

# Rebalancing the nuclear debate through education

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Better physics teaching with a particular emphasis on radioactivity and radiation science could improve public awareness through education of the environmental benefits and relative safety of nuclear power generation, according to leading Brazilian scientist Heldio Villar. He suggests that it might then be possible to have a less emotional debate about the future of the industry that will ultimately reduce our reliance on fossil fuels.

To [environmental activists](#), nuclear power and environmental preservation are two antagonistic concepts. Nevertheless, nuclear power can generate huge amounts of electrical and heat energy with minimal impact on the planet, particularly in terms of much lower [carbon emissions](#) and pollution than is seen with power generation based on [burning fossil fuels](#). Because of this cultural clash, activists have prognosticated doom for a world if we pursue the nuclear energy option, leading to public distrust of the nuclear industry and its relatives, nuclear research installations and particle accelerators.

"The introduction of the theoretical bases of radioactivity, radiation physics and [nuclear power plants](#) in the environmental education curricula will certainly result in a greater awareness of the public towards the reality surrounding radiation and radioactivity," says Villar of the University of Pernambuco, who not surprising also works for Brazil's Nuclear Energy Commission. "This initiative, coupled with a more realistic approach towards nuclear risks on the part of nuclear regulators and licensers, has the potential to make nuclear applications - not only in

electric energy production but in other areas - more palatable to a public squeamish of another Three Mile Island or Chernobyl and the specter of nuclear weapons, rendering it more prepared to reap the benefits thereof."

Ironically, in the 1950s and 1960s, nuclear power was once hailed as the best option for an energy-starved world. Nuclear reactors were seen as modern, reliable and, above all, capable of producing electricity 'too cheap to meter'. Into the 1970s, the oil crisis sparked the first major interest in going nuclear on a much wider scale. However, even before Three Mile Island, activist groups such as Greenpeace were sounding unwarranted alarm bells and popular movies such as the China Syndrome, which does not have a disastrous ending, were fuelling the anti-nuclear movement.

Villar points out that it is widely accepted that Brazil and several other nations, are entirely capable of launching successful [nuclear power](#) programs, given their expertise, the availability of nuclear fuel and the pressures such as a lack of coal and the rising price of oil. "Electrical energy is scarce and obviously expensive," says Villar, "a situation seen in several other countries." Supposed "green" solutions, such as hydroelectric power, which has already been fully exploited in Brazil, as well as gas turbines, solar and wind power, tidal power and biomass, do not represent a cheaper alternative to nuclear he asserts.

**More information:** "The 'threat' of radioactivity: how environmental education can help overcome it" in *Int. J. Nuclear Knowledge Management*, 2011, 5, 295-305

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