European Spallation Source Scandinavia

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Press release from
ESS Scandinavia

ESS and SNS launch a joint initiative to make large scientific facilities climate neutral

OFFICE

ESS Scandinavia Secretariat
Lund University
Stora Algatan 4
22 350, Lund

Fax
+46 222 83 14

Web
www.esss.se

FOR MORE INFORMATION, PLEASE CONTACT:

Professor Colin Carlile
Director
colin.carlile@esss.se
+46 761 33 33 99

Roger Eriksson
Communications Officer
roger.eriksson@esss.se
+46 761 33 33 97

ESS Scandinavia in Lund, Sweden, and SNS in Oak Ridge, Tennessee, USA, have launched a joint initiative in climate neutrality of large scientific facilities. The goal is to make future research possible without negative effects on the climate.

– With the experience built up when building and operating the neutron spallation source at SNS we will be able to further optimize the energy management when building ESS in Lund in order to achieve our sustainability goals, says Professor Colin Carlile, Director of ESS Scandinavia. The data gathered at SNS are invaluable to us since it come from a large operating facility.

Large scientific facilities typically use large amounts of energy to operate their equipment, much of it vented into the environment as low-grade heat. By judicious design, power needs can be minimized, recycling can be maximized ande he carbon footprint of such facilities reduced to net zero.

– Our goal is to become a model for future environmentally friendly research facilities, says Colin Carlile.

As a part of the initiative Thomas Parker, Energy Manager at ESS Scandinavia, will be seconded to the SNS facility in Oak Ridge, Tennessee where he will work together with the staff at SNS.

– It is our hope and ambition that Thomas' mission at SNS will yield results that are beneficial to both parties and that one or more projects will result, says Colin Carlile.

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ESS IN SHORT

The European Spallation Source – the next generation facility for materials research and life science

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The European Spallation Source (ESS) will be a multi-disciplinary research laboratory based upon the world's most powerful neutron source. ESS can be likened to a large microscope, where neutrons are used instead of light to study materials – ranging from polymers and pharmaceuticals to membranes and molecules – to gain knowledge about their structure and function. ESS will be up to 100 times better than existing facilities, opening up new possibilities for researchers in for example health, environment, climate, energy and transport sciences and cultural heritage.

ESS is an intergovernmental project resembling CERN in Geneva. After several years of discussions on the siting, it is now clear that the ESS will be built in Lund in southern Scandinavia. The ESS will be constructed, financed and operated by those European governments that have an interest in the ESS.

The Swedish Government has offered to host the ESS and to cover 50 percent of the 1,4 B€ investment costs and 20 percent of the operating costs together with the Nordic and Baltic states. The ESS Scandinavia Secretariat works on a mandate from the Government for the planning of the future international ESS organisation. The Director is Professor Colin Carlile, previous Director of the world-leading Institut Laue-Langevin in Grenoble.

Negotiations on bringing the ESS to Lund are now underway. The Swedish government has appointed Mr. Allan Larsson, former Finance Minister, as Sweden's chief negotiator. Right now the process of obtaining the necessary authorisation is progressing, as well as the technical preparations and the refinement of the design to site conditions in Lund. Building is expected to start around 2012 the first neutrons to be produced in 2018-19 and the facility to be fully operational around 2023.

ESS will support a user community of 5000 researchers and will have great strategic importance for the development of the European Research Area. Lund and the Malmö-Copenhagen region have excellent preconditions to attract leading scientists: several large universities, a broad research-based industry, high-quality infrastructure, an English-speaking population and world-class research capabilities in, among other areas, biotech and nano technology. Near by there will be complementary laboratories, such as the synchrotron MAX IV in Lund and XFEL and PETRAIII in Hamburg.

ESS Scandinavia engages in the climate change strategies of the European Union and the Swedish government, and has adopted the goal that the ESS will be carbon dioxide neutral. This will be achieved by means of an energy conservation strategy, the use of renewable sources of electricity, and the reuse of excess heat through the Lund district heating and cooling system. ESS built in Lund will be the first large-scale scientific facility operating under this principle, and it will be a demonstration project for other future facilities.