



Solar Thermal Energy in British Agriculture



Interreg 
North-West Europe
ICARE4FARMS
European Regional Development Fund



AIM: presenting the British agricultural domain, it's potential for Solar Thermal Energy (STE) application and its key sectors.



METHOD: summarizing this ambition by highlighting results from interviews, academic and official documents analyses.

Use of Renewable Energy in Agriculture

Share of Renewable Energy: 20%

- Price of energies (2019):
- Photovoltaic: 0.115€/kWh
 - Electricity: 0.156€/kWh
 - Biomass: highly variable
 - Natural gas: 0.027€/kWh (2018)

National Aids & Legal Framework for STE

- Government incentives have been reduced and some systems are now viable without financial support
- Farmers will consider the adoption of STE as a purely commercial decision with no subsidies involved.

KEY SECTORS FOR STE

Milk-Fed Calves



- There are only a few veal producers in the UK therefore it is not a good market sector for STE use because veal production is so limited.

- Recent changes in agricultural policy, which includes the banning of euthanasia for newly born and very young calves, may change this.

Dairy Farms



- **Holding :**
Total: 1,85 m with in average 148 cows
Target candidates for STE : water heating based energy system farms
- **Water per day :**
796,6 L/day (for 175 cows)
- **Main Energy Used :**
Solar energy

- **Average Direct Consumption :**
 - o 120 kWh/cow for cleaning
 - o 350 kWh /year/cow for processing

Pig Farms



- **Holding :**
 - o Total: 10539 farms (2019)
 - o Of which 5451 are breeding sows
- **Main Energy Used :**
Electricity & Fuel Oil

- **Average Direct Consumption :**
 - o 3,49 € per pig produced
 - o 87€/sow /year based upon 24.8 pigs produced/sow/year)

- **Holding :**
 - o Greenhouses: 2377 ha
 - o Horticulture (plants and flowers): 14000 ha
- **Average Direct Consumption :**
 - o Greenhouses: 105 kWh/m2/year
 - o Horticulture: 105 kWh/m2/year
- **Main Energy Used :** Electricity & Gas

Greenhouse



2 particularly appropriate sectors:
Dairy Farms & pig farms



2 other sectors of interest: milk-fed calf farms & horticulture



2 sectors with low potential currently: on-farm milk processing farms & poultry