



Local energy network company LOC-EN

- ROLE PURPOSE (CORE BUSINESS) :** To produce energy (heat and electricity) and sell it to end-users or to the National energy network company
- POSSIBLE ACTIONS (PROJECTS) :** AGRO-F, BATT, BIOGAS, GEO, HYDRO, PSPT, PTG, PV-FB, PV-RE-TAIL, SOLAR-F, UHN, WIND-T
- RESOURCES :** Local connections (in particular with the Local Authority whose chairman is part to the executive board); flexibility
- CONSTRAINTS :** No big financial power but supported by the Local Authority
- KNOW-HOW AND EXPERTISE :** Producing, saving and storing renewable energy
- INITIAL FINANCIAL CAPACITY (K€) :** 12 000
- OPERATING EXPENSES (K€) :** 2 000

INTERACTIONS WITH OTHER ACTORS

LA	Planning authorizations; Funding; incentives to partnerships with local actors
NGO	Legal action from NGO; Funding
PC	PV-RETAIL
NAT-EN	Storage through REINFOR; Co-investment
FARM	Land; farm inputs for AGRO-F and BIOGAS
DEV	Electricity storage for D-LuxG and D-AffG

RECOMMENDED STRATEGY

The local energy operator is focused on local energy self-sufficiency rather than on making money. They benefit from technical expertise and know-how enabling many actions for producing, saving and storing energy. In competition with the national energy operator (NAT-EN) they are disadvantaged because of lower financial means.

But as a subsidiary of the Local Authority they are better connected with the territory and may take advantage from grants from the Government transiting through the LA.

Compared with the national operator they have fewer operating expenses and are more flexible. The Local Authority may also facilitate partnerships with other actors benefiting from more higher financial means.

POSSIBLE ACTIONS FOR LOC-EN

WIND TURBINES



WIND-T

7 Wind turbines uphill
TYPE: Intermittent energy production (Pi)

OTHER ENTREPRENEUR(S) : NAT-EN

INVESTMENT COST (K€) : 8 000
GROSS ANNUAL INCOME : 8% (3 200 K€ per 5-year term)
ENERGY PRODUCED (MWh / year) : 13 000
PREREQUISITE FACILITIES : Storage capacity 1 083 MWh
LOCATION : 3 plots on a hill (column N)
JOBS CREATED LOCALLY : 4

SOLAR PANELS ON FARM BUILDINGS



PV-FB

Photovoltaic panels on farm buildings roofs
TYPE: Intermittent energy production (Pi)

OTHER ENTREPRENEUR(S) : FARM

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

AGROFUEL



AGRO_F

Producing agrofuel from rapeseed

TYPE: Continuous energy production (Pc)

OTHER ENTREPRENEUR(S) : NAT-EN

INVESTMENT COST (K€) : 700

GROSS ANNUAL INCOME : 5% (175 K€ per 5-year term)

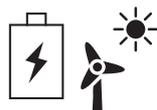
ENERGY PRODUCED (MWh / year) : 2 000

PREREQUISITE FACILITIES : R-FIELD

LOCATION : 1 plot

JOBS CREATED LOCALLY : 3

ELECTRICITY STORAGE BATTERIES



BATT

Electricity storing capacity through batteries

TYPE: Energy storage (St)

OTHER ENTREPRENEUR(S) : NAT-EN

INVESTMENT COST (K€) : 700

GROSS ANNUAL INCOME : -2% (-70 K€ per 5-year term)

ENERGY STORED (MWh) : 320

PREREQUISITE FACILITIES : none

LOCATION : 1 plot

JOBS CREATED LOCALLY : 3

HYDROKINETIC TURBINE IN THE RIVER



HYDRO

Hydrokinetic turbines immersed in the river

TYPE: Continuous energy production (Pc)

OTHER ENTREPRENEUR(S) : NAT-EN

INVESTMENT COST (K€) : 2 000

GROSS ANNUAL INCOME : 5% (500 K€ per 5-year term)

ENERGY PRODUCED (MWh / year) : 1 000

PREREQUISITE FACILITIES : none

LOCATION : In the river (no plot required). Risk to biodiversity.

JOBS CREATED LOCALLY : 4

GEO THERMAL ENERGY



GEO

Recuperating heat from the ground

TYPE: Continuous energy production (Pc)

OTHER ENTREPRENEUR(S) : NAT-EN

INVESTMENT COST (K€) : 500

GROSS ANNUAL INCOME : 8% (200 K€ per 5-year term)

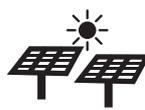
ENERGY PRODUCED (MWh / year) : 2 000

PREREQUISITE FACILITIES : none

LOCATION : 1 plot

JOBS CREATED LOCALLY : 4

SOLAR FARM



SOLAR-F

Solar panels either on wasteland (including quarry) or on farming land

TYPE: Intermittent energy production (Pi)

OTHER ENTREPRENEUR(S) : NAT-EN

INVESTMENT COST (K€) : 2 000

GROSS ANNUAL INCOME : 8% (800 K€ per 5-year term)

ENERGY PRODUCED (MWh / year) : 2 800

PREREQUISITE FACILITIES : Storage capacity 233 MWh

LOCATION : 1 plot (wasteland, farming land, disused quarry J3)

JOBS CREATED LOCALLY : 3

BIOGAS



BIOGAS

Production of biogas from biomass

TYPE: Continuous energy production (Pc)

OTHER ENTREPRENEUR(S) : NAT-EN

INVESTMENT COST (K€) : 18 000

GROSS ANNUAL INCOME : 6% (5 400 K€ per 5-year term)

ENERGY PRODUCED (MWh / year) : 10 000

PREREQUISITE FACILITIES : ANIMAL

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

JOBS CREATED LOCALLY : 3

PUMPED STORAGE POWER STATION



PSPT

Storage facility: two successive dams with a sufficient level difference between the two

TYPE : Energy storage (St)

OTHER ENTREPRENEUR(S) : NAT-EN

INVESTMENT COST (K€) : 1 000

GROSS ANNUAL INCOME : -2% (-100 K€ per 5-year term)

ENERGY STORED (MWh) : 250

PREREQUISITE FACILITIES : none

LOCATION : 2 plots with altitude difference : N and [M or L]

JOBS CREATED LOCALLY : 3

POWER TO GAS



PTG

Energy storage between Summer and Winter through producing hydrogen with electricity (water electrolysis)

TYPE: Energy storage (St)

OTHER ENTREPRENEUR(S) : NAT-EN

INVESTMENT COST (K€) : 1 100

GROSS ANNUAL INCOME : -2% (-110 K€ per 5-year term)

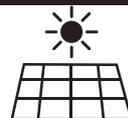
ENERGY STORED (MWh) : 270

PREREQUISITE FACILITIES : none

LOCATION : 1 plot

JOBS CREATED LOCALLY : 3

PHOTOVOLTAIC PANELS ON HYPERMARKET ROOF SPACE



PV-RETAIL

PV panels on 10 000 m² flat roof space

TYPE : Intermittent energy production (Pi)

OTHER ENTREPRENEUR(S) : NAT-EN

INVESTMENT COST (K€) : 1 400

GROSS ANNUAL INCOME : 8% (560 K€ per 5-year term)

ENERGY PRODUCED (MWh / year) : 1 800

PREREQUISITE FACILITIES : HYPER; Storage capacity 150 MWh

LOCATION : HYPER

JOBS CREATED LOCALLY : 5

URBAN HEATING NETWORK



UHN

Heating network fed by heat originating from industry (H-IND)

TYPE: Energy saving (Sa)

OTHER ENTREPRENEUR(S) : LA

INVESTMENT COST (K€) : 1 100

GROSS ANNUAL INCOME : 5% (-275 K€ per 5-year term)

ENERGY SAVED (MWh / year) : 1 200

PREREQUISITE FACILITIES : H-IND

LOCATION : Linear infrastructure (no plot required)

JOBS CREATED LOCALLY : 6