

# The ESS Target Monolith Vessel



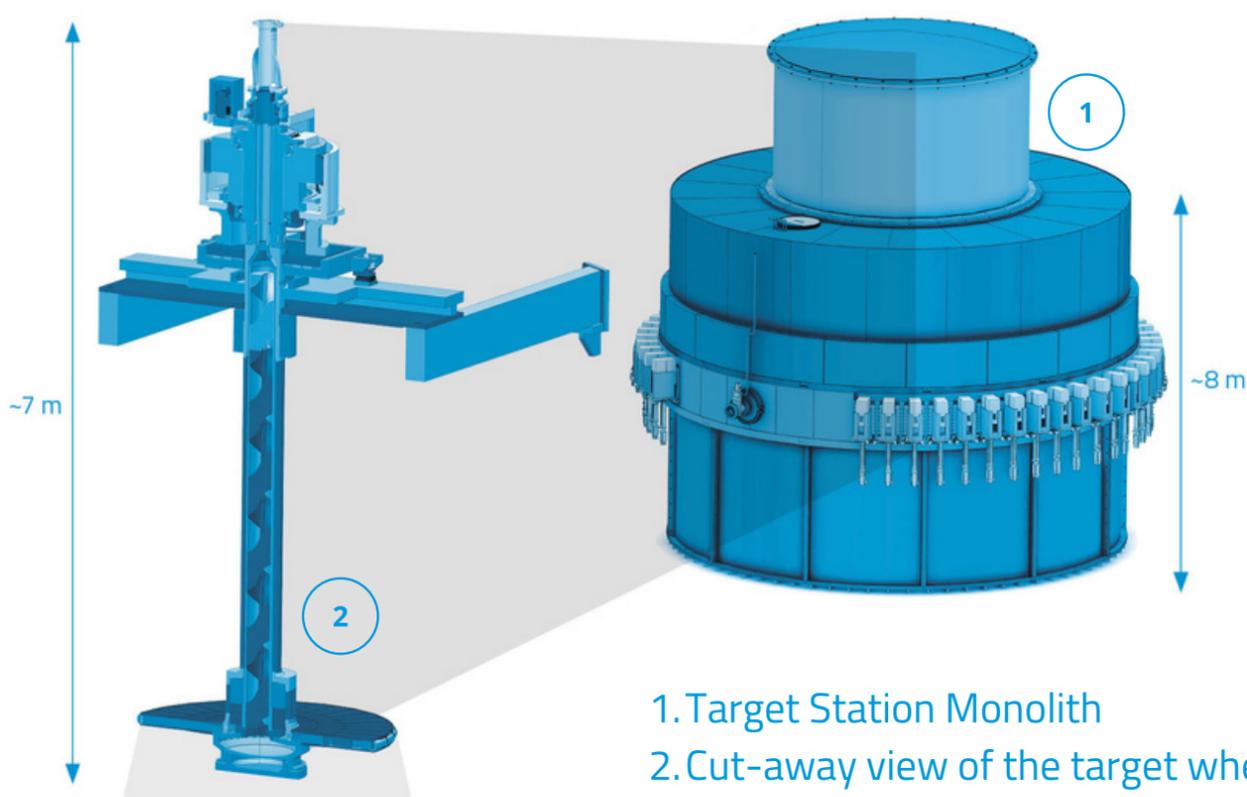
## The Target is the heart of ESS

The neutrons that will be used by researchers who come to ESS are generated by a spallation process in the Target station, and specifically inside the Target Monolith, which comprises a number of components encased by a Monolith Vessel (MV). The MV will house the rotating target wheel which contains 7,000 tungsten blocks, from which the neutrons are released in the spallation process. The neutrons are then guided to the scientific instruments that researchers will use to conduct their experiments.



*ESS Bilbao is responsible for the design, manufacturing & delivery of the Monolith Vessel, with the help of contractors, AVS and Cadinox, responsible for manufacturing, engineering and production.*

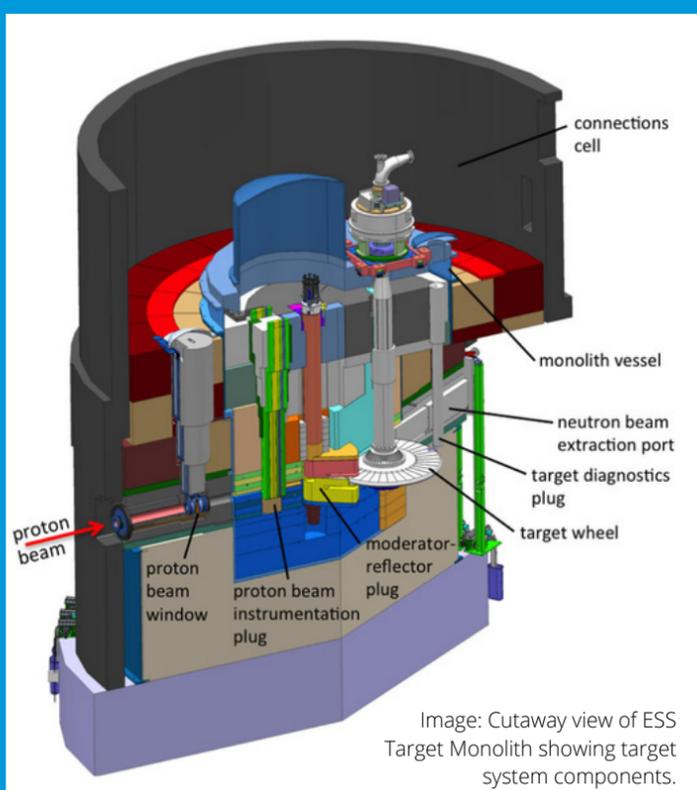
## Target Monolith Components



## Interesting facts about the Monolith Vessel

- The engineering concept of the vessel started in 2015.
- The MV will enclose the target wheel; moderator; the reflector plug; proton beam instrumentation, etc.
- Neutron spallation will be performed in a vacuum atmosphere contained in the big tank – the MV.
- The cylindrical vessel contains 1,000 tonnes of steel, shielding the outside from ionising radiation generated in the spallation process.

## Inside the Target Monolith



Spallation takes place when the accelerated proton beam hits tungsten metal in the rotating target wheel, producing unprecedented neutron brightness for scientific experiments across many disciplines.



The ESS tungsten target wheel is a novel design. It will measure 2.5 meters in diameter and weigh 4 tonnes.

Image: Schematic illustration of ESS Target wheel.