

ClimateFlex Assets

Climate-energy eco-infrastructures of care for urban-rural habitats and regional flexibility

CETPartnership Joint Call 2026 - Partner Search Concept Note



One-line proposition: ClimateFlex Assets transforms passive urban, coastal and peri-urban spaces into active climate-energy nodes for renewable generation, storage, flexibility, clean mobility, comfort and biodiversity support.

Project idea

ClimateFlex Assets proposes to develop, demonstrate and validate modular ecosystems of distributed climate-energy assets that transform passive urban, coastal and peri-urban spaces into active climate assets and energy nodes for local renewable generation and circulation, stationary storage, flexibility, clean mobility, climate protection and comfort and spatial resilience.

The project is based on a family of modular systems - Solar Patios, Solar Gardens, e-Agoras, EV Oasis nodes, Solar Forests and solar landscapes - that combine clean energy generation, battery storage, smart lighting, e-bike/EV charging, local energy exchange, thermal comfort services, water/vegetation strategies and digital orchestration.

Why it matters

The clean energy transition is not only a technical challenge of panels, batteries, grids or charging points. It is also a spatial, civic and urban challenge. In this project, energy becomes urbanism: renewable energy infrastructure becomes a visible, useful and socially accepted layer of everyday life.

Core innovation

A modular asset class that integrates distributed renewable generation, stationary storage, demand-side flexibility, clean mobility, climate adaptation and public-space services. An eco-infrastructure of care for people, biodiversity and shared urban habitats.

Modular system

NODE	CLUSTER	NETWORK
Solar Patio / Oasis Single climate-energy unit for climate protection, PV generation, charging, lighting and comfort.	Solar Garden / e-Agora A group of nodes that balances surplus and deficit between nearby users and services.	Solar Forest / Landscape / EV oasis A corridor or district-scale network linked to mobility, public lighting, local premises and flexibility services.

Digital layer - Solar Node OS

Each node can generate, store, consume, shift and share clean energy locally. At cluster scale, the system can balance surplus and deficit between nearby users such as restaurants, markets, parks, civic facilities, mobility stops, waterfront premises and local businesses.

- Monitor PV generation, battery charging/discharging and local self-consumption.
- Optimise EV/e-bike charging, smart lighting, cooling demand and flexibility potential.
- Track comfort indicators, local energy exchange and climate-resilience co-benefits.

Relevance to CETPartnership Joint Call 2026

CM2026-08 - Integrated Regional Energy Systems Relevant because the project links distributed renewable generation, storage, mobility charging, demand-side flexibility, municipalities, local operators, energy communities and urban-rural habitats at district, waterfront or regional scale.	CM2026-10 - Clean Energy Integration in the Built Environment Relevant when framed as a building-plus-urban-habitat interface: terraces, markets, civic centres, waterfront premises, public spaces and adjacent buildings become active and flexible parts of the clean energy system.
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Potential demonstration settings

- Climate-adapted terraces and outdoor workspaces connected to nearby premises.
- Waterfront Solar Gardens with PV, storage, lighting, charging and comfort services.
- Civic climate refugia in plazas, parks, campuses or public facilities.
- Markets or food-energy hubs supporting refrigeration, lighting and local energy services.
- EV Oasis / mobility nodes integrating e-bike, EV and solar water transport charging.
- Small Solar Forests linked to public lighting, playgrounds, adjacent premises and local flexibility services.

Expected results • Prototype and validate modular Solar Patio / Solar Garden / e-Agora / EV Oasis nodes. • Demonstrate local PV + storage + smart lighting + EV/e-bike charging + comfort services. • Develop and test Solar Node OS for monitoring, optimisation and flexibility control. • Measure renewable generation, self-consumption, storage, load shifting and flexibility potential.	Partners sought • Integrated regional energy systems and clean energy integration in the built environment. • Local flexibility, demand response, microgrids and distributed energy resources. • Stationary battery storage, EV/e-bike charging and solar water transport charging. • Digital energy management systems / EMS and Solar Node OS integration. • DSOs, energy communities, municipalities and local energy operators.
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- Measure adaptation co-benefits: shaded capacity, comfort-hours, cooling effect and outdoor-work protection.
- Define governance and business models: energy-as-a-service, flexibility-as-a-service, comfort-as-a-service, SPVs, energy communities or municipal partnerships.

- Universities, research centres, living labs, pilot-site owners, climate adaptation and urban resilience partners.

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