

# Mobilization for energy renovation

## Innovative tools for the uptake of deep renovation of the existing building stock based on behavioural insights

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### PROBLEM STATEMENT



5 out of 10 houses in Flanders were built before 1970<sup>1</sup>

- In the context of climate change it is a priority to reduce the energy demand and shift to renewable sources of energy
- Flanders has a big potential of home renovation due to a high rate of home ownership (70%). The vast majority of Flemish acknowledge the importance of energy efficiency, 65.5% of dwellers considers it very important and 30.0% rather important<sup>1</sup>.
- The measures taken for the uptake of deep energy renovation have lower impact than expected due to various reasons, one being that these policies treat the dwellers as a **rational decision maker**.
- The Elaboration Likelihood Model by Cacioppo<sup>3</sup> stipulates two routes through which messages are processed: central processing (effortful deliberation) and peripheral (less conscious).
- The gap between intention and action has to be filled not only with information and sensitization campaigns that influence rational decision making.



1 out of 10 houses was renovated in the last 10 years<sup>2</sup>

### OBJECTIVES

- There is an increase in research and public policies based on methodologies from **behavioural economy** that focus on peripheral, less conscious decision making.
- The research will verify the efficiency or inefficiency of **nudging and other methods regarding irrational decision making in boosting deep energy renovation**.
- Nudging is not an alternative to the traditional behavioural change models, but rather a catalyst. Subsidies and incentives aim to eliminate the objective external factors, the campaigns aim to fill in the informational and attitudinal gap. These are tools to influence the cognitive decision making, whilst nudging will contribute to the parallel peripheral, less conscious message processing.
- Firstly will be analyzed the technological and socio-economic context of Flanders. With this background, we will translate behavioural insights into effective tools and methods for public and NGO campaigns. In order to be efficient, these tools must be elaborated with a solid analysis of specific technological, social and normative factors that impede deep energy renovation nowadays.

### METHODOLOGY



Technological approach

Public policy

Sociological approach

Traditional behavioural change

Innovative behavioural change

INTENTION

GAP BETWEEN ACTION



#### DWELLER AS A RATIONAL DECISION MAKER

- Alternative Behavioural Models to the traditional Expected Utility Model
- Information Deficit Models
- Variations of the Expectancy Value Theory that take into consideration values, beliefs, attitudes, habits, emotions, self efficacy of the individual.
- Incentives or informational and sensitizing campaigns based on these Models did not have the expected impact.

#### DWELLER AS A PREDICTABLY IRRATIONAL DECISION MAKER

- Apply behavioural economy methods (dweller as a predictably irrational decision maker) as alternative to traditional behavioural change methods (dweller as a rational decision maker).
- According to Amos Tversky's Judgement Heuristic Theory, when the decision is taken under uncertainty, time pressure, or under heavy cognitive load like in the case of house renovation, often prevail intuitive responses that are **shortcuts** to the cognitive processing<sup>3</sup>.
- Even though some choices are less rational, they are not random but follow certain patterns, the **behavioural insights**<sup>5</sup>.
- Elaborate innovative methods of nudging based on behavioural insights in the context of energy renovation of Belgian existing building stock.
- Elaborate energy calculators, applications based on personalized output of smart meters in order to simplify the cognitive load in the decision making process or monitor the outcomes of the renovation (gamification).
- Collective nudging- treating the dweller as part of a community rather than individual.

#### TESTING THE TOOLS

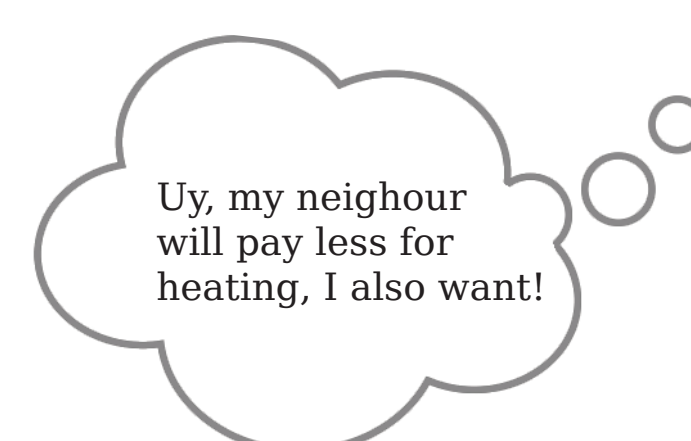
Once elaborated, the traditional and innovative tools will be tested in the following Flemish Living Labs:

- Werfgoed
- Ecoren
- Mutatie+

In these real life case experiments with dwellers nudges will be compared to control groups in order to evaluate their impact. Another aspect to be verified is whether the response to nudges is influenced by socio-economic factors such as gender, income, age, ethnicity, etc. The statistical results will prove the efficiency or inefficiency of the elaborated tools and methods. It will allow us to outline behavioral trends and efficient methods of implementation of deep energy renovation.

#### BEHAVIOURAL INSIGHTS

- **Loss aversion** people prefer avoiding losses to acquiring gains
- **Anticipated regret aversion** (FOMO Fear Of Missing Out) people do not wish to miss out on a good offer that others are taking advantage of
- **Discount the future** a smaller reward today is preferred over a larger reward in the future.
- **Social norms** people are heavily influenced by what others are doing.
- **Defaults** individuals tend to go with the flow of pre-set options. Prompted choices are a milder cousin of formal defaults.
- **Anchoring** tendency to rely too heavily on the first piece of information offered (the anchor), tendency to evaluate persons or objects based on perceived value instead of objective data
- **Mental accounting** people think of money as sitting in different "mental accounts" such as savings or expenses, money for fuel, for social causes, etc. If they receive the Winter Fuel Payment, they are 14 times more likely to spend them on fuel.<sup>5</sup>



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