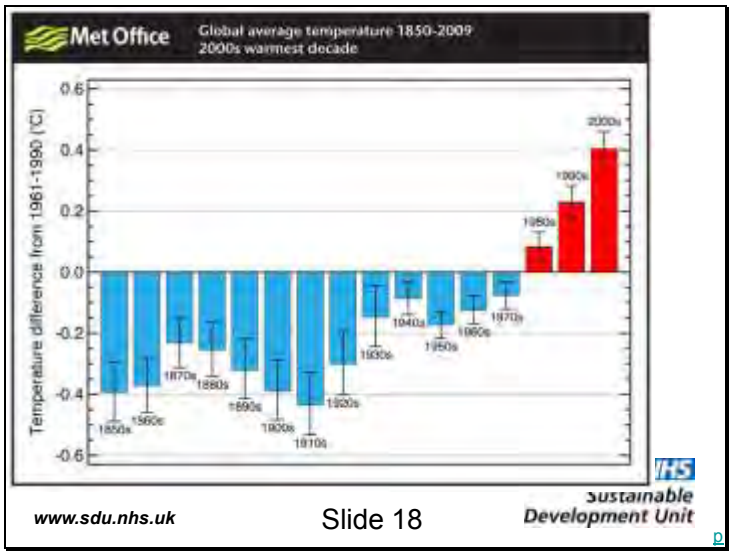
Slide 17



Source: **David J.C.MacKay**. *Sustainable Energy – without the hot air*. UIT Cambridge, 2008. ISBN 978-0-9544529-3-3. Available free online at: www.withouthotair.com This graph: http://www.inference.phy.cam.ac.uk/withouthotair/c1/page_6.shtml. (Last accessed: 11 July, 2010.)

Figure 1.4. Carbon dioxide (CO2) concentrations (in parts per million) for the last 1100 years, measured from air trapped in ice cores (up to 1977) and directly in Hawaii (from 1958 onwards).
The year 1769 is marked, the year in which James Watt patented his steam engine.

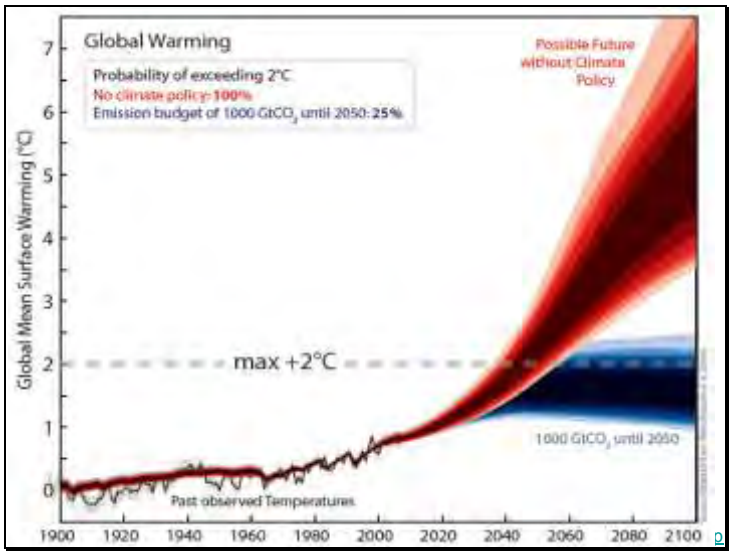
Slide 18



This is the trend since 1850: „Over the last 100 years Earth has warmed by about 0.75 °C. The last decade was the warmest on record despite a major La Niña event, which temporarily cools the global climate system‘.

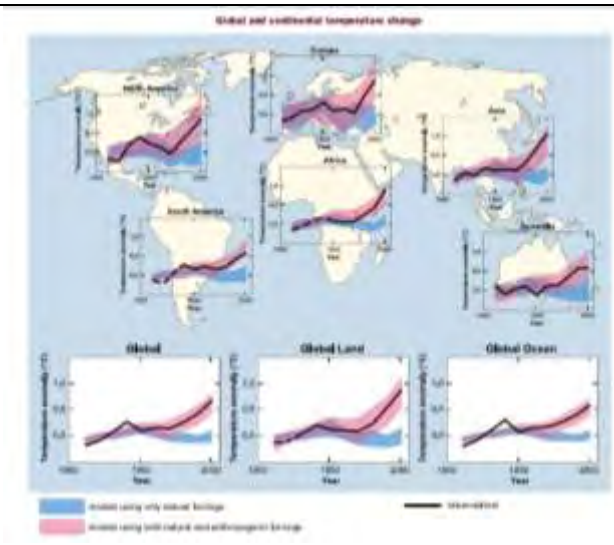
Source: Met Office. Available at: http://www.metoffice.gov.uk/climatechange/science/controversy/facts.html (Last accessed: 5 July, 2010).

Slide 19



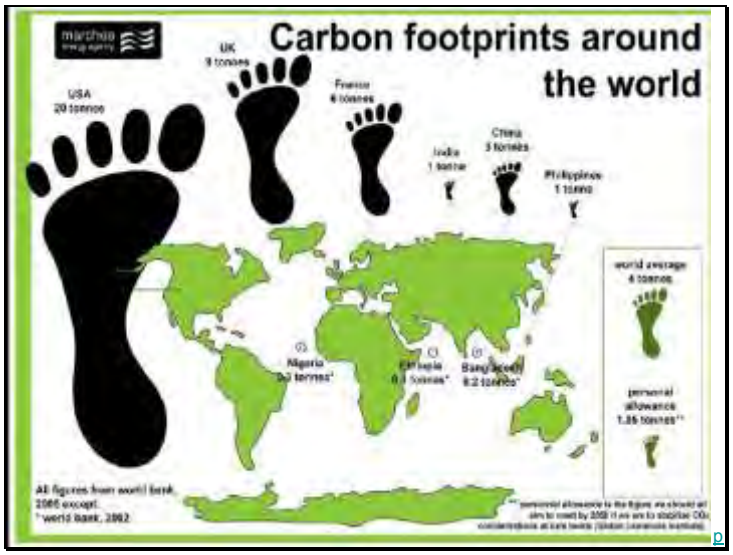
Billion = 1000 million
Trillion = 1 and 12 zeros
Giga = 1 and 9 zeros = billion tonnes
Mega = 1 and 6 zeros = million tonnes

Slide 20



Page 18, Chapter 1, **Observed changes in climate and their effects. Synthesis report, Assessment Report 4, 2008. http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf**

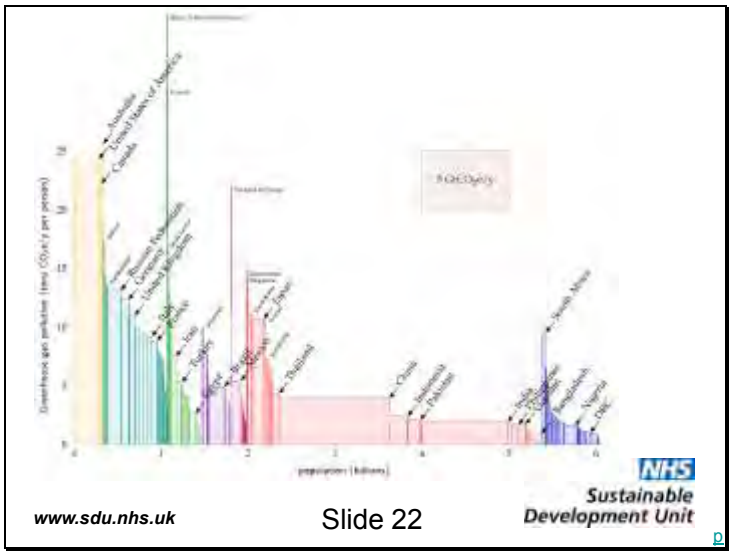
Slide 21



This slide helps to explain the concept of *Contraction and Convergence*. Carbon footprints (per capita) vary around the world; with the world average being ~4 tonnes CO2.
Scientists suggest that 1.85 tonnes (per capita) is needed for sustainability. For most countries (including the UK), that's a very large reduction! (Although according to the contraction and convergence concept, other countries, such as Nigeria, Ethiopia and Bangladesh, should be allowed to increase their emissions, to allow them to develop and attain the standard of living of the developed world).
NHS targets are in this context. As the biggest public sector organisation, arguably the NHS should be at the forefront of leading actions against climate change.

Source: *Marches Energy Agency*, but it was derived from some work carried out by the Global Commons Institute (GCI) – Contraction & Convergence – international shares of carbon.

Slide 22



Before you put up this slide: ask participants: Which countries do you think have the highest per capital carbon emissions?

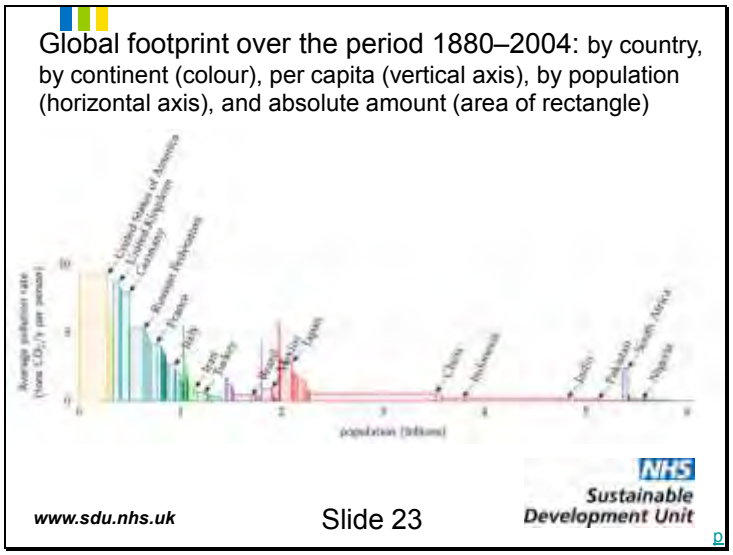
Source: **David J.C.MacKay**. *Sustainable Energy – without the hot air*. UIT Cambridge, 2008. ISBN 978-0-9544529-3-3. Available free online from: www.withouthotair.com. This graph: http://www.inference.phy.cam.ac.uk/withouthotair/c1/page_13.shtml. (Last accessed: 11 July, 2010).

This figure shows: CO2e emissions, by country, for the year 2000.
Each rectangle‘s area shows the greenhouse gas emissions for that country.
The width is the population (in billions) of the country; the height is the greenhouse gas pollution (tons CO2e/year per person) for that country.

To calculate your own carbon footprint:

http://carboncalculator.direct.gov.uk/index.html
http://footprint.wwf.org.uk/

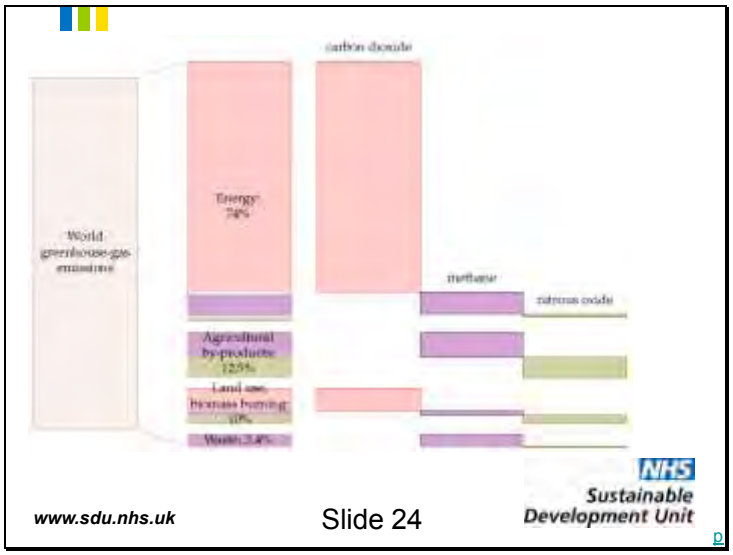
Slide 23



Source: **David J.C.MacKay**. *Sustainable Energy – without the hot air*. UIT Cambridge, 2008. ISBN 978-0-9544529-3-3. Available free online from: www.withouthotair.com. This graph: http://www.inference.phy.cam.ac.uk/withouthotair/c1/page_14.shtml (Last accessed: 11 July, 2010).

From the perspective of social justice, the issue of *time* can be added to give cumulative emissions per capita (which puts the UK second only to the USA, due to industrial revolution having started in Britain). This measurement puts India and China a long way back.

Slide 24



David J.C.MacKay. *Sustainable Energy – without the hot air*. UIT Cambridge, 2008. ISBN 978-0-9544529-3-3. Available free online from: www.withouthotair.com. This graph: http://www.inference.phy.cam.ac.uk/withouthotair/c1/page_15.shtml. (Last accessed: 11 July, 2010).
Figure 1.9 (Emission Database for Global Atmospheric Research. Breakdown of world greenhouse-gas emissions (2000) by cause and by gas.)

‗Energy' includes power stations, industrial processes, transport, fossil fuel processing, and energy-use in buildings.
‗Land use, biomass burning' means changes in land use, deforestation, and the burning of un-renewed biomass such as peat.
‗Waste' includes waste disposal and treatment.
The sizes indicated the 100-year global warming potential of each source.

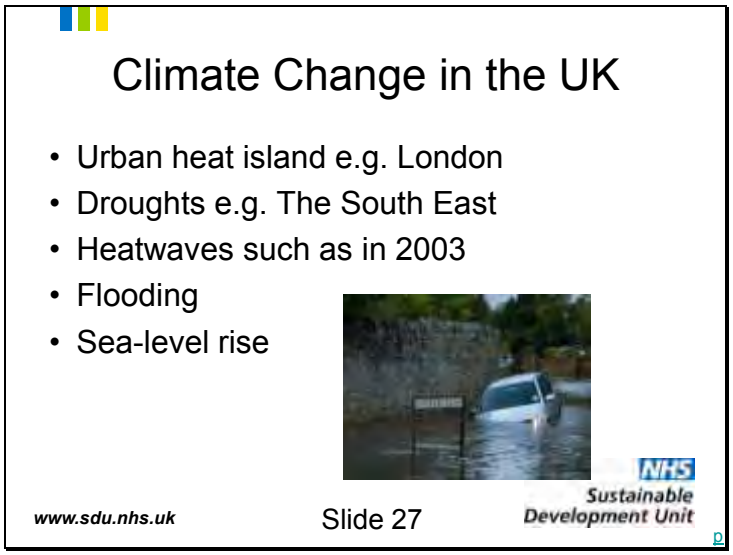
Slide 25

Notes for the presenter:
When most people are asked about the health effects of climate change, they think of (as shown in the pictures, clockwise from top left): Food poisoning, cataracts, vector borne disease, skin cancer, flooding, heatwaves.
All of which are entirely true. However, *these are not the big issues….*

Slide 26

Notes for the presenter:
The ***big issues*** are: drought, crop failure, economic collapse, mass migration, civil unrest, societal collapse. ...Easter Island. *Ask the audience if anyone knows what happened on Easter Island.* Refer those who are interested to: Jared M. Diamond‘s book, „Collapse: How Societies Choose to Fail or Succeed‘ (also titled: *Collapse: How Societies Choose to Fail or Survive*) (2005).

You might also wish to ask the audience to think about how these „big issues“ will affect their local and regional communities.



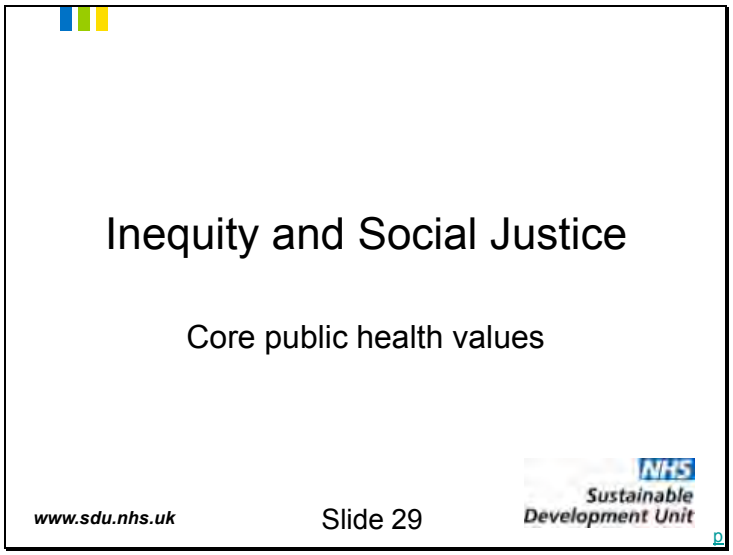
Note for the presenter: These are just some of the UK climate effects; you may wish to include your own slide here describing local/regional effects.

‗How our climate may change' in the UK:
• The urban heat island effect already warms central London by >10degreesC on some nights. This would increase still further – on top of the effects of global warming.
• Droughts will be more likely, particularly in the South East; and more intense downpours of summer rainfall could lead to flash flooding.
• The extreme heatwave of 2003 (in which average summer temps were 2degreesC higher than normal) led to >2,000 additional deaths in the UK. Such hot summers could happen every other year by the 2040's.
• Heavier winter precipitation – potentially more flooding.
• Sea-level across the UK are projected to rise by up to 76cm by the end of the century. In worst cases, rises of up to 1.9m are possible but highly unlikely.

Source: ‗Warming. Climate Change – the facts.' Met Office, 2009. Available from: http://www.metoffice.gov.uk/climatechange/guide/quick/ (Last accessed 26 January, 2010)

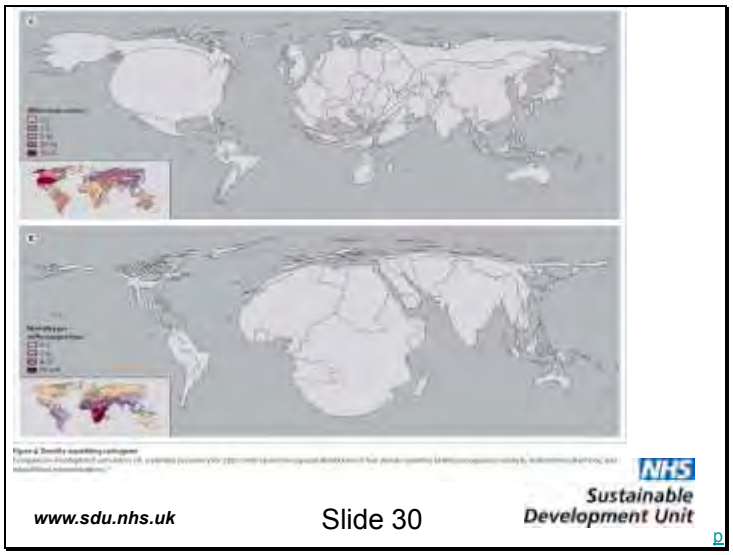
The perfect storm - food, water and energy shortages...

Slide 29



Inequity - *social* justice
Sustainability – *environmental* justice
Climate change – *intergenerational* justice

Slide 30



The top figure shows: CO2 emissions by country 1950-2000. *Which regions were responsible for the most carbon pollution?*
The bottom figure shows: the distribution of 4 climate-sensitive health consequences (malaria, malnutrition, diarrhoea, inland flood-related fatalities). *Which regions suffered the most from climate change?*

Climate change is an extremely regressive problem. That is, those who have contributed the least, are being hit first, and hardest. Addressing climate change is synonymous with addressing health inequalities.

Source (1): Climate Change presents the biggest threat to health in the 21st Century" The Lancet (373;9697 pp 1659-1734, May 16-22 2009).

Slide 31

Note: This slide is for public health practitioners only

For public health professionals, there is a special reason for acting on sustainability. This goes back to the very essence of public health, and for many, their earliest motivations for entering this specialty*. Ask the audience: why did you choose to work in public health?*

Public health specialists have historically taken the lead on health issues of societal importance – for example, sanitation, tobacco control – these were issues upon which public health workers acted and advocated on the basis of scientific evidence. So perhaps more than any other health professional, this is*our job* – we have a **special responsibility and opportunity to lead on this issue.**

Quote: ‗If medicine is about saving lives, not just by last minute interventions but by trying to avert illness, then working to alter patterns of behaviour that contribute to climate change could arguably become a priority for clinicians… as an urgent preventive measure' (Source: Coote, A. ‗What health services could do about climate change' (Editorial). BMJ 2006; 332:1343-1344.

These notes are applicable only to public health registrars.
Key skills in the FPH (Faculty of Public Health) Curriculum include: Consideration of the evidence, Awareness raising, Advocacy, Change Management. (The SDU listed all the FPH competencies that are relevant to climate change and sustainability: ~80! Clearly, there are opportunities to meet a number of competencies by working on sustainability projects.)

‗Design your own training': As a public health registrar, you are in the rather unique position of, to some extent, being able to influence your training according to your own interests and priorities. So ask yourself, ‗Where do I want to be in 5-10 years?' Work towards this, pressure your training programme directors and ask for positions in which you can gain relevant skills and experience.

Slide 32

Notes for the presenter: You might like to ask participants these questions. Some answers (to provoke discussion) are listed below.

UK: started the high carbon world (with the Industrial Revolution…)
UK: one of the highest per capita *cumulative* emission rates (see slide23)
NHS: largest public sector emitter. (The NHS England's carbon footprint is 21m tonnes CO2e – which is more than some medium-sized countries!)
NHS: largest workforce (1.7million – the 4th largest employer in the world)
NHS: most motivated workforce
NHS: most exemplary potential
NHS: more win-wins through visionary high quality, low cost delivery of health care.

Slide 33

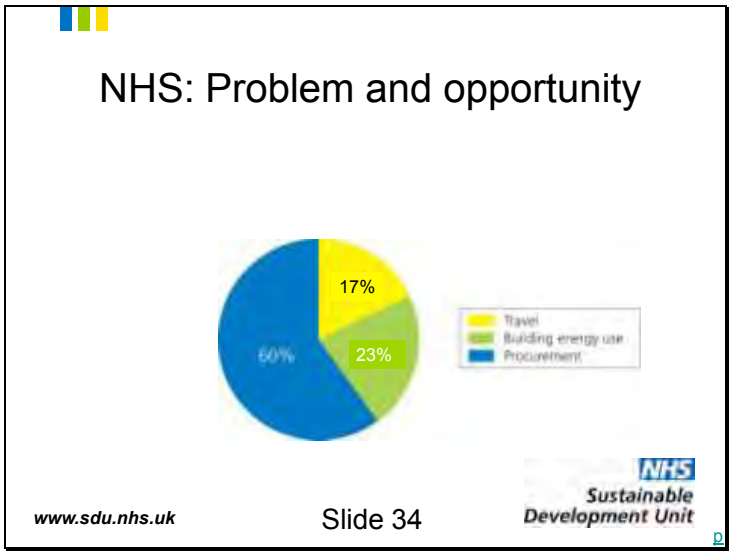
This is „TheCase': the 6 reasons why the NHS needs to become a low-carbon, sustainable organisation.

- There are legally binding UK Government targets in the Climate Change Act (2008): 80% carbon reduction on 1990 levels by 2050 . All UK organisations will need to demonstrate how this is being measured, monitored, and managed.
- The evidence base for climate change (and subsequent health effects of) is strong and growing.
- Acting sustainably makes very good business sense: there are both short term financial savings to be made and there is also the opportunity to make the NHS financially secure and resilient in the long term (e.g. energy price and availability fluctuations). Note: the Stern Review found that the benefits of strong, early action (will cost 1% GDP) far outweigh the economic costs of doing nothing (5-20% annual GDP; risk of major economic and social disruption).
- Health co-benefits (see slide 40).
- 95% of NHS staff and organisations who responded said that they are strongly in support of the NHS taking a lead on sustainability. (Source: *Consultation Process.* In: Saving Carbon, Improving Health. NHS Carbon Reduction Strategy for England (January 2009); page 26.)

6. The NHS should be an exemplar organisation: „Due to its size, the NHS will have a real impact in protecting the environment and therefore improving the health of the population. The NHS has a duty of care to take this issue seriously and visibly seriously at that' (David Pencheon, Health Service Procurement Review, Autumn 2009, p34).

The opportunities: better healthcare systems: much more informed public, patients, and staff; less travel; much more care closer to (or in) the home; much more prevention and primary care; better use of ICT (Information & Communication Technology); much more flexible workforce; use of technology to make the whole system safer, better value, and more sustainable; pharmaceutical companies offering drugs *and services;* much more of a vertically integrated system that rewards prevention and outcomes… etc.

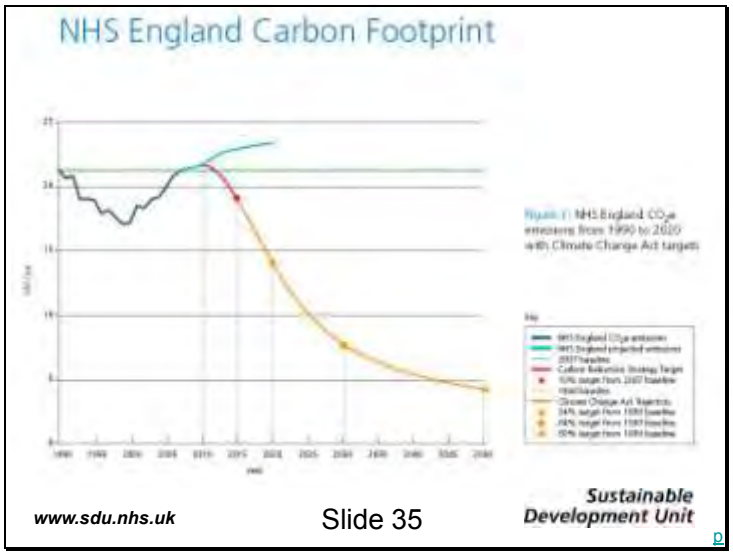
Slide 34



The Carbon Footprint of the NHS England (in 2007) = 21MtCO$_2$e (21 million tonnes carbon dioxide (equivalent) per annum (about the same as all emissions from a medium sized country such as Northern Ireland or Portugal)
Procurement: supply chain activities of companies producing goods and services = 60%
Travel: patients, staff, visitors = 17%
Energy: heating, lighting, hot water, ventilation, cooling = 23%
(Source: Update NHS Carbon Reduction Strategy: Saving Carbon, Improving Health, 2010. Cambridge: NHS Sustainable Development Unit)

The NHS:
• 1.7 million employees
• Sees 1 million patients every 36 hours
• Has a budget of more than £100 billion
(Source: 'About the NHS' in NHS Choices. Available at: http://www.nhs.uk/NHSEngland/thenhs/about/Pages/overview.aspx. (Last accessed: 11 July, 2010).

Slide 35

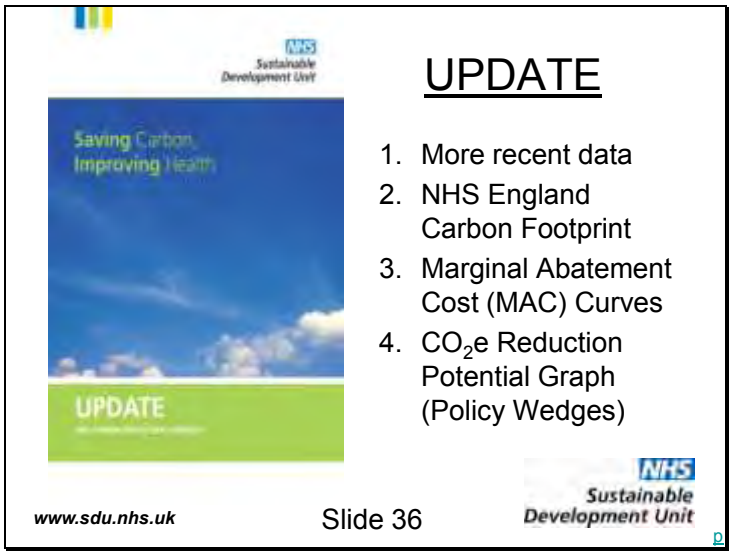


This graph shows: the NHS's CO2e emissions to 2007 (the dark blue line) and the forecast emissions (light blue line). The targets, which are set to meet our legal requirements under the UK Climate Change Act, are the points on the orange line.
You can see that the overall target (orange triangle) is: an 80% carbon reduction (on 1990 levels) by 2050. The interim target of a 10% reduction (on 2007 levels) by 2015 will require **reversal** of the trend – an enormous challenge.

So what does this tell you about the scale of the challenge? This is not about a bit of car sharing and changing light bulbs. Achieving these targets is going to require **total transformation** of the service. The world will need to be a very different place very soon and the NHS needs to lead that process, not be a laggard.
For example, downsizing hospitals and moving patterns of care… clinical pathways will need to be very low carbon with minimal energy use, low travel, sustainable procurement and risk managed waste policies
Thus the SDU sees this as an enormous **change management** project.

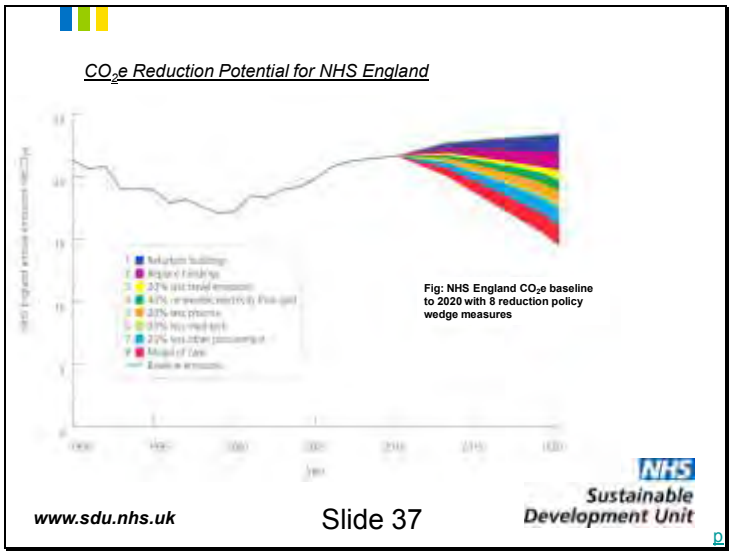
Source: Update NHS Carbon Reduction Strategy: Saving Carbon, Improving Health, 2010. Cambridge: NHS Sustainable Development Unit

Slide 36



The NHS Carbon Reduction Strategy Update (January 2010) is, as with all the SDU publications, available free on the website: www.sdu.nhs.uk

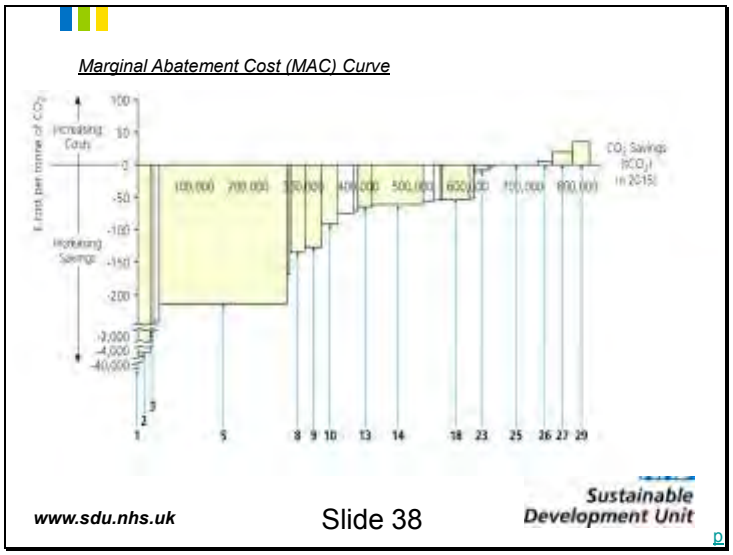
Slide 37



This graph provides a visual representation of the effects that various (theoretical) carbon reduction measures would have on NHS England emissions up to 2020.
The baseline (grey line) is a projection of business as usual CO2e emissions for NHS England to 2020. Each coloured wedge represents a reduction in emissions caused by a different action (1-8).

For further information see: www.sdu.nhs.uk >Carbon Reduction Strategy>Update

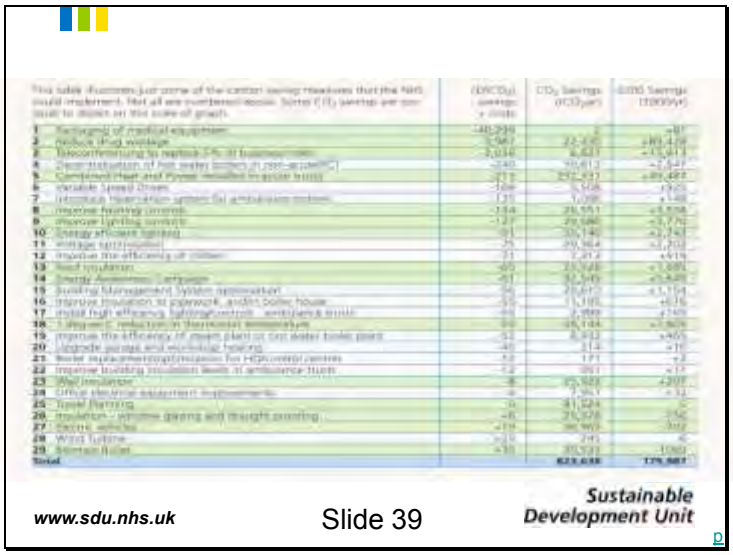
Slide 38



The Marginal Abatement Cost (MAC) curve for NHS England condenses complicated data into a graph showing cost effectiveness and the amount of carbon saved for different carbon saving measures. Each block represents a different carbon saving measure (see the table on the next slide).
-The width of each block shows the amount of CO2 saved each year. The greater the width, the greater the carbon saving.
- The height of the block illustrates the financial cost or saving of a measure, per tonne of carbon.
- If a block is below the line this initiative will save more money than it cost to introduce.
- If a block is above the line, the investment will not be recouped over the lifetime of the project, although there will be a carbon saving which still has important benefits for health.
- This MAC curve shows that the **NHS can save at least £180 million per year** by reducing its carbon emissions. **This does not take into account any future costs that may be associated with carbon emissions** (e.g. The UK Carbon Reduction Commitment Energy Efficiency Scheme). If the cost of carbon goes up, the measures will become more cost-effective.

For further information see: www.sdu.nhs.uk >Carbon Reduction Strategy>Update

Slide 39



This is the table for the MAC curve on the previous slide.

Slide 40

Acting more sustainably will have immediate health benefits, **on 3 levels:**

- **Benefits for you (the individual):** low carbon lifestyles are healthier lifestyles. For example: walking and cycling rather than driving (physical activity and psychosocial health benefits, less obesity, fewer road traffic deaths, less noise and air pollution); eating more fruit and vegetables and less saturated fat and processed foods, etc.

2. **Benefits for us (the health care system)**: Sustainability is very well-aligned with other health care priorities. For example: providing care closer to (or in) the home, and self care; more prevention and primary care; better use of ICT (Information & communication technology); more flexible workforce; pharmaceutical companies offering drugs and services (eg diabetes monitoring), etc.

3. **Benefits for the world: in terms of international health inequalities**. (See slide30).

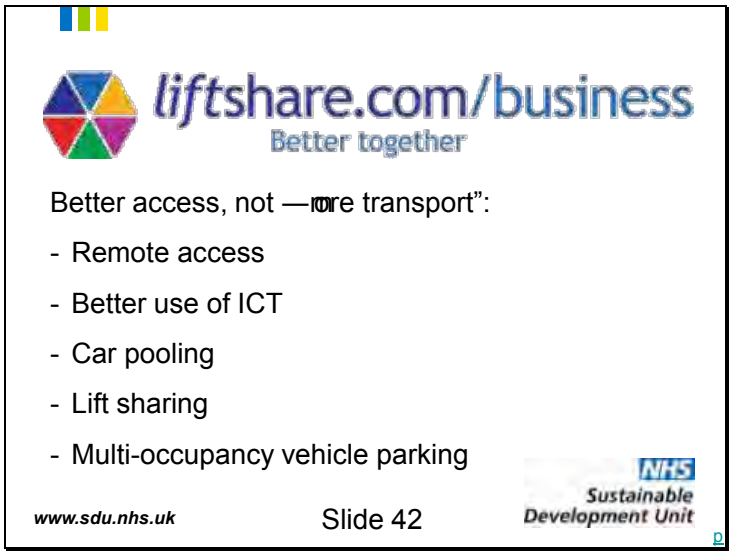
Slide 41

Transport and travel should be considered as a *last resort* when all other ways of moving information, expertise and services have been exhausted. The default place for promoting health, preventing illness and delivering care is *in the home.*

Travel: measurement of the carbon impact of NHS business travel are still being worked on, but initial estimates are that it could be greater than the direct emissions. **5% of all journeys are estimated to be on NHS business**.

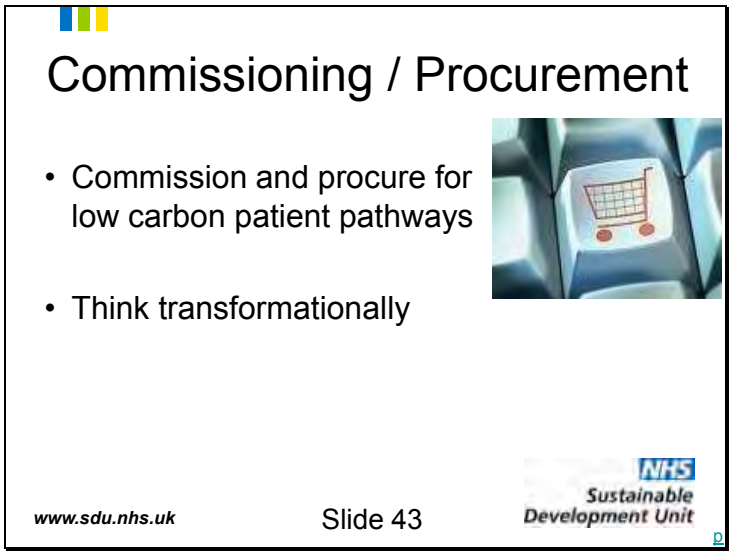
Examples of energy savings through transport:
- Nottingham University Hospitals Trust established a free bus service between its two sites in the city carrying around 500,000 visitors, patients and staff per year and saving around £180,000 in taxi costs. This initiative helps both health and the environment.
- Addenbrooke‘s NHS Foundation Trust (Cambridge) has reduced the proportion of journeys to hospital by car from 60% in 1999 to 38% in 2006, by improving bus services, encouraging cycling, improving park and ride and encouraging car sharing. It introduced the 1st public bus service in the country to be managed by the NHS. This „park & ride‘ service is designed to reduce car traffic in the hospital‘s vicinity and thus help improve Cambridge traffic congestion in general.

Slide 42



Liftshare: https://www.liftshare.com/uk/ (Last accessed 12 July, 2010)

See: https://www.liftshare.com/business/clients.asp for *Healthcare case studies* on Addenbrooke's Hospital and NHS Greater Glasgow and Clyde

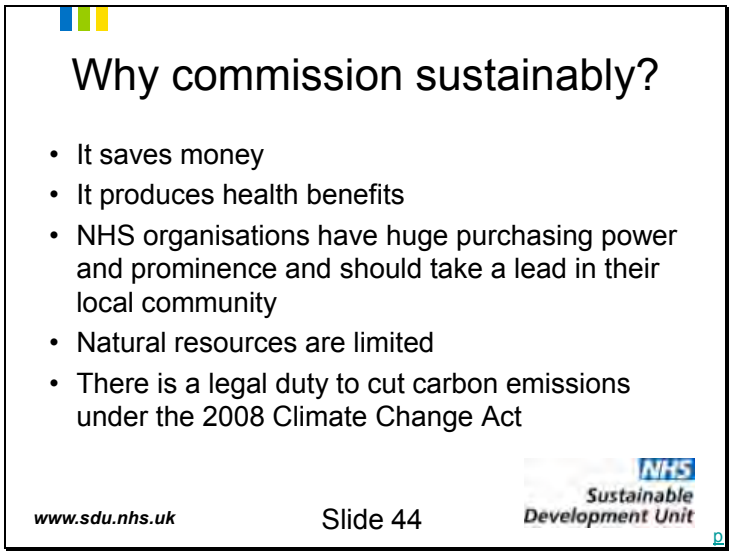


Commission and procure for low carbon patient pathways, that will be compatible with a low carbon society.
Don‘t become too focussed with just improving the efficiency of today‘s systems – think transformationally…

Note: ***The SDU has produced a ‘How To’ Guide for Commissioners.*** It should be used in conjunction with „Healthy Futures 9, Commissioning for Sustainable Development‘, published by the Sustainable Development Commission (SDC).

Source: Commissioning for Sustainable Development: A How-To Guide for Commissioners. NHS Sustainable Development Unit, April 2010. The SDU and SDC reports are both available at:
http://www.sdu.nhs.uk/page.php?page_id=167

Slide 44



Source: Commissioning for Sustainable Development: A How-To Guide for Commissioners. NHS Sustainable Development Unit, April 2010. Available at: http://www.sdu.nhs.uk/page.php?page_id=167

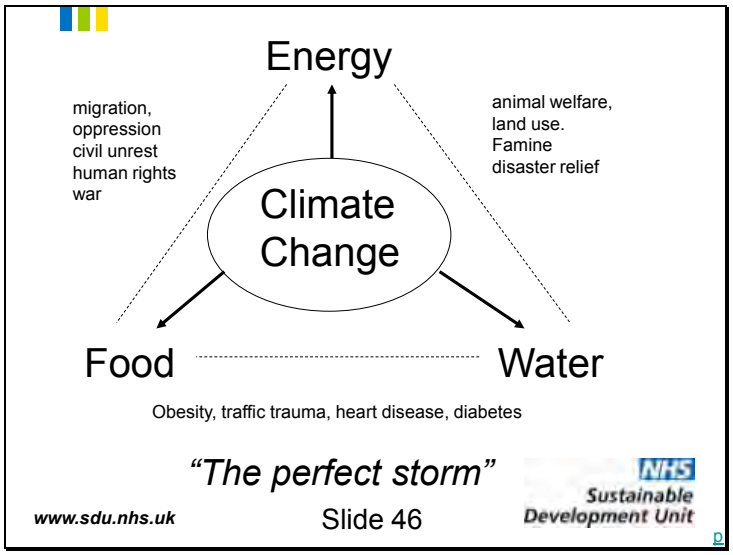
Slide 45

Criteria relating to sustainability and low carbon operations can be used in tendering documents and contracts for services. One example of a potential statement is on the slide; other examples are given in the _HowTo' Guide (details below).

NHS Manchester have successfully used sustainability in their tendering process. Their wording is provided in Appendix 1 (page 11) of the _How To' Guide.

Source: Commissioning for Sustainable Development: A How-To Guide for Commissioners. NHS Sustainable Development Unit, April 2010. Available at: http://www.sdu.nhs.uk/page.php?page_id=167

Slide 46



Don‘t think about climate change in isolation: it is boring (!) and you will be thought of a single issue person, ignoring the other big global issues.

From Professor John Beddington‘s talk 2nd December, 2008.

Slide 47

Measuring energy (and CO_2e)

Understanding energy and carbon footprints:

- Micro-metering – wireless energy monitors at home and at work
- (Shadow) carbon pricing £12 a ton)
- Energy is a LARGE bill for most people/organisations
- Energy and carbon taxes

www.sdu.nhs.uk

Slide 47

NHS Sustainable Development Unit

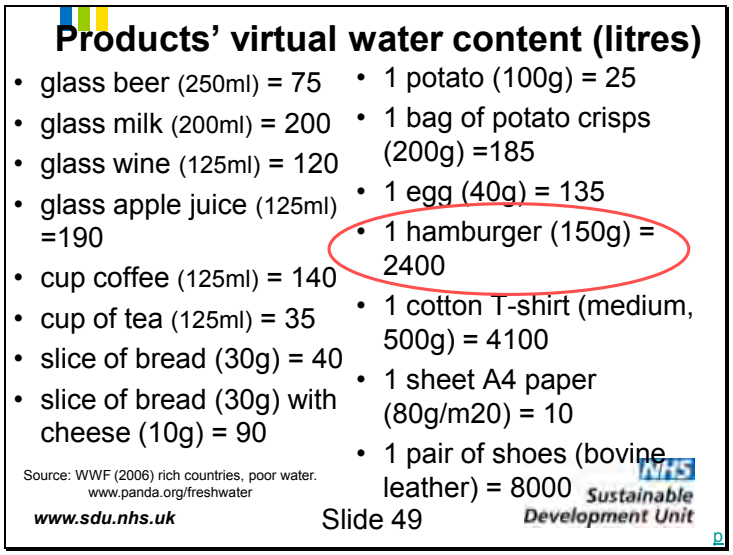
For further information read about the: Carbon Reduction Commitment, Carbon Budgets and EU Emissions Trading Schemes

Slide 48

Food is a good example of multiple benefits:
Health (immediate and long term), illness prevention, sustainable (eg. ‚food miles'), patient recovery and experience in NHS, sustainable food system, cost.

Here's an example of generic advice about eating and drinking, that combines health and sustainability:
Ensure you and your patients:
- eat less saturated fat, sugar, salt
- eat more fruit and vegetables
- eat less meat and dairy products, especially high fat dairy products and processed or red meat
- drink more tap water, less bottled water, and less alcohol

Slide 49



Water is also an important issue. This slide shows the embedded water content for some common items. Most people have no idea how much water is used in industry and manufacture.

Slide 50

For example: the "nipper mountain". One PCT might produce ~ 6000kg of "waste" stainless steel nippers, which will be "hazardous waste".

This is about *risk management*: what is the impact of policy to manage theoretical vCJD (variant Creutzfeldt-Jakob disease) risk versus the cost to the budget and to the environment.

Leadership: its difficult to get anything done without leaders!! The NHS workforce could be its greatest asset.

The SDU has developed a **'NHS Sustainable Boards Leadership Programme**' which is a resource designed to help leaders and those responsible for developing Board leadership programmes integrate sustainability into their programmes.
There are four downloadable resources which are available at: http://www.sdu.nhs.uk/page.php?page_id=168 (Last accessed: 12 July, 2010).

Slide 52

Source: „Saving Carbon, Improving Health' NHS Carbon Reduction Strategy for England (January 2009). Available from: http://www.sdu.nhs.uk/page.php?area_id=2 (page7)

Further questions:

- Is sustainability being seized as an opportunity to improve quality?
- Is climate change on your risk register?
- What should every NHS Chief Finance Officer know in 6 months? (Carbon Reduction Commitment (CRC), Carbon budgets, interest free loans)
- How (and why) does an NHS Chair and CEO make sustainability and carbon a core and *corporate* issue?
- How this relates to e.g. financial deficit, NHS Operating Framework, FT application

You are asking these questions in order to do at least three things:

- To learn yourself
- To help them reflect on what they know

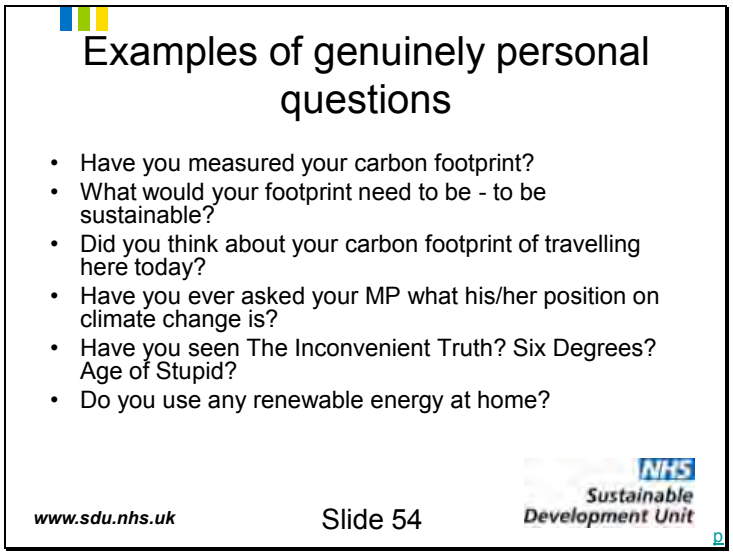
- To help them learn from each other about opportunities within their own organisation/team/network/partnership

Slide 53

Every team and every individual in your organisation has a role .Think about the important questions and responsibilities of each (below); with the overall aim being to implement the CRS (NHS Carbon Reduction Strategy).

- **Chair**: Sustainability objective in every non Exec member – sign up to Carbon Trust and NHS Good Corporate Citizenship Assessment Model
- **CEOs**: SD / CSR / GCC corporate strategy/policy
- An Exec and **non-Exec** lead with reporting mechanisms
- Sustainability objective for every **Executive team member**
- Climate change > a specific section on **risk register**
- **Finance**: Shadow carbon pricing, carbon standard, Salix
- **Performance**: CQC, Operating Framework, CRC
- **Estates/facilities**: Measuring in as many departments as possible: smart metering *(50% of Year 1 CRC)*
- **Access and travel planning**: Sustainable *access*, Liftshare
- **Commissioning** and **Procurement:** Criteria and standards
- **Workforce:** Board development > staff development / T&C
- **Communications**: Staff and public buy-in, corporate objectives and image, website

Slide 54



Websites on which you can measure your personal carbon footprint:

http://carboncalculator.direct.gov.uk/index.html
http://footprint.wwf.org.uk/

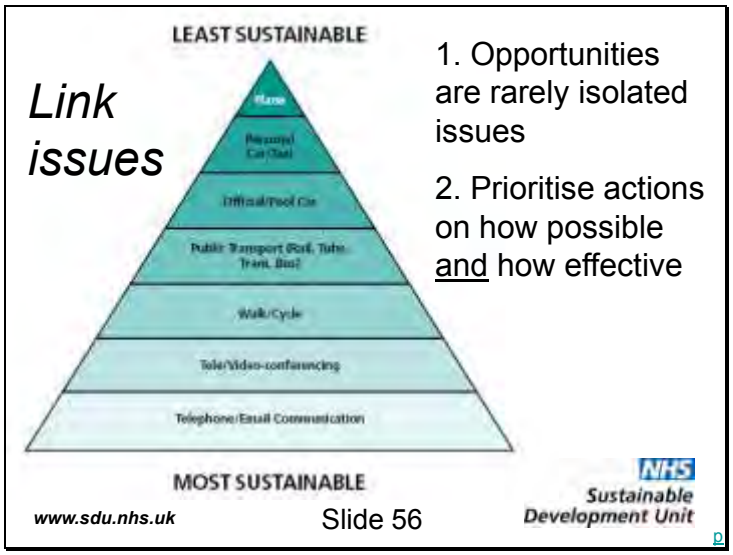
And to measure CO2 emissions for a journey:

http://www.transportdirect.info/Web2/Home.aspx

Slide 55

•Empathy: Understand the current challenges for the NHS: increasing expectations; demographics (e.g. aging population); pressure to improve quality but contain costs; technology; climate change and sustainability
• Weave your case in with existing priorities: climate change *amplifies* (*doesn't compete with*) most existing public health problems (e.g. health inequalities), so there is great potential to link in with other health issues
• Know your audience: some people will respond to the practical arguments (e.g. health co-benefits); others will respond to the strategic arguments (e.g. social justice)
• Be positive and be helpful
• Nurture future and current allies: 1. Go to the top 2. Engage people and groups from more than one direction
• Have examples of success…everyone loves a story!

Slide 56



Never be a single issue presenter. No matter how urgent or fascinating you are, you will be boring and irrelevant to too many people. Start where the audience is and take them on a journey that makes sense to them and helps them address current problems, that also simultaneously help future problems too (co-benefits for the system).

In this example, travel and ICT (Information & Communication Technology) should both be a part of the wider policy.

Slide 57

It is important to find out where your audience is already so that you can tailor your session. For example, a session for medical students will be quite different to one for finance directors! This short YouTube clip was put together by Australian medical students.

With thanks to AMSA
AMSA (Australian Medical Students' Association): Climate Code Green Campaign - the impact of Climate Change on health
Available at: http://www.youtube.com/watch?v=CqMaDc4G_vs
AMSA website: http://amsa.org.au/news/amsa-climate-change-and-health-policy

Change management

- What is the scale of the challenge for carbon reduction in the NHS?

- Why should I do anything about it?
- What are the barriers?
- What are our opportunities?
- What can I do?
- What models can I use?

www.sdu.nhs.uk

Slide 58

NHS Sustainable Development Unit

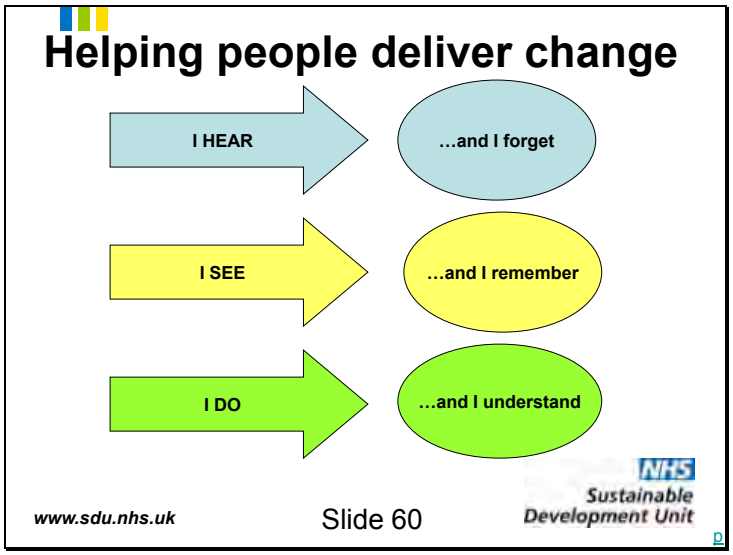
This whole business is more about ***managing change*** – in people, in organisations, in society - than about *climate change.*

Climate change is the tip of the iceberg with which we are dealing but change management is how we help the opportunities to be grasped positively and sustainably.

Slide 59

See John P. Kotter‘s many books – and there are many others like them. In fact, John Wesley, the Methodist preacher, had a very similar approach. Above all, *do not create gloom and doom* – that will drive people‘s heads further into the sand, and they will have even more reason to deny or want to deny.
You must remain positive: Martin Luther King did not say: „I have a nightmare“ !

Slide 60



Chinese in origin

Slide 61

•The NHS Sustainable Development Unit was established in April 2008 and is a small unit of ~7 full-time staff in Cambridge.
• It develops organisations, tools, policy and research to help the NHS in England fulfil its potential as a leading sustainable and low carbon organisation.
• The NHS SDU website is a good source of information: http://www.sdu.nhs.uk/

In more detail, the SDU aims to:
•Be a source of **leadership, expertise and guidance** concerning sustainable development to all NHS organisations in England.
•Raise **awareness** across the NHS as to the important responsibilities of, and actions for, the NHS regarding sustainable development and climate change. This includes promoting a culture of measurement and management which will eventually lead to an process of carbon governance.
•Help **shape NHS policy**, locally, nationally and internationally that makes promoting sustainable development and adapting to and mitigating climate change both necessary and possible for every NHS organisation.
•Ensure the very best practice and innovations on sustainability in the NHS and elsewhere are evaluated and costed and the mechanisms for implementation are made fully available to all NHS organisations.
•Work in **partnership** with the NHS, government, industry and the third sector to achieve the above.

Slide 62

Suggestion for the presenter: Divide the participants into small groups, and ask them to pledge one or two actions that they will undertake in the next: 5 days, 30 days, 100 days (i.e. one or two actions for each time-frame). They should make an action plan:

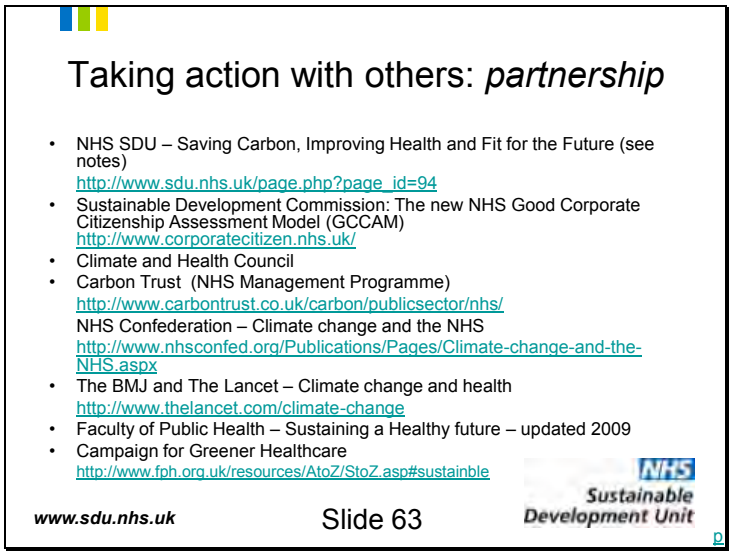
- What are you going to do?
- How will you do it?
- Who is going to check what you've done? (e.g.. buddy system), etc.

Then, the small groups will share their action plans with the larger group, for feedback and suggestions. (The co-chair may wish to write ideas up on the flipchart/whiteboard).

OR: Participants could come up with their own individual actions and write them on a (self-addressed) postcard. At the end of the session the presenter collects the postcards, and post them back to the participants in 3 months time. (The presenter needs to supply the postcards).

Credit for photograph: jonahhphotography.com

Slide 63



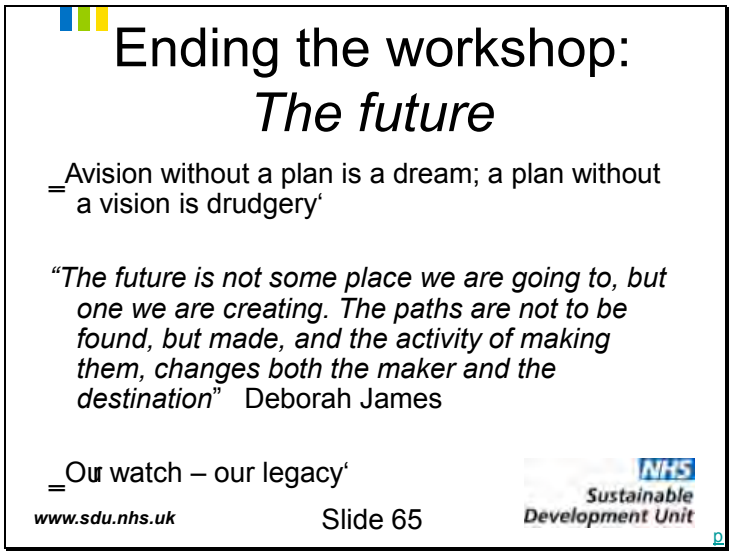
There are some of the organisations the SDU works in partnership with.

Slide 64

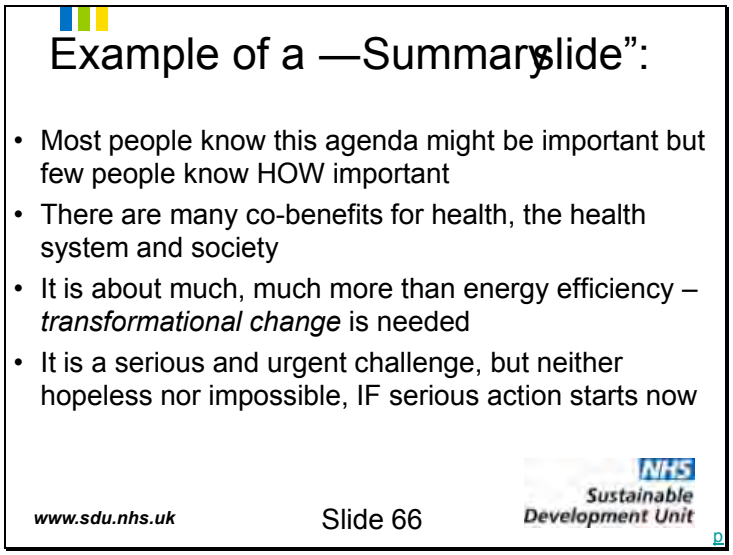
•Financial savings (immediate, and short ROI (return on investment). For example, for every1% reduction in energy consumption, at current prices, the NHS could save about £4 million per year.
• A healthier local population (more physical activity, and less obesity, cleaner air, few traffic deaths, improved mental health, etc).

Other examples:
• Faster patient recovery rates – Cornwall Hospital Food Programme (http://www.cornwallfoodprogramme.co.uk/)
• Improved staff morale – CABE (Commission for Architecture and the Built Environment: http://www.cabe.org.uk/)– well-designed buildings and improved productivity.

Slide 65

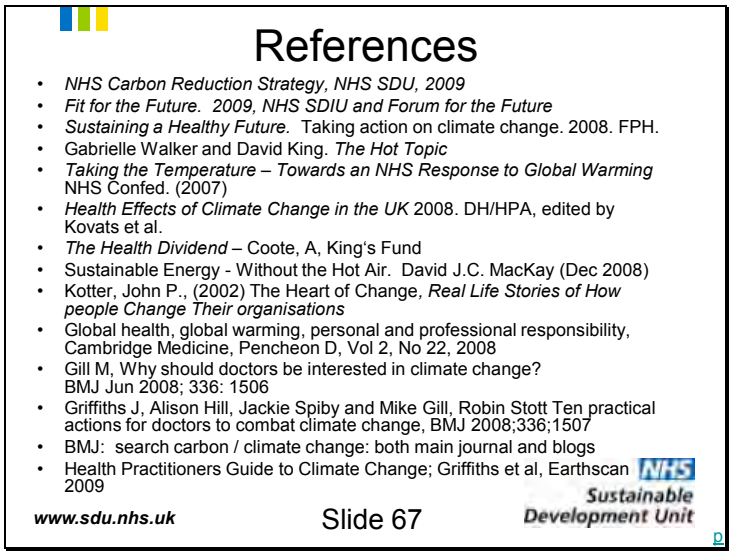


Have some pithy quotes to stimulate and inspire but ensure that when people leave they are able to *act rather than just talk.*



Notes for the presenter: the takeoff and landing (ie the beginning and end of your session) – are the most important parts of any process. How you finish it – clearly and positively and making people feeling empowered to act - is crucial.

Slide 67



Others:

Kunzig and Broecker: *Fixing Climate*

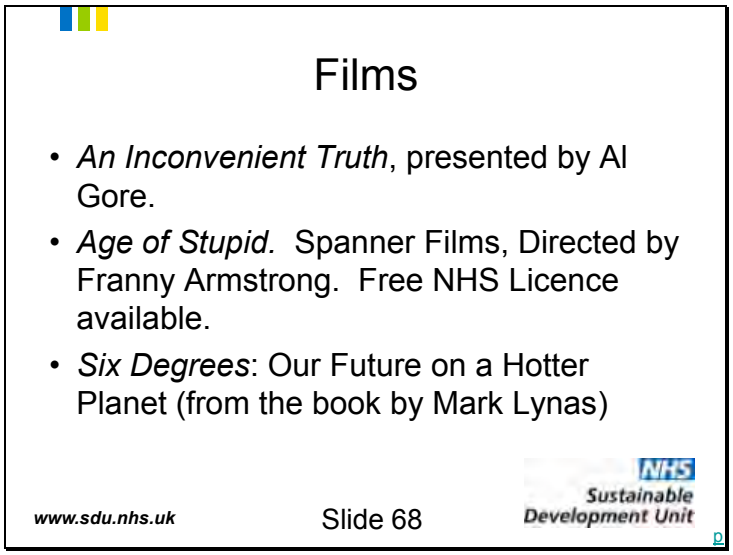
Stern Review on the Economics of Climate Change (2006)

IPCC, Chapter 8, Working Group 2

Bridges, William (2003) *Managing Transitions: Making the Most of Change 2nd edition*

Diamond, Jared M. (2005) Collapse: How Societies Choose to Fail or Succeed

Slide 68



These films are very informative and inspiring but can leave people very depressed. Thus they may need to be watched with some facilitation – that is, that there are some very positive things we can do now which will yield benefits now AND in the future (co-benefits).

Mark Lynas approaches climate change by describing things that may happen when average global temperatures rise by 1, 2, 3, 4, 5 and 6 degrees, respectively, providing successive chapters for these scenarios.

Internet resources

- www.nef.org.uk/
  - *New economic perspectives and sustainable energy solutions*
- www.energysavingtrust.org.uk/
  - *Energy Saving Trust: great for all aspects of saving energy*
- www.projectgenie.org.uk
  - *Simple and useful, good for children and families*

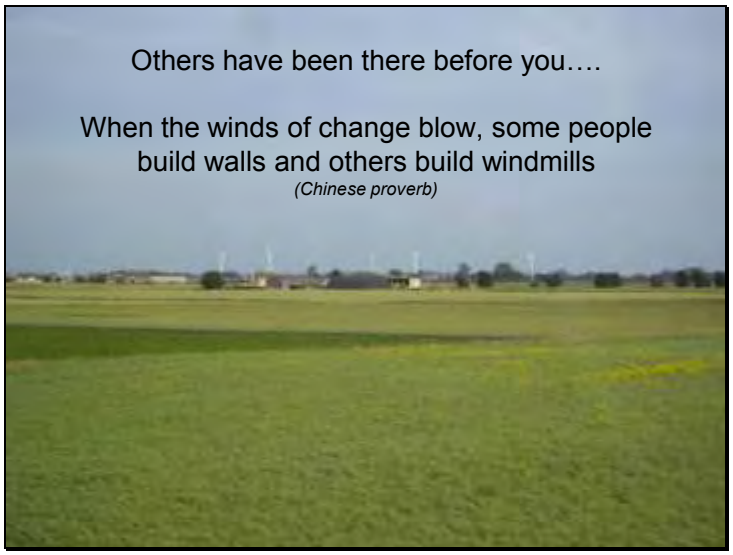
Thanks to the following people and organisations

- Larissa Lockwood
- Maria Arnold
- Sustainable Development Commission
- Anna Coote
- Tess Gill
- Jonathan Porritt
- Tom Cumberlege
- Tim Pryce
- Paul Cosford
- Hugh Montgomery
- Chris Tuppen
- Campaign for Greener Healthcare
- Julie Hotchkiss
- Mike Gill
- Robin Stott
- Fiona Head
- Fiona Godlee
- Richard Horton
- Marches Agency
- Carbon Trust
- David MacKay
- John Kotter
- Muir Gray
- Frances Mortimer
- Tim Nicholson
- …and many more

www.sdu.nhs.uk

Slide 70

Slide 71


Others have been there before you….
When the winds of change blow, some people build walls and others build windmills
(Chinese proverb)

Glossary

Anthropogenic: Caused or produced by humans. (1)
Adaptation: Changes to behaviour or practice to adjust to the impacts of climate change.
Carbon neutral: Commonly accepted terminology for something (e.g. an organisation or product) which has zero net emissions. (2)
Carbon literacy: General knowledge or awareness of the concepts, causes, and the effects of atmospheric pollution or greenhouse gases. (2)
Climate: Average weather and its variability over a period of time, ranging from months to millions of years. The World Meteorological Organization standard is a 30-year average. (1)
Climate change: A change in the climate's mean and variability for an extended period of decades, or more. (1)
Climate feedback: An initial process in the climate leads to a change in another process in the climate, which in turn influences the initial one. A *positive feedback* intensifies the original process, and a *negative feedback* reduces it. A warming climate could increase the release of carbon dioxide from soils. Since carbon dioxide is a greenhouse gas, the additional release of carbon dioxide would further warm the climate — this is an example of a positive feedback (1)

Climate models: A mathematical representation of the climate system based on its physical, chemical and biological components, in the form of a computer program. The computer climate models used at the Met Office Hadley Centre are detailed three-dimensional representations of major components of the climate system. Coupled climate models are the most complex, combining various components such as atmosphere, ocean, sea ice and land surface. They are run on the Met Office's supercomputer. (1)

CO_2: Carbon dioxide, a gas in Earth's atmosphere. It occurs naturally and is also a by-product of human activity such as burning fossil fuels and land-use change. It is the principal anthropogenic greenhouse gas. (1)

CO2e: Carbon Dioxide Equivalent. There are six main greenhouse gases which cause climate change and are limited by the Kyoto protocol. Each gas has a different global warming potential. For simplicity of reporting, the mass of each gas emitted is commonly translated into a carbon dioxide equivalent (CO2e) amount so that the total impact from all sources can be summed to one figure. (2)

El Niño Southern Oscillation (ENSO): El Niño is a periodic warming of the tropical Eastern Pacific Ocean associated with a fluctuation in the low latitude pressure system known as the Southern Oscillation. This atmosphere-ocean interaction is known as ENSO, and normally occurs on timescales of between two to seven years. (1)

Fossil-Fuels: Biomass lain down in the Earth millions of years ago, such as coal, oil, and natural gas, which when burnt produce carbon dioxide. (1)
Global warming: A rise in the Earth's temperature, often used with respect to the observed increase since the early 20th century. (1)
Good Corporate Citizenship (GCC): Describes how NHS organisations can embrace sustainable development and tackle health inequalities through their day-to-day activities. The Sustainable Development Commission (SDC) has developed a self assessment model that will help organisations to identify and assess their contribution to good corporate citizenship. (2)
Greenhouse gases (GHG): Include carbon dioxide, nitrous oxide, methane, hydrofluorcarbons, perfluorocarbons and sulphur hexafluoride. They trap heat in the earth's atmosphere, such that a rise in levels of GHG increases temperature – the so-called greenhouse effect. (2)
Greenhouse effect: The greenhouse effect is the natural process of the atmosphere letting in some of the sun's energy (ultraviolet and visible light) and stopping it being transmitted back into space (infrared radiation or heat). This makes the Earth warm enough for life. For several thousands of years the atmosphere has been delicately balanced, with levels of greenhouse gases relatively stable. Human influence has now upset that balance and, as a result, we are seeing climate change. (3)

Gulf Stream/North Atlantic Drift: The Gulf Stream is a warm ocean current originating near the Caribbean and the Gulf of Mexico which follows the east coast of the USA before turning into the North Atlantic Drift towards north west Europe. This combined system transports heat from low to high latitudes, keeping north west European winter temperatures higher than they would otherwise be. (1)

La Niña: the cold phase of ENSO leading to extensive cooling of the central and eastern Pacific. (1)

Low carbon: A building, project or product that has the lowest possible CO2 emissions. (2)

Mitigation: Action to reduce the emissions of greenhouse gases to slow the rate of human-induced climate change.

One planet living: Currently, the average UK resident consumes resources at a rate at which it would take *three earths* to replenish. Since we only have one earth, we are living way beyond our means. *One planet living* means living within the limits of the earth's resources.

Peak Oil: A range of oil analysts are expecting global oil production to reach a peak and then begin its decline within the next 10 years. *Peak oil* is the point in time when the maximum rate of global petroleum extraction is reached, after which availability of production will decline. (2)

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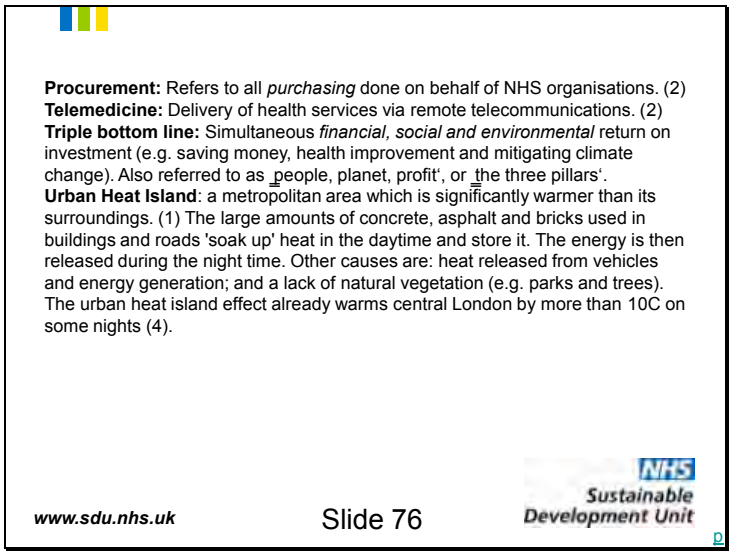

Glossary References:

(1) Met Office: Climate change glossary. Available at: http://www.metoffice.gov.uk/climatechange/guide/glossary/ (Last accessed: 28 June, 2010).
(2) *Saving Carbon, Improving Health: NHS Carbon Reduction Strategy for England* (January 2009). NHS Sustainable Development Unit, Cambridge, UK.
(3) Met Office: What is climate change? Available at: http://www.metoffice.gov.uk/climatechange/guide/quick/evidence.html (Last accessed 5 July, 2010).
(4) BBC Weather Centre: Urban Heat Islands. Available at: http://www.bbc.co.uk/weather/features/understanding/urban_heat_islands.shtml (Last accessed 5 July, 2010).

The session from now on is, in a sense, a ‗role-play' of what the presenter would expect participants to be able to do after today. Participants, given this slide set and some preparation time, should be able to run a similar session, themselves, in their own workplaces.
You don't have to be an expert, you just have to be one step (not 100 steps) ahead!

Establish the Ground Rules (*3 is a good number!*)

Objectives

- **Awareness**: For you to understand the key facts about climate change, sustainable development, health and the NHS.
- **Advocacy:** To get you to the point at which you could run a similar session yourself.
- **Action:** For you to develop, plan and carry out, actions on sustainability.

… and your objectives?