



WP3 - Energy Entrepreneurship based on renewable energy resources

D15 - Market analysis report of potential bioenergy service customers

Summary

In order to better understand end-user needs and detect potential customer for bio-energy services, market analysis have been performed in the five European countries: Austria, France, Finland, Italy and Spain. Each *BioHousing* partner has detected the main aspects concerning the particularities in their region/country. Individual conclusions can apply at regional or national level in the country where the study was developed, while general conclusions could be applied to many other European countries.

Main general conclusions

The aim for the energy entrepreneurship is to help the expansion of solid biomass heating by removing the need of a potential private house occupant to take care of a heating system by himself.

Surveys developed in five European countries have showed that in some regions house owners prefer not to take care of the biomass heating system by themselves, while in others they prefer to maintain their own installations. The difference is basically the kind of biomass system. Those countries running with very automated and modern technologies (eg. Austria), need little time to maintain the system, while systems not integrated (As in Finland, where boiler and burner come as spare parts) need of more care.

Regarding biomass related companies, diversification of the activities is well defined, and don't want to diversify to others as they would need different resources. So, it could be find companies for installing and maintenance, delivering the bio-fuels, ashes removal, etc.

In countries with lower biomass for housing heat development (Italy, Spain, France), final users that decide to purchase a pellet heating system are not supported by a complete chain and in same cases are completely on their own.

Furthermore, each country shows its particularities regarding biomass systems maintenance:

In Finland, Chimney sweepers are the right group of professionals when planning energy maintenance services. The maintenance of the system was not a barrier to choose pellet heating, but it is pellets price.

In Austria each house or flat occupant has to arrange an inspection of his or her chimney once a year, this is regulated by law. There is no need of further maintenance for biomass system.

In Italy, Spain and France, end users have some worries regarding biomass supply (and possibility of shortage) or investment costs. This is predominant compared to maintenance services.



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It is representative an initiative developed some years ago in Austria, when it was decided to organise the bioenergy maintenance service by chimney sweepers. The main advantage would have been to engage them for annual maintenance of biomass boilers because they have to look after the chimneys anyway. This project wasn't successful because of following reasons:

There are many different boilers from different manufacturers. A chimney sweeper has to know all boilers in his district that would mean a big effort of training

Because chimney sweeper have territorial protection it wouldn't work that a chimney sweeper looks after certain types of boilers an another looks after the rest in the same area

Boiler manufacturer only issue guarantee, if the boiler is serviced by a professional certified by themselves. So the manufacturer would have to know all the chimney sweepers

Moreover, there are key aspects that could be of interest regarding *BioHousing* concept and maintenance services:

In some regions it is possible to establish a service contract between the boiler manufacturer and the customer.

Prefabricated boiler room concept is not well known by end users.

BioHousing concept seems to be viable for both one-family homes and buildings or group of buildings.

Fuel storage or place for the whole biomass system could be a barrier.

There is lack of information and need of subsidies in some countries with low-medium market development.

Also, there have been considered additional services that could be provided by the bioenergy entrepreneurship, depending on the local needs:

Calculation of necessary heat consumption (seasonality)

Energy consulting (energy saving potential)

24 hour service and maintenance via remote system control

Possibility to upgrade with a cooling system

Combination with other heating systems (solar, geothermal,...)

Education, and educational material for professionals who affect end users decision (chimney sweepers, plumbers, energy consultants and other persons related to biomass) updating

Integrated system supply and maintenance: Install, operation and maintenance.

Energy supply by means of a biomass heating system (BioHousing concept or similar)

It should be highlighted that most of the people interviewed or respondents expressed high interest in the *BioHousing* project deliverables, which they considered useful.

The particular conclusions found by each partner as described in the following sections.



Association regionale Biomasse Normandie (France) - Questionnaire study for professionals

Introduction

In order to evaluate the business possibilities prospects in each participating country, it was decided, during the second meeting in Valladolid, to interview a panel of potential end-users and professionals. The aim of this study is to point out what are the extra needs for end-users and determine which category of professionals will be interested in developing new services to encourage the use of solid biomass heating systems in individual houses.

This study will be realized in two phases: the first one will concern the professionals, which will be contacted by phone ; the second one will address potential end-users by direct interviews during the next *Housing Fair*, which is organised in Caen from 16 to 19 March 2007.

Enquiry

10 professionals, working in the field of energy or wood-energy, have been interviewed. They represent different segments of business:

- 4 wood boiler manufacturers : 2 Austrian and 2 French companies,
- 2 wood boilers installers,
- 1 energy supplier (oil company),
- 2 wood-fuel suppliers (pellets),
- 1 heating services company (repair and maintenance services for conventional boiler).

Results

In France, domestic boilers need to be revised once a year and this should be made by a professional. In case of fire problems, non respect of this maintenance by a professional invalidates insurance policies. As in Austria, maintenance on wood boilers is generally made by professionals that have been trained and accredited by the boiler manufacturer.

Considering this, we have focused our enquiry on the possibility to develop companies which could propose to the end-users all the different services involved in individual biomass heating: installing and maintaining the biomass equipment, delivering the bio-fuels, removing the ashes ...

Through our interviews, it appears that professionals already working in wood-energy field are not willing to diversify their activities, and prefer that each "step" of solid biomass heating project is assumed by each category of professionals. These professionals are making their turnover on the specific domain they have chosen to develop and they don't really want new "services" companies to appear on the market. They consider that this "all integrated concept" company will not be able to produce good work (too many different technical skills to put together) and will not give entire satisfaction to the final customer. They are more willing to create networks to gather all the different partners involved in a solid biomass heating concept in order to propose a global answer to end-users' needs.



On the opposite, the companies working in the field of conventional energies, such as oil or gas boiler manufacturers and installers, fossil fuels suppliers, are strongly interested in entering RES heating market, including wood-fuel heat (mainly from pellets). But they are considering this new market very carefully and are analysing the main barriers limiting its development. Due to high increase in fossil fuel prices these last 2 years, they are now considering to diversify their activities and propose services to support the whole "chain" of solid biomass heating: selling and installing equipments, delivering bio-fuels, and after sales services ...

More generally questioned about what is needed to develop solid biomass heating and overcome current barriers, here are the main actions pointed out by the professionals:

- **Overcome lack of information** for domestic end-users on available technologies and wood-fuels.
- **Strong needs in organization of supplying**, particularly for pellets, in order to secure the market and to provide customers with fuels that meet quality requirements for reasonable price. Currently, there isn't any standards for pellets production, and one can find very good or very bad quality pellets, for very disparate prices (from 200 to 350 € per ton). In France, pellets market is depending on available raw material (saw dust) which is use on one hand to produce particleboards, and one the second hand to produce pellets which are mostly exported to the Italian market were they are sold at a higher price than in France mainly because of very high prices of fossil fuels in Italy.
- **Strengthen stability in biomass fuel prices.** High price for pellets (which is very close to oil price) and its possible variations are parts of the reasons why domestic end-users show hesitation and finally prefer to maintain their oil or gas boiler or to choose geothermal or electrical heating (for new buildings).
- **Maintain subsidies to reduce investment costs for solid biomass heating equipment.** High investment costs for wood (and solar) heating systems are still a main barrier. To overcome this point, French government has reinforce its supporting policy : individual house-owner can obtain subsidies which correspond to a reimbursement **(50 % of equipment costs, excluding installation costs)** on income taxes for **a wood heating equipment with high performance (efficiency>65%) or solar water heater installed by a professional**. This measure will last till 2009, but professionals wish that this program could be pursued after this date, particularly to support development of efficient separate wood heating equipments (inserts, stoves...).

Conclusion

Conclusion of the questionnaire study is that two potential target groups for offering extra services to domestic end-users for solid biomass heating can be addressed :

- **Installers** of wood heating equipments, who are also wishing to provide their customers with wood fuels, in order to secure their activity and to overcome the worries about bio fuels shortage. This could be conceived in a frame of local organization (regional or even sub-regional) based on association of local actors (wood fuel producers and suppliers).
- **Fossil fuel suppliers**, and particularly the oil suppliers which dispose of the required framework (size, number of employees) to develop their activities and propose all the different services linked to solid biomass heating systems : from selling and installing equipment (combined skills necessary in order that final consumer can receive



Governmental subsidies) to delivering fuels (pellets, chips ...) and proposing maintenance contracts.

Through this study, we have also identify two companies (one in each of the above mentioned categories) interested in developing new activities in order to answer wood based domestic heating needs.

Association regionale Biomasse Normandie (France) - Questionnaire study for domestic end- users

Introduction

In order to evaluate the business possibilities prospects in each participating country, it was decided, during the second meeting in Valladolid, to interview a panel of potential end-users and professionals. The aim of this study is to point out what are the extra needs for end-users and determine which category of professionals will be interested in developing new services to encourage the use of solid biomass heating systems in individual houses.

Potential end-users have been addressed by direct interviews during a Housing Fair, which was organised in Caen from 16 to 19 March 2007, and on which Biomasse Normandie was animating a stand on RES and energy saving, in collaboration with ADEME and Regional Council.

Enquiry

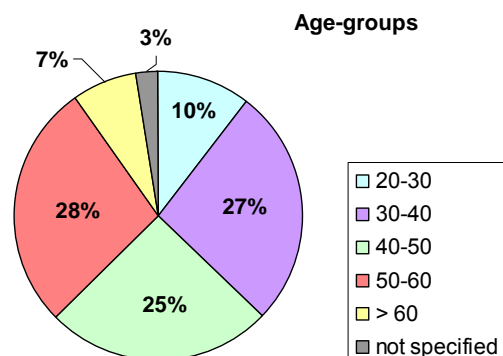
Within 2 days (17th and 18th of March), 230 people have been interviewed by four students (graduating for a Master in "European projects for local development" at University. In the frame of their courses, they have made a case study on the BioHousing project).

Characteristics of interviewed domestic end-users

General information

People interviewed are mainly aged from 30 to 60, and 69 % of them are homeowner.

Within these homeowners, 96 % of the buildings are individual houses.

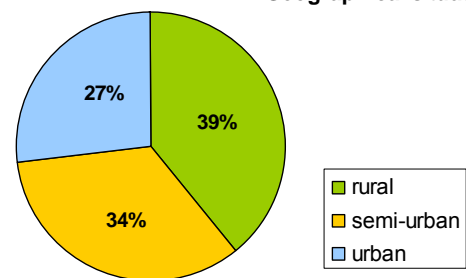




This high share of house owners can be explained by the fact that Housing Fair is visited by people who wants to gain information on how to reduce energy consumption or planning to install new equipments, which are topics concerning mainly owners of individual houses, whereas for flats, investments for energy saving or heating systems are usually made by co-owners consortiums.

Concerning people's living place, we have noticed a quite uniform share between rural, semi-urban and urban areas.

Geographical situation

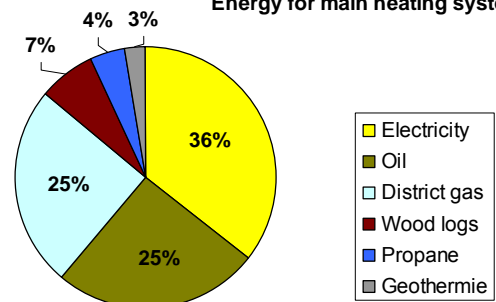


Information on heating systems used

Enquiry on main heating systems shows what is observed nowadays in France: a large share of electricity (36 %), and equal share between oil and gas.

Only 7 % of owners declare using wood energy as principal heating system.

Energy for main heating system



Among all interviewed persons, 50 % declare using an auxiliary energy to complement their main heating system. If we concentrate on the owners, the share of auxiliary heating system raises to 72 % and the main auxiliary energy source is wood logs (80 %) used in open fireplaces or inserts (very few wood stoves).

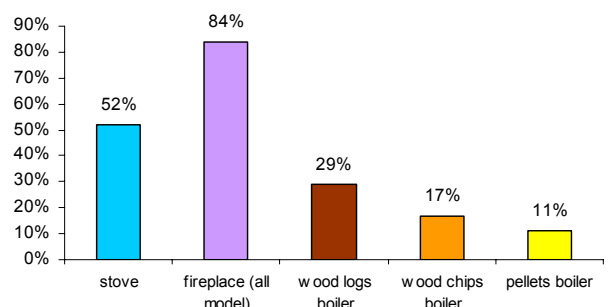
Wood energy knowledge of interviewed people

General knowledge

Most of the interviewed people know about wood energy, and the most well known wood burning appliance is the fireplace.

We can notice that automatic wood boilers (chips or pellets) are not well known by private house owners.

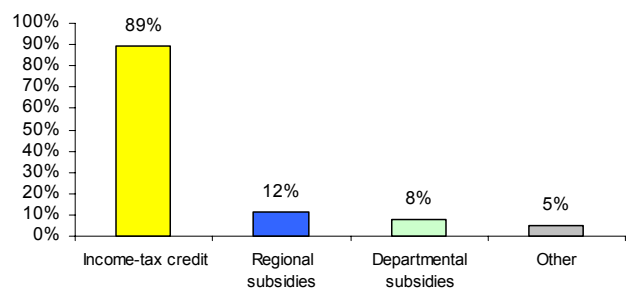
Share of answers on wood based systems





About 52 % of interviewed people declare being aware of subsidies and incentive measures related to wood based heating systems, but it appears that they mostly know about fiscal incentive (income tax credit) and few of them are informed about local subsidies (Region, Department ...).

Knowledge on fiscal and incentive measures

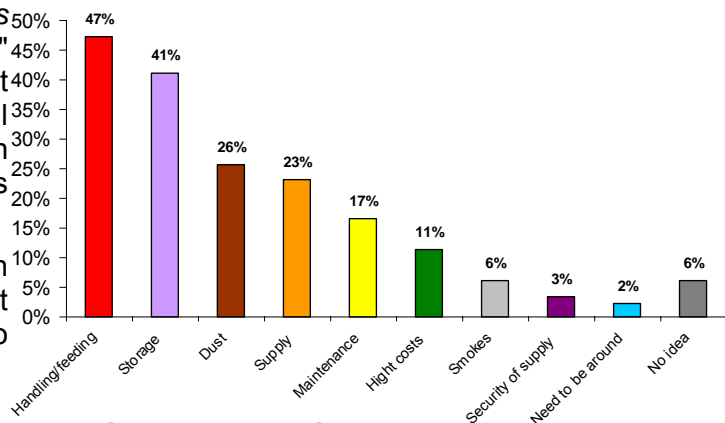


Main constraints relating to wood energy

The given answers to the simple question "Which are for you the main constraints related to wood based heating system?" show that the most important disadvantages of wood energy are still **fuel handling** and **manual feeding**, as in people's mind wood energy is synonymous with wood logs.

Storage, dust problems and security in supply are also often mentioned. But surprisingly, high prices reason is not so predominant (11 % of answers).

Main constraints regarding to wood energy



Interest in bio-energies companies proposing extra services

Referring to "Local sanitary regulation" supported by each French Department, flue gas sweeping and control of domestic boilers have to be done at least once a year, by a qualified professional. Maintenance contracts can be proposed to house owners and are normalised for fossil fuels: NF X 50-010 for gas boiler and NF X 50-011 for oil boilers. In case of fire problems, non respect of this regulation can invalidate insurance policies. For wood boilers, as it is done in Austria, maintenance and annual control is generally made by the professionals that have been trained and accredited by the boiler manufacturer.

Considering this, we have focused our enquiry on the possibility to develop companies which could propose to the end-users all the different services involved in individual biomass heating: installing and maintaining the biomass equipment, delivering the bio-fuels, removing the ashes and even proposing financial solutions... like it is already made for oil or gas boilers.

During interviews, people were asked two questions:

Would you be ready to install an automatic wood boiler, if companies were proposing complete services: from installation and maintenance to fuel delivery?

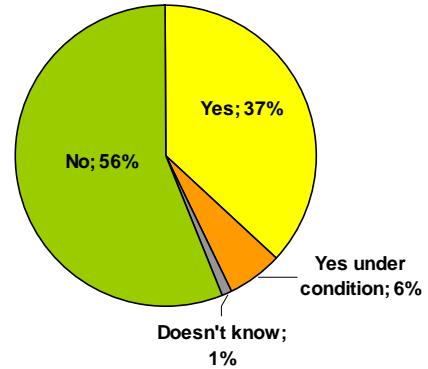
Would you be interested in even more "global" services company integrating the financing of your installation?



Choice of an automatic wood boiler

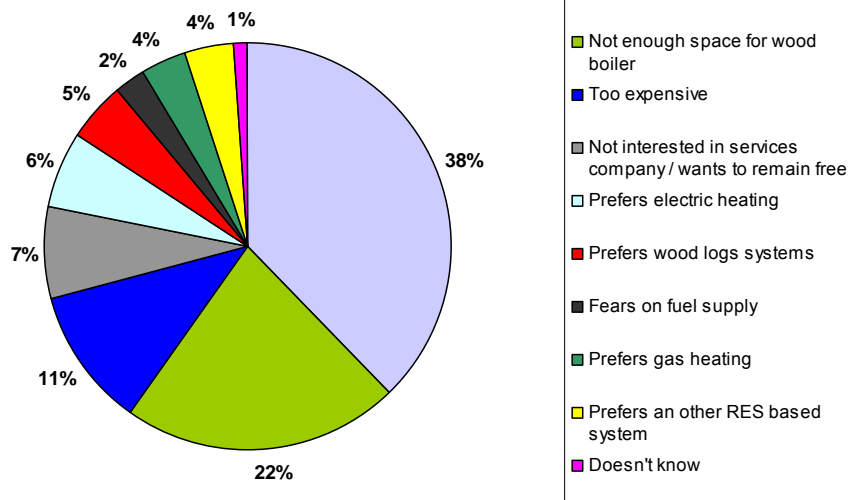
Results for question n°1

Among the 189 persons living in a single house, about 43 % show interest in automatic wood boiler (pellets or chips): 37 % have declared they would be ready to equip their house with such a system by using bio-energies services companies, and 6 % would do it if it's more economic than with conventional systems.



Within the 56 % of negative answers, we can find various reasons for non choosing automatic wood boiler and bio-energies services companies. The most common reason given is that the house owner is pleased with his current heating system (38 %).

Reasons for non installing automatic wood boiler



Then, in second and third position, are appearing reasons related to **space** (lack of space in the building to install the boiler) and **high investments costs**.

7 % of interviewed people **feel not interested in the concept of bio-energies services companies**, offering all needed tasks related to automatic wood boilers, and would prefer to stay autonomous and free to choose by themselves the different professionals they want to work with.



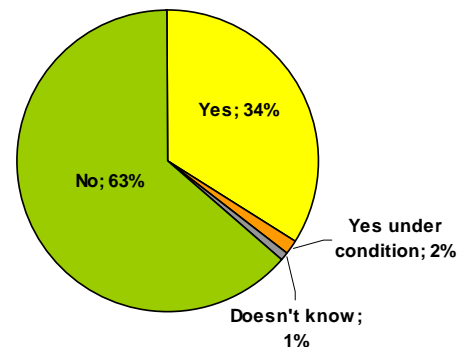
Results for answer n°2

About 2/3 of the 189 persons living in a single house, are not favourable to "global" services also including financial part (63 %).

Main given reasons are:

- no need for this kind of extra services,
- each professional keeps its business, and financial services should be proposed by banks,
- wish to remain free and autonomous on financial aspects.

Choice of global services



Conclusion

Conclusion of these interviews is that most house-owners feel not interested in the concept of bio-energy services company, because they don't want to have all aspects related to solid biomass heating concentrate in the "same hands". They are afraid of being too much dependent and want to be able to choose and have some competition between installers or fuel suppliers, in order to have prices regulation. They are also worrying on lack of organization in supplying wood fuels.

Regarding "global" services also including financing services, a large majority feel sceptic and would prefer to ask banks for financial solutions.

The positive result is that more than 40 % of interviewed house-owners would agree to choose wood based heating system if final costs were lower than for fossil fuels, and if security in supply was improved. However, this result is not fully representative of average population, as interviews were implemented in a specific part of the fair dedicated to RES and wooden buildings, and thus men and women met there were more aware of these subjects than average people.

Feeling of end-users concerning automatic biomass heating system can be summarized as below:

Global feeling that professionals from heating, supplying or financing should not merge : "à chacun son métier" = **each one keeps his business.**

Fear of increase in prices for wood based fuels (pellets, chips, logs). Stability in biomass fuel prices should be insured to secure final end-users. This has to be done by improving organization scheme in wood fuels production.

Biomass equipment costs and final price of biomass heat are still predominant in end-user's choice. Except people choosing wood-energy by personal conviction, in most cases, house owner's choice is based on favourable economic results, which, for example, is still not realized for pellets boilers, due to high investment costs and high pellets price.



ETA, Energia, Trasporti, Agricoltura srl (Italy) - Market analysis report

Introduction & scope

In order to understand what kind of maintenance services are requested and what kind of business opportunities are available in Italy, a questionnaire was delivered to end-users living in the mountainous region of Tuscany; a few small enterprises that are already providing maintenance services for fossil fuel heating systems, and also one pellet producer were contacted as well. The results of this first enquiry constitute the basis of the bioenergy entrepreneurship model of the Italian case study.

The work was made by ETA Renewable Energies via direct (phone call) and indirect contact (one page + cover, sent/collected by fax or email are enclosed in the annex).

Questionnaire summary

Taking into account the template and the instruction of the WP3 Leader (ESCAN), the questionnaire was revised in order to better fit the Italian context, and it was organised into five simple questions:

- the first two are to gather statistics of the different types of heating systems and the different biomass fuels used;
- the third is devoted to understanding the present availability of maintenance/supply services;
- the fourth asks the interviewed party explicitly for his needs and desires among the common normal/advanced services presently supplied;
- the last question focuses on the documentation that will be available in the frame of the project and asks what kind of report could be of interest (related to different phases of the heating system, such as the choice, installation, storage, and maintenance).

Result & conclusion

End-users (owners or general users of biomass based heating systems), potentially representing the market demand for maintenance and supply service, were the main focus of this enquiry. Represented by the potentially interested enterprises that are providing fuel supply and/or standard operations & maintenance services, the market supply depends strictly on the demand and on the specific conditions of the Italian market — potentially profitable but still in an embryonic state. In fact, the interviewed enterprises confirmed their interest in biomass based heating systems but simultaneously reported that they would only be able to provide additional services when there is a solid and stable demand along with specific market conditions that are not yet totally present in Italy, above all the unstable price of the biomass fuels.

The questionnaire underlined, in general terms, the following outcomes:

- 1) The more common biomass based heating systems in Italy are stoves and open/closed fireplaces fed by log wood or other types of wood fuels (general wood residues from different sources): these are generally auxiliary plants to heat a few rooms and not the entire dwelling;
- 2) Three of the interviewees were owners of pellet heating systems (2 stoves and 1 boiler). They underlined their direct involvement in the purchasing of pellets and the maintenance of the plant; even though the result of this enquiry can be only indicative for the small analysed sample, it is



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however realistic to say that the final users that decide to purchase a pellet heating system are not supported by a complete chain and in some cases are completely on their own.

3) Generally the questionnaire reports that the owners of fireplaces and stoves are already in contact with companies in charge of the supply of wood fuel and other companies that provide O&M. No advanced services are used thus far.

4) Generally the questionnaire also reports that, when the basic services are not provided, the more advanced services are not of interest, and the “all-inclusive service” is the preferred choice. It is however right to underline that several interviewees expressed their desire for the “Energy Consultancy” option.

5) The respondents all expressed high interest in the project deliverable documents, which they considered useful, and in some cases more than one option was selected in the multiple choice menu. The interviewees also expressed their interest several times in the provision of additional documentation regarding the economic comparison of biomass heating systems with fossil fuels systems. The small sample of the questionnaire does not allow a real in-depth statistical analysis, but the results point out a total absence of entrepreneurship devoted specifically to both the maintenance of biomass based systems and the supply of non-fossil fuels. Owners of pellet heating systems generally directly manage the overall daily control and annual maintenance of the system, as well as the purchase and organisation of the supply of the wood fuel. Consequently the questionnaire identifies pensioners and single elderly people, living in mountain areas, as possible potential customers, benefiting from the comfort of an “all-inclusive” service. The number of possible customers and the stability of the market seem to be the key parameters for entrepreneurs to be interested in such a potential market.



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ANNEX:

1. COVER LETTER

Firenze, 18 Dicembre 2006

Gent.mi Sig.ri,

ETA Energie Rinnovabili, nell'ambito del Progetto Europeo BIOHOUSING, appartenente al Programma "Energia Intelligente per l'Europa 2003-2006", relativo ai sistemi di riscaldamento a biomassa per utenze domestiche, sta distribuendo un questionario per capire le principali necessità degli utenti finali nei servizi di manutenzione dei sistemi di riscaldamento a biomassa.

In questo contesto si richiede gentilmente la vostra partecipazione.

Il questionario è principalmente costituito da domande con risposte multiple da barrare nell'opportuno riquadro. Occasionalmente si è invitati a dare informazioni supplementari nello spazio predefinito in grigio.

Una volta completato, salvate il file sul vostro PC e inviatelo come allegato all'indirizzo di posta: lorenzo.corbella@etaflorence.it o se distribuito in versione cartacea inviatelo al numero di fax: **055 573425**.

In caso di difficoltà nel riempire il questionario non esitate a contattarci.

Saremmo grati di ricevere il questionario compilato entro il 22 Gennaio 2007.

Ringraziandovi anticipatamente del vostro gentile aiuto porgiamo,

Cordiali saluti


Ing. Lorenzo Corbella
Project Manager del Progetto Biohousing

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2. QUESTIONNAIRE (Italian version)

BIOHOUSING - QUESTIONARIO		Intelligent Energy  Europe
No 0EIE/05/067/SI2.420197 Sustainable, comfortable and competitive biomass based heating of private houses		
Il questionario si pone l'obiettivo di capire le necessità degli utenti finali nei servizi di manutenzione: il questionario sarà svolto nei 5 casi studio del Progetto BIOHOUSING (Finlandia, Italia, Francia, Spagna, Austria)		
Lingua:	<input type="text" value="Italiano"/>	
Come completare il questionario: Il questionario è principalmente costituito da domande con risposte multiple da barrare nell'opportuno riquadro. Occasionalmente si è invitati a dare informazioni supplementari nello spazio predefinito in grigio. E possibile cambiare le risposte e le scelte in ogni momento. Una volta completato salvate il file sul vostro PC e inviatelo come allegato all'indirizzo di posta: lorenzo.corbella@etaflorence.it o inviatelo al numero di fax: 055 573425		
1 Che tipo di impianto di riscaldamento a biomassa avete?		
<input type="checkbox"/> Stufa <input type="checkbox"/> Camino aperto <input type="checkbox"/> Camino chiuso <input type="checkbox"/> Cammino/stufa con sistema di circolazione dell'acqua integrato <input type="checkbox"/> Caldaia <input type="checkbox"/> Caldaia onnivora <input type="checkbox"/> Altro.....		
2 Che combustibile utilizza il vostro impianto di riscaldamento ?		
<input type="checkbox"/> pellet <input type="checkbox"/> ciocchi di legno <input type="checkbox"/> briquette <input type="checkbox"/> cippato/segatura <input type="checkbox"/> più di un combustibile solido... <input type="checkbox"/> Altro.....		
3 Di quali servizi state già usufruendo ?		
<input type="checkbox"/> Fornitura di combustibile <input type="checkbox"/> Fornitura di combustibile e rimozione ceneri <input type="checkbox"/> Assistenza e manutenzione (A&M), pulizia canna fumaria <input type="checkbox"/> Consulenza Energetica (Calcolo dei consumi stagionali e possibili risparmi, possibilità di integrazione impianti di condizionamento/sistemi ausiliari) <input type="checkbox"/> Monitoraggio tramite Internet <input type="checkbox"/> Assistenza 24 ore su 24 <input type="checkbox"/> Servizio tutto incluso di manutenzione e fornitura combustibile <input type="checkbox"/> Altro.....		
4 Di quali altri servizi vorreste usufruire al prezzo di mercato?		
<input type="checkbox"/> Fornitura di combustibile <input type="checkbox"/> Fornitura di combustibile e rimozione ceneri <input type="checkbox"/> Assistenza e manutenzione (A&M), pulizia canna fumaria <input type="checkbox"/> Consulenza Energetica (Calcolo dei consumi stagionali e possibili risparmi, possibilità di integrazione impianti di condizionamento/sistemi ausiliari) <input type="checkbox"/> Monitoraggio remoto tramite Internet <input type="checkbox"/> Assistenza 24 ore su 24 <input type="checkbox"/> Servizio tutto incluso di manutenzione e fornitura combustibile <input type="checkbox"/> Altro.....		
5 Che documentazione sareste interessati a ricevere inerente i sistemi di riscaldamento domestico a biomassa ?		
<input type="checkbox"/> Catalogo dei sistemi di riscaldamento a biomassa <input type="checkbox"/> Guida per lo stoccaggio del combustibile solido <input type="checkbox"/> Linee guida per la corretta installazione <input type="checkbox"/> Linee guida per la corretta manutenzione <input type="checkbox"/> Indicazioni sull'integrazione del Solare termico come sistema ausiliare <input type="checkbox"/> Pacchetto di materiale educativo generale <input type="checkbox"/> Altro.....		
Per maggiori informazioni: http://www.biohousing.eu.com/		



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3. QUESTIONNAIRE (English version)

BIOHOUSING - QUESTIONNAIRE	
No OEIE/05/067/SI2.420197 Sustainable, comfortable and competitive biomass based heating of private houses	Intelligent Energy  Europe
In order to understand end-users needs, and focus the project on market demand, the questionnaire below will be performed in the regions of Biohousing project partners (Finland, Italy, France, Spain and Austria).	
Language: <input type="text" value="English"/> 	
Filling in the questionnaire: The questionnaire is mostly made up of closed questions inviting you to respond by ticking the appropriate box. Occasionally you will be invited to add supplementary information by typing text into a text field in the grey space. You can always return to a question and change your answer. Once you have completed the questionnaire, please save it on your computer and send it as e-mail attachment to lorenzo.corbella@etaflorence.it or send via fax: 055 573425	
1 What kind of biomass based heating system do you have ?	
<input type="checkbox"/> Stove <input type="checkbox"/> Open Fireplace <input type="checkbox"/> Close Fireplace <input type="checkbox"/> Stove/Fireplace with water circulation system <input type="checkbox"/> Boiler <input type="checkbox"/> hybrid system <input type="checkbox"/> others...	
2 What kind of solid fuel do you use ?	
<input type="checkbox"/> pellet <input type="checkbox"/> firewood (log wood) <input type="checkbox"/> briquette <input type="checkbox"/> chips / sawdust <input type="checkbox"/> more than one solid fuels <input type="checkbox"/> Others....	
3 What kind of services do you receive already ?	
<input type="checkbox"/> supply of fuel & ash removal <input type="checkbox"/> purchase and supply of fuel & ash removal <input type="checkbox"/> Standard Operations & Maintenance (O&M), smokestack cleaning <input type="checkbox"/> Energy consulting (Calculation of necessary heat consumption (seasonality) energy saving potential, possibility to upgrade with a cooling system, combination with other heating systems) <input type="checkbox"/> Remote system control via the internet <input type="checkbox"/> 24 hour service <input type="checkbox"/> All inclusive O&M + fuel supply <input type="checkbox"/> others...	
4 What kind of additional services would you like to ask for at market price ?	
<input type="checkbox"/> supply of fuel & ash removal <input type="checkbox"/> buy and supply of fuel <input type="checkbox"/> Standard Operations & Maintenance (O&M), smokestack cleaning <input type="checkbox"/> Energy consulting (Calculation of necessary heat consumption (seasonality) energy saving potential, possibility to upgrade with a cooling system, combination with other heating systems) <input type="checkbox"/> Remote system control via the internet <input type="checkbox"/> 24 hour service <input type="checkbox"/> All inclusive O&M + fuel supply <input type="checkbox"/> others...	
5 Is there any information or training on biomass heating systems (and/or solar thermal) for housing that you would find interesting to receive in the close future ?	
<input type="checkbox"/> Catalogue of biomass heating systems <input type="checkbox"/> Guide for the storage of solid fuels <input type="checkbox"/> Guidelines on installations <input type="checkbox"/> Guidelines on maintenance <input type="checkbox"/> Recommendations for the integration of solar heating as auxiliary system <input type="checkbox"/> Education material package <input type="checkbox"/> Others....	
For further details: http://www.biohousing.eu.com/	



ESCAN, S.A. (Spain) - Bioenergy survey for end users and RES companies

Introduction

With the aim of understanding what kind of bioenergy maintenance services are required by consumers, and which potential related business could be developed in Spain, a market survey has been performed in Spain. 150 Spanish people composed the total representative group.

A questionnaire has been prepared, focused to two main groups: end-users, and RES related installers, O&M and retailers companies. ESCAN has carried out the survey by means of direct contact, particularly through personal interview or telephone calls. Regarding the companies, it has been focused to relevant market actors (well-known firms).

As a conclusion of the carried out study on biomass heating systems for houses and buildings, it is that it is necessary a bigger contribution of economic funding and subsidies by the public administrations besides an effort in the promotion and publicity of these energy systems. Also, Biohousing concept seems to be viable for both one-family homes and buildings or group of buildings.

Questionnaire summary

The questionnaire was organized into five simple questions, which show a general panorama of the current situation in Spain:

- The first two are to gather statistics of the different types of installed heating systems and which is the current demand of necessities.
- The third asks on the attractiveness of the project and understanding the interest on biomass systems.
- The fourth is related to the interest in training of heating systems with biomass.
- The last question focused in the factors that can affect to the success of the project.

Results & conclusion

In Spain the questionnaire has been carried out mainly to two groups of people: end-users and companies related with the renewable energies. General people showed their worries regarding the investment costs and financial issues, and also some lack of knowledge on biomass heating systems. Companies and professionals showed also their concern about investment costs, but almost in the same level than lack of information.

The questionnaire was carried out to the following groups:

- RES related companies
- General Public

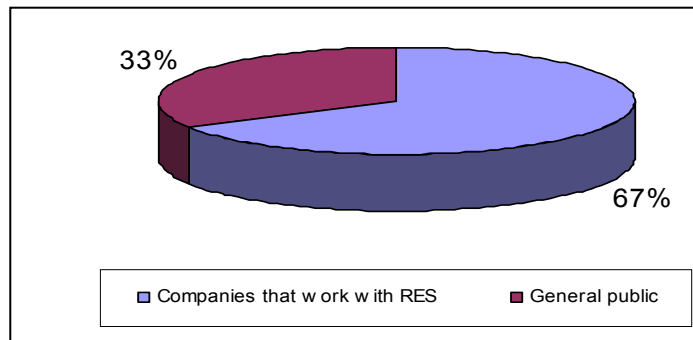


Fig.1. Interviews

The results have been analysed individually in each one of the mentioned groups.

- **End-users**

It has been taken a representative sample of the Spanish society, selecting 50% of the interviewed living in one-family houses and 50% in buildings.

The results of the questionnaire show that the main barrier when installing biomass boilers for the end-users is the high price compared to non-renewables heating systems (oil or gas mainly), together with low subsidies (economical issues add 56%). A great ignorance still exists on the part of the sector of this type of boilers (20% selected lack of information), and also several end-users showed lack of interest (16%).

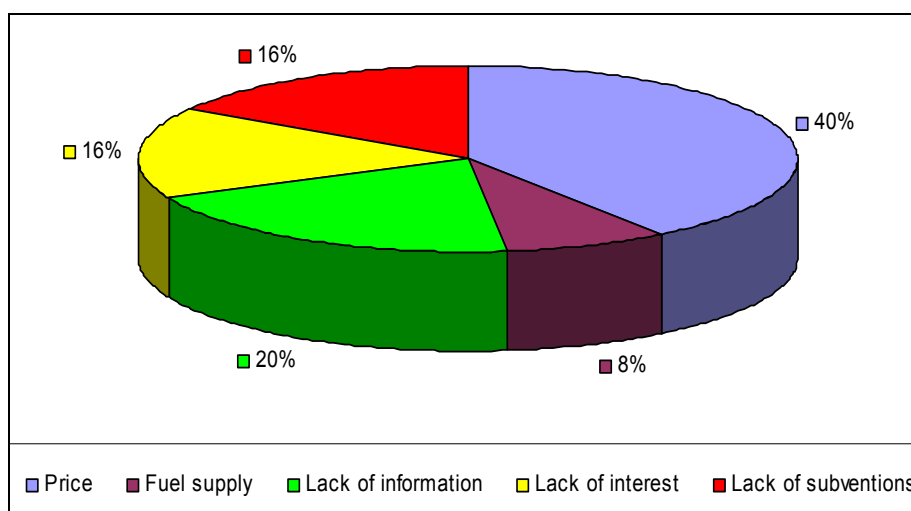


Fig.2. Barriers considered by end users



To solve this type of barriers final users believe that the use of biomass boilers could be favoured mainly by means of the help of subsidies (55%), besides it is necessary more information of the products available in the market (37%). It seems also interesting the low concern about regulations and legislation, as only a few interviewed (1%) selected this item as relevant, considering the low Spanish regulation regarding biomass for heat at homes.

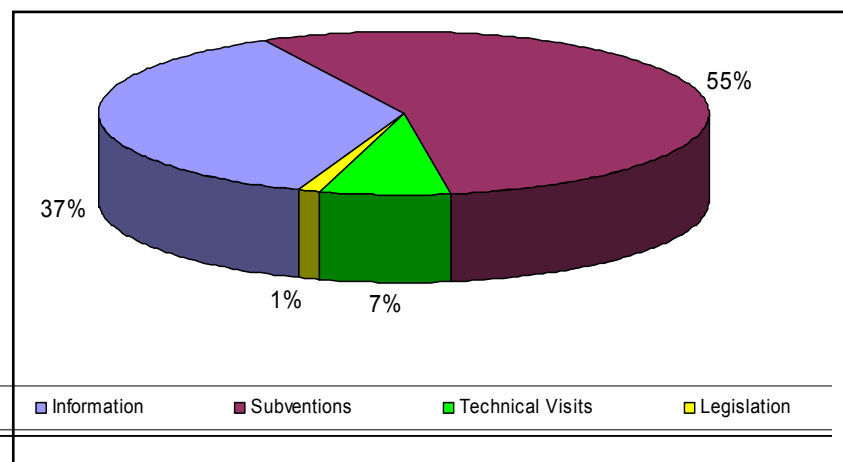


Fig.3. End users needs to install biomass systems

All people interviewed showed great interest in the development of the project, and other initiatives similar to promote biomass heating systems in Spain.

- **RES related firms**

Regarding the companies that work at present with renewables, firstly it was analysed their feeling on the increase of the different kind of heating systems available in the market in the close future.

According the interviewed companies, the heating systems that will increase its use in the next years will renewables (this selection was made by 75% of the companies), although those that work with gas are believed that will also have an important advance (18%). The losers are clearly those systems combusting oil, which were only selected by few companies (2%)

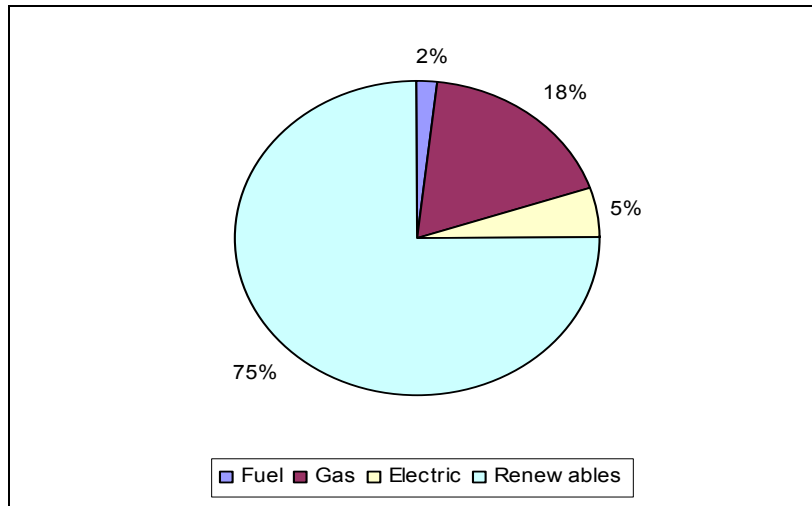


Fig.4. Heating systems that will increase in the close future

A conclusion of the survey carried out to the companies is that the main barriers found to install biomass boilers are the investment (32%) and the lack of information of the product (30%). Fuel supply (20%) causes concern to Renewables related companies. It should be pointed out that very few of the questionnaires reflect the lack of biomass heating systems legislation as a main barrier. Several companies considered the housing and building design, not well prepared for biomass storage, also as an important issue.

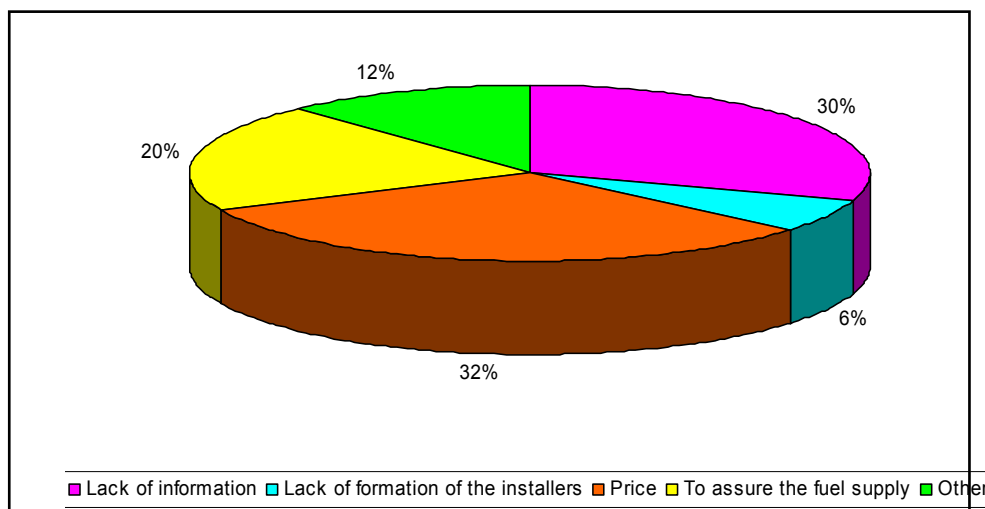


Fig.5. Biomass heating systems barriers (companies)

Also to point out that most of the companies believe that biohousing results is indicated mainly for one-family houses (48%), even when buildings and group of buildings add a similar percentage (47%).



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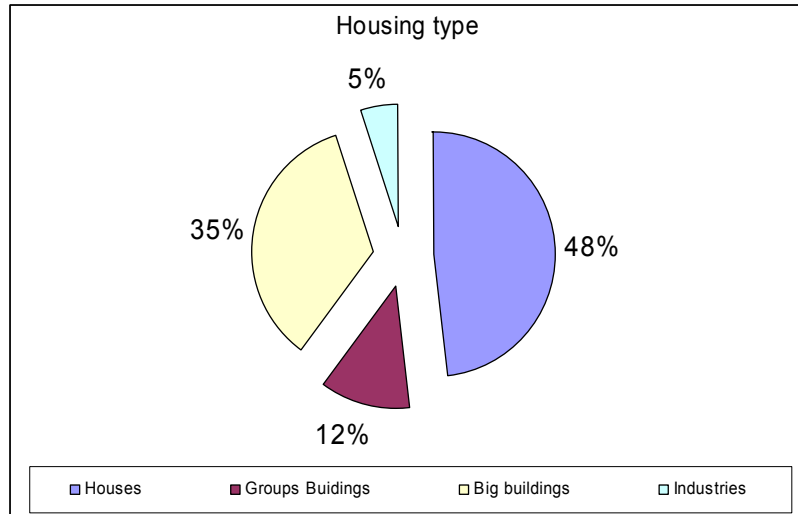


Fig.5. Distribution of potential customers



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Jyväskylä Innovation Ltd (Finland) - Bioenergy survey for end-users and professionals

Background information

During the second project meeting it was pointed out different needs concerning the maintenance work of biomass heating equipment. In Austria the boilers are integrated systems and there is just minor need for maintenance and service work. On the other hand, in Finland the boiler and the burner are rarely integrated and therefore the system needs more maintenance. It was decided to make interviews to potential end-users of biomass based heating system. The structure of the interview was first to explain what the energy maintenance concept would mean and then ask what services the customers are willing to pay for and what not. The possible service producers (plumbers, chimney sweepers etc.) were interviewed also to understand their possibilities and interest in offering additional services. Main questions would be more general and some adapted to national situation. The basic idea of the interviews would be to identify the business possibilities in each country.

The aim for the energy entrepreneurship is to develop bioenergy service entrepreneurship model to help the expansion of solid biomass heating by removing the need of a potential private house occupant to take care of a heating system by himself.

2. Questionnaire study

Questionnaire study was made according to the instructions from the WP3-leader (ESCAN S.A.). The minimum number of people to be interviewed was 25. In Finland, the interviews were made by Jyväskylä Innovation Oy / T.Laitinen. She interviewed by phone 20 private end-users who are considering installation of pellet heating system or renovating old heating system. Additionally seven chimney sweepers were interviewed.

All seven chimney sweepers participated in a training course in Saarijärvi 15.12. when the topic for the day was "Use and maintenance of the biomass heating equipment". During the day energy maintenance concept was discussed and preliminary feedback from the chimney sweepers was received. Chimney sweepers are the right group of professionals when planning energy maintenance services. After the training day ms. Laitinen phoned each chimney sweeper and interviewed them more carefully about their possibilities and interest in offering maintenance services. These interviews were made before the instructions for the interviews were given by the WP-leader. These interviews are reported in Finnish.

Contact information of the private end-users were given by executive manager of the national pellet association (Suomen Pellettienergiayhdistys ry). She gave a list of phone numbers and addresses. The consumers had contacted the association during year 2006. The consumers lived all around Finland. 20 phone interviews were made 12.-19.1.2007.



3. Summary

Chimney sweepers showed their interest already during the training day. At the moment the maintenance of the boilers (oil, pellet, wood chips, log wood) is one of the services which is offered by the chimney sweepers. At the moment in Finland there are only 10.000 private houses heated by pellets, so it is quite rare that the chimney sweepers maintain pellet boilers. According to the chimney sweepers the house owners are quite lazy and unskillful to take care of the boilers and therefore it is important that an external expertise maintain the boilers few times a year. The chimney sweepers also clean the fuel storage to remove the dust which might cause operation problems. The proper tools and equipment for the work are important but because the chimney sweepers use them every day, it is economical for them to buy the tools even some expensive ones.

Chimney sweepers are willing to learn more about the pellet heating equipment, especially about the adjustments. At the market there are a lot of different kind of equipment which are all unique. A couple of interviewees asked to have service manuals from different equipment manufacturers. At the moment this kind of material is under work and means to deliver this material to all chimney sweepers in Finland are under consideration. Also training courses for chimney sweepers are to be planned and organized during autumn 2007. Preliminary discussions with central association about practical arrangements are started.

On the other hand, the end-users were more skeptical about the pellet heating system. The reason was not the maintenance work but the pellet price (total energy price). The interviewees thought that the basic idea for the energy entrepreneurship is good but all were willing or capable of doing the maintenance work themselves. The maintenance of the system was not a barrier to choose pellet heating.

Those who were still considering a renovation of the heating system were very suspicious of the pellet price in the future. Most of these people thought that the price will increase rapidly, following the oil price, because in Finland there is practically only one supplier (Vapo Oy). And some had already made a decision to purchase a new oil boiler or a thermal heating system.

The other barriers were that inside a house or in a courtyard there was no suitable place for the fuel storage. Also the consumers wanted to have a turn-key supply which is rarely available. It is difficult to compare the offers from different suppliers and to know if everything what is needed is included.

Interviewees had looked for the information mostly from the web-sites.

During spring 2006 it was for the first time possible to apply for an energy subsidy. Energy subsidies might be granted for private houses for investment costs and for district heating connection fee if the heating system is renovated according to the Act when reducing greenhouse emissions. The subsidy might be granted for houses with max. two apartments (for example one-family houses and semi-detached houses). The Act has been valid since 5.4.2006. Interviewees who had applied for the energy subsidy, had also got it. In some cases it was the max. 15% for investment subsidy for pellet and wood-heating devices but in some cases less. The reason was that in the municipality there was not enough money for everybody so amount was decreased.



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4. Conclusion

The conclusion of the questionnaire study is that the potential target group to offer energy maintenance services in Finland is chimney sweepers. They are willing to offer their services, their knowledge about biomass heating equipment and the maintenance work is in high level although further education is needed. Additionally the house owners trust in chimney sweepers, for example in small towns chimney sweepers are known. People don't want to give their house keys to strangers or to keep doors open. For the work suitable equipment are needed and for professionals the price is cheaper when the tools are used regularly.

The interviewed consumers (end-users) were persons whose choice about the heating system didn't depend on amount of the maintenance work. Other matters influenced more. These people were active themselves, also in searching information about the best solution for their house, as in doing work themselves. The interviewees thought that the target groups for energy maintenance services could be retired people, urban career people or single women. The interviewees didn't fit in these groups, except one single lady but she was used to heat with log woods and with pellets it was easier for her.



Österreichisches Forschungsinstitut für Chemie und Technik (Austria) - Bioenergy survey for end-users and professionals

1. Background information

During the second project meeting discussed the different ways of integration biomass heating systems and their maintenance in houses. As there are pellet boilers for several years, in Austria the service system is completely build up. Another aspect is that Austrian are designed to run automatically, so very few maintenance and service work is needed.

Some years ago there was an initiative to organise the service work together with chimney sweepers. The main advantage would have been to engage them for annual maintenance of biomass boilers because they have to look after the chimneys anyway.

This project wasn't successful because of following reasons:

There are many different boilers from different manufacturers. A chimney sweeper has to know all boilers in his district that would mean a big effort of training

Because chimney sweeper have territorial protection it wouldn't work that a chimney sweeper looks after certain types of boilers an another looks after the rest in the same area

Boiler manufacturer only issue guarantee, if the boiler is serviced by a professional certified by themselves. So the manufacturer would have to know all the chimney sweepers

At the moment in Austria there is no need for new bioenergy service entrepreneurship model and the training possibilities for specialists (chimney sweepers and plumbers) are organised as well.

2. Questionnaire study

To get an overview about the project partner countries the questionnaire study was made according to the instructions from the WP3-leader (ESCAN S.A.). In Austria the inquiry was performed by Angelika Rubick working at *ofi*. The running system in Austria was described based on the experience of Austrians biomass associations and professionals (10 interviews per telephone and face to face). 15 people (private end-users) were interviewed personally. Furthermore a short summary of the education offer was carried out. The interviews took place between 27.09.2006 and 11.10.2006 at the "Blaue Lagune" next to Vienna.

3. Summary

Running system

In Austria each house or flat occupant has to arrange an inspection of his or her chimney once a year, this is regulated by law. Usually for each house there are three fixed dates per year, when the chimney sweeper plans to look after the chimneys, one has to be chosen. Chimney sweeper don't have to compete with each other because they have territorial protection.

The chimney sweeper doesn't look after the functionality of the boiler, he only is responsible for functionality of the chimney.



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The maintenance of the biomass boiler is often performed by the howsoever themselves. Usually people who are interested in biomass are collecting a lot of information before they choose a biomass boiler. This group of people mostly is willing to maintain their boilers themselves. The other possibility to establish a service contract between the boiler manufacturer and the customer. Qualified employees of the manufacturer or installers that are certified by the manufacturer are maintaining the boiler regularly (mostly once a year) and in case of problems these persons are giving advise. For the customer it is important to have such a contract to keep the guarantee for their boilers. The customer has the possibility to upgrade his system with a wireless control module to allow the manufacturer to resolve problems via internet.

An additional service for house owners is energy consulting. This service is paid by the government and covers new building, rebuilding and renovation.

Inquiry of end user

During the interview of the end users we tried to gain some information about the opinion of people towards (prefabricated) biomass heating systems.

All people know biomass heating systems but some people didn't even know about a prefabricated boiler room.

Some think that oil or gas heating systems are cheaper than biomass heating systems.

Because of the increasing pellet price people are more interested in heat pumps, the are disappointed by biomass branch promises that the pellets price will stay stable.

Most people are going to choose their heating system depending on efficiency.

Nearly all interviewees prefer a modular (prefabricated) system that is offered by the prefabricated house supplier.

Additional services (what could they be)

Calculation of nessecary heat consumption (seasonality)

Energy consulting (energy saving potential)

24 hour service and maintenance via remote system control

possibility to upgrate with a colling system

combination with other heating systems (solar, geothermal,...)

Interviewees had looked for the information mostly from the web-sites, energy consultants and boiler manufacturers.



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Education offer for chimney sweepers and plumbers

In Austria there are numerous biomass training courses (89) aiming at different target groups (students, professionals, other interested people).

The training course for **installers** is now running for 7 years. Over 150 professionals are taking part each year.

The seminar is composed of two days theory and one day of practical exercises. It comprises topics like biomass fuels and combustion, logistic, hydraulic connection, fire safety, marked situation, ecological and economical aspects, subsidies and so on.

At the end, after an exam the plumber gets a certificate and is allowed to call himself “Biówärme-Installateur®” – bioheat installer a trademark.

Similar to the training course for plumbers the course for **chimney sweepers** is composed. The training also ends with an exam and a certificate. Chimney sweepers who pass the exam become “Biówärme-Rauchfangkehrer®” - bioheat chimney sweeper also a trademark. So far since six years between 60 and 100 chimney sweepers are taking part each year.

Both training courses are successfully performed by the Austrian Biomass Association – “Österreichischer Biomasseverband” (www.biomasseverband.at).

4. Conclusion

In Austria the system is working very well and does improve by itself. A very important aspect is that the education material for professionals (chimney sweepers, plumbers, energy consultants and other persons related to biomass) is up to date, because they directly influence the customers decisions. That will be an aim for this year.