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The Jülich HBS Project for accelerator based neutron sources

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The Jülich Centre for Neutron Science is working on the project to develop, design and demonstrate an accelerator driven high-brilliance neutron source (HBS) as an efficient and cost-effective alternative to current low- and medium-flux reactor and spallation sources. The HBS comprises a high current proton accelerator with an energy of 70 MeV and a beam current of 100 mA, a compact neutron target of 100 kW power, sophisticated cold and thermal moderator systems and an optimized neutron transport system to provide thermal and cold neutrons with high brilliance for a full suite of epithermal, thermal and cold instruments.

The project offers construction of a scalable neutron source for a user facility with open access and service according to the various and changing demand of its communities. Embedded within an international collaboration with partners from Germany, Europe and Japan the Jülich HBS project offers best flexible solutions to the scientific and industrial users. The overall conceptual design of HBS was published in a recent report.

We will present the current status of the project, progress and next steps regarding accelerator, target, moderators and beam delivery development, milestones and the vision for the realization of such a facility.