

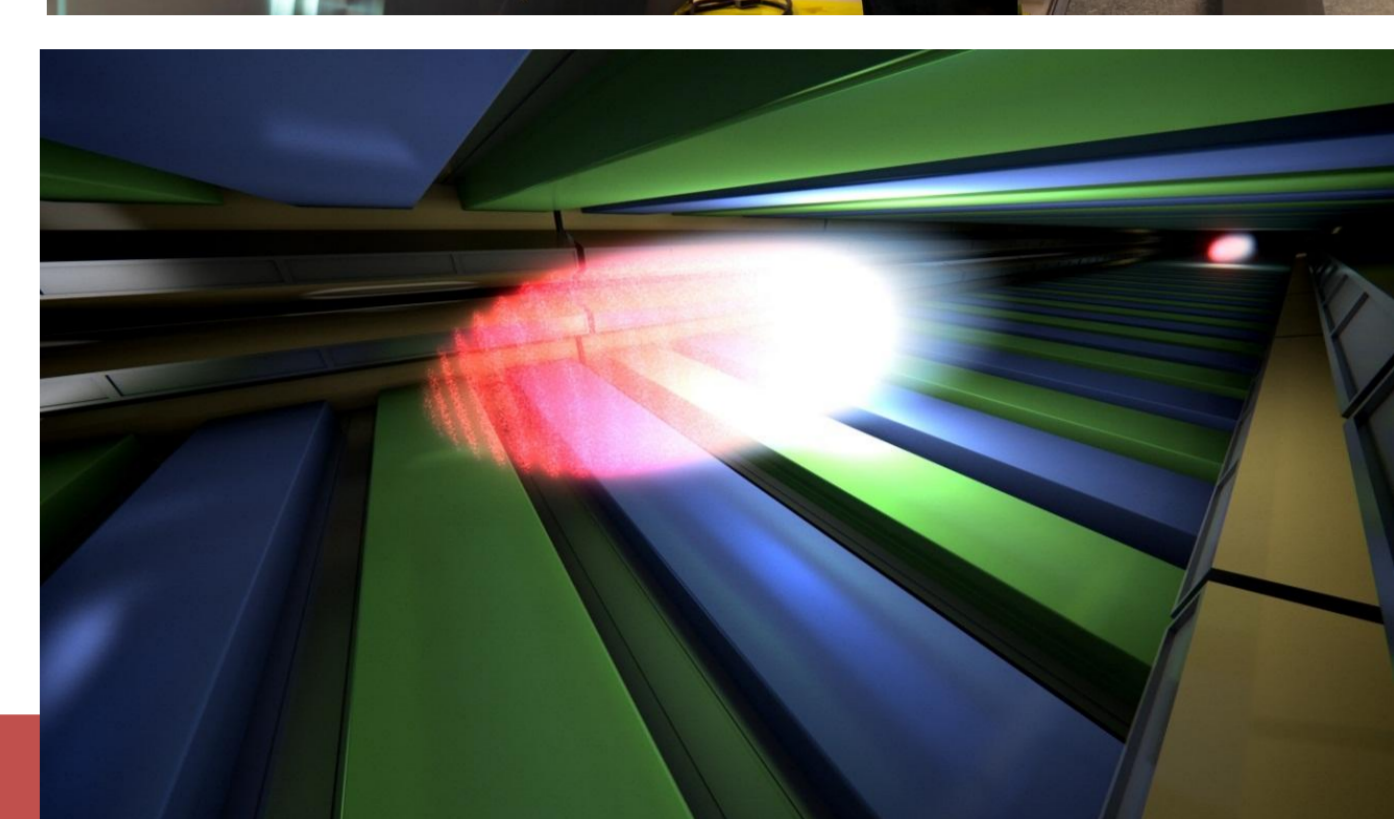
# European X-Ray Free-Electron Laser Facility



## General information

The safety and radiation protection (S&RP) group works in an independent manner and reports directly to the administrative director of the management board who is in charge of safety and security. The work of the XFEL S&RP Group is focused on existing work places rented at DESY where XFEL staff develop, test and assemble machine parts like vacuum systems and undulators, photon diagnostics equipment and experimental set ups for XFEL Laser experiments such as detectors and liquid jets for biological samples. The safety risks are therefore of various nature which is common in this field of research.

The XFEL S&RP Group consists at present of 1 safety engineer and 1 part-time administrative assistant. The safety engineer deals with risk assessments of workplaces, safety training, radiation protection for x-ray generators and radioactive sources, laser and biological safety. The recruitment of 1 radiation protection engineer and 1 safety technician within the next months is planned. For the operation phase in 2016 the group will have in total 6.5 FTE for the Schenefeld campus, excluding technical emergencies which are planned with ~13 FTE within XFEL Technical Services. During the construction and installation phase the DESY safety group and emergency services are looking after the European XFEL site. For the future XFEL facility, the safety organization and concept will be set up in collaboration with DESY to ensure a smooth and safe start into the operation phase starting in 2015/16.



## Facts and figures

### GENERAL

Total length	3.4 km	The facility will run from the DESY site in Hamburg in a north-western direction to the border of the town of Schenefeld (Schleswig-Holstein).
Number of sites	3	The three sites are: <b>DESY-Bahrenfeld</b> (ca. 2 hectares), <b>Osdorfer Born</b> (ca. 1.5 hectares) and <b>Schenefeld</b> (ca. 15 hectares). The research campus will be located in Schenefeld.
Depth of the tunnels	6 to 38 m	The tunnels are covered by at least 6 m of soil.
Construction costs including preparation and commissioning	1.15 billion euro (price levels of 2005)	As the host country, Germany (Federation, Hamburg and Schleswig-Holstein) covers 54 % of the construction costs. Russia takes over 23 % and the other international partners between 1 and 3.5 % of the construction costs each. To a great extent, the European XFEL facility will be realized by means of in-kind contributions by shareholders and partners.

### EUROPEAN XFEL GmbH

Legal Form	GmbH	The European XFEL will be constructed and operated by the European XFEL GmbH, a non-profit Company of Limited Liability under German law. This company was founded on 28 September 2009, initially with DESY as the only shareholder.
Annual budget	2012: 2013:	140 211 000 € 106 844 000 €
Staff (under development)	250 employees	The European XFEL GmbH is building up a workforce of about 250 people.
Participating countries	currently 12	Denmark, France, Germany, Greece, Hungary, Italy, Poland, Russia, Slovakia, Spain, Sweden and Switzerland participate or plan to participate in the construction and operation of the European XFEL.

### SOME MILESTONES...

February 2000	Scientists achieve a world first by generating shortwave laser light in the ultraviolet range (80-180 nm) using the pioneering SASE principle, on which the European XFEL is based. They succeed in generating the greatest possible light amplification.
September 2004	The federal states of Hamburg and Schleswig-Holstein ratify a state treaty that provides a legal basis for the construction and operation of the X-ray laser. Among other things, the states agree on a joint public planning approval procedure ( <i>Planfeststellungsverfahren</i> ) including an environmental impact assessment.
July 2006	The authority for Mining, Energy and Geology in Clausthal-Zellerfeld, Germany, enacts the approval resolution ("Planfeststellungsbeschluss") for the construction and operation of the European XFEL.
July 2007	The EU funds the Pre-XFEL project aiming to support the foundation of the European XFEL. The project, which has a duration of 4 years, is coordinated by DESY.
January 2009	Start of construction, duration: about 5.5 years
November 2009	Signing ceremony of the international convention in Hamburg. Five shareholders from the non-German partner countries join the European XFEL company.
June 2012	Construction of the network of tunnels with the tunnel boring machines TULA and AMELI is finished.
End of 2015	Commissioning of the first part (SASE1) of the facility
2016	Start of research operation for external groups (user operation)

