



IEE/09/758/SI2.558286 - MixBioPells

WP 6 / D 6.4

Summary review of national side workshops

Author: Thomas Zeng (DBFZ – Deutsches Biomasseforschungszentrum)

With support of the project partners:

Bioenergy 2020+
VTT - Technical Research Centre of Finland
SP – Technical Research Institut of Sweden
DTI - Danish Technological Institute
Protecma – Energia Y Media Ambiente S.L.
CTI - Italian Thermotechnical Committee

Supported by the European Commission under the EIE programme

The sole responsibility for the content of this report lies with the authors. It does not necessarily reflect the opinion of the European Communities. The European Commission is not responsible for any use that may be made of the information contained therein.



INTELLIGENT ENERGY
EUROPE





Table of contents

1	Background	3
2	Method	4
3	Summary of the national side workshops.....	5
Annex A:	Detailed overview of the Austrian national side workshop.....	11
Annex B:	Detailed overview of the Danish national side workshop.....	16
Annex C:	Detailed overview of the Finnish national side workshop	22
Annex D:	Detailed overview of the German national side workshop.....	26
Annex E:	Detailed overview of the first Italian national side workshop.....	31
Annex F:	Detailed overview of the second Italian national side workshop.....	36
Annex G:	Detailed overview of the Spanish national side workshop.....	39
Annex H:	Detailed overview of the Swedish national side workshop.....	44
Annex I:	Templates for the organisation and reporting of the national side workshops	48



1 Background

Currently, wood is the predominant fuel used for biomass combustion in Europe. However, caused by the growing demand for material and energy related use wood is getting scarcer nowadays. Consequently, unexplored solid biomass raw materials such as agricultural residues are experiencing growing interest as alternative fuel source. In most European countries preliminary activities in industrial as well as in public sectors have been started to integrate these alternative solid biofuels. However, the market integration of alternative biomass pellets is still hindered by various constraints. Thus, the local situations in Central Finland, East Sweden, Jutland in Denmark, Rhineland-Palatinate in Germany, Lower Austria, Lombardy in Italy and Asturias in Spain were analysed. Local bio-business activities have been supported based on a close cooperation with local key actors along the whole value chain. The objective was to develop regional case studies to gather information about successful technical developments, available raw materials, basic and economic conditions and problems during the build-up of new regional bio-business activities. The information was then set into the context of the current situation concerning technical possibilities in production and utilisation of alternative pellets in the European partner countries. As a result, recommendations on favourable legal frameworks can be given and regional concepts for the market implementation of alternative pellets with regard to the existing frameworks were developed and included in an Initiators Handbook and Advisory Papers. Furthermore, the difficulties connected to combustion of alternative pellets, especially in small scale, amplifies the need for quality systems and quality assurance. Thus, a draft for a labelling system for the production and combustion of alternative and mixed biomass pellets developed in close cooperation with the European Pellet Council will be presented. Dissemination of the project as well as the project results should help to increase the market implementation of alternative and mixed biomass pellets. To do so a website including a database and a forum was set up and side-workshops were organised at local, national and international conferences.

In this report the results and experiences of the seven national side workshops organised within the MixBioPells project are summarised.



2 Method

The content of the MixBioPells project and the information gathered as well as the experiences of the MixBioPells project were communicated on a national basis by special side-workshops at local conferences in each partner country. The aim was to inform the defined target groups as well as an interested public in the right way. Addressed target groups were besides the regional acting key actors, national boiler manufactures and developers of combustion systems, pellet producers, administration and policy and engineers and consultants for designing heating systems present on such events. Also the regional target groups and bio-business initiators from other regions are addressed to spread the information gathered in the example region to other regions and therefore to increase the project impact. The workshop was used to:

- Inform about the situation in the own country compared to partner countries and about Best practice Examples”,
- Describe defined constraints and drivers,
- Discuss results and compile promotion approaches.

Thus, the WP leader provided the project partners with a template including all relevant information for the organisation and reporting of the national side workshop, see Annex I for further details. Therefore the workshop will consist of two parts, a presentation and a discussion part. The concept for the workshop will be developed by the WP-leader to have similar workshops in all addressed countries and to give the possibility for summarisation and comparison of the results. The template was prepared on the basis of the discussion in the steering group and project meetings too. As a result the national side workshops were summarised by DBFZ and presented in the report.



3 Summary of the national side workshops

Within the national side workshops involved key actors gave presentations about their experiences concerning this topic and their role in the project. In general, target groups were informed about the project and the situation in their own country compared to other countries. Besides the presentations the workshop was used to discuss the presented information and the actual situation, to give possibility for exchange of ideas and requirements of the different target groups. Thus, the workshop was used to bring the different positions together and to compile further activities. An overview about the topics and main conclusions of the national side workshops are listed in Table 1.



Table 1: Overview about the national side workshops

National side workshop	Date, place	Number of participants	Topics	Main conclusions
Austria	03.02.2012, Graz	151	<ul style="list-style-type: none"> theoretical background including the background of the project and common aspects of the energetic utilisation of alternative and mixed biomass pellets report about practical experience and related problems during the development of bio business activities panel discussion for the exchange of opinions and ideas. 	<ul style="list-style-type: none"> the technical realisation of mixed biomass pellet production and combustion is possible, patience endurance are necessary in order to keep up the, probably necessary, long optimisation process of adjustments before a plant is running properly. only few practical experiences with pelletizing/briquetting agricultural biomass exist the market of alternative and mixed biomass fuels is at early stages. a potential of biomass resources is available even though they are quite heterogeneous. further developments are strongly depending on: <ul style="list-style-type: none"> Development of legal framework Transferability of practical experiences to other regions Economics of the whole supply chain
Denmark	19.04.2012, Esbjerg	18	<ul style="list-style-type: none"> Inform target groups about the results of the project Feedback about actual developments and problems for the use of alternative and mixed biomass pellets 	<ul style="list-style-type: none"> The use of non-woody biomass will increase by 2020. The yields will increase, and crops will be produced according to the market pull. However, there are different prospects on the market developments in the private and large sector. The suggested labelling handbook for biopellets will mainly be of interest for smaller customers and private end users. Probably, the scheme will be quite expensive to use for companies The results from MixBioPells project will support increased alternative biomass production and utilisation. There is a need for increased technological development for all boilers using non-woody pellets and increased knowledge about logistics, security of supply and pre-treatment.



Table 1: Overview about the national side workshops (continued)

National side workshop	Date, place	Number of participants	Topics	Main conclusions
Finland	08.04.2012, Jyväskylä	38	<ul style="list-style-type: none"> • Increase the information about the topic of alternative and mixed biomass pellets, e.g. the project as well as the production and combustion of non-woody biomass pellets • Increase the awareness of national authorities and bio business initiators • presentation of recent developments in standardisation and in the markets • presentation of experiences with alternative mixed biomass pellets 	<ul style="list-style-type: none"> • In Finland, an increase of the utilisation of alternative and mixed biomass pellets within the next 10 years is expected. • The use of pellets in Finland will increase remarkably during the next few years especially in industrial scale. • Existing production technologies designed for the use of woody raw materials must be adapted and special developments in the field of pre-treatment, conditioning as well as pelletizing are needed. • The mixing of raw materials can play an important role to improve the fuel properties and to reduce problems during the combustion as well as formation of gaseous and particulate emissions.



Table 1: Overview about the national side workshops (continued)

National side workshop	Date, place	Number of participants	Topics	Main conclusions
Germany	25.05.2012, Leipzig	14	<ul style="list-style-type: none"> Theoretical background covering the background of the project and common aspects of the energetic utilisation of alternative and mixed biomass pellets. Reports about practical experience including best practise examples and related problems during the development of bio business activities Providing information about the situation in Germany compared to other European countries. Compiling different approaches, concerns and solutions of the heterogeneous target groups and discussion of further prospects. 	<ul style="list-style-type: none"> The technical realisation of mixed biomass pellet production and combustion is possible. In many fields their application is possible and a large potential of biomass resources is available even though they are quite heterogeneous. The market of alternative and mixed biomass fuels is at early stages. Many experiences were available especially in the field of pellet production and first utilisation concepts are successfully realised on regional level, especially above 100 kW. Further developments are strongly depending on: <ul style="list-style-type: none"> Availability of raw materials Development of legal framework, Transferability of local existing integrated concepts (isolated applications) to other regions or countries Economics of the whole supply chain
Italy 1	19.03.2012, Cremona	>100	<ul style="list-style-type: none"> Discussion of the pelletising process and the possibility for residues to be used as a fuel in combustion systems. 	<ul style="list-style-type: none"> The market for alternative and mixed biomass pellets is at early stages. Only few practical experiences with pelletizing/briquetting of agricultural biomass exist. There is a high availability of alternative biomass even though heterogeneous. The production and combustion technologies should address the characteristics and performance of several raw materials apart from wood. Standards of the alternative pellet and their combustion devices could support the development of this market.



Table 1: Overview about the national side workshops (continued)

National side workshop	Date, place	Number of participants	Topics	Main conclusions
Italy 2	31.03.2012, Cesana	20	<ul style="list-style-type: none"> • Discussion of aspects concerning the production and combustion of pellets made of alternative biomass (agri-pellet). • Focus on the most important fuels: residues from agricultural and agro-industry sectors. 	<ul style="list-style-type: none"> • There is high a high potential for the use in the domestic sector • There are difficulties in supporting initiatives caused by a difficult legal framework. • The recovery of the agricultural residues could give economic advantages.
Spain	29.10.2010, Valladolid	13	<ul style="list-style-type: none"> • Increase the information about the topic of alternative and mixed biomass pellets, e.g. the project as well as the production and combustion of non-woody biomass pellets • Increase the awareness of national authorities and bio business initiators • Providing information about the situation in Spain compared to other European countries • Exchange existing problems, experiences and ideas concerned with the topic 	<ul style="list-style-type: none"> • The technical realisation of mixed biomass pellet production and combustion is possible but there is a huge demand for further development. • A large potential of biomass resources is available even though it is quite heterogeneous. • There is almost no market for alternative and mixed biomass fuels in Spain. • The main concerns were on the one hand the costs for the production of alternative mixed biomass pellets and on the other hand the critical fuel characteristics and their effect on the boiler. • An appropriated labelling and certification scheme for pellets and boilers could increase the market relevance of alternative and mixed biomass pellets.



Table 1: Overview about the national side workshops (continued)

National side workshop	Date, place	Number of participants	Topics	Main conclusions
Sweden	Öknaskolan, Tystberga, 02.04.2012	18	<ul style="list-style-type: none"> • Exchange of experiences and knowledge about possible raw materials, processing concepts, combustion technology, user and community perspectives and best practice examples from all over Europe. • Discussion of possibilities to support the ideas that could lead to new businesses in the production and use of renewable energy. • Companies tell and show how they have chosen to focus on adding value and use new biomass resources for pelletizing and briquetting. 	<ul style="list-style-type: none"> • identify sustainable alternative biomass to pellets value chains • the market for alternative biomass for pellets is new to many farmers, cooperatives and companies within the agricultural sector • initiated new discussions and projects

Supported by:



Partner:





Annex A: Detailed overview of the Austrian national side workshop

A1 Objectives of the workshop

The main objective of the workshop was to inform and sensitise national authorities and bio business initiators about the topic of alternative pellets. The target groups should be informed about the project and the situation in their own country compared to other countries. The workshop was divided into three parts: Theoretical background (part 1), a report about practical experience (part 2) and a panel discussion (part 3). The theoretical part covered the background of the project and common aspects of the energetic utilisation of alternative (mixed) biomass pellets:

- Combustion and pelletizing of alternative (mixed) biopellets
- Cost analysis
- Legal framework

In the second part Mr. Zimmermann presented his experiences with and related problems during the development of bio business activities. Afterwards the panel discussion opened the possibility for the exchange of opinions and ideas.

A2 Workshop organisation

The workshop was organised in close cooperation with the Agricultural Chamber of Styria. Thus, the workshop was an integrated part of the “Fachtagung Energie” (“Symposium on Energy”) on the 3rd February 2012. The key actors were contacted both with the symposium and the MixBioPells mailing list. In the morning the topic of the symposium was “Photovoltaic in agriculture”. In the afternoon the energetic utilization of alternative biomass pellets was discussed. So the workshop started at 14:00 after the lunch and was finalised about 17:00. Project leaflets and information for the participants were available at the welcome desk. The flyer of the event is depicted in Figure 1.



Agrarische Rohstoffe



Information

Messe Congress Graz, Tagungszentrum,
A-8010 Graz, Messeplatz 1

Datum: Freitag, 3. Februar 2012
Veranstalter: Landwirtschaftskammer Steiermark
Tagungsbeitrag:
 Photovoltaik in der Landwirtschaft (Vormittag) 10 Euro
 Heizen mit agrarischer Biomasse (Nachmittag) 7 Euro
 Kombipaket (ganzer Tag) 16 Euro

(In den Beträgen ist keine abzugsfähige MWST enthalten)

Verbindliche Anmeldung und Auskünfte
 Landwirtschaftskammer Steiermark
 Referat Energie und Biomasse
 Christine Wellner
 Tel. +43(0)316/8060-1433
 Fax +43(0)316/8060-1430
 E-Mail: christine.wellner@lk-stmk.at

Fachtagung Energie

Neue Wege: Photovoltaik, agrarische Rohstoffe



Fachtagung Energie

Neue Wege: Photovoltaik,
 agrarische Rohstoffe

Datum: Freitag, 3. Februar 2012
Ort: Messe Congress Graz, 8010 Graz,
 Messeplatz 1

Angeichts der massiven Verteuerungen bei Öl und Gas und der atomaren Katastrophe in Japan wird klar, dass kein Weg an der Energievielfalt vorbeiführt. Die zentralen Herausforderungen liegen im effizienten und sparsamen Einsatz von Energie und im massiven Ausbau aller erneuerbaren Energiepotenziale. Die österreichische Land- und Forstwirtschaft hat bislang schon einen wichtigen Beitrag zur nachhaltigen Gestaltung des heimischen Energiesystems geleistet. Immerhin werden 16 Prozent des österreichischen Energieverbrauchs mit Biomasse gedeckt. Obwohl es noch Ausbaupotenziale in den heimischen Wäldern gibt, muss der Fokus künftig auch auf erneuerbare Energiepotenziale in der Landwirtschaft gerichtet werden.

Mit der Fachtagung Energie sollen zwei Hoffnungsmärkte für die Land- und Forstwirtschaft beleuchtet werden: Photovoltaik und agrarische Rohstoffe. Im Themenblock „Photovoltaik in der Landwirtschaft“ werden Potenziale und Chancen für bäuerliche Betriebe aufgezeigt, Wirtschaftlichkeitsanalysen und praktische Umsetzungsbeispiele vorgestellt und die Frage „Photovoltaik als Zusatzstandbein oder Flächenkonkurrent“ diskutiert. Im Themenblock „Heizen mit agrarischer Biomasse“ werden sowohl Ressourcen, Pelletier- und Feuerungstechnologien, rechtliche Rahmenbedingungen und Fragen der Wirtschaftlichkeit analysiert als auch ein Ausblick auf künftige Entwicklungen gegeben.

Programm

8.00 Uhr **Registrierung**

Photovoltaik in der Landwirtschaft

9.00 Uhr **Begrüßung und Eröffnung**
Kammeramtsdirektor DI Werner Brugner,
 Landwirtschaftskammer Steiermark

9.15 Uhr **Weichen Beitrag kann die Photovoltaik zur Energiewende leisten?**
Präsident Dr. Hans Kronberger,
 Photovoltaik Austria

9.45 Uhr **Photovoltaik in der Landwirtschaft – Zukunftsinvestition oder Liebhaberei?**
Mag. Thomas Lobnegger, LK Steiermark

10.15 Uhr **Photovoltaik-Initiative Murau – Auf jedes Stalldach eine PV-Anlage**
K.R. Josef Schröder,
 BK Murau und ARGE Murauer Bergbauem

10.45 Uhr **Kaffeepause**

11.15 Uhr **Photovoltaik-Freizügigenanlage Mureck mit BürgerInnen-Beteiligung**
ÖR Karl Totter, SEBA Mureck GmbH & Co KG

11.45 Uhr **Photovoltaik-Freizügigenanlagen aus raumplanerischer Sicht**
DI Harald Griesser, Amt der Stmk LR, Abteilung 16

12.15 Uhr **Podiumsdiskussion**
 „Photovoltaik in der Landwirtschaft – Zusatzstandbein oder Flächenkonkurrent?“
Präsident ÖR Gerhard Wodkowskí, LK Stmk
Präsident Dr. Hans Kronberger,
 Photovoltaik Austria
DI Harald Griesser, Amt der Stmk LR, Abteilung 16
ÖR Karl Totter, SEBA Mureck GmbH & Co KG

13.00 Uhr **Mittagspause**

Heizen mit agrarischer Biomasse - Chance oder Illusion?

(In Kooperation mit der Bioenergy 2020+ GmbH)

14.00 Uhr **Begrüßung und Eröffnung**
DI Dr. Horst Jauschnegg, LK Steiermark

14.15 Uhr **Agrarische Brennstoffe - Ressourcen, Rohstoffgemeinschaften, Pelletier- und Feuerungstechnologien**
DI Elisabeth Wopienka, Bioenergy 2020+ GmbH

14.45 Uhr **Rechtliche Rahmenbedingungen für die Verfeuerung agrarischer Brennstoffe in Kleinfeuerungen, Heizwerken u. gewerblichen Anlagen**
Dipl.-HFL-Ing. Leopold Lasseisberger,
 BLT Wieselburg

15.15 Uhr **Rechnet sich die Bereitstellung von agrarischen Biobrennstoffen?**
DI Christa Kristöfel,
 Bioenergy 2020+ GmbH

15.30 Uhr **Kaffeepause**

16.00 Uhr **Erfahrungen aus der Praxis**
Martin Zimmermann, Agrarenergie Weinviertel

16.15 Uhr **Podiumsdiskussion**
 „Agrarische Brennstoffe - Wohin geht die Reise?“
Siegfried Klöbassa, KO BK Radkersburg
Wolfgang Kleindienst, Amt der Stmk LR, FA 17A,
 Büro des Landesenergiebaubeauftragten
Dipl.-HFL-Ing. Leopold Lasseisberger,
 BLT Wieselburg
Martin Zimmermann, Agrarenergie Weinviertel
Erwin Stubenschrott, Geschäftsführer KWB –
 Kraft und Wärme aus Biomasse GmbH

17.00 Uhr **Ende der Veranstaltung**

Figure 1: Flyer of the Austrian side workshop



Workshop programme in English:

Heating with agricultural biomass - Opportunity or Illusion?

- 1 Welcome and introduction
DI Dr. Horst Jauschnegg, Agricultural chamber of Styria
- 2 Agricultural fuels - resources, raw material properties, pelleting and combustion technologies
DI Elisabeth Wopienka, Bioenergy 2020+ GmbH
- 3 Legal framework for combustion of agricultural fuels in small furnaces, heating plants and industrial facilities
Dipl.-HLFL-Ing. Leopold Lasselsberger, BLT Wieselburg
- 5 Does the supply of agricultural biomass pellets pay off?
DI Christa Kristöfel, Bioenergy 2020+ GmbH
- 6 Practical experiences
Martin Zimmermann, Agrarenergie Weinviertel
- 7 Coffee break
- 8 Panel discussion: "Agricultural biomass fuels – Where are we headed?"
Siegfried Klobassa, Local authority Bad Radkersburg
Wolfgang Kleindienst, Federal state government of Styria, Unit 13B
Dipl.-HLFL-Ing. Leopold Lasselsberger, BLT Wieselburg
Martin Zimmermann, Agrarenergie Weinviertel
Erwin Stubenschrott, KWB (boiler manufacture)

A3 Results of the workshop

In total 151 persons have participated in the workshop. The distribution according to the target groups is listed in Table 2.

Table 2: Distribution according to the target groups

Pellet and combustion plant operators	4
Regional acting key actors like raw material suppliers and bio business initiators	85
Policy makers/local authorities	17
Engineers and consultants	5
Lobbying institution/ professional institution	11
Others, e.g. research institutes, institution of higher education	29
Sum	151



Figure 2: Participants of the Austrian side workshop

At the end, six attendant policy makers/local authorities and three raw material supplier had been asked for their feedback. The policy makers had the possibility to rate the quality of the workshop based on five questions and a marking system.

In particular, the policy makers highlighted the speciality of the topic and the presentations including news facts and experiences. The raw material supplier liked the practical and basic information. The workshop was introduced by Horst Jauschnegg (Agricultural chamber of agriculture). He gave a short overview about the actual situation for the use of renewables in Austria. Following, Elisabeth Wopienka (BE2020+) presented the state-of-the-art of pelletizing and combustion technologies and as well the results of the pelletizing and combustion tests of the MixBioPells project. It was shown that the production of alternative biomass pellets requires a suitable combination of raw materials and process parameters of the pellet press to facilitate the development of combustion systems for the use of alternative biomass pellets, particularly in small scale appliances. A big variety of agro fuels is available, but their pelletizing- and combustion-properties differ and technologies but also legitimations have to be adapted. The improvement of the pelletizing-process can be induced by different technological adjustments like dwell time or freeness mixing different raw materials can improve bad properties only in some cases. Finding appropriate fields of application would raise the suitability of these regenerative materials. Especially compliance with statutory emission requirements is an issue.

Next, Leopold Lasselsberger (BLT Wieselburg) presented the actual legal framework concerning the energetic utilisation of alternative biomass. Emission limits of small scale combustion-systems are regulated in the Federal constitution law (Bundesverfassungsgesetz) Art. 15 a BVG. The combustion plant ordinance FAV ("Feuerungsanlagenverordnung") was changed in 2011. Adaptions concerning the definition of solid fuels, O₂-base value and the standardisation of fuels were amended. Fuels are standardized in ÖNORM EN 14961-1 – 5. Agricultural fuels are standardized in specialized prenoms (VORNORM ÖNORM M 7139:2006, VORNORM ÖNORM C 4000:2007, VORNORM ÖNORM C 4001-2008, VORNORM ÖNORM C 4002:2010). Boilers are regulated in EN 303-5 which includes requirements and testing methods for security, combustion quality, operating performance, etc.. Following, Christa Kristöfel (BE2020) presented economic aspects of the energetic utilization of alternative biomass.

The second part mainly focussed on the reports of practical experiences on pelletizing and combustion of alternative (mixed) biomass. Mr. Zimmermann talked about his difficulties to find the right briquetting plant and the time consuming adjustment of the process parameters. One



main problem is that only few experiences with pelletizing/briquetting Miscanthus exist. Afterwards the participants of the workshop could ask questions to the experts of the panel discussion.

A4 Conclusion

The presented results and experiences as well as the discussion during the workshop has shown that the technical realisation of mixed biomass pellet production and combustion is possible, but that patience endurance are necessary in order to keep up the, probably necessary, long optimisation process of adjustments before a plant is running properly. Furthermore only few practical experiences with pelletizing/briquetting agricultural biomass exist and only standardized fuels can be used legally allowed. So market of alternative and mixed biomass fuels is at early stages. Nevertheless, a potential of biomass resources is available even though they are quite heterogeneous. Further developments are strongly depending on:

- Development of legal framework,
- Transferability of practical experiences to other regions,
- Economics of the whole supply chain which are mainly driven by the costs of raw materials, production of pellets and specific investments for the combustion plant.

A5 Presentations

The presentations in German are available at the project website:

<http://www.mixbiopells.eu/en/publications/presentations-and-workshops.html>



Annex B: Detailed overview of the Danish national side workshop

B1 Objectives of the workshop

The aim of the workshop was to inform the target groups in the project about the results. 58 persons were invited from all our target groups, including persons from the Danish Energy Agency and from the Mid Jutland Region. These are our target group concerning policy and administration, but they did not show up at the meeting, and could therefore not make the wanted positive feedback.

B2 Workshop organisation

The national side workshop was arranged as a ½ day meeting at the premises at ANDRITZ Feed & Biofuel. The reason for this was that the numbers of Danish biomass conferences in these years are very limited. In the last two years there has only been one wood pellet conference with limited number of delegates. Thus, there was no suitable conference for the side work shop available. In addition, the second national presentation about the MixBioPells project was done at this wood pellet conference. The invitation for the workshop is listed below.

Invitation til afsluttende møde og workshop i MixBioPells projektet. Torsdag d. 19 april i Esbjerg.

Du og dine kollegaer indbydes sammen med en række andre aktører i branchen til et afsluttende møde og workshop om øget anvendelse af biomasse til energi med fokus på alternativer til træ. Mødet er del af EU-projektet MixBioPells, og det har til formål at identificere biomasseressourcer i Danmark der ikke er træ, og som endnu ikke udnyttes. Ligeledes er det formålet at klarlægge årsagerne til den manglende udnyttelse og at undersøge muligheder for at afhjælpe disse.

Mødet afholdes hos ANDRITZ Feed & Biofuel, Glentevej 7, Esbjerg.

Se dagsorden nedenfor.

Deltagelse er gratis. Send også indbydelsen til en kollega.

Se også hjemmesiden <http://www.mixbiopells.eu/dk/forside.html>

Tilbage melding om deltagelse skal ske senest hurtigst muligt til ANDRITZ Feed & Biofuel, Miran Komadina, e-mail: reception.esbjerg@andritz.com eller til Lars Nikolaisen LSN@teknologisk.dk

Med venlig hilsen

Lars Nikolaisen
Teknologisk Institut
Kongsvangs Alle 29
8000 Århus C
Tlf 7220 1302

Lars Bloch
ANDRITZ Feed & Biofuel
Glentevej 7
6705 Esbjerg Ø
Tlf 7216 0300



Logo for den foreslåede mærkningsordning



Dagsorden

- 9.45 - 10.00. Ankomst og kaffe
- 10.00.-10.25: Aktiviteterne i MixBioPells projektet og resultaterne ved Lars Nikolaisen, Teknologisk Institut
- 10.25 - 10.45: Mærkningssystem for alternative piller ved Anna Sager, SP Sveriges Tekniska Forskningsinstitut.
- 10.45 - 11.05: Industrianlæg til formaling og pelletering af alternative biomasser ved Lars Bloch, ANDRITZ Feed & Biofuel.
- 11.05 - 11.25: Erfaringer fra brug af alternative biomasser i et kraftvarmeværk ved Allan Abildskov Verdo.
- 11.25 - 11.40: Erfaringer fra Sverige med alternative biomasser ved Anna Sager, SP Sveriges Tekniska Forskningsinstitut.
- 11.40 - 12.00: Oplæg til eftermiddagens workshop samt perspektivet i den nationale energihandlingsplan fra 2010 for fremtidig anvendelsen af alternative biomasser i Danmark ved Lars Nikolaisen.
- 12:00 - 13.00 Frokostbuffet
- 13.00 - 14.30: Workshop i 2-4 grupper afhængig af antallet af deltagere. Emnerne vil bl.a. være:
- Hvorledes kan projektets resultater anvendes til øget biomasseanvendelse fremover
 - Kan den foreslåede mærkningsordning fungere?
 - Åbner den nationale energihandlingsplan fra 2010 op for øget anvendelse af alternative biomasser frem mod 2020 ?
 - Kan der opstilles en konkret liste med navne på kommende projekter med alternative biomasser?
- 14.30 - 15.30: Plenum hvor grupperne fremlægger konklusionerne og der opstilles en kortfattet samlet konklusion.
- 15.30 Tak for i dag

Workshop programme in English:

National side workshop

- 9.45 - 10.00: Arrival and coffee
- 10.00 - 10.25: Activities in MixBioPells project and its results by Lars Nikolaisen, Technological Institute
- 10.25 - 10.45: Labelling System for alternative Pellsets by Anna Sager, SP Swedish National Testing and Research Institute.
- 10.45 - 11.05: Industrial plants for grinding and pelleting of alternative biomasses by Lars Bloch, Andritz Feed & Biofuel.



- 11.05 - 11.25: Lessons learned from the use of alternative biomass in a Cogeneration Plant at Allan Abildskov, Verdo.
- 11.25 - 11.40: Lessons learned from Sweden with alternative biomass by Anna Sager, SP Swedish National Testing and Research Institute.
- 11.40 - 12.00: Presentation to the afternoon workshop and perspective in the National Renewable Energy Plan from 2010 for future use of alternative biomass in Denmark by Lars Nikolaisen.
- 12:00 - 13:00 Lunch Buffet

Regional workshop 4 (including the discussion of the national side workshop)

- 13.00 - 14.30: Workshop for 2-4 groups depending on the number of participants. The topics will include:
- How can project results be used to increase biomass use in the future?
 - Can the proposed labelling scheme work?
 - Opens the National Energy Action Plan from 2010 up to the increased use of alternative biomass by 2020?
 - Is there a concrete list of names for future projects with alternative biomass?
- 14.30 - 15.30: Plenary session where the groups will report the conclusions and outlines a brief overall conclusion.
- 15.30 End

B3 Results of the workshop

17 persons joined the meeting. They represented the following target groups:

- Producer of pelletizing equipment: 4
- Universities: 2
- Biomass trader: 1
- Engineers & consultants: 5
- Pellet producer: 2
- Power plant operator: 1
- Straw Farmers Association: 1
- Swedish participant: 1

Six presentations were made during the ½ day meeting and the focus were both results from the project, experience from Sweden by our Swedish partner Anna Sager, information about large scale industrial systems for pelletizing and experience from Verdo's use of alternative biomasses in Randers CHP plant. The final presentation about the Danish NREAP was an introduction to the afternoon session which was made as a regional network meeting 4 in WP5.



Anna Sager presenting the labelling system



Lars Bloch presenting the ANDRITZ pellet technology



Delegates Abildskov, Stelte, Shang at the workshop



Delegates Hørdum, Pallesen Junker, Tybirk at the workshop

The discussion was done during the afternoon session. The questionnaire was handed out, and the results are listed in Table 3 below.

Table 3: Evaluation of the workshop

Rating	1 (Good)	2	3	4 (Bad)	Total
Answer	52	23	4	0	79
%	66	29	5	0	100

B4 Conclusion

Discussion and conclusions at the Danish national side workshop and Workshop no. 4 on 19.04.2012 at ANDRITZ Feed & Biofuel

The two groups were given a guideline for the discussion in 5 questions:

1. Will the use of non-woody biomass increase up to 2020?
2. Is the suggested labelling handbook for biopellets operational?
3. Will the results from MixBioPells project support increased use of biomass?
4. Are you aware of new energy projects for non-woody biomass
5. Is there a basis for new projects succeeding MixBioPells? If YES, how?

During the plenum discussion following answers was formulated:

- Conclusion question 1:

YES, yields will increase, and crops will be produced according to the market pull. Increased use will help the producer. Different views in the 2 groups if the private consumer or large scale user will be the customer. Biomass will be replaced by solar panels and heat pumps in small scale units. The second group believes that there is a business area because the private consumer goes for the low price. BUT there is a need for the development of non-woody biomass boilers for private end users, and this is a great challenge.



- Conclusion question 2:
Some criticism of the scheme. Who are asking for this scheme? It will mainly be of interest for smaller customers and private end users. This scheme is not enough in terms of quality description of the product, including heating value, ash, sustainability and traceability. Probably, the scheme will be quite expensive to use for companies
- Conclusion question 3:
Yes, the results are useful.
- Conclusion question 4:
There is preliminary planning of a 110 MW CHP straw plant in Århus.
- Conclusion question 5:
The need for increased technological development for all boilers using non-woody pellets. Need increased knowledge about logistics, security of supply and pre-treatment

B6 Presentations

The presentations in Danish are available at the project website:

<http://www.mixbiopells.eu/en/publications/presentations-and-workshops.html>



Annex C: Detailed overview of the Finnish national side workshop

C1 Objectives of the workshop

The main objective of the workshop was to inform and sensitise national authorities and bio business initiators about the topic of alternative and mixed biomass pellets. The target groups should be informed about the project as well as the production and combustion of non-woody biomass pellets. Furthermore, recent developments in standardisation and in the markets should be presented and discussed. Thus, presentation covering experiences with alternative mixed biomass pellets were given by the key actors involved in the project.

C2 Workshop organisation

The workshop was organised in close cooperation with the Finnish Pellet Association. About 30 persons attended the workshop. The key actors were contacted both with the website of the Finnish Pellet Association and FINBIO and the mailing lists of VTT and the Finnish Pellet Association. After the workshop, all presentations were available on the website of the Finnish Pellet Association.

Ajankohtaista

- Blogi
- Tapahtumakalenteri**
- Kalenteri uutiset
- Tuoteuutiset
- Uutiskirjeistö
- Esihenkilöt

versawood HOTTI
Lämmintuotus

VAPPO

Tapahtumakalenteri

Event

Title: MixBioPells -seminaari
Vuhen: 08.04.2011 - 08.04.2011
Vihreä: VTT, Jyväskylä Jyväskylä
Ryhmä: Seminaarit

Description

MixBioPells -seminaari SPE:n vuosikokouksen yhteydessä

Agrobiomassoista ja turpeesta pellettiä.

Ohjelma

Seminaarissa käsitellään seuraavia aiheita:

- kokemuksia pellettien tuottamisesta agrobiomassoista ja turpeesta
- polttokokeita seopellettien poltosta
- eurooppalaisen standardin EN 14961-6 laatuvaatimukset seopelletille

Tilaisuuden puheenjohtajana toimii Matti Kempa, Vapo Oy

9.00	Ilmoittautuminen ja aamukahvi
9.30	Pohdintaa seopellettien roolista tulevaisuudessa Hannes Tuohimäki, Suomen Pellettienergia ry
9.45	MixBioPells -projektin esittely Matti Kempa, VTT
10.10	Pellettien tuottaminen erillisistä raaka-aineista – kokemuksia tuotannosta OKI- ja ruokajäpöpelletit, Harri Honkavaara, Biootia Oy MDF-pelletit, Aarno Alaluusua, Jalasjärven Lampo Oy Tuhopelletit, Tom Ruohomäki, Vapo Oy
11.00	Eurooppalainen ei-puuraaka-aineista valmistettujen pellettien tuotusstandardi – EN 14961-6 Eija Alekangas, VTT
11.25	Kokemuksia muiden kuin puupellettien poltosta Heikki Oravainen, VTT
	Keskustelu
11.20.00	Lounas VTT:n ravintolassa (omakustanteinen)
13.00-16.00	Suomen pellettienergiayhdistyksen vuosikokous – jäsenille (kahvipöytä)

Seminaariin jälkeen pidetään SPE:n vuosikokous, johon kaikki jäsenet ovat tervetulleita.

Sponsors: Fullmax, Pellix, AgriMarket, ARITERM, SolarBioX, Kotkan, Polttopuu, Motiva.

Facebook: Pellettienergia

Figure 3: Flyer of the Finnish side workshop



Workshop programme in English:

Pellets from agrimaterials

Chairman Mr Matts Kempe, Vapo Oy

- 09.00 Registration and coffee
- 09.30 Reflections of the future role of mixed biomass pellets
M. Hannes Tuohiniitty, Finnish pellet association
- 9.45 MixBioPells –project
Mr Markku Kallio, VTT
- 10.10 Pellets production from different raw materials – experiments of producers
 - 1 Straw- and reed canary grass pellets
Mr Harri Honkavaara, Biobotnia Oy
 - 2 MDF-pellets
Mr Aarno Alaluusua, Jalasjärven Lämpö Oy
 - 3 Peatpellets
Mr Pasi Sironen, Vapo Oy
- 11.00 European standard for non-wood raw materials produced pellets – EN 14961-6
Mrs. Eija Alakangas, VTT
- 11.25 Experiments of the alternative pellets burning
Mr Heikki Oravainen, VTT Expert Services Ltd
- 12:00 Discussion
Lunch in the restaurant of VTT
- 13.00 The annual meeting of Finnish Pellets association – for members

C3 Results of the workshop

In total 30 persons have participated in the workshop. The distribution according to the target groups is listed in Table 4.

Table 4: Distribution according to the target groups

Pellet and combustion plant operators	8
Regional acting key actors like raw material suppliers and bio business initiators	5
Policy makers/local authorities	5
Engineers and consultants	7
Lobbying institution/ professional institution	0
Others, e.g. research institutes, institution of higher education	13



Figure 4: Participants of the Finnish side workshop

The workshop was supervised by Mr. Matts Kempe from Vapo Oy.

At first, the manager of Finnish pellet energy association (SPE) Mr. Hannes Tuohiniitty gave an overview about the actual state of the production of alternative pellets in Europe. It was concluded that the real markets would open for alternative and mixed biomass pellets within the next 10 years. According to the TEM (Ministry of Employment and the Economy) the use of pellets in Finland will be increased remarkably during the next few years especially for large scale use. On the other hand, the bulk density of straw or grass is so low that it will limit the use of straw or grass as a local fuel.

Mr. Markku Kallio presented the MixBioPells –project and actual developments and problems for the pelletisation of alternative and mixed raw materials. Low bulk density creates difficulties not only in transport, but also in storage. Available pelletising machines are designed for the use of woody raw materials. If alternative raw materials are used, the production capacity is lower due to decreased flow rates of the raw material. Furthermore, the utilisation of reed canary grass was discussed, e.g. harvesting time and pelletizing. It was concluded that Spring is the best time. However, pellets have to be stored until the heating season which requires space and the quality of pellets might also decrease.

Mr. Harri Honkavaara from Biobotnia Oy presented a mobile unit to pelletize alternative raw materials by using a total bale in the grinder. The main difficulty in the production is the varying moisture content of bales (between 10 – 40 w-%). An appropriate moisture content for pelletizing of straw and grass would be 10 –15 w-%. Mr. Aarno Alaluusua from Jalasjärven Lämpö Oy presented the production of MDF pellets and and the use in a 700 kW pellet boiler. Furthermore, a new investment in a gasification system will be ready in 2012. It is planned to use straw and grass pellets for the total heat production of the Jalasjärvi municipality.

Mr. Pasi Sironen from Vapo Oy presented the peat and wood pellet production of Vapo Oy. Vapo´s Peräseinäjoki plant produces about 30 000 to 60 000 tons mixed peat pellets annually according to needs of the market. About 5 – 7 % wood is used in peat pellets to improve the physical-mechanical fuel properties. The pellets are used in farms, heating centers and in CHP plants.

Mrs. Eija Alakangas from VTT presented the European standards for non-woody biomass pellets for non-industrial use (EN14961-1 and 6). The classification is based on the origin and the



source of the raw material and it is published for major traded forms. Solid biofuels are divided into subclasses by origin and source. Main subclasses are woody biomass, herbaceous biomass, fruit biomass, and blends and mixtures. The most important fuel properties are normative (mandatory) and others informative (voluntary). Normative fuel properties are dimensions (D,L), moisture content (M), ash content (A), bulk density (BD), amount of fine particles (F), net calorific value (Q), mechanical durability (DU), nitrogen (N), sulfur (S) and chlorine (Cl). The use of additives has to be stated. Many details of the standardization work was presented too. A separate article was provided to the participants.

Mr. Heikki Oravainen (VTT Expert Services Ltd.) presented the results from an international research project dealing with the combustion characteristics of different agrobiomass pellets. Mr. Oravainen summarized that

- All emissions will be higher than those of burning of pure wood
- Amount of ash and the low melting temperature creates problems in heating devices
- These things have to be taken into account in planning of heating devices.
- The devices will become more complicated and more expensive than burning devices for wood
 - Problems related to ash have to be solved
 - Impurities have to be removed from the flue gases
 - Additional requirements for the boiler materials
- Raw materials of pellets must be available in the markets in sufficient amounts
- Price of the raw material will probably be low.

In summary of the discussion, it was notified that alternative and mixed biomass pellets should be used in industrial scale and wood pellets in small scale appliances.

C4 Conclusion

In Finland, an increase of the utilisation of alternative and mixed biomass pellets within the next 10 years is expected. According to the Ministry of Employment and the Economy the use of pellets in Finland will increase remarkably during the next few years especially in industrial scale. However, the production of alternative and mixed raw materials is connected with several problems. Thus, existing production technologies designed for the use of woody raw materials must be adapted and special developments in the field of pre-treatment, conditioning as well as pelletizing are needed. The mixing of raw materials can play an important role to improve the fuel properties and to reduce problems during the combustion as well as formation of gaseous and particulate emissions.

All participants were interested to develop further alternative bio business.

C6 Presentations

The presentations in Finnish are available at the project website:

<http://www.mixbiopells.eu/en/publications/presentations-and-workshops.html>



Annex D: Detailed overview of the German national side workshop

D1 Objectives of the workshop

The main objective of the workshop was to inform and sensitise national authorities and bio business initiators about the topic of alternative pellets. The target groups should be informed about the project and the situation in their own country compared to other countries. Thus, presentation covering experiences with alternative mixed biomass pellets were given by the key actors involved in the project. Furthermore, a forum was provided for discussion of the presented information as well as the actual situation and requirements of the target groups. Also, the forum opened the possibility for the exchange of ideas. The workshop was divided into two parts: Theoretical background (part 1) and reports about practical experience (part 2). After each of the presentations (10 - 15 minutes) given in part 1 and 2 about the same time was granted for discussion. The theoretical part covered the background of the project and common aspects of the energetic utilisation of alternative (mixed) biomass pellets. In the second part best practise examples and related problems during the development of bio business activities were presented. The following fields of interest were identified:

- Providing a vast overview about constraints and drivers as well as possible solutions for the energetic utilisation of alternative (mixed) biomass pellets.
- Providing information about the situation in Germany compared to other European countries.
- Compiling different approaches, concerns and solutions of the heterogeneous target groups and discussion of further prospects.

D2 Workshop organisation

The workshop was organised in close cooperation with the 2nd International Biomass Conference in Leipzig, Germany. About 100 persons attended the conference. Thus, the workshop was an integrated part of the conference. The key actors were contacted both with the conference and the MixBioPells mailing list. Additionally, the participants of the conference were informed about the side workshop via a conference presentation, a poster, project leaflets and information at the welcome desk. The workshop started after the end of the conference at 25th of May with a lunch. Afterwards, the workshop continued at 14:00 and was finalised about 17:30. The flyer of the event is depicted in Figure 5.








Workshop „MixBioPells“:
Marktfähige Nutzungskonzepte für alternative Biomassepellets

Die derzeit favorisierte Nutzung von Holz zur Wärme- und Stromproduktion stößt in einigen Regionen aufgrund einer Verknappung der Ressourcen sowie steigender Brennstoffkosten an ihre Grenzen. Umso bedeutender ist der Beitrag, den alternative biogene Festbrennstoffe wie Anbaubiomassen sowie industrielle Reststoffe biogenen Ursprungs zur Erweiterung der Rohstoffbasis leisten können. Die Nutzung derartiger Biomassepellets wird derzeit jedoch durch verschiedene Einflussfaktoren eingeschränkt. Entsprechend befindet sich der Markt für Mischbrennstoffe in Europa im Anfangsstadium. Zur Verbesserung dieser Situation werden im Rahmen des EU Projektes „MixBioPells“ Hindernisse und Anreizfaktoren zur energetischen Nutzung alternativer Biomasseressourcen in kleinen und mittleren Feuerungsanlagen sowie in Heizkraftwerken untersucht und interessierten Akteuren zu Verfügung gestellt. Ziel des Workshops ist es, einen Überblick zur aktuellen Marktsituation bei der Produktion und energetischen Nutzung alternativer (Misch-) Brennstoffe zu geben und die Diskussion interessierter Akteure anzuregen. Die Workshopssprache ist Deutsch.

Weitere Informationen: www.mixbiopells.eu

Organisatorisches
Die Teilnahme am Workshop ist kostenfrei. Vor dem Workshop (13:00 bis 14:00 Uhr) wird ein gemeinsames Mittagessen mit den Teilnehmern der Workshops „Grundlagenuntersuchungen zur thermochemischen Nutzung von alternativen Biomassebrennstoffen – Fachdiskussion zu Ergebnissen und zukünftigen Schwerpunkten“ angeboten. Am Ende der Veranstaltung besteht die Möglichkeit für weiterführende Gespräche bei Kaffee und Kuchen.

Veranstaltungsort



Zeitgeschichtliches Forum
Leipzig
Grimmische Str. 6
04109 Leipzig
<http://www.hög.de/leipzig/>

Anfahrt





Workshop:
„MixBioPells“

25.05.2011
14:00–16:45
Zeitgeschichtliches Forum Leipzig








25.05.2011 **Programm**

Eröffnung
14:00 Projektvorstellung MixBioPells:
Volker Lenz (Deutsches Biomasseforschungszentrum; DBFZ)

Thema I: Hintergrund und Stand der Technik

14:20 **Möglichkeiten zur Herstellung standardisierter Biomassepellets**
Volker Lenz (Deutsches Biomasseforschungszentrum; DBFZ)

14:45 **Technische und rechtliche Rahmenbedingungen zur Verbrennung alternativer Festbrennstoffe**
Thomas Zeng (Deutsches Biomasseforschungszentrum; DBFZ)

15:10 **Pause**





Thema II: Erfahrungsberichte aus der Praxis

15:20 **Praktische Erfahrungen bei der Herstellung biogener Mischpellets**
Bernd Pilz (Apoldaer Biomassewerk UG)

15:45 **Stand und Perspektiven bei der Umsetzung regionaler Mischbrennstoffkonzepte**
Lars Dathhoff (Pusch AG)

16:00 **Verbrennung von Traubentresterpellets in Rheinland-Pfalz – ein lokaler Ansatz**
Thorsten Pollatz (RLP AgroScience GmbH)

16:20 **Biogasanlage Kolbermoor: Kombination von Vergärung (Pferdemist, Landschaftspflegematerial, KULAP-Gras) und Verbrennung der Gärreste**
Walter Danner (Snow Leopard Projects GmbH)

Im Anschluss Diskussion und ca. 16:45 Ende der Veranstaltung

Rückantwort

Workshop:
„MixBioPells: Marktfähige Nutzungskonzepte für alternative Biomassepellets“

25.05.2011

Die Anmeldung kann über die Homepage der IBC (www.ibc-leipzig.de) erfolgen oder senden sie das ausgefüllte Formular an:

Deutsches Biomasseforschungszentrum (DBFZ)
Tangerauer Straße 116
D-04347 Leipzig
Tel.: +49 341 2434 514
Fax: +49 341 2434 133
E-Mail: thomas.zeng@dbfz.de

Name, Vorname, Titel _____
Institution _____
Straße _____
Postleitzahl, Ort _____
Telefon _____
Fax _____
Email _____

Figure 5: Flyer of the German side workshop

Workshop programme in English:

- 1 Introduction
- The MixBioPells Project
- 2 Topic 1: Background and state of the art
- Possibilities for the production of standardized biomass pellets
- Volker Lenz (DBFZ Deutsches Biomasseforschungszentrum gemeinnützige GmbH)
- Technical and legal aspects for the combustion of alternative solid biomass fuels



Thomas Zeng (DBFZ Deutsches Biomasseforschungszentrum gemeinnützige GmbH)

3 Coffee Break

4 Topic 2: Practical experiences

Practical experiences for the production of mixed biomass pellets

Bernd Pilz (Apoldaer Biomassewerk UG)

Prospects for the realisation of regional concepts for the utilization of mixed biomass pellets

Lars Dahlhoff (Pusch AG)

Combustion of grape marc pellets in Rhineland Palatinate – a local approach

Sandra Lang (Agroscience GmbH)

Biogas plant Kolbenmoor: An integrated concept of digestion and combustion

Walter Danner (Snow Leopard Projects GmbH)

5 Discussion

D3 Results of the workshop

In total 14 persons have participated in the workshop. The distribution according to the target groups is listed in Table 5.

Table 5: Distribution according to the target groups

Pellet and combustion plant operators	4
Regional acting key actors like raw material suppliers and bio business initiators	3
Policy makers/local authorities	0
Engineers and consultants	0
Lobbying institution/ professional institution	0
Others, e.g. research institutes, institution of higher education	5



Figure 6: Participants of the German side workshop

Apparently, only plant operators as well as local key actors and researchers participated in the workshop. Policy makers, engineers and consultants did not join the workshop, even though



policy makers known to the DBFZ were contacted individually prior to the conference. Due to several reasons (e.g. other conferences in the same time, holiday and other business dates) it was difficult to include this target group. Nevertheless, they claimed their interest on that topic and it was agreed to inform them separately about the results and available documents of the workshop (e.g. presentations, report, etc.).

Topic 1: Background and state of the art

The workshop was introduced by Volker Lenz (DBFZ). He gave a short overview about the actual situation for the use of renewables and the political targets in Germany and Europe. Afterwards, the focussed on common aspects of the energetic utilisation of woody biomass compared to non-woody biomass fuels to point out the objectives of the project. Thomas Zeng (DBFZ) highlighted the state of the art available for the production of standardised biomass pellets, combustion technologies and the related legal framework. It was shown that the production of standardised pellets requires a suitable combination of raw materials and process parameters of the pellet press to facilitate the development of combustion systems for the use of alternative biomass pellets, particularly in small scale appliances. Especially compliance with statutory emission requirements is an issue. Though there are technologies partly available on the market to reduce emissions further developments for precipitators are needed. The following discussion expressed high concerns regarding the legal framework, economics and availability of the raw materials. Especially the use in combustion plants without permission according to 1.BImSchV (up to 100 kW) is critical. According to §3 Abs.1 No. 8 licensed fuels are “straw, whole plants (also pellets), grains (also pellets), energy grain processing residues, husks, culms residues and similar herbaceous biomass substances (like straw, Miscanthus or hay)”. According to §3 Abs. 1 No. 13 “other renewable sources” such as fuel mixtures can be used. The combustion of the latter is combined with significant higher requirements, e.g. additional measurement program etc. Thus, alternative biomass pellets according to §3 Abs.1 No. 8 which are based on pure raw materials and with low critical emission related elements have the most promising potential. However, there are some uncertainties regarding the specification and use of licensed fuels according to §3 Abs. 1 No. 13 of 1.BimSchV and the related costs and missing precipitator technologies. Therefore, a market development is estimated in about 5 years. In contrast, for medium scale combustion plants the technical possibilities are already available and specific investments are significant lower. Thus, in short and medium term energetic utilisation of alternative pellets will be focussed on this power range. The discussion showed that there are differing opinions about the availability of the raw materials. Though large amounts of straw are produced annually there are big concerns about strongly fluctuating raw material prices and the sustainable use of these fuels, e.g. suitable cultivation strategies to avoid monoculture and soil erosion. Some uncertainties have also been raised about the economics of the pellet supply chain. There is a lack of information about the break-even point especially under changing conditions (raw material prices, investments and capacity utilisation of the pellet press, etc.).

Topic 2: Reports on practical experience

The second part mainly focussed on the reports of practical experiences on pelletizing and combustion of alternative (mixed) biomass. First, Mr. Pilz of Apoldaer Biomassewerk UG who has long time experience in pelletizing of non-woody biomass focussed his presentation on technical details, problems and solutions of the pelletizing process. He clearly pointed out that long term experiences made during the production of animal feed pellets can be transferred to



the production of alternative and mixed biomass fuels. The main problem is still the availability of cost-effective raw materials and suitable markets. Other presentations have focussed on integrated concepts for the energetic utilisation of biomass resources or residues on local level:

- Turnkey system developed by Pusch AG for pelletizing and combustion of alternative and local available biomass
- Combustion of grape marc in Rhineland-Palatinate
- Combination of fermentation of horse manure, grass and landscape conservation material and combustion of digestates

The main objectives of these projects are to increase the value creation and process efficiencies by using local biomass resources in rural areas in terms of circular flow economy, heat integration and utilisation of biomass resources, e.g. with problematic fuel properties.

D4 Conclusion

The presented projects and experiences as well as the discussion during the workshop have shown that the technical realisation of mixed biomass pellet production and combustion is possible. In many fields their application is possible and a large potential of biomass resources is available even though they are quite heterogeneous. Nevertheless, a market of alternative and mixed biomass fuels is at early stages. It was shown that many experiences were available especially in the field of pellet production and first utilisation concepts are successfully realised on regional level, especially above 100 kW. Further developments are strongly depending on:

- Availability of raw materials
- Development of legal framework, e.g. licensing of mixed biomass pellets according to §3 Abs.1 No. 13 of 1.BImSchV
- Transferability of local existing integrated concepts (isolated applications) to other regions or countries
- Economics of the whole supply chain which are mainly driven by the costs of raw materials, production of pellets and specific investments for the combustion plant

In particular, the participants highlighted the speciality of the topic, the reports of experience and the professionalism of the key actors. Some of the participants have missed detailed aspects on the economics and the detailed description of possible problems of the utilisation concepts.

D6 Presentations

The presentations in German are available at the project website:

<http://www.mixbiopells.eu/en/publications/presentations-and-workshops.html>



Annex E: Detailed overview of the first Italian national side workshop

E1 Objectives of the workshop

Energy production from biomass is closely linked to the rural and agricultural sector. Wood production, which is the raw material traditionally used as biomass for energetic purposes, can no longer satisfy the growing demand of material: the Italian renewable energy production target cannot be fulfilled only by wood production anymore. Most of the biomass coming from the agricultural and agro-industrial sectors is made by residues (prunings, straw, cereal processing waste ...) which, due both to technical and, above all, legal problems, sometimes is difficult to dispose. The meeting focused on the pelletization process and the possibility for these residues to be part of the new pellet mixture to be used in combustion systems.

E2 Workshop organisation

The workshop was organised in the framework of Bioenergy conference on 19.03.2011 of the Vegetalia fair in Cremona that is located in the heart of the most important Italian agricultural, industrial and livestock breeding area. The key actors and stakeholders were contacted in several ways, mainly with mailing list, CTI newsletters, direct contact with most important associations references. Additionally, the participants of the conference were informed about Vegetalia fair's mailing list and by project leaflets.

SCHEDA DI REGISTRAZIONE

Nome _____

Cognome _____

Ente _____

Via _____

CAP _____

Città _____

Telefono _____

Fax _____

E-Mail _____

Data _____

Il trattamento dei dati personali avviene nel rispetto del DLgs 196/2003

Inviare la scheda via e-mail alla segreteria organizzativa formazione@cti2000.it

SEGRETERIA ORGANIZZATIVA

Comitato Termotecnico Italiano
CTI Energia e Ambiente
Via Scarlatti 29
20124 Milano

Tel. 02-266.265.1
Fax. 02-266.265.50

formazione@cti2000.it
www.cti2000.it

www.bioenergyitaly.com

Per poter accedere gratuitamente alla Manifestazione "Bioenergy Italy. Biomasse e Rinnovabili" è **indispensabile** preregistrarsi al seguente link:

www.bioenergyitaly.com/preregit.html

LA PARTECIPAZIONE AL CONVEGNO È GRATUITA



mixBioPells
Market Implementation of extraordinary biomass pellets



Agripellet e pellet combustibili non convenzionali

Ambiti di sviluppo e opportunità per il settore agricolo e industriale



Convegno

Sabato 19 marzo 2011
Sala Fonti Rinnovabili

BIOENERGY ITALY
Biomasse e Rinnovabili

Quartiere fieristico di Cremona



PRESENTAZIONE

L'utilizzo dei residui vegetali, della pollina e di altri sottoprodotti per la produzione di combustibili di caratteristiche standard e loro conversione energetica

Il tema della produzione di energia da biomasse desta da sempre interesse in ambito rurale/agricolo e non solo. Tuttavia, la materia prima tradizionale, rappresentata dal legno e dai prodotti residuali della filiera forestale, è soggetta a notevoli fluttuazioni sia in termini di disponibilità che di prezzo. In queste condizioni la potenziale offerta di biocombustibili solidi alternativi ottenuti da sottoprodotti agricoli e agroindustriali, che peraltro devono essere comunque collocati e/o smaltiti, risulta di interesse per diverse applicazioni.

Al fine di fornire degli elementi utili per meglio valutare il potenziale mercato e le problematiche presentate dalle diverse alternative al legno, il seminario vuole esporre le problematiche di base, i risultati di alcune sperimentazioni, favorire un confronto tra i diversi operatori interessati e mettere a fuoco le opportunità offerte dal recupero produttivo di materiali residuali di valore limitato o negativo. L'incontro si propone anche come un'occasione per fare il punto sulle prospettive dell'uso energetico della pollina. L'iniziativa si inserisce nell'ambito del progetto europeo MixBioPells, a cui il CTI partecipa come rappresentante nazionale, il cui scopo è la valutazione del mercato di pellet prodotti da biomasse alternative al legno.

Convegno organizzato nell'ambito del progetto Intelligent Energy Europe - IEE - MixBioPells

PROGRAMMA

Moderatore Giovanni Riva
Università Politecnica delle Marche - Comitato Termotecnico Italiano

- 10:00 **Registrazione partecipanti**
- 10:30 **Apertura lavori**
Antonio Panvini
Comitato Termotecnico Italiano
- 10:45 **Iniziativa di Regione Lombardia nel settore**
Gabriele Boccasile
Regione Lombardia DG Agricoltura
- 11:15 **Il Progetto MixBioPells: obiettivi e attività**
Dario Molinari
Comitato Termotecnico Italiano
- 11:30 **Utilizzo energetico di residui agricoli e agroindustriali e prospettive di mercato - Progetto MixBioPells**
Giuseppe Toscano
Università Politecnica delle Marche - Comitato Termotecnico Italiano
- 11:55 **Risultati del progetto sulla combustione del pellet di pollina svolto per ARAL nell'ambito del progetto pilota SATA**
Andrea Pizzi
Università Politecnica delle Marche
- 12:20 **Esperienze di raccolta e produzione di pellet dalle potature di vite**
Claudio Bonamini
MAREV
- 12:40 **Prove di combustione di sarmenti e pellet di vite nel progetto BIOTEC**
Andrea Cristoforetti
Fondazione Edmund Mach - IASMA
- 13:00 **Discussione**
- 13:30 **Chiusura Lavori**



Agripellet e pellet combustibili non convenzionali

Ambiti di sviluppo e opportunità per il settore agricolo e industriale



Convegno
Sabato 19 marzo 2011
Sala Fonti Rinnovabili
BIOENERGY ITALIA
Biomasse e Rinnovabili
Quartiere fieristico di Cremona

Figure 7: Flyer of the first Italian side workshop



Workshop programme in English:

PRESENTATION

Use of vegetable residues, poultry litter and other byproducts to produce solid biofuels with standard characteristics and energy conversion.

Energy production from biomass is more and more interesting, not only in the agricultural and rural sectors. The traditional biomass, wood and byproducts from the forest chain, has a high variability in terms of quantity and price; therefore, the potential offer of alternative solid biofuels, produced with residues from agriculture and from the agro industrial sector, is very interesting, also because those residues are to be disposed in any case.

The aim of the seminar is to give useful elements for the evaluation of the potential market and of the characteristics of the different alternatives to wood as raw material. It will show the basic problems and the results of some pilot activities; it will give the opportunity to some key actors to interact and will focus on the opportunities of a production use of residues with low or even negative economic value.

The perspectives of the poultry litter use for energy production will also be discussed during the meeting.

The seminar is part of the European MixBioPellets Project that has the aim to study the market of the alternative biomass pellets. CTI is one of the partners of the project.

Meeting organized under the Intelligent Energy Europe project - IEE - MixBioPells

PROGRAM

Chairman Giovanni Riva

Comitato Termotecnico Italiano

10:00 **Registration of the participants**

10:30 **Opening** - Antonio Panvini

Italian Thermotechnical Committee

10:45 **Activities in the sector of Regione Lombardia**

Gabriele Boccasile

Regione Lombardia - Agriculture Department

11:15 **Energy use of residues from agriculture and agro-industry and market perspectives - MixBioPells Project**

Giuseppe Toscano

11:35 **Analyses of the potential production of alternative to wood pellets - MixBioPells Project**

Dario Molinari

Italian Thermotechnical Comity

11:50 **Results of the experiments on the combustion of pellets from poultry litter made by ARAL**

Andrea Pizzi

Università Politecnica delle Marche

12:20 **Experiments on collection and production of grapevine pruning pellets**

Claudio Bonamini

MAREV

12:40 **Experiments of combustion of grapevine pruning pellets by BIOTEC Project**

Andrea Cristoforetti

Fondazione Edmund Mach - IASMA

13:00 **Discussion**

13:30 **End of the meeting**



Agripellet e pellet non convenzionali

Ambiti di sviluppo e opportunità per il settore agricolo e agroindustriale



Convegno
Sabato 19 marzo 2011
BIOENERGY ITALIA
VEGETALIA 2011 | Quartiere fieristico di Cremona

E3 Results of the workshop

In total 100 persons have participated in the workshop. The distribution according to the target groups is listed in Table 6.

Table 6: Distribution according to the target groups

Pellet and combustion plant operators	15
Regional acting key actors like raw material suppliers and bio business initiators	2
Policy makers/local authorities	2
Engineers and consultants	6
Lobbying institution/ professional institution	6
Others, e.g. research institutes, institution of higher education	6

Regarding the remaining participants it wasn't possible to identify the activity or company and institution affiliation. Many participants present at the meeting were not included in the list of persons contacted or it was difficult to contact persons considering the high number of participants present in meeting room. It was noticed the high participation of farmers or agricultural operators (consultants). The policy maker involved in the project (they introduced the meetings and contributed to the discussions) represents Region Lombardy administration.



Figure 8: Participants of the first Italian side workshop

During the meeting it has been shown the results of some recent experiences on collecting, producing and combusting of pellets made by grapevine pruning and the audience demonstrated great interest on this subject. Moreover, the results of experiments on poultry litter pellets combustion have been illustrated, which showed how the use of pelletized product brings to a better management of the combustion, improving performance and reducing emission levels. The results exposed during the meeting underlines how agri-pellet combustion systems should be further developed, keeping into account that these systems are environment respectful. The meeting has been attended by over a hundred participants: operators from agricultural and industrial sectors, researchers and administration representatives: the presence, amongst the others, of the Regional Department for Agriculture of Lombardy underlines the high expectations administrations have for this sector.

E4 Conclusion

In Italy there would be some interesting conditions for developing the alternative biomass pellet supply chain. Several Italian companies are able to provide the machinery necessary for the production and utilization of alternative biomass pellets. Moreover, raw materials are available in large amounts especially where agriculture is widespread. However, there are many aspects limiting the development of the sector that currently shows very few practical cases. The production and combustion technologies should addresses the characteristics and performance of several raw materials different from wood. This issue is important especially to reduce the technical problems and environmental impact of the combustion. The dust emission is probably one of the critical issues to be solved to ensure the development of this sector. The economic



information is still not enough to evaluate the convenience for the production of alternative pellets in different alternative context. However, in some cases emerge interesting aspects that make the prospect of very good chances of success. The grapevine pellet case it is particularly interesting as chain model to analyze potential and limits of this sector.

Interesting in the biomass pelletizing is high. Some operators have studied also the possibility to adapt the production and combustion technology to livestock residual materials but addressing numerous technical and environmental problematic. Finally, it is considered that the development and introduction of standard may guide and support the development of this market. The following conclusions can be figured out:

- The market for alternative and mixed biomass pellets is at early stages.
- Only few practical experiences with pelletizing/briquetting of agricultural biomass exist.
- There is a high availability of alternative biomass even though heterogeneous.
- The production and combustion technologies should address the characteristics and performance of several raw materials apart from wood.
- Standards of the alternative pellet and their combustion devices could support the development of this market.

E6 Presentations

The presentations in Italian are available at the project website:

<http://www.mixbiopells.eu/en/publications/presentations-and-workshops.html>



Annex F: Detailed overview of the second Italian national side workshop

F1 Objectives of the workshop

The aim of the meeting was to discuss some aspects concerning the production and combustion of pellets made of alternative biomass (agri-pellet). In particular, the most important fuels taken into consideration were residues from agricultural and agro-industry sectors.

F2 Workshop organisation

The workshop was organised in the framework of Agrofer fair in Cesena which took place on 31.03.2012. The key actors and stakeholders had been contacted in several ways, mainly by mail, CTI newsletters, news from the Pellet News magazine and by direct contact with reference to the most important associations.

AGRO FER FONTI ENERGETICHE RINNOVABILI E SVILUPPO SOSTENIBILE

CESENA, 30-31 Marzo e 1 Aprile 2012

Fonti energetiche rinnovabili e sviluppo sostenibile

Home Page

Settori Espositivi

Info Espositori

Info Visitatori

Convegni ed Eventi

Laboratori

Mostra Progetti, Prototipi e Creazioni

Concorso Scuole

Convegni ed Eventi delle Passate Edizioni

Edizioni Precedenti

Registrati

Partner

Contatti

Come Raggiungerci

Informazioni Alberghiere

AGRO FER FONTI ENERGETICHE RINNOVABILI E SVILUPPO SOSTENIBILE 30-31 Marzo e 1 Aprile 2012

AGRIPPELLET - EVOLUZIONE DEL SETTORE ESPERIENZE E PROSPETTIVE DELLE FILIERE LOCALI

31/03/2012 09:45 SALA AGRICOLTURA

Premesso da:
CESENA FIERA - CRPV - CTI

Ore 9:45
Introduzione:
Luciana Garbuglia

Ore 10:00
Mercato / normativa
Implicazione di uno sviluppo normativo sul mercato dell'agripellet (analogia con il pellet di legno), analisi del presente e prospettive future; normativa tecnica (standard) e aspetti sulla normativa incentivante.
Giovanni Riva

Ore 10:20
Filiera aziendali e industriali per l'agripellet
Biomasse solide alternative al legno e loro caratteristiche; i parametri fondamentali per l'uso energetico in combustione; i vantaggi della pellettizzazione di biomasse alternative e i principali problematiche del loro utilizzo in caldaia.
Giuseppe Toscano

Ore 10:50
Ambiente / normativa / aspetti emissivi
Orizzonte di riferimenti dei piccoli apparati termici utilizzati e quelli utilizzabili: stime delle emissioni delle attuali combustioni (Presentazione dello studio sui consumi di legna in piccoli impianti in RER).
Luigi Vicari - Direttore ARPA FC; **Paolo Veronesi** - ARPA FC - <http://www.arpa.emr.it/forlicesena/>

Ore 11:30
Applicazioni concrete della filiera dell'agripellet (utilizzo finale) la voce di chi lo usa
Introduzione ai casi (G. Riva e G. Toscano)
Claudio Bonamini - caso di utilizzatore di agripellet: titolare dell'Az. MAREV produttrice di macchine per la raccolta della patata della vite - <http://www.marev.it/>
Piercarlo Meneghelo - Produttori pellet Verona produzione e commercio di agripellet - <http://www.produttoriipellet.com/>
Francesco Bacia - società agrozootecnica: esperienza di tre impianti alimentati da pellet e agripellet
Euroforaggi - Esperienze di produzione di agripellet - <http://www.snappobaioni.com/index.asp>

Ore 12:00
Applicazioni e casi di filiera in via di sviluppo
Maurizio Pinzi - Termocabi: azienda produttrice di bruciatori con esperienza sulla combustione degli "agripellet" prodotti derivanti dal cossame della filiera agricola, con casa di studio e sviluppo per la combustione della paille - <http://www.termocabi.it/>

Ore 12:15
Dibattito

Supported by the European Commission under the EIE programme

INTELLIGENT ENERGY EUROPE

mixBioPells

CTI AMBIENTE

Figure 9: Website of the second Italian side workshop



Workshop programme in English:

RENEWABLE ENERGY AND SUSTAINABLE DEVELOPMENT

AGRIPELLET - EVOLUTION OF THE SECTOR AND PROSPECTS FOR LOCAL CHAINS

31/03/2012

Supported by: CESENA FIERA - CRPV - CTI

9:45 Introduction - Luciana Garbuglia

10:00 Market and standard

Implication of a agripellet market legislation development (in comparison to the wood pellets), analyze of the current situation and future prospects; technical regulations (standards) and economical incentive framework - Giovanni Riva

10:20 Agripellet chains

Alternative biomass properties; the main parameters for the combustion process; benefit from pelletization of alternative biomass and the main problematic – Giuseppe Toscano

10:50 Environment / standards / emissions

Reference for the small heating plants: evaluation of combustion emission - Luigi Vicari – and Paolo Veronesi - ARPA FC - <http://www.aroa.emr.it/forlicesenal>

11:20 Practical case of agripellet chains and operator point of view - Introduction by G. Riva e G. Toscano

Claudio Bonamini - MAREV – machinery for grapevine pruning harvesting

Piercarlo Meneghello - Produttori Pellet Verona

Euroforaggi – Agripellet producer

12:00 Application and case of development chains

Maurizio Pinzi – Termocabi- Agripellet burner producer

12:15 Conclusion

F3 Results of the workshop

In total 20 persons have participated in the workshop. The distribution according to the target groups is listed in Table 7.

Table 7: Distribution according to the target groups

Pellet and combustion plant operators	2
Regional acting key actors like raw material suppliers and bio business initiators	3
Policy makers/local authorities	1
Engineers and consultants	0
Lobbying institution/ professional institution	1
Others, e.g. research institutes, institution of higher education	> 10



It was impossible to identify the activity or company and institution affiliation of the other participants. Some of them were not included in the contacted people list. The policy maker involved in the project represents the Province of Forlì-Cesena.



Figure 10: Participants of the of the second Italian national side workshop

The event hosts the participation of key actors of the project, stakeholders and other operators. Also Politicians of the local Province contributed to the discussion. In particular, the difficulty in managing the biomass to energy applications has been underlined, the main problems arising from a confusing legislative framework that makes hard dealing the applications. In addition, clearer information on the present technical limits and problems of biomasses are requested. It is important to better define the benefits from this type of energy production and to disseminate this information to people, in order to improve the social acceptance. Data regarding the present woody biomass consumption were shown during the event and it was interesting to notice the wide daily utilization of domestic biomass heating systems. The presentation of Giuseppe Toscano highlighted some benefits from the agripellet production; the other presentations illustrated the present case studies which are also part of the MixBioPells project: pellet of grapevine chain by Mr. Claudio Bonamini of MAREV; agropellet production made in Euroforaggi by Mr. Giovanni Bagioni and the burners for agripellet by Mr. Maurizio Pinzi of Termocabi. Each presentation took about 20-30 minutes and was followed by a short discussion and some questions from the participants. At the end of the workshop, a more opened discussion took place. The meeting has been attended by 20 persons: operators from agricultural and industrial sectors and public administration representatives.

F4 Conclusion

Studies highlight the high consumption of biomass for energy production in domestic heating devices, also in urban context. Though, there are difficulties in supporting initiatives in biomass utilization for heating production, also caused by the confused legislative framework. The results illustrated during the meeting show the benefits, in terms of environmental impact, deriving from the utilization of alternative biomasses for pellet (agri-pellet) production. Moreover, it was highlighted that the recovery of the agricultural residues could give economic advantages in the production area.

F6 Presentations

The presentations in Italian are available at the project website:

<http://www.mixbiopells.eu/en/publications/presentations-and-workshops.html>



Annex G: Detailed overview of the Spanish national side workshop

G1 Objectives of the workshop

The aim of the workshop was to bring together the various key actors of the target groups along the process chain of alternative pellet production and utilisation and to inform and sensitise national authorities and bio-business initiators about the topic of alternative pellets. The target groups should be informed about the project, preliminary results and the situation in Spain compared to other countries. Presentations were given by the key actors covering several aspects along the process chain. After each of the presentation the possibility for discussion was provided to allow the exchange of known problems concerned with the topic and of possible solutions. Additionally, a forum was provided to promote further discussion of the presented information as well as the actual situation and requirements of the target groups. Also, the forum opened the possibility for the exchange of ideas.

The opening of the national side workshop was accompanied by an introduction of the MixBioPells project. The following session was dedicated to presentations from the field of research and application. After each of the presentations (20 minutes) about 10 minutes were granted for discussion. The following fields of interest were identified:

- Providing an overview about constraints and drivers as well as possible solutions for the energetic utilisation of alternative (mixed) biomass pellets.
- Providing information about the situation in Spain compared to other European countries.
- Compiling different approaches, concerns and solutions of the heterogeneous target groups and discussion of further prospects.

G2 Workshop organisation

The workshop was organised in close cooperation with the Expobioenergia fair in Valladolid, Spain. Thus, the workshop was an integrated part of the lecture program accompanying the fair. The key actors were contacted both with the mailing list of the associated company Hargassner (about 3000 contacts covering all the target groups of MixBioPells) and with the MixBioPells mailing list. Additionally, the visitors of the fair were informed about the side workshop via a poster at the entrance of the fair and via project leaflets and information at Hargassner's stand at the Expobioenergia fair. The workshop started after on 29th of October at 13:00 and was finalised about 16:40.



Retos en el uso de pellets alternativos y biomasas variadas en calderas altamente automatizadas

Fecha: 29 de octubre de 2010

Lugar: Feria EXPOBIOENERGÍA, Valladolid.

Por razones de aforo se ruega confirmen asistencia:

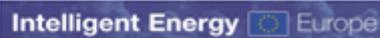
Tfno. contacto: 984 281669

e-mail contacto: mariaj.perez@protecma.es

Organiza:



Patrocina:



13.00h. Presentación y bienvenida

D. Steven Trogisch, PROTECMA - Gerente

13.10h. BioMixPellets: mezclas biomásicas para mejorar las características de pellets

D. Steven Trogisch, PROTECMA - Gerente

13.40h. Experiencias en peletización y combustión de mezclas de biomasas.

Dña. Irene Mediavilla Ruiz, CEDER-CIEMAT, Doctora Ingeniera Química

14.10h. La astilla forestal para calefacción como oportunidad desde el punto de vista de una empresa forestal

D. Javier Vigil Fabián, Agroforestal NAVA, Técnico Forestal

14.30h. Proyectos de gestión energética con astilla

D. Olaf Mulder, MYCSA – Director Gerente

14.50h. Qué biomasas usar para cada aplicación?

D. Abraham Piñera, HARGASSNER – Director técnico

15.10h. Mesa redonda: ¿Pueden ser competitivas las biomasas mejoradas producidas con diferentes materias primas?

16.30h. Clausura

Figure 11: Flyer of the Spanish side workshop



Workshop programme in English:



Challenges for the use of alternative pellets and different biomass in highly automatised biomass boilers

Date: 29th of October 2010

Place: Feria EXPOBIOENERGÍA, Valladolid.

Please confirm your participation:

Contact: 984 281669 e-mail: mariaj.perez@protecma.es

Organisers:	
Collaborators:	

- 13.00h. Presentation and welcome
D. Steven Trogisch, PROTECMA – Managing director
- 13.10h. BioMixPellets: biomass mixes for improving the pellet characteristics
D. Steven Trogisch, PROTECMA - Managing director
- 13.40h. Experiences in the peletisation and combustion of alternative and mixed biomasses.
Dña. Irene Mediavilla Ruiz, CEDER-CIEMAT, Doctora Ingeniera Química
- 14.10h. Forest Wood chips for heating needs: a business opportunity
D. Javier Vigil Fabián, Agroforestal NAVA, Técnico Forestal
- 14.30h. Energy contracting in the biomass sector: the relevance of alternative fuels
D. Olaf Mulder, MYCSA – Director Gerente
- 14.50h. What biomasses are suitable for each application?
D. Abraham Piñera, HARGASSNER – Director técnico
- 15.10h. Round table: ¿Can the alternative biomasses be competitive?
- 16.30h. Closing

G3 Results of the workshop

The national side work shop was organised similar to a conference session. The venue setting allowed for an easy coming and going of the visitors. Therefore, different people attended the presentations according to their gusto. For that reason, no signed participation list is available. In average 70 people attended the presentations. From our appraisal the workshop reached all the target groups important for the MixBioPells project. However, according to the topics of the discussion installers and planners for biomass fired heating systems predominated among the participants. List of participants during the presentation session is not available. For the discussion session (round table for regional workshop) the following participants were present. The distribution according to the target groups is listed in Table 8.



Table 8: Distribution according to the target groups

Pellet and combustion plant operators	8
Regional acting key actors like raw material suppliers and bio business initiators	0
Policy makers/local authorities	1
Engineers and consultants	1
Lobbying institution/ professional institution	1
Others, e.g. research institutes, institution of higher education	2



Figure 12: Participants of the of the Spanish national side workshop

The workshop was introduced by Steven Trogisch (Protecma). He gave a short overview about the actual situation for the use of renewables and the political targets in Spain and Europe. Afterwards he introduced the MixBioPells project, described its objectives and the possibilities for key actors in the field of alternative biomass pelletising and utilisation. Irene Mediavilla Ruiz, senior researcher at the CEDER-CIEMAT presented in detail recent results of the research institute in the field of pelletising of alternative biomass mixtures and the combustion of the resulting alternative (mixed) biomass pellets. It was shown that ash melting characteristics could be considerably improved by addition of cork. In the following presentation Javier Vigil Fabián (Agroforestal NAVA) described possibilities to create added value for forest companies by mobilising low quality forest residuals as alternative fuels. The discussion revealed that economic concerns are a major constraint for the increased utilisation of alternative biomasses. Olav Mulder (MYCSA) described recent energy contracting projects with biomass. It became apparent that a reliable and economic supply chain is of very high relevance. Furthermore, the critical fuel parameters and their negative influence on the maintaining efforts and the boiler live time showed to be an important criterion for an energy contractor. In the final presentation Abraham Piñera (HARGASSNER) highlighted possible problems and restrictions for the use of alternative biomasses as fuel for available combustion technology. Furthermore, he evaluated possible adaptations of the available technology for the requirements of alternative biomasses. After the presentations the regional workshop was held. There, the round table opened the possibility for discussion. The lively discussion clearly indicated the interest in the utilization of alternative fuels as well as the concerns especially with respect to ash content and ash melting. The lack of labeling and certification both for boilers and pellets appears to be a major constraint against enhancement of the market relevance of alternative (mixed) biomass pellets. Since there is no other labeling available in Europe boiler manufacturers demand ENPlus or DINPlus pellets to grant the guarantee for their boilers. Thus, end users either have to use



exclusively these high quality pellets or risk to lose the guarantee. On the other hand, even if boiler manufacturers adapt their boilers for alternative pellets they have no mean how to indicate the upgrade and to specify which alternative pellet quality is required.

Overall, the discussion highlighted the increasing interest in alternative biomass for energetic utilization. There is a large variety of residues available in Spain susceptible to be used for blended pellets. The main issues were the additional costs for the blending. Several critical fuel characteristics of alternative biomasses (e.g. small particle emission) can be improved by utilizing mixtures of different biomasses, i.e. blending. However, particle emission which is a major concern in other European countries is at the moment not important in Spain. The participants agreed that as soon as a new binding European legislation comes, this will change fast in Spain. The lack of labeling and certification was seen as major constrain.

G4 Conclusion

The presented projects and experiences as well as the discussion during the workshop have shown that though the technical realisation of mixed biomass pellet production and combustion is possible there is a huge demand for further development. The application of alternative mixed biomass pellets for energy purposes seems possible and a large potential of biomass resources is available even though it is quite heterogeneous. However, there is almost no market for alternative and mixed biomass fuels in Spain. The main concerns were on the one hand the costs for the production of alternative mixed biomass pellets and on the other hand the critical fuel characteristics and their effect on the boiler. An appropriated labeling and certification scheme for pellets and boilers was assumed to help to increase the market relevance of alternative (mixed) biomass pellets.

G5 List of participants

Not available

G6 Presentations

The presentations in Spanish are available at the project website:

<http://www.mixbiopells.eu/en/publications/presentations-and-workshops.html>



Annex H: Detailed overview of the Swedish national side workshop

H1 Objectives of the workshop

Sweden has great potential to produce biofuels from agriculture and forestry. Interesting materials may be canary reed grass, forest or agricultural residues such as straw. For entrepreneurs within agriculture and forestry biomass offers a wide range of business opportunities by delivering biofuels to others but also unique opportunities to become self-sufficient with regard to energy supply. The aim of the workshop is to exchange experiences and knowledge about possible raw materials, processing concepts, combustion technology, user and community perspectives and best practice examples from all over Europe. Representatives from relevant authorities are in place and talk about how they can support the ideas that could lead to new businesses in the production and use of renewable energy. Hear some companies tell and show how they have chosen to focus on adding value and use new biomass resources for pelletizing and briquetting.

H2 Workshop organisation

The workshop was organized in close co-operation with important stakeholders from the alternative biomass for pellets and briquettes sector. The key actors and stakeholders were contacted in several ways, mainly with mailing list, SP newsletters, direct contact with most important contacts and advertisement in the national newspaper for agriculture and the local newspaper. Information about the workshop was also distributed through the network of the Swedish farmers Association and other agricultural stakeholders and their networks.



Varmt Välkommen till en informationsträff och studiebesök kring

"Nya" biobränsleråvaror – nya affärsmöjligheter!
Alternativa biomassaråvaror till pellets och briketter

Plats: Öknaskolan, Tystberga
Tid: 11:00 - 16:30, 2 april 2012

Sverige har stor potential att producera biobränsle från jord och skog. Intressanta råvaror kan vara rörlfen, andra kvaliteter från skogen eller restprodukter från jordbruket såsom halm.

För enskilda företagare inom jord och skog finns utrymme för affärsmöjligheter genom att leverera biobränslen till andra men också unika möjligheter till självförsörjning med egen biomassa råvaror och genom samarbete med andra företag i området.

Vi vill med denna träff utbyta erfarenheter kring möjliga råvaror, förädlingskoncept, förbränningsteknik, användar- och samhällsperspektiv. Myndigheterna finns på plats och berättar om hur de kan stödja idéer som kan leda till nya affärer inom produktion och användning av förnybar energi. Hör några företag berätta och visa hur de har valt att satsa på förädling och användning av nya biomassa råvaror.

Dagen avslutas med ett studiebesök på värmecentralen på Öknaskolan. Sommaren 2011 byggdes anläggningen om för alternativa biomassaråvaror och eldas idag med rörlfenbriketter från Lättra Gård Bioprodukter. Pannan är från tyska Ökotherm.

Program

11:00 – 12:00

Registrering och lunch

12:00 – 12:15

Vad händer i Sverige just nu?
Anna Sager, SP

12:15 – 12:45

Tekniska möjligheter för
produktion och förbränning av
alternativa råvaror
Susanne Paulrud, SP

12:45 – 14:00

Processstöd,
finansieringsmöjligheter och
affärsutveckling (inkl frågor)

Jordbruksverkets stöd
Lena Niemi Hjulfors,
Jordbruksverket

Biobränsleprogrammet och affärsutveckling
Erik Hedfar, Energimyndigheten
Företagsstöd för värmeeffektiva och produktion av pellets
Christina Petersson, Länsstyrelsen Södermanlands län

14:00 – 14:20

Kaffe

14:20 – 15:30

Goda exempel
Nationell samordning och utveckling av småskaliga
biobränslekedjor
Cecilia Wahlberg Roslund, Hushållningsällskapet
Rörlfen från frö till färdig värme
Göran Winkler, Lättra Gård Bioprodukter
Rörlfen i glesbygdens småskaliga närvarsystem – Sveriges
första mobila brikettanläggning för stråvaror
Anna Lundmark, Glommers Miljöenergi AB
Produktion av halm- och höpellets
Mathias Jönsson, Jemapellets

15:30 – 16:30

Studiebesök Öknaskolans värmecentral - Förbränning av
rörlfenbriketter
Decima Henningsson, Teem Combustion Group

Praktisk information

Plats: Öknaskolan, Tystberga

[Vägbeskrivning](#)

Evenemanget är kostnadsfritt för anmälda deltagare. Fika och lunch ingår.

Anmäl er senast den 30 mars via e-post eller telefon till:
anna.sager@sp.se
Tel: 010 - 516 58 37

Meddela behov av specialkost



www.sp.se



Upphovsmännen har ensamma ansvaret för innehåll i denna inbjudan. Det föredrider inte nödvändigtvis Europeiska gemenskapens åsikter. Europeiska kommissionen ansvarar inte för någon form av användning av informationen som finns i inbjudan.



www.sp.se



Upphovsmännen har ensamma ansvaret för innehåll i denna inbjudan. Det föredrider inte nödvändigtvis Europeiska gemenskapens åsikter. Europeiska kommissionen ansvarar inte för någon form av användning av informationen som finns i inbjudan.

Figure 13: Flyer of the Swedish side workshop



Workshop programme in English:



Welcome to a workshop and study visit dealing with

"New" biomass raw materials - new business opportunities!

Alternative biomass for pellets and briquettes

Place: Öknaskolan, Tystberga

Time: 11:00 - 16:30, 2 april 2012

Sweden has great potential to produce biofuels from agriculture and forestry. Interesting materials may be reed canary grass, forest or agricultural residues such as straw. For entrepreneurs within agriculture and forestry biomass offers a wide range of business opportunities by delivering biofuels to others but also unique opportunities to become self-sufficient with regard to energy supply.

The aim of the workshop is to exchange experiences and knowledge about possible raw materials, processing concepts, combustion technology, user and community perspectives and best practice examples from all over Europe. Representatives from relevant authorities are in place and talk about how they can support the ideas that could lead to new businesses in the production and use of renewable energy. Hear some companies tell and show how they have chosen to focus on adding value and use new biomass resources for pelletizing and briquetting.

The day will end with a study visit to a combustion plant using reed canary grass briquettes to supply a boarding school with heat and warm water. The plant was built in summer 2011 and is now up and running on reed canary grass briquettes from Lättra Gård Bioprodukter. The combustion is a boiler of the German manufacturer Ökothem.



www.sp.se



Upphovsmännen har ensamma ansvaret för innehållet i denna inbjudan. Det företräder inte nödvändigtvis Europeiska gemenskapens åsikter. Europeiska kommissionen ansvarar inte för någon form av användning av informationen som finns i inbjudan.

Program

11:00 – 12:00

Registration and lunch

12:00 – 12:15

What's happening in Sweden?
Anna Sager, SP

12:15 – 12:45

Technical possibilities for production and combustion of alternative raw materials
Susanne Paulrud, SP

12:45 – 14:00

Support, financing and business development

Support from the Swedish authority for Agriculture
Lena Niemi Hjulfors, Swedish Agriculture Agency
Biomass program and business development
Erik Hedar, Swedish Energy Agency
Support to business for heating plants and production of pellets
Christina Petersson, Regional council of Södermanlands län

14:00 – 14:20

Coffee

14:20 – 15:30

Best practice examples
National coordination of development of small scale biomass chains
Cecilia Wahlberg Roslund, Hushållningssällskapet
Reed canary grass, from seed to heat
Göran Winkler, Lättra Gård Bioprodukter
Reed canary grass in rural small scale district heating – Sweden's first mobile briquetting for straw
Anna Lundmark, Gloomers Miljöenergi AB
Production of straw and hay pellets
Mathias Jönsson, Jemapellets

15:30 – 16:30

Study visit to heating plant at Öknaskolans – Combustion of reed canary grass
Decima Henningsson, Teem Combustion Group



www.sp.se



Upphovsmännen har ensamma ansvaret för innehållet i denna inbjudan. Det företräder inte nödvändigtvis Europeiska gemenskapens åsikter. Europeiska kommissionen ansvarar inte för någon form av användning av informationen som finns i inbjudan.

Praktisk information

Plats: Öknaskolan, Tystberga

[Vägbeskrivning](#)

Evenemanget är kostnadsfritt för anmälda deltagare. Fika och lunch ingår.

Anmäl er senast den 30 mars via e-post eller telefon till:
anna.sager@sp.se
Tel: 010 - 516 58 37

Meddela behov av specialkost

H3 Results of the workshop

In total 18 people participated in the workshop, see Table 9.

Table 9: Distribution according to the target groups

Pellet and combustion plant operators	4
Regional acting key actors like raw material suppliers and bio business imitators	6
Policy makers/local, regional, national authorities	3
Engineers and Consultants	2
Lobbying institution/professional institution	1
Others	2

During the workshop stakeholders exchanged experience and knowledge about pelletizing and combustion of alternative biomass raw materials. The day ended with a study visit to a combustion plant for reed canary grass briquettes. The combustion plant is built on site of a boarding school and supplies the school with heat. Regional and national authorities informed about support and financing possibilities and new business ideas were discussed. A follow up of the meeting is planned.



H4 Conclusion

The regional networking meetings and the national side workshop were appreciated by the regional stakeholders and national stakeholders from the entire alternative biomass chain. All participants agreed on those regular meetings are necessary to bring the development of alternative biomass chains forward. Only by meeting in person and be able to discuss and exchange experience and knowledge the alternative biomass to pellets chains will be further developed and contribute to the changeover from fossil fuels to renewables and a fossil fuel free society. Furthermore, the participants were provided with business opportunities and possibilities for the development of the green economy by developing the alternative biomass to



pellets chains. Local produced biomass from agricultural residues and wastes has become of vital importance for and a substantial part of regional and local development. Amongst others, local biomass contributes to an independent and secure energy supply, economic growth and climate protection. When using local biomass, it is important to observe the entire chain to guarantee a sustainable application, from the outtake of biomass or the usage of agricultural residues, to the recovery of ash from biomass combustion. Energy systems of the future require appropriate energy mixes adapted to service both regional and local needs without challenging natural resources. The regional networking meetings as well as the national side workshop helped to identify sustainable alternative biomass to pellets value chains to enable regional and local green business development across Sweden and Europe. Farmers and agricultural cooperatives all over Europe have unique natural resources agricultural residues to increase the local supply of biomass for efficient use in heating and CHP installations. However the market for alternative biomass for pellets is new to many farmers, cooperatives and companies within the agricultural sector. New markets often require a new and targeted approach. The national side workshop contributed to the development by disseminate information and best practice examples from all over Europe and by presenting financial support opportunities and background knowledge initiated new discussions and projects.

H6 Presentations

The presentations in Swedish are available at the project website:

<http://www.mixbiopells.eu/en/publications/presentations-and-workshops.html>



Annex I: Templates for the organisation and reporting of the national side workshops

MixBioPells IEE/09/758



Country:	Place / Conference:	Date:
No. of participants:	Organizer:	Target groups:

Title

Topics of the event / Program:

Short summary: (aims and goals of the meeting, methods, contents, results)

Annexes (as pdf)

- Leaflets (invite)
- List of participants (signed!)
- Presentations (as PDF for website)
- Short Summary on national side workshop
- Pictures
- Documentation of the number of participants from policy and administration
- Documentation of at least 3 positive feedbacks from policy makers on the evaluation sheet about usefulness of workshop (send with additional document)



Background

To inform and sensitise national authorities and bio-business initiators about the topic of alternative pellets, one side-workshop per country at a local conference should be organised by each partner. By organising the workshop beside a national conference, addressing the field of combustion the participation of the target groups is expected to be high. Addressed target groups are

- regional acting key actors,
- national boiler manufactures and developers of combustion systems,
- pellet producers,
- administration and policy and
- engineers and consultants for designing heating systems
- bio-business initiators from other regions

Since the background and fields of interest concerning the addressed topic are different, the workshop should be used to:

- Inform about the situation in the own country compared to partner countries and about Best practice Examples”
- Describe constraints and drivers,
- discuss results
- Compile promotion approaches.

Thus the workshop will be used to bring the different positions together and to compile further activities.

Workshop organisation

The project partner key actors who are involved in the project will give presentations about there experiences concerning this topic and their role in the project. In general the target groups should be informed about the project and the situation in there own country compared to other countries. Besides the presentations the workshop should be used to discuss the presented information and the actual situation, to give possibility for exchange of ideas and requirements of the different target groups.

Therefore the workshop will consist of two parts, a presentation and a discussion part. Thus the presentation should be done as a keynote speech (about 5-10 minutes) with a following discussion about 15-20 minutes. At the beginning of the workshop a short introduction of the project should be presented. To get a target orientated discussion, the amount of participants should be about. 40 to 50 people.

According to Annex 1 the national side-workshop should include 5 representatives from policy and administration (result indicator).

Please use the MixBioPells presentation template and indicate the legal disclaimer of the IEE somewhere in the presentation.



Logo of the project partner



Your ideas and suggestions are important to us. Please answer the following questions.

- How would you rate the organization of the workshop?

1 2 3 4
☺ ☹

- How would you rate the quality of the presentations in regard to timeliness, information content and added value for your own professional activities?

1 2 3 4
☺ ☹

- How would you rate the relevance of information and the relevance of the personal contacts for your own professional activities?

1 2 3 4
☺ ☹

- How would you rate the relevance of the presented project (MixBioPells) for your own professional activities?

1 2 3 4
☺ ☹

- How would you rate the workshop all in all?

1 2 3 4
☺ ☹



Logo of the project partner



- Which part of the workshop did you particularly like?

- What have you missed?

- Which needs/ expectations do you have for future meetings?

Space for additional questions of each project partner

Thank you for your cooperation!