What is DEMO?

ITER is not an end in itself: it is the way towards a first fusion power plant called DEMO (Demonstration Power Plant) that will generate significant amounts of electricity over extended periods and will be self-sufficient in tritium. The first commercial fusion electricity power plants are set to be established following DEMO.

While the final design of DEMO will depend to a large extent on the results obtained from the development and use of ITER, it is envisaged that R&D activities in preparation for DEMO will be carried out within the framework of the Broader Approach Agreement. DEMO is set to be larger in size than ITER and to produce significantly larger fusion power over long periods: a continuous production of up to 500 megawatts of electricity.

If DEMO is successful in terms of systems and performance, DEMO itself could be used as the commercial prototype, creating a ‘fast track’ to fusion power, perhaps minimising the time for the first commercial fusion power to reach the grid by 20 years. Indeed, if ITER and DEMO are successful, fusion energy has the potential to provide a sustainable, secure and safe solution to European and global energy needs.