



Bundesministerium  
für Bildung  
und Forschung

# FUSION 2040 – Research on the way to a fusion power plant

The new BMBF funding programme

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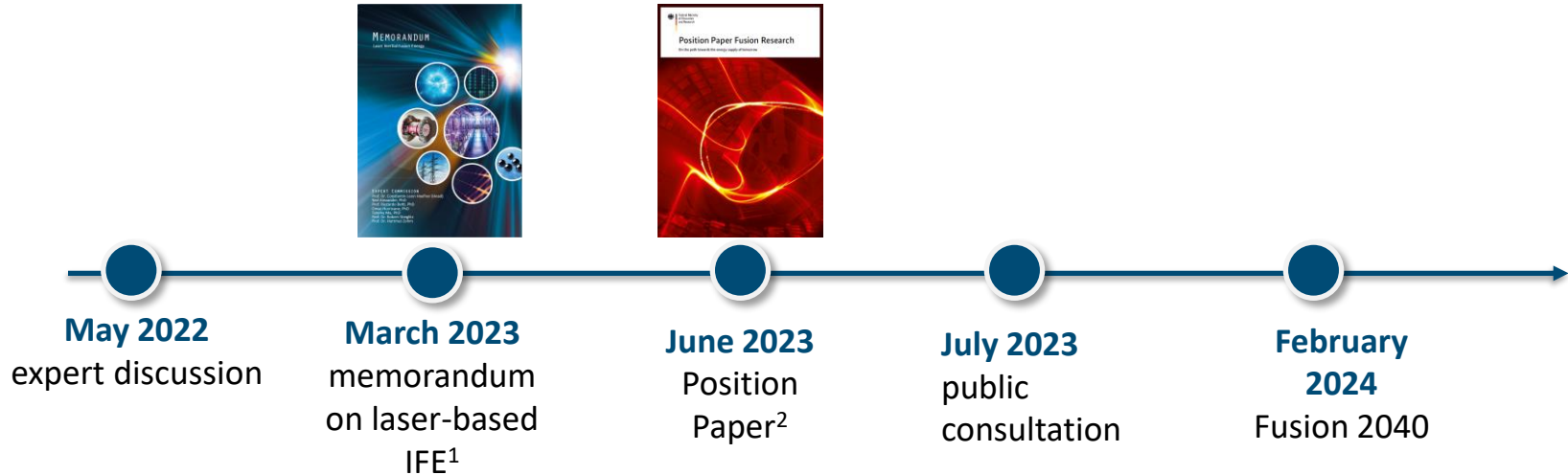
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[bmbf.de](http://bmbf.de)



# The path to the new programme



<sup>1</sup> <https://www.bmbf.de/SharedDocs/Downloads/de/2023/230522-memorandum-laser-inertial-fusion-energy.html>

<sup>2</sup> [https://www.bmbf.de/SharedDocs/Publikationen/de/bmbf/7/775804\\_Positionspapier\\_Fusionsforschung.html](https://www.bmbf.de/SharedDocs/Publikationen/de/bmbf/7/775804_Positionspapier_Fusionsforschung.html)



# Situation in Germany – Magnetic Fusion

Stellarator and Tokamak research

International: German contributions to ITER

## Research Institutes

Max Planck Institute for Plasma Physics (IPP)

Karlsruhe Institute of Technology (KIT)

Jülich Research Centre (FZJ)

## Start-ups

Gauss Fusion

Proxima Fusion



# Situation in Germany – Inertial Fusion

## Research Institutes

Helmholtz Association (HGF)

Max Planck Society (MPG)

Fraunhofer Society (FhG)

## Start-ups

Focused Energy

Marvel Fusion



# The Way to a Fusion Powerplant

## 1. Research and development phase

From today until the first half of the 2030s

## 2. Transfer phase

First half of the 2030s to the start of the 2040s

## 3. Operational phase

From the 2040s



# Fields of Action

## **Magnetic fusion**

Wendelstein 7-X, ASDEX Upgrade, ...

## **Inertial fusion**

Laser research, target research, ...

## **Cross-cutting issues**

Design, modelling, education, regulation...



**Spill-over effects**



# Fusion 2040 – Research on the way to a power plant

Overarching Goal:  
Fusion Power Plant

Funding for MFE and IFE

Duration:  
1 Jan 2024 – 31 Dec 2033

## Fields of Action I Scientific and technical issues

- ❖ Tritium
- ❖ Material development, First Wall and Blanket
- ❖ Neutron (sources)
- ❖ Plasma confinement
- ❖ Laser systems
- ❖ Targets
- ❖ Simulations
- ❖ (Design) studies

## Fields of Action II Ecosystem

- ❖ Infrastructures
- ❖ Training and further education of specialists
- ❖ Establishing Networks (especially between research and industry)
- ❖ Public dialog & information
- ❖ Regulation



# Fusion 2040 – Research on the way to a power plant

Overarching Goal:

FL

Funding for MFF and IFF

Duration:

– 31 Dec 2033

## Innovation, Industry, Internationalization

planned to be released in February 2024

370 Mio. € until 2028 (project funding, institutional funding not included)

Submission of applications in the context of specific calls

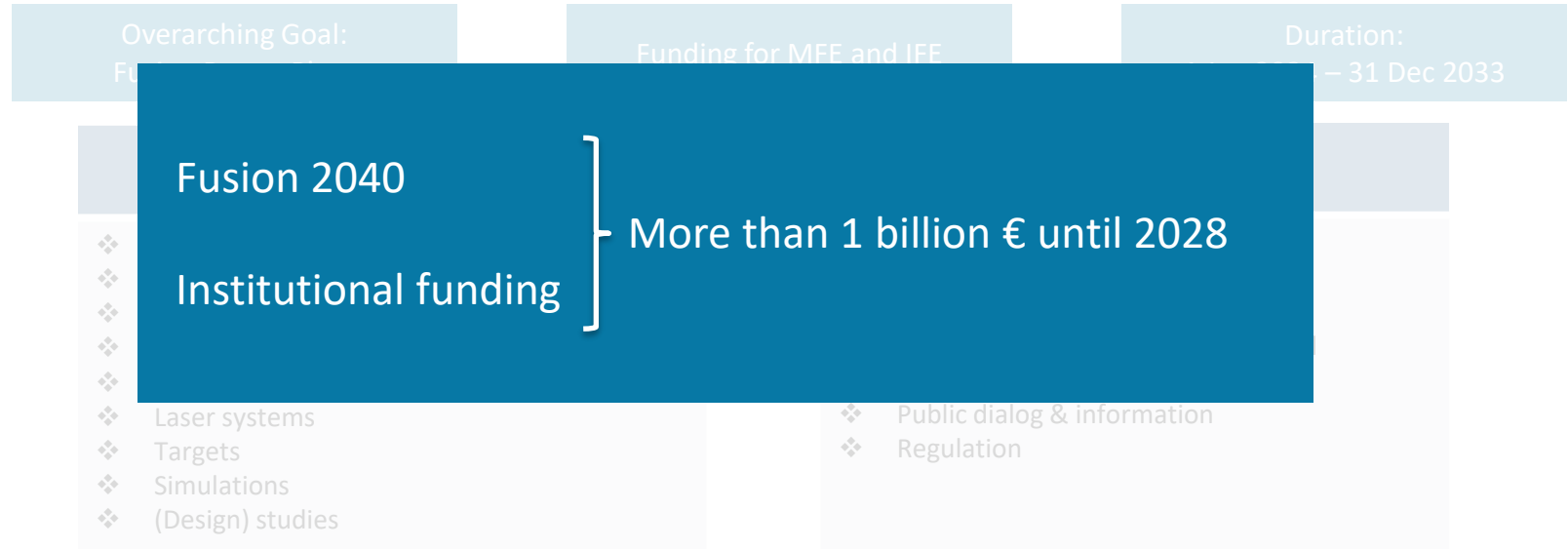
- ❖ Laser systems
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- ❖ Public dialog & information
- ❖ Regulation





# Fusion 2040 – Research on the way to a power plant





## Linked to Government's ...



Future Research and Innovation Strategy



Energy Research Program



## International cooperation

Fusion research is already an extremely international area as the numerous international contributions and users at Wendelstein 7-X and ASDEX Upgrade show.

In this way, research can be accelerated for the benefit of all partners involved.

The BMBF will continue to explore opportunities for bi- and multilateral cooperation.