Emerging Examples
Building Renovation Passports

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Content

• Context
• What is a Building Renovation Passport?
• Case studies (BE, FR, GER): comparing features
  – What is deep renovation? (definitions)
• Lessons learnt
Challenges

1. Need to scale up energy renovation across Europe to meet Paris Commitment
2. Today fragmented renovation & lock-in effect
3. Interest in renovation roadmaps/passport across Europe (several pilots)
4. EPCs not driver for renovation

Building Renovation Passports as potential solutions
Three case studies: Belgium (Flanders), France and Germany
Common barriers

- Building owner lacks information (what to do, where to start, and which measures to implement in which order?)
- Renovation perceived as a burden (time, money and dust)
- Insufficient training for auditors beyond technical aspects (how to convince to start renovation after the audit?)
- Limited financial resources - upfront costing
- Complex legislation and ‘stop and go’ support measures
What is a Building Renovation Passport?

a. Renovation Roadmap:

A document outlining a long-term (up to 15 or 20 years) step-by-step renovation roadmap for a specific building, resulting from an on-site energy audit fulfilling specific quality criteria established in dialogue with building owners.

b. Logbook:

A repository of all building-related information (e.g. energy consumption and production, executed maintenance and building plans).
1. DATA GATHERING ON INDIVIDUAL BUILDING LEVEL

On-site Energy Audit

External experts: energy auditors, installers (dialogue with owners)

On-site Data Gathering

• By building owners or tenants (e.g. executed works, characteristics of installed equipment)
• Automated data: e.g. smart meters, monitoring systems (e.g. RES, heating, CO2 meters, etc.)

2. PROCESSING THE DATA

3a. RENOVATION ROADMAP (Deep “Staged” Renovation)

• Comprehensive audit
• Long-term perspective
• Considering individual context
• Systematic renovation in a sensible order and packages

3b. BUILDING LOGBOOK

1. Inventory of non-dynamic information
2. Interactive tool
3. Linking building owners (users) and third parties
Case studies: comparing features

Common elements:

- **Voluntary tool** (complementary to EPC)

- **Political support**: direct support (Germany and Flanders) or interest (France)

- **Ambition**: long term renovation targets (deep renovation or long term efficiency levels)

- **Open dialogue with building owners**: building owners are at the centre of the process (customised measures)

- **A new way to measure comfort** (qualitative element)
# Case studies: comparing features

## Building Renovation Passports

<table>
<thead>
<tr>
<th>Process</th>
<th>BE- Flanders</th>
<th>France</th>
<th>Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definitions (Deep or staged deep renovation and/or alternative definition)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Long term target for existing building stock (2050)</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Barriers</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Stakeholders mapping</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Stakeholders engagement</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Energy Audit</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Auditors' training</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Tailored solutions</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Logbook/Database</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
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</tbody>
</table>
What is deep renovation?

- **Flanders**: Reference to a *long-term efficiency objective*:
  - Existing buildings must achieve an efficiency level of E60 by 2050 (100 kWh/m² gross surface)
  - Set of measures for building elements

- **France**: the renovation of a given dwelling reaching high levels of efficiency in one go (global renovation) to achieve BBC levels of renovation = 80 kWh/m² of primary energy per year
  - P2E tries to reconcile this definition with a staged approach (renovation is paced out over a longer horizon)

- **Germany**: “*Best possible principle*”
  - Building stock has to achieve an average efficiency level of 30-40 kWh/m²/a (KfW’s Efficiency House 55)
  - Auditors have to recommend the most ambitious standards and options for each building (and justify if not possible)
Flanders (BE)
Woningpas (Dwelling ID)

• Directly linked to EPCs (Renovation Advice and EPC+)
• Introduces the notion of Digital Logbook:
  – Accessible by property owners and authorised third-persons (e.g. craftsmen, architects, notaries)
  – Follows the long-term evolution of each house
  – Collects data on energy performance, renovation advice, housing quality, building features (stability, installations, humidity level, etc.) and other data related to the property (e.g. inspections, access to financing)
  – Could be used by potential buyers to get first glimpse about building’s overall ‘health check’
France
Passeport Efficacité Énergétique (P2E)

- Energy Transition Act (2015):
  - Renovation of all class F&G building by 2025
  - All buildings must be in class A&B (BBC levels) by 2050
- Based on a combination of measures based on building type/age/location
- Attempt to ‘industrialise’ the renovation process and lead to economies of scale
- Web platform
- Three main users (owners, auditors and professionals)

Source: The Shift Project
Germany
Individueller Sanierungsfahrplan (individual renovation roadmap)

- Included in the National EE Programme and the Federal Efficiency Strategy for Buildings
- Not linked to EPC
- Modelling used can simulate impact of each renovation on the overall EE target
- New skills required for the energy auditor
- Based on pilot in Baden-Württemberg
- No logbook

Source: ifeu, DENA, PHI
### Lessons learnt

**Common guiding principles and policy recommendations**

<table>
<thead>
<tr>
<th>Category</th>
<th>Recommendations</th>
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</thead>
<tbody>
<tr>
<td><strong>Long-term perspective</strong></td>
<td>• Vision for building stock 2050, definition of deep renovation or energy efficiency levels required</td>
</tr>
<tr>
<td><strong>Timing and sequencing of actions</strong></td>
<td>• Short-term and long-term measures included, order of implementation key to achieve deep renovation</td>
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<tr>
<td><strong>Customer engagement and individual context</strong></td>
<td>• Put the owner at the centre (wishes, needs, constraints)</td>
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<tr>
<td><strong>User-friendly tool (for the auditors and the users)</strong></td>
<td>• Make it easy to understand/use/promote&lt;br&gt;• Auditors as ambassador for deep renovation</td>
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Lessons learnt
Common guiding principles and policy recommendations

<table>
<thead>
<tr>
<th>Automation</th>
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<tr>
<td>• Easy to use for the energy experts (modular blocks, default values, highlights errors/anomalies, etc.)</td>
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<th>Stakeholder engagement</th>
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<td>• Go beyond the building sector (behavioural experts, data analysts, communication strategists)</td>
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<th>Promote comfort as a driver for renovation</th>
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<tr>
<td>• Clearly indicate positive impacts on comfort</td>
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<tr>
<td>• Include indoor air quality, acoustics, lighting, daylight, fresh air supply among main indicators</td>
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<th>Provide appropriate regulatory framework (EPBD)</th>
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<tr>
<td>• Long-term vision for EU building stock, link BRP to EPC, common approach to deep-staged renovation (including tools and methodological guidelines)</td>
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Thank you for your attention

Find the report at: http://bpie.eu/publication/renovation-passports/

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