

# REDUCING GREENHOUSE GAS EMISSIONS

## Climate change mitigation

The FPH SIG Resource “Overview of Climate Change” cites the UN Intergovernmental Panel on Climate Change’s 2018 Special Report<sup>1</sup>, which assessed that **carbon emissions need to fall by 45% by 2030** for global warming to be kept to a maximum of 1.5C, and to zero by 2050. This resource addresses the actions that need to take place for this to be achieved.

**Is it too late? Is it possible?** Should we focus instead on adaptation to climate change (see other SIG Resources)? It has to be said that there is little evidence to suggest that humanity is capable – politically, psychologically, ethically, economically – of slashing carbon emissions quickly and deeply enough to prevent the worst impacts of climate change, fundamentally because of the challenge to consumerist culture and economic growth as a main purpose of government. Twenty-five years ago, strong evidence on climate change was presented to the Rio Earth Summit of 1992: since when, carbon emissions have increased relentlessly across the world. Even last year, the Global Carbon Budget released in December 2018 projects CO<sub>2</sub> emissions in 2018 to rise by 2.7% (range 1.8% to 3.7%) to a record 37.1 billion tonnes (Gt) CO<sub>2</sub>, “as policy and market forces are currently insufficient to overcome growth in fossil energy use”.<sup>2</sup>

But - we do know what we need to do to halve carbon emissions. Here is a summary.

### Some terminology

**Mitigation** - Taking action to reduce Greenhouse Gas Emissions and enhancing natural and artificial processes that remove greenhouse gases from the atmosphere

**Adaptation** – Taking action to minimise the current and expected impacts of climate change

**Carbon dioxide CO<sub>2</sub> - carbon emissions** - The main, but not the only gas that traps heat in the atmosphere, acting like a blanket. The term is widely used to describe greenhouse gas emissions generally

**CO<sub>2e</sub> - Equivalent CO<sub>2</sub> emissions** – a measure used to compare how much CO<sub>2</sub> would need to be emitted to be the equivalent of a mix of different GHGs

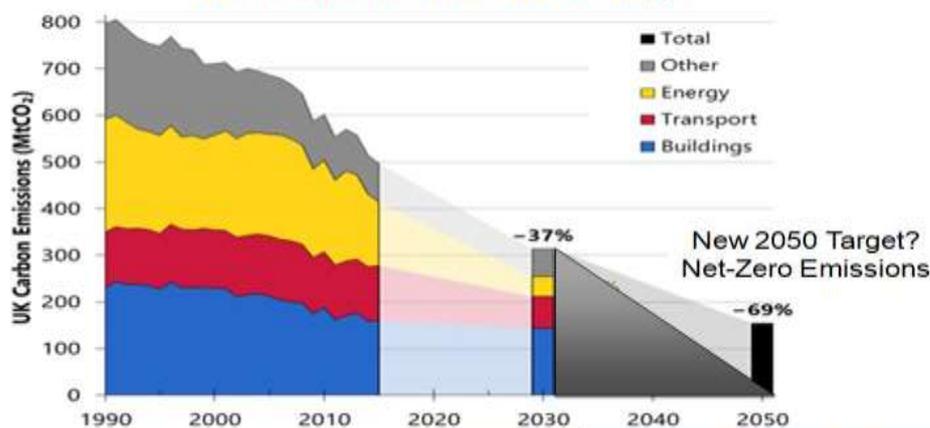
**GHGs - Greenhouse Gases** – all the gases that contribute to trapping heat in the atmosphere, including not only carbon dioxide but methane and water vapour

To limit global warming to 1.5C, **young people today would need to live their lives without contributing significantly to global emissions**, for example the average person born today could emit only an eighth of the lifetime emissions of someone born in 1950. Carbon Brief<sup>3</sup> has the methodology and an interactive tool.

**A plant-based diet** cuts the use of land by three-quarters and halves the greenhouse gases caused by food production – see SIG **Sustainable Food Systems Resource**

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### UK CO<sub>2</sub> Emissions Plans Committee on Climate Change



*This graphic was prepared for the UK Committee on Climate Change’s 2018 report<sup>4</sup>. It shows that the UK’s greenhouse gas emissions have reduced by 43% compared to 1990 levels. However 75% of the emissions reductions since 2012 have come from the power (energy) sector: all other sectors are flat. Emissions from transport, industry and, particularly, buildings have reduced only slightly.*

### PERSONAL ACTIONS

Individual actions do make a difference. Per capita emissions in the UK need to reduce from approx 10-12 tonnes CO<sub>2</sub> per annum to 1-2 tonnes over the next decade. The following are actions we can all take – in ascending order of GHG reduction:

#### Low impact actions:

- Upgrading light bulbs

#### Moderate impact actions

- Hang dry clothes
- Recycle waste
- Wash clothes in cold water
- Replace typical car with hybrid

#### Higher impact actions

- Eat a plant based diet
- Switch to an electric car
- Buy green energy
- Avoid transatlantic flights
- Go car free
- Have one fewer child

Source – Wynes & Nicholas 2017<sup>5</sup>

### The four most effective actions for individuals to take are:

1. Having fewer children
2. Going car free
3. Eating a plant based diet
4. Avoiding air travel

Collectively these actions can result in systemic change.

### Carbon reduction in the NHS and social care system

See <https://www.sduhealth.org.uk/policy-strategy/route-map.aspx>

The Sustainable Development Unit is funded by Public Health England and NHS England to work across the NHS, public health and social care system.

The NHS has reduced its carbon footprint by 20% over the last decade<sup>6</sup>.

Actions that need to continue to be emphasised include:

- Prioritising sustainability in service redesign and systems
- Carbon assessment of pathways and interventions to inform decisions
- Routine carbon impact assessments and follow up action
- Change heating systems to electric power
- Prioritise local suppliers for procurement
- Reduced wastage in health care e.g. devices

### To contribute to GHG reduction, public health practitioners can:

- **Reduce their own emissions** and encourage family, friends, their workplaces and communities to do the same
- Encourage or lead the development and (crucially) implementation of **policies and strategies** for their organisations that result in action to reduce GHGs (see above) such as not flying, driving electric vehicles, adopting low-meat diets
- Use their influence to help to influence **public opinion** in favour of radical action on the climate crisis, and to influence local and central government
- **The Public Services (Social Value) Act 2013** allows public bodies in England to take into account the social, environmental and economic impact of their commissioning

### UK Government Action

In 2018, the Government published its 25-year Environment Plan<sup>7</sup>. The Committee on Climate Change reports independently to Parliament on the implementation of the UK Climate Change Act. In its 2018 Progress Report<sup>4</sup> it noted that:

- Measured from 1990, emissions have fallen by 43% over a period when the economy grew by over 70%, which is the most substantial emissions reduction in the G7 group of countries
- The effort to decarbonise the power sector is the best demonstration of strong UK policies. Over 30% of electricity now comes from renewable sources.

But in the same report, the Committee on Climate Change has identified the need for the government to:

- Revert to the housing policies cancelled in 2015 – zero carbon homes, efficiency measures in buildings, requiring housing developers to include renewables
- Invest in and encourage offshore and onshore wind power
- Develop and implement consistent policies, for example the planned expansion of Heathrow Airport is arguably incompatible with the need to radically reduce emissions from air travel.

## References

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1. Intergovernmental Panel on Climate Change (IPCC) (2018) Special Report on Global Warming of 1.5°C. <https://www.ipcc.ch/sr15/> (accessed 09.01.19)
2. <https://www.globalcarbonproject.org/carbonbudget/18/highlights.htm> (accessed 24.04.19)
3. <https://www.carbonbrief.org/analysis-why-children-must-emit-eight-times-less-co2-than-their-grandparents> (accessed 24.04.19)
4. Committee on Climate Change (2018) Progress Report to Parliament <https://www.theccc.org.uk/publication/reducing-uk-emissions-2018-progress-report-to-parliament/> (accessed 08.01.19)
5. Wynes, S. and Nicholas, KA (2017) The climate mitigation gap: education and government recommendations miss the most effective individual actions Environmental Research Letters, Volume 12, Number 7 <https://iopscience.iop.org/article/10.1088/1748-9326/aa7541> (accessed 22.04.19)
6. <https://www.sduhealth.org.uk/news/626/health-system-report> (accessed 24.04.19)
7. HM Government (2018) A Green Future: Our 25 year plan to improve the environment. <https://www.gov.uk/government/publications/25-year-environment-plan> (accessed 24.04.19)

## Professional Development Questions

- A. What are the actions that individuals can take that will have the greatest impact on their greenhouse gas emissions?
- B. What actions can organisations (including local government) take to mitigate climate change?

## FPH General CPD Questions

1. What did I learn from this activity or event?
2. How am I going to apply this learning in my work?
3. What am I going to do in future to further develop this learning and/or meet any gaps in my knowledge, skills or understanding?