Advanced Housing Renovation:
From demonstration projects to volume market

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First goal: Passivhouse standard

New constructions:
Lindås park, measured: 68 kWh/m2 år

Renovation/upgrading:
Brogården, calculated: 92 kWh/m2 år
The Product lifecycle curve (Rogers)
Methodology

Starting with the Product lifecycle
studying introduction, growth phase and volume phase, one by one

through 4 product perspectives;
attractiveness, competitiveness, affordability and availability

looking for

driving forces, barriers and measures

and summing up

important actors and recommendations
Introduction phase:

Successful demonstration projects

Barriers

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<th>Attain owners interest</th>
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<td>Barriers</td>
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<td>Lack of funding</td>
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Public actors

- Set the national agenda
  - Green energy vs energy efficiency
  - Tech vs market R&D

Research institutes

- Find the first movers
- Trustworthy facts
- Good project partners
- International alliances

Innovative companies

- Communicate
- Design a package
- Find users’ needs
- Own funding
- Compliment. partners
- Public funding
- Info search
- Coop research institute
- Training

Actors

- Public actors
- Research institutes
- Innovative companies

Arenas

- Education
- R&D
- Internat. Cooperation
- Documentation
- Info search
- Coop research institute
- Training

Successful demonstration projects

Green energy vs energy efficiency
Tech vs market R&D

Good project partners
International alliances

Own funding
Compliment. partners
Public funding

Set the national agenda
Find the first movers
Communicate

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Find the first movers
Communicate
Growth phase:

**Trendsetter wants to by**

**Barriers**
- “Added value” is unclear. Both on supply and demand side
- Scarcity of knowledge and quality assurance
- Lack of cooperation and coordination

**Actors**
- Local / national authorities
- Research and education
- Variety of companies

**Develop “one stop shops” for complete solutions**
- Public buildings as showcases - boosting the demand side
- Implement tools which create advantages for complete solutions

**Post educational programs on all levels and involved professions**
- Implementation of EPBD - focus on QA
- Demo projects as showcases and learning

**Networking through the supply chain**
- Create arenas for all actors to meet
- Masterplans developed by authorities

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Volume

Growth

Introduction

Announced stepwise enforced building codes
A Norwegian scenario
(OED - Lavenergiutvalget)
Norway:
Use of energy in the existing dwelling stock

- Small houses: 85%
- Blocks of flats: 15%
# Recommendations

**Public actors should:**
- take the lead through good examples and create arenas for actors to meet
- support demonstration projects, quality assurance and knowledge dissemination
- create and coordinate predictable support schemes

**Companies should:**
- find complementary and trustworthy partners
- use demonstration projects as arenas for learning and marketing
- establish “one-stop shops” and focus on added value for the customer

**Homeowners should:**
- make long term holistic plans toward passivhouse standard
- not perform small renovations that blocks later upgrading to passivehouse standard
This is the beginning