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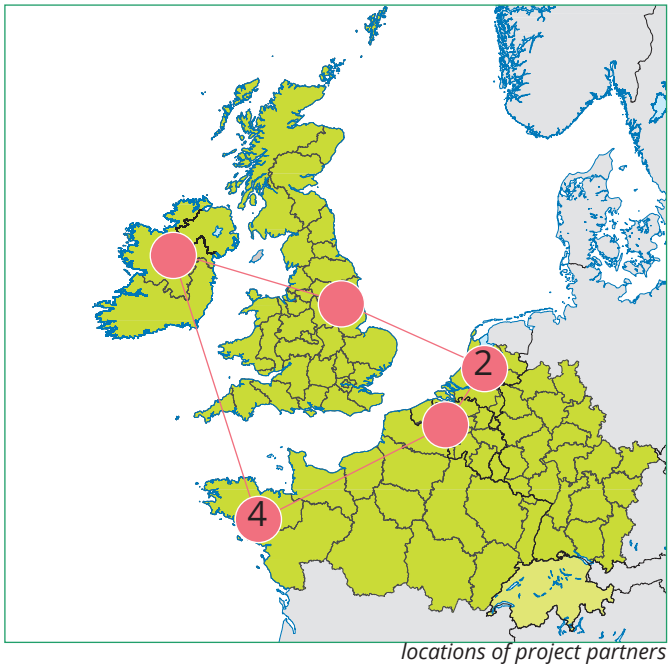
Welcome to the IcaRE4Farms newsletter

ICaRE4Farms (I4F) is an Interreg North-West Europe funded project on theme of Low Carbon with an aim of reducing CO_2 emissons.

ICaRE4Farms intends

- to boost the use of solar thermal energy (STE) in farming in North West Europe,
- to contribute to reduce Greenhouse House Gas (GHG) emissions and increase the share of renewable energies,
- to help the transition to a low-carbon economy and meet the EU 2030 goal of 27% share for renewable energy (RE).

STE is an affordable RE technology to heat water and has a huge potential to replace fossil energies.



locations of project partners

The ICaRE4Farms project is a team of multi-disciplinary organisations across five countries. The project is lead by Laval Mayenne Technopole in France. The other members of the project are

- Association des Chambres d'Agriculture de l'Arc Atlantique, France
- Innovatiesteunpunt, Belgium
- University of Lincoln, United Kingdom
- SunChip Projects BV, Netherlands
- Cornelissen Consulting Services BV, Netherlands
- Université Bretagne Sud, France
- Northern and Western Regional Assembly, Ireland
- Feng Technologies SAS

At a later stage another 9 sub partners will become involved in the project.

What is Solar Thermal Energy?

Solar Thermal Energy (STE) uses the power of the sun to heat water for use in homes, agricultural and industrial buildings. Unlike photovoltaic panels it does not produce electricity.

Did you know?

That installing 1 STE panel can save up to 500kg of CO_2 in 1 year when replacing natural gas.

An example of Solar Thermal Energy

A farm in Livré-La-Touche, France needs 800 litres of water at a temperature of 75°C twice a day to prepare calf feed. Before installing STE, the water was heated with a gas boiler. For this, they had to purchase about 4.4 tons of propane annually. That corresponds to a total energy content of 56,320 kWh.

In 2013, with the help of the agricultural cooperative CAM-Inovia (Cooperative des Agriculteurs de la Mayenne), a solar thermal system was installed with a patent from Fengtech. The installation consists of 4 modules, with a total of 120 vacuum tubes and 4 boiler vessels with a total volume of 1200 litres.

Such systems capture 3 types of solar radiation:

- direct,
- diffused and
- reflected radiation.

The energy collectors (the vacuum tubes) work even in cloudy weather and are protected against overheating. The vacuum is a natural insulator, so the system is not very sensitive to the outside temperature. The boiler tanks are made of stainless steel and insulated with 60 mm polyurethane. The pipes at this calf farm have a surface area of 18 m², with which the radiation can be collected.

The system is not pressurised. The installation is on the ground, on a concrete slab that is painted white for optimal reflection of the solar radiation.

When there is no radiation, a back-up system (in this case the original gas boiler) takes over the heating of the required water.

Thanks to the savings they achieve with the solar boiler, the veal farm only needs to purchase around 2.8 tons of propane annually. This corresponds to an energy-saving of 20,480 kWh / year and a CO_2 reduction of 6.3 tonnes/year.