

FP7-ENERGY-2013-1

Research and development of innovative solar thermal facades

FLUIDGLASS

Solar Thermal Glass Facades with Adjustable Transparency

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Catalogue of various system schematics for integration of the collector with dimensioning guidelines for storage equipment size, etc. for different building types

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Executive Summary

In task 4.5 the possibilities for the integration of FLUIDGLASS elements into HVAC systems was investigated. As a result it can be said that in principle a FLUIDGLASS system can be integrated to standard HVAC system schemes prepared for heating, cooling and solar thermal gains. The most changes and effort are on side of the heat distribution system. Therefore rather complex distribution systems arise. Detailed dimensioning of single HVAC devices and components can only be done for each individual use case based on the main boundary conditions building structure, building use and climate zone. The FLUIDGLASS consortium focused mainly on the field test container for evaluating the prepared proto types and simulation models. A full definition of the most interesting use cases is therefore still open. Because of that in this task principle HVAC system layouts were developed hat will work for most use cases. The scaling - e.g. the nominal heat/cold output of the generators, pipe dimensions, storage size, ... - have to be done by detailed dimension models later on. After the FLUIDGLASS and building simulations models are evaluated in WP 6 and further developed the best use cases for FLUIDGLASS systems can be identified and prepared. Based on this results and progress the dimensioning for HVAC-FLUIDGLASS system can be done for each individual use case.

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