ENERGY SELF-SUFFICIENCY
A way to reduce energy bill by 2020
LORIENT CASE STUDY
A company specialized in sustainable energy solutions:

« QUENEA ENERGIES RENOUVELABLES »

QUENEA RENEWABLES ENERGIES is an independant french company established in the West of France. Since its beginning in 1996, QUENEA RENEWABLES ENERGIES contributes to develop wind farms and solar solutions until their achievement. The company provides its expertise in sustainable energy solutions to the community, for all R.E projects.

KEY FIGURES

QUENEA RENEWABLES ENERGIES
Technical Engineering and Researching Operator (PV, Wind, etc.)

- 25 EMPLOYEES
- OVER 20 YEARS’ EXPERIENCE
- +3000 PV FARMS STARTED TO OPERATE

FIELDS OF COMPETENCE

SOLAR FARMS
WIND FARMS

PLACES USING VARIOUS FORMS & SOURCES OF ENERGY

INNOVATIVE & ARCHITECTURAL PROJECTS

SOLAR FARMS DEVELOPED & BUILT: 10 MWc
WIND FARMS DEVELOPED & BUILT: 125 MWc
FARMS PROJECTS CURRENTLY UNDER DEVELOPMENT

35 MW FOR FUTURE SOLAR POWER STATIONS
170 MW FOR FUTURE WIND FARMS

QUENEA’CH is our investment & funding holding company for all the projects we are developing in France.
What are Lorient’s agglomeration wishes & targets for renewables energies?

- To develop the energy transition within the agglomeration
- To set up short energy circuits between consumers and suppliers
- To promote all kinds of renewables energies
- To increase the production of green energy on the territory
- To include its approach into national support mechanisms

**2012**
- Adoption of the « Plan Climat Air Energie » (PCAET)

**2013**
- Participation at the tenders launched by the Brittany region for energy management and deployment of renewable energies (« BOUCLE ÉNERGÉTIQUE LOCALE »)

**2015**
- Certification « Cit’ergie »
- Laureate « Territoire à Energie Positive pour la Croissance Verte » (TEPCV)

**2017**
- Participation to the European program « POWERSTEP » for the energy consumption optimizing of wastewater treatment plants

**2018**
- Certified ISO 50001 about waste treatment & recycling
LORIENT’S PROJECTS: GREEN POWER PRODUCTION TO REDUCE ENERGY COSTS

Main goal of Lorient’s project:

- To reduce the high energy costs related to the management and recovery of waste and water treatment

**LEGAL FRAMEWORK:**

- Possibility of individual self-consumption
- Feed in tariff:
  - Up to 30/06/2017 T5 at 5.80€/kWh, and then 0€/kWh
- No possibility of collective self-consumption

**REMINDER**

- 80% of the energy bill
- 26 GWH / YEAR
- 3M € / YEAR ELECTRICITY

6 SITES SELECTED

- One all of the most energy-consuming sites in the agglomeration
- Set up pilot self-sufficiency projects

**ENERGY EFFICIENCY PROGRAMS**

1/ PERFORMANCE AUDIT REPORT
2/ ENERGY OPTIMIZATION
3/ DECREASE OF CONSUMPTION

**DEPENDING ON:**

- The level of energy consumption
- The green energy potential
- Technical site’s specifications

What about the production surplus?

- Lorient decided not to feed into the grid
- 100% of the production is entirely used on sites for plant operations
- PV maximum layout lower than basic consumption
LORIENT’S PROJECTS: 6 SOLAR PHOTOVOLTAIC SYSTEMS

Waste Factory ADAOZ – CAUDAN

- **Type of installation**: Rooftop PV installation
- **Area**: 1050 m²
- **System power**:
  - 155 kWc on the « Centre de tri »
  - 68 kWc on the « l’Abri à balles »
- **Average production per year**:
  - « Le centre de tri » : 144 MWh
  - « L’abri à balles » : 62 MWh
- 100% of the production is entirely used on site
- 50% of current electricity needs of « Centre de tri »
- Legal constraint: building permit subject to impact studies for installations over 250 KWc, at ICPE plants

Water Treatment Plant KEROLAY – LORIENT

- **PV of installation**: PV farm
- **Area**: 1 022 m
- **System power**: 105,6 kWc
- **Average production per year**:
  - 95 MWh
- 100% of the production is entirely used on site
- 3,01% of current electricity needs on the site
- Technical constraint: limited surface
LORIENT’S PROJECTS: 6 SOLAR PHOTOVOLTAIC SYSTEMS

Water Treatment Plant – LANESTER
- **Type of installation**: Rooftop PV installation
- **Area**: 300 m²
- **Power**: 60 kWc
- **Average production per year**: 56 MWh
- 100% of the production is entirely used on site. 3.51% of current electricity needs on the site.
- **Technical constraint**: limited roof surface

Recycling Workplace – CAUDAN
- **Type of installation**: Rooftop PV installation
- **Area**: 200 m²
- **Power**: 36 kWc
- **Average production per year**: 31 MWh
- Production sale into the grid
- **Technical constraint**: limited roof surface
Industrial Landfills – INZINZAC LOCHRIST

- **Type of installation**: Solar PV farm
- **Area**: 700 m²
- **Power**: 64 kWc
- **Average production per year**: 65 MWh
- 100% of the production is entirely used on the site
- **Technical constraint**: low basic consumption

Water Treatment Plant - PLOEMEUR

- **Type of installation**: Solar PV farm
- **Area**: 700 m²
- **Power**: 57 kWc
- **Average production per year**: 56 MWh
- 100% of the production is entirely used on the site
- **Technical constraint**: limited surface
LORIENT’S PROJECTS : SPECIFIC REQUIREMENTS

» REINFORCED SUPPORT STRUCTURE

» NEW TRANSFORMER HAS BEEN INSTALLED TO ADAPT PV SYSTEM TO THE NEUTRAL SYSTEM

» ENEDIS : 6 month’s delay for grid connection agreement (supplier different from the consumer)

» Specific PPA between Lorient and the factory operator

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SPECIFIC AGREEMENT

LORIENT POWER PRODUCER

FACTORY OPERATOR

CONSUMER

CONNECTION AGREEMENT

PURCHASE AGREEMENT
LORIENT’S PROJECTS : CONCLUDING REMARKS

POWER PRODUCTION : Whole of installations, yearly energy yield : **480 MWh**

- **100 %** of the production is entirely used on site
- **70 %** basic consumption is covered
- **10 %** of the yearly energy consumption (*excluding ADAOZ Factory*)

LEGAL FRAMEWORK :

- Building permit subject to impact studies for installations over 250 KWc in ICPE
- Regulatory conditions limit energy self sufficiency
- No added value for surplus sale

ECONOMICAL GOALS :

- **1.000 €** operationnal costs reduction for **10.000 € invested**
- 1 M€ subsidies recovered within 10 years
- VAT not recovered by communities on electricity invoice

FUTURE :

- **New projects** under development
- Necessity to **reduce operationnal, development & investment costs**
- Necessity to keep on **public subsidies** (TEPCV 2 ?) to consolidate new models
THANK YOU FOR YOUR ATTENTION