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**The path to magnetic fusion energy**

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Progress in magnetic fusion energy has progressed sufficiently far that we can identify an R&D roadmap that will take us the rest of the way toward commercial power production. Our progress is illustrated clearly by our capability to design and construct ITER - a tokamak experiment that will produce burning plasmas (where the plasma temperature is mainly self-sustained by heating by fusion-produced alpha particles) and generate 500 MW of fusion power for about 500 seconds. This reactor-scale experiment will be the centerpiece of the world fusion program, beginning plasma operations in the early 2020s. Remaining challenges include (1) producing high performance plasmas in steady state (with research aided by the new class of tokamak and stellarator experiments with superconducting magnets in Asia and Europe), (2) establishing a suitable plasma-material interface, with suitable materials and plasma control (successfully demonstrated for existing short-pulse experiments, but not yet for steady state), (3) developing the material science and integrated engineering systems to withstand and manage the large flux of neutrons. Planning in several nations outline R&D programs that lead to demonstration power plants around the late 2030s. This talk will review the recent progress, remaining scientific challenges, and the remaining path to take us to a demonstration power plant