



 [PRINT ARTICLE NOW](#)  [CLOSE WINDOW](#)

Industry News Alert

ITER and Nuclear Fusion Projects - Yardsticks for New Energy Technologies

HOUSTON--July 20, 2005--Written by Richard Finlayson, International Correspondent for Industrialinfo.com (Industrial Information Resources Incorporated; Houston, Texas). Energy industry watchers are saying that it is a good time for members of the investing class, those who have a few million spare change from their last severance package, to buy into renewable "sustainable energy start up companies. With a bit of luck, they could cash in for the crock of gold at the end of the solar-sourced, wind-driven, hydrogen-producing rainbow. If they get it wrong, they can always get severed from their current jobs and remain upwardly indulged.

There are so many ventures in the field of new energy that a spread bet taking in a range of focused renewable ventures, a nanotechnology-materials-chemistry mix and some heavy place bets on clean coal and nuclear power companies may be necessary to allow you to sit back and switch off the trading screen for a couple of hours each day.

The attractive power of the risk in state-of-the-art technological frontiers creates compulsion in high-rolling private investors and national governments alike. This is illustrated by case studies of commercial computer pioneers thirty or forty years ago, who winked out heavy wads of folding seed cash from the back pockets of car dealers and other hard cash guys before hiring lawyers and accountants and moving on to the investment banks and institutions. Some boomed, many busted - many to live again. This environment is also illustrated by the old Parkinson-related case of the board of a confectionary and donut business taking half an hour to approve a \$5 billion investment in a nuclear power station project, but having the approval for the budget for the tin roof for a new bicycle shed held over for two meetings, while contention raged among the knowledgeable.

There certainly are crocks of gold out there in new entrepreneurial energy projects but 'caveat emptor' (and we are talking of qualified, quality entrepreneurs, not dot.com type leaders of the lemmings).

For a rush to stake a claim at the largest, long term range of the energy project market, we can look at what followed the announcement that the \$12 billion International Thermonuclear Experimental Reactor (ITER) project to create the world's first sustainable nuclear fusion reactor would be built on a site at Cadarache in southern France. In the first week of July, following the announcement, it was reported that China was making plans to build its own fusion plant and that South Korea was 'considering' building its own fusion reactor. Can India be far behind?

The independent national initiatives are not mutually exclusive of the ITER project, which has been developed by a six-nation consortium, consisting of the U.S., Russia, China, Japan, South Korea, and the EU.

Construction of the reactor could begin in 2006, with the project work taking \$6 billion of the budget and the operating cost another \$6 billion over 20 years. At current dollar values, France and the EU, through Euratom, will cover half the costs and the other members will contribute 10% each. Other country members could take part in the project, and India has also expressed interest. Japan had stayed in the bidding to host the project, until finally bowing to France. A target date for the reactor's going into operation is set conditionally for 2016.

The crock of gold for nuclear fusion is the production of energy that is cleaner than fossil or fission power technologies, and for which the hydrogen feed sources are virtually limitless. The basic physics of the process are no secret, but the high level of engineering required on as yet unknown boundaries to control the process is a massive challenge. The first reactor in France is a demonstration plant to prove that the sun-like fusion of atomic nuclei can be harnessed as an economical viable energy source. After this, a second reactor would be built in Japan, which would be designed as a prototype for commercial fusion reactors. Some scientists believe this stage may not be reached until post 2050 and that the projected cost will inevitably increase during the life of the project.

China, while claiming access to the ITER project, is working on its own \$24 million reactor, due for completion this year, the Experimental Advanced Superconducting Tokamak (EAST) prototype reactor. The project is based on forty years of development at sites in Sichuan province, which also has nuclear weapon assembly-disassembly, plutonium production, and uranium

enrichment plants. In 1999, the People's Daily reported that an experimental nuclear fusion device, Tokomak HL-2A, was being built outside Sichuan's capital, Chengdu.

An official of China's Bureau of Basic Atomic Research was quoted by Xinhua news agency as saying, "The EAST is the prototype closest to the ITER and it will be unbeatable in at least a decade." The next test of the EAST reactor is aiming at an operational temperature of over 100 million degrees Centigrade and production of electricity for 1,000 consecutive seconds.

In South Korea, the super conductor nuclear fusion experimental facility, KSTAR, has been under development since 1995. With the aim of producing a commercially useful reactor within 35 years, the country's ministry of Science and Technology has held a hearing to garner input from experts and researchers, to map out the basics of the development plan. This will include the infrastructure needed and the establishment of uniform technical standards. Like China, South Korea is claiming access to ITER as a member of the consortium.

Heavily invested, officially-backed long-term projects produce product and applications spin-offs and, under the intense development pressures applied to them, bring recondite engineering and chemical engineering techniques into the commercial domain. Not many of us have 35 or 50 years to wait for the pay-off, but if you are looking for earlier prospects in the new energy field, it will be worth following the progress of the various fusion reactor projects, as they could be a yardstick to measure the survival potential of other new technologies now on offer. Make sure you make your place bets, as well, and remember, there are only just so many severance packages to be taken in one person's lifetime, although this theory is under challenge by current events in business.

Industrial Information Resources (IIR) is a Marketing Information Service company that has been doing business for over 22 years. IIR is respected as a leader in providing comprehensive market intelligence pertaining to the industrial processing, heavy manufacturing, and energy-related industries throughout the world.

View these related products in our online catalogue

[North American Power Industry Spending Wall Map](#)

[2005 Power Industry Forecast](#)

[Plant Contacts Mailing Lists](#)
