INTRODUCTION TO FARM-E PROJECT

Case study presentation

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PARTNER FORUM 2023

BESIX

PAULINE DIJON

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CE+T PARTNER FORUM 2023

1 THE PARTIES

BESIX Group

AGRISOL

CE+T POWER

LIÈGE université

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BESIX

Nº 1
Belgium

Nº 48
TOP 250
International Contractors

50 %
Activities ABROAD

PRIVATELY OWNED
50% MIC
with casting vote
50% OC

+95 years
INTERNATIONAL activity

+55 years
EXPERIENCE in the Middle East

26
countries

+ 3,500
White collars

+ 7,500
Blue collars

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BESIX GROUP GEOGRAPHICAL SPREAD

3 domestic markets: BENELUX, Middle East, Australia

BESIX GROUP EXPERTISE

A multi-services company covering the entire value chain

Concessions & assets

Real estate

Contracting

01 Project development

02 Design

03 Build

04 Finance

05 Maintain & Operate

BESIX Projects

Projects

- Contracting
  - Building
  - Marine works
  - Infrastructure
  - Environment
  - Sport and entertainment
- Real Estate Development
- Concession & Assets


Burj Khalifa, Dubai


Railway station, Liège


Water treatment, Ivory Coast


Ferrari world, AD


MED Port, Tanger


Sluishuis, NL


A6 Motorway, NL

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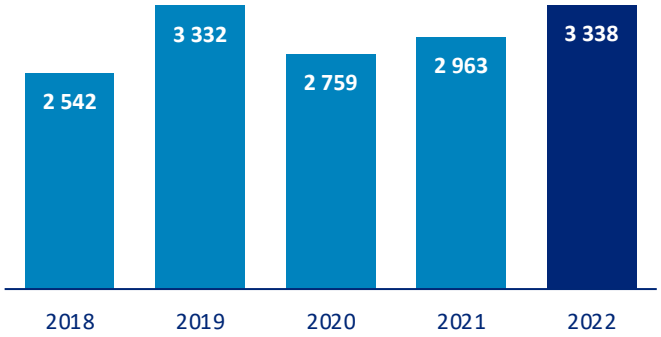
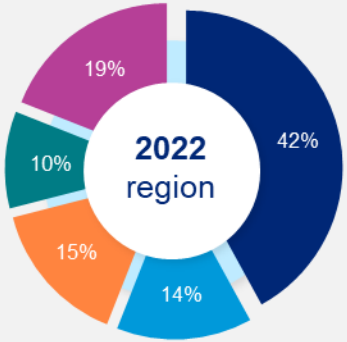
BESIX GROUP REVENUES

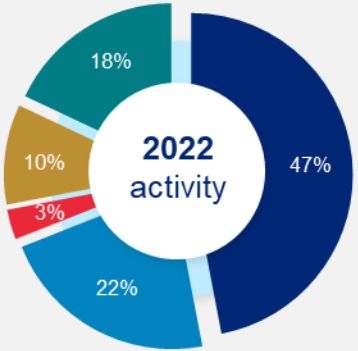
BESIX Group Figures **2018-2022**
(in mio EUR)



REVENUES BY REGION (2022)



REVENUES BY AREAS OF ACTIVITY (2022)



BESIX GROUP COMMITMENT

Excel in creating sustainable solutions for a better world

As BESIX Group we develop multiple services **to create value for our clients,** whilst incorporating the evolving expectations of the end users and building on **strong partnerships** with all stakeholders

- Unity
- Passion
- Co-creation
- Respect
- Excellence

- Leveraging on our **customer centricity**
- Developing a « **one-stop-shop** » solution
- Being a leader in open innovation
- Promoting **openness towards** new ventures & activities for business
- Promotion a **great place to work**
- Synergizing **our ways of working**

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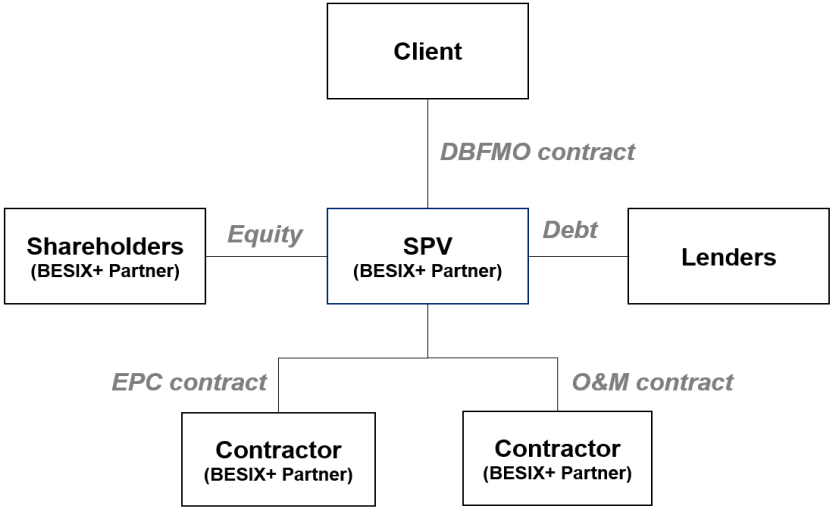
BESIX GROUP DIVERSIFICATION

From a constructor to an energy investor

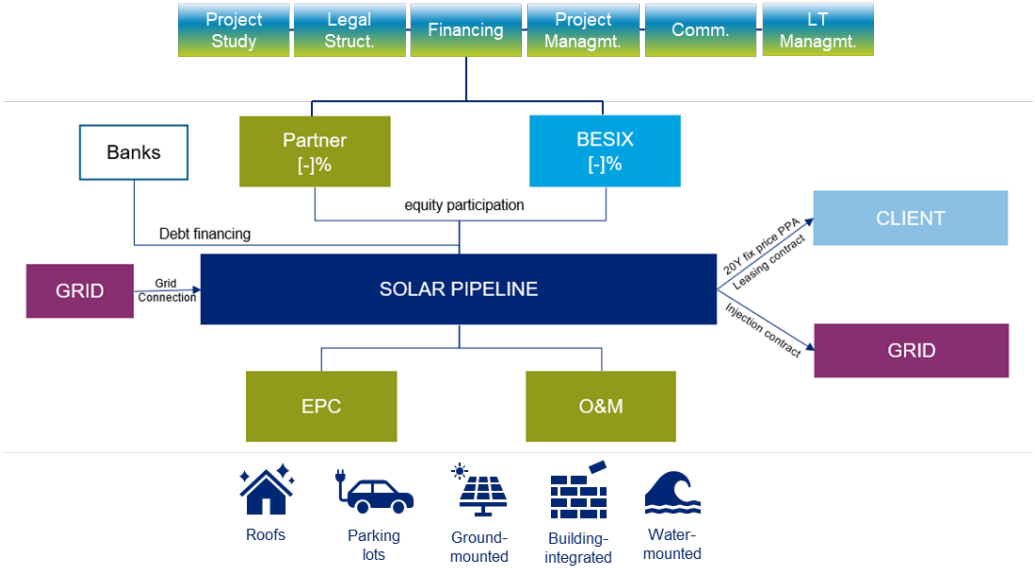
FOSTER Plant, Ghent: The purpose of the plant, to be built in port of Ghent, is to process the biomass left over after the treatment of domestic wastewater and the recovery of phosphorus and energy.

Dubai, the world's largest waste-to-energy plant: The facility in Warsan can generate 220 MWh of renewable energy, which can power 135,000 residential units (5000T MSW/day)



BESIX GROUP DIVERSIFICATION

BESIX as solar investor – Third Party financing



WHAT IS IN FOR THE CLIENT ?

- NO UPFRONT INVESTMENT
- ALL- IN SOLUTION – NO RISK
- ALIGNMENT OF INTEREST
- LT COST PREDICTABILITY
- COMPETITIVE OFFER
- FLEXIBILITY

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BESIX as solar investor

The financing structure

Third-party financing of solar energy primarily occurs through **two models: power purchase agreements (PPAs) and solar leases**.

In both models, a solar company installs a solar system on the customer's property, often with no upfront costs, and is responsible for system upkeep for the entire duration of the contract (10,15,20 years)

- **In the lease model (pay as produced)**, a customer signs a contract with the developer and pays for the use of a solar system over a specified period of time. This is a fixed monthly fee that is not directly based on the amount of on-site generation
- **In the PPA model (pay as consumed)**, a customer agrees to purchase all the energy produced and auto-consumed onsite. The developer sells the power generated to the customer at a fixed rate, typically lower than the local utility

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Farmers sharing with families

- Project development, execution and fulfilment for solar rooftops on European farms.
- Growing project portfolio in Walloon Region, constructions starting Q4 2023.
- Low cost energy at the farm
  - covering +50% of energy for existing activity.
  - Attracting new activities at the farm, including food processing.
- Project Execution and fulfilment

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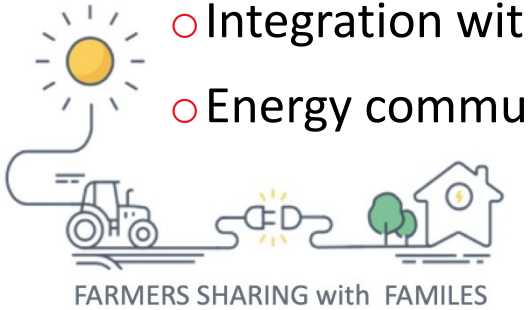
Development, execution and fulfilment

- Project sourcing
- Development
- Finance
- Engineering, procurement and construction
- Operations and maintenance
- Energy management, brokerage and trading
- Integration with supply
- Energy communities



PURPOSE

To promote farmers
as the preferred local energy hub
for their local community

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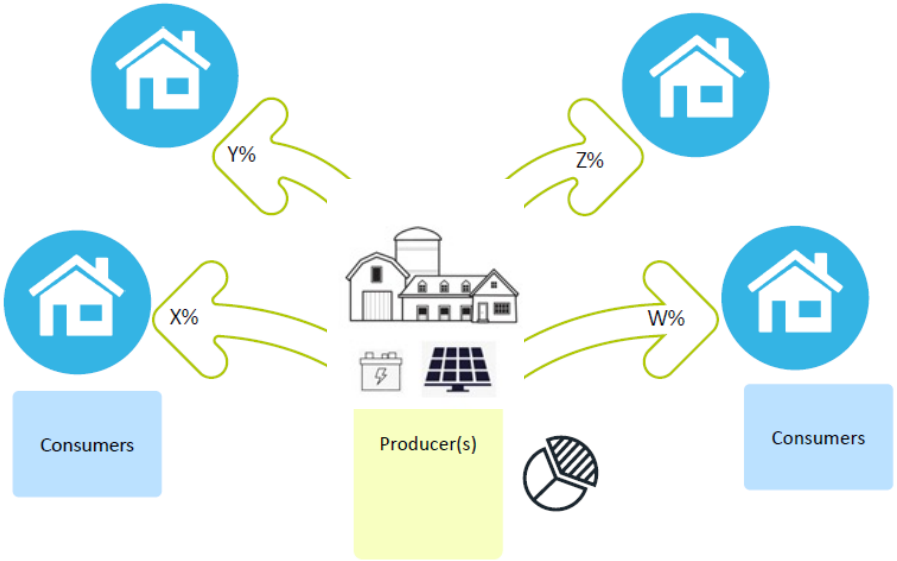
2 THE PROJECT

FARM-e

Project Description – introduction to energy sharing



Description: The main idea is to install solar panels on farms roofs in Wallonia to generate green electricity that can be shared with households and SMEs

- on-site needs

- community needs

- storage

- surplus injection

Keys elements:

- Farmers only have 20% self-consumption leaving 80% of production available to the local market.

- 13 000 farms in Wallonia

- 30 % have sufficient roof surface to install PV. The potential only in Wallonia could reach 1170MWp i.e 1GWh/year

EU Directive "marché" 2019/944 et la directive "renouvelable" 2018/2001
transposées en droit wallon par le décret adopté par le Parlement wallon le 5 mai 2022

FARM-e

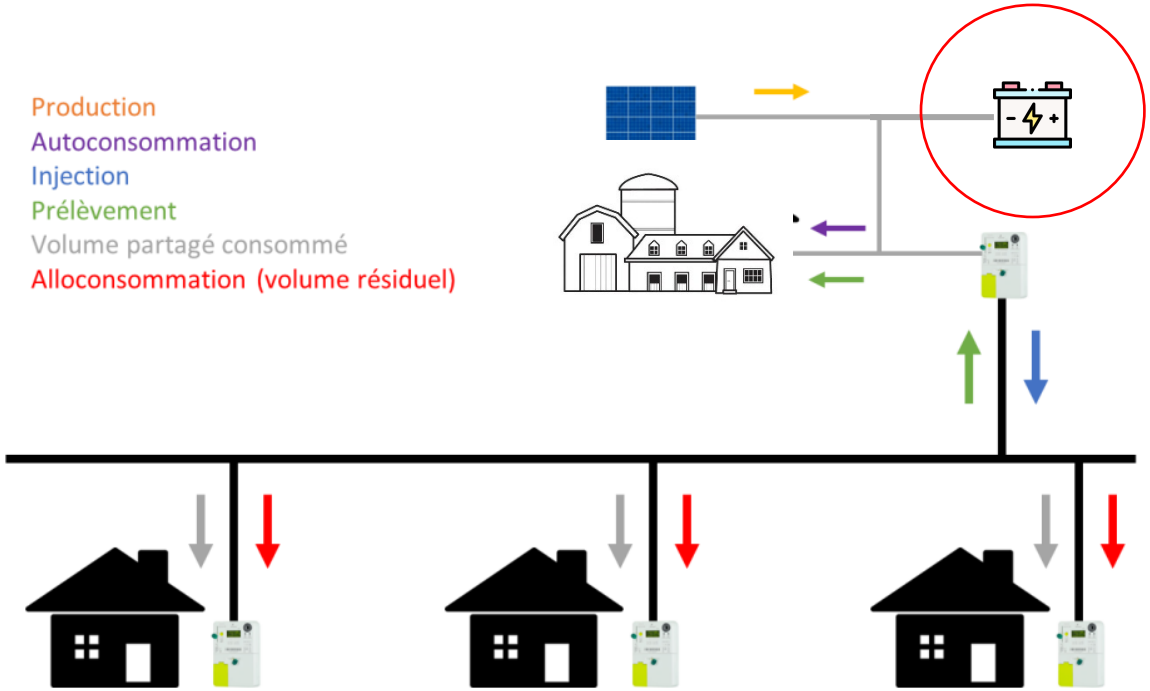
Project Objectives

- Increasing **renewable electricity production** in Wallonia
- Reducing and stabilize the **electricity costs** for the farmers. The total expenses of the Walloon farms are higher than its revenues mainly due to high opex.
  - Electricity price only linked to the cost of the equipment itself not to the market
  - No more distribution and transport costs for self consumed electricity
- **Optimizing the sharing** of the produced electricity within the community (company, local building…)

- **Optimal setting of the project**
  - No specific permit requirements for PV on roofs
  - No environmental concerns (Agri-PV is highly controversial today)
  - No loss of revenues from the primary activity of the farmers
  - Easily duplicable in Wallonia, Flanders, EU

FARM-e

How would this work concretely ?



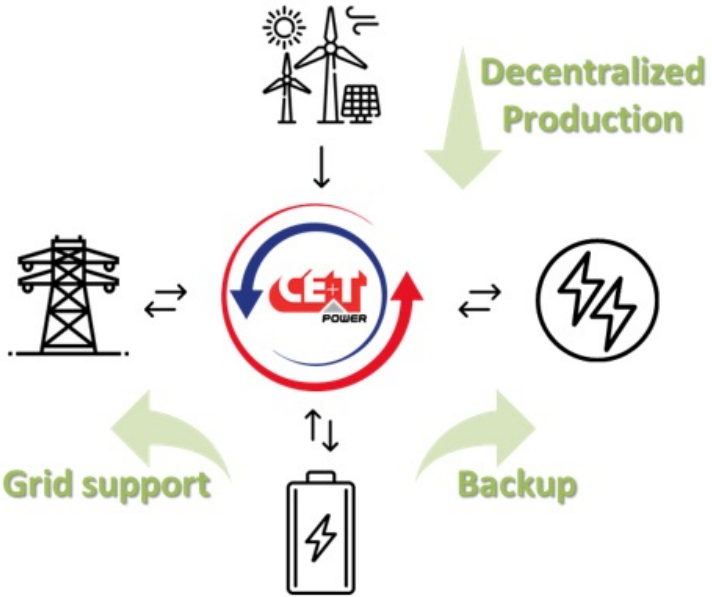
Many energy sharing projects are currently under development in Belgium, but we added a storage component to ours.

The idea is to define through the usage of battery, an optimal business case that can enable the deployment of storage equipment in parallel with renewables.

The project is SMART using EMS as well.

FARM-e

CE+T Power as project enabler (hardware)



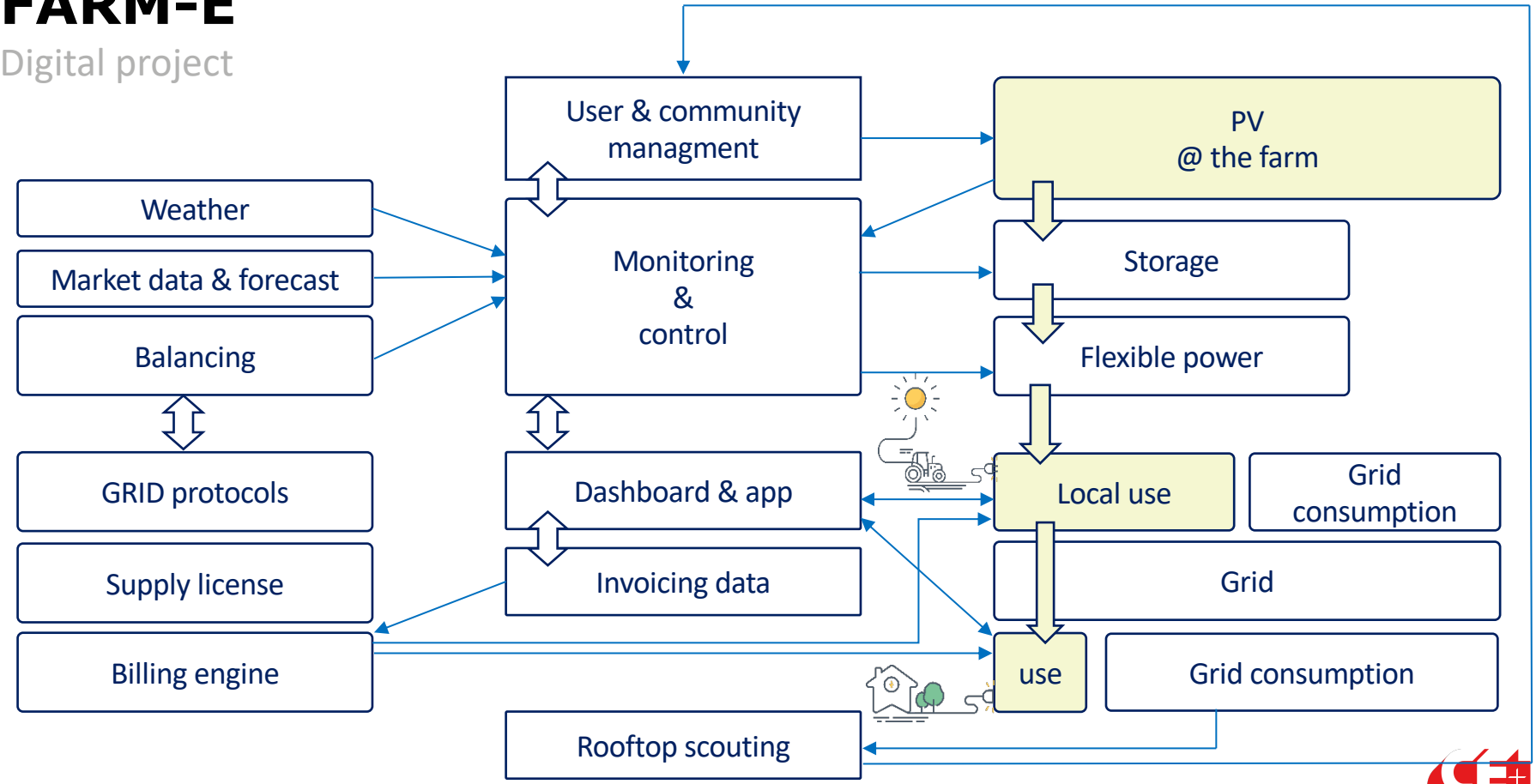
In FARM-e, CE+T hardware, Hercules & Sierra converters are the project enabler that will dispatch the energy in all relevant directions with AI pilot.

The CE+T solution will provide the following services:

- Collect data from meters and devices to monitor electricity usage;
- Shifting and reducing electricity demand during peak hours or low renewable generation;
- Participating in demand response programs to capture incentives for flexible consumption
- Use battery to store excess of electricity and supply it back to the grid
- Maximize self-consumption and foster virtuous behaviors

FARM-E

Digital project



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QUESTIONS ?

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THANK YOU

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