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This was strengthened by two Conservative governments. Then-prime minister Theresa May decreed in 2019 that the United Kingdom would have net zero emissions by 2050. The following year, her successor, Boris Johnson, oversaw the legislation to phase out new petrol and diesel engines.

There are many things the current government could do now to improve the lives of the poorest people. It could mandate that those with the lowest incomes always pay the lowest energy prices; it could invest on a larger scale in home insulation to keep bills down and reduce carbon footprints. A nationwide education and training programme could give people access to green jobs, especially in the United Kingdom's many deprived areas.

Carbon budgets and net-zero deadlines are not a game, and the future of our planet is not an issue on which to create divisions. When he came into office, Sunak presented himself as a steady hand. He works within a consensus of research and expertise in economic policy. He has recognized the necessity of restoring UK researchers to their important place as part of the funding system Horizon Europe. He is talking to educators about how to encourage more young people to study mathematics at school. It is just as important to engage with, not ignore, expert advice in climate and energy science and policy. It is not too late to change course.

AI will transform science — now researchers must learn to tame it

A new *Nature* series will explore the many ways in which AI is changing science, and how it can be safely integrated into research.

The number of research fields touched by artificial intelligence (AI) is rising all the time. From protein folding to weather forecasting, and from medical diagnostics to science communication, the list seems to grow by the day. The proportion of papers in the Scopus database that mention AI or AI-related keywords in the title or abstract now stands at 8%, up from 2% a decade ago, according to an analysis by *Nature*.

Meanwhile, AI has also been changing. Whereas the 2010s saw a boom in the development of machine-learning algorithms that can help to discern patterns in huge, complex scientific data sets, the 2020s have ushered in a new age of generative AI tools pre-trained on vast data sets that have much more transformative potential.

But precisely how and why AI in its various forms is affecting science — and, indeed, whether or how all of the purported benefits will be realized — is itself an emerging story. A *Nature* survey has captured the views of more than 1,600 researchers from around the world (see page 672). It marks the launch of a new series on the role of AI in science. We intend to draw on these results as we dive deeper into what researchers are saying about AI and so inform the conversation about the technology's potential — and its pitfalls. All of the material in *Nature*'s series will be accessible on one website (see go.nature.com/3jz1uvw).

> **"Researchers need access to data, code and metadata. Producers of black-box systems need to recognize the necessity of making these available."**

Survey respondents told us, for example, that they are using AI to process data, write code and help them write papers. One clear benefit for many is in English-language science communication. Generative-AI tools powered by large language models (LLMs), notably ChatGPT, help researchers whose first language is not English, but who need to use English to publish their research. Scientists can use LLMs to improve their writing style and grammar, and to translate and summarize other people's work.

AI is also widely being used in science education around the world. Students at schools and universities regularly use LLM tools to answer questions, and teachers are starting to recognize that curricula and methods of pedagogy will need to change to take this into account.

But respondents also reported concerns, many of which mirror those held in wider society about AI technologies. These range from the lack of transparency of 'black box' systems, in which the underlying reasons why an AI reaches the results it does are not clear, to fears over training data including biased information. Researchers are also concerned about the harms that could be caused by AI spreading misinformation, and the prospect of AI-generated fake studies. These concerns hold particular weight in science. If we lose trust in primary scientific literature, we have lost the basis of humanity's corpus of common shared knowledge.

Another factor that survey respondents commented on is the dominant part corporations are playing in the development of AI. Companies are valuable contributors to science, technology and innovation. But the scale of their ownership of AI, in terms of both the technology and the human data needed to power it, is greater than in the past. Researchers need access to data, code and metadata. Producers of black-box systems need to recognize the necessity of making these available for research if AI claims are to pass verification and reproducibility tests. But the speed at which AI is developing means regulators are still playing catch-up.

In the coming weeks and months, we will be further exploring these and other questions about the influence of AI on science, including how AI will affect scientific publishing, and whether, for example, peer reviewers need to be trained to identify the use of AI in studies.

Now is the time to determine which aspects of research and society AI can be safely integrated into, and how to go about it. The coming deluge of AI-powered information must not be allowed to fuel a flood of untrustworthy science. Science and humanity stand to benefit from AI, provided it is applied in the right way. A comprehensive understanding of the potential dangers of this technology is an essential prerequisite for its safe use.