PRESS RELEASE

Draft of the German federal government's Fusion Action Plan

Fusion Research as a Key to the Future of Energy Supply

A key step in German energy policy is being taken: Today, the German federal government approved its draft Fusion Action Plan, which is going allocate two billion euros for fusion research by 2029. This plan is expected to pave the way for a sustainable and zero-emission energy supply through targeted investment and collaboration while securing innovative strength and competitiveness. With its comprehensive expertise in material and manufacturing engineering and laser technology, the Fraunhofer-Gesellschaft stands ready to help implement the Fusion Action Plan and harness its potential for value creation.

Nuclear fusion offers considerable potential as a forward-looking, sustainable source of energy. In particular, industrialized countries need innovative approaches and solutions to tap into additional, dispatchable energy sources that support both the carbon-neutral energy mix of the future and the countries' economic and innovative strength. The recently adopted High-Tech Agenda Germany lists nuclear fusion and climate-neutral energy generation as one of the six key technologies that are decisive for the future of our country. The draft Fusion Action Plan adopted today is an essential step in this direction.

"Fraunhofer welcomes the draft Fusion Action Plan, which was approved by the federal government today. This is a powerful signal for research and industry, underlining that Germany is resolutely embracing the opportunities offered by this forward-looking technology and is ready to take on a leading role in global competition," says Holger Hanselka, President of the Fraunhofer-Gesellschaft. "With outstanding expertise in research and technology, our country is well-positioned to make fusion-based, carbon-neutral energy generation a reality." Fraunhofer is one of the first movers in this field, Hanselka says.

Constantin Häfner, Executive Board Member for Research and Transfer at the Fraunhofer-Gesellschaft and an expert in fusion energy, adds: "The Fusion Action Plan is exactly what we need to enable the necessary steps towards early industrialization while fostering Germany's excellent basic research. This resolute, dual path, where research institutions such as Fraunhofer and the German high-tech industry closely work together, is the only way to secure Germany's leading role as a supplier, generate early added value and ensure technological sovereignty for the energy supply of the future."

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Need for action and strategic investment

In recent years, remarkable scientific breakthroughs have been achieved, including the world's first ignition of a burning plasma in laser-driven inertial confinement fusion and significant advances in magnetic confinement fusion. A global technology race has begun, resulting in billions being invested in fusion research. So-called spillover effects are already tangible today: Technologies such as high-power lasers and modern manufacturing systems are directly benefiting from developments in fusion research. They not only strengthen the industry but also create jobs and open up opportunities for exporting German technology.

In its moonshot innovation brief, the Fraunhofer-Gesellschaft therefore calls for the creation of interlinked technology hubs to bring research and industry together effectively, scale applications and secure a leading role in laser fusion. To achieve this, it is crucial here that the government acts as an anchor customer, deliberately promoting collaboration between research institutions and industry. The government also needs to support high-risk projects that come with considerable development costs in order to facilitate private investment.

With its expertise in materials and manufacturing engineering and laser technology, the Fraunhofer-Gesellschaft stands ready to actively contribute to implementing the German government's action plan. If all players join forces, it will be possible to develop world-leading laser systems within the next three to five years through coordinated cutting-edge research and investment in infrastructure.

Moonshot innovation brief on nuclear fusion as an enabler for a resilient energy supply, disruptive innovation and high-tech growth (German only): https://www.fraunhofer.de/content/dam/zv/de/ueber-fraunhofer/fraunhofer-positionspapiere/MIB_Kernfusion.pdf

Fraunhofer fusion research expertise: https://www.fraunhofer.de/en/research/fraunhofer-strategic-research-fields/resource-efficiency-and-climate-technologies/nuclear-fusion.html

Nuclear fusion offers enormous potential for a sustainable energy supply as well as for innovative and economic strength.

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