Thermochemical Fluids in Greenhouse Farming

Economic analysis

The economic analysis of the implementation of TheGreefa technology in greenhouses was performed based on real data from two TheGreefa greenhouses located in Switzerland and in Italy. In the study, the operational phase of the greenhouses was analysed considering energy and fuel consumption.

The aim was to identify the potential time needed for the return of the investment costs incurred to implement TheGreefa system but also what should be the price for ready-to-market TheGreefa technology to be able to meet the required payback period. For this purpose, the costs related to seasonal consumption of energy and heat generation were collected and analysed. In the market study performed contacting greenhouse operators, it was identified the most expected time for the investment return is 7 to 10 years. It is reasonable considering the expected lifetime of greenhouse installations of approximately 15 years.

To perform the economic analysis of the cost efficiency of implementation of the new technology, it is necessary to calculate the seasonal costs the greenhouse must pay for electricity and heat sources. Then the same calculation needs to be performed using real or simulated data presenting consumption of energy and fuels if the new system is in operation.

The analysis showed the expected cost savings for the Swiss greenhouse are over €8,500 each year. To have a 10 year long payback period, the cost of TheGreefa solution should be around €85,000. In this case, the energy is provided by an external supplier. Therefore, the cost of transport of fuels is not considered. Direct heat generation in a greenhouse could increase cost savings. The savings are more visible in colder climates where more resources in needed for heat generation.

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