



# Solar Thermal Energy in British Agriculture



**Interreg**   
**North-West Europe**  
**ICARE4FARMS**  
European Regional Development Fund



**AIM:** presenting the French 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.

### 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.

## KEY SECTORS FOR STE

### 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