


Can nuclear power help mitigate the climate crises?

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September 23, 2024

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Nuclear power has always been viewed with suspicion owing to the devastating military usages it has had. The United States (US) dropped the first atomic bomb, named Little Boy on Hiroshima on August 6, 1945, and then the second one, named Fat Man on Nagasaki on August 9, 1945. By the end of 1945, the bombing killed an estimated 140,000 people in Hiroshima and another 74,000 in Nagasaki. In the years that followed, survivors faced leukaemia, cancer or other devastating side effects from the radiation. The simultaneous fear and awe of the bomb set in international relations and other countries, including the former Soviet Union and China set out on developing their own nuclear arsenals. During the Cold War, the fear of the usage of nuclear weapons became the most alarming feature of the competition between the US and the Soviet Union. The two countries, in the next few decades signed a host of arms control agreements as a means to manage their rivalry and to reduce the risk of a nuclear war.



Climate crisis (Representational photo / Creative Commons)

However, while the two superpowers of the Cold War era were trying to reduce chances of a nuclear war, there were other actors like China which also emerged as threat actors and the chances of the usage of nuclear weapons against China became high in 1969. During the Sino-Soviet border conflict of 1969, the Soviet Union was on the brink of launching a nuclear attack against China and only backed down after the US told Moscow that such a move would mark the beginning of the World War III.

If the threats of the usage of nuclear weapons in a traditional, military conflict were not high enough to propagate an end to the development of nuclear power, there was the Chernobyl incident in 1986 which further strengthened global opinions against the development of nuclear power. On April 26, 1986 the No. 4 reactor of the Chernobyl nuclear power plant in northern Ukraine, near the Belarus border in the Soviet Union exploded. It is one of the only two nuclear energy accidents rated at the maximum severity on the International Nuclear Event scale. The other accident is the Fukushima nuclear accident. The response involved more than 500,000 personnel and cost an estimated 18 billion rubles or \$68 billion in 2019.

The Fukushima nuclear accident of 2011 further pushed global narratives against the usage and accumulation of nuclear power, even if it is for civilian purposes. The Fukushima nuclear accident, which took place at the Fukushima Daiichi nuclear plant in Okuma, Fukushima, Japan was caused by the 2011 Tohoku earthquake and tsunami which resulted in the failure of the electric grid and damaged nearly all of the plant's backup energy sources. This led to the inability to sufficiently cool reactors after shut down and resulted in the release of radioactive containments into the surrounding environment.

Despite the fact that nuclear power and its accumulation has often been used for military purposes or for the purposes of deterrence, fact also remains that it has great potentials for averting a non- traditional, global security threat, i.e. of the climate crisis. The capacity of nuclear energy to ensure our energy independence and to guarantee the production of low carbon electricity is priceless for tackling the climate energy humanity currently faces. To start with, nuclear power is an energy source that emits the least greenhouse gases. If countries and communities are to seriously think of accomplishing low carbon transitions, then the civilian usages of nuclear energy is a must. It has a very low CO₂ emission rate, which is four times less than even solar. Nuclear power prevents the release of about two billion tonnes of CO₂ every year, which is roughly the equivalent of the production of 400 million cars.

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In addition to being a climate-friendly source of energy, nuclear power provides continuous electricity, owing to its robust production system, which is able to adapt to variations in electricity demand. Due to the stability of its associated grid and its controllable nature, nuclear power contributes significantly to securing the electricity supply in hospitals, in businesses and in every home. In a situation where the global population is mostly ageing, there is an emergence of epidemics and viruses, there is a need for better hospital facilities across the globe, where there would be a constant supply of electricity. Thus, the usage of nuclear energy would be the most appropriate in this new scenario that the world lives through.

The climate energy we are living through is real, and by 2050 due to global demographic growth, the deployment of electric mobility and the economic development of emerging economies, there will be a need for twice as much as electricity, and at the same time the world will have to achieve carbon neutrality. Thus, in these new scenarios, countries across the globe will have to move beyond the fear of the military usage of nuclear power and while reducing the chances of accidents like Chernobyl and Fukushima, have to using nuclear energy for energy generation. International politics has always been and always will be unpredictable but that should not drive the focus on tackling the climate crisis, and the only long-term and sustainable way to tackle the climate crisis is through the usage of nuclear energy.

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