



ETEAACHER

Empowering Energy Education

Gamified energy saving behaviour change in European buildings:

*Initial impacts from a web-based app
developed with its pilot users*

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Energy Evaluation Europe, Online, 15th -16th March 2021



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 768738

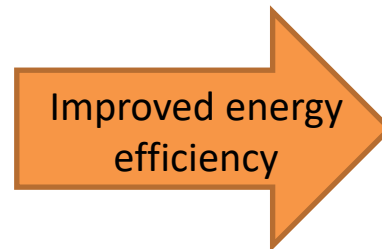


Imagine your workplace...

- ... and energy efficiency issues that might come up
 - Over-heating?
 - Lights left on?
- Would you install and use an App that helped to reduce these problems?
- Would it reduce energy use?



“The **characteristics** of a building, its **design**, its look and feel, and its **technical standards** not only influence our productivity, our well-being, our moods and our interactions with others, they also **define how much energy is consumed** in and by a building, and how much heating, ventilation and cooling energy is needed to create **pleasant environment.**” (BPIE, 2011)



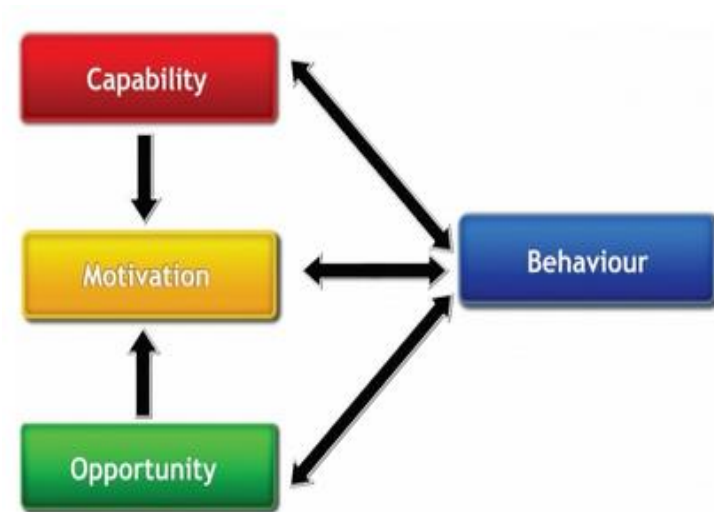
Improved comfort & wellbeing of occupants



Lower greenhouse gases






BPIE (2011). EUROPE'S BUILDINGS UNDER THE MICROSCOPE: A country-by-country review of the energy performance of buildings. ISBN: 9789491143014

- COM-B model
 - **Motivate**, via gamification
 - Enhance social **opportunity**, by connecting users to information and sharing
 - Ensure **Capability**, via promoting doable behaviours



Michie S, Atkins L, West R. (2014). *The Behaviour Change Wheel: A Guide to Designing Interventions*. London: Silverback

- Gamification example:
 - Energy Chickens “serious game” led to 13% energy use reduction

Level -2	Level -1	Baseline 0	Level +1	Level +2
				

Orland, B., Ram, N., Lang, D., Houser, K., Kling, N. and Coccia, M. (2014). Saving energy in an office environment: A serious game intervention. *Energy and Buildings*. 74. pp.43-52



eTEACHER

Empowering Energy Education

MISSION

Encourage and enable energy behaviour change of building users to save energy and optimise indoor environmental quality.

VISION

Carry out behaviour change interventions facilitated through a set of empower tools to drive informed user decisions.



eTEACHER IS DEMONSTRATED IN...



SPAIN
2 HEALTHCARE CENTRES
2 SCHOOLS
1 RESIDENTIAL BUILDING
1 OFFICE



UNITED KINGDOM
1 SCHOOL
1 OFFICE



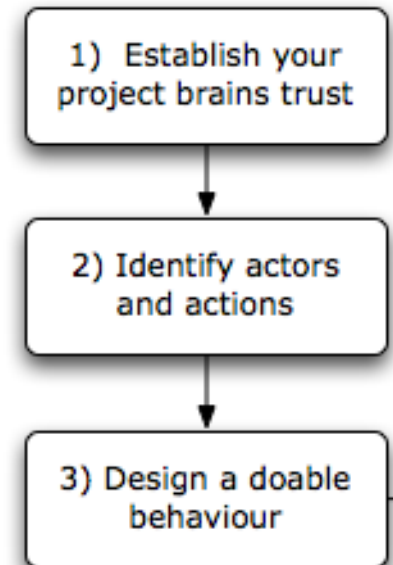
ROMANIA
4 RESIDENTIAL
BUILDINGS



IEECB&SC conference | 21-22 March 2018



- Projects designed by experts **frequently fail or under-perform** (Robinson, 2012)
 - Lack of buy-in from stakeholders
 - Lack of insight on the situation as it is
 - Lack of checking if intervention ideas could work
- User-centred design can address this
 - Initial meeting and three Feedback Forums to specify app
 - 112 and 119 participants respectively



Roll-out

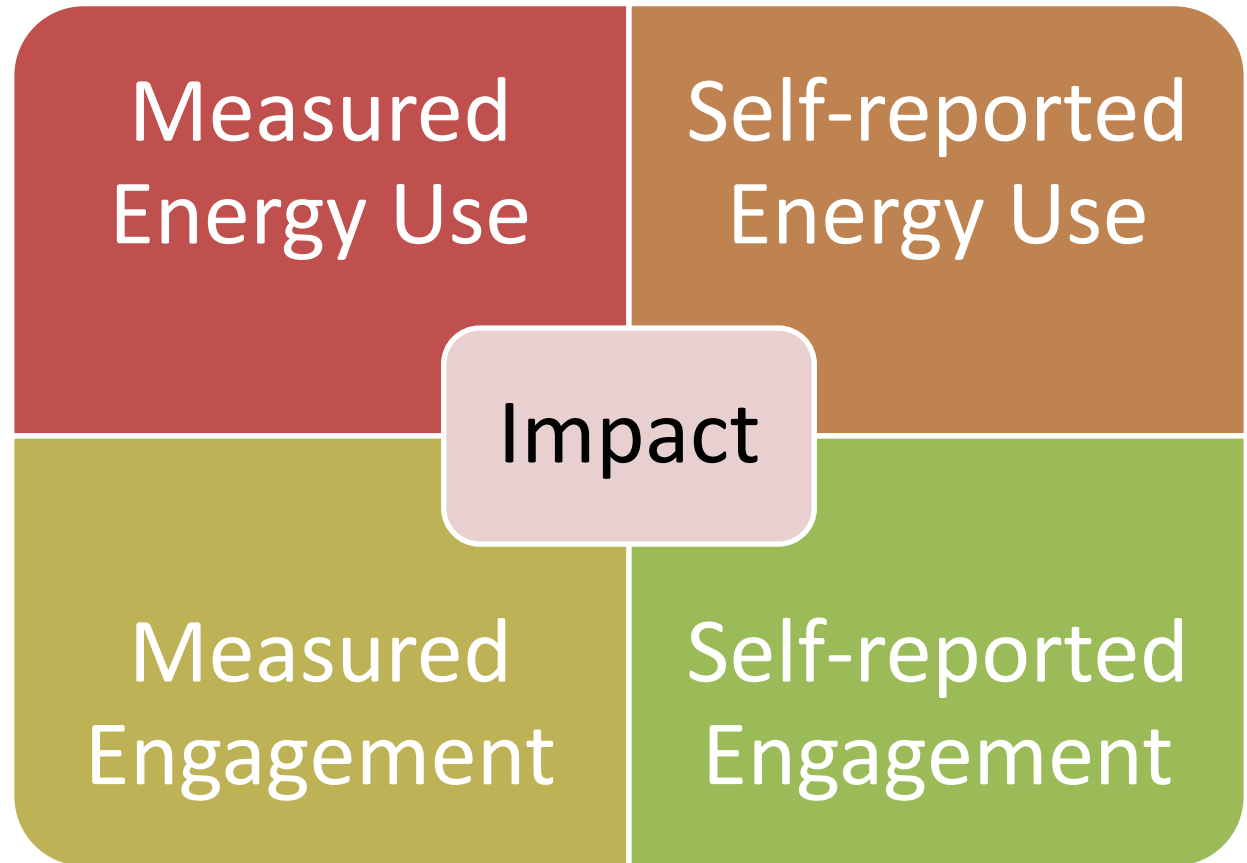
- Soft launch in early 2020
- Full launch October 2020
- Usage data: Oct 2020-Jan 2021

Early Evidence

- Logging app usage
- Logging energy use
- Interim survey (Dec'20 – Jan'21)

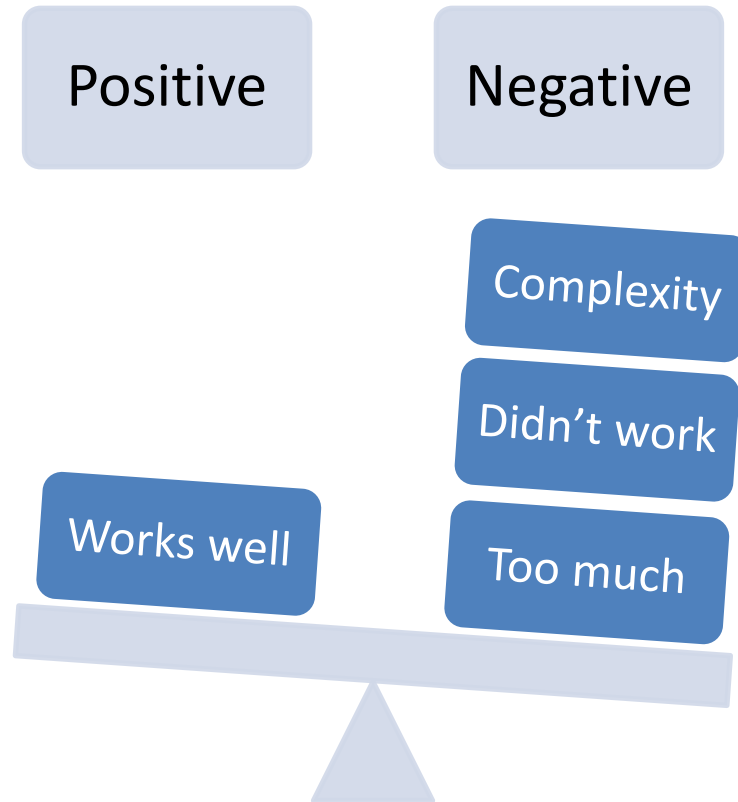
Results - Impact

- Energy
 - Disrupted by Covid-19
- Engagement
 - 49 users
 - 18 active
- Evaluation needs to draw and link all four aspects



Results - User Experience

- Set up problems
 - Account creation
 - Logging in
- Active users are positive
- Experience related to user role?



- Issues
 - Sense of project ownership
 - Priorities amidst pandemic
 - Installing monitoring
 - Technical
 - Privacy
- Evaluation in a changed context
 - Multiple complementary data sources
 - Self-reported and measured
 - Qualitative and Quantitative



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THANK YOU

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