



# Thermochemical Fluids in Greenhouse Farming

## Improvement of the economic and competitiveness in greenhouses

The use of thermochemical fluids (TCF) for the air humidity and temperature control in greenhouses improves the economic and competitiveness under different aspects:

- Reduce energy costs for end users: Exploitation of unused heat from renewables as hot air from the backside of PV panels. In an initial phase, that can be realised as “single stakeholder” model with PV on the roof of farm buildings and electricity for on-farm consumption. In a more developed, multi stakeholder model external producers of unused heat can be connected to farm activities. This may also include industrial waste heat.
- Reduce investment costs: Offering of multiple services in one system, thinner ducts without insulation, higher energy density, seasonal thermal storage.
- Improving the farm productivity: The humidity control allows the increase in production as the phenomenon of rotting of the tomato and pepper plants is eliminated, the fruit set is increased, and the physiological state of the plant improves. Furthermore, the contact with TCF (salt) has a disinfection effect, killing viruses and pathogens.
- Costs of land in agriculture are strongly related to availability of water. Higher independence from ground water may reduce the pressure on areas with low water resources and will improve the value of the related farmland, thus stabilizing the



situation of many farmers. Farmland with available water resources is subject of financial speculation. A higher independence on water using water cycling technology may reduce instabilities raising from this kind of speculation.



TheGreefa project has received funding from the European Union's Horizon 2020 Research and Innovation Program under grant agreement No 101000801.

The sole responsibility of this publication lies with the authors. The European Commission and the Research Executive Agency is not responsible for any use that may be made of the information contained therein.