

“Promoting economic growth whilst mitigating and adapting to climate change and the depletion of natural resources”

Introduction & Purpose

This Position Statement describes the IMechE responses to the major issues of relevance and/or concern in the broad environment field. It expands upon and clarifies the environment theme headline statement quoted above, and outlines the rationale (underlying principles) that will guide delivery of that statement to the theme’s various target audiences.

Key Messages

With the facts currently available to us, interpreted in light of the underlying principles set out below, the key messages we communicate to our target audiences in support of the environment theme headline statement are:

Message 1: Protect against the impacts of global warming that it is too late to prevent.

Climate scientists tell us that the world’s climate will change during the next few decades, with an increased frequency of severe weather events, due to carbon emissions already stored up in the atmosphere. Mechanical engineering will be at the centre of society’s adaptation to this change. We will actively lead research into what needs to be done by mechanical engineers to adapt mechanical systems to near-term climate change and use the findings to promote the role of mechanical engineering in helping society find solutions as well as to set government agendas for action.

Message 2: Tackle the root causes of global warming.

There is growing evidence from many scientists that an 80% cut in carbon dioxide emissions is likely to be required by 2050. We believe the focus should be firmly on getting emissions down and at the same time exploring alternative solutions to global warming, including global cooling and the provision of carbon sinks.

Message 3: Minimise the future impact of global warming.

The twin challenges of creating a low carbon economy and adapting to climate change require a concurrent approach and a second industrial revolution based on innovation in mechanical engineering. We support initiatives that educate the public to understand that adaptation solutions must also be low-carbon solutions; likewise, when devising low-carbon solutions their applicability in a changed climate must be understood.

Message 4: Calculate carbon footprints based on whole lifecycle costing.

There should be a level playing field in calculating carbon footprints and that account must be taken in such calculations of embedded carbon and whole lifecycle carbon as well as operational carbon emissions. We support developments of methodologies that truly enable whole lifecycle carbon calculations to be made so that products and services can be compared on a like-for-like basis.

Message 5: Stimulate a carbon market.

Legally binding emissions caps should be agreed globally to stimulate a world carbon market, encourage a move to low-carbon economies, and facilitate a transfer of low-carbon technologies to developing nations. We will support initiatives that give developing nations, such as China and India, easier access to low-carbon technologies developed by more advanced nations.

Message 6: One person's waste is another person's vital resource.

We subscribe to the waste hierarchy and believe that societal attitude change driven by education and legislation is the route to successful implementation; there needs to be a significant shift in society's perception of 'waste' to a point where 'waste' is intrinsically seen as a resource. We will support initiatives that educate the public to regard waste as a resource.

Message 7: Process waste appropriately.

We favour a rigorous lifecycle analysis of waste processing options to ensure that the best choice is made between a recycling route and energy from waste route. We support initiatives to develop methodologies that enable waste industry practitioners to clearly present the case for the selection of the appropriate route for a given waste stream.

Message 8: Minimise the use of the world's limited resources.

We believe that our profession must strive in a holistic approach to reduce the amount of the World's limited natural resources utilised in our engineering solutions and intrinsically design-in opportunities for repair, remanufacture and reuse whenever possible. We actively encourage our profession to consider repair, remanufacture and reuse options at the design stage with full-account taken of whole lifecycle carbon costs.

Underlying Principles

In delivering the headline theme statements, the Institution will establish and report facts relevant to the specific theme. It will also provide guidance and advice and lobby decision makers to adopt specific measures and policies, based on its own interpretation of those facts. This is often a highly subjective process. To help ensure the resulting pronouncements are robust, consistent and appropriate, we will use the following guiding principles:

- We support the principles and practices of Sustainable Development, as described in the [IMechE Sustainable Development Position Statement](#).
- We use the word "sustainable" in its broadest sense, embracing concepts such as energy security, cost effectiveness, environmental stewardship, ethics and stakeholder dialogue.
- We support technological innovation, particularly in areas that inspire young people and provide major future business opportunities.
- Engineering and technology development on their own cannot address all the issues; we recognise the potential and need for behavioural, societal, political and organisational change.
- Markets and legislation are tools to be used to contribute to a sustainable future, not necessarily constraints on that future.



- We accept the findings of the Intergovernmental Panel on Climate Change (IPCC) and the Stern Review; that modern global warming is real and largely man-made. It can be cost-effectively addressed only if tackled urgently and aggressively.
- We are a Learned Society, not a trade association or trade union. We will be open-minded, gather evidence from a wide variety of national and international sources, and make pronouncements on the basis of what we perceive to be best for society, the environment and economy at large.
- We will, wherever possible, lead by example and promote engineering and engineers as able to achieve great things and thus be the key deliverers of a sustainable future.