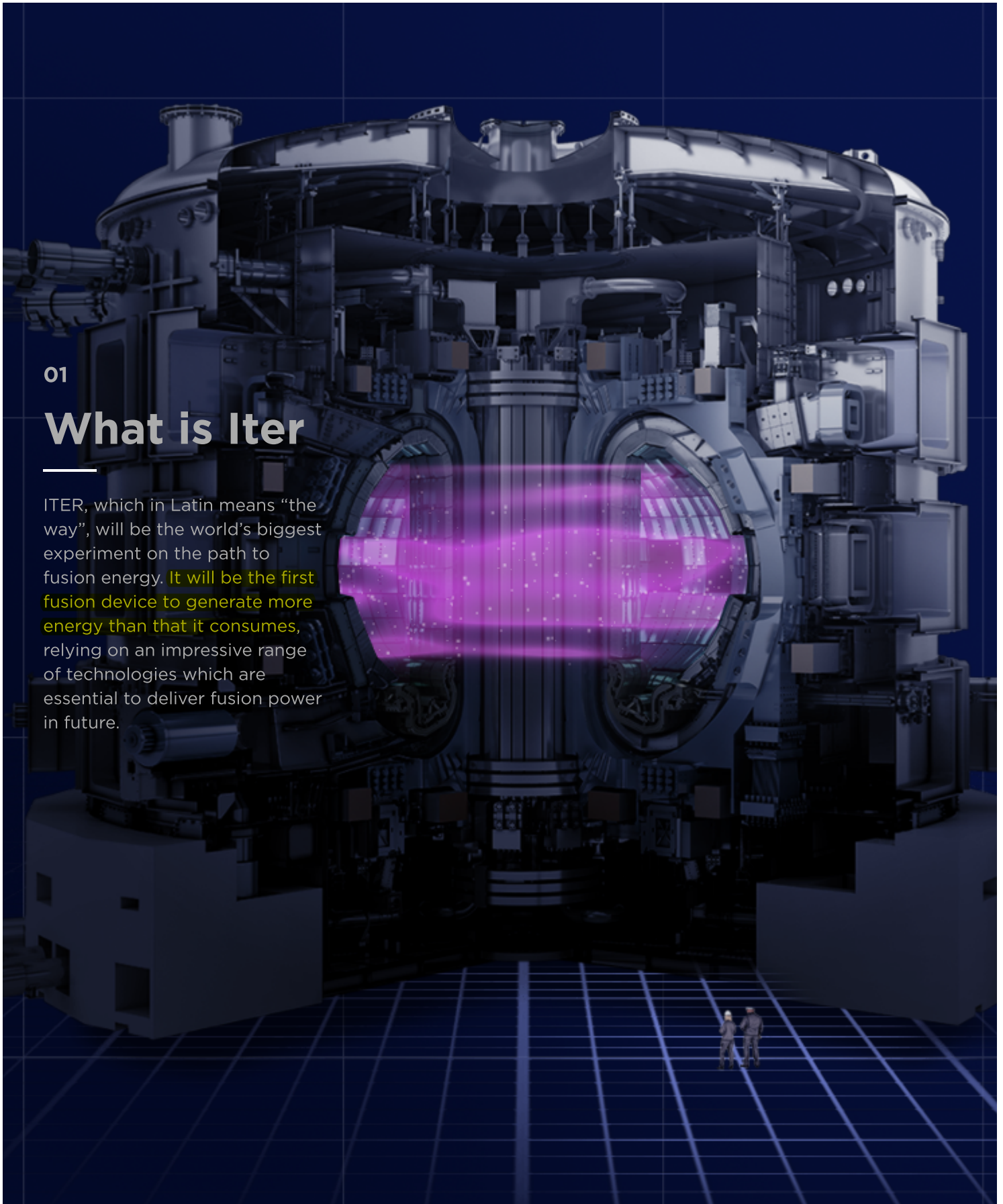


01

What is Iter

ITER, which in Latin means “the way”, will be the world’s biggest experiment on the path to fusion energy. **It will be the first fusion device to generate more energy than that it consumes,** relying on an impressive range of technologies which are essential to deliver fusion power in future.





BRINGING
THE POWER
OF THE SUN
TO EARTH

A large, detailed 3D cutaway rendering of the ITER tokamak, showing its complex internal structure and the central fusion core. The device is set against a dark blue background with a faint grid pattern. Two small human figures are visible at the bottom right for scale.

The world's biggest
experiment on the path
to fusion energy.

Europe is the host of the project which is currently under construction in Cadarache, south of France. ITER is a global scientific partnership of unprecedented scale bringing together half of the world's population: China, Europe, Japan, India, the Republic of Korea, the Russian Federation and the United States.

02

The technology in a nutshell

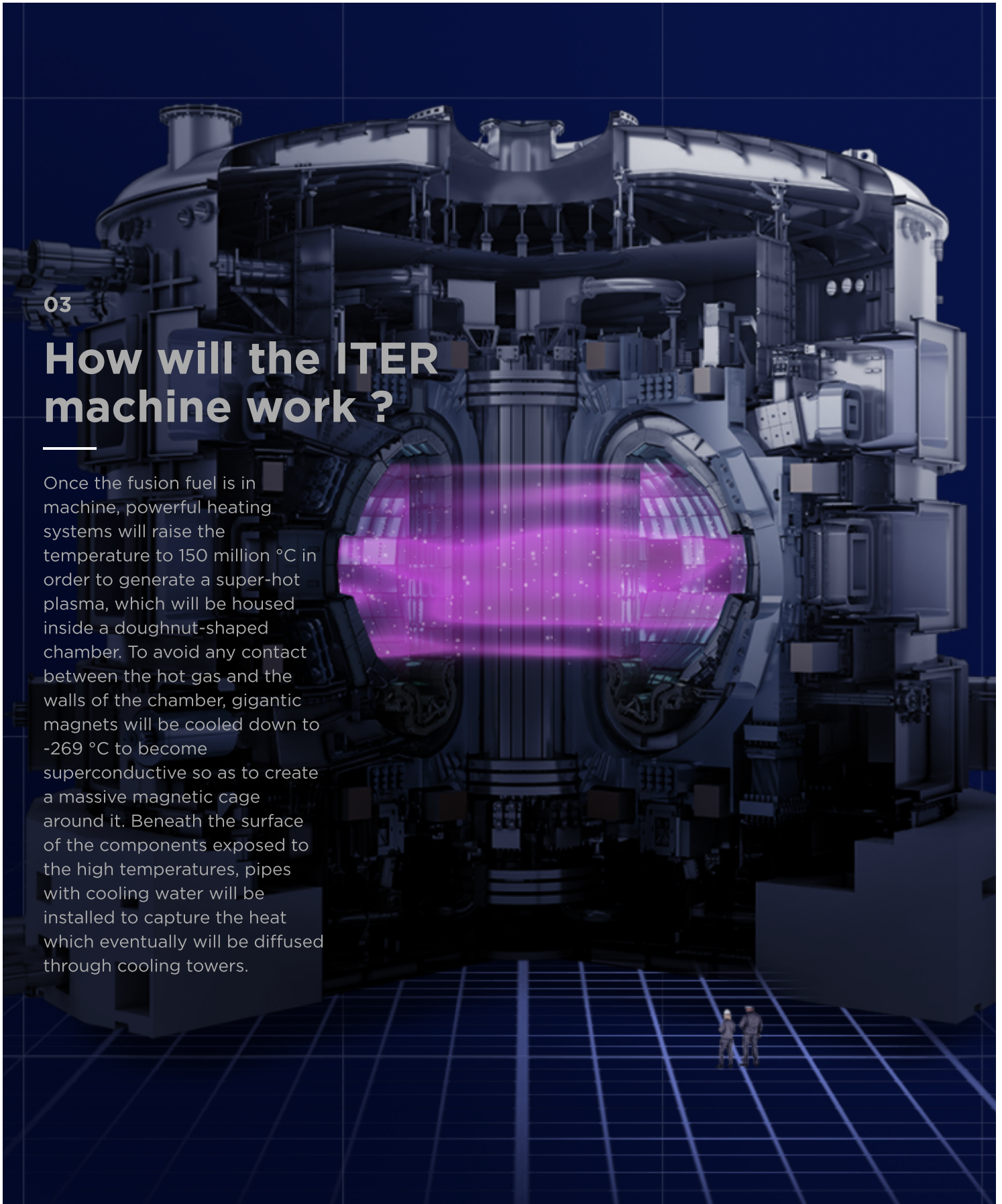
ITER will be the largest Tokamak device to test magnetic confinement to produce fusion energy. It will count millions of components, operated by cutting-edge systems, so as to measure its performance, and draw lessons for a future commercial fusion power plant.

 FOLLOW THE WORK IN PROGRESS

03

How will the ITER machine work ?

Once the fusion fuel is in machine, powerful heating systems will raise the temperature to 150 million °C in order to generate a super-hot plasma, which will be housed inside a doughnut-shaped chamber. To avoid any contact between the hot gas and the walls of the chamber, gigantic magnets will be cooled down to -269 °C to become superconductive so as to create a massive magnetic cage around it. Beneath the surface of the components exposed to the high temperatures, pipes with cooling water will be installed to capture the heat which eventually will be diffused through cooling towers.





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500 MW for
about 7min

ITER will produce a significant amount of heat in the range of 500 MW for about 7 minutes – enough to satisfy the electricity needs of a medium-sized town during that period of time.

10 times more
thermal power

ITER will generate 10 times more thermal power than the one received.

