

Energy flexible DYnamic building CErtification

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Horizon 2020
European Union funding
for Research & Innovation

THE EVOLUTION

EDYCE (Energy flexible DYnamic building Certification) is the natural evolution of the conventional Energy Performance Certification into real time optimization of building performance and comfort, by capturing the building's dynamic behaviour and at the same time providing transparent feedback, through an intuitive interface.

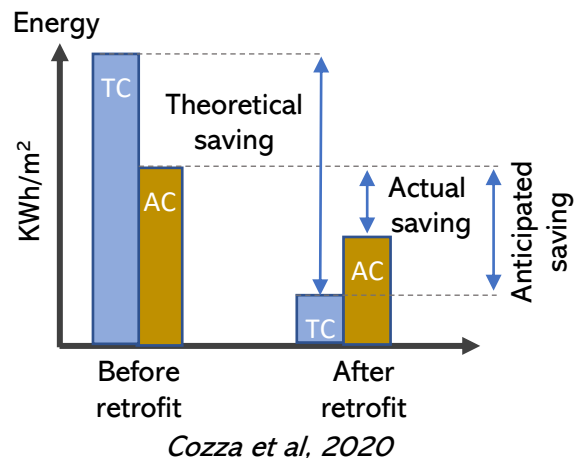
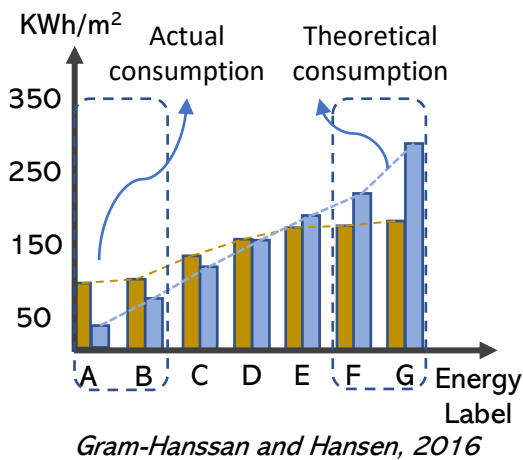
The most important incompetence of the existing steady-state energy labeling of buildings is to capture their dynamic and changing conditions. The current energy labeling methodologies result in high discrepancies with post occupancy behaviour - performance gap. This inaccuracy does not allow the building owner to make informed decisions on time, and restricts the potential of economical exploitation of the building.



E-DYCE will combine innovative approaches with established and widely available tools to create a methodology capable of implementing scalable and adaptable dynamic energy performance certification (DEPC)

EDYCE motivation

Our motivation is impacted by Performance gap phenomenon is partially connected with this aspect, reducing the ability in providing timely decisions and the economical exploitation of building retrofitting choices. The adoption of a steady-state approach is restricting the potential of several climate and FR technologies – especially in the cooling seasons – not allowing for a correct analysis of their potential and not reflecting building dynamics.



EDYCE consortium

 AALBORG UNIVERSITY



 NEOGRID TECHNOLOGIES APS



 EMTech GmbH



 Estia SA Estia

 OCEAN



 Politecnico di Torino



 Torre Pellice Municipality (TPM)



 ENEA



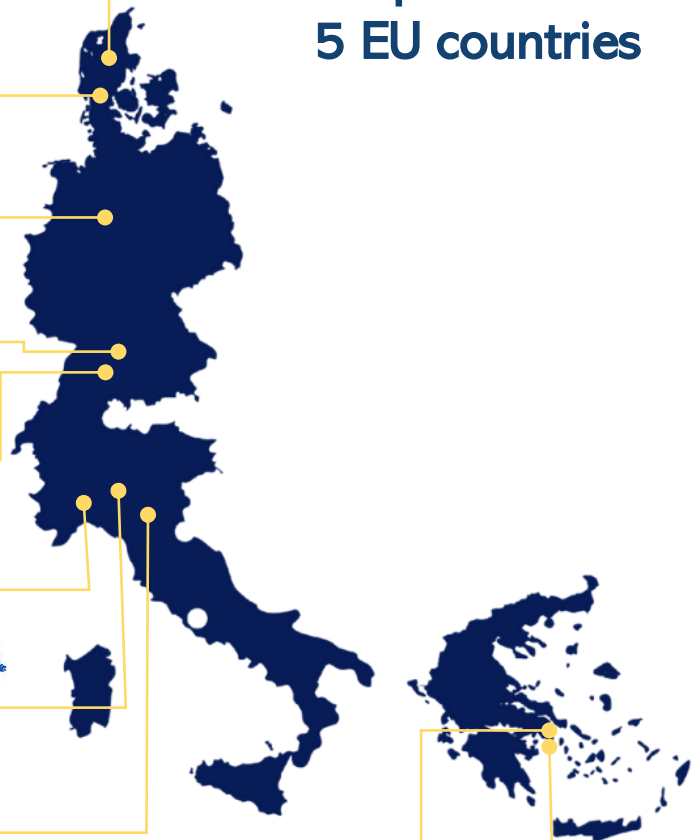
 CORE INNOVATION



 GEP



10 partners
5 EU countries



Our Vision

To provide an energy performance labeling methodology, that will be closer to building operation conditions, and will be able to defend its voluntary status, by the benefits provides.



Our Aim

E-DYCE is aligned with current EPBD and nZEB definitions and can be applied to any building of any typology, location or smartness level. It aims to generate substantial savings of one energy class, by guiding the user to unlock the potential of free-running operation of the building.

Strategic Objectives



SO1

To deliver a methodology for dynamic certification of buildings based on openly available resources and tools for technology and service providers, effectively creating an evolving, technology neutral ecosystem.



SO2

To generate substantial savings of 30kWh/m² (+1 energy class) in buildings certified through a dynamic scheme, benefiting owner, tenant and the service provider and thus incentivizing all three.



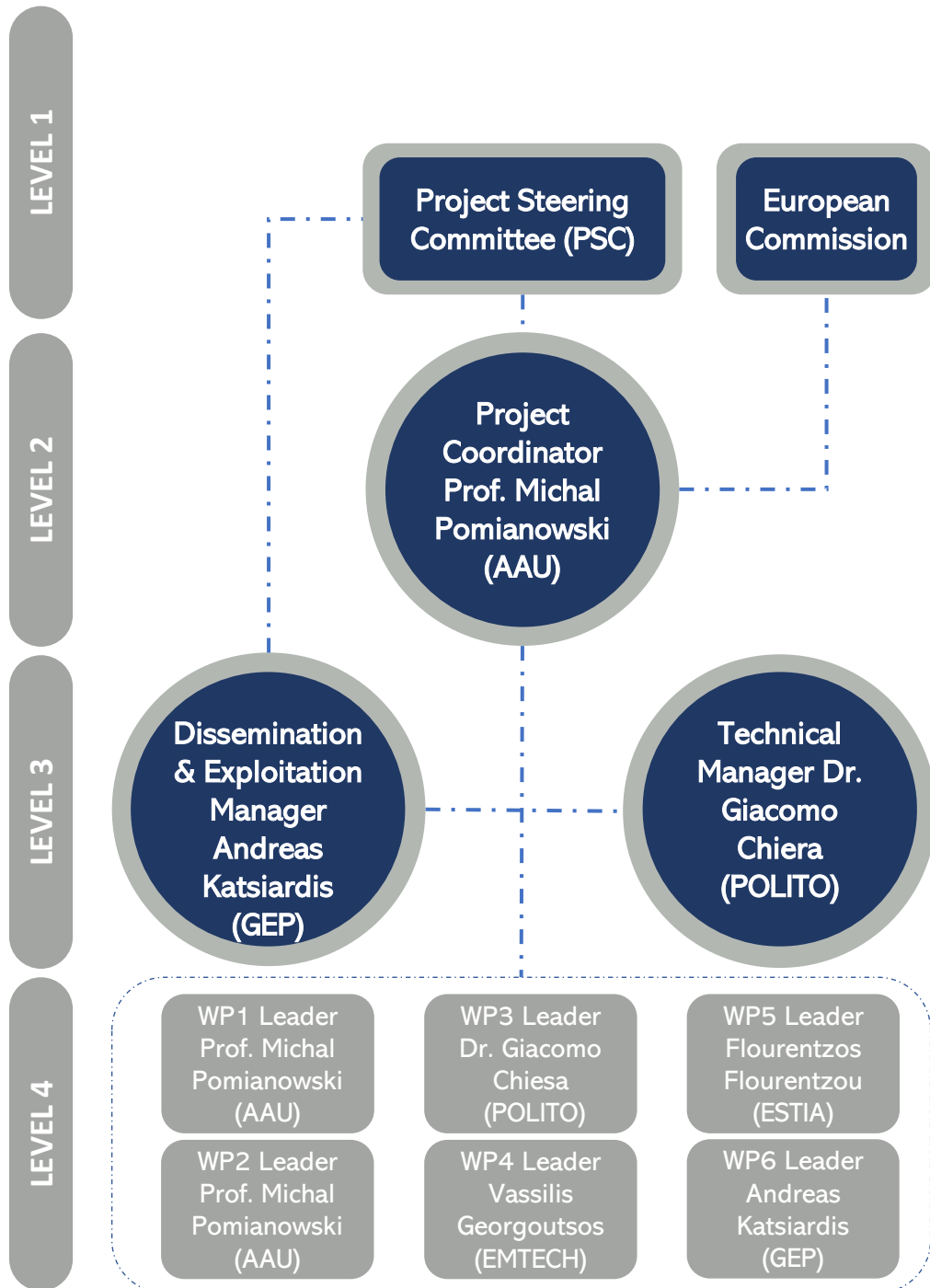
SO3

To leverage the savings generated and reinvest into energy efficient refurbishments and optimization, scaling up the number of buildings certified to the level that can provide policy makers with meaningful data.

Specific Objectives

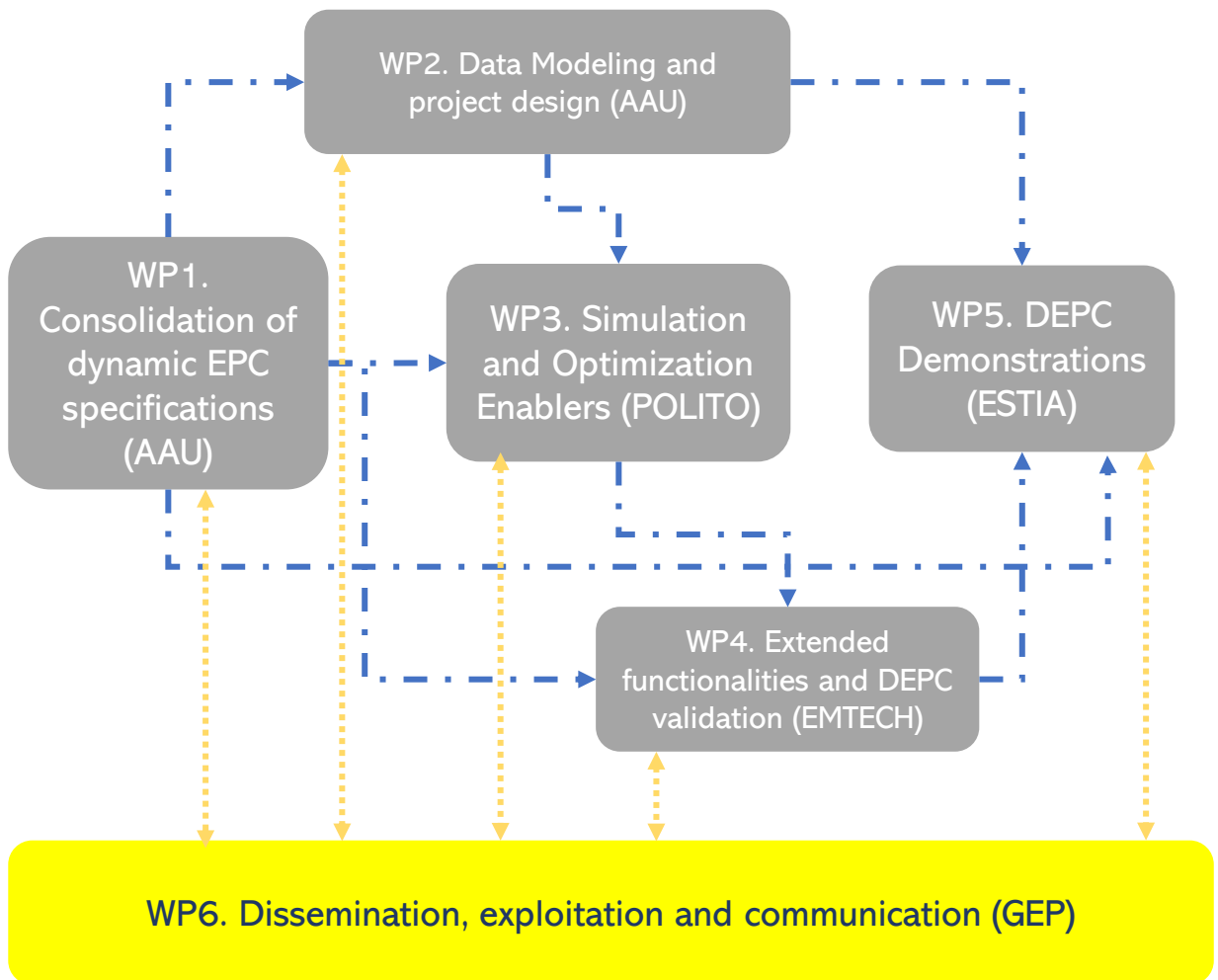


4 level organizational management structure

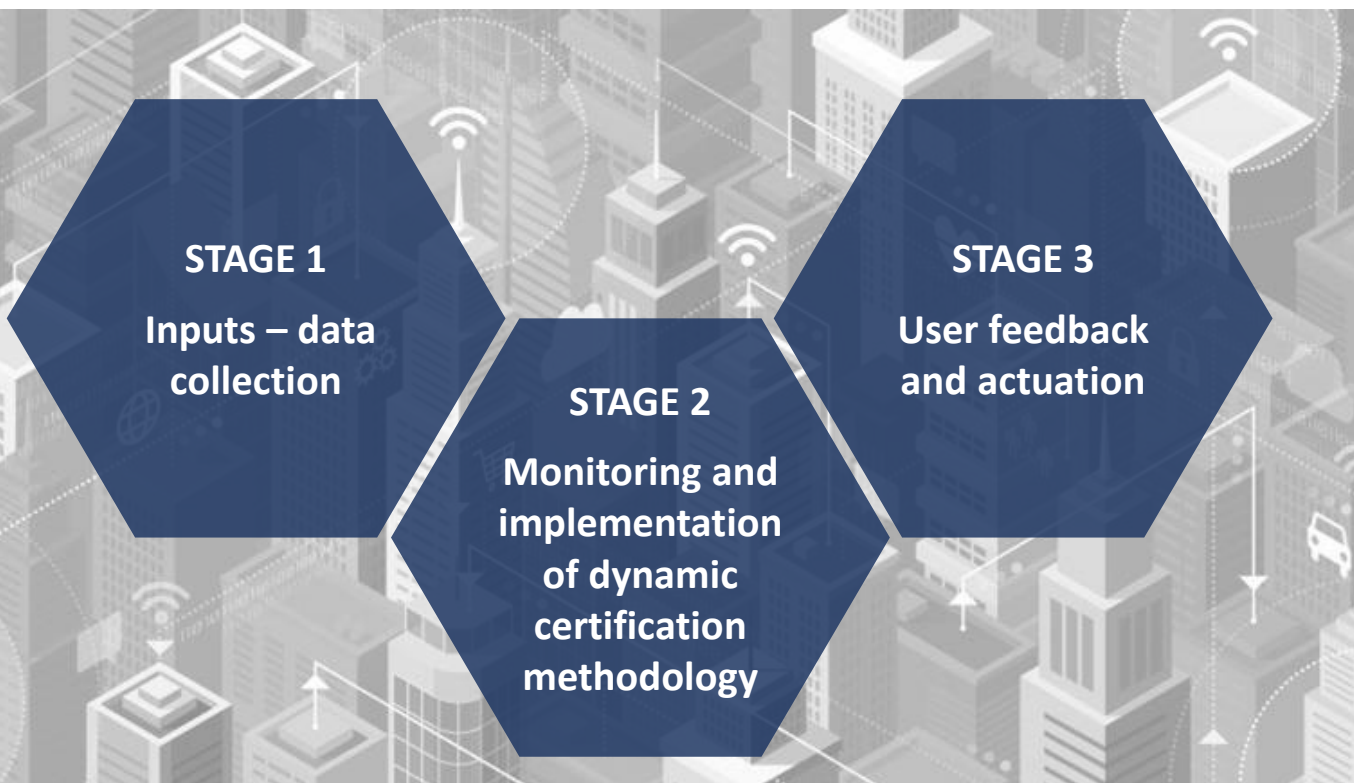
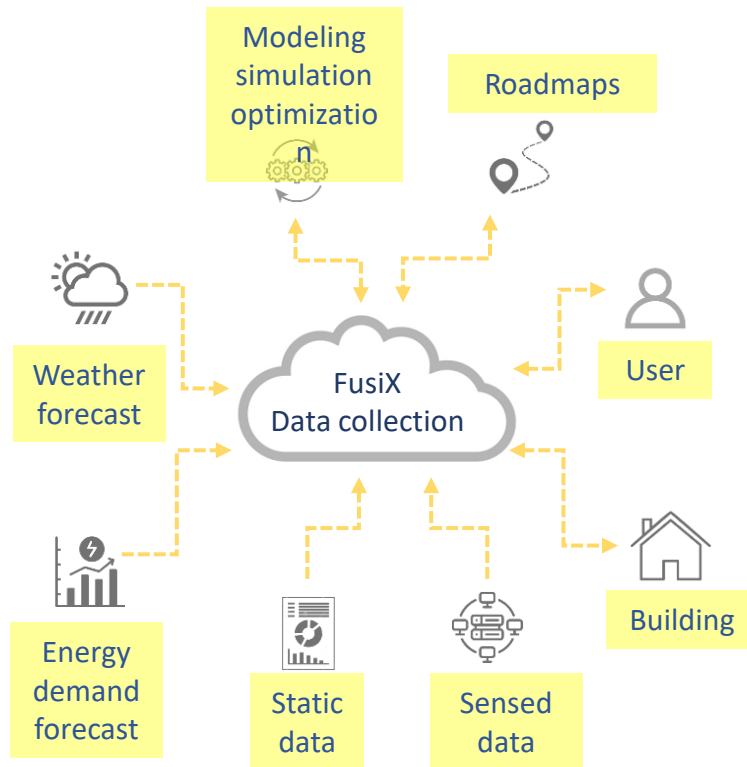


Pert chart of the E-DYCE project

WP7. Project management (AAU)

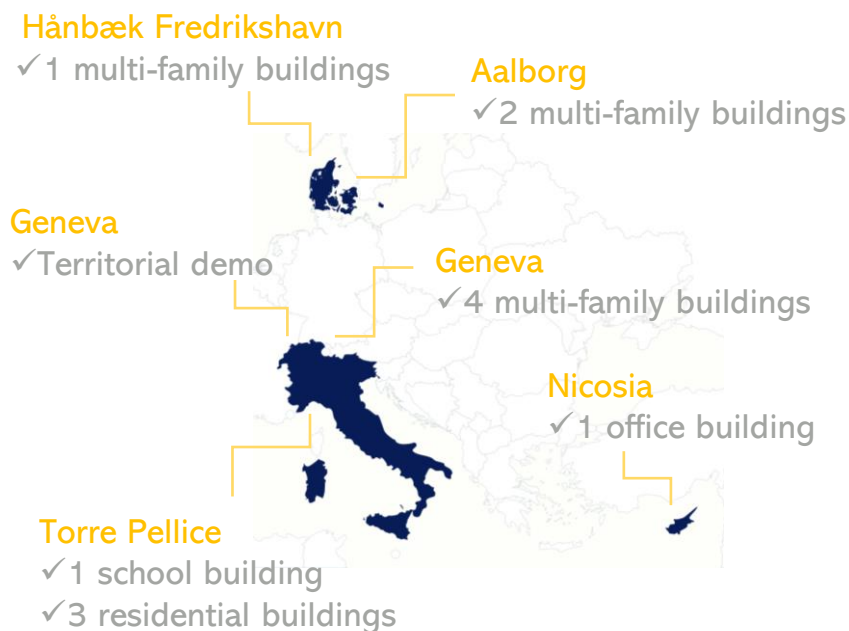


E-DYCE logic



E-DYCE pilots

The methodology of E-DYCE features two parallel and complementary approaches. On one hand, the methodology for the certification process will be defined, elaborated, reported and made openly available as technology neutral DEPC. In parallel, the certification process will be validated by applying DEPC in a number of building case studies across 4 countries and five locations.



- ❑ Geneva features an interesting mix of underperforming nZEB, old inefficient buildings and new construction.
- ❑ Torre Pellice is centred on public school buildings in view of the national plan for school refurbishment.
- ❑ Nicosia will exploit the free running potential of an underperforming nZEB in warm climate.
- ❑ Aalborg and Frederikshavn will scale up implementation to multi-apartment level.
- ❑ Geneva will be a region-wide collection of data for comparative assessments and DEPC evaluation.



E-DYCE key results



PREDYCE

Development of python driven simulation tool input (real weather, scenario of use) and output (aggregation, KPIs, plots)



DEPC protocol

Generation of results for tenants/professionals.



FusiX middleware

Data collection, modeling integration, feedback to users.



Renovation roadmaps

With focus on performance gap.



Forecasting

Different Functions



edyce.eu

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