One-stop-shop business model for energy renovation of detached houses – 3 year project (2016-19)

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Familjen Kamprads stiftelse
The Kamprad Family Foundation for Entrepreneurship, Research & Charity

Project participants

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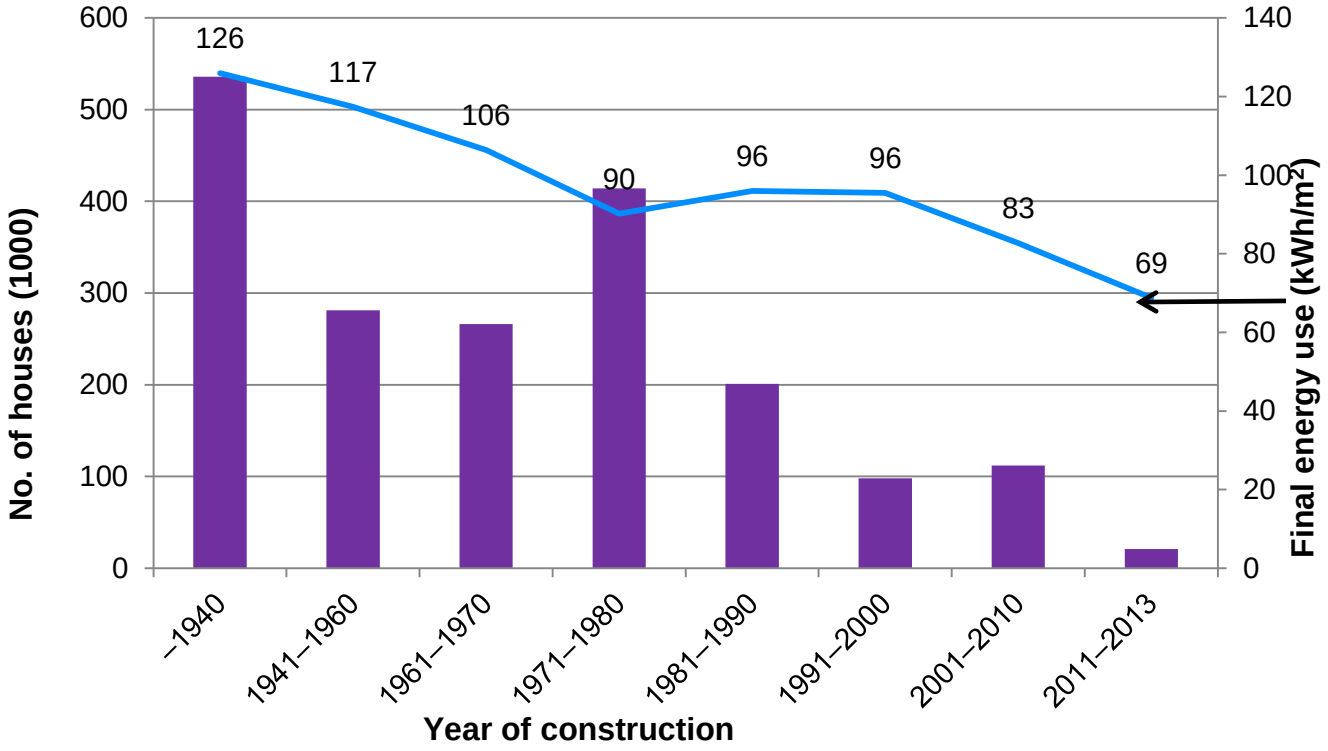
- Trond Haavik, Segel A/S, Norway
- Stefan Olsson, Energikontoret Sydost
- Jan Johansson, Växjö kommun
- Magnus Jonasson, Energirådgivare, Växjö kommun
- Bengt Arnby, Susen AB
- Ewald Strandberg, Åseda Värme och Sanitet
- Claes-Göran Åhlander, Villaägarna Kronoberg
- Mats Rolf, Länsförsäkring Kronoberg
- Anders Rosenkilde, TMF- Trä- och Möbelföretagen
- Mikael Ludvigsson, Smarthousing Småland

Swedish detached housing stock and final energy use, 2014

- 80% of the houses are 30 years old or more; less energy efficient
- 40% in rural areas, 50% owned by 65+ year old
- Majority need renovation
- Similar situation in other nordic countries



(Energistatistisk för småhus 2014)

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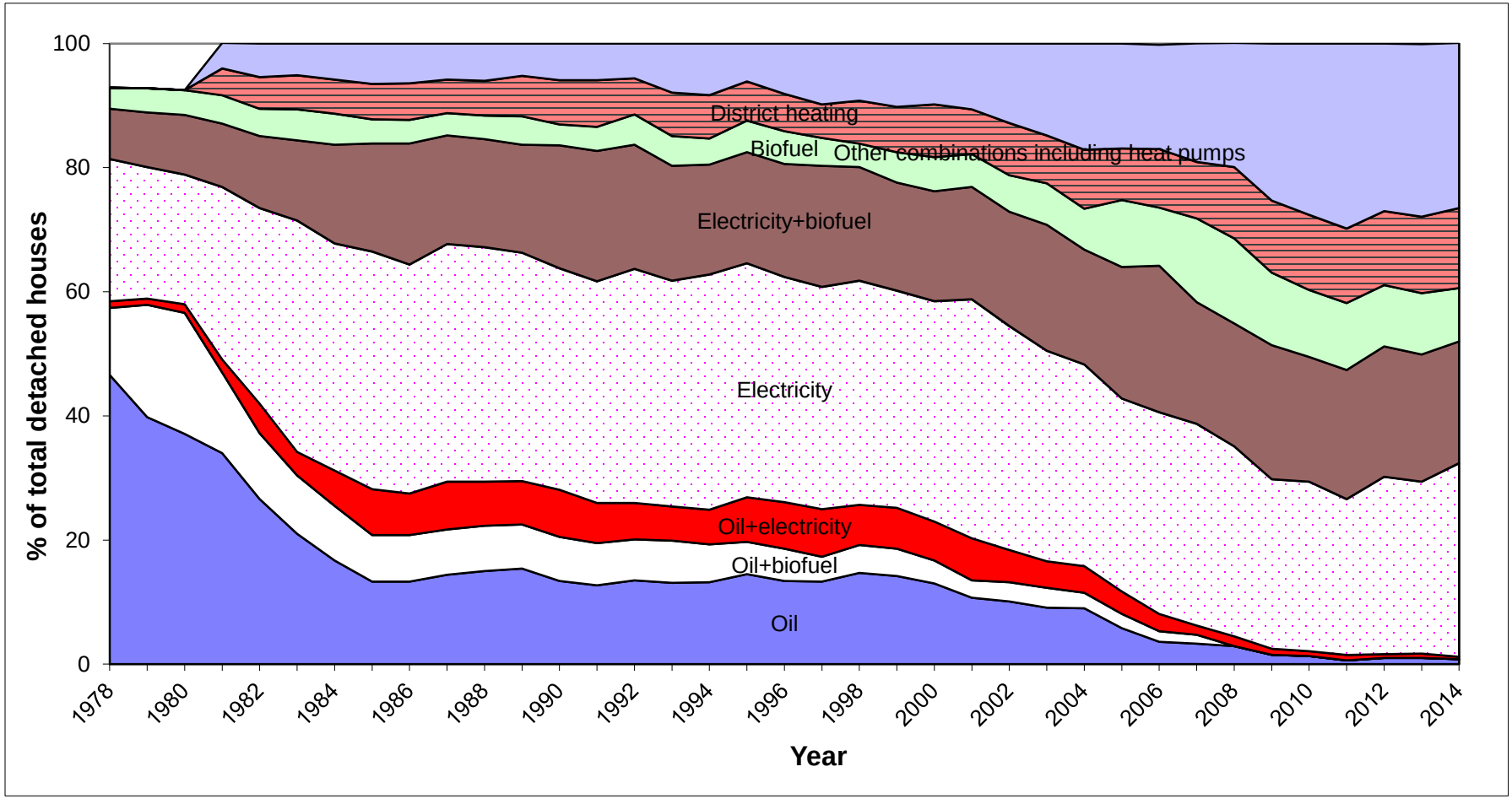
Swedish detached houses using different kinds of energy for heating, 1978-2014



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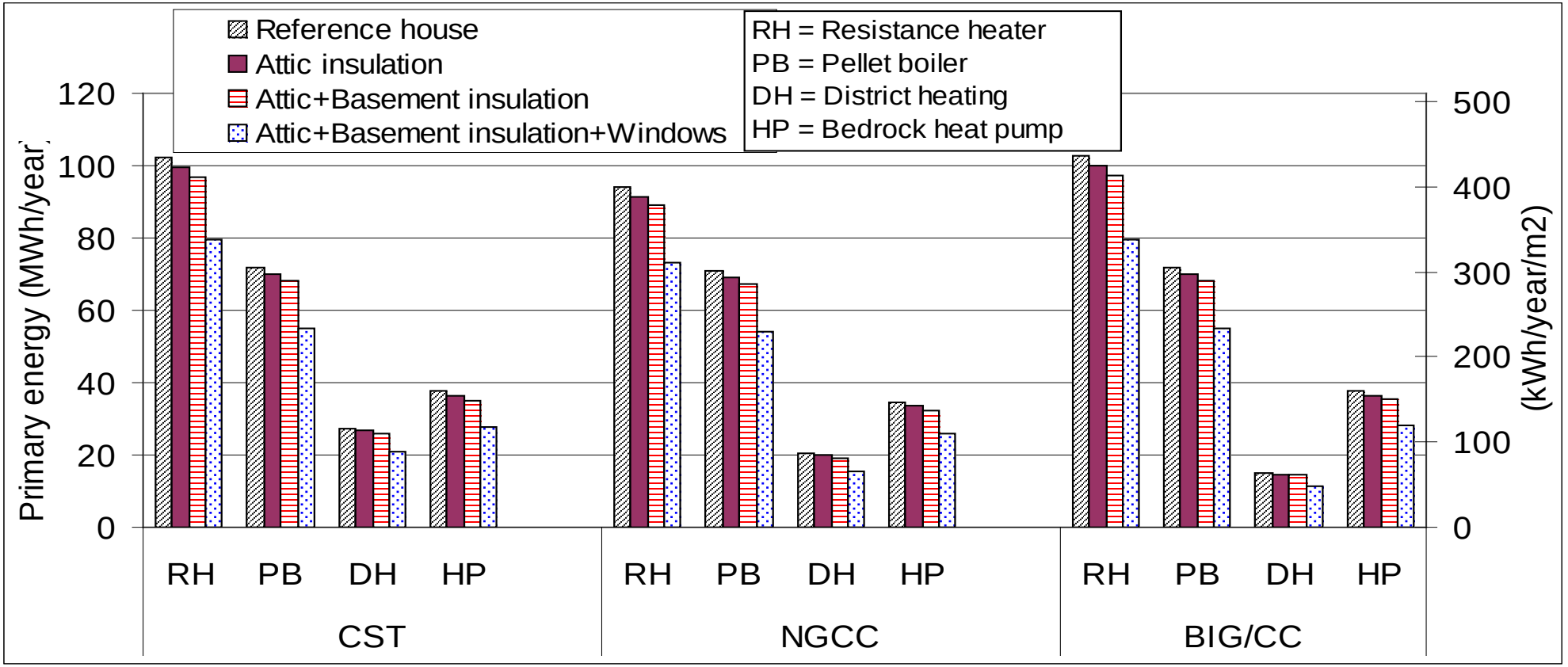
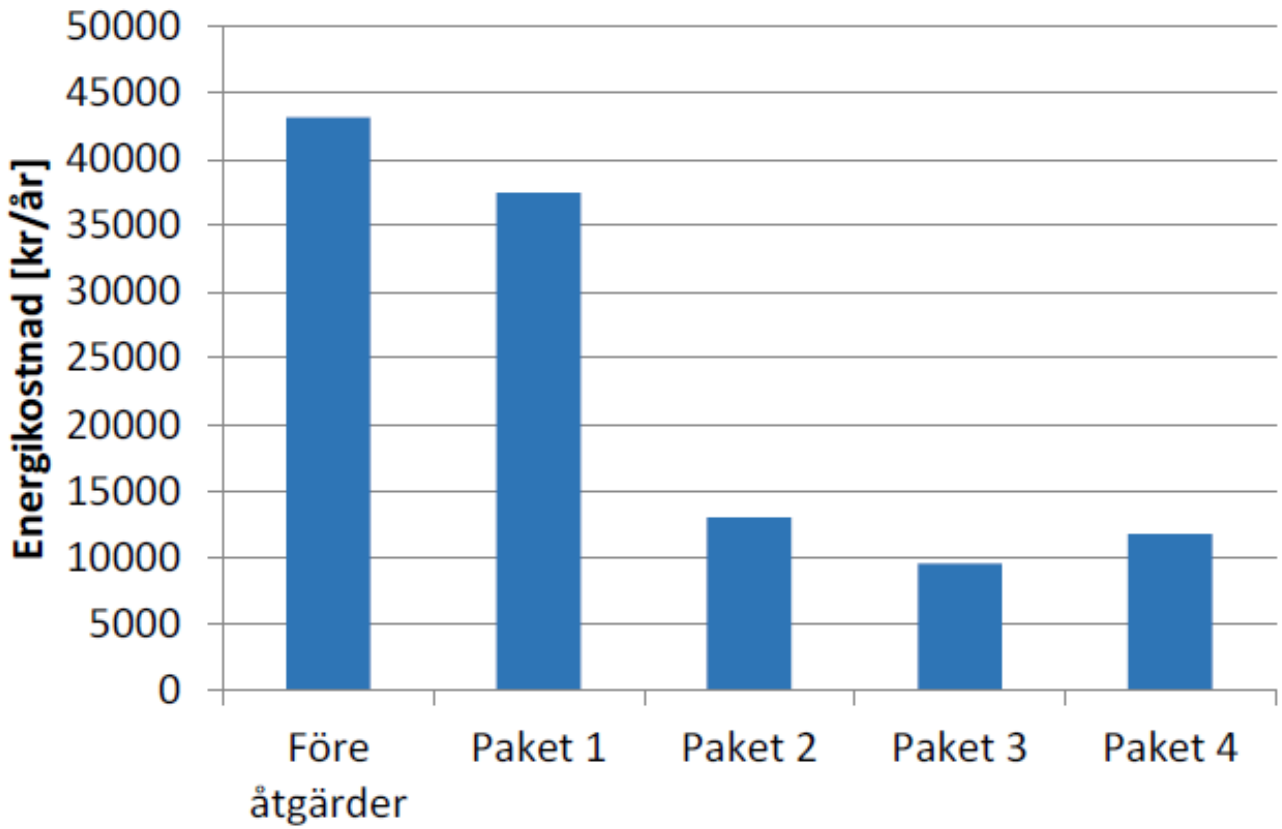
Annual *primary energy use* with installation of heating systems and energy efficiency measures



Electricity supply systems: coal-based steam turbines (CST), natural gas-based combined cycle (NGCC), and biomass with integrated combined cycle technology (BIG/CC)

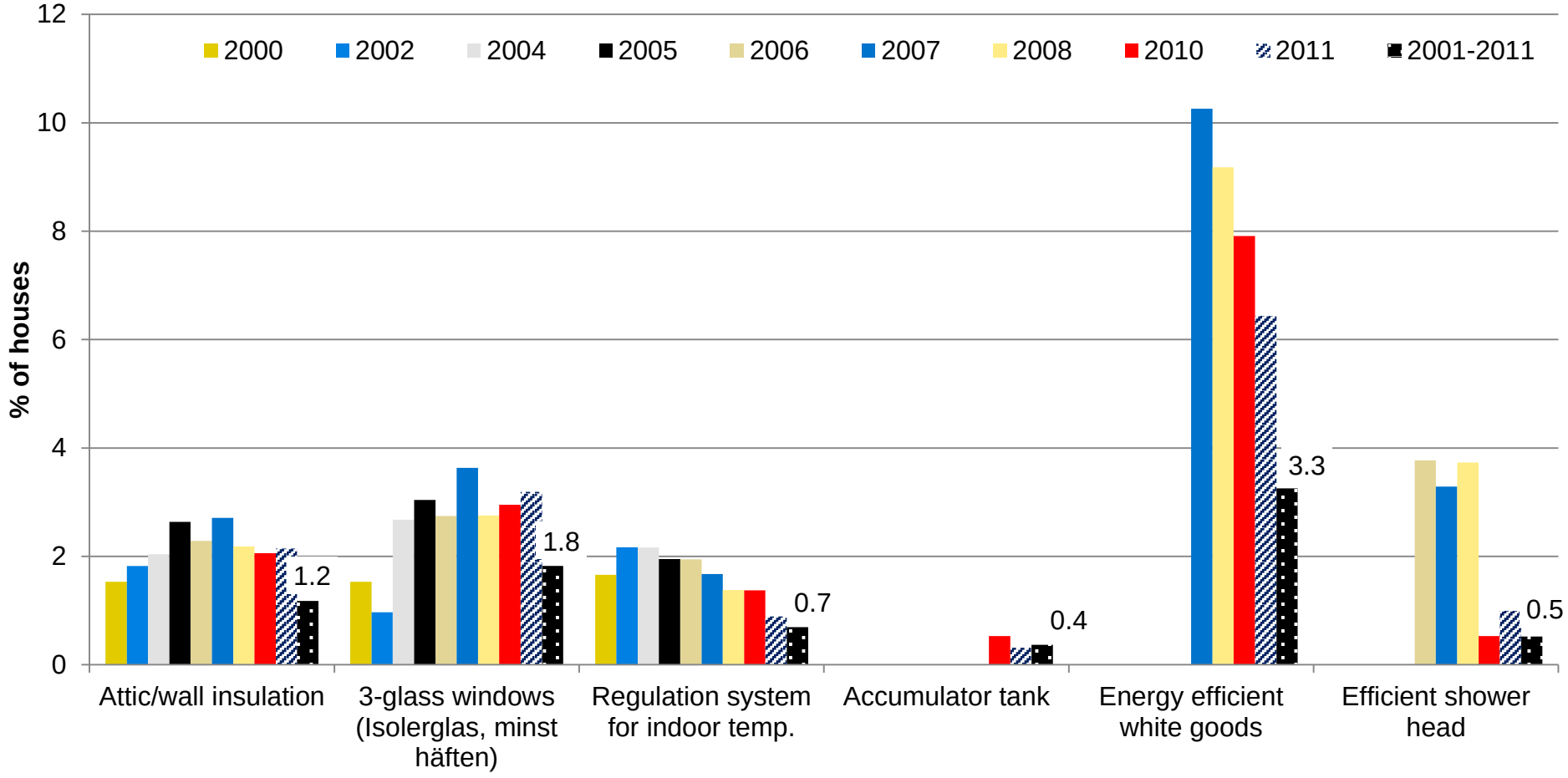
Source: Joelsson, A. (2008). Primary Energy Efficiency and CO_2 Mitigation in Residential Buildings, PhD Thesis 58, Mid Sweden University, Sweden.



Figur 21 Energikostnad för ”Villa från 1970-1980”.

Heier, J., Bergdahl, M. and Börjesson, P., 2014. paketrenovering i småhus med belok totalmetodik: Beslutsunderlag vid finansiering med energilån, LÅGAN Rapport december 2014.

% of houses implementing energy effieciency measures



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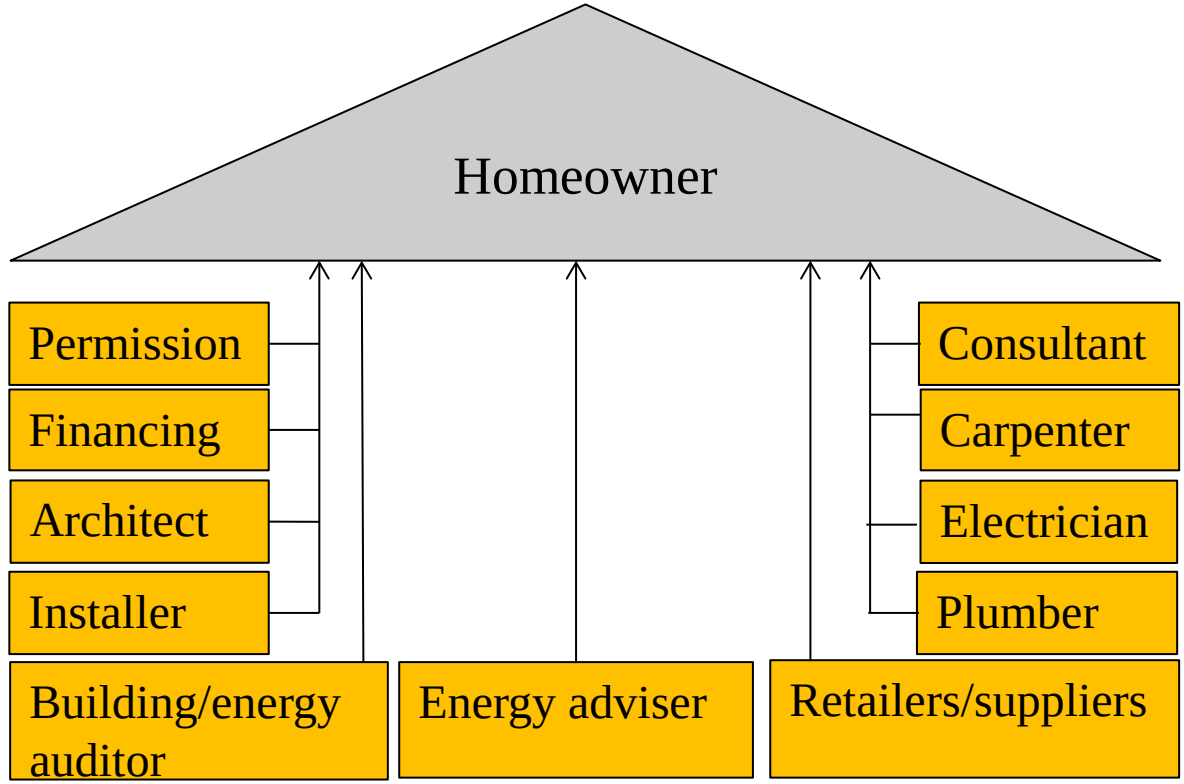
Energistatistisk för småhus, various years (Statistics Sweden/ Swedish Energy Agency)

Barriers to energy renovation

- Low priority given to energy issues
- Information limitations
- High investment cost and lack of financing
- Lack of consideration to non-energy benefits
- Market dominated by individual solutions
- Complex and difficult to handle
- Trustworthiness



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Mahapatra, K., Gustavsson, L., Haavik, T., Aabrekk, S., Svendsen, S., Vanhoutteghem, L., Ala-Juusela, M. and Paiho, S., 2013. Business models for full service energy efficient renovation of single family houses in Nordic countries, Applied Energy, 112: 1558-1565.

Barriers to implementation ….(2)

- High investment cost and Mortgage limitations
  - House loan 85% of the market value of the house
  - Young buyers usually use the house loan fully to buy an old houses; they do not have additional resources for renovation
  - Old homeowners may have capacity to take a loan, but avoid the hassles of renovation

Barriers to energy renovation

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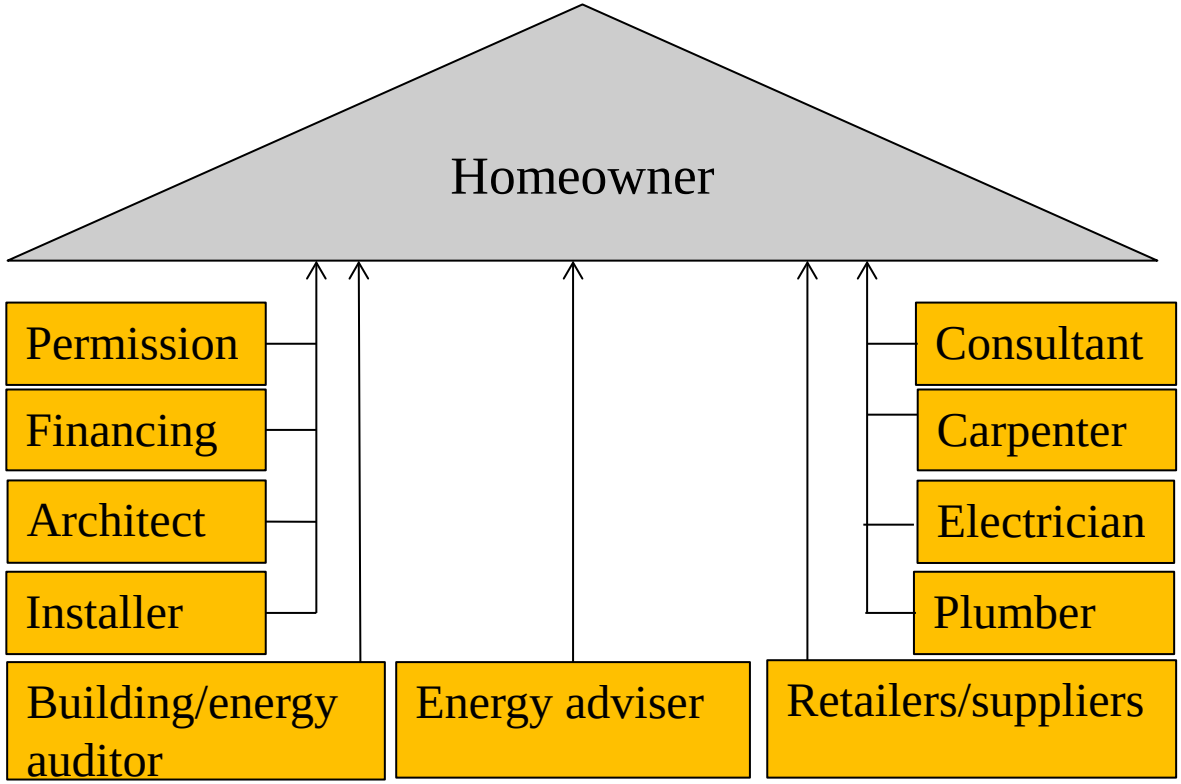

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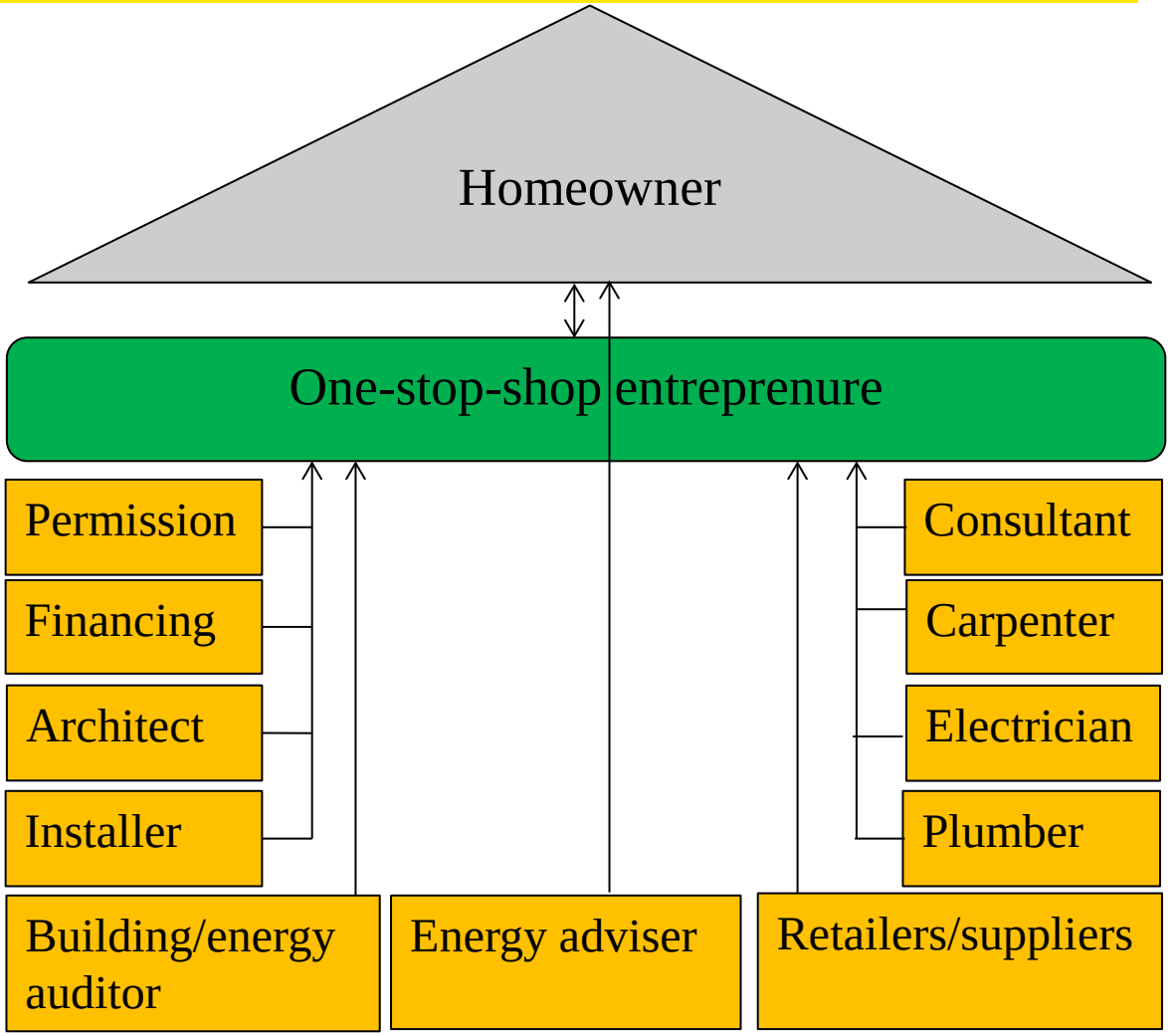
One-stop-shop renovation model

- Single-point contact, little risk or responsibility for homeowners
- Improved quality of house
- Better adaptation to climate change, less insurance claim
- Mortgage banks have safer asset
- Reduced energy use and greenhouse gas emission



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Project objectives

- Attitude and interest of *homeowners, renovation related companies,* and *banks* towards energy renovation and one-stop-shop model
- Platform for actors to discuss and create networks to develop business models
- Apply the model(s) for renovation of 4 houses, 2 in rural area and 2 in suburban area of Småland-Blekinge
- Economic and environmental (CO_2 emission and primary energy use) assessment of the renovations

Surveys

- Questionnaire survey in cooperation with Villägarna and Länsförsäkringar, VT 17
- Interview with companies, VT 17

Interview with selected homeowners

Are you interested in energy efficient renovation? Why?

Number of interviewees (N)	Choice	Reasons
14	Interested (but do not know what and how to do)	- Saving energy means saving money - Improved life quality: more healthy - Increase house value - Sustainability
7	Not interested	- Not necessary - Lack of information

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Tang, C., Gentili, E., Gilbert, E., Liao, Y., Sullivan, J. and He, J., 2016. What do private house owners of detached houses need in order to take on energy renovations in their homes? How could this need be satisfied through a business offering? Project work, BED Master program, Linnaeus University

Interview with selected homeowners

Are you interested in one-stop-shop model? Why?

Number of interviewees (N)	Choice	Reasons
11	Positive	- professional advices - holistic view - quality guarantee
10	Negative	- personal contact - financial factor - prefer to do things by self

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Thank you!