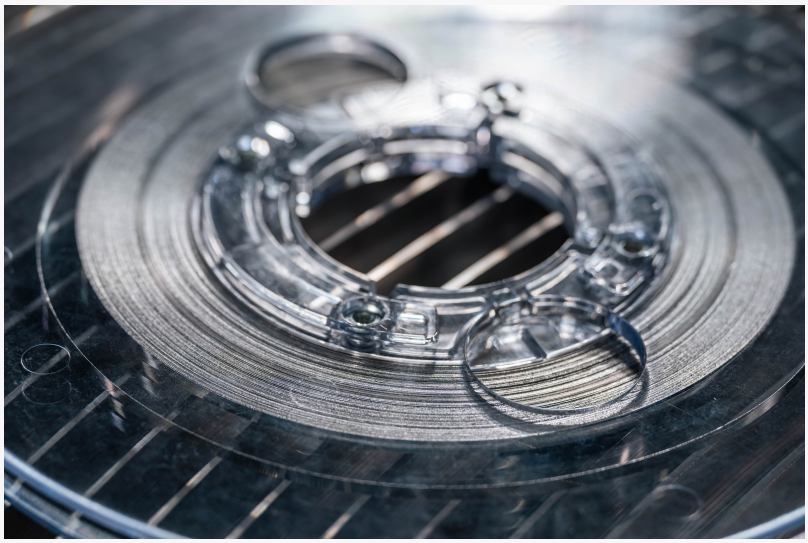
Proxima Fusion and Lower Saxony sign MoU to build Europe’s first large-scale fusion-grade HTS tape facility

HANOVER, GERMANY, September 9, 2026 /EINPresswire.com/ -- Proxima Fusion and the State of Lower Saxony today signed a Memorandum of Understanding (MoU) to lay the foundations for large-scale industrial production of high-temperature superconducting (HTS) tape in Lower Saxony. The new production site is intended to create industrial value and highly skilled jobs, while establishing an essential industrial foundation for new European supply chains. Around €140 million in investment is planned for the first two project phases, running until the end of 2029.



HTS tape, which becomes super conducting at high temperatures, is a key component in building powerful and compact electromagnets used inside fusion machines

HTS tape is a specialised metallic tape that becomes superconducting at relatively high temperatures. In its superconducting state, it can carry electrical currents with virtually no resistive losses, making it possible to build electromagnets that are both exceptionally powerful and compact. The magnets built from the tape are essential to stellarators: they generate the magnetic fields that confine and control the extremely hot plasma inside a fusion machine. This makes HTS tape a key enabling technology for fusion. By enabling more compact and powerful fusion machines, it supports not only the technical realisation of fusion energy, but also the development of cost-effective power plants.

The planned production site, which will be the first-of-its-kind in Germany and Europe, will create an essential industrial foundation in Lower Saxony for Proxima’s Alpha fusion demonstrator, its planned Stellaris power plant and, ultimately, the production of stellarators at scale. Beyond supporting the stellarator supply chain, the HTS manufacturing capacity would also serve other applications including high-performance electricity grids, medical imaging and treatment, advanced propulsion systems and other high-field magnet technologies.

Closing a strategic gap in Europe's fusion supply chain

Today, HTS tape is manufactured at industrial scale primarily in Asia. Establishing domestic production capacity is strategically important if the stellarator supply chain is to be located almost entirely within Europe.

Under current plans, Proxima will require approximately 20,000 kilometres of HTS tape for Alpha and a further 40,000 kilometres for Stellaris. Long-term purchase volumes will be critical to scaling production, retaining manufacturing expertise and reducing the cost per metre. Proxima aims to finance the total investment equally through private capital and public funding, with the State of Lower Saxony providing €21 million, representing just under 30% of the proposed public funding contribution.

This plant enables Germany to retain manufacturing expertise and economic value, make its European supply chains more resilient and translate its world-leading stellarator research into an internationally significant industry. By bringing together materials expertise, production processes, quality assurance, skilled workers and suppliers, it would create a critical upstream manufacturing capability with applications across a wide range of sectors while reducing dependence on overseas suppliers.

Proxima is in discussions with several international technology partners about bringing established HTS manufacturing expertise and production capabilities to Lower Saxony.

Through the Alpha Alliance, more than 50 companies across Europe are already working to develop an industrial supply chain for fusion energy. The production of fusion-grade HTS tape adds a key component to this industrial base and closes a decisive gap in Europe's fusion supply chain.

Olaf Lies, Minister-President of Lower Saxony, said: "We are making Lower Saxony a pioneer in European HTS manufacturing. This will not only support Germany's ambitious fusion-energy goals, but also bring advanced manufacturing, new economic value, highly skilled jobs and technological expertise to our state, with the potential to generate positive innovation effects across many other industries. Lower Saxony will become, quite literally, a magnet for a new critical technology."

Dr Francesco Sciortino, co-founder and CEO of Proxima Fusion, said: "HTS tape is one of the critical technologies needed to scale fusion rapidly at an industrial level. Alpha and Stellaris will create the demand required to build this manufacturing expertise locally. Lower Saxony has the industrial base, energy expertise and political determination to turn a supply-chain dependency into an enduring strategic strength for Germany and Europe."

Falko Mohrs, Minister of Science and Culture, Lower Saxony, said: "Lower Saxony offers excellent conditions for the industries of the future. Our research institutions have particular strengths in

key fusion technologies, especially laser physics and photonics. The planned facility demonstrates the importance of collaboration between science and industry in developing new areas of strength for Lower Saxony."

From fusion research to industrial value

Through the MoU, Lower Saxony and Proxima Fusion are creating a framework for translating this technological demand into an industrial production base. The MoU covers the assessment of potential sites in Lower Saxony, establishing a milestone-based support and funding structure, facilitating permitting processes and developing partnerships with companies, municipalities and research institutions across the state.

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About Proxima Fusion

Proxima Fusion is Europe's leading stellarator company and the first spin-out from the Max Planck Institute for Plasma Physics. The company is developing commercial fusion power plants based on the QI-HTS stellarator concept, building on the scientific breakthroughs of the Wendelstein 7-X programme.

With Alpha, Proxima is developing a net-energy fusion demonstrator targeted for the early 2030s, paving the way for Stellaris, the world's first commercial stellarator fusion power plant later that decade. This ambition is supported by the Alpha Alliance, a consortium of more than 50 industrial partners, and a distinguished Industrial Development Board.

Headquartered in Munich, with offices in Zurich and Oxford, Proxima employs around 200 people across engineering, science and operations. More information: www.proximafusion.com

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