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Energy for Sustainable Science European Spallation Source

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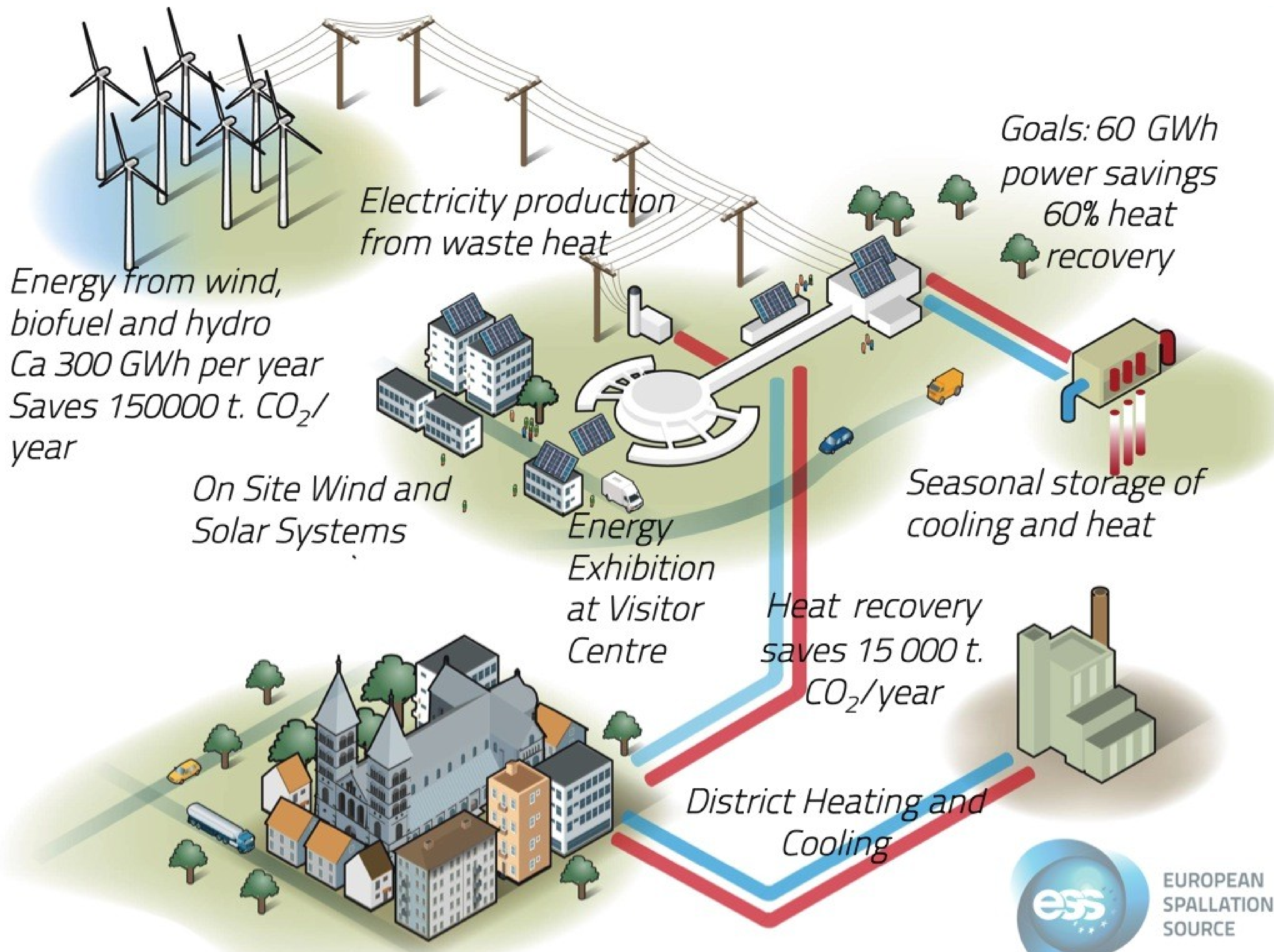


EUROPEAN
SPALLATION
SOURCE

Energy ^{FOI} Sustainable Science European Spallation Source

It is well established that materials science for sustainable development and energy solutions has benefited significantly from neutrons as a complementary investigative technique. The European Spallation Source, ESS, to be built in Lund (Sweden) will offer significant performance gains in neutron beam intensities and allow a whole range of experiments to be performed on unprecedented time and length scales, enhancing the current contribution considerably. Additionally, the ESS aims to be the first CO₂ neutral large-scale research facility.

Responsible Renewable Recyclable



A sustainability strategy named "Responsible, Recyclable and Renewable" is being implemented for energy management at the European Spallation Source. It includes measures to conserve electricity, to source energy from renewables, such as wind-energy, as well as to recycle waste-heat in collaboration with the local district-heating operators. The energy saving program will apply to everything, from the cafeteria to the klystrons. Every device will be examined for opportunities both to reduce carbon footprint, energy consumption and to recapture heat at as high a temperature as possible.

An Energy Inventory that includes detailed information on power, energy and temperature flows is being developed, both as a technical tool and as an instrument to establish an Energy Culture. The cultural dimension will be strengthened with on-site demonstrations of emerging technology and a public energy exhibit.

The ESS has sustainable energy solutions at its heart both from the science that it enables, as well as the direct impact it has on the environment.

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