Cabinet Office

Overview of Fusion Energy Innovation Strategy

Provisional translation

- ✓ **Seeing fusion energy as a new industry**, Japan will not miss the opportunity to **enter the burgeoning global fusion supply chain competition**.
- ✓ In addition to subsequent approach; the ITER Project/BA Activity, and DEMO development, Japan will accelerate the realization of fusion energy through a multifaceted approach such as commercialization.
- ✓ **Japan will establish Fusion Industry Council, support start-up and others' R&D, hold discussions on safety regulations, strengthen its support to emerging technologies, develop educational programs, etc**.

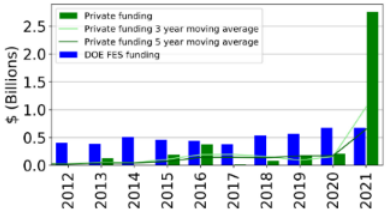
Fusion energy as a solution for energy and environmental problems

- Carbon neutrality by 2050
- International energy situation greatly impacted by Russia's aggression against Ukraine
- Ensuring energy security

- Benefits of fusion energy: 1) carbon neutral, 2) abundant fuel supply, 3) inherent safety, 4) environmental protection
- Paradigm shift of energy hegemony from countries with resources to those with technology

Fusion energy as a new industry

- Increased private-sector investment in fusion energy development in other countries
- US, UK have national strategies aiming at commercialization of fusion energy (starting confining technologies to own countries).
- Japan may win in technology but lose in business, although it has technological advantages and reliability.
- Japan is a strong partner for other countries; good chance to get overseas markets.



Reference : https://science.osti.gov/-/media/fes/pdf/fes-presentations/2022/Wurzel---PPP-Lighning-round-talk.pdf

Developing the Fusion industry

Visualization

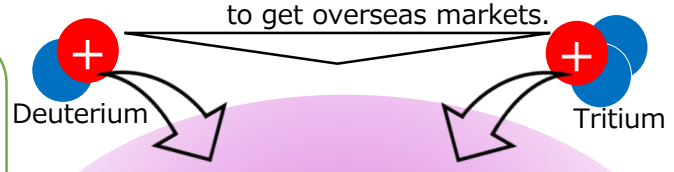
- Early realization of DEMO by accelerated R&D
- Clarification of targets with technology, market opportunity maps

Connections

- Matching of companies by establishment of Fusion Industry Council of Japan aiming at FY2023

Fostering

- Greater support to private companies from FY2023 for reducing gap between industry needs and technology seeds possessed
- Participation in discussion between like-minded countries on safety regulations and standardization
- Formulation of basic ideas on ensuring safety based on inherent safety of fusion energy



Achieving a national vision by:
Developing industry (D) +
Technology strategy (T) × Promotion (P)
『Toward realization of fusion energy, the world's next-generation energy- "Commercialization of fusion energy" Seizing the winning market edge with technological superiority』

Plasma Heating

Developing Fusion Technology

- Enhanced support measures for emerging technologies such as miniaturization and high-performance technologies as a game-changer
- Acquisition of key technologies through ITER Project/BA Activity
- Acceleration of R&D anticipating future development of DEMO
- Promotion of academic research on fusion energy
- Promotion of Action Plan for DEMO development by incorporating new technologies

Framework for Promoting Fusion Energy Innovation Strategy

- With Cabinet Office as "control tower," advancing strategy together with relevant ministries, agencies
- Establishing framework for conducting R&D by bringing together, centering on QST, academia and private companies for DEMO development (establishment of fusion technology innovation hub)
- Clarifying future career paths, systematically fostering by industry-academia-government HR engaged in fusion energy
- Strengthening HR development at universities, acquiring excellent HR from other fields, countries (provision of fusion energy educational programs)
- Conducting outreach activities to deepen understanding of citizens