



# Solar Thermal Energy in Irish 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: 3.2%

- Price of energies (2018):
- Photovoltaic: 0.06-0.12€/kWh
  - Electricity: 0.19€/kWh
  - Biomass: 0.062-0.122€/kWh
  - Natural gas: 0.089-0.147€/kWh

## National Aids & Legal Framework for STE

- Targeted Agricultural Modernisation Schemes II / TAMS II
- SEAI's Better Energy Communities /BEC
- Support Scheme for Renewable Heat (SSRH)

BUT not applicable for now on to STE

## KEY SECTORS FOR STE

### Milk-Fed Calves



- **Average Direct Consumption over 22-week (rearing period - French Basis) :**
  - 152 kWh/calf (all activities/100%)
  - 108 kWh only for drinking (= 71%)

- **Holding :** Total: Very few/unknown  
Target candidates for STE: n/a
- **Main Energy Used :** n/a

### Dairy Farms



- **Holding :**  
Total: 18 000 farms with an average of 90 cows  
Target candidates for STE with on-farm processing: the whole set
- **Water per day :** between 200 & 500L/cow
- **Main Energy Used :** Electricity
- **Average Direct Consumption :**
  - o 120 kWh/cow for cleaning
  - o 254 kWh/milk (L) for processing

### Pig Farms



- **Average Direct Consumption :**
  - o Maternity stage: 729kWh/place (80%)
  - o Post-Weaning stage: 67kWh/place (79%)
- **Main Energy Used :** Electricity & Fuel Oil

- **Holding :**
  - o Total: 1 675farms (≈ 1017 pigs) cf. 1.7 M pigs

- **Holding (tomato & cucumber) :**
  - o Horticulture: 1105 ha
  - o Market Gardening: 1081.6 ha
- **Average Direct Consumption :**
  - o Horticulture: 160kWh/m2/year
  - o Market Gardening: 317kWh/m2/year
- **Main Energy Used :** Electricity & Gas

### Greenhouse



1 particularly appropriate sector:  
Dairy Farms



2 other sectors of interest: Pig Farms & Poultry



2 sectors with low potential currently:  
Calf Farms & Greenhouses