

Opinion **Climate change**

Technology can help save the planet, but it is not enough

To bet everything on future innovation is one heck of a gamble with our future

JOHN THORNHILL



Bill Gates with Amazon-based indigenous leader Tuntiak Katan at the recent UN summit in New York, where world leaders were laggardly in their response to the climate emergency © EPA/Shutterstock

John Thornhill SEPTEMBER 30 2019

The intellectual clash I once saw between an eminent neoclassical economist and a passionate environmentalist remains fixed in my memory, even though it took place at a conference in France more than a decade ago.

With icy logic, the economist dismissed warnings about [irreversible climate change](#). By definition, unsustainable development could not be sustained, he argued. If global warming became a big enough problem in the future, then demand for a solution would conjure up remedial supply. The market would magically produce an answer.

Such blind-faith thinking still lies behind much of the laggardly response to the climate emergency that was on display at [the UN summit in New York](#) last week. Even if we cannot predict the exact forms they will take, the argument runs, market forces and technological innovation will surely conjure up a solution. Why stop poor countries from developing and throw coal miners out of jobs today when technological innovation can deal with the problem tomorrow?

There is an outside chance that the free market ideologues may be right. Humanity has an extraordinary capacity for ingenuity. We may yet invent the mother of all decarbonisation

machines in response to [the greatest investment opportunity](#) of our age. But to bet everything on that happening soon is one heck of a gamble with the future of our planet.

If, as the environmentalists argue, there were a 75 per cent chance of a huge asteroid slamming into Earth in 2050 then we would surely mobilise all our resources today to prevent such a catastrophe. Why do we not respond to global warming with similar urgency?

Edward Perello, an investor at Deep Science Ventures, which backs promising environmental technologies, says the biggest challenge is to grow solutions fast enough to deal with the magnitude of the problem.

“Does the market have the capability to deliver the technology when the demand arrives?” he asks. “Technology alone is not going to solve the problem, certainly not in the timeframe needed,” is his answer.

[The Economist magazine](#) agrees: “Unfortunately, technologies capable of delivering negative emissions of billions of tonnes a year for reasonable prices over decades do not exist.”

That is in no way to diminish the astonishing — and desperately needed — technological progress that has been made in many environmental fields over the years. Solar power costs have fallen more than 80 per cent in the past decade. The tech billionaire Elon Musk has helped to pioneer an [electric car revolution](#) by producing cool Tesla cars. In 2015, two dozen governments launched Mission Innovation, which has so far allocated \$4.6bn to clean energy research. The Chinese government has invested massively in renewable energy.

The Breakthrough Energy Coalition, backed by Microsoft’s Bill Gates and other private investors, is also exploring the potential of all kinds of environmental technologies, from next generation nuclear reactors, to carbon dioxide sequestration, to prevention of bovine flatulence. The EU is backing a related [€100m venture fund](#).

But Mr Gates accepts that a far bigger systemic change is needed in the way we run the global economy. “To stop the planet from getting substantially warmer, we need breakthroughs in how we make things, grow food and move people and goods — not just how we power our homes and cars,” he wrote in a [blog post](#).

Fiona Cousins, a principal at Arup, an engineering company, says there is far more we can do with existing technologies to cut harmful gas emissions as long as we have the right incentives and sufficient will. For example, we use a huge amount of energy heating and cooling buildings. The answer is to electrify them and then decarbonise the electricity supply. Replacing belching boilers, installing insulation and deploying machine learning systems to regulate supply and demand makes a difference.

The trouble is that in the race against physics, winning slowly is still losing, as the writer [Bill McKibben](#) has argued. In that sense, our environmental crisis represents the ultimate market failure. We cannot rely on the market alone to solve a problem it has helped fuel. The convening

and mission-setting power of governments, the mobilising force of civil society and radical shifts in consumer behaviour are all still needed to help preserve our planet.

“We have got to do everything if we want net emissions to fall to zero,” says Ms Cousins. “We do not have much of a buffer left.”

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Letter in response to this column:

[*Nature's own timetable is beyond our control / From Ross Gelbspan, Boston, MA, US*](#)

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