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Centre on Innovation and Energy Demand

A client-oriented evaluation of the 'creative destruction' in low energy policies: Finnish policy mix on building energy efficiency

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Core elements of the presentation

1. Idea of policy mixes and their evaluation
2. Incorporating sustainability transitions in the evaluation framework
3. Client oriented & stakeholder evaluation as a method
4. Focus on building energy efficiency and integrated energy services

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Policy mixes

- Complex arrangement of multiple goals and means (Kern & Howlett, 2009)

- Emerge in 'real word' contexts (Howlett & Rayner, 2007; Flanagan et al., 2011) and develop incrementally over many years (Kern & Howlett, 2009)

- Three focus areas of the literature
  - What mixes exist and how they have they evolved (e.g. Howlett and Rayner, 2007; Kern and Howlett, 2009; Flanagan et al, 2011)
  - Interaction of instruments in the mix (del Rio, 2010; Huttunen et al., 2014; Rosenow et al., 2016)
  - Impacts of the mix to a given goal, such as energy efficiency or innovation (Kivimaa and Virkamäki, 2014; Cantner et al., 2016)

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Policy mix evaluation

- Policy mixes messy to evaluate
    - inputs, administrative processes, and outputs of all the individual programmes and instruments included in the mix
- Thus, here a perspective of a selected target group taken
    - chosen for its importance for systemic innovation in energy efficiency & the novelty of business models in the context of energy disruption (boundary actor)
    - Complementary to policy mapping exercise

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Sustainability transitions & creative destruction

- A socio-technical transition = a set of processes that lead to a fundamental shift in socio-technical systems increasing sustainability
  - Far-reaching changes along different dimensions: technological, material, organizational, institutional, political, economic, and socio-cultural (Markard et al 2012)
  - Some theories address a range of functions that contribute to change in technological innovation systems (e.g. Bergek et al. 2008) linking to transitions
- Creative destruction by Schumpeter used to elaborate the functions approach to policy analysis –
  - ‘disruptive policies’ (Kivimaa & Kern, 2016)

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Analytical framework (based on Kivimaa & Kern, 2016)

Creation functions (niche creation)	
Knowledge creation, development and diffusion (C1)	Knowledge related goals, R&D funding schemes, innovation platforms, demonstration subsidies, etc.
Establishing market niches/ market formation (C2)	Market creation goals, regulation, tax exemptions, public procurement, deployment subsidies
Price performance improvements (C3)	Deployment and demonstration subsidies enabling learning-by-doing
Entrepreneurial experimentation (C4)	Experimentation goals, advice systems for SMEs, incubators, low-interest company loans, venture capital, etc.
Resource mobilisation (C5)	R&D and deployment subsidies, venture capital, educational policies, etc.
Support from powerful groups / legitimisation (C6)	Innovation platforms, foresight exercises, labelling etc.
Influence on the direction of search (C7)	Targeted goals, R&D funding, regulations, tax incentives, voluntary agreements, etc.

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Analytical framework (based on Kivimaa & Kern, 2016)

Destruction functions (regime destabilisation)	
Control policies (D1)	Emission regulations, carbon taxes, technology bans, etc.
Significant changes in regime rules (D2)	E.g. structural reforms in legislation, significant new overarching laws, changed policy priorities.
Reduced support for dominant regime technologies (D3)	Removal/reduction of goals, subsidies and R&D funding, technology bans, etc.
Changes in social networks, replacement of key actors (D4)	E.g. creation of new powerful committees with involvement of niche actors

Main argument: policy mixes for sustainability transitions need to involve policies aiming for the 'creation' of new AND for 'destroying' (or withdrawing support for) the old = 'creative destruction' (Schumpeter)

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Research questions

1. How the existing mix of policies addresses the creation of innovations and destabilisation of the existing regime?

2. What characterises regime destabilising policies and policy mixes from the perspective of integrated energy service companies?

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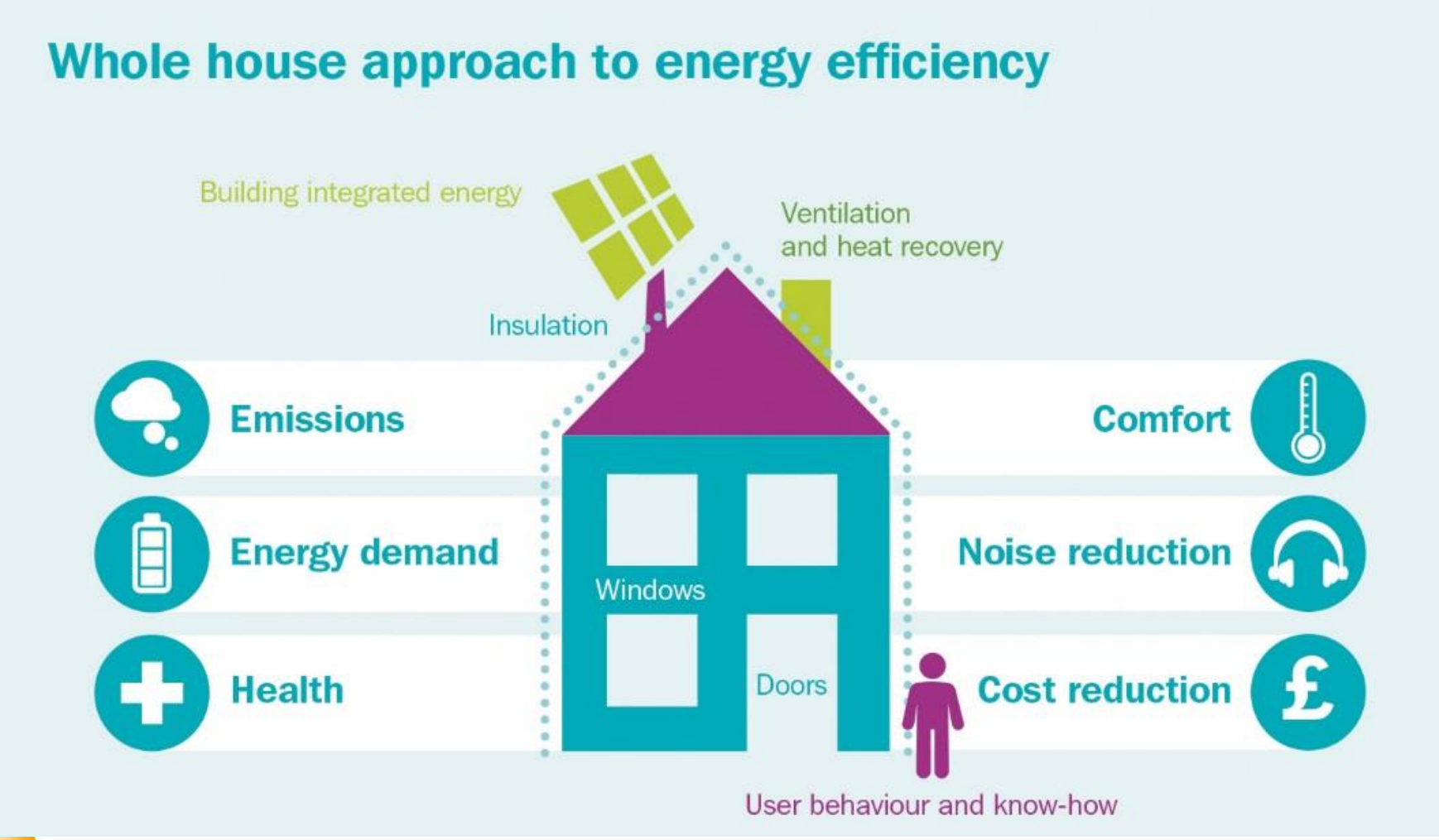
Energy services as potentially disruptive innovations due to a whole house approach to energy efficiency



Source: CIED / Kivimaa & Martiskainen, 2015

Client-oriented and stakeholder evaluation (based on Vedung 2000)

- Stakeholder evaluation
  - *'concerns and issues of the people, who have an interest in or are affected by the intervention'*
  - Applicable to situations with multiple (potentially) conflicting policy goals

- Client-oriented evaluation
  - '*takes the goals, expectations, concerns, or even needs of the program addressees as its organizing principle and criterion of merit'*
  - Co-exists with other forms of evaluation (democracy)

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Stakeholder interview analysis as method

Organisation	Revenue (million)	Employees	Main business area
Are	170	2800	Building services
Caverion	330	2700	Building and industrial services
Sweco	165	2000	Expert services in building design and energy management
Schneider Electric	135	600	Expert services in energy management and efficiency, energy services a core business, also automation
Talokeskus	25	260	Expert services for buildings
Enegia	18	170	Services for procurement, sale and efficiency use of energy
Karves	4	60	Renovation & energy efficiency services
TPI	3,5	30	Expert services for heat transfer processes
LeaseGreen	2	25	Energy-efficiency services
Energiakonsultit	0,1	1-10	Building energy services
NCC		18 000	Construction
Kodin Terra	184 (sales)	10 (stores)	Hardware retail
Greennet Finland			Cleantech business network
Lähienergialiitto			Association for Renewable Energy

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Use of intervention theory for the analysis

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Development of energy efficiency policy for buildings

- 2000-2014 incremental improvement in policy goals towards increased energy efficiency and zero carbon buildings (Kern, Kivimaa & Martiskainen 2016)

- 16 new policy instruments have been added between 2007 and 2014 in addition to revisions made in the building code
  - - in total 35 instruments at the end of 2014

- How more borderline stakeholders view the current status of policies – are they disruptive for the benefit of sustainability?

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Findings regarding policy instruments in the policy mix

- Interviewees talk about **19 of the out of 35 policy instruments** that have been identified in earlier top down analysis
- Regarding 12 of the 19 instruments, **views were mixed** between a positive impact and shortcomings in the design or implementation of the policy
- Six instruments were only positively viewed but often mentioned by a single interviewee

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Findings for 'creative' functions

Function	Policies with positive effect	Policies with shortcomings / limited impact
C1 Knowledge creation, development and diffusion	Consumer information & advice by Motiva (4) Energy grants for audit and repair (1) Energy efficiency agreement (1) Funding by Tekes (1) Land use and building act (1) ERA17 Programme (1) Energy audit programme (1)	Energy performance certificates (2) Energy grants for audit and repair (2) Consumer information & advice by Motiva (1)
C2 Market formation	Energy audit programme (3) Energy performance certificates (1) Subsidies for renewable heating systems (1) Subsidies for energy efficiency in buildings (1) Energy grants for audit and repair (1) Innovative public procurement (1)	Energy performance certificates (4) Energy grants for audit and repair (2) Innovative public procurement (2) Subsidies for energy efficiency in buildings (1) Energy efficiency req in building regulations (1) Energy audit programme (1)
C3 Price-performance improvement		
C4 Entrepreneurial experimentation	Innovative public procurement (1)	Innovative public procurement (1) Funding by Tekes (1)
C5 Resource mobilisation	Subsidies for renewable heating systems (3) Energy efficiency agreement (1) Funding by Tekes (1) Energy Aid Scheme (1)	Subsidies for energy efficiency in buildings (2) Energy grants for audit and repair (2) Innovative public procurement (1) Energy audit programme (1)
C6 Support from powerful groups / legitimisation	Energy efficiency agreement (1)	Innovative public procurement (1)
C7 Influence on the direction of search	Energy efficiency req in building regulations (6) Land use and building act (3) Energy performance certificates (1) Subsidies for renewable heating systems (1) Consumer information & advice by Motiva (1) Energy efficiency agreement (1)	Energy efficiency req in building regulations (2) Land use and building act (2) Energy performance certificates (1)

Findings for ‘disruptive’ functions

Functions	Policies with positive effect	Policies with shortcomings / limited impact
D1 Control policies	Energy efficiency req in building regulations (6) Land use and building act (3) Energy performance certificates (1) Energy efficiency requirements for renov. (1) Act on energy efficiency services (1)	Energy efficiency req in building regulations (3) Land use and building act (2) Energy performance certificates (2) Energy efficiency requirements for renov (1)
D2 Significant changes in regime goals and rules	Energy efficiency req in building regulations (3) Land use and building act (2) Zero energy goals (1) Prosumerism forms a part of objective & instrument setting (1)	Energy efficiency req in building regulations (4) Land use and building act (2) Innovative public procurement (1)
D3 Removal of support for existing technologies	Ban of incandescent light bulbs (1)	
D4 New organisations or replacement of key actors		

Policy gaps/problems identified

- *Control policies / significant changes*
  - lack of monitoring of their enforcement and/or lack of know-how in building inspection (n=5)
  - lack of sanctions for non-compliance (n=3)

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Disruptiveness of the current policy mix

- When directly asked, 7 interviewees cannot think of any policies actually disrupting the existing energy system
    - old fashioned decisions, incremental steps and the lack of energy efficiency in political decision making
- 3 interviewees more positive & consider we are in a clear change period with quick policy changes and opening up the production of electricity to consumers
    - Yet see of lack of practical action behind all the talk

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Conclusions

- Less positive picture of effectiveness than an earlier policy mapping based analysis
- Support for creative destruction is piecemeal
- Weak signs that (some of the) recently taken instruments & legislative revisions may indicate an early destabilisation process
- Enforcement relies on *existing practices* which contradict with *new policies*
    - *new organisational or institutional practices needed in addition to policy goals and instruments*

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