

# Climate change: Manifesto of actions

## Summary

The Royal Society of Chemistry (RSC) has called on Governments to show strong leadership to achieve the goals of the Paris Agreement, however, we can also make a substantial contribution directly. The RSC is committed to supporting the chemical sciences community in their efforts to understand and address climate change. We have adopted a goal of net zero greenhouse gas emissions from our organisation by 2040 and are taking urgent action as part of our commitment to play our full part in this transformation.

### Climate science; observations, causes and consequences

The scientific community can say with high confidence that human activities have caused the Earth's surface to warm by approximately 1°C since the pre-industrial era. This warming is due to the accumulation of greenhouse gases in the atmosphere, with carbon dioxide from fossil fuel combustion being the leading cause. The chemical sciences have been at the forefront of understanding the origin and fate of greenhouse gases and their biological, geological and oceanographical interactions. If we continue emitting at the current rate, global warming is likely to reach 1.5°C between 2030 and 2050 and could go much further with very harmful consequences. Until anthropogenic emissions of carbon dioxide and other long-lived greenhouse gases reach a balance of sources and sinks, "net zero", the global temperature rise will continue. Net zero identifies the date at which we stop directly adding to further warming, but it is the cumulative emissions of carbon dioxide, and other long lived greenhouse gases, that largely determines the extent of warming and this emphasises the urgent need for near term emissions cuts. Nature and societies around the world will struggle to adapt to extreme weather, sea level rise and ocean acidification if we do not change course now.

## Manifesto of Actions

### **The chemical sciences community will continue to show leadership and engagement in tackling climate change**

The Royal Society of Chemistry's potential reach and influence is much greater than its direct carbon footprint. Whilst we have committed to the [UN Race To Zero](#), setting a goal of net zero emissions by 2040 through the [Pledge to Net Zero](#), we will continue to show leadership through a broader range of actions.

**1. The RSC will continue to convene researchers, communicate and disseminate the latest scientific findings, and highlight ways that the chemical sciences can tackle the many aspects of climate change.**

Chemical scientists are pioneering improvements in industrial processes, converting CO<sub>2</sub> into valuable chemicals and transforming our ability to generate and store renewable energy by sharing results and learning from each other. For instance, in the last year, we have convened a [Faraday Discussion on Carbon Dioxide Utilisation](#) and launched an international journal [Environmental Science: Atmospheres](#). We're committed to [increasing open access](#) to high quality scholarly research and we will work to make future events more accessible and inclusive.

**2. We will collaborate internationally recognising the global nature of the challenge and its solutions**

Whilst the climate is largely affected at a global scale, the changes in society to mitigate and adapt to climate change will vary nation by nation and region by region. Through our international links with [IUPAC](#), [EUChems](#) and [Commonwealth Chemistry](#), and the reach of our membership, we will promote dialogue, knowledge sharing and collaboration internationally whilst recognising the different resources and opportunities for parts of the chemical science community to act.

**3. We will work with other learned societies and professional bodies in support of these goals.**

The challenges and opportunities articulated in this position statement are multidisciplinary and shared by other learned societies and professional bodies. We will work actively to support each other in securing a future that avoids dangerous climate change. We will learn from each other's practice, develop a common understanding of the issues at stake and speak with a unified voice to governments.

**4. We will provide expert advice to government drawing on our members' expertise, contribute to public dialogue on the science of climate change, and the choices we face in mitigation and adaptation.**

During the next decade new technologies and policies will be required in transport, housing, food and the workplace. Society will increasingly look to trusted voices to understand the choices, trade-offs and decisions to be made. Dialogue on the merits and implications of different choices will be vital, whether it is batteries substituting for hydrocarbons in our cars or hydrogen for chemical feedstocks and steel making. We will share the findings of our research community, gather evidence to inform policy, and promote member led local and online events to further public engagement in science and societal understanding of these issues which will have consequences for decades and generations to come.

**5. We will support training and education for the transition to net zero and inspire the next generation of chemists through teaching in schools, colleges and universities.**

Many of our members are educators working in the full range of institutions and the RSC supports them directly with [resources and networks](#). Our policy engagement on the school curriculum will contribute to the transition to net zero by identifying and advocating for the skills and knowledge necessary to understand the problem of climate change and take action, for both this and future generations. [Our careers programme](#) will inspire the next generation to join existing chemistry professionals working towards a better future.

**6. We will support our membership and the wider chemical sciences community to understand the ways in which they can take action.**

Our membership recognise the importance of action on climate change in their working lives. We will ask how we, as their professional body, can support them effectively through training, events, networks and practical resources. By updating our professional standards we will ensure that we as a community develop a thorough understanding of the issues at stake and the contribution that we can make as chemistry using professionals.

**7. We will take urgent action to eliminate our contribution to climate change by reaching net zero emissions by 2040.**

Urgent action is required to hold global warming to 1.5°C so we are setting out on the path to net zero emissions immediately. We will cut direct emissions, those arising from the procurement of energy, goods and services, and emissions associated with the events we organise by at least half by 2030. Progress will be shared by transparent monitoring and reporting to our community and the wider world. If residual emissions remain beyond 2030, we may offset some emissions by supporting technologies that physically remove CO<sub>2</sub> from the atmosphere and store it permanently in materials or geological features.