

Clean fusion energy: HiPER is on the roadmap

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The roadmap outlining opportunities for European science was published on Thursday 19 October. The result of two years intensive work involving over 1000 top-level scientists, the European Strategy Forum on Research Infrastructures (ESFRI) roadmap lists 35 opportunities for major science facilities over the next 20 years.

The HiPER laser project is a key opportunity being sponsored by Council for the Central Laboratory of the Research Councils (CCLRC) within this roadmap. Its purpose is to demonstrate a high technology solution for a long-term supply of environmentally clean energy.

The European High Power laser Energy Research facility, HiPER, will be designed to investigate the newest concept for efficient generation of power from fusion – the power of the Sun. A demonstration that energy can be produced from laser driven fusion is already due in the period 2010-2012, initially in the USA and subsequently in France. HiPER has been designed to move from this scientific proof of concept to a point where a demonstration commercial power plant is feasible, using a new technique known as ‘fast ignition’.

A consortium of over 50 senior laser and plasma scientists from nine countries have worked over the past two years to prepare the conceptual design of HiPER. The consortium will now direct their efforts to preparing the case for obtaining preparatory design funding as part of the European Commission’s response to the ESFRI roadmap. The design stage is anticipated to last three years, preparing the case for construction

of this €800M facility. Whilst the future location is yet to be determined, the UK is a potential host, as part of a wider drive to take a leading position in high profile science with strong economic impact.

Whilst the pursuit of a future clean energy source is the principal goal of HiPER, the capability offered by a state-of-the-art laser has not escaped the wider scientific community. Proposals to make use of HiPER are being incorporated into the design, covering fields as diverse as extreme material science, astrophysics in the laboratory, miniaturised particle accelerators, and a wide array of fundamental physics studies.

Further details on the HiPER project can be found at www.hiperlaser.eu
Further details on the ESFRI roadmap can be found at cordis.europa.eu/esfri/

Source: Council for the Central Laboratory of the Research Councils

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