Innovative policy instruments to trigger renovation

IEA – IPEEC workshop
Global Energy Efficiency Benchmarking, and
Low Energy Buildings and the Role for Smart Management Systems
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Barriers to renovation

**Awareness**
- Don’t know where to find the right information
- Limited understanding of energy performance
- Uncertainty of what to do and where to start

**Financial**
- Cost of renovation is too high
- Lack of attractive financial products
- No energy savings guarantees

**Other**
- Lack of time for renovation works
- Low trust in installers/professionals
- Too much hassle
- Need to use the space (i.e. no room for renovation)
- Administrative barriers

Residential
- Limited understanding of energy performance
- Uncertainty of what to do and where to start

Non-residential
- Cost of renovation is too high
- Lack of attractive financial products
- No energy savings guarantees
- Too much hassle
- Need to use the space (i.e. no room for renovation)
- Administrative barriers

This research is funded by DG Energy under service contract ENER/C3/2018-447/05
Features of a tool addressing the main barriers

- Provides independent and trusted advice on renovation options
- Reflects the personal circumstances of owners and/or occupiers
- Provides advice on financing opportunities
- Creates one trusted point of contact

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### Staged or one step renovation?

<table>
<thead>
<tr>
<th>Staged renovation</th>
<th>One step renovation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower upfront cost enables more people to engage in energy renovations (that might lead to a low-energy level over time).</td>
<td>Lower risk of lock-ins in one step renovations effects because of the possibility of integrated planning and implementation of the renovation.</td>
</tr>
<tr>
<td>Carrying out renovation works at the time when certain building components must be replaced anyway due to completion of service life such as windows, boilers etc. reduces costs.</td>
<td>The cumulative energy savings are higher if renovation is carried out in one step.</td>
</tr>
<tr>
<td>It enables flexibility and the possibility to incorporate measures that weren’t considered initially, such as additional rooms or space planning requirements.</td>
<td>Overall quality of renovation is better in one step renovation (better airtightness, less thermal bridges, systems dimensioned consistently with envelope performance).</td>
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<td>It allows the integration of new technologies that may not exist or have reached maturity when the renovation is initiated.</td>
<td>Staged renovation can cause a larger inconvenience to the occupants due to multiple construction works at the same time.</td>
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<tr>
<td>It may not require the building to be completely vacated and regular activities can run partially.</td>
<td>Potentially lower total investment costs compared to staged energy renovation. In one step renovations, synergies arise from scaffolding to site set-up to planning costs, along with being able to scale heating equipment to lower capacities.</td>
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<tr>
<td>It reduces overall carbon emissions due to usage of legacy equipment with the new systems.</td>
<td></td>
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Examples of renovation advisory systems
Advisory systems exist in many EU countries

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Our methodology to evaluate the existing systems

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# Analysis of 16 BRP* frontrunners

**Meta-data of the deep dives**

<table>
<thead>
<tr>
<th>What?</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of deep dives</td>
<td>16</td>
</tr>
<tr>
<td>Geographical spread</td>
<td>8 countries (7 European countries + Canada)</td>
</tr>
<tr>
<td>Types of cases</td>
<td>6 one-stop-shops, 6 building renovation passports, 2 energy performance certification schemes, 1 energy audit framework, 1 online application</td>
</tr>
<tr>
<td>Level of governance</td>
<td>8 regional, 4 national and 4 privately governed schemes</td>
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<table>
<thead>
<tr>
<th>Nr</th>
<th>Case</th>
<th>Country</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>BetterHome</td>
<td>DK</td>
<td>One-stop-shop</td>
</tr>
<tr>
<td>2</td>
<td>Certificação Energética dos Edifícios</td>
<td>PT</td>
<td>Energy performance certificate</td>
</tr>
<tr>
<td>3</td>
<td>Det digitale energimærke</td>
<td>DK</td>
<td>Energy performance certificate</td>
</tr>
<tr>
<td>4</td>
<td>Energieberatung</td>
<td>DE</td>
<td>Energy audit framework</td>
</tr>
<tr>
<td>5</td>
<td>EPC+ &amp; Woningpas</td>
<td>BE</td>
<td>Building renovation passport</td>
</tr>
<tr>
<td>6</td>
<td>HeizCheck</td>
<td>DE</td>
<td>Online advice tool</td>
</tr>
<tr>
<td>7</td>
<td>Home Energy Masterplan</td>
<td>UK</td>
<td>Building renovation passport</td>
</tr>
<tr>
<td>8</td>
<td>Individueller Sanierungsfahrplan für Wohngebäude</td>
<td>DE</td>
<td>Building renovation passport</td>
</tr>
<tr>
<td>9</td>
<td>Ma Rénov</td>
<td>FR</td>
<td>One-stop-shop</td>
</tr>
<tr>
<td>10</td>
<td>Oktave</td>
<td>FR</td>
<td>One-stop-shop</td>
</tr>
<tr>
<td>11</td>
<td>Passeport Efficacité Energétique</td>
<td>FR</td>
<td>Building renovation passport</td>
</tr>
<tr>
<td>12</td>
<td>Passeport Energie Habitat</td>
<td>FR</td>
<td>Building renovation passport</td>
</tr>
<tr>
<td>13</td>
<td>Picardie Pass Rénovation</td>
<td>FR</td>
<td>One-stop-shop</td>
</tr>
<tr>
<td>14</td>
<td>Rénoclimat</td>
<td>CAN</td>
<td>One-stop-shop</td>
</tr>
<tr>
<td>15</td>
<td>Sanierungsfahrplan BW</td>
<td>DE</td>
<td>Building renovation passport</td>
</tr>
<tr>
<td>16</td>
<td>Superhomes</td>
<td>IE</td>
<td>One-stop-shop</td>
</tr>
</tbody>
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Information derived from these “deep dives”

Key results

- A survey of 1006 Danes who bought a property in 2015, shows that 65% stated that they read the whole report that comes with the EPC [8]
- 45% of owners are living in a building with a lower EPC rating (E-F-G) have implemented at least one of the EPC-listed energy-saving measures (for people living in D=35%, C=16%, B=15%, and A=7%) [8]
- When asked about the importance of the EPC when they bought their building, 22% described the EPC as very important, while 36% saw it as somewhat important [8]
- Most building owners were satisfied with an EPC rating C (37%), followed by D (22%). Only 7% desired an EPC rating A to be satisfied [8]
- 38% of the building owners implemented measures because it was “financially attractive”, while 28% did so in conjunction with other renovation work. Only 5% did so to reduce their climate and environmental impact [8]
- 46% of the building owners knew that it is possible to view their own or other EPCs online; while 46% out of these had used this function [8]
- 6% said they would have renovated if the EPC report included more detailed information and additional suggestions for renovation measure [8]
- The most commonly implemented measures from the recommendations related to windows (42%), roof (39%), heating system (28%), doors (21%) and external wall (19%) [8]
Most developed Building Renovation Passports

Several (regional) examples of models, promoting and offering BRPs to owners, auditors and craftsmen:

- Passeport Efficacité Énergétique
- Passeport Énergie Habitat
- Picardie Pass Rénovation

Financing: Both private and public

Woningpas and EPC+ combine the BRP with an integrated database with building data and beyond. Financing: public (Flanders Region, inter-ministerial cooperation)

individueller Sanierungsfahrplan provides a detailed individual renovation roadmap for single family houses. Financing: public (Federal government)

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Some well developed examples

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What is a building renovation passport?

- **DATA GATHERING**
  - General Administrative Information
  - Building construction information
  - Building Energy Performance
  - Building Operation & Use
  - Smart Information

- **PROCESSING**

- **BUILDING RENOVATION PASSPORT**
  - **RENOVATION ROADMAP**
    - Comprehensive audit
    - Renovation steps in a sensible order
    - Tailored to individual context
    - Long-term perspective
  - **BUILDING LOGBOOK**
    - Inventory of building-related information
    - Functionalities to users
    - Beyond energy
    - Linking building owners & users to third parties

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Features of a Building Renovation Passport

• Provides technical and long-term renovation advice, bridging short-term investments with long-term objectives

• Impacts the decision to renovate, the number of measures to implement, the performance level of the selected measures, as well as the type of measures implemented.

• Increases awareness of the importance of healthy indoor environment and influence residents’ energy behaviour

• Provides an overview of the potential renovation markets which can be utilized by the private sector to develop renovation service and product offering in a tailored way.

• Allows public authorities to monitor the energy transition of each building but also modify policies and financial support according to development

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Main findings (i)

• Conversion rate (average numbers from 4 deep dives):
  • 35% of the homeowners informed about the scheme chose to get an on-site energy check, while;
  • 31% of the homeowners that received the energy check (and subsequent renovation advice) decided to invest in an energy renovation;
  • consequently, 10.8% of the building owners that receives the first contact will go on and finally invest in an energy renovation.

• The existing schemes and initiatives do not target any hard-to-reach groups (not interested, low-income etc.)

• Indoor environmental quality and the environmental aspects of renovations are not included in the analysed cases.
Main findings (ii)

• Renovation advice is more effective when it is integrated with, and reinforced by, other elements (e.g. simple access/use, financial support, communication)

• BRPs are effective in alleviating two of the main barriers to renovation;
  • low awareness of the benefits of energy renovation and;
  • insufficient knowledge of what measures to implement and in which order

• Tailored renovation advice, together with other support measures, has an impact on;
  • the decision to renovate,
  • the number of measures to implement and their performance level,
  • as well as on what kind of measures that are being implemented

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Thank you!

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You can find all our reports on www.bpie.eu

The analysis on BRP will shortly be available at https://renovation.epbd19a.eu/documents