

Proceedings of the 2nd NanoWorld Conference in Boston (NWC-2017). Part VI: Conclusions of World Peace Forum and of NWC 2017

How to go from Nuclear and Strategic Disarmament to Worldwide Joint Research and Peace

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Abstract

In the last few years the problems of humanity are growing in all sectors of the economy, from energy to environment and disasters induced by nuclear reactors, from cancer to hardware and space such as asteroids. More than 150.000 asteroids are now registered in the Smithsonian's Minor Planet Center and NASA estimates that more than 1.000 are characterized as Near-Earth Objects that can be stopped only by nuclear weapons which are largely on the hands of United States of America and Russian Federation (Figure 1). Similarly, nuclear reactors are progressively deteriorating everywhere except in the only two nations where referendum (Italy) and governments (Germany) stopped them. Further details can be found in reference 1.

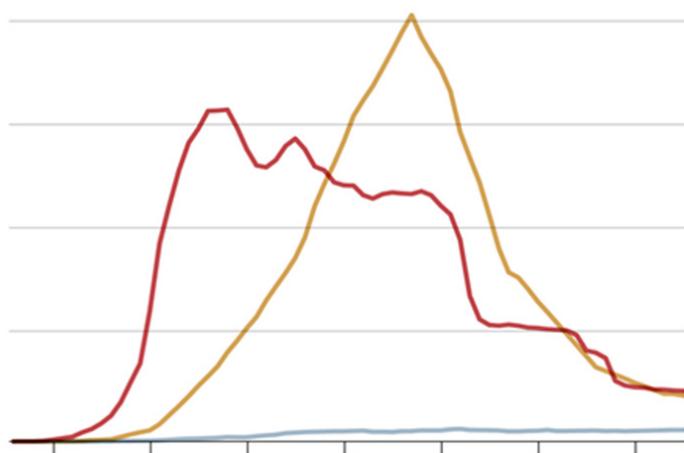


Figure 1: Estimated Number of Nuclear Weapons (1945–2014) ranging from 0 to 40,000 between 1950 and 2015, reaching 7,000 for USA and 7,300 for Russia, while for 6 countries (France, China, Britain, India, Pakistan, Israel) ranging from 300 to 80 and for North Korea less than 10.

Attempts to solve them at the national scale failed because of the magnitude of the crisis induced by the derivatives appears to have far lasting devastating effects in each country and because the magnitude of the technological problems long time underestimated became unmatchable at the scale of any nation regardless of its size. The scheme based on leading multinational companies [1], that in the past was able to work for Bioelectronics with the creation of ad hoc consortia, could still be valid now when properly extended to Russia and USA as in the past reaching the required critical mass with USSR and Europe within the Biochip Project according to rules and procedures set in the merit. Even if present international situation makes prohibitive for both to transfer resources from nuclear and strategic armaments to science and technology, only jointly they appear capable to overcome the numerous open problems. A critical open problem could be one of the first target (Figure 2).

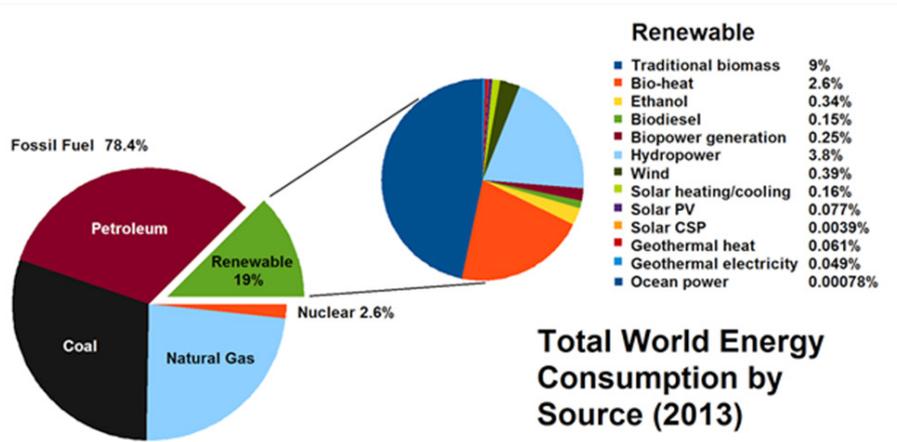


Figure 2: World Energy Consumption.

A wide consensus was expressed on April 5, 2017 in Newton (Boston) at the end of the World Peace Forum of the second NanoWorld Conference to appeal USA, Russian Federation and all seven nations involved in nuclear armaments (Figure 1) to Negotiate the further Nuclear and Strategic Disarmament and Transfer Saved Military Resources in Joint Scientific and Technological Projects open to other leading nations. Many big challenges remain unsolved in front to humanity, namely cancer, energy, intelligent hardware and environment, that only a truly internationalized broad research carried out down to the nanoscale could successfully undertake, namely

- New Energy Sources
- Carbon Dioxide Reduction
- Cancer Defeat
- Space Exploration
- Asteroids Destruction

Efforts at the national scale did provide so far, a limited response due to the magnitude of the economic crisis and to the magnitude of technological and scientific problems still largely underestimated. The scheme based on multinational companies, that in the past for my direct experience was able to work for Italy and USSR for Bioelectronics, with the creation of two ad hoc consortia as Polo Nazionale Bioelettronica (PNB) and CIREF, centered around Italian-based multinational companies as ABB, Montedison, FIAT, ST-Microelectronics, Olivetti, Farmitalia; this very same strategy could still be valid now when properly extended, but this time only if the two largest countries, Russia and USA participate along with other leading countries as Japan, China and India, with laboratories and scientists properly selected by weighted deciles in the merit as recently suggested [2]. In the past the Biochip Project initiated by President Gorbachev through Academicians Velikov and Minister Bortnik (USSR) and President Craxi through myself and Minister Ruberti (Italy) did work and I do not see why should not work now, despite the larger scale and the more ambitious objectives. In 2001 the fusion of all above organisms gave birth to the NanoWorld Institute entirely under a Scientific Umbrella still alive and capable to win numerous large research grants from the Italian and European Governments and from many multinational companies. The entrance of Russian Federation in June 2014 into the European Synchrotron Radiation Facility, quite central in Nanotechnology development, is also an indirect recognition of the correctness of our undertaking between Moscow and Grenoble at the highest level since 2007. Terrible challenges are in front of humanity (environmental, energetic and technological, such space, cancer and intelligent hardware) and the time is running out on us very fast. A new version of the World Economic Forum focused on Energy and Environment as recently proposed by Prime Minister of Japan Shinzō Abe is fundamental after adopting the Paris Agreement, considering that the third Innovation for Cool Earth Forum occurred in October 2016 at Tokyo was the very first pertinent international meeting thereafter [3]. The limited scientific and technological progress in Energy and Environment appears still incapable to find solutions for effective carbon dioxide reduction and for new energy sources really alternatives to nuclear fission, gas, oil and carbon still dominating the scene worldwide, and this despite hopes being raised on nuclear fusion, energy storage and hydrogen energy for which quite more is needed. Several countries do not appear indeed intentioned to do it and we have to face the problem with more determination, introducing other useful alternative as thorium fuels with its uncoupling of nuclear armaments from civil nuclear plants. After the improper legal stop around 1972 in USA to thorium that should be reconsidered, India is presently a leader of thorium based research and the first nuclear reactor using thorium rather than uranium is being expected shortly hopefully without the plutonium production leading to atomic bombs [3]. An alternative route to advanced industrialization is being now proposed in Bergamo (the second most industrial town in Europe) by the Fondazione ELBA Nicolini under the name of

NanoBioEINet which by the involvement of the multinationals represents a possible key to success.

The time is indeed running out on humanity and exceptional resources and attitudes are called for, and we are thereby directly appealing to all nations involved to their further reduction of nuclear arsenals and waste for the needed nuclear disarmament encouraging to transfer saved military resources in joint scientific and technological projects described above, This could be pursued attempting to emulate previous successful initiatives as Polo Nazionale Bioelettronica, NanoWorld Institute, Skoltech and MIT, and Fondazione ELBA Nicolini, in close sinthony with the Erice statement written in 1982 by Paul Dirac, Piotr Kapitza and Antonino Zichichi and being consolidated in the Ettore Majorana Center over the time up to now [4]. No one specific organism is intended to head this movement, but such mandate should emerge as a result of a wide public discussion and consensus triggered by the evolution of the World Peace Forum initiating on April 3 2017 in Boston within the second NanoWorld Conference. In nuclear energy Italy was really by far the most advanced nations worldwide in 1935 showing the properties of slow neutrons that led the way to the discovery of nuclear fission (with top physicists escaping the fascism, as Enrico Fermi and Emilio Segrè, Nobel Prize winners which move to USA and as Bruno Pontecorvo who instead move to USSR) and Italy started to produce nuclear energy in the early 1960s. All these nuclear plants uranium based were later closed in 1990 following the Italian nuclear power referendum that 30 years later could spread worldwide with the NWC17 participants help. Incidentally I am now still happy to have contributed to call such referendum by convincing the then Prime Minister Bettino Craxi.

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