

OPEN4CEC

SERVICE-ORIENTED OPEN PLATFORM FOR CITIZEN ENERGY COMMUNITIES (CEC) – A COLLABORATIVE PLATFORM

[HTTP://OPEN4CEC.ASE.RO](http://open4cec.ase.ro)

OBJECTIVE

The main objective is to create an **open access, multi-layered, flexible and collaborative platform (OPEN4CEC)** that integrates models developed as microservices to support digital transition towards a sustainable electricity consumption.

The target users of OPEN4CEC are the Citizen Energy Communities (CEC) and its members: urban consumers and prosumers, administrative buildings, local business entities, municipalities, storage facilities, EV charging stations distributed generation and storage units, aggregators.

SCIENTIFIC APPROACH

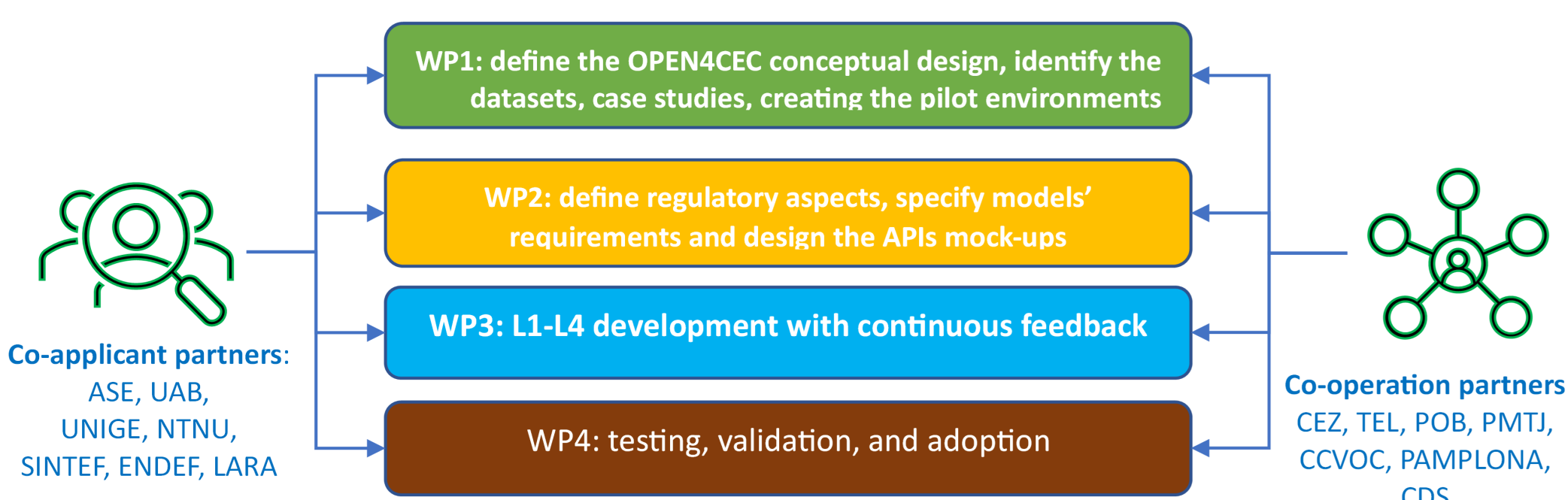
For modularity and scalability, the following layers are envisioned to be included in OPEN4CEC:

- **Layer1 - Awareness, Acceptance & Adoption;**
- **Layer2 - Load Control, Optimization & Analytics;**
- **Layer3 - Predictive & Proactive for Distributed Generation & Storage;**
- **Layer4 - Market trading & Business models for CEC.**

TECHNICAL APPROACH

For developing these layers, we propose a **Microservice Reference Architecture (MRA)** with **open access** to provide a **living platform** that will be continuously improved, extended and scaled to support CEC.

MRA will consist of data acquisition and integration patterns, data storage and processing patterns, communication, API Gateway, cybersecurity, composition patterns for integration, self-registration and communication between microservices.



COORDINATOR

ASE - Academia de Studii Economice din Bucuresti, Romania
PhD. Simona-Vasilica OPREA

PARTNERS

University Partners

UAB - Universitat Autònoma de Barcelona, Spain
NTNU - Norges Teknisk-Naturvitenskapelige Universitet, Norway
UNIGE - Università Degli Studi di Genova, Italy

Business partners

LARA - Lara Business Energy SRL, Romania
ENDEF - Endef Engineering SL, Zaragoza, Spain

Grid Operators

CEZ - CEZ Romania SA, Romania
TEL - CNTEE Transelectrica SA, Romania

Research Institutes

SINTEF - SINTEF Energi AS, Norway

Municipalities

Consell Comarcal Del Vallès Oriental, Catalunya, Spain
Primaria Municipiului Targu Jiu, Romania
Primaria Municipiului Oras Bacoi, Romania
Comune di Savona, Savona, Italy
Pamplona, Navarra, Spain