



***Etrium* (Cologne) – Ecological Power from the Greened Roof**

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Short description of the speaker

Ecostream is part of the international Econcern group, which has its headquarters in the Netherlands. Since 1984 Econcern has been active in all areas of renewable energy and energy efficiency. The group employs over 900 people in 14 countries. The other members of the group are Ecofys, Evelop and EcoVentures.

Biographical details or background information

The name *etrium* is a combination of the terms energy efficiency and atrium and in itself describes two important characteristics of the building. As the first large passive house office building in North Rhine-Westphalia, the *etrium* requires about 80% less energy for heating and 70% less energy for primary energy needs than a conventional office building of the same size.

A 32 kW photovoltaic system has been installed on the roof and will produce approximately 30,000 kWh of electricity a year which is fed directly into the public grid. The photovoltaic system was planned and installed by the subsidiary company, *ecostream*. The fixtures for the panels are integrated in the green roof structure and use the weight of the vegetation substrate as ballast for firm attachment to the building. The rainwater storage of the green roof is thus completely retained. The solar modules are mounted about 40 cm above the surface of the green roof and this allows air to circulate freely around the modules. The green roof construction also promotes heat dissipation. Both these circumstances contribute to increasing the efficiency of the solar modules at high temperatures. The converters for transforming the electrical energy generated into alternating current are located next to the grid connection point in the basement. The low temperature that prevails here all year long makes high efficiency of the photovoltaic system possible even at high outdoor temperatures.