SPECIAL REPORT 23 March 2011

Fossil fuels are far deadlier than nuclear power

Read more: "Special report: Rescuing nuclear power"

IN THE wake of the nuclear crisis in Japan, Germany has temporarily shut down seven of its reactors and China, which is building more nuclear power plants than the rest of the world combined, has suspended approval for all new facilities. But this reaction may be more motivated by politics than by fear of a catastrophic death toll. It may be little consolation to those living around Fukushima, but nuclear power kills far fewer people than other energy sources, according to a review by the International Energy Agency (IAE).

"There is no question," says Joseph Romm, an energy expert at the Center for American Progress in Washington DC. "Nothing is worse than fossil fuels for killing people."

A 2002 review by the IAE put together existing studies to compare fatalities per unit of power produced for several leading energy sources. The agency examined the life cycle of each fuel from extraction to post-use and included deaths from accidents as well as long-term exposure to emissions or radiation. Nuclear came out best, and coal was the deadliest energy source.

The explanation lies in the large number of deaths caused by pollution. "It's the whole life cycle that leads to a trail of injuries, illness and death," says Paul Epstein, associate director of the Center for Health and the Global Environment at Harvard Medical School. Fine particles from coal power plants kill an estimated 13,200 people each year in the US alone, according to the Boston-based Clean Air Task Force (*The Toll from Coal*, 2010). Additional fatalities come from mining and transporting coal, and other forms of pollution associated with coal. In contrast, the International Atomic Energy Agency and the UN estimate that the death toll from cancer following the 1986 meltdown at Chernobyl will reach around 9000.

In fact, the numbers show that catastrophic events are not the leading cause of deaths associated with nuclear power. More than half of all deaths stem from uranium mining, says the IEA. But even when this is included, the overall toll remains significantly lower than for all other

fuel sources.

So why do people fixate on nuclear power? “From coal we have a steady progression of deaths year after year that are invisible to us, things like heart attacks, whereas a large-scale nuclear release is a catastrophic event that we are rightly scared about,” says James Hammitt of the Harvard Center for Risk Analysis in Boston.

Yet again, popular perceptions are wrong. When, in 1975, about 30 dams in central China failed in short succession due to severe flooding, an estimated 230,000 people died. Include the toll from this single event, and fatalities from hydropower far exceed the number of deaths from all other energy sources.

Read more: Our interview with David Spiegelhalter, “Risk expert: Why radiation fears are often exaggerated”