

Energy Strategy for Future on the Finite Globe

Abstract

The oil crisis that occurred about 30 years ago reminded us that fossil fuels are exhaustive and their lifetime is unexpectedly short. However, our life still depends mostly on fossil fuels. Increasing fossil fuel consumption now has caused various environmental problems, which is recognized as a global issue to be tackled urgently. On the other hand, energy policies are different in countries, because energy resources are unevenly distributed. Therefore the energy problem has to be discussed from the three aspects:

- (1) Exhaustion of energy resources (resource),
- (2) Environmental contamination (waste),
- (3) Energy security (policy).

Energy resources are divided into three categories, that is, fossil fuel energy, renewable energy and nuclear energy including fusion. Each has merits and demerits. There are no perfect one to meet the above three issues. Possible combinations depend on time and countries. However, any energy will be disposed finally as heat. The energy profit ratio, or life cycle assessment is necessary. Replacement of conventional energy with renewable energy is preferable, but the latter is still not self-dependent. Science and technology is expected to reply those issues, but it is not almighty. Energy strategies from short-term and long-term aspects will be discussed. Participation of various field researchers and integrated discussions are important to form a common recognition.

The view is personal one of a plasma physicist who has struggled with energy problem, while continuing his research on fusion energy development.

Curriculum Vitae



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Place and Date of Birth:

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Education:

1968-1972	Faculty of Science, Nagoya University. Awarded the degree of B.S. in Physics.
1972-1974	Faculty of Science, Nagoya University. Awarded the degree of M.S. in Physics.
1974-1977	Faculty of Science, Nagoya University.
1979	Awarded the degree of PhD. in Physics.

Research and professional experience:

1977-1989	Research associate at the Institute of Plasma Physics, Nagoya University, Japan.
1987	Visiting researcher at JET Joint Undertaking, Abingdon, England.
1989-1992	Research associate at National Institute for Fusion Science, Japan.
1992-present	Associate professor at National Institute for Fusion Science, Japan.

Membership of Academic Societies:

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