

# Mitä tuo mukanaan uusittu rakennusten energiatehokkuus direktiivi sekä muut EU-säännökset?

## FINVAC – RIL seminaari 8.6.2011

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[www.rehva.eu](http://www.rehva.eu)

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## Two important policy plans adopted in March 2011 by the European Council

- **A roadmap for moving to a low carbon economy by 2050**
  - Upto 90% reduction of GHG emissions in building sector
- **Energy efficiency action plan**
  - Buildings one of the major target areas

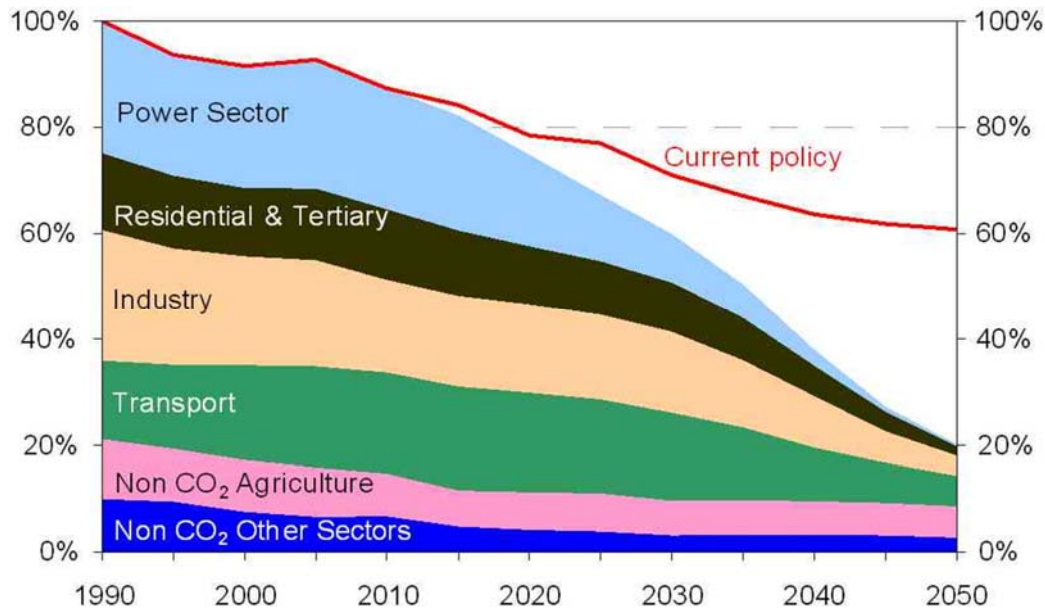


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# A roadmap for moving to a competitive low carbon economy in 2050

Adopted on March 8 th, 2011

<http://ec.europa.eu/clima/documentation/roadmap>



**EU GHG emissions towards an 80% domestic reduction (100% =1990)**

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## Energy efficiency action plan 2011

Adopted March 8 th by the Council

[http://ec.europa.eu/energy/efficiency/action\\_plan](http://ec.europa.eu/energy/efficiency/action_plan)

### Background:

**EU will achieve only half of 20-20-20 targets by 2020 if it continues current policy and actions**

### Some new actions:

- Exemplary role of the public sector
- Accelerate the refurbishment rate of the building stock
- Public authorities should be required to refurbish at least 3% of their buildings each year
- Energy efficiency criteria to be included in public procurement
- Improve the energy performance of appliances
- Improve the efficiency of power and heat generation
- More smart grids and smart meters



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# Important energy related directives at EU



## **Building performance – EPBD – 2002, Recast 2010**

Improvement of energy performance of buildings

## **End use efficiency and energy services -ESD**

Member States to save at least an additional 1% of their final energy consumption each year for the 9 years- second set of intermediate reports due in June 2011

## **Energy using products – EuP 2005 → Energy related product ErP 2009**

Aim at protecting the environment and securing energy supply

## **Renewable energies – April 2009**

Increase the use of renewables up to 20%, bio fuels up to 10%



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# Uusittu rakennusten energiätehokkuusdirektiivi 2010



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# Energiatehokkuusdirektiivi 2010

- Toteuttaminen aloitettu jo monissa maissa
- Pitäisi aloittaa pikaisesti myös Suomessa
- Suomalaiset mukaan EU-tason valmisteluun – kaivataan aktiivista osallistumista järjestöjen kautta (CEN, teollisuuden järjestöt: FIEC, CEETB, EURIMA, ACE jne)



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## Suurimmat muutokset energiatehokkuusdirektiivissä (1)

- Viittaus CEN standardeihin – tulee vahvistamaan niiden asemaa
- Kansalliset määräykset kustannusoptimaaliselle tasolle
  - Ohjeet valmisteilla komissiossa
- Vatimukset asetettava primäärienergiana
- 1000m<sup>2</sup> raja poistettu uusiutuvien energioiden sekä korjausten kohdalla
- Uusien rakennusten vaippaa koskevia ja vaihtoehtoisia energialähteitä vaatimuksia on noudatettava myös korjausrakentamisessa silloin kun taloudellisesti järkevää



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## Methodology to calculate cost-optimal level of energy performance regulations

- **MS and stakeholders workshop in March and May Guidelines for MS – to be published in July 2011**
- **Implementation in MS by 2013**
- **Net present value method based on EN15459**

## Some principles

- **Definition and use of the reference buildings (existing, building types etc.)**
- **Whose cost optimal? (private/societal)**
- **Estimated escalation rate of energy (oil, gas, coal on EU level, rest on national level) – Commission gives**
- **Expected economic lifecycle (20 and 30 years?)**
- **Interest rate 3%**

# Suurimmat muutokset energiatehokkuusdirektiivissä(2)

- **Määräykset myös teknisille järjestelmille**
- **Uudet rakennukset lähes nolla-energiarakennuksia vuoteen 2020 mennessä – julkinen sektori 2018**
- **Toimenpiteitä edellytetään markkinaesteiden poistamiseksi**
- **Energiatodistusten asemaa vahvistettava**



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# Suurimmat muutokset energiatehokkuusdirektiivissä(3)

- **Kattilatarkastuksista lämmitysjärjestelmän tarkastuksiin**
- **Ilmastoinnin tarkastuksissa painoa enemmän jäähdytystarpeen vähentämiseen**
  - REHVA lla ohjekirja valmisteilla
- **Riippumattoman toditusten ja tarkastusten valvontajärjestelmän käyttöönotto**
- **RES ja ErP (ent EuP) direktiivit otettava myös huomioon**



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# Korjausrakentaminen

- Tavoitteena korjata 3% rakennuskannasta vuodessa
- Trendi on kohdistaa uudisrakentamisen vaatimukset yhä pienempiin kokonaisuuksiin – jopa rakennusosatasolle (Saksassa raja 50m<sup>2</sup>)
- Tukitoimia kaikissa maissa



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## Rakentamismääräykset ja laskenta

### Parannettavaa 2010 jälkeen

- Sähkön käytön laskenta kehitettävä jotta säästötoimet voitaisiin kohdistaa oikein
- Ilmanvaihto ja ilman laatu
- Lämmin käyttövesi nousee yhä keskeisempään asemaan asuinrakennuksissa
- Määräysten kohdennettavuutta laajennettava (loma-asunnot)
- Alueellinen energiatehokkuus (esim uusiutuvia koskevat vaatimukset)
- Materiaalitehokkuuden mukaanotto
- Dynaaminen laskenta välttämätöntä



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## New/unusual/innovative systems that are not yet included in “official” calculation process exceptions identified

- Night time ventilative cooling – DK, FR
- Ground source cooling – DK, FR
- Air quality or demand based ventilation - DK
- Demand controlled lighting - DK
- Thermal bridges for cooling season- DK
- Ventilation effectiveness
- Double skin facades
- Water loop heat pumps for simultaneous heating and cooling
- Phase change materials
- Aquifer cooling and heating
- Evaporative and desiccant cooling
- Waste water heat recovery



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## Directive on the promotion of the use of energy from renewable sources (Adopted in April 2009)



- electricity, heating, cooling and transport
- a 20% target for the overall share of energy from renewable sources and
- a 10% target for renewable energy in transport



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# Renewable sources defined as

- **Active solar**
- **Hydro**
- **Biomass (boilers or co-generation) with min fuel efficiency >0.8**
- **Wind**
- **Geothermal**
- **Heat sources of heat pumps – COP > 2.88 (air, water, ground)**

**Not included in renewable energies to avoid double counting:**

- **Improvements in energy efficiency**
- **Passive solar**



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## Increasing the share of renewable energies from 2005 to 2020

<b>Latvia</b>	<b>32.6%</b>	<b>→</b>	<b>40%</b>
<b>Finland</b>	<b>28.5%</b>	<b>→</b>	<b>38%</b>
<b>Denmark</b>	<b>17.0%</b>	<b>→</b>	<b>30%</b>
<b>Estonia</b>	<b>18.0%</b>	<b>→</b>	<b>25%</b>
<b>France</b>	<b>10.3%</b>	<b>→</b>	<b>23%</b>
<b>Spain</b>	<b>8.7%</b>	<b>→</b>	<b>20%</b>
<b>Germany</b>	<b>5.8%</b>	<b>→</b>	<b>18%</b>
<b>Greece</b>	<b>6.9%</b>	<b>→</b>	<b>18%</b>
<b>Italy</b>	<b>5.2%</b>	<b>→</b>	<b>17%</b>
<b>The Netherlands</b>	<b>2.4%</b>	<b>→</b>	<b>14%</b>



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# Renewable energies

**Many countries have a quota for RES to achieve the goals of the RES directive, examples (2010):**

- DE (15 - 50% depending on type of building and RES)
- NO (40%) – DH included
- UK (10%)
- SL (25%)
- IT (Lombardia) min 50% of the energy used for DHW
- DK Demand for thermal solar if DHW consumption exceed more than 20 m<sup>3</sup>/day
- NL gives credits for the RES use
- Other countries are investigating the issue (BE, HU)



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## EU-projects converting policy into action

### The Intelligent Energy Europe Programme

Executive Agency for Competitiveness and Innovation – EACI  
SAVE and ALTERN Programmes



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# EU-projects converting policy into action

## IEE (Intelligent energy Europe) PROGRAMME (2007-2013)

YEARS	2007	2008	2009	2010	2011	2012	2013	Total 2007-2013
IEE 2 Budget (mio€)	65.0	70.4	88.3	109.2	112.6	131.2	150.6	727.3

- Complementary to research programs FP7... and Structural Funds
- Annual Work Programmes / Call for Proposals
- 2011 call closed in May 12, 2011 – about 80 M€
- Focus on local level, practical application, financing schemes



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[www.buildup.eu](http://www.buildup.eu)

**BUILD UP: An Open Platform  
to Disseminate Energy  
Efficiency Related Information  
for Building sector**

Supported by the EU Commission

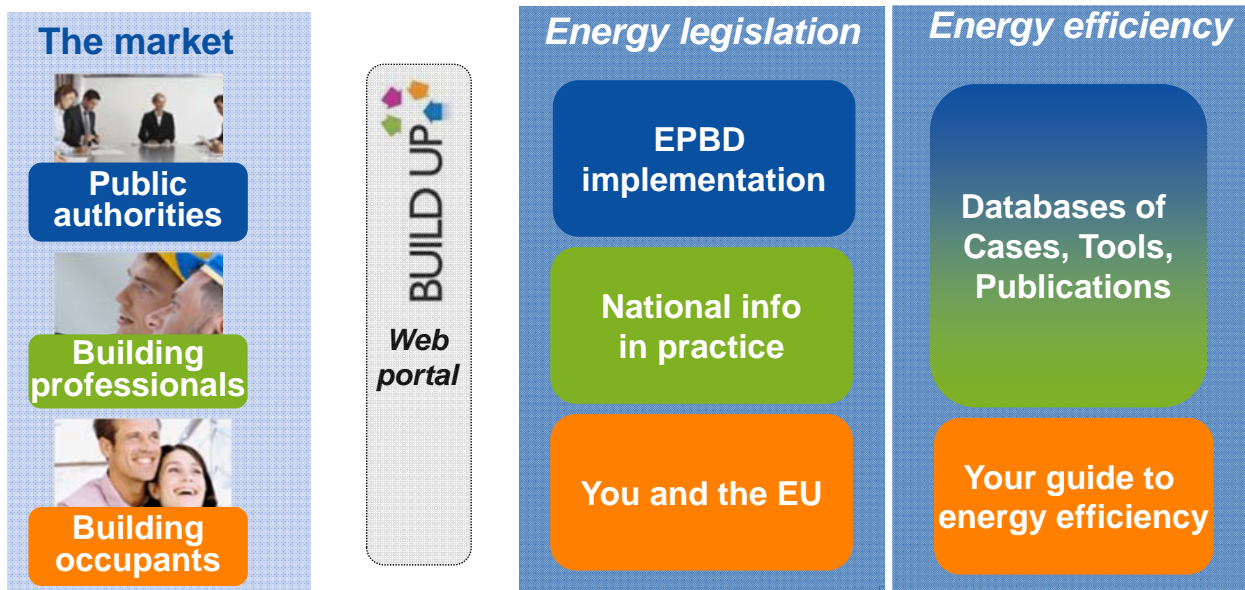
[www.buildup.eu](http://www.buildup.eu)



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# Solutions for different audiences



## Status of the BUILD UP Web portal 2011

- Over 600 visitors a day
- English is the main language but material in all 23 EU languages accepted (headlines in 22 languages)
- Search by language, theme, topic, keyword, date, country, etc. status in March 2011
- 1909 publications
- 1130 links
- 161 cases
- 147 tools
- 49 upcoming events
- 27 communities

**BUILD UP 2 (2011 – 2014) – REHVA is one of the partners**

## Some building industry related EU bodies

- **DG ENERGY:** Energy efficiency (EPBD, RES, ErP, Energy Labelling)
- **DG SANCO:** Indoor Climate, health and ventilation
- **DG ENVIRONMENT:** building labelling
- **DG ENTR:** Eco-design of energy related products
- **CEN** – Revision on EPBD related standards – TC 371
- **EACI** –Executive agency for innovation and competitiveness: BUILD UP etc.



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## EU regulations related HVAC in buildings at [www.rehva.eu](http://www.rehva.eu)->EU regulations

<p><b>EU legislation</b> Legislative process, Parliament, Council, Commission, Committees, Directives, Decisions, Regulations, Policy documents, Important directives</p>	<p><b>Energy performance of buildings directive</b> Directives Concerted action EPBD BUILD UP Nearly Zero Energy Buildings CEN Standards and EPBD</p>	<p><b>Eco-design of energy related products directive (ErP)</b> Scope of the directive HVAC product groups (Lots) Products regulations Preparation studies</p>
<p><b>Renewable energy sources directive</b> (RES)</p>	<p><b>Buildings labelling</b> EU Eco-labeling criteria and Green Public Procurements for Products EU Eco-label and Green Public Procurement for Buildings</p>	<p><b>Indoor Environmental Quality</b> Outdoor air quality Environmental noise Indoor air quality and thermal comfort</p>
<p><b>F-Gas regulations</b> Regulation Confinement of fluorinated gases, Labelling Staff training and certification</p>	<p><b>Projects</b> Intelligent Energy - Europe programme Energy regulations related projects Indoor air quality related projects Executive Agency for Health and Consumers</p>	<p><b>CEN and ISO standards</b> What is CEN, what is ISO? Who can participate in standardization? How a European standard is prepared? What is "EN ISO" Standards? EPBD standards</p>



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