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# Progress of Breeding Blanket Technology Development in Korea

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The development of breeding blankets is critical for the realization of fusion energy, as they are essential in fuel production and energy generation in fusion reactors. The pre-conceptual design for the K-DEMO blanket has commenced, with the HCCP blanket concept adopted as the reference design following the KO-EU HCCP TBM project, while other potential design options are being explored. To efficiently support and validate these designs, a conceptual study has been conducted to derive the strategy and infrastructure necessary for breeding blanket development.

In the meantime, with the "Strategy for Accelerating Fusion Energy Realization" approved in Korea in 2024, it is expected to further accelerate the development of key fusion technologies, including breeding blankets. While the strategy and infrastructure for blanket development will need to be realigned in accordance with this new strategy, basic R&D activities for breeding blankets will continue. These efforts include the development of tools, modeling and data for design and safety, manufacturing technologies, tritium extraction and cooling technologies, and materials and their database.

This study addresses the breeding blanket development strategy and provides an overview of the current status of technology development in Korea, highlighting ongoing R&D activities and key advancements in breeding blanket technologies.

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