

TORONTO STAR

THE BIG DEBATE

OPINION

By **Jatin Nathwani** Contributors

M.V. Ramana

Schyler Edmundson

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We must reduce the burning of fossil fuels to save our planet — but should nuclear energy be part of the solution? **Prof. Jatin Nathwani** argues yes while **Prof. M.V. Ramana** and **Schyler Edmunston** argue no.

YES

NO

YES

Prof. Jatin Nathwani

Executive director of the Waterloo Institute for Sustainable Energy

“Truth is the daughter of time,” Francis Bacon noted four centuries ago. Perhaps the time has come to acknowledge the near existential threat posed by climate change to our collective well being and recognize the importance of one compelling solution — nuclear energy — in solving this problem.

The primary culprit is well-known: emissions from fossil fuels must be eliminated. The problem has been in the making for over five generations and we do not have the luxury of time to mitigate the risk of destabilizing the climate system that can deliver misery on a very large scale: floods, fires, famines, tsunamis, and extreme weather events that test the boundaries of human habitation.

What is needed, with urgency, is a fundamental reboot of the global energy system. In 1990, the share of global primary energy stood at 85 per cent fossil fuels and all other sources (hydro, nuclear, geothermal, wind, solar, bioenergy) at 15 per cent. In 2020, after three decades of diplomacy and target setting to reduce carbon emissions, the share of fossil fuels is still at 85 per cent. The challenge, then, is to tackle the most compelling threat staring us in the face — to get to an energy system not dependent on fossil fuels.

Nuclear energy is one answer. It is a safe and proven source of low-carbon energy that currently displaces over 2 billion tonnes of carbon-dioxide emissions globally, equivalent to taking 500 million cars (or half of the world’s passenger vehicles) off the road.

Nuclear is a zero carbon source of energy during production and on a life cycle basis it is at the lowest end of the spectrum of energy supply options such as hydro, wind, solar, biomass: 80 to a 100 times lower than coal per unit of useful energy.

The density of nuclear power as an energy source means its environmental land use requirement is lower than all the other noncarbon sources of energy and it makes a positive contribution to 9 of the 17 UN Sustainable Development Goals. Scaling up nuclear power displaces coal and natural gas emissions, directly resulting in drastic reductions for meaningful impact on climate goals.

Is nuclear safe?

If you are concerned about the safety of nuclear power, one question you may ask is: “What kills Canadians?” and if you compile a list from reliable sources, such as Statistics Canada, you will find nuclear power is not on that list.

If you ask the question, what frightens Canadians? Again, nuclear is not on that list. The absence of nuclear on such lists should be the first telltale sign that nuclear fears are exaggerated. Nuclear power has not been a dominant concern of Canadian for quite some time. “Fears” of nuclear power does captivate a small group of people whose imaginations conjure up scenarios of outlandish catastrophic events. Ignoring these tall tales helps. Fidelity to facts matter.

The safety record of Canada’s nuclear power plants over 60 years is publicly available and clear. Have there been failures of equipment and systems at operating plants in those 60 years? Yes. Have there been releases of radioactivity from these facilities from faulty operations? Yes. Have the workers at these plants been subject to unsafe or unhealthy working conditions? No. Have any of these failures resulted in any significant harm to a member of the public or the environment with measurable impacts? No.

What about nuclear waste and cost to future generations?

The cost to safely manage the waste is a fraction of a penny on the 6.1 cents per kilowatt hour charged for nuclear in Ontario. Akin to a pension plan, today’s contributions address tomorrow’s liability.

Nuclear energy can help decarbonize the global energy system safely and within cost constraints. The urgency for credible solutions points to nuclear as one answer complemented by additional sources. If only past practices of the fossil fuel sector had come anywhere close to the stewardship of the environment similar to nuclear, we would not be in the position we are in emerging from the threat of climate risks and the upheaval it may cause on a planetary scale.

Prof. Jatin Nathwani is executive director of the Waterloo Institute for Sustainable Energy and Ontario Research Chair in Public Policy for Sustainable Energy at the University of Waterloo.

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