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"A World Powered Predominantly by Solar and Wind Energy?"

Walter Kohn

Walter Kohn is awarded the Nobel Prize in Chemistry on October 13, 1998 for his development of the density-functional theory.

Departments of Physics and Chemistry, UCSB, USA
(http://superstarsofscience.com/scientist/walter-kohn)

Total oil plus natural gas production (or consumption), which currently provides about 60 % of global energy use, is expected to peak in 10 - 20 years, followed by a rapid decline. During that same time interval, the developing world will see an approximate doubling of its population as well as an approximate tripling in per capita energy consumption. The near-coincidence of these three galloping trends has created two unprecedented global challenges: The threatened global shortage of acceptable energies and the imminent danger of unacceptable global warming and its consequences.

This colloquium describes a possible way of coping with this predicament*: A concerted commitment to a changeover from the current era, dominated by oil plus natural gas, to a future era dominated by solar plus wind energy, both of which are clean and effectively inexhaustible.* However, this optimistic perspective must be tempered with the realization that, unless there are technological breakthroughs, the energy of this future era would be much more costly than at this time. In the United States this would require a significant change of lifestyle: population stabilization and reduced per capita energy use.

Organizátor přednášky: Doc. Ing. Štefan Zajac, CSc., E-mail stefan.zajac@fjfi.cvut.cz