

Korea's Strategy for Fusion Energy Realization

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Korean Fusion Energy Development Promotion Law (FEDPL) was enacted in 2007 to promote a long-term cooperative fusion research and development among participating industries, universities and research institutes. As a following step, a conceptual design study for a steady-state Korean fusion demonstration reactor (K-DEMO) has been initiated in 2012. As a result of a conceptual design study for K-DEMO, the major and minor radii are 6.8 and 2.1 m, respectively, and toroidal field magnets of K-DEMO can generate around 8 T at plasma center with a peak magnetic field of ~16 T. As a following step for the DEMO R&D, the 20th National Fusion Energy Committee has approved the "Strategy for Accelerating Fusion Energy Realization" in 2024 and a new plan is under development. The new plan is based on a Public-Private-Partnership (PPP) and is focused on key technology developments and a design and construction of Compact Pilot Device (CPD). The objectives of the CPD are 1) Construction of innovative compact fusion pilot device in a decade, 2) Production of steady-state capable recirculating fusion power in a decade, and 3) Demonstration of ignited plasma with internal heating only in a decade. The current status of the program will be presented.

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