# AI projects shortlisted for £2m Manchester Prize to cut industrial emissions



Artificial intelligence is emerging as a key driver of environmental reform in the UK, particularly in carbon-intensive industries such as steel and cement. This year’s £2 million Manchester Prize has shortlisted ten AI-led projects designed to cut emissions in these sectors, underscoring the growing importance of clean energy innovation.

Now in its second year, the prize rewards technologies that deliver economic benefits while advancing social equity. Among the finalists are AI tools that improve furnace efficiency in steelmaking and optimise process control in cement production—two of the most energy-demanding processes globally.

Funded by the Department for Science, Innovation and Technology and run by Challenge Works, part of the Nesta group, the Manchester Prize supports AI breakthroughs with the potential to transform public services and underpin a low-carbon economy. Finalists will receive funding and development support, with the overall winner to be announced later this year.

Peter Kyle, Secretary of State for Science, Innovation and Technology, said AI was offering “transformative new ways to tackle climate change” and help the UK meet its ambition of becoming a clean energy superpower. He stressed the need to reduce emissions from industries that contribute around 16% of global carbon output, while maintaining warm homes and resilient infrastructure.

Last year’s Manchester Prize winner, Polaron, received £1 million for its AI technology that dramatically accelerated the discovery of materials for wind turbines and electric vehicle batteries—cutting development time from years to days. The project showcased the impact AI can have on energy and infrastructure innovation.

Previous editions of the competition have drawn nearly 300 submissions tackling challenges in areas such as water management and energy efficiency, reflecting a wider push for responsible AI development in the UK.

As the country positions itself as a global leader in ethical and impactful AI, these shortlisted projects represent meaningful steps towards a sustainable future. Their success could set the tone for how advanced technologies are deployed to deliver environmental and economic progress.

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## Bibliography

1. <https://www.roboticsandautomationmagazine.co.uk/news/ai/ai-projects-targeting-emissions-among-2m-manchester-prize-finalists.html> - Please view link - unable to able to access data
2. <https://www.roboticsandautomationmagazine.co.uk/news/ai/ai-projects-targeting-emissions-among-2m-manchester-prize-finalists.html> - The article discusses the inclusion of AI technologies aimed at reducing industrial emissions in the UK's cement and steel sectors among the ten finalists for the £2 million Manchester Prize. The competition focuses on clean energy, with projects like an AI-powered system optimising furnace operations to reduce carbon emissions in steel manufacturing and an AI-based process control tool to cut emissions from cement production. The Manchester Prize, funded by the Department for Science, Innovation and Technology and delivered by Challenge Works, supports AI breakthroughs that benefit the economy and promote a clean energy system.
3. <https://www.gov.uk/government/news/british-start-up-wins-1-million-ai-prize-for-breakthrough-slashing-materials-development-from-years-to-days> - This UK government press release announces that Polaron, a British AI-driven innovation, has won the £1 million Manchester Prize. Polaron's technology dramatically speeds up the development of materials used in wind turbines and electric vehicle batteries, reducing the process from years to days. The prize aims to support AI innovations that deliver social good, with Polaron exemplifying the promise of AI in addressing challenges in energy and infrastructure.
4. <https://www.theengineer.co.uk/content/news/polaron-ai-wins-inaugural-1m-manchester-prize> - The article reports that Polaron Ltd, an Imperial College spin-out, has won the £1 million inaugural Manchester Prize. Polaron's AI technology accelerates the development of advanced materials, such as those used in batteries, from years to days. The Manchester Prize, funded by the UK Department for Science, Innovation and Technology, rewards British-led breakthroughs in AI for public good, with Polaron's approach revolutionising materials research and development.
5. <https://www.watermagazine.co.uk/2024/07/11/water-sector-ai-solutions-win-share-of-1-million-as-manchester-prize-names-first-ever-finalists/> - This article highlights the Manchester Prize's £1 million award to ten teams of advanced AI innovators, including those focused on water sector solutions. The competition, launched by the UK Department for Science, Innovation and Technology, received nearly 300 entries addressing challenges in energy, environment, and infrastructure. The finalists, such as gAIn Water by UKCRIC, leverage AI to optimise water flow and maintenance schedules, aiming to reduce leaks and lower energy consumption, benefiting water utilities and communities across the UK.
6. <https://www.thechemicalengineer.com/news/manchester-prize-winner-uses-ai-to-improve-battery-materials/> - The article reports that Polaron, a startup using generative AI to accelerate the development of renewable materials, has won the £1 million Manchester Prize. Polaron's technology uses microstructural data to improve material performance, aiming to create stronger, lighter, and more efficient materials for clean energy, transport, and infrastructure. The Manchester Prize, launched in 2023, focuses on AI innovations in energy, environment, and infrastructure, with Polaron's approach exemplifying AI's potential for public good.
7. <https://www.innovationnewsnetwork.com/uks-1m-ai-prize-winner-speeds-up-advanced-materials-development/56612/> - This article discusses how Polaron, a British AI-driven innovation, has won the UK's £1 million Manchester Prize. Polaron's technology dramatically speeds up the development of advanced materials used in wind turbines and electric vehicle batteries, reducing the process from years to days. The Manchester Prize, funded by the UK Department for Science, Innovation and Technology, supports AI innovations that deliver social good, with Polaron exemplifying the promise of AI in addressing challenges in energy and infrastructure.