EffCoBuild

ENERGY EFFICIENCY COMMUNITIES –
ESTABLISHING PILOT COMMUNITIES FOR THE BUILDING SECTOR

WP4 - CONCEPT OF MEASURES FOR THE COMMUNITY OF JESENICE (SLOVENIA) – FINAL

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1. BACKGROUND

1.1. General

Jesenice is a municipality with 21,000 inhabitants in the north western part of Slovenia. It is located south of Austria, on the Slovene side of the Karavanke mountain range, (40 km south of Villach/Beljak and 40 km east of Tarvisio/Trbiž (Italy)).

It is known for the biggest Slovenian steel making company and its ice hockey club. The history of Jesenice is tightly knit with ironworks and metallurgy, since after the WW2 those have been the driving forces of Jesenice development in practically all departments.

In 60-ties and 70-ties the Jesenice ironworks started employing more people than ever before. This industrial development resulted also in massive building of apartment buildings and houses, as the population was growing. At its peak in 1970s, the ironworks employed more than 8000 people.

After the political changes in former Yugoslavia also the economic policies changed and Jesenice ironworks could not compete with the much more developed metallurgy in the West. This led to massive layoffs and emigration of people in search of new jobs. However, since the declaration of Slovenian independence in 1991, Jesenice became much less dependent on metallurgic industry and is currently developing in other areas of economy.

Jesenice is presently undergoing urban reconstruction with the help of EU resources. A new city centre is being built in the former industrial part of town. New shopping malls have already been erected, besides the new city hall. The current projects include rebuilding of some old parts of town and sport facilities, as well as another high school. Many of residential buildings, especially apartment buildings are owned and/or used by low income inhabitants that can hardly follow the growing demand for regular maintenance and refurbishment of their homes.

Therefore the focus of this project was to develop the set measures on the municipal level aiming at realization of large energy saving potential identified above all in the residential building sector at Jesenice.

1.2. Buildings and energy

A great number of the building stock has been built after the Second World War. Currently the total residential building stock area covers 546.500 m², i.e. ~60% of the stock, the non-residential building floor area is estimated to 364.300 m²; ~40% of the stock, and from that the public buildings floor are is 43.000 m².

Nowadays the municipality has more than 5000 flats, 3500 of them are connected to district heating. The age of this building stock is over 40 years. These buildings exhibit very high energy saving potential, due to the low insulation of the envelopes and old-fashioned
HVAC technologies. Renewable energy sources come to the agenda but a break through for their wider implementation is still to be reached.

This technically based difficulties are combined with continuative decrease of steel production, decrease of workers income and consequently with lower capability of inhabitants to invest in maintenance or event energy efficient refurbishment of the building stock. In the last 20 years the environmental issues came strongly to the agenda of Municipality Jesenice. The environment, once polluted because of the industrial emissions, is being continuously improved. The emissions caused by low quality of buildings and low efficiency of heating systems have been systematically focused since 1999. To complement the existing awareness raising activities and programmes of subsidies also additional programmes are needed to inform and teach the building owners and users about the energy efficiency and to stimulate the realisation of energy savings through EE investments as well as through behavioural change, not neglecting more and more important public participation decision making.

The central part of the municipality is heated by district heating. The town has the sixth largest (according to heat capacity) district heating system in Slovenia (Plinstal = 55 MW) that cover 43% of of demand in building sector. Around this area the outskirts the natural gas network is being developed, that contributes 7% to the energy supply; while 48% of the building sector in more distant locations are supplied by oil, biomass and combined systems. In more scattered locations there are still the individual heat generators using coil. The reduction of the latest is planned, either to switch to natural gas or to use alternative energy sources (preferably wood biomass).

Figure 1: Schematic picture of municipality Jesenice

The majority of households in central part of Jesenice is connected to the district heating network. From 3500 dwellings connected to d.h. (out of 8955 flats in total) in 1400 dwell-
ings the energy use is over 150 kWh/m²/year and in 2100 dwellings the energy use is below 150 kWh/m²/year. The biggest energy consumers are the existing blocks of flats.

![Figure 2: Actual heat consumption [MWh/a]](image)

![Figure 3: Total energy consumption in the building sector in Jesenice municipality before (indicated figures are related to existing situation) and after the theoretical implementation of identified energy saving potentials](image)

The estimated energy savings in residential and municipal housing stock could reach 45% (48.642 MWh/year) in case of implementation of the most important energy saving measures. 30% of the identified energy saving measures is the measures with the payback below 10 years.
The energy saving potential in building sector of Jesenice has been evaluated (WP3) on the most frequently used / proposed energy saving measures in existing building stock in Slovenia:

- thermal insulation of envelope (walls, roof, floor above the cellar),
- exchange of existing windows with energy efficient ones,
- refurbishment of heating system – heat generator (if relevant),
- local and central regulation,
- hydraulic balance of the heating system,
- thermostatic valves,
- introduction of heat metering and billing according to actual energy use.

The above measures are also part of the municipal programme of incentives for RES and RUE where EffCoBuild project is expected to play an important role in awareness raising, information and promotion.

### 1.3. Developed focus of measures

Energy users in Jesenice are aware of a global energy situation and subsequent greenhouse gas emissions. Not just changing of habits and rational use of energy also the refurbishment of existing building stock is very important for reducing the emissions. The main barrier in Jesenice is the lack for money for investment in refurbishment of apartment buildings, so the measures focus on promotion of incentives, subsidies and on a holistic support to develop the energy refurbishment projects.

On the basis of detailed analysis of the energy saving potential, it was concluded, to build the concept of measures for Jesenice around the most problematic municipal sector – the existing apartment building sector. This sector has on one hand the highest saving poten-
tial and on the other hand the biggest problems with realisation of this potential, due to well known barriers in recently privatized apartment buildings:

- low income building owners and / or tenants,
- low “social capital” in residential building sector,
- lack of building users’ interest and motivation for improvement,
- scattered ownerships of recently privatized existing apartment buildings,
- lack of consensus for common actions;
- lack of interest and expertise for EE projects at building management companies,
- organisational barriers due to building regulation (consensus, loan guarantee),
- lack of technical information,
- lack of best practice information form the neighbourhood.

As it will be further explained the core target group for the implementation of the measures is the apartment building sector with the energy consumption more than 150 kWh/m2a.

**Big energy users above 150 kWh/m2year**

Delivered energy (kWh/m²/year) – heated area of building (m²) – energy costs SIT/m²/month

![Graph showing energy consumption and costs for buildings](image)

**Figure 5**: The biggest energy consumers – older apartment buildings in the municipality Jesenice, the core target group for the implementation of the concept of measures.
1.4. Virtual power plant of Jesenice

Figure 6: Virtual power plant of municipality Jesenice, Slovenia.

1.5. CO₂ emissions

In case of the implementation of the proposed measures the municipality Jesenice could reduce CO₂ emissions in the building sector for:

- 8.4 mio ton/year CO₂ in single family houses,
- 6.0 mio ton/years in apartment buildings and
- 0.6 mio ton/year in public building sector.
Figure 6: Link between energy savings in various building sectors of Jesenice and the reduction of CO2 emissions. Energy refurbishment of SFH participate to reduction of emissions in d.h, liquid, solid fuel and other energy sources, while the implementation of refurbishment projects in block of dwellings contribute 71% of CO2 reduction by reduction of d.h. CO2 emission and 29% of CO2 reduction by lowering natural gas related emissions. Above: CO2 emissions in Jesenice by energy sources, as they are represented in the energy supply structure in Jesenice municipality (the total building sector). Bellow: CO2 emissions before and after, considering the energy saving potentials for heating.
2. IDENTIFICATION OF POSSIBLE ACTIVITIES & SELECTION OF FINAL MEASURES FOR COMMUNITY CONCEPT

2.1. Process

On the basis of workshops in the local community, in cooperation with key actors on the national level, following the existing boundary conditions in the municipality and after the consultation on the trans-national level with EffCoBuild project partners, possible measures were highlighted and finally confirmed. These measures include suggestions for municipal activities, which are possible to implement in municipality of Jesenice.

People's awareness in the field of RUE has to be raised in Jesenice, as well as the financial barriers have to be tackled in order to realize the energy saving potential. The main reason for poor conditions of buildings in municipality is the lack of funds. So an ideal combination would be financial support, informing the people about necessary activities on that topic as well as assisting them in preparation of RES and RUE projects.

General energy refurbishment targets in existing buildings are:

- Big energy users in Jesenice are the buildings that use more than 150 kWh/m² for space heating (1400 dwellings)
- Final target is to reduce the energy use for dwelling with floor area 55 m² to a range between 100 and 110 kWh/m².
- Short term target of municipality Jesenice is to reduce delivered energy for space heating to 140 kWh/m².

The ideas for the measures were developed around four main activities:

- Progressive municipal subsidies

Municipality Jesenice introduced a municipal subsidy programme for RES and RUE investments back in 2000. The grants are available for big energy consumers. The problem of this existing measure is quite low budget in total and secondly the grant is too low to remove the »lack of many« barrier, which is the most important barrier in the worst condition buildings. The new idea was to develop progressive subsidies scheme in order to actually offer bigger contribution to the worst buildings.

- Contracting in top 40 apartment buildings

Municipal district heating company JEKO-IN and recently privatized company for heat generation in Jesenice ENOS have developed the idea to stimulate energy performance contracting projects in Jesenice buildings. In spite of the fact that not all measures in building sector are interested for ESCO's (long pay back period of building envelope measures) the actors believe that these projects are feasible with the financial participation of building owners. Some interesting experiences are already available in neighbourhood (ELTECH Mulej TPF project in elementary schools of Kranj). For the successful im-
plementation of contracting the organisational and legal issues have to be defined at this stage.

- Training for building managers

Building managers and/or building management companies are obligatory in Slovenian apartment buildings based on the Residential Act. Based on the management contract signed with the building owners their role is to prepare the maintenance and investments plan and to organize all kind of refurbishment works. For the technical improvements the 100% consensus of building owners is needed. The role of building managers in identification of the energy efficiency projects may be crucial, since many of measures are linked with regular maintenance works or can be done at the lowest price in such a moment. There are already some best practice cases available of such successful interaction between building manager and the owners, but in general such companies need additional education in identification of the most feasible projects and above all they need to share the information about overcoming the barriers and best practice cases. The measures consider the training and other ways of involvement of building managers in identification of EE project in the municipal building sector.

- “Web-site benchmarking”

“Web-site benchmarking” was defined as an umbrella measure for various awareness raising, information and promotion activities aimed at apartment building owners (and also tenants) in order to facilitate the use of available municipal co-financing instruments. Currently the biggest problem is to build a refurbishment project, i.e. to move from the identified energy saving potential to actual decision for the implementation of the measure. Internet was considered to be a powerful tool to bring the general information about the actual energy use, the actual building condition, the energy saving potential to the relevant target group (building managers, building owners, ESCOs, technology suppliers and building contractors). Communication with key actors over a home page of municipal d.h. company JEKO-IN also allows to promote new EPBD instruments (energy certificate), available financial incentives, energy advisory options; as well as it is possible to disseminate the useful results of other EIE projects in the field of municipalities, social housing, energy certificates and passive house renovation. Web site benchmarking was further on developed in many independent (sub-)measures and many of them were selected for the implementation in WP6.

2.2. Selection of final measures for community concept

The final list of measures proposed in EffCoBuild project for the municipality Jesenice is presented in the Table 1. According to the work programme defined in WP6 at least one of the measures will be implemented during the lifetime of this project, while the others will be launched in the frame of the project and their implementation phase will go beyond the official conclusion of the EIE project.
Table 1: Final concept of measures for the community Jesenice

<table>
<thead>
<tr>
<th>Description of measure</th>
<th>Priority</th>
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<tbody>
<tr>
<td>1. Municipal subsidies</td>
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<tr>
<td>1.1. Progressive municipal subsidies for EE refurbishment projects of big energy consumers in the municipality</td>
<td>1</td>
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<tr>
<td>2. Energy performance contracting</td>
<td></td>
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<tr>
<td>2.1. Contracting in apartment buildings - top 40 energy consuming – preparatory activities</td>
<td>3</td>
</tr>
<tr>
<td>3. Building managers</td>
<td></td>
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<tr>
<td>3.1. Information and awareness raising of building managers</td>
<td>2</td>
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<tr>
<td>3.2. Training of building managers</td>
<td>2</td>
</tr>
<tr>
<td>4. “Web-site benchmarking”</td>
<td></td>
</tr>
<tr>
<td>4.1. Web site benchmarking of delivered energy for 40 apartment buildings connected to d.h. and considered as big energy consumers in the heating season 1998/99, on-line consumption data available for recent years</td>
<td>1</td>
</tr>
<tr>
<td>4.2. Ranking of 40 apartment buildings by energy saving potential – big potential, average, already refurbished cases</td>
<td>1</td>
</tr>
<tr>
<td>4.3. Pilot energy certificate for 40 apartment buildings</td>
<td>1</td>
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<tr>
<td>4.4. IR thermography for 40 apartment buildings</td>
<td>1</td>
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<tr>
<td>4.5. Recommended measures</td>
<td>1</td>
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<tr>
<td>4.6. Sharing actual information on financing opportunities, subsidies, soft loans</td>
<td>1</td>
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<tr>
<td>4.7. Energy advisory network ENSVET – strengthening the role of energy advisors in EE project formation</td>
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<tr>
<td>5. Best practice cases</td>
<td></td>
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<tr>
<td>5.1. Best practice cases in energy restoration in the neighbourhood – 10 best practice cases form EffCoBuild brochure and uses’ opinion available on-line</td>
<td>1</td>
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<tr>
<td>6. Links to further information from EIE relevant projects</td>
<td></td>
</tr>
<tr>
<td>6.1. EIE EI-Education, EIE Passive Retrofit Kit, EIE SHARE – target:: building managers, building owners, users of flats in social housing</td>
<td>1</td>
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<tr>
<td>7. Dissemination</td>
<td></td>
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<tr>
<td>7.1. Dissemination of web site information to district heating clients (over the energy bills)</td>
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<tr>
<td>7.2. Dissemination of web site benchmarking via media</td>
<td>1</td>
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</tbody>
</table>

Legend:
Priority 1 – implemented in WP6
Priority 2 – highly recommended, idea launched during EffCoBuild project lifetime
Priority 3 – to be further developed after the project
3. DESCRIPTION OF THE DIFFERENT MEASURES IN THE FINAL CONCEPT

3.1. Progressive municipal subsidies

Municipality Jesenice developed »150 subsidy programme« of subsidizing energy efficiency measures and installation of alternative energy systems in existing buildings in municipality. The program started in 2000. The incentives were eligible for all existing buildings with energy consumption for space heating over 150 kWh/m² a.

The main conclusion of the subsidy scheme was that there was not enough projects subsidized and that the biggest energy consumers in the municipality were still not reached in spite of the financial support offered.

The suggestion was to extend the municipal programme in terms of budget and in terms of subsidised measures, like restoration of the heating system and installation of heat metering and billing according to the actual energy consumption. Already executed projects of metering and billing instantly showed a significant drop in energy consumption, not due to reduced thermal comfort, but mainly due to better habits of the user.

The common opinion of the key actors in the municipality was that besides other support in identification and preparation of EE refurbishment project there is additional challenge to overcome the biggest barrier – the lack of money for investment – by increasing the offered percentage of subsidy for the top energy consumers.

In practice the biggest energy consumers are apartment buildings from 60-ties, with low insulation, insufficient maintenance, used by low income (retired, unemployed) owners and/ or tenants. Co-financing 30% of investment in combination with national subsidies and soft loans should enable the financing of the measure even in the described conditions.

It is planned to enlarge the budget for subsidies in 2007 and to accept the criteria for progressive subsidy scheme. The measure was confirmed in discussion with actors at national workshop 1 - EffCoBuild.

Table 2: Progressive municipal subsidies, budget allocated in 2007 – 40.000 EUR

<table>
<thead>
<tr>
<th>Energy consumption kWh/m² year</th>
<th>Subsidy for RUE and RES investment %</th>
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<tbody>
<tr>
<td>150 - 180</td>
<td>10 – 15</td>
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<tr>
<td>180 – 210</td>
<td>15 – 20</td>
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<tr>
<td>210 – 230</td>
<td>20 – 25</td>
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<tr>
<td>&gt; 230</td>
<td>30</td>
</tr>
</tbody>
</table>
Eligible measures
- thermal insulation of attics (unused attic) or thermal insulation of roofs (used attic),
- thermal insulation and renewal of façades,
- thermal insulation of basement ceilings or flooring,
- replacement of buildings’ joinery – windows and doors,
- switch to district heating (connection to hot-water network and gas grid),
- installation of heat pumps for hot water generation,
- installation of solar systems for hot water generation,
- installation of special wood-fuelled combustion plants for central heating running on logs (biomass).

3.2. Contracting in top 40 apartment buildings

The company ENOS responsible for heat generation in Jesenice municipality and public company JEKO-IN (d.h. distribution network) are willing to co-finance energy rehabilitation projects as well as to take over the execution of the energy refurbishment of the buildings, possibly in co-operation with building management companies. Utility together with related private companies expressed the interest for becoming an ESCO.

Successful energy performance contracting has certain rules, like creation of the pool of buildings with big saving potential to reduce the risk and the freedom to implement only the most cost effective measures, which normally exclude envelope measures. The later are highly needed in Jesenice building stock also because of the maintenance reasons.

Being aware of contracting rules and on the other hand taking into account the broader aspect of good building management the above actor decided to further develop the idea of contracting with involvement of owners in part of the investment (related to maintenance works). For the contracting period the participation model was considered, where users participate in the savings, in order to increase the interest in project.

In spite of the fact that not all measures in building sector are interesting for traditional ESCO’s (long pay back period of building envelope measures) the actors believe that these projects are feasible with the financial participation of building owners.

TPF selection criteria are:
- Energy consumption - kWh/m² year,
- Heated area,
- Financial contribution of flat owners,
- % of consensus for investment,
- Location of building (visibility, architectural importance, demonstration impact).

TPF project can invest in insulation, windows and modernisation of heating installations.

Tenants of apartment buildings are especially interested in installation of heat distribution devices, mainly because of short return period; this motivates them to use less energy and to save money for heating.
For the successful implementation of contracting the organisational and legal issues have to be defined at this stage and this is the core activity of the proposed measure. Due to the existing barriers in the building sector the realisation of in general interesting contracting idea seems a more complex issue and it is therefore evaluated with lower priority.

Reduced Costs

Existing costs - reduced costs

= Saved energy costs

= contracting rate,

which is received during the contract duration by the contractor for his services.

Duration model

Energy costs [DM/a]

Existing Costs

Reduced Costs

Start of main phase

End of Contract

Duration of energy services measures

Participation model

Energy cost [DM/a]

Share of saved energy costs, which the TPF user receives during the period of validity.

Share of saved energy costs

= contracting rate, which the TPF provider receives as compensation for his services.

Start of main phase

End of Contract

Duration of energy savings measures

Figure 7: Traditional »duration« model of energy performance contracting and participation model where users participate in the savings (considered in Jesenice).

3.3. Building managers

3.3.1. Information and awareness raising of building managers

Building managers are the key actors for preparation of RUE project in apartment buildings.

The aim of this measure is to assure that the building managers in the municipality are well informed about the energy policy on the national and local level, that they are familiar with possibilities for financial support of investment, informed about best practice cases in the neighbourhood and about interesting renovation cases aboard. They should develop the attitude to RES and RUE measure and to contribution to environmentally friendly actions.

The above information will reach the building managers via national EffCoBuild web site placed at utility home page, via brochure, via regular workshops organised by BCEI ZRMK, via articles in local and professional newspapers and/or magazines and above all via personal communication with them. The measure will be initiated in the frame of this project and it is planned, also according to municipal plan, to be continued in the future.
3.3.2. Training of building managers

Training, covering technical topics of energy refurbishment projects, is needed to qualify building managers for preparation of RUE projects in apartment buildings. The trained building manager is expected to be able to:

- to identify of projects,
- stimulate the building owners to come to a consensus,
- define the projects in detail,
- collect offers,
- investigate financing possibilities

The measure will be initiated in the frame of this project and will be continued in future.

The involvement of building managers is planned in EffCoBuild workshops an the national level – like at the occasion of the second national workshop in Jesenice in April 2007 (training focused on installation of heat distribution devices) and at the transnational level – like at the occasion of the last transnational EffCobuild workshop in Oct. 07 in Ljubljana.

3.4. Web-site benchmarking

“Web-site benchmarking” is an umbrella name for a set of measures using internet for communication with the target group: building owners (incl. users, tenants) and/ or building managers in order to stimulate the EE renovation projects in building sector in Jesenice and to facilitate the use of available municipal co-financing instruments and other national supporting instruments.

Currently the biggest problem is to build a refurbishment project, i.e. to move from the identified energy saving potential to actual decision for the implementation of the measure. Internet was considered to be a powerful tool to bring the general information about the actual energy use, the actual building condition, the energy saving potential to the relevant target group (building managers, building owners, ESCOs, technology suppliers and building contractors). Communication with key actors over a home page of municipal d.h. company JEKO-IN also allows to promote new EPBD instruments (energy certificate), available financial incentives, energy advisory options; as well as it is possible to disseminate the useful results of other EIE projects in the field of municipalities, social housing, energy certificates and passive house renovation.

The main elements for presentation on the internet.

- Communication with end users & building managers
- http://www.jeko-in.si
- about EIE EffCoBuild project
- FAQ about heating and energy savings
- Promotion of measures in support to “RUE in over 150 kWh/m2 buildings”
- List of 40 buildings
- ranking by energy consumption
- energy performance certificate
- IR themography
- RUE measures identified (energy audit)
- Best practice in restoration
- Financing opportunities, further advice options

Building condition can be easily demonstrated with IR thermography, the methodology for energy certificate is almost completed (EIE BUDI project), some buildings have been evaluated by energy audits. Putting this information on the web site would stimulate the owners to raise questions towards EE investments, to look for energy advice (free of charge ENSVET scheme is available in the municipality) and to prepare a feasible EE refurbishment project.

3.4.1. Web-site benchmarking of delivered energy for 40 apartment buildings

Web site benchmarking of delivered energy for 40 big apartment buildings in centre of Jesenice, connected to d.h. and considered as big energy consumers in the heating season 1998/99 due to delivered energy above 150 kWh/m²a, is planned. The data will be available on the EffCoBuild page on JEKO-IN homepage. JEKO-IN as a municipal utility can provide updated data on energy consumption which can be compared with the data for some recent years and with the almost 10 years old information on energy consumption. The specific energy indicators can be compared also with indicators of other buildings in the municipality. The measure is planned to be implemented in WP6.

![Figure 7: Benchmarking of energy indicators in buildings connected to district heating in Jesenice.](image)

3.4.2. Ranking of buildings by energy saving potential

The measure aims at ranking of 40 apartment buildings big energy consumers by energy saving potential. The selection of building originates from almost ten years ago when municipality Jesenice finance the energy audit for them. Since that time some buildings already implemented renovation measures while the other remained the same. Based on this follow up activity the key actors can be informed about the saving potential and the impact of the implemented measures. The graphical presentation on the map is planned with indicated ranking by red colour – for big potential, yellow colour – for average condition, green colour – for good buildings, already refurbished in recent years. Further information on energy use can be obtained by clicking on the selected building on the map.

The aim of the measure is information and awareness raising and further deployment of successful renovation cases. The measure is planned to be implemented in WP6.

3.4.3. Pilot energy performance certificate

EPBD imposed the requirement for obligatory energy certificate of buildings. For the time being energy certificate is in the process of transposition in the national regulation, the final scheme is not available for the time being. But in order to support the market uptake
of the certificate the pilot projects (EIE BUDI) with the tentative certification scheme is available in Slovenia.

This measure focuses on elaboration of 40 pilot energy certificates according to new EPBD calculation methodology. Pilot energy certificates will be elaborated and put on the website in order to complement the benchmarking of actual energy consumption data and to make people aware of the new coming instrument to promote energy efficient building.

3.4.4. Thermographic pictures on-line

IR thermographic pictures have already been elaborated for most of the 40 apartment buildings - big energy consumers in the frame of energy audit. Since IR thermography is a very attractive visual presentation of the building condition it was concluded to check again the compliance of the existing IR pictures, repeat thermography when needed due to already implemented measures and put the IR pictures on the internet. Usually this approach has a strong impact on building owners and building managers when they consider the energy renovation of the building.

3.4.5. Recommended measures

Based on the study of energy saving potential in building sector in municipality (in WP2) and based on specific results from existing energy audit for selected apartment buildings in Jesenice, generic recommended measures are planned to be compiled in order to offer a guideline for renovation scenario(s) in existing building stock. This shall serve as a guideline for building managers, building owners and also for potential energy performance contracting projects.

3.4.6. Financing and incentives

Sharing actual information on financing opportunities, subsidies, and soft loans is necessary for assisting the successful implementation of measures. A page with relevant links to municipal and national support is planned.

3.4.7. Energy advisory

Energy advisors are one of the important actors, besides municipality, utility, energy managers, designers, architects, installers, building contractors, technology providers and other energy experts that can significantly contribute to successful implementation of the above measures.

Slovenia has more than 13 years of tradition in running of energy advisory network ENS-VET, being financed by the state with contributions in kind (municipal office, logistics) from municipalities. The energy advisors are part time employees and responsible for their own promotion of the advisory programme on the municipal level. The municipality Jesenice has its own advisory office, where the people can ask for the advice according to their need. Mostly the advice is asked by single family house owners, while apartment buildings are difficult to reach. Establishing a link between the potential clients in apartment buildings and the energy advisor can lead to a win-win combination for both, building owners can get a professional free of charge advice and the energy advisor service can improve its outreach, in difficult to reach (in fact social) housing sector.
Figure 8: Draft for web – site with the elements of above described measures.

Figure 9: Draft for web – site with the elements of above described measures.
### 3.5. Best practice cases

Best practice cases in energy restoration in the neighbourhood will be prepared publication in the EffCoBuild brochure in WP5. The idea of this measure is to put 10 best practice cases from EffCoBuild brochure together with the users’ opinion about the impact of renovation on the municipal utility home page. The aim of this on-line measure is to disseminate effectively best practice and to stimulate creation of similar projects in the municipality.

### 3.6. Links to further information from EIE relevant projects

Intelligent Energy Europe project provided a lot of useful information also for Jesenice key actors: building managers, building owners, users of flats in social housing. It was agreed to disseminate this information, together with the tools available in the national language.

- **EI-Education** – education programmes for social housing sector about how to create and implement EE renovation projects – target: building managers
- **Passive Retrofit Kit** – technical and financial information on passive house renovation of existing buildings – target: building owners and building managers
- **SHARE** – promotion of low cost and organisational measures for reduction of energy consumption and improvement of indoor comfort level (awareness raising and information leaflets)– target: users of flats in social housing

Figure 10: Pilot energy certificate on the Web – for apartment buildings
3.7. Dissemination

3.7.1. Dissemination over the energy bills
Utility has a possibility as well as a commitment by the energy act to disseminate the information about energy efficiency to their clients. The measure aims at sending out the information about EffCoBuild results and implemented measures (saving potential, home page with web site benchmarking, best practice cases) over the energy bills.

- A flyer will be sent out with the bill, bringing the information about the energy saving potential and the EffCoBuild web-site benchmarking.

3.7.2. Dissemination of web site benchmarking via media
Local and national professional media

- like EGES, JON, Bulletin AURE,

will be used for dissemination of EffCoBuild results in order to motivate the local energy users to form renovation projects and to build a follow-up impact in other Slovenian communities.

The media campaign detailed schedule is linked to the completion of the web-site benchmarking tool, expected for Feb 2008.
4. **OUTLOOK**

4.1. **General**

Based on the communication at the national level (workshops with key actors) and based on the international consultation with project partners the final plan for the implementation of the concept of measures was done.

Some measures were selected to be implemented in the frame of the WP6 since they represent the effort of cross-linking the various activities already going on in Slovenia and in the municipality Jesenice (Table 1, priority 1). These measures are web-site benchmarking and various dissemination activities.

The other activities will be launched according to the scope and work programme of the project, what will create the good starting point for further activities after the end of the projects. (Table 1, Priority 2) These measures are information and training of building managers.

One selected measure (energy performance contracting) has lower priority but they are expected to become more interesting with the growing interest for energy renovation projects also supported by EffCoBuild we-site benchmarking (Table 1, Priority 3).
### 4.2. Time Schedule

Table 2: Time schedule of measures in community Jesenice

<table>
<thead>
<tr>
<th>Description of measure</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>2006</td>
</tr>
<tr>
<td>Measure / Quarter</td>
<td>I</td>
</tr>
<tr>
<td>1.1 Progressive municipal subsidies for EE refurbishment projects of big energy consumers in the municipality</td>
<td></td>
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<tr>
<td>2.1 Energy performance contracting in apartment buildings - preparatory activities</td>
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<tr>
<td>3.1 Information and awareness raising of building managers</td>
<td></td>
</tr>
<tr>
<td>3.2 Training of building managers</td>
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<tr>
<td>4.1 Web site benchmarking of delivered energy for 40 apartment buildings connected to d.h.</td>
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</tr>
<tr>
<td>4.2 Ranking of 40 apartment buildings by energy saving potential – big potential, average, already refurbished cases</td>
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<tr>
<td>4.3 Pilot energy certificate for 40 apartment buildings</td>
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</tr>
<tr>
<td>4.4 IR thermography for 40 apartment buildings</td>
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</tr>
<tr>
<td>4.5 Recommended measures</td>
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<tr>
<td>4.6 Sharing actual information on financing opportunities, subsidies, soft loans</td>
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<tr>
<td>4.7 Energy advisory network ENSVET – cross linking</td>
<td></td>
</tr>
<tr>
<td>5.1 10 best practice cases from EffCoBuild brochure and users’ opinion available on-line</td>
<td></td>
</tr>
<tr>
<td>6.1 EIE EI-Education, EIE Passive Retrofit Kit , EIE SHARE – target:: building managers, building owners, users of flats in social housing</td>
<td></td>
</tr>
<tr>
<td>7.1 Dissemination of web site information to district heating clients (over the energy bills)</td>
<td></td>
</tr>
<tr>
<td>7.2 Dissemination of web site benchmarking via media</td>
<td></td>
</tr>
</tbody>
</table>

Legend:
- Priority 1 – implemented in WP6
- Priority 2 – highly recommended, idea launched during EffCoBuild project lifetime
- Priority 3 – to be further developed after the project