SUSTAINABLE PLACES

Energy Communities in Practice: The What's and the How's Workshop

Day 2 | Wednesday 28th October | 14.00 - 17.00

MUSE GRIDS / Alessandra Cuneo

MERLON MUSE GRIDS IElectrix Compile

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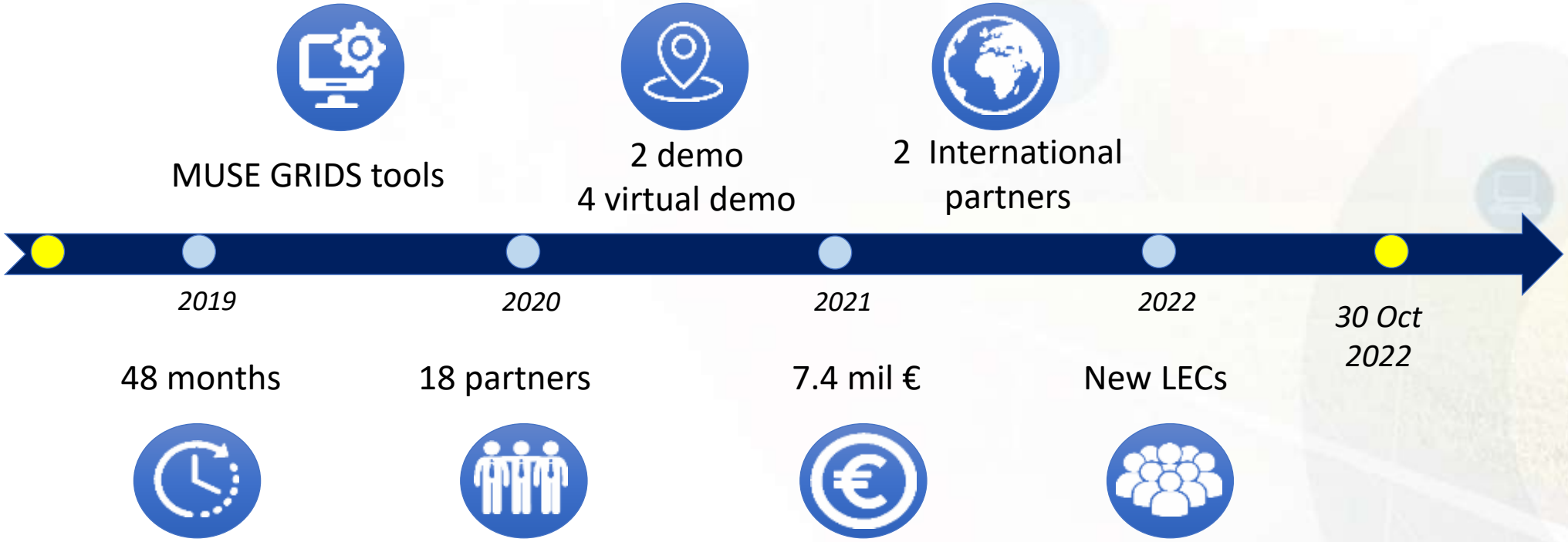
Project in a nutshell



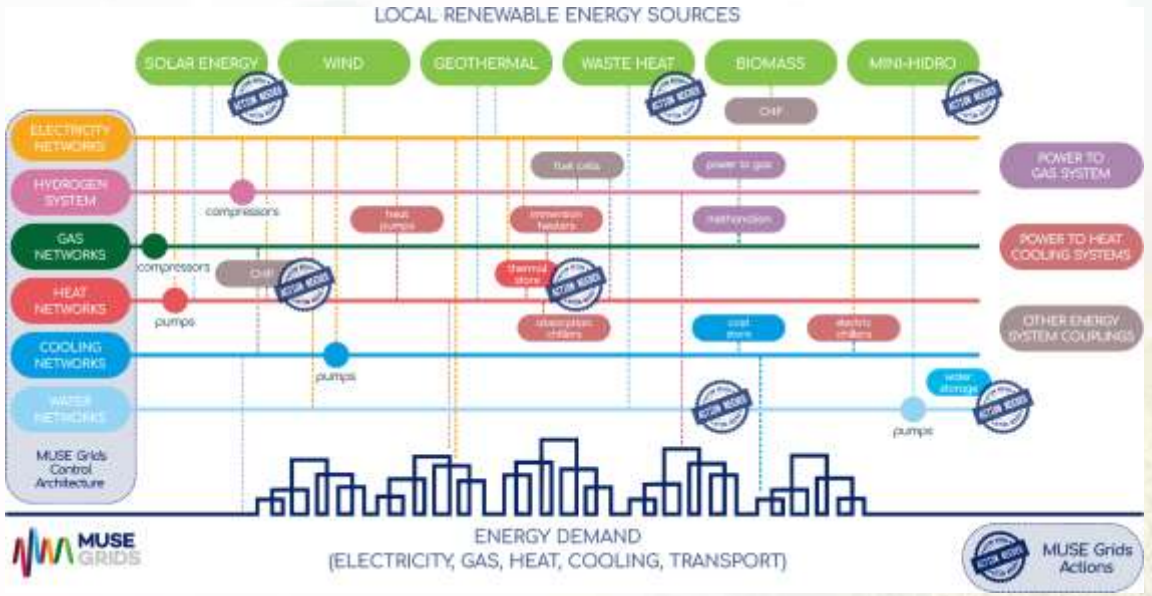
Project Objectives

Demonstrate in two **INSPIRING DEMOSITES** a set of both technological and non-technological solutions towards local energy independency via the promotion of

SMART ENERGY SYSTEM

Interaction and interdependencies between energy supply networks

Creation of Local Energy Communities

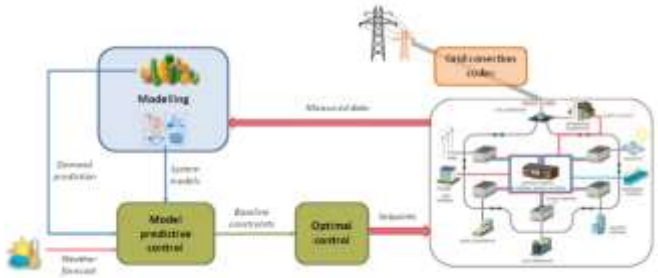


MUSE Grids aims to be a lighthouse/ inspiration project for EU

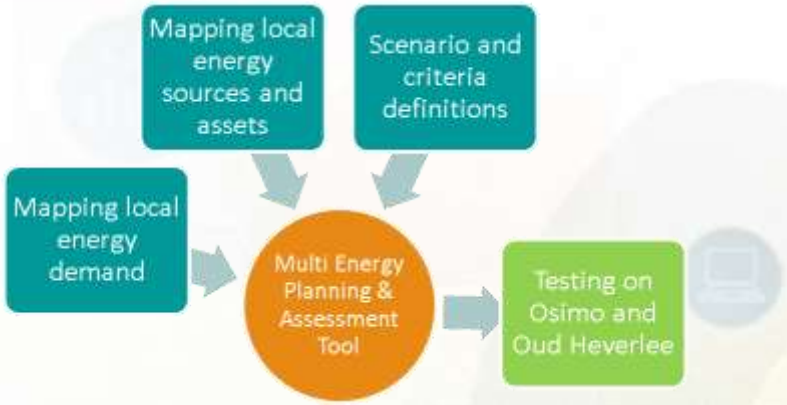
Project Solution and Technologies for Energy Communities

SUSTAINABLE PLACES

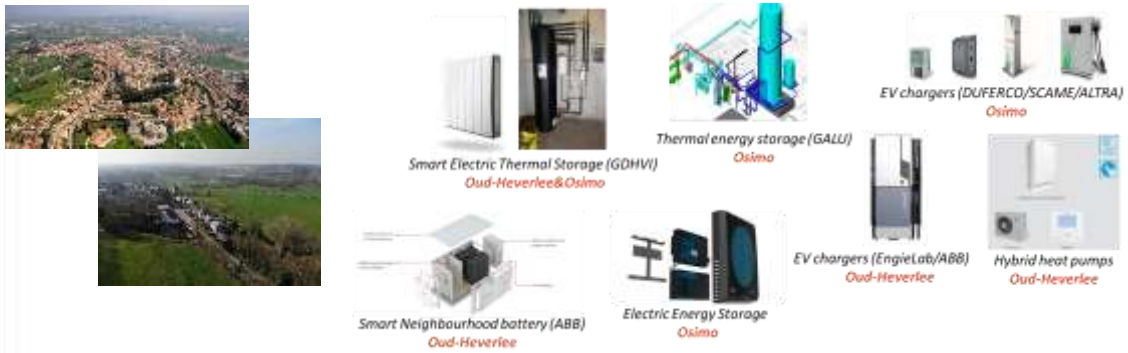
PILLAR 1: OPTIMIZE AND AGGREGATE ENERGY GRID MANAGEMENT SYSTEMS IN A MULTI ENERGY DSM



PILLAR 2: MULTI ENERGY PLANNING FOR EU CITIES



PILLAR 3: KPI DRIVEN DEMONSTRATION AND REPLICATION



PILLAR 4: ENGAGEMENT OF END USER IN POLYGENERATIVE ENERGY GRIDS AND CREATION OF ENERGY COMMUNITIES

bridge HORIZON 2020

Project Pilot Sites

SUSTAINABLE PLACES

Real Demonstration

Osimo (Italy)

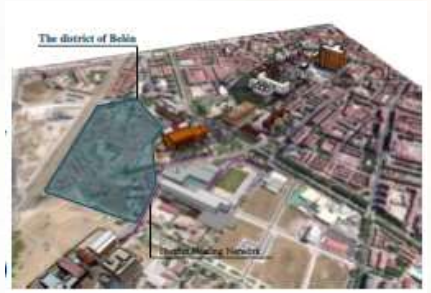
A municipal microgrid in a historical town on a top of a hill with a DHN, a smart water pumping system with a large PV presence aiming to optimize supply management making it more reliable thanks to EV

Oud-Heverlee (Belgium)

A rural area with houses often equipped with RES generators where to further promote flexibility assets and the engagement of local energy communities moving to the effective integration of an enlarged local energy community

Virtual Demonstration

District of Belen, Valladolid



San Cebriàn de Campos

Eilat

Sundarbans, Bali Island

Key expected outcomes

- Each demonstrator aims to demonstrate **stable and secure grid operation** in the context of the implementation of flexibility assets
- Each of the demonstrators is bringing a **specific set of challenges, technology options and most importantly, energy market conditions**.
- Cross-cutting activities among the demo are devoted to **solve common technical, organizational, legal, regulatory and market-related issues** as well as to evaluate the solutions from the economic and business points of view.

Osimo (Italy)

Energy Asset	CURRENT SITUATION	MUSE GRIDS Target
Heating and DHW demand	Gas : 35,649 final Users – 45502000 m^3 gas	-25% of NG consumption for H&C, DHW
District Heating network	1,250 users; 19,529 $MWh_{,th}$ yearly production 4,352 $MWh_{,el}$ for auxiliaries	
Electricity consumption	30,216 users;: 255,908.00 MWh	- 60% of electricity from National Grid
CO_2 due to ASTEA production Assets	7084 t/yr	-25 % of local CO_2 thanks to electro-mobility, reduction of gas consumption

Oud-Heverlee (Belgium)

Energy Asset	CURRENT SITUATION	MUSE GRIDS Target
Heating and DHW demand	724 115 kWh/year	- 25 % of primary energy consumption
Electricity consumption	225 000 kWh/year	- 60% of electricity purchased from National Grid
CO_2 due to heating and DHW	156, 409 ton $CO_{2,eq}$	-25 % of local CO_2 thanks to electro-mobility, reduction of gas consumption
CO_2 due to electricity	34.5 ton $CO_{2,eq}$	

Key Challenges and Lessons Learnt

- Complicated interactions and interdependencies between energy supply networks
- Integration of multiple energy supply networks would result in a more complex energy system to manage and operate
- Regulation aspects mainly related to V2G and available standards
- Engagement of end-users, especially during COVID-19
- Business models

Workshop Moderator

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