TOWARDS AN INTERNATIONAL RENEWABLE ENERGY AGENCY

Nuclear power no solution to global warming

Insecurity is increasing worldwide with the global warming and energy crises, but establishing an International Renewable Energy Agency to help bring a speedy transition to harnessing earth-friendly renewable energy resources would greatly assist in assuring stable, reliable energy supplies everywhere, reports **ALICE SLATER**. Nuclear power's very limited ability to reduce greenhouse gases, compared to reductions that can be achieved using the same dollars for sustainable energy, and its enormously dangerous proliferation and pollution issues, combine to make nuclear an untenable, irrational energy choice.

We are at a critical time in history. Increasingly severe extreme weather events, more catastrophic hurricanes, droughts, melting polar ice, underline the urgency of heeding the scientific consensus on the need to reduce our ever rising use of carbon-based fuels which are endangering our survival on the planet. Current international efforts to limit greenhouse gas emissions, including the Kyoto Protocol, are proving insufficient to address the urgency of the global climate crisis. The world's dependence on fossil fuels creates political and economic instability across the globe. These tensions are bound to increase as depleting resources and price volatility undermine energy security worldwide.

Rise of nuclear tensions

Additionally, recent failures of the Non-Proliferation Treaty Review Conference, the Millennium Summit and the General Assembly to meaningfully address nuclear disarmament and nuclear proliferation issues, should serve as a wake-up call to nations. We cannot continue with "business as usual," as increasing numbers of nations seek to assert their right to pursue civilian nuclear technology under the Non-Proliferation Treaty, which can easily be converted to weapons technology. Civilian nuclear programs in Israel, India, Pakistan and North Korea enable each of those countries to covertly develop nuclear weapons as a result of their "peaceful' nuclear energy programs. Currently, Iran's assertion of its right under the Non-Proliferation Treaty to enrich uranium is raising new international concerns.

To date, the United States alone has produced more than 80,000 tons of highly radioactive waste for which there is no suitable storage location

Nuclear power plants generate toxic radioactive waste that threatens both human life and the environment. To date, the United States alone has produced more than 80,000 tons of highly radioactive waste for which there is no suitable storage location. This waste will remain lethal to human health and the environment for more than 250,000 years, and its continued production poses an unacceptable burden on present and future generations. Nuclear reactors emit contaminated water and steam as part of daily routine operations, leaking radioactive toxins into groundwater and soil.

In every situation where nuclear technology is employed, whether in the military or civilian sector, countless studies report higher incidences of birth defects, cancer, and genetic mutations." A US National Research Council 2005 study reported that exposure to X-rays and gamma rays, even at low-dose-levels, can cause cancer. The committee defined "low-dose," as a range from near zero up to about 10 times that from a CT scan. "There appears to be no threshold below which exposure can be viewed as harmless," said one NRC panelist.[2] Tens of thousands of tons of nuclear waste accumulate at civilian reactors with no solution for its storage, releasing toxic doses of radioactive waste into our air, water and soil and contaminating our planet and its inhabitants for hundreds of thousands of years.

Despite the obvious health and security disadvantages of utilizing nuclear power to produce electric-

The U.S. nuclear industry is estimated to have received more than $115 billion in direct subsidies from 1947 through 1999; Government subsidies for wind and solar energy for the same period totaled only $5.49 billion

ity, it's being promoted in some quarters as having potential to help avert future climate catastrophes. But nuclear power is not pollution or emissions free. Every step of the nuclear fuel cycle: mining, development, production, transportation and disposal of waste, relies on fossil fuels and produces greenhouse gas emissions. A complete life-cycle analysis shows, generating electricity from nuclear power emits 20–40% of the carbon dioxide per kilowatt hour of a gas-fired system when the whole system is taken into account.[3]

Equally important, nuclear power is the slowest and costliest way to reduce CO_2 emissions, as financing nuclear power diverts scarce resources from investments in renewable energy and energy efficiency. The enormous costs of nuclear power per unit of reduced carbon emissions would actually worsen our ability to abate climate change as we would buy less carbon-free energy per dollar spent on nuclear power compared to emissions we would save by investing those dollars in solar, wind or energy efficiency. According to a Massachusetts Institute of Technology study on the future of nuclear power, 1,500 new nuclear reactors would have to be constructed worldwide by mid-century for nuclear power to have a modest impact on the reduction of greenhouse gasses.[4] Nuclear power's role in mitigating climate change is further constrained because its impact is limited to producing only electricity.

The nuclear power industry has already demonstrated it's unable to compete in a liberalized electricity market. Despite tens of billions of dollars the nuclear industry has received since its inception in 1948, it's still unable to operate without massive subsidies, tax breaks and incentives. For example, in the U.S., the 2005 Energy Bill allocated over $13 billion in direct and indirect subsidies for the nuclear industry, mostly geared towards research and developing new reactor technologies.[5] The U.S. nuclear industry is estimated to have received more than $115 billion in direct subsidies from 1947 through 1999. Government subsidies for wind and solar energy for the same period totaled only $5.49 billion.[6]

Nuclear power plants present unique security, health and safety threats. Nuclear storage facilities and power plants themselves are vulnerable to accidents or attacks, and there are similar hazards in transporting nuclear waste by truck, train or ship. Importantly, the Chernobyl catastrophe of 1984, awoke the world, if briefly, to the enormous dangers of nuclear power. People in countries outside Russia also suffered direct external irradiation from fallout, and contamination of their food and water. Dr Bertell, renowned for her decades-long research on the health effects of ionizing radiation, in a comprehensive 2006 study, very conservatively estimates the eventual death toll from the Chernobyl disaster, to be one to two million. As Bertell reports, the real health consequences of Chernobyl have been hidden from public view through omissions, poor records and methodology, and the failure of various committees, often with conflicting interests, to consider all health issues resulting from this disaster. [7]

There is also concern regarding terrorist or wartime attacks for which there is little defense. "Mock attacks" carried out by the US Nuclear Regulatory Commission against nuclear power plants from 2000–2001 were successful in nearly half the tests performed.[8] A terrorist or military attack causing a core meltdown would bring a disastrous human toll, with estimates of over 15,000 acute radiation deaths and up to one million deaths from cancer.[9] In a less hypothetical example, the Indian Point nuclear reactors, 30 miles from New York City were listed as suggested targets in Al-Quaeda documents, found after the World Trade Center attacks.

Reprocessing nuclear fuel increases dangers

As well as these worries, the nuclear fuel cycle produces nuclear material which can also be utilized for weapons purposes, making every nuclear power plant a potential nuclear bomb factory. International Atomic Energy Agency (IAEA) Director Mohammed El-Baradei remarks: "We just cannot continue business

as usual…we are really talking about 30–40 countries sitting on the fence with a nuclear weapons capability that could be converted into a nuclear weapon in a matter of months."[10] Current efforts to create a Global Nuclear Energy Partnership to reprocess the used nuclear fuel and create an international network of nuclear fuel and technology transfer would further increase current proliferation risks. Reprocessing nuclear spent fuel has the potential to cause a dangerous shift in global nonproliferation policy and could increase the likelihood of fissile material being stolen to build a nuclear bomb.

According to a recent report by the U.K. government's advisory panel, the Sustainable Development Commission, risks associated with nuclear power greatly outweigh its minimal contribution to reducing CO_2 emissions. The report identifies major disadvantages of nuclear power, including lack of a long-term solution to storage of radioactive waste, high cost uncertainties, unjustified subsidies and the burden placed on taxpayers to cover escalating costs, as well as international security and proliferation risks. The report further concludes that, because of these enormous disadvantages, nuclear power is not the answer to climate change.[11]

The combination of its limited ability to reduce greenhouse gases, compared to reductions that can be achieved by using the same dollars for sustainable energy, and the enormous proliferation and pollution issues, makes nuclear energy an untenable and irrational energy choice. Renewable energy and energy efficiency are the only paths to true energy security, assuring stable, reliable energy supplies and to expand energy access across the planet.

Calls for International Renewable Energy Agency. Technology to harness the enormous potential of the sun, wind, tides and geothermal energy exists today. We can build a self-sustaining, earth-friendly energy infrastructure to harvest the earth's benign and abundant free resources.[12] Abolition 2000, a network of over 2000 organizations in 95 countries, working to eliminate nuclear weapons, recognises the "inextricable link" between nuclear weapons and nuclear power. It proposes adoption of an International Sustainable Energy Agency, and calls for the agency to be funded by reallocating to clean energy resources, the $250 billion given in annual subsidies to fossil and nuclear fuels.[13]

The German government has recently proposed a similar initiative calling for an International Renewal Energy Agency, IRENA, and is looking for like-minded partners to support it. IRENA would empower developing countries to access the free energy of the sun, wind, marine, and geothermal sources, would train, educate, and disseminate information on implementing sustainable energy programs, organize and enable the transfer of science and application of renewable energy technologies, and generally be responsible for helping the world make the critical transition to a sustainable energy future. New Zealand's inspiring and sensible *Energy Efficiency and Conservation Strategy*,[14] as well as its far reaching vision in adopting the *New Zealand Energy Strategy to 2050: Powering Our Future*,[15] resulted in the United Nations Environment Programme granting Prime Minister Helen Clark its *Champions of the Earth Award*. Perhaps New Zealand, with its enlightened energy policy, could join in partnership with Germany and other like-minded nations to make IRENA a reality.

Much work needs to be done. In the words of Secretary General Kofi Annan: "We will have time to reach the Millennium Development Goals…but only if we break with business as usual."[16] Politicians, businesspeople, diplomats, academics, workers, and activists, all share a common bond and a common responsibility to help realize these goals by supporting rapid transition to plentiful sustainable energy. The barriers to this transition are not technological, but political. The failure to make this transformation would occur not from a lack of workable solutions, but from a scarcity of democracy. PE

Alice Slater is the New York Director, of the Nuclear Age Peace Foundation and Convenor ofAbolition 2000, Working Group for Sustainable Energy see www.wagingpeace.org and www.abolition2000.org

NOTES

1 http://ocrwm.doe.gov/ym_repository/about_project/waste_explained/howmuch.shtml
2 http://news-service.stanford.edu/pr/2005/pr-abrams-102605.html
3 Storm van Leeuwen,J.W. and Phiilip Smith. Nuclear Power: the Energy Balance. The CO-2Emission of the Nuclear Life-Cycle. 2005. Available at: http://www.stormsmith.n./Chap1_CO-2_emission_of_the_nuclear_fuel_cycle.PDF
4 Massachusetts Institute of Technology. 2003. The Future of Nuclear Power. Available at http//web.mit.edu/nuclearpower/
5 Scully Capital Services.2002.Business Case for New Nuclear Power Plants. Available at http//www.nuclear.gov/home/bc/businesscase.html
6 Renewable Energy Policy Project. Goldberg,Marshall. Federal Energy Subsidies: Not All Technologies Are Created Equal. Research Report No.11, July 2000. Available at: http//www.crest.org/repp_pdf/subsidies.pdf
7 Rosalie Bertell, Behind the Cover-Up: Assessing Conservatively the Full Chernobyl Death Toll, *Pacific Ecologist*, issue 12, 2006, see http://www.pacificecologist.org/archive/12/behind-the-cover-up.pdf
8 Nuclear Reactor Security. Union of Concerned Scientists, September 2005. Available at http//ucsusa.org/clean_energy/nuclear_safety/nuclear-reactor-security.html
9 Frogatt, Anthony,. Nuclear Issues Paper No.2: Nuclear Reactor Hazards. Heinrich Boll Foundation. December 2005
10 Multilateral Groups Should Control Nuclear Fuel: IAEA, *Taipei Times* (syndicated article of Agence France Press). February24, 2005. Available at http://www.taipeitimes.com/News/world/archives/2005/02/24/2003224385
11 Sustainable Development Commission. The Role of Nuclear Power in a Low Carbon Economy. London. March 2006. Available at http://www.sd-commission.org.uk/publications/downloads/SDC-Nuclear Position-2006.pdf
12 See A Sustainable Energy Future is Possible Now, www.abolition2000.org
13 See PDF at http://tinyurl.com/6nz3ly
14 http://www.mfe.govt.nz/publications/energy/energy-conservation-strategy-sepo1.html
15 http://www.med.govt.nz/templates/ContentTopicSummary____19431.aspx
16 What are the Millennium Development Goals? United Nations. Available at: http://www.un.org/millenniumgoals/