



Minutes Interim Workshop, Finland

D6.8 of WP6 of the Entranze Project
1st October 2013, Helsinki

Written by:

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Agenda

1. Welcome and introductions
2. Recent policy developments concerning energy efficiency in the existing building stock (Harri Hakaste, Ministry of Environment)
3. Introduction to ENTRANZE and examples of policy instruments identified (Eva Heiskanen, National Consumer Research Centre)
4. Interim results from the Tarmo project in Tampere (Juhani Heljo, Tampere University of Technology)
5. Discussion concerning policy instruments
6. Closing of the workshop

Participants

Erkki Aalto	RAKLI
Susanna Eerola	Aalto yliopisto (Aalto University)
Harri Hakaste	Ympäristöministeriö, rakennetun ympäristön osasto (Ministry of Environment, Department of the Built Environment)
Juhani Heljo	Tampereen teknillinen yliopisto (Tampere University of Technology)
Heli Kotilainen	Green Building Council Finland
Päivi Laitila	Motiva Ltd
Maija Mattinen	Suomen ympäristökeskus (Finnish Environment Institute)
Eero Nippala	Tampereen ammattikorkeakoulu (Tampere University of Applied Sciences)
Terttu Vainio	VTT
Eva Heiskanen	Kuluttajatutkimuskeskus (National Consumer Research Centre)
Kaisa Matschoss	Kuluttajatutkimuskeskus (National Consumer Research Centre)

1 Welcome and introductions

Participants were welcomed to the workshop and a round of introductions was made.

2 Recent policy developments concerning energy efficiency in the existing housing stock

Harri Hakaste, Ministry of Environment, gave a brief overview of recent policy developments concerning energy efficiency in the existing housing stock. A great deal

of the work derives from EU directives (EPBD, RED, EED and Ecodesign). Renovation constitutes a particular challenge for the future. A decree on energy efficiency requirements in building renovation was issued in February 2013.

This also is one of the reasons for needs to update the Land Use and Building Act, which is to be reformed by 2016 including provisions on renovation. Reforms to the building energy performance certificate also pertain to in particular to existing buildings. As part of the RES implementation, minimum requirements will also be issued on the use of renewable energy in new and existing buildings. In the context of the EED, the aim is to make a new analysis of the entire building stock and a more detailed analysis of the energy efficiency potential. All these also have linkages to the Building Renovation Strategy, which is a broader strategic programme of the Ministry of Environment. In terms of building codes, there are ongoing plans to revise the structure of the existing legislation, which will change the format of the Building Code. The aim is to clarify the competencies (distinction between decrees and acts) and to make a clearer distinction between regulations and guides.

Some discussion and questions followed. One of the points discussed related to the explanatory memoranda for regulations and decrees. In the future, they will be written so as to offer users (e.g. building inspectors) guidance for how to interpret legislation.

3. Introduction to ENTRANZE and examples of policy instruments identified

Eva Heiskanen gave an overview of the ENTRANZE project and presented some examples of interesting and novel policy instruments identified in the project (see slides attached).

The overview of ENTRANZE raised a great deal of discussion. One of the topics discussed was the cost-optimality approach. Erkki Aalto from RAKLI raised the question of how such calculations compare with the investment calculus on professional property owners, where the value of the building (depending on its location) is often a significant determinant of how much it is worth investing in renovation. Terttu Vainio from VTT raised the issue of drawing boundaries: calculations are easier for new build than for existing buildings with are only partly reconstructed. Juhani Heljo from TTY raised the issue of communicating complicated cost-optimality calculations to decision makers, e.g. housing company boards.

One new approach to determining improvements relates to the notion of base consumption defined in a publication by Green Building Council Finland on life cycle indicators for buildings <http://figbc.fi/kira/elinkaarimittarit/>

Another issue raised was how policy instruments could support innovation. This is the direction that has been taken with performance-based energy requirements in building codes: only a certain performance level is specified, not the particular solutions for

reaching it. There was also discussion on the role of renewable energy, which can be more suitable in certain locations than other ones.

The concept of “energy renovation” (energiaremontti) also raised a lot of discussion. Harri Hakaste from the MoE said that it is not an appropriate term, and a better term would be “systematic renovation” (suunnitelmallinen korjaustoiminta). It was also argued that the notion of systematic maintenance (suunnitelmallinen kiinteistönpito) should also be included, and that there is a need for a new concept. There is also the need for new services in this area.

As part of the presentation, a summary of the Policy Group’s policy scenarios for WP4 were presented. These are:

1. BAU
2. Target group specific scenario
 - a. single-family homes: shift from oil and electricity to ground-source heat and wood-based heating via new finance scheme and technology (cost) development
 - b. apartment buildings: renovation to reduce energy demand by 50% for all buildings that are 50 years of age via tailored advice (building inspector?) and new finance scheme.
 - c. solar power promotion by investment subsidy
3. Energy taxation scenario: price of energy (electricity, heat and fossil fuels) raised by 20,50 & 100%

The scenarios raised a great deal of discussion. Some of the points with the most immediate implications for the scenario include:

- Why is the focus in single-family homes only on heating systems? (Heli Kotilainen, FiGBC)
- 50 years is too late to give advice on renovation since many repairs have already been made. 35 years would be a more appropriate time (Terttu Vainio, VTT). The appropriate time may also depend on the building type and age. There is a study ongoing looking at the entire building stock and hotspots in terms of renovation needs. It was agreed that NCRC can consult with VTT on this.
- Tailored advice is necessary but it should not be the responsibility of the building inspector since they lack the resources (Harri Hakaste, MoE)

The notion of efficient use of space was raised. Erkki Aalto (RAKLI) raised the point that current buildings do not meet the current needs. For example, apartments are too large and there are too few small apartments considering today’s household size. There was a debate on whether some buildings should be demolished. A connection to overall housing policy and elderly care was identified: how could elderly people be encouraged to move into more suitable apartments in good time, e.g. by changing inheritance laws, tax rules and e.g. social services help for the process of moving?

Space use efficiency is also very relevant in offices. Heli Kotilainen raised the point that public sector workplaces seem to be slow in adopting more efficient ways of working. There is also a great deal of empty office space in the metropolitan area, partly also due to more efficient ways of organizing office work (Erkki Aalto, RAKLI) and this space should be converted to residential use.

There was also some discussion concerning other instruments. One focus for a procurement competition identified by Juhani Heljo (TTY) is exhaust air heat pumps for buildings heated with district heat. They are not currently optimal and should be improved in terms of cost-effectiveness and functionality. Moreover, there was also some discussion on energy tariffs inspired by the French bonus/malus tariff scheme: currently in Finland customers get cheaper electricity if they use more, which is a disincentive. Päivi Laitila distributed a few copies of the Concerted Action report *Implementing the Energy Performance of Buildings Directive* (EPBD).

4. Interim results from the Tarmo project in Tampere

Juhani Heljo (Tampere University of Technology) presented an ongoing project called TARMO in Tampere. This project builds on open data which are becoming more readily available. The increasing availability of building specific data on specific energy use, age of building components, weather data, energy performance certificates (hopefully soon, though the quality is variable) and timing of previous renovations offers the possibility for “mass customization” of advice. A large amount of preparatory work can be done on the basis of such data before visiting the site. Currently, however, even the building owners (residents of housing companies/condominiums) do not have access to such data. The TARMO project is developing easy-to-use applications to assemble and process such data.

Some existing sources of open data on buildings include:

www.jokapaikka.fi

www.karttapaikka.fi

5. Discussion concerning policy instruments

The discussion was structured under the following headings:

- a) needs to develop finance instruments
- b) needs to develop informative instruments
- c) needs to develop technologies and services

- a) **Needs to develop finance instruments**

There was a discussion on renovation funds, which are mandatory (though usually too low) in several countries. In Finland, there are certain disincentives for renovation funds as there is a risk that such funds can be perceived by tax authorities as income, which housing companies are not allowed to make.

The notion of long-term finance from outside the state budget was also noted to require more specification. Banks might not be too eager to offer such finance at the moment and in general, interest rates are expected to rise in the medium term. Ethical investment, carbon offset instruments and ESCOs were mentioned as options.

Heli Kotilainen (FIGBC) said that finance can have a significant leverage effect if new and innovative instruments could be devised. She offered to distribute a copy of *Financing Tools for Building Energy Efficiency* by the Dutch Green Building Council.

Erkki Laitinen called for innovations that do not raise the cost of housing, e.g. innovations in senior housing. He also suggested that it would be worth exploring whether pension funds could offer housing as a pension benefit (instead of pension income).

Juhani Heljo called for solutions that do not place the burden on private building owners. Loan periods should be long but interest rates should be low. It is society's benefit if buildings are renovated and kept in good shape, and it is also in the banks' interests to keep the value of the building stock stable. It is also important to have a good forward-looking planning process so that renovations do not come as a surprise for residents.

Harri Hakaste argued that finance is perhaps not the most significant problem as there are options available. He said that raising building owners' awareness is more important. However, the MoE is trying to promote the inclusion of audits and planning within the household tax deduction scheme as this could promote the quality of renovation plans.

Eero Nippala (Tampere University of Applied Science) argued that training of competent professionals is part of the cost equation since it has a direct impact on the quality of renovations. This has just started with the first training programmes for engineers in building renovation.

b) needs to develop informative instruments

One of the most important needs identified by several participants was the need to identify and train key actors: house managers (isännöitsijä) and building professionals. The house managers are important sources of information but seldom have much time for individual buildings, as they are more legal and financial administrators and residents are often not willing to pay for "additional" service. However, more attention should be devoted to including energy issues in the professional qualifications of house managers and also maintenance companies.

On the other hand, there is also the need to offer training for residents. For example in Tampere, they are offering training for housing company (condominium) board members (hallituksen jäsenet) to become Energy Experts.

Single-family home owners should have an unbiased, comprehensive online service.

There was also discussion concerning marketing: there is lots of information available but how to get people to search for it and use it? How to create demand for advice and service?

One of the problems is that renovation needs and renovations made are not visible in the purchase price of an apartment. This is because the market price of real estate is highly dependent on location. Since housing is a basic need, consumers should not be at risk of losing their money simply because of ignorance. For example, neglected renovations can accumulate significant liabilities for the building, but such “renovation liabilities” (korjausvelka) are not visible in the official documents (e.g. financial statements) of the building.

One suggestion (Juhani Heljo) was to include in the official building documentation a list of all possible renovations, which should be checked in terms of which renovations have been made and which have not been made. Terttu Vainio also mentioned a German online portal with data on renovations and examples of successful solutions.

There was also widespread agreement that data should be easily available and easily understandable and absorbable. This does not only concern residential buildings: e.g. Terttu Vainio told of public buildings where the top-level municipal administration is highly committed to energy efficiency (Covenant of Mayors etc. programmes) but this does not follow through on lower administrative levels. The Finnish Carbon-Neutral Municipalities was mentioned as a good example where different levels of administration and also political decision makers are engaged.

There is also a need to get information directly to residents and to make sure that they react appropriately (e.g. do not keep windows open in cold weather). Automation and individual heat metering can offer some help with these issues.

Harri Hakaste made a concrete proposal for a campaign (which gained widespread support) for capturing low-hanging fruit (“löysät pois”) which could identify and publicize a list of easy and cheap energy saving measures for different kinds of buildings. This could include a competition for buildings.

c) Need to develop technology and services

It was generally identified that there is a need to find service innovations that solve several societal problems at once (e.g. energy saving and ageing population).

Juhani Heljo suggested that reparability should be taken into consideration already when planning buildings – for example, ease of replacing piping when it reaches the

end of its life. Heli Kotilainen seconded this: there is a need for life cycle thinking when designing buildings.

Procurement competitions were widely supported. The practical suggestion of developing a procurement competition for exhaust air heat pumps for buildings within the district heating system was reiterated.

There is also a need for better tools to measure and monitor real energy consumption and to analyse the underlying causes. This is all the more urgent as the energy performance certificate is based on calculated consumption. It was noted that Green Building Council Finland is widely engaged in the development of new measures and indicators for buildings.





6. Closing of the workshop

Participants were thanked for their input and the lively discussion. The project team promised to distribute a report of the workshop as well as materials sent in by participants.

Annex: Slides concerning the ENTRANZE project

<p>ENTRANZE</p> <p>Supported by INTELLIGENT ENERGY EUROPE</p> <p>ENTRANZE –HANKE JA EUROOPPALAISIA ENERGIAKORJAUSTEN EDISTÄMISEN KÄYTÄNTÖJÄ</p> <p>Eva Heiskanen, Kuluttajatutkimuskeskus KOHTI LÄHES-NOLLAENERGIATASOA OLEMASSA OLEVASSA RAKENNUSKANNASSA-työpaja Ympäristöministeriö, 1.10.2013</p>	<p>ENTRANZE</p> <p>AGENDA</p> <ul style="list-style-type: none"> Projektista <ul style="list-style-type: none"> Tavoite Osahankkeet Tuloksia ja vireillä olevia asioita Keskustelua Eurooppalaisia energiakorjausten edistämisen käytäntöjä <ul style="list-style-type: none"> Yleisiä keinoja Kiinnostavia keinoja Hassuja ideoita Ryhmäyöskertelyn teemat <p>2 www.entranze.eu</p>
<p>HANKE</p> <p>ENTRANZE</p> <ul style="list-style-type: none"> Rahoittajana EC Intelligent Energy Europe –ohjelma <ul style="list-style-type: none"> jota koordinoi Executive Agency for Competitiveness and Innovation (EACI) Tavoitteena <ul style="list-style-type: none"> tukea jäsenmaiden politiikan tekijöitä kehitettäessä integroituja, toimivia ja tehokkaita ohjauskeino yhdistelmiä edistettäessä nopeaa ja laajaa lähes-nollaenergiarakentamisen tasoa (NZE) ja integroitaessa uusiutuvan energian lämmitys- ja jäähdytysratkaisuja (RES-H/C) olemassa oleviin rakennuksiin ja niiden korjaukseen EPBD:n ja RED:n mukaisesti Rakennuksista tarkastellaan asuinrakennuksia, julkisia rakennuksia sekä toimistorakennuksia Aikataulu: 4/2012-9/2014 <p>Supported by INTELLIGENT ENERGY EUROPE</p>	<p>REGIONAL COVERAGE</p> <p>ENTRANZE</p>  <p>4 www.entranze.eu</p>
<p>HANKKEEN KESKEINEN SISÄLTÖ</p> <p>ENTRANZE</p> <p>Olemassaolevan tiedon täydentäminen:</p> <ul style="list-style-type: none"> Lämmitys-järjestelmillä Rakennusten omistajien päätöksentekokriteereillä <p>WP2: Building related energy systems: structure and dynamics</p> <p>WP3: Technology analysis</p> <p>WP4: Scenario development</p> <p>WP5: Assistance in policy development</p> <p>Policy group-ryhmän ehdotusten pohjalta simuloidaan 3 skenaariot/maaa Työkaluna INVERTEE-Lab + POLES valmistuu 4/2014</p> <p>Kustannusoptimaalisen tason tunnistamiseen tarvittavat kustannus/energiakäyrät tuotetaan yleisimmille rakennustyypeille Käytössä kansallisten toimien listan päivitykseen v. 2014</p> <p>4 kokousta/maa 3 asiantuntijakonsulttiokierrosta/maa 2 työpajaa/maa</p> <p>Hankkeen suuntaaminen Politiikkaskenaariot Skenaarioiden arviointi</p>	<p>VIESTINTÄ JA VUOROVAIKUTUS TÄRKEÄSSÄ ROOLISSA</p> <p>ENTRANZE</p> <p>Continuous process over whole duration of the project</p>  <p>Kansallinen Policy Group</p> <p>Haastatteluja ja asiantuntijakeskusteluja</p> <p>Workshop laajenman näkemysten muodostamiseksi</p> <p>→ To ensure policy feasibility of project results and to gain and keep the commitment of decision makers to integrate the results in their policy agenda</p> <p>7 www.entranze.eu</p>

<p style="text-align: right;">ENTRA NZE</p> <p>KANSALLINEN OHJAUSRYHMÄ (POLICY GROUP)</p> <ul style="list-style-type: none"> ▪ YM Rymo ▪ TEM ▪ Syke ▪ RAKLI ▪ Kiinteistöliitto ▪ Aalto yliopisto ▪ VTT ▪ Tampereen teknillinen yliopisto <p style="text-align: right;"><small>www.entranze.eu</small></p>	<p style="text-align: right;">ENTRA NZE</p> <p>VALIKOITUJA TULOKSIA</p> <ul style="list-style-type: none"> ▪ Interactive Online Data Mapper (http://www.entranze.enerdata.eu) ▪ Energiatohokkaiden ja uusiutuvaan energiaan perustuvien ratkaisujen esteet ja ajurit erilaisissa omistajaryhmissä (D2.4 & D2.5) ▪ Overview of EU-27 building policies and programs (D5.1 & D5.2) ▪ Ohjauskeinokatsaus (D5.3) ja analyysi (D5.4) ▪ WP3 (kustannusoptimalisuus) mallinnus lähes valmis (kiitos TTY!) <p style="text-align: right;"><small>www.entranze.eu</small></p>									
<p style="text-align: right;">ENTRA NZE</p> <p>JOITAKIN HAVAINTOJA RAKENNUSTEN KÄYTTÄJISTÄ</p> <ul style="list-style-type: none"> ▪ Tilanne eri maissa ja eri omistajaryhmissä hyvin erilainen <ul style="list-style-type: none"> ▪ Ammattimaiset omistajat vs. käyttäjä-omistajat ▪ Asunto-Oy:t/vastaavat vs. omakotitalot ▪ Vuokra-asuntojen tilanne hyvin erilainen useimmissa maissa ▪ Rahoitus yhteinen huoli ja ongelma ▪ Energiaremontti ei ole vakiintunut käsite missään maassa ▪ Eri uusiutuvien ratkaisujen käyttöönoton/leviämisen vauhti vaihtelee <ul style="list-style-type: none"> ▪ Aurinkosähkö kovassa nousussa ▪ Lämmitysjärjestelmissä tapahtuu: rooli Suomessa kaukolämpöverkon ulkopuolella <p style="text-align: right;"><small>www.entranze.eu</small></p>	<p style="text-align: right;">ENTRA NZE</p> <p>TÄSTÄ NOUSEVAT POLICY GROUPIN IDEAT SUOMEN OHJAUSKEINOSKENAARIOIKSI</p> <ol style="list-style-type: none"> 1. BAU 2. Kohderyhmäkohtainen skenaario <ul style="list-style-type: none"> ▪ Omakotitalot – öljy- ja sähkölämmityksestä maa- ja puulämpöön <ul style="list-style-type: none"> ▪ Rahoitus + ratkaisujen kehittäminen ▪ Kerrostalot – 50-vuotiaat talot kuluttamaan 50% vähemmän <ul style="list-style-type: none"> ▪ Rahoitus + yksilöity neuvonta (rakennusvalvonta) 3. Hintaohjaus <ul style="list-style-type: none"> ▪ Energian (sähkö, lämpö, foss. polttoaineet) hinta ↑ 20/50/100% <p style="text-align: right;"><small>www.entranze.eu</small></p>									
<p style="text-align: right;">ENTRA NZE</p> <p>EUROOPPALAISIA ENERGIAKORJAUSTEN EDISTÄMISEN KÄYTÄNTÖJÄ</p> <p>YLEISIÄ KEINOJA KIINNOSTAVIA KEINOJA ERIKOISIA KEINOJA</p> <p style="text-align: right;"><small>www.entranze.eu</small></p>	<p style="text-align: right;">ENTRA NZE</p> <p>YLEISESTI KÄYTETTYJÄ ENERGIAKORJAUSTEN OHJAUSKEINOJA</p> <table border="1" style="width: 100%; text-align: center;"> <tbody> <tr> <td>Määräys- ohjaus</td> <td>Taloudelli- nen ohjaus</td> <td>T&K</td> </tr> <tr> <td>Tiedollinen ohjaus</td> <td>Demon- straatiot</td> <td>Osaamisen kehittäminen</td> </tr> <tr> <td>Seuranta</td> <td>Uusiutuvan energian tuki</td> <td>Yleinen energia- tehokkuuden edistäminen</td> </tr> </tbody> </table> <p style="text-align: right;"><small>www.entranze.eu</small></p>	Määräys- ohjaus	Taloudelli- nen ohjaus	T&K	Tiedollinen ohjaus	Demon- straatiot	Osaamisen kehittäminen	Seuranta	Uusiutuvan energian tuki	Yleinen energia- tehokkuuden edistäminen
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<p>ENTRANZE</p> <p>KIINNOSTAVIA KEINOJA: RAHOITUS VALTION BUDJETIN ULKOPUOLELTA</p> <p>Energiayhtiöiden energiansäästövelvoitteet (UK, IT, FR, DK, BE-FL)</p> <p>Green Deal (UK)</p> <ul style="list-style-type: none"> Palveluntarjoajat tarjoavat rahoitusta "Golden Rule" -säännön mukaisille investoinneille, jotka voidaan kuolettaa tetyssä ajassa ja jotka toteuttaa sertifioitu urakoitsija. Laina liittyy rakennukseen (sähkölaitteisiin) eikä omistajaan ja se maksetaan takaisin sähkölaskun yhteydessä. Laina siirtyy mahdolliselle seuraavalla asunnon/kiinteistön omistajalle tai vuokralaisille. Lisäksi energiayhtiöt rahoittavat vähemmän kannattavia toimenpiteitä sekä korjauksia pienituloisissa kotitalouksissa <p></p> <p>16 www.entranze.eu</p>	<p>ENTRANZE</p> <p>KIINNOSTAVIA KEINOJA:</p> <p>Hankintakilpailut (SE; FI)</p> <ul style="list-style-type: none"> Tavoitteena tuoda tehokkaampaa ja edullisempaa energiaa säästävää tekniikkaa markkinoille lupaamalla kilpailun voittajalle ensimarkkinan Energimyndigheten: mm. energiatehokkaat ikkunat ja jääkaapit, viime simpänä sähköautot Motiva: MotiVoitaja, Sitra: EeMontti <p></p> <p>16 www.entranze.eu</p>
<p>ENTRANZE</p> <p>ERIKOISIA KEINOJA (2)</p> <ul style="list-style-type: none"> Bucharestin energiaremontit Kunnat tukevat (75%) Euroopan investointipankin osarahoituksella Erityisesti Sector 1(/6): Pomestarin suurkampanja <ul style="list-style-type: none"> Rahoitus 100% kunnalta, samoin suunnittelu, toteutus ja valvonta (luokasta D->B) Muutama tuhat asunto remontoidaan vuodessa <p></p> <p>19 www.entranze.eu</p>	<p>ENTRANZE</p> <p>RYHMÄTYÖ/ Keskustelukysymyksiä</p> <ul style="list-style-type: none"> Tarvitaanko yksilöidempää ohjausta? Tarvitaanko uusia rahoituslähteitä? Tarvitaanko muita ohjauskeinoja? <p>a) Miten energiakorjausten rahoitusta tulisi kehittää? b) Miten tiedollista ohjausta tulisi kehittää? c) Miten tekniikkaa ja palveluja tulisi kehittää?</p> <p>19 www.entranze.eu</p>
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