

FP7-ENERGY-2013-1

Research and development of innovative solar thermal facades

FLUIDGLASS

Solar Thermal Glass Facades with Adjustable Transparency

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List of technical and economical system requirements comprising room climate, collector performance, building energy balance usability for district heating and per-m2-costs

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PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

FLUIDGLASS

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Executive Summary

The value proposition of FLUIDGLASS from a qualitative perspective is the ability to unite different functionalities in only one element therewith replacing several independent building components. The outer fluid layer works as a variable shading device and as a solar thermal collector. The inner gas filled chamber(s) are a transparent insulation unit, while the inner fluid layer can be used to heat or cool the interior replacing the usual necessary under floor heating and cooling ceiling. To be able to do so, FLUIDGLASS' performance in the named functions should not be inferior to the corresponding building element it is meant to replace.

Based on this, a market segment is defined, in which the value proposition is strongest. The target market segment is commercial buildings (retrofit and new-built) in central, western and southern Europe whose facades are entirely or largely glazed.

For each of the four parts of the value proposition, FLUIDGLASS must fulfil economical, technological, regulatory and operative requirements:

- It has to match the performance of the respective dedicated building element it aims to replace. Key performance indicators are among others room climate, collector performance, building energy balance and usability for district heating.
- It shall not result in higher investment costs as a whole compared to cumulated cost of the replaced building elements, so an indicative price target is given.
- It has to fulfil the applicable regulation and standards.
- It must allow for the application of industry best practices during the whole process from the planning phase over production and delivery until installation and maintenance.

These requirements are one after the other explained in general and then quantitatively specified for FLUIDGLASS so they can act as guidelines during the research project and the entire development process.

Furthermore, a term structure is defined that shall ease the communication and reporting during the collaborative research project.