Return to the Road of Infinite Progress: Revive a Crash Program for Fusion Power

by Megan Beets

This article is an introduction to a coming series of weekly articles by the LaRouche PAC Science Research Team regarding the critical role of fusion power, space exploration, and the creative powers of the human mind in shaping the coming establishment of the new international paradigm of relations among great civilizations.

Contrary to the un-natural environmentalist ideology which still underlies the thinking of most in the trans-Atlantic nations today, mankind *must always grow*—both in number, and in the power it exerts in and over nature. This is not a choice; it is our essential species characteristic, not shared by any animal, and it is one the universe depends on for its continuing improvement and development.

Today, the world population is approaching 7.5 billion, and is growing exponentially. Under the "greenie" system—one which sees man as an animal—any increase in resource consumption required to provide a high standard of living to each and every human individual is horrific, an unthinkable "looting" of the planet's limited riches—a policy which must be stopped at all costs!

This outlook is a scientific fraud, and is part of a dying empire system.

To a healthy civilization, as with the "New Paradigm" intention of China to eliminate poverty worldwide, each of these 7.5 billion persons is, in potential, an indispensable resource for the next creative breakthrough for humanity—a breakthrough which creates new resources and potentials.

When U.S. policy was centered on a commitment to progress for all mankind, such as under John F. Kennedy, rather than geopolitics, we had intensive crash-programs both in space travel/colonization, and in harnessing the incredible potentials of the atomic nucleus in the form of fusion power.

Before those programs were sabotaged and all but shut down, the participating scientists had the natural and optimistic view that humanity was on the verge of overcoming poverty, disease, and energy shortages for good, relegating these problems to a bygone era.

What did those scientists see in the potentials of fusion power and the space program, of which most people today are completely ignorant? What happened (and is happening) in the U.S. fusion program? How might we revive this today?

For that, we must look to the remaining potentials in the U.S., and to the leadership of China. But first, consider a controversial fact.

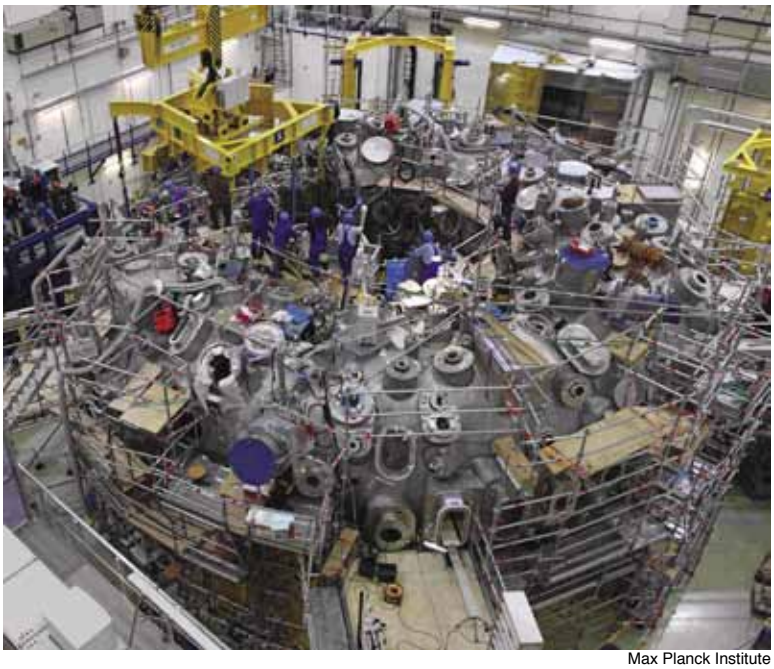
"Our children will enjoy in their homes electrical energy too cheap to meter... It is not too much to expect that our children will know of great periodic regional famines in the world only as matters of history, will travel effortlessly over the seas and under them and through the air with a minimum of danger and at great speeds, and will experience a lifespan far longer than ours, as disease yields and man comes to understand what causes him to age."

—Lewis Strauss, Chairman of the Atomic Energy Commission, 1954

Population Growth Is Natural, and Good

The truth about mankind, unlike all animals, is that we are willfully creative. This means that we have the capacity to change nature in an increasingly powerful way by applying new discoveries of scientific and cultural principles to our work and life. For this, we are "rewarded" with an increased potential for both population density and lifespan.

For example, the late 19th/early 20th Century introduction of electricity into processes of industry, transportation, and agriculture revolutionized the quality and quantity of the productive output per capita, far beyond anything possible before. In this respect, man's power to change the planet—to create new materials and states of matter, higher energy throughput in plants and animals, large-scale construction of infra-



Max Planck Institute

The Wendelstein 7-X experimental stellarator reactor in Greifswald, Germany.

structure—has increased in an exponential way since our very beginning.

The growth in our species' power does not come about gradually; rather, each introduction of a discovery of a hitherto unknown principle (e.g. electromagnetism) has resulted in great, revolutionary leaps upward in our productive powers of labor per capita—and most importantly in our minds' increased powers to make the next scientific breakthrough. Therefore, it is in the interest of all mankind that each person—a potential source of the next discovery—enjoys a stable standard of living, and has access to the highest educational and cultural resources possible.

The challenges this poses for an ever-growing and longer-living population can only be overcome if we organize our society around the mission of discovering ever-higher principles of nature, expanding our dominion over this planet, and colonizing other bodies in our Solar system. For this, we must make the leap to fusion power.

The Optimism of Nuclear Fusion

Nuclear fusion is the joining together of two atomic nuclei—the process which powers the Sun—and it is no easy task to replicate this stellar phenomenon in the conditions on the surface of the Earth. It requires (under one hypothesis) the creation and handling/control of hot gases—plasmas—at temperatures many times hotter than the center of the Sun, which continue to behave in ways that defy our assumptions about the of nature of matter.

But what is so promising about achieving controlled fusion? In quantitative terms, the power density in an atomic nucleus is upwards of a billion times greater than that of the chemical forces contained in molecules. In terms of fuels, each gram of nuclear fusion fuel (deuterium-tritium) is 1,000 times more energy-dense than nuclear fission fuel (uranium-235), and up to one million times more energy dense than chemical fuels (hydrogen-oxygen combustion).

In order to obtain fuel for fusion, we will mine the oceans for the plentiful heavy hydrogen (deuterium) contained in seawater, and later, mine the Moon for the optimal fusion fuel held in the lunar soil, helium-3.

In qualitative terms, with full control over the atomic nucleus—both fission and fusion—humanity establishes a completely new relationship to materials and energies. We will, for example, be able to create new, specialty steels and other metals on a mass scale; manufacture medical isotopes when and wherever needed; mine our landfills for resources with the fusion torch; power a scientific colony and industrial operations on the Moon during the long lunar nights; and power a fusion-driven rocket for a trip of weeks, rather than months, to Mars and planets beyond, extending our reach into the Solar system.

Incredible progress has been made toward the mastery of fusion in the U.S. and internationally, beginning in the 1950s. If the trajectory established in the early decades of the U.S. fusion program had continued, then mastery of fusion as a power source would already be providing nations of the world with virtually unlimited energy, and would have created a qualitative transformation in our powers of industry, transportation, and medicine.

While the U.S. budget for fusion has been cut year after year—thus crippling a successful and necessary endeavor—China has today become the only nation in the world which is increasing its fusion budget, and has the intention to graduate 2,000 new fusion scientists by 2020.

In Part II, we will take up the current state of the U.S. fusion program (and its promising recent achievements), as well as the important developments of the past 15 months in Europe and Asia.

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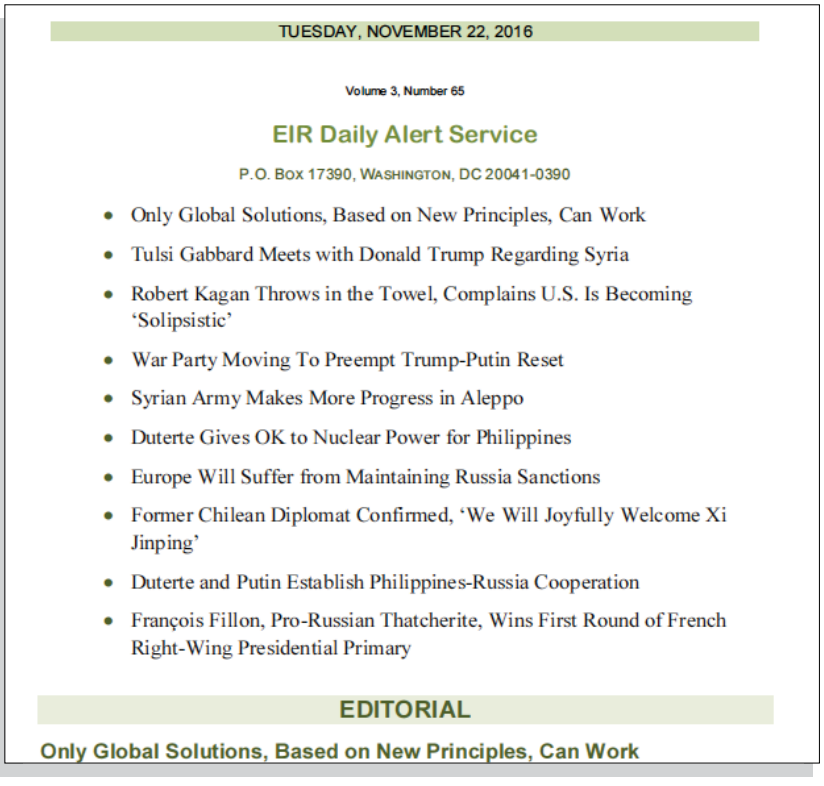

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