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AmBIENCe Project

Sustainable Places, October 2020

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Consortium

AmBIENCe project involves **eight partners** (research and commercial partners) from four countries.

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New Opportunity: Buildings will become more digital and smarter



Vision and Mission

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<u>VISION</u>: Reduced building emissions in the EU, as well as lower energy consumption, thanks to the application of **electrification combined with active control.**

- Electrification (of heating and hot water production) reduces emissions because compared to gas, electricity produces heat more efficiently and has a lower carbon intensity.
- The carbon intensity of electricity will continue to drop by more investments in wind and PV.
- The carbon intensity varies over the day, and the intra-day variability increases: emissions can be reduced by being smart and conscious about WHEN energy is consumed.



MISSION: Improve the economic attractiveness of building emission reduction measures by combining energy efficiency improvements with electrification and active control.

Active managed Buildings with Energy Performance Contracting



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GOALS: WHAT will we do?



Extend the Energy Performance Contracting concept to include Demand Response value streams, valorizing the flexibility that is available in Active Buildings*.



Make this Active Building EPC concept applicable to a broader range of buildings (incl. residential) and clusters of buildings.



Develop a tool that supports the forecast of the DR value stream in the EPC contracting phase, along with a matching M&V methodology for the operational phase.



Validate the concept, tool and M&V methodology through two pilots (real buildings, real ESCOs).



Engage with all relevant actors and stakeholder groups (from building managers to ESCOs, policy makers and financial institutions) to remove barriers and ensure applicability.

Active managed Buildings with Energy Performance Contracting

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Greenhouse gas emissions will be reduced by electrification and by moving electricity consumption to times when the carbon intensity is lowest. Energy cost savings will be achieved by shifting consumption to times when the cost is low, or by offering flex services.



Access to more – and distributed – flexibility from buildings can avoid or mitigate problems resulting from increased wind and solar energy and electrification.



Enriched EPC contracts, with higher value and applicable to a wider selection of buildings, will grow the ESCO business opportunity. There Server S

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Methodology

New Concept

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The AmBIENCe concept extends the traditional EPC concept in **3 dimensions**:





Extending energy performance guarantees related to energy efficiency to include the valorisation of flexibility through Demand Response (DR) services

Tailor EPCs to a broad scope of building types: residential, hospitals, education, offices, commerce, etc

Extending the scope of EPCs to groups/clusters of buildings under the concept of (local) energy communities.

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Workpackages and Timeline

AmBIENCe - Implementation



AmBIENCe project's objectives will be achieved by implementing the work organised in **7 different work packages**:



Timeline

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The project has a duration of **30 months**.

 2019)	2020		-0	2021	
Kick-off. Analysis of the framework for the active building EPC concept and business model	Development of the Active Building EPC concept, methodology and business model.	Operational phase: deployment and pilot's monitoring.		Scenario development & adoption of an Energy System Impact Calculation Active Control.	Publication of guidelines and recommendations on the enabling conditions to support the active EPC.
					Exploitation plan.
	Implementation of the concept in five pilot buildings.				

Pilots

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The AmBIENCe "proof of concept" is going to be developed and tested in two pilots, based in **Portugal and Belgium**.





Enablers and barriers for the Active Building EPC: Regulatory aspects

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The goal

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 The analysis of the current directives, policies and measures that are relevant for the Active Building EPC concept at EU level and across the Member States is the key to understand what are the **best practices and gaps** in the current regulatory framework that might have a **significant impact in the successful deployment of the Active Building EPC**



EPC/ESCO Status at MS level

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ESCO/EPC development status in the other EU countries

ESCO/EPC development status in the countries represented in the Consortium



Status of DR services offered by buildings at MS level and ambience



Status of explicit DR in the other EU countries

Status of explicit DR in the countries represented in the Consortium



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