



# Farmer

## FARM

<b>ROLE PURPOSE (CORE BUSINESS) :</b>	Agriculture
<b>POSSIBLE ACTIONS (PROJECTS) :</b>	ANIMAL, METHANE-F, PV-FB, ZTF, R-FIELD
<b>RESOURCES :</b>	Land ownership (dark green plots, considered as rural area)
<b>CONSTRAINTS :</b>	Financial weakness
<b>KNOW-HOW AND EXPERTISE :</b>	Agriculture and husbandry
<b>INITIAL FINANCIAL CAPACITY (K€) :</b>	2 500
<b>OPERATING EXPENSES (K€) :</b>	500

### INTERACTIONS WITH OTHER ACTORS

LA	Land banking
NGO	Legal action from NGO; Funding for ZTF
NAT-EN	Farm inputs for AGRO-F and BIOGAS; Land for PSPT, BIOGAS, GEO, PTG, WIND-T, SOLAR-F
LOC-EN	PV-FB; Farm inputs for AGRO-F and BIOGAS; Land for PSPT, BIOGAS, GEO, PTG, WIND-T, SOLAR-F
PC	Land, co-investment
DEV	Land for dwellings

### RECOMMENDED STRATEGY

The Farmer's revenues from farming are low. Renewable energy provides them with opportunities for additional income:

- By producing energy with methanization in the farm (METHANE-F) and photovoltaic panels on farm buildings (PV-FB);
- By producing rapeseed necessary to agrofuel production (R-FIELD) and biomass for gas production (ANIMAL);
- By renting or selling plots for renewable energy production such as wind turbines (WIND-T), biogas (BIOGAS), geothermal energy (GEO), solar plant (SOLAR-F), and for storage systems such as batteries (BATT), pumped storage power station (PSPT) or power to gas (PTG).

The Farmer may also sell or rent plots for economic and urban uses (with the risk of contributing to urban sprawl and soil artificialization...)

Finally the Farmer may act directly towards energy saving through ecological farming without ploughing the soil (zero till farming: ZTF). However this means a loss of yield for

## POSSIBLE ACTIONS FOR FARM

### ANIMAL HUSBANDRY



ANIMAL

*Cows, pigs, sheep, etc.*

**TYPE:** Activity (A)

**OTHER ENTREPRENEUR(S) :** none

**INVESTMENT COST (K€) :** 300

**GROSS ANNUAL INCOME :** 4% (60 K€ per 5-year term)

**ENERGY SAVED (MWh / year) :** -100 (Negative because animal husbandry emits greenhouse gas (methane)).

**PREREQUISITE FACILITIES :** None (but is prerequisite for BIOGAS)

**LOCATION :** 3 plots on farmland (rural area)

**JOBS CREATED LOCALLY :** 2

### METHANISATION AT FARM



METHANE-F

*Production of methane and electricity*

**TYPE:** Continuous energy production (Pc)

**OTHER ENTREPRENEUR(S) :** none

**INVESTMENT COST (K€) :** 1 900

**GROSS ANNUAL INCOME :** 10% (950 K€ per 5-year term)

**ENERGY PRODUCED (MWh / year) :** 600

**PREREQUISITE FACILITIES :** none

**LOCATION :** One plot in rural area. Odours in the neighbourhood (risk of residents opposition).

**JOBS CREATED LOCALLY :** 3

### SOLAR PANELS ON FARM BUILDINGS



PV-FB

*Photovoltaic panels on farm buildings roofs*

**TYPE:** Intermittent energy production (Pi)

**OTHER ENTREPRENEUR(S) :** LOC-EN but after agreement with the farmer)

**INVESTMENT COST (K€) :** 500

**GROSS ANNUAL INCOME :** 6% (150 K€ per 5-year term)

**ENERGY PRODUCED (MWh / year) :** 600

**PREREQUISITE FACILITIES :** storage capacity 50 MWh

**LOCATION :** Existing farm buildings on J5

**JOBS CREATED LOCALLY :** 1

### RAPSEED FIELD



R-FIELD

*Rapeseed field to feed AGRO-F*

**TYPE:** Activity (A)

**OTHER ENTREPRENEUR(S) :** none

**INVESTMENT COST (K€) :** 90

**GROSS ANNUAL INCOME :** 4% (18 K€ per 5-year term)

**ENERGY SAVED (MWh / year) :** -100 (Negative because growing plants only for energy production is not environmentally and ethically sustainable).

**PREREQUISITE FACILITIES :** None (but is prerequisite for AGRO-F)

**LOCATION :** 3 plots on farmland (rural area)

**JOBS CREATED LOCALLY :** 1

### ZERO TILL FARMING



ZTF

*Reduces soil erosion and builds up organic matter (biological diversity of the soil fauna). Increases carbon sequestration.*

**TYPE:** Energy saving (through less ploughing)

**OTHER ENTREPRENEUR(S) :** none

**INVESTMENT COST (K€) :** 10

**GROSS ANNUAL INCOME :** -5% (-3 K€ per 5-year term); energy saving doesn't compensate decline of productivity

**ENERGY SAVED (MWh / year) :** 1 100

**PREREQUISITE FACILITIES :** None

**LOCATION :** Farmland (in rural area)

**JOBS CREATED LOCALLY :** 0