

2007: *Annus Mirabilis* and the Smiling Garden of Eden

by Pablo Ouziel

In 1905 Albert Einstein, presented the *Annus Mirabilis* ("Wonderful Year") Papers, in which he explained the mass–energy equivalence formula, $E = mc^2$, which led to the development of nuclear energy. In 1955, a few days before his death, Einstein together with Bertrand Russell issued the Russell-Einstein Manifesto, highlighting the dangers posed by nuclear weapons, and calling for world leaders to seek peaceful resolutions to international conflict. One of the paragraphs in the manifesto read; “We shall try to say no single word which should appeal to one group rather than to another. All, equally, are in peril, and, if the peril is understood, there is hope that they may collectively avert it.”

The year 2007 has been a “Wonderful year” in the quest for nuclear supremacy. While as ‘global citizens’ we have been distracted by the dangers of a nuclear-armed Iran, the possible failed state of Pakistan, and the push for disarmament by North Korea, our political and economic leaders have been making aggressive moves towards reinstating the forgotten supremacy of Nuclear Energy.

Following the 1986 disaster at Chernobyl and the end of the nuclear arms race of the Cold War, it looked like the use of nuclear energy would fade away and be replaced with alternative sources of energy, both for military and civilian purposes. However, it seems apparent now, that the opposite is taking place and as wars continue to spread, together with terrorism and failed states, the global race is on for nuclear domination. As President Bush said on the 20th of December; " [Nuclear plants] are the best solution to making sure we have economic growth and at the same time be good stewards of the environment."

On December 19th the Washington Post told us; “Nuclear power is on the verge of a renaissance in the United States.” The fact is that there is a global renaissance thirsty for nuclear proliferation, and this time Washington is not its sole promoter. The main problem is that as ‘global citizens’ we don’t understand the true implications of this choice. In 1953 Edward Teller "the father of the hydrogen bomb" and an early member of the Manhattan Project, charged with developing the first atomic bombs, addressed the issue in a letter to Sterling Cole, Chairman of the Joint Committee on Atomic Energy. Referring to the use of nuclear energy for civilian purposes he said; “it is clear that no legislation will be able to stop future accidents and avoid completely occasional loss of life. . . Power production can, however, be conducted in such a manner as to produce militarily useful materials.”

Little does this “occasional loss of life” matter at the beginning of the 21st century. We learned a few days ago at the French National Assembly's economic affairs committee, that Anne Lauvergeon, chief executive of Areva, the world's largest nuclear power group, is saying that "between now and 2030 we believe there could be 100 to 300 (nuclear reactors built around the world)."

During this aggressive uranium rush, Umberto Quadrino, chief executive of Edison, Italy’s second-largest utility, is calling for a substantial increase in Europe’s nuclear

power capacity; “a nuclear programme at a European level has to be taken into consideration.” A move which deems irrelevant the research released on December the 8th by physicians and health researchers from the University of Mainz in Germany, which clearly states " that the risk for children under five years of contracting leukaemia grows with proximity of their homes to nuclear power plants."

As all countries seek to invest in nuclear energy, no importance is given to the dangers of promoting investment in nuclear development in such a volatile world; “The open secret of the nuclear age is that the line between civilian and military programs is extraordinarily thin... Indeed, the most difficult part of building a bomb is... the process that is also crucial to civilian nuclear power — producing the fuel.” New York Times December 5th.

So as civilians allow this path to be pursued and all governments want to be active participants of this dangerous club, a new United States legislation was agreed last week which directs the Secretary of Energy to provide \$20.5 billion for nuclear energy, \$18.5 billion for nuclear reactors and \$2 billion for uranium enrichment. Coincidentally, there is also a plan backed by the UK government's chief scientist to build a £1bn fuel processing plant at Sellafield capable of turning the UK's 60,000 tonnes of high-level nuclear waste into reactor fuel.

Meantime in China, there are plans to increase the country’s nuclear power capacity to 40,000 MW by 2020 and an agreement has already been reached for the construction of six third-generation reactors. Russia, on the other hand has announced that in 2008 a nuclear-energy university will be established in Moscow, based at the Moscow Engineering Physics Institute, and coordinated in unison with the Russian Education Ministry.

As the year comes to a close, while observing these rapid moves towards a more nuclear world, I am drawn to the prediction made in 1909 by the British chemist Frederick Soddy, who believed atomic power would “make the entire world one smiling Garden of Eden”. Sadly, I am confident that honest analysis will reveal that 2007 was the “Wonderful Year” in which doctrines of arbitrary authority, with their innate contempt for freedom, and belief in the necessity of violence and the morality of war were promoted side by side with a thriving nuclear complex. In this real life scenario, it seems to me that collective common sense holds the key to a non-terrorized society, which today stands far away from this mythological “Smiling Garden of Eden”.

(Published December 31st 2007)