

STATUS OF QUALIFICATION AND PROCUREMENT OF THE EUROPEAN SUPERCONDUCTORS FOR ITER MAGNETS

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The European share of the ITER magnet superconductors includes the supply of around 20 km of Toroidal Field (TF) and 7 km of Poloidal Field (PF) conductors. These amounts represent 20 % and 11 % of the total conductor quantities respectively needed for all ITER TF and PF coils. For TF conductor, around 95 tons of superconducting Nb₃Sn strand and 60 tons of copper strand are needed to be procured, cabled and inserted within a stainless steel jacket tubes to form the Cable-In-Conduit-Conductor (CICC). For PF conductor, about 45 tons of superconducting NbTi strand need to be cabled and jacketed. Altogether, Fusion for Energy (F4E) already placed or will shortly place eight contracts for the European TF and PF conductors: 4 supply contracts (one for copper strand, two for Nb₃Sn strand and one for cabling and jacketing) and 4 characterization contracts for both strand and conductor samples. In addition, the PF conductor procurement is based on a bi-lateral agreement with the Russian Federation Domestic Agency (RF DA) where NbTi cables are supplied by RF DA and their jacketing is provided by F4E.

In this article, the procurement strategy, the qualification and the current procurement status are reported for the European contribution to both TF and PF conductors.