**UCL** Department of Science, Technology, **Engineering and Public Policy** 

# **Process perspective on home** retrofit decisions a qualitative metasynthesis

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### **Presentation outline**

- 1. Background: you could have something here
- 2. Research aim : you could have something here
- 3. Theoretical lens : you could have something here
- 4. Methodology : you could have something here
- 5. Findings
- 6. Policy implications
- Q&A

References



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### Background Why encourage energy retrofit among EU homeowners?

**2°C** [1]

~ **third** (2/3 of 41%) [2]

Encourage energy retrofit among homeowners

- reduce operational energy use in dwellings
- mitigate climate change



#### **70%** [3]

~ **50%** [4,5,6]





### **Background** Why existing policies are unsuccessful?

Existing policies **focus**:

- drivers/ barriers understanding of retrofit decisions [7]



**Limitations** of existing policies implications:

- do not allow to understand the temporal sequence of various influences [8]
- retrofit is a process [7]



#### **Research aim**

#### Take a process perspective on homeowner energy retrofit decisions to present a



#### qualitative metasynthesis of empirical cases visible in the literature.





### **Theoretical lens**

	Pre-retrofit	Retrofit	Post-retrofit
Technical	Physical characteristics of a	Level of retrofit depth $\longrightarrow$	Physical structure of a hous and its technological potential for low energy use
	Technology available on the market		
			<ul> <li>Energy use in buildings</li> </ul>



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### Methodology Qualitative metasynthesis [9]









### Methodology Profiles of papers in the synthesis [10-19]

Year	Country	Authors	Source
2019	UK	Martiskainen, M. and Kivimaa, P.	Journal of Cleaner Production
2018	UK	Sunikka-Blank, M., Galvin, R. and Behar, C.	Building Research & Information
2017	Denmark	Bjørneboe, M.G., Svendsen, S. and Heller, A.	Journal of Architectural Engineering
2017	Sweden	Buser, M. and Carlsson, V.	Construction Management and Economics
2017	Denmark, Norway	Fyhn, H. and Baron, N.	Society & Natural Resources
2016	UK	Sunikka-Blank, M. and Galvin, R.	Energy Research & Social Science
2014	Australia	Judson, E.P. and Maller, C.	Building Research & Information
2014	UK	Galvin, R. and Sunikka-Blank, M.	Energy Policy
2014	Denmark	Vlasova, L. and Gram-Hanssen, K.	Building Research & Information
2010	Netherlands	Mlecnik, E.	Open House International

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#### Methodology Retrofit depth in visible cases in the articles













	Pre-retrofit	Retrofit
Technical	Physical characteristics of a → house	Level of retro
	Technology available on the market	
•		••••••
	Maturity of energy retrofit market	<ul> <li>Quality of construction</li> </ul>
	Construction industry	Retrofit coord and evaluato
	Homeowner expectations	<ul> <li>Diversity of a</li> <li>opposing energy</li> </ul>
Social		Homeowner technologica

Legend: ···· Physical aspects of low-carbon home retrofit are documented above the dotted line Arrow denotes effects



# **Policy implications**





#### ultimate

- build team expertise
- develop the market for low-carbon technology
- inform homeowner expectations prior to retrofit

engage occupants in the process of a technological solution creation for retrofit



## Thank you! Q&A





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