

## **COMMUNICATION TOWARDS PUBLIC AUTHORITIES**

### **JOINT REPORT ON FINANCIAL SUPPORT SCHEMES**

**Title**

Country reports on financial support schemes

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## 1. Introduction

The housing market in most countries is highly regulated. This poses a substantial barrier for innovative building concepts, especially for passive and very low energy houses and technologies. As the housing market is a very sensitive political issue, public authorities (officials as well as politicians) behave very "conservative", meaning that they tend to keep regulation to protect the public from unreliable technologies.

This study focuses on the know-how transfer towards public authorities (politicians and civil servants). This study is based on the specific situation in participating countries and an intensive exchange of experience within the consortium relevant stakeholders from public authorities.

As a starting point for this study, all participating countries delivered a report about the current situation in their country with respect to the above mentioned subject. Based on the reports from participating countries an overview of the specific situation of regulation and financial support schemes will be available from all countries. Members of consortium will report improvements with regard to regulation at the end of the project. This report will also be used to evaluate the advancement during the life-span of the project. The exchange of information and the international conference will help to start a network of representatives from public authorities.

This study should help to develop favourable financial conditions (e.g. via funding schemes) in participating countries.

This study was developed in the framework of the IEE project "PASS-NET".

## 2. Subsidies overview

### 2.1. Possible form of subsidy

#### 2.1.1. Loan

Financing through long-term loan with very low interest rate. The interest rate is usually around 2 % below current interest rate and often it is combined with other ways of support, ex.:

- repayment-free start-up years
- fixed interest rate for some years
- possible off-schedule repayment at any time also in partial amounts without any extra charge
- free of fees

This kind of subsidies for passive houses is used in Austria (in most regions) and Germany.

#### Advantages

- returning investments for institution providing subsidy (long term subsidy programme)

#### Disadvantages

- communication towards people
- more difficult administration
- necessity of cooperation with financial institution (banks etc.)

#### 2.1.2. Direct payment

Co-financing of the investment through direct grant to the applicant. The height of grant may depend upon the effectiveness of the investment, or percentage of the investment. An additional grant is often used to support designing costs or construction supervision.

This kind of subsidy is used in Austria (some regions), Belgium (regional level), Czech Republic and Germany (only marginally).

#### Advantages

- motivation for people (boosting the market)
- easy administration (both grant giving institution and applicant)
- easier communication towards people

#### Disadvantages

- risk of running out of financial sources

- bigger amount of financial sources must be available

### 2.1.3. Tax reduction

Deduction of taxes (percentage or fixed amount) for certain time period. Most suitable taxes are income tax and real estate tax.

This kind of subsidy is used in Belgium.

#### Advantages

- no need for financial sources
- legal claim for subsidy

#### Disadvantages

- may be difficult for applicant

## 2.2. Reason for the subsidies

### 2.2.1. Economy

- boosting economy and employment, mostly on local level

### 2.2.2. Environment

- reduction of CO<sub>2</sub> emissions and dependency on fossil energy

### 2.2.3. Social

- lower energy invoices and lower total cost of ownership of the building

## 2.3. Summary per country

Country	Description
Austria	<ul style="list-style-type: none"> <li>• Differs region to region, mostly low-interest credit</li> <li>• Housing is supported for a long time, now the conditions are getting more strict (towards energy efficiency)</li> <li>• Height of the subsidy depends on the energy performance, in some region quite high subsidy for basic level (not motivating for high energy standards)</li> <li>• Sources: state national budget splitted among the regions</li> </ul>
Belgium	<ul style="list-style-type: none"> <li>• National level: income tax reduction 10x 790 EUR</li> </ul>

	<ul style="list-style-type: none"> <li>• Regional level: grant or real estate tax deduction (10 years)</li> <li>• Communal level: grant</li> </ul>
Czech Republic	<ul style="list-style-type: none"> <li>• New buildings: grant – fixed amount per house/dwelling</li> <li>• Refurbishment: grant – fixed amount per m<sup>2</sup></li> <li>• Sources: revenues from international emission trading scheme</li> </ul>
Germany	<ul style="list-style-type: none"> <li>• National level: long-term low-interest credit by KfW</li> <li>• Lot of regional or local subsidies</li> <li>• Two levels of support: KfW55 (55 % of EnEV2007) – lower interest rate, KfW70 (70 % of EnEV2007)</li> <li>• Refurbishment: reaching the standard min EnEV2007, or -30 % of EnEV2007 (better conditions), or single measurements</li> </ul>

## 2.4. Detailed overview per country

### 2.4.1. Austria

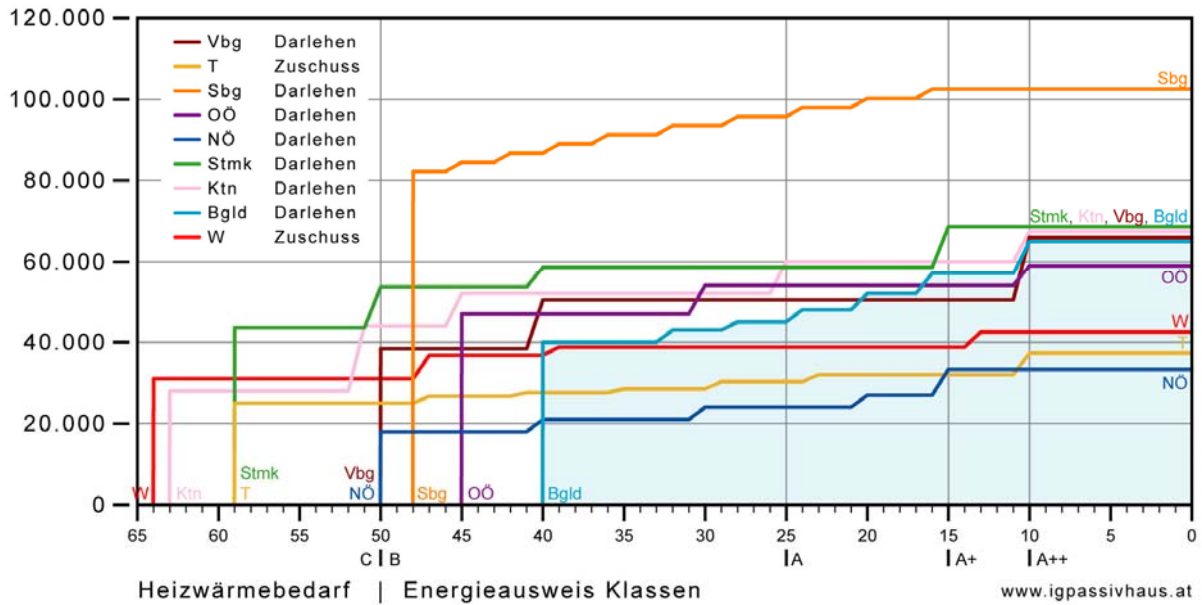
In all provinces there are special subsidies for passive houses. In general the subsidy gets higher the better the energy efficient standard of a building is.

In some communes there are extra subsidies, too.

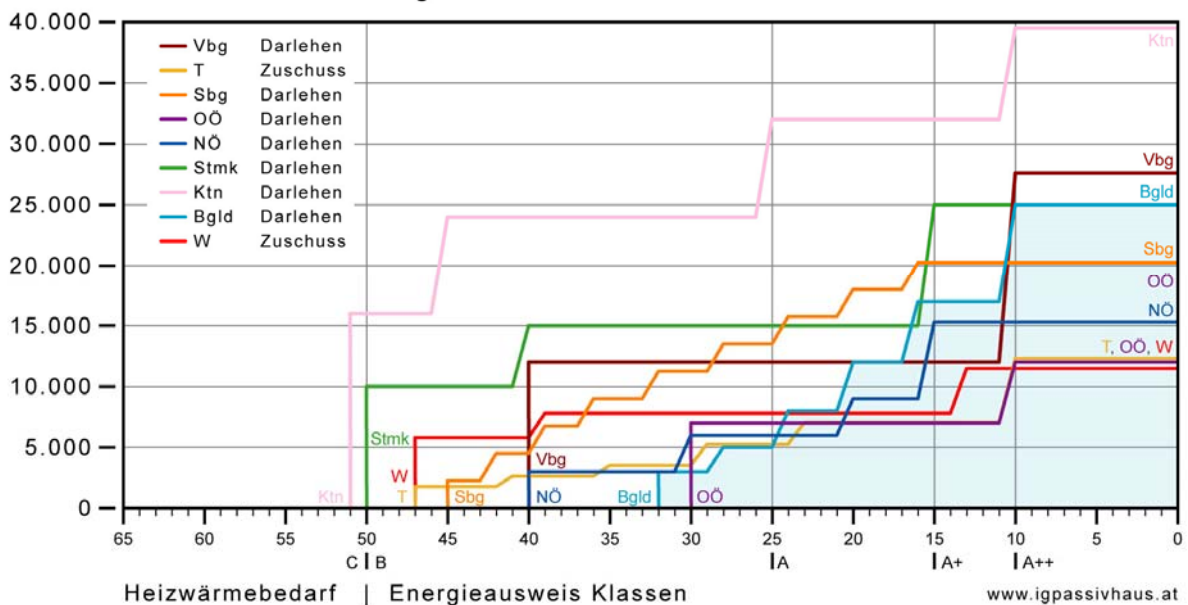
#### 1. Form and rate of contribution of subsidies

The form and rate of contribution are depending on the province. Most provinces offer low-cost credits. Direct payments are offered in some. Tax reductions are not common but often discussed.

**Abstufung der Förderung nach Energieeffizienzkriterien inkl. Basisförderung für den Neubau von Eigenheimen in Österreich**



**Abstufung der Förderung nach Energieeffizienzkriterien ohne Basisförderung für den Neubau von Eigenheimen in Österreich**



2. *Legal claim for the subsidy*

Yes, if all requirements are fulfilled. Clients have to apply for subsidy at provincial government, institute or bank. There are no competitions for subsidy. It just can happen that some extra subsidies are limited to a number of buildings.

3. *Dependence on the energy performance*

In general the subsidies depend on the energy performance. The levels are quite different between the provinces. The high depends on other things, too: size of the family, income, renewable energy, security, green materials, handicapped accessible living.



4. *Reason for the subsidies*

- To make it possible, that everybody can own a home.
- Boosting economy and employment
- Reduction of CO<sub>2</sub> emissions and dependency on fossil energy

5. *Benefits for grant making institution*

- Affordable living
- Higher employment and stable economy
- Clean environment

6. *Impact on the development of passive houses*

High influence on development of passive houses. In provinces with good subsidy system passive houses are booming. In provinces with bad subsidy system passive houses are stagnating. This happens because most people calculate short term and ignore the savings in future.

7. *Sources of finance for the subsidies*

There are national sources (€ 1780 million per year) which get split for the provinces. Provinces have the possibility to use the money also for infrastructure as they do with some.

8. *Weaknesses and disadvantages*

It's difficult to have a survey of 9 different systems.

The structure in the most provinces leads to low effects of regulation (high basic level; flat structure of levels).

9. *Proposed improvements or changes*

Reducing the point where basic level starts (40 kWh/m<sup>2</sup>a); exponential structure of the levels; more money for energetic optimal renovations

10. *Description of the application form*

Application form Lower Austria (Annex 2 in German):  
[www.noel.gv.at/bilder/d3/Ansuchen2006\\_EH.pdf?1567](http://www.noel.gv.at/bilder/d3/Ansuchen2006_EH.pdf?1567)

Online Application Lower Austria (for trying):  
[https://formular.noel.gv.at/forms/fscasp/content/bin/fscvext.dll?ax=COO.1.1001.1.83288&dx=COO.2117.560.1.1085&sol\\_createclass=COO.2117.560.1.1577&catetst=true&ru=http://www.noel.gv.at/](https://formular.noel.gv.at/forms/fscasp/content/bin/fscvext.dll?ax=COO.1.1001.1.83288&dx=COO.2117.560.1.1085&sol_createclass=COO.2117.560.1.1577&catetst=true&ru=http://www.noel.gv.at/)

Application form Upper Austria (Annex 3 in German):  
[http://esv.or.at/esv/fileadmin/esv\\_files/Privathaushalte/Ansuchen\\_Eigenheim\\_2\\_.pdf](http://esv.or.at/esv/fileadmin/esv_files/Privathaushalte/Ansuchen_Eigenheim_2_.pdf)

Application form Salzburg (Annex 4 in German):  
<http://www.salzburg.gv.at/dot-formulare-bw-w9099.dot>

11. *Passive house definition*

In general it's according to the Austrian standard OIB directive 6. There the energy efficiency grade A++ is defined as 10 kWh/(m<sup>2</sup>a) gross floor space. But there are varieties in some provinces, too. A calculation according to PHPP is common in Vorarlberg and Burgenland, too.

12. *Documentation of energy performance, certification, verification*

The European energy performance certificate is necessary which can be done by a technical bureau. Provincial Institutions are verifying the documentations. In Vorarlberg and Burgenland a calculation according to PHPP can be necessary, too.

13. *Studies about influence of passive houses to the local economy*

Short analysis of Austrian building sector in English:

[http://www.wifo.ac.at/www/servlet/www.upload.DownloadServlet/bdoc/S\\_2007\\_HOUSING\\_SUMMARY\\_29180\\$.PDF](http://www.wifo.ac.at/www/servlet/www.upload.DownloadServlet/bdoc/S_2007_HOUSING_SUMMARY_29180$.PDF)

Long version in English:

[http://www.wifo.ac.at/www/servlet/www.upload.DownloadServlet/bdoc/S\\_2007\\_HOUSING\\_29179\\$.PDF](http://www.wifo.ac.at/www/servlet/www.upload.DownloadServlet/bdoc/S_2007_HOUSING_29179$.PDF)

On [www.wifo.ac.at](http://www.wifo.ac.at) should be some more detailed analysis, too.

14. *Economical analyses about passive houses*

A calculator for economic efficiency is in work. Will be available by 2009 at the IG Passivhaus Österreich website [www.igpassivhaus.at](http://www.igpassivhaus.at).

15. *Support for non-residential development*

No subsidies.

## 2.4.2. Belgium

1. *Form and rate of contribution of subsidies*

- **on a federal level**

10x € 790\*/year deductible from the income tax (after calculation) for certified passive houses. The tax cut is allocated for 10 successive years, starting with the year of certification.

The certification is based on a verification of the PHPP calculation according to the AS-BUILT plans, and is executed by Passiefhuis Platform. Parallel to this, free EPBD software is used to calculate a primary energy level, as a legal obligation for all new houses. This software is at the moment not exact enough, so passive houses still have to be calculated by PHPP. [www.minfin.fgov.be](http://www.minfin.fgov.be)

+ € 2550\*/year of classical tax cut for energy saving investments (€ 3440\*/year for a solar water boiler and/or PV panels) [energie.wallonie.be](http://energie.wallonie.be)

(\* ) this is indexed each year, prices here are for the year 2008

• **on a regional level**

- a. Flemish region  
40% deduction of the real estate tax for a period of 10 years, planned to start in 2009, exact conditions and procedures still have to be decided on.
- b. Brussels region  
€ 100\*/m<sup>2</sup> up to 150 m<sup>2</sup>, and € 50/m<sup>2</sup> per further m<sup>2</sup> (m<sup>2</sup> is net usable surface), for certified passive houses.  
[www.ibgebim.be](http://www.ibgebim.be)
- c. Walloon region  
€ 6500\* for a new single family house  
[energie.wallonie.be](http://energie.wallonie.be)

• **on a communal level**

- a. Bv. City of Turnhout  
€ 3000 for a newly built certified passive house  
[www.turnhout.be](http://www.turnhout.be)
- b. Bv. City of Bilzen  
€ 5000 for a newly built certified passive single family house
- c. Bv. Community of Balen  
€ 1000 for a newly built certified passive house  
[www.balen.be](http://www.balen.be)

• **utility companies (companies that manage the power grid and distribution grid)**

Bv. € 2000 for a renovation towards a passive house, € 1500 for a newly built passive house (EANDIS)

2. *Legal claim for the subsidy*

In all of these subsidies, it's a legal claim, no competition.

3. *Dependence on the energy performance*

Mostly this is the case, yes. For some subsidies, there is only a PH subsidy.

4. *Reason for the subsidies*

Different for each of them:

On federal level, effect of a special interministerial conference on climate change. On all levels, it helped to have PH-concept in the political programme of some parties, to have a motivated person within parties to put it in the programme. In the mean time, most of the

parties make reference to PH-standard. But still there is resistance in one important party that doesn't want to hear about 'passive houses'.

5. *Benefits for grant making institution*

Mostly: lower energy invoices and lower total cost of ownership of the building. Also (but much less: environment, social impact ...).

6. *Impact on the development of passive houses*

It gets publicity, which works very well. If the amounts are important, then development is important. Otherwise, it stays limited to the publicity effect.

7. *Sources of finance for the subsidies*

Different for all levels. There's the income tax and real estate tax, but also local government budgets as sources.

8. *Weaknesses and disadvantages*

It's not perfect yet. There's still discussion on who should certify passive house projects in order to get the grants. Currently, it's Passiefhuis Platform, but some say it should be open to other certifiers. Also: it is interesting to have one clear and significant subsidy instead of multiple (but smaller) subsidies with different procedures. (But this might be a typical Belgian problem, with multiple regions and languages.) Also: we have two procedures: EPBD and passive. We'd better have one procedure and calculation instead of two. A last point: strong discussion on the need to include  $n_{50} \leq 0,6$  as requirement, both on the value itself as even on the need to include airtightness as a requirement as such (the argument is: you could achieve good comfort and very low energy consumption even with  $n_{50} = 1, 1.5, \dots$ ).

9. *Proposed improvements or changes*

Coupling it to the 'normal' EPBD obligations. Having one energy procedure with both EPBD and passive calculations and certificates. Currently there are still important political and administrative barriers to achieve this.

10. *Description of the application form*

Annex 5: application form Brussels region (in Dutch).

11. *Passive house definition*

Mostly: 15 kWh/(m<sup>2</sup>a) for heating demand and  $n_{50} \leq 0,6$

12. *Documentation of energy performance, certification, verification*

PHP is the current authority, but under discussion. PHP also verifies.

13. *Support for non-residential development*

Some subsidies also apply for non-individual dwellings and non-residential buildings

### 2.4.3. Croatia

There is no assistance in Croatia with any form of low energy housing or other type of building.

### 2.4.4. Czech Republic

There is a subsidy programme supporting complex refurbishments of old single- and multifamily houses to higher energy performance, newly built single- and multifamily passive houses and use of renewable energy sources in buildings starting on April 7<sup>th</sup> 2009.

#### 1. Form and rate of contribution of subsidies

Direct payment:

New buildings single family houses: 220 000 CZK/building

New buildings multi family houses: 140 000 CZK/flat

Refurbishment single family houses 70 kWh/(m<sup>2</sup>a): 1 300 CZK/m<sup>2</sup>

Refurbishment single family houses 40 kWh/(m<sup>2</sup>a): 1 950 CZK/m<sup>2</sup>

Refurbishment multi family houses 55 kWh/(m<sup>2</sup>a): 900 CZK/m<sup>2</sup>

Refurbishment multi family houses 30 kWh/(m<sup>2</sup>a): 1 350 CZK/m<sup>2</sup>

#### 2. Legal claim for the subsidy

The support is conceived as semi-mandatory – i.e. it has been drawn up so that the funds available within the program can be drawn during the entire term of the program, 2009 – 2012, without any substantial changes in the conditions, and that the funds can be provided to everyone who applies for them and fulfils the conditions. Complete programme see Annex 6 (in progress, will be available soon).

#### 3. Dependence on the energy performance

New buildings:

- support for new passive family houses and apartment buildings

Refurbishment:

- complete insulation of the envelope of family houses and apartment buildings ensuring a low energy standard of the buildings
- individual measures leading to savings of energy for heating

#### 4. Reason for the subsidies

Reduction CO<sub>2</sub> emissions, support of local economy, political popularity

5. *Benefits for grant making institution*

Improving local environment, support of local economy due creating new jobs, support of innovation (new products) and high quality work

6. *Impact on the development of passive houses*

No figures available yet

7. *Sources of finance for the subsidies*

The Czech Republic has an estimated emissions surplus equalling 150 million tons of CO<sub>2</sub>eq. (or AAU, Assigned Amount Units) within the Kyoto Protocol regime for the 2008 – 2012 period, of which approximately 100 million AAUs can be traded in the framework of the international emission trading scheme. The revenues from the sale of the AAUs are estimated in the amount of CZK 10 – 25 billion, where a major part of the revenues should be obtained already during 2009.

8. *Weaknesses and disadvantages*

Too early to judge

9. *Proposed improvements or changes*

Too early to judge

10. *Description of the application form*

Not available yet.

11. *Passive house definition*

According to TNI 73 0329 (single family houses) and TNI 73 0330 (multi family houses).

12. *Support for non-residential development*

No.

#### 2.4.5. Germany

In Germany you can get a credit with a very low interest rate if you built a house with low primary energy consumption by the KfW Bank. The KfW bank is the biggest bank for subsidies in whole Germany.

The primary energy consumption of a passive house is almost below 40 kWh/(m<sup>2</sup>a) for heating and domestic hot water. For each flat you get a grant-aided credit of 50 000 EUR.

1. *Proposed ideal way of support for passive houses*

Found networks and spread the information with this cooperation. Do a lot of seminars with planners and house builders. Lobbying is very important. Try to see the situation out of the lobbyists eyes. Go to the peoples and speak directly to them and connect them with people who live or work in passive houses.

2. *Form and rate of contribution of subsidies*

There are low-cost credits in Germany. The difference of the interest between normal and low-cost credit differs from time to time, but the interest is about 2-3 % cheaper.

3. *Legal claim for the subsidy*

There is a maximum budget for a period, but in the last years everybody gets the subsidies.

4. *Dependence on the energy performance*

Yes. It depends on the primary heat demand.

5. *Reason for the subsidies*

The higher costs for lower heat demand can be financed with the low-cost credit. With the money you save because of low energy consumption can be used for repay the credit.

6. *Benefits for grant making institution*

If you built a high energy house you give your money to the energy combines. If you built a passive house you give your money to the local economy and the local banks.

7. *Impact on the development of passive houses*

It helps to convince people who think about energy efficient housing. The bankers more and more increase the liquidity for people that built passive houses. But they have to have a big knowledge about passive housing.

8. *Sources of finance for the subsidies*

All national level.

9. *Weaknesses and disadvantages*

Generally it is suitable. One problem is that the KfW bank is not always up to date with the newest developments and so they support sometimes also older standards.

10. *Proposed improvements or changes*

The support should only be spent for passive house and better standards.

11. *Description of the application form*

There are two main possibilities: PHPP calculation or EnEV (a part of the German building regulations) based calculation. The rest is a very easy template with name and method of verification. The calculation must be done by an accredited person.

12. *Documentation of energy performance, certification, verification*

On PHPP or EnEV calculation. The KfW is inspecting the calculation. Only in rare cases the building is verified. The accredited person is responsible for the accuracy of the calculation.

### 13. Support for non-residential development

Quite the same as for residential buildings. Some federal states or local districts have additional subsidies.

#### 2.4.6. Romania

There are no subsidies in Romania.

##### 1. Proposed ideal way of support for passive houses

We propose below several types of possible support allowing the promotion the passive house area in the Romanian residential sector:

Financial support: about 50 % of the passive house design costs, and maximum 15 % of the total project cost (without land cost) representing the difference between the standard house cost and passive house cost.

Technical support – free technical consulting services regarding the best companies (engineering, architecture, construction, equipment and material suppliers, etc) in the EU passive house market and information about EU success passive house projects.

#### 2.4.7. Slovakia

There is no assistance in Slovakia with any form of low energy housing or other type of building.

#### 2.4.8. Slovenia

There are two sources of subsidies or financial support for housing (residential buildings) in Slovenia.

The first one is called **Eco Fund – Slovenian Environmental Public Fund**, which assigns in this year for the first time in the name of Slovenia non-repayable financial stimulations for investments in solar heating systems, complete renewal of one- or two-dwelling buildings and building new low energy and passive houses. Non-repayable financial support for individuals in community for use of renewable source and efficient use of energy in dwelling buildings on territory of Slovenia are meant for next causes:

- Implementation of solar heating systems (SHS),
- Complete renewal of dwelling building (CRB),
- Building dwelling buildings with low energy or passive technology (LEH/PH).

Tender Eco Fund – Slovenian Environmental Public Fund:

- Public tender for non-repayable financial support for individuals in community for use of renewable source and efficient use of energy in dwelling buildings ISUB-OB08

The second one is managed under **European Affairs and Investments Directorate – Slovenia, efficient use and renewable energy sources division** and covers three areas (A, B and C):



**A.** With co-financing in frame of budgetary implements trough public tenders is it encouraging utilization of renewable sources of energy, namely: Utilization of sun energy (solar and photovoltaic energy system) of surrounding arias (heat pumps for central heating of facilities) and energy utilization of wood biomass (wood biomass boilers and district heating systems) and efficient use of energy:

- insulation of frontage, attic and roof above heated attic and replacement and renewal windows and hydraulic balancing heating systems in dwelling residential buildings (tag for public tenders JR-ST=building).

**B.** Co-financer encourages efficient use of energy and utilization of renewable source of energy with financial support for investments (with studies), utilization of renewable source of energy with co-financing investment projects. Invitations for tenders are each year in accordance with budgetary implements:

1. Financial stimulations for preparation of investments

- stimulation of energy examination of Institutions, companies and dwelling residential buildings,
- support for preparing investment documentation for projects for efficient use of energy, for utilization of renewable source of energy and cogeneration (heat and power station).

2. Financial support for investment measures for use/utilization of renewable source of energy

- utilization of geothermal energy for heating supply,
- heat pumps for heating supply,
- solar energy collectors for water heating,
- setting up of self-supporting power stations on sun or wind power.

3. Financial support for investment measures for energetic use of wooden biomass,

- wood biomass boilers and heating systems for wood biomass,
- (micro)remote systems.

**C.** Financial support for investments in utilization of renewable source of energy

Renewable source of energy is in the future the meaning source of primary energy in Slovenia; the priority is to increase the part of this source. They are many benefits from using renewable source of energy: reduction of emissions, economizing with fossil fuels, reducing of import dependence and reducing the impacts of macroeconomic on the regional and local economy.

Because of that Agency in a frame of budgetary implements through public tenders encourage utilization of renewable source of energy namely: use of geothermal energy and energy of surrounding aeries, solar energy and the energy of wood biomass for heating utilities and water and under special conditions use of water and wind for producing electric power/electricity.

1. Form and rate of contribution of subsidies

**A. Implementation of solar heating system (SHS)**

The amount of non-repayable financial support is 25 % recognized costs of investments which include purchase and implementation of receiver for solar energy, appropriate installation, pumps and control elements of the system, but not more than 150 EUR/m<sup>2</sup> for systems with flat receivers and not more than 200 EUR/m<sup>2</sup> for systems with vacuum receivers.

**B. Complete renewal of dwelling building (CRB)**

Condition to get the financial support/subvention is to do more measures on one or two dwelling building, namely:

- thermal insulation of outside envelope of building (frontage, roof and/or boards against not-heated attic and/or basement)

Thickness of insulation material is most at least:

	curtain walls	roof/attic	basement
Thermal conductance of insulating material ( $\lambda$ )	$\leq 0,045$ W/mK	$\leq 0,045$ W/mK	$\leq 0,045$ W/mK
Thickness of insulation is most at least	12 cm	25 cm	8 cm

- replacements of outside building furniture (windows, balcony doors and of firm glazing, includes replacement with new one with  $U < 1,0$  W/(m<sup>2</sup>K) for glazing or  $U < 1,3$  W/(m<sup>2</sup>K) for windows and frame together.
- renewal of heating system (includes up-to-date devices and heating systems of facilities and for domestic hot water).  
Efficiency of recirculation of heat from waste are has to be most at least 80 % and it has to be visible from suitable technical proof of producer of device.

Applicant for implementation for investment in whole renewal of existing building has to provide a detailed expert report of building physics, which has to be done before renewal and after and it has to proof reduction of use of energy for most at last 40 % of yearly need for heat/energy for heating.

The amount of financial support is amounting to most 25 % of cost estimate for investment, which includes costs of replacement, buying and to build in the materials, but not more then it is in the table:

Action	Unit	maximum amount	maximum costs in EUR/unit
windows ( $U_g \leq 1,0$ W/(m <sup>2</sup> K), $U_w \leq 1,3$ W/(m <sup>2</sup> K))	m <sup>2</sup>	30	75,00
Thermal insulation of curtain walls – frontage (Thickness of isolation $d \geq 12$ cm)	m <sup>2</sup>	200	12,00

Thermal insulation of basement	m <sup>2</sup>	10	6,00
Thermal insulation of roof or attic	m <sup>2</sup>	150	8,00
condensing boiler on ELKO	kW	20	62,00
condensing boiler on gas	kW	20	62,00
boiler for/on wooden biomass – wood chips	kW	20	100,00
boiler on wood biomass	kW	20	75,00
boiler on wood biomass – pallets	kW	20	100,00
heat pump (system water-water)	*kW	2,5	1 000,00
heat pump (system earth-water)	*kW	2,5	1 000,00
local mechanical ventilation with heat recovery	pcs	4	25,00
central mechanical ventilation with heat recovery	pcs	1	1 500,00

For a detailed expert report of building physics the applicant will get 50 % of the costs on the bill back but not more than 200 EUR

The financial support for the renewal is up to 9 000 EUR.

### C. Building dwelling buildings with low energy or passive technology (LEH/PH)

The right to support will be given for building a low energy or passive house.

Class of efficiency of the building and fulfilling the entrance energy criterion  $Q_h \leq 35$  kWh/(m<sup>2</sup>a) has to be calculated and checked by definite methodology.

For building for/in which is calculated class  $Q_h \leq 25$  kWh/(m<sup>2</sup>a) is necessary to calculate energy balance of the building by methodology PHPP 2007 (Passivhaus Institut Darmstadt).

Outside envelope of building has to fulfil next basic demands:

- For high efficient LEH ( $Q_h \leq 25$  kWh/(m<sup>2</sup>a)) is allowed to build in only building furniture with triple glazing with  $U \leq 1,0$  W/(m<sup>2</sup>K). Average U of the envelope of building with considering of heat bridges has to be  $\leq 0,30$  W/(m<sup>2</sup>K).
- Other classes of buildings can use only building furniture with  $U < 1,0$  W/(m<sup>2</sup>K) for glazing or  $U < 1,3$  W/(m<sup>2</sup>K) of windows and frame together. Average U of the building envelope, with considered heat bridges, has to be  $\leq 0,40$  W/(m<sup>2</sup>K).

It is necessary to build in the central ventilation with efficient heat recovery are most at least 80 % and with limited use of electric energy to 0,5 Wh/m<sup>3</sup> of transported air, which has to be seen in technical proof from the device from producer.

The amount of support it is bounded on netto heated area of the building inside of the protected building envelope and not for more then 200 m<sup>2</sup> of this area for one dwelling building or 150 m<sup>2</sup> for the dwelling in double dwelling building.

The support includes also some of building costs – planning, supervising by professionals,...

The amount of support for this coos is most 25 000 EUR.

Class of efficiency of the building Q <sub>h</sub> (kWh/m <sup>2</sup> a)	The highest amount of the support on unit €/m <sup>2</sup>		
	material of natural source*	material of mineral source**	synthetic and other material***
≤15	125	100	75
≤20	105	80	62
≤25	85	60	48
≤30	60	46	36
≤35	40	34	30

Buildings which are built in LEH and PH technology are deviated in three groups which are segregated by volume part of implemented isolation material:

- Material of natural source\*: in the building has to be implemented/used 75% insulation material of natural source,
- Material of mineral source\*\*: in the building has to be implemented/used 75% insulation material of mineral source,
- Synthetic or other material\*\*\*: all other combination of materials. Considered are only materials with  $\lambda \leq 0,15$  W/mK.

### European Affairs and Investments Directorate - Slovenia, efficient use and renewable energy sources division

Public tender for assigning of non-repayable financial stimulations by rule "de minimis" for execution of energy survey and preparing documentation for investments in phase of planning for projects about efficient use of energy and use of renewable source of energy – yearly	Non-repayable financial stimulations are assigning for realization for next advisory projects: <ul style="list-style-type: none"> <li>• energy survey of buildings</li> <li>• preparing documentation of investments in phase of planning – making of document of</li> </ul>	Companies have to fulfil following conditions: <ul style="list-style-type: none"> <li>• ownership or managing of the building in which will be carry out the energy survey or the investment in project for efficient use of energy and use of renewable source of energy,</li> <li>• contract with outsourcer,</li> </ul>	The amount of non-repayable financial stimulations: <p>The overall level of cost is 140.000 € with anticipated use of 70.000 € in 2008 and 70.000 € in year 2009.</p> <ul style="list-style-type: none"> <li>• For energy survey of building from 750 € to 7.500 €;</li> <li>• For preparing documentation of investments in phase of</li> </ul>
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<p>tender – 1X in a year</p>	<p>identification of investment project for efficient use of energy and use of renewable source of energy</p>	<ul style="list-style-type: none"> <li>total consumption of energy in the building was amounting to at least 300 MWh in last year,</li> <li>point estimate of investment in the project for efficient use of energy and use of renewable source of energy is over 10.000 €,</li> <li>applicant in last five years for proposed building for energy survey of buildings didn't get from Ministry/Government any credits/financial support for energy survey or in last three years didn't get credits/financial support for preparing documentation of investments in phase of planning – making of document of identification of investment project for efficient use of energy and use of renewable source of energy,</li> <li>applicant doesn't have any outstanding obligations with the government/ministry under the head of the contracts with them.</li> </ul>	<p>planning is amounting to considering preliminary evaluation of high of investment from 450 € to 4.500 € .</p>
<p>Public tender for assigning of non-repayable financial stimulations for execution of energy survey and preparing documentation for investments in phase of planning for projects about efficient use of energy and use of renewable source</p>	<p>Non-repayable financial stimulations are assigning for realization for next advisory projects:</p> <ul style="list-style-type: none"> <li>energy survey of buildings</li> <li>preparing documentation of investments in phase of planning</li> </ul>	<p>Conditions to candidate on public tender;</p> <p>On the tender can participate local communities that have undertaken some energetic approaches , some public trusts, public agencies, public institutes and registered churches and other religious communities that fulfill next conditions:</p>	<p>The amount of non-repayable financial stimulations:</p> <p>The overall level of cost is 130.000 € with anticipated use of 65.000 € in 2008 and 65.000 € in year 2009.</p> <ul style="list-style-type: none"> <li>For energy survey of building from 750 € to 7.500 €;</li> <li>For preparing</li> </ul>

<p>of energy (Ul. RS, št. 56/08)</p>	<p>till the level of identification of the project for efficient use of energy and use of renewable source of energy</p>	<ul style="list-style-type: none"> <li>• ownership or managing of the building in which will be carry out the energy survey or the investment in project for efficient use of energy and use of renewable source of energy,</li> <li>• contract with outsourcer chosen by public procurement,</li> <li>• total consumption of energy in the building was amounting to at least 300 MWh in last year,</li> <li>• point estimate of investment in the project for efficient use of energy and use of renewable source of energy is over 10.000 €,</li> <li>• applicant in last five years for proposed building for energy survey of buildings didn't get from Ministry/Government any credits/financial support for energy survey or in last three years didn't get credits/financial support for preparing documentation of investments in phase of planning – making of document of identification of investment project for efficient use of energy and use of renewable source of energy,</li> <li>• applicant doesn't have any outstanding obligations with the government/ministry under the head of the contracts with them for co-financing for</li> </ul>	<p>documentation of investments in phase of planning is amounting to considering preliminary evaluation of high of investment from 450 € to 4.500 € .</p>
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		consultant services on the field of efficient use of energy and use of renewable source of energy.	
Public tender for financial support for the purpose of investments which will increase energy efficiency in existing multi-dwelling buildings – yearly tender - 1X in a year	<p>A) System for distributions and calculating of costs for heat</p> <p>B) Installation of thermostatic valve and hydraulic balancing system for heating</p> <p>C) Thermo protection of older multi – dwelling buildings</p>	It is meant for households or private individuals who are floor/flat/dwelling owners in buildings with minimum of 9 flats/dwellings in Slovenia.	<p>Financial stimulation will be given to consumption of means provided in year 2008</p> <p>About 190.000 € in year 2009 about 210.000 € approximately 400.000 € for fulfilling one or more actions.</p>
Public tender for financial support for the purpose of investment actions for use of renewable source of energy in households for year 2007 and 2008 (Ul. RS, št. . <a href="#">26/07</a> , 23th of March 2007, concluded tender published in Ul. RS, št. <a href="#">48/07</a> , 1th of July 2007)	<p>Non-repayable financial stimulations were given for next/following actions :</p> <ul style="list-style-type: none"> <li>• implement of solar systems for heating of water (action A),</li> <li>• implement of heat pump for central heating of utilities (action B),</li> <li>• implement of photovoltaic system for producing electricity (action C),</li> <li>• implement of special combustion installation for central heating with wooden biomass namely for combustion installation on wood chips, and pallets (action D)</li> </ul>	<p>Conditions to candidate on public tender:</p> <p>Individual households on territory of Slovenia could cooperate for public tender that they did one or more actions from the tender. Non-repayable financial stimulations are assigned for versed measures under points A, B and C that are in function since 1st of May 2006 and for versed measures under point D that are in function since 1st of June and that they wear fulfilled till submission of application. Function of activity of system is being proved with date on the bill for implement or montage of individual measure.</p> <p>Additional conditions and criteria for realization of measure actions B. and D,</p> <p>For gain the non – repayable financial support for implement of heat pump for central heating of utilities (action B) must to be beside</p>	<p>The amount of non-repayable financial stimulations:</p> <p>Implement of solar systems for heating of water</p> <p>For fulfilled system for gear of worm water with the help of sun witch wear gain with help of receivers of solar energy, hranilnika toplote and other necessary elements which are implemented in accordance with valid regulations is the amount of non-repayable financial stimulations to 125 EUR/m2 for receivers of solar energy but however most 2.100 for the hole system.</p> <p>Implement of heat pump for central heating of utilities</p> <p>For fulfilled system for central heating of buildings with help of heat pump which are implemented in accordance with valid regulations is the amount of non-repayable financial stimulations to 40% of costs for the heating pump with included transferor to capture sun energy but most</p>

		<p>basic condition filed out also condition that it was specific annual heating of building Qh/Au [kWh/m2a] in witch heating systems with heat pumps are build in, in accordance with regulations about thermic protection and efficient use of energy in buildings (Ul. RS, št.42/02, 110/02-ZGO-1, 29/04).</p> <p>For gain the non – repayable financial support for implement of special combustion installation for central heating with wooden biomass namely for combustion installation on wood chips, and pallets (action D), must to be beside basic condition filed out also condition that had combustion installation next thermic-technic feature:</p> <ul style="list-style-type: none"> <li>• Utilization of combustion installation at effective rated output had to be higher or least 88%,</li> <li>• Value of emissions of carbon monoxide at effective rated output had to be lower than 750 mg/m3,</li> <li>• Value of emissions of dust particles at effective rated output had to be lower then 50 mg/m3,</li> </ul> <p>Additional condition only for combustion installations</p>	<p>2.100 EUR.</p> <p>Implement of photovoltaic system for producing electricity</p> <p>For fulfilled photovoltaic system for producing of electricity implemented in accordance with valid regulations is the amount of non-repayable financial stimulations to 2,5 EUR/Wp modules of solar cells that wear bulled in (PV moduls) or 2.100 EUR for the hole system.</p> <p>Implement of special combustion installation for central heating with wooden biomass namely for combustion installation on wood chips, and pallets</p> <p>For fulfilled system for central heating of building which contains special combustion installations , heaters, security and regulation organs that are implemented in accordance with valid regulations is the amount of non-repayable financial stimulations to 40% of the costs for combustion installation and necessary components/equipment but most 1.250 EUR when it is combustion installation with/on (polena), to 40% of the costs for combustion installation and necessary components/equipment but most 1.675 EUR when it is combustion installation with/on pallets and to 40% of the costs for combustion installation with necessary components/equipment but most 2.100 EUR when it is the combustion installation on/with wood chips.</p>
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2. *Legal claim for the subsidy*

In Slovenia you can get the subsidies through public tenders, where the timely of applications and available resources (money) are limited.



### 3. Reason for the subsidies

The subsidies exist, because they are a part of the National strategy LEH and PH buildings (reconstruction and new buildings).

### 4. Impact on the development of passive houses

Existing subsidies has low rate of influence on the development of PH in Slovenia, because the Eco Found assigned this year for the first time non-repayable financial stimulations for building a new low energy and passive houses.

### 5. Weaknesses and disadvantages

The new existing way of support is quite suitable, manure points are the level of support, it should be higher and the public tenders should be open whole year, not just on the first come, first serve basis.

### 6. Proposed improvements or changes

We, from Maribor Development Agency / Enterprise Europe Network Slovenia, would improve or change the way of support in different categories:

- The possibility to get any support should be „open” the whole year.
- The application forms should be not so administrative
- The supports and subsidies should be more open in the way of getting the subsidy and more clearly written down for average people.
- The subsidies and support should involve variety of possibilities for building a new or renovating the buildings to attain the level of LEH and PH, not only so rigorous. For example you can get the full subsidy if you use only materials of natural source, which is not wrong, but the problem is the high of the subsidy which is too low for using the „right” material to get the subsidy.
- The level of amount of the subsidy should be higher, in the way that investors would consider to built a building in the LEH or PH standard.

### 7. Description of the application form

The main data of the application form are:

- information's about applicant/ Personal data
- information's about personal bank account
- data about construction of low energy and passive buildings
- planned heat source
- planned system for central ventilation
- data acquisition about wrapper of the building

- data about outer wrapper of the building
- data about type and volume percentage of the isolation material that is build in the wrapper of the heated part of the building
- data about design of the building for the calculation of energy balance

Please find enclosed (annex 7) an application form.

#### 8. *Passive house definition*

PH is defined for the subsidy according to PHPP 2007.

#### 9. *Support for non-residential development*

There is no support for commercial development for offices or multifamily houses.

### 2.4.9. Sweden

So far there have been no subsidies for passive houses in Sweden. However there is a National Passive House program established by the Swedish Energy Agency, which will be finalized in the end of 2008. The Programme was developed with the aim to support the building demonstration projects according to the Swedish version of the passive house standard, in order to gain knowledge and experience in building energy efficient buildings in different parts of Sweden, using different building technologies. Only commercial builders are eligible for funding. Projects that apply for support need to have strong mainstreaming potential.

In the Western Götaland region a Programme for Energy efficient buildings was established during spring 2007 with the top amount of about 2,5 mil EUR. The main aim of the program is to support energy efficient building in the region. The form of support comes in:

- information spreading about energy efficient and passive house buildings in order to gain more interested actors (focus are politicians, entrepreneurs, architects and consultants)
- support for those that want to build energy efficient buildings in form of educational seminars for specific groups, expert advice in the early stages of the project, contact network with the qualified consultants and producers
- financial support for those demonstration buildings where new technologies and concepts are being tested. Special focus is given to projects where passive house concept or similar building methods are adjusted to other building types than multifamily houses, like schools, offices and renovation of existing buildings. Particular support is therefore given to evaluation of project success and exchange of experience. The financial support can thus be obtained for additional costs in design stage, quality securing, internal education and evaluation of project results. An important criterion is also that the project can be available for a wider public for study visits
- international cooperation and increased export of environmental technologies – in the form of study visits and exchange of experts and experience between different countries

- research and development between west Sweden's researchers and actors from the building sector
- Passivhuscentrum (Passive house centre) which was opened together with the city of Alingsås, place there with the aim spread the knowledge about passive houses and operate the development project. It also works as a platform which collects and cooperates with actors and producers in the passive house market.
- follow up and evaluation of the development of the energy efficient building market.

1. *Form and rate of contribution of subsidies*

There is no direct support for passive houses in Sweden but if private house owners and those that live in rental houses are to implement solar heating in combination with another renewable energy source for heating like bio-energy, they are eligible for a subsidy from the government.

2. *Legal claim for the subsidy*

One applies for the support to the National Passive House Program's Secretariat which makes the decision depending on the criteria they have.

3. *Dependence on the energy performance*

There is no difference in support for passive houses or low energy houses in Sweden.

4. *Reason for the subsidies*

For supporting faster mainstreaming of a desired concept in order to reach the goal faster.

5. *Impact on the development of passive houses*

The current subsidies, or support, influences mostly research development.

6. *Sources of finance for the subsidies*

For the Western Götaland Region's Programme for Energy efficient buildings the support was allocated by the regional government. The supporter of the National Passive House program is the Swedish Energy Agency.

7. *Weaknesses and disadvantages*

The existing support is suitable for trying to build up experiences with passive houses in Nordic region. Climate specifics that are different from North to South are a barrier for faster spreading of passive houses. Solutions need to be developed which are cost effective.

On the other hand, in order to have mainstreaming of the concept, a different type of support is needed. At the moment current subsidies, or support, influences mostly research development, so other incentives should be introduced in order to get the big building companies converted.

## 8. *Proposed improvements or changes*

One should provide support in the investment stage when the higher costs are those that drive the decisions. That would help to lower the payoff time of the initial investments. In that case there should be a system for calculating those additional costs, for which the support is given.

## 9. *Description of the application form*

For the National Passive House program support for demonstration projects the application is in text form. There is a template which one can use. Information required is divided into two parts. The first part includes general information about the project including technical description of planned systems. This is mostly preliminary since this support is given at the beginning of the project for supporting project's development. In the second part more detailed information is given about the project. It concerns documentation for the project which should be handed in before the construction starts in order to have the support approved. The information is related to functional requirements for following systems:

- climate shell (U value and air tightness)
- windows (U value, solar heat transmission factor, daylight factor for buildings with low glass area share, ventilation possibilities – opening and natural ventilation possibilities)
- system design for the ventilation (draft, noise, air flows in the kitchen...)
- heat exchange of outgoing air
- eventual low energy solutions for household appliances
- low energy solutions for hot water
- energy analysis for dimensioned winter operation mode
- eventual energy analysis for summer operation mode
- system for heating (and energy source)
- system for hot water (and energy source)
- system for solar shading for spring and summer
- noise from the ventilation system in the sleeping room
- methods for moisture safe construction

The support which is searched for can be for more costs in the pre studies/project design stage, more costs in the first process of carrying out the project (like education of those involved, air tightness tests...), measurement and evaluation processes, and for some information spreading activities.

## 10. *Passive house definition*

It is defined according to the Swedish specification criteria for passive houses.

#### *11. Documentation of energy performance, certification, verification*

According to the new building regulations in Sweden, based on the EPBD, energy performance of all new buildings should be documented – first during the design stage and then after two years. There is no certification authority that verifies energy performance.

When it comes to passive and low energy houses, in Sweden we still do not have a good calculation method that can be widely used. All buildings fall under the national building regulations where energy performance is measured and reported. Since passive houses are still under development most of the projects are followed by researchers or some other institution doing research on passive houses.

#### *12. Studies about influence of passive houses to the local economy*

Forum for Energy Efficient Buildings in Sweden did a Market survey for passive and low energy houses in Sweden. The survey was done during 2007 with a final revised version completed in September 2007. The document is in Swedish.

#### *13. Studies on energy saving potential on regional level*

Most studies are done for energy saving potential of low energy houses, not specific passive houses, except papers that were submitted for the PH Conferences.

At the Nordic Passive House Conference in Trondheim, in April 2008, a number of papers have dealt with energy saving potential of passive houses in the region. Link to the Conference proceeding is:

<http://www.passivhusnorden.no/foredrag/conference%20proceedings.pdf>

#### *14. Support for non-residential development*

No support, but the Western Götaland Region's Programme for Energy efficient buildings supports demonstration projects of other function than housing.

#### *15. Proposed ideal way of support for passive houses*

For housing buildings the support can depend on the type of building ownership. There are rental housing, housing cooperatives, and private houses in Sweden. Approximately half of the housing in Sweden is private housing, villas, which is at the same time the most expensive mode of housing. Therefore incentive could be given to the owners in the form of, for example, tax reductions, since tax levels are very high in Sweden, or low-cost credit. For Housing cooperatives the situation is a bit more complicated<sup>1</sup>. That means that the subsidy should be given to the builder. This could also be a good way to foster faster mainstreaming of passive houses – there a number of big building companies in Sweden that build housing cooperative areas so if they could see profit in this they would actually consider changing their building techniques. The same principle could be applied for rental housing, especially for renovation of existing rental houses.

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<sup>1</sup> A housing cooperative is a legal entity – usually a corporation – that owns real estate, consisting of one or more residential buildings. Each shareholder in the legal entity is granted the right to occupy one housing unit, sometimes subject to an occupancy agreement, which is similar to a lease.

#### 2.4.10. United Kingdom

- There is no assistance in the UK with any form of low energy housing or other type of building.

### 3. Conclusion

Support of high energy efficiency builds leads to support of local economy (employment, top quality labour work, innovation) and improvements of local environment. Basically there are three ways of support, or their combination:

- long-term low-interest credit
- direct grant
- tax deduction

Currently, subsidies for private persons for building new passive houses or refurbishment using components for passive houses are available in Austria, Belgium, Czech Republic and Germany. The subsidy in Slovenia is not motivating for higher energy efficiency. There are no subsidies in other countries (Croatia, Romania, Slovakia, Sweden and the UK).

There are following finance sources to implement the subsidy scheme in these countries:

- revenues from international emission trading scheme
- ERDF (certain amount of funds 2007-2013 could be used for housing)
- tax deduction

It is extremely important to support only the top solutions: passive houses (or similar) and refurbishments at least 30 % better then current standards. The multiplication effect brings further development of local economy.

## **4. Annexes**

- Annex 1    Template on regulation and financial support schemes
- Annex 2    Application form Lower Austria
- Annex 3    Application form Upper Austria
- Annex 4    Application form Salzburg
- Annex 5    Application form Brussels
- Annex 6    Subsidy programme Czech Republic
- Annex 7    Application form Slovenia