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**Renaissance**

## Contacts

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## Renewable integration and sustainability in energy communities



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## Overview

Renaissance project is an Innovation Action supporting clean production and shared distribution of energy in local communities. It aims to deliver a community-driven, scalable and replicable approach to implement new business models and technologies in the energy market.

## Consortium



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## CONTEXT

Typically electricity travels from the plant to its final destination for kilometers, resulting in a average energy loss of 12%. Such a distribution grid contributes significantly to greenhouse gas emissions, being inherently inefficient. Technologic solutions for Local Energy Communities already exist and new business models are emerging, but there is a lack of consumer-centric solutions.

The key challenge of RENAISSANCE is to cross the chasm from early adopters to early majority.

## PILOT SITES

In order to validate a suite of innovative tools, their application will be demonstrated in real-life pilots in Belgium, Greece, Spain and the Netherlands.

Each site represents different end-user groups, integrates different combination of energy vectors and faces diverse challenges when it comes to the design of local energy systems.

## CONCEPT

Renaissance project will develop a comprehensive benchmarking model to significantly improve the uptake of local integrated energy grids, likely reducing consumer prices by at least 10-15%.

## OBJECTIVES

To deliver a proven community-driven approach that is scalable and replicable globally, RENAISSANCE will:

Bring to the market a set of tools for clean integrated energy systems in any local environment.

Allow dynamic mapping of energy vectors and associated financial values.

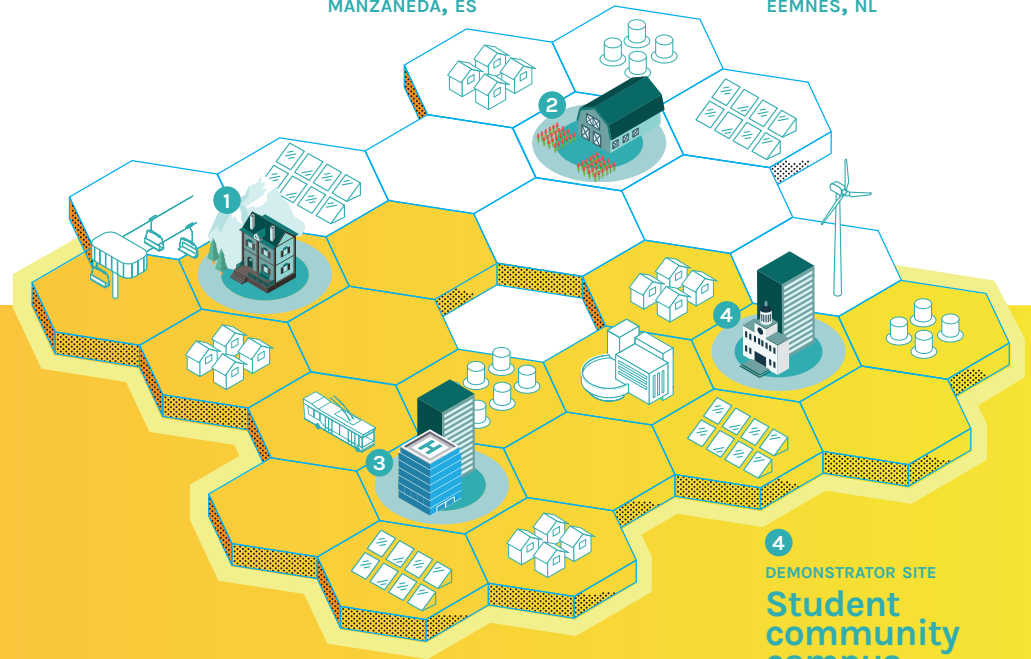
Identify new business models to activate a critical mass of local energy stakeholders.

1

DEMONSTRATOR SITE  
**Ski village resort**  
MANZANEDA, ES

2

DEMONSTRATOR SITE  
**Suburban municipality**  
EEMNES, NL



3

DEMONSTRATOR SITE  
**Health university campus**  
BRUSSELS, BE

4

DEMONSTRATOR SITE  
**Student community campus**  
KIMMERIA, EL

Thanks to the Local Levelised Cost of Energy (LLCOE) indicator, comparison of smart grids with current centralised energy systems becomes possible.

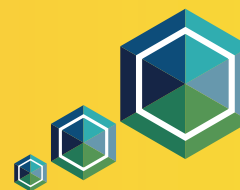
The combination of novel micro-grid design and management tools with existing energy generation and storage technologies allows the identification of business cases and subsequent operational solutions that maximise value capturing and energy delivery for end-users.

## Renaissance features



### Interoperability

A platform based on a secure, interoperable and scalable blockchain architecture will be developed to interconnect demonstrators.



### Scalability

New business models will be identified to support the design of customised smart contracts, then validated for scalability in the four different European pilot sites.



### Replicability

Virtual demonstrators in Eastern Europe, India, China, United Kingdom, USA will demonstrate the replicability of solutions in any type of local energy system.