

Short Rotation Woody Crops (SRC) plantations for local supply chains and heat use

Project No: IEE/13/574



# Report on training events for small and medium users of woodchips in Croatia

March 22nd, 2016  
Vinkovci, Vukovar- Srijem County

*WP 5 – Task 5.3*

March 2016



Author: Željka Fištrek, Energy Institute Hrvoje Požar (EIHP), Croatia  
Biljana Kulišić, Energy Institute Hrvoje Požar (EIHP), Croatia

Editor: Branka Jelavić, Energy Institute Hrvoje Požar (EIHP), Croatia

Contact: Energy Institute Hrvoje Požar  
Savska cesta 163, 10 000 Zagreb  
[zfistrek@eihp.hr](mailto:zfistrek@eihp.hr)  
+385 1 6326 139

The SRCplus project (Short Rotation Woody Crops (SRC) plantations for local supply chains and heat use) is supported by the European Commission in the Intelligent Energy for Europe Programme. The sole responsibility for the content of this report lies with the authors. It does not necessarily reflect the opinion of the European Union. Neither the EASME nor the European Commission are responsible for any use that may be made of the information contained therein. The SRCplus project duration is March 2014 to April 2017 (Contract number: IEE/13/574).



Co-funded by the Intelligent Energy Europe  
Programme of the European Union

SRCplus website: [www.srcplus.eu](http://www.srcplus.eu)

# Contents

<b>1</b>	<b><i>Introduction</i></b>	<b>4</b>
<b>2</b>	<b><i>Reaching the stakeholders for training activities</i></b>	<b>5</b>
<b>3</b>	<b><i>Participants</i></b>	<b>5</b>
<b>4</b>	<b><i>Training concept</i></b>	<b>5</b>
<b>5</b>	<b><i>Discussion</i></b>	<b>9</b>
<b>6</b>	<b><i>Evaluation of training</i></b>	<b>10</b>
<b>7</b>	<b><i>Media coverage</i></b>	<b>11</b>

# 1 Introduction

The first seminar for small and medium woodchip users and woodchip producers is organised with following aims:

- To introduce to the potential stakeholders the concept of short rotation coppice (SRC) and SRC local supply chains, and to encourage the stakeholders to consider their involvement in biomass production and usage of biomass in general but especially from SRC.
- To inform the participants about standards and quality requirements for woodchips and pellets and provide good practice examples.
- To understand modern technology that uses biomass for heat production through numerous already operational examples.
- Show the sources of financial support for realisation of such projects.
- Discuss the challenges for SRC development and biomass utilisation.
- Inform the participants on the effect of biomass production and utilisation on local development and local environment.

In order to amplify this aspects the title of the workshop was “Seminar on CO<sub>2</sub> emission reduction and savings from heating: Heat from local biomass sources.” The goal was to present to the audience the objective information that can help them in their decision to change energy source used currently for heating (heating oil, natural gas, firewood in inefficient stoves). The target audience were potential woodchip/pellet users such as industry, companies, public institutions, private citizens, and all other subjects that currently do not use modern biomass for heating and are interested in biomass.

The seminar was organised at the premises of Vukovar- Srijem County, in the County hall, and in collaboration with local partner Ekosustav d.o.o., and wood cluster Slavonski hrast. The presentations were prepared and presented by EIHP and numerous invited speakers, who contributed to the overall quality of the event.

The participants were introduced to the project and available project materials. Furthermore, they were informed about basic characteristics of SRC cultivation (species, agro technical measures), possibilities of sustainable SRC development within the county, potential for usage of woodchip from SRC and obstacles in SRC development and SRC woodchip use. Sustainable agricultural practices for wood chips production from SRC were also promoted in order to highlight environmental benefits of SRC. However, the focus of the seminar was on examples and questions on how biomass can be more used, especially from SRC. This is done in order to create new biomass users that will consider SRC as potential biomass source. The last part of the seminar was organised in form of discussions between the participants and the focus shifted from information provision to active involvement of participants in discussion.



Figure 1: Seminar participants and venue

## 2 Reaching the stakeholders for training activities

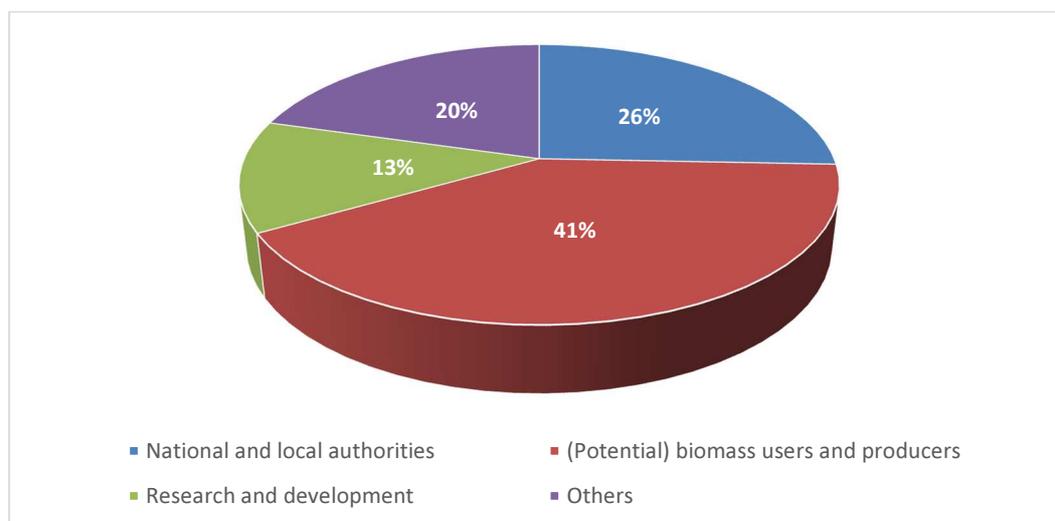
Prior to the training, potential beneficiaries of the seminar in target region were identified. The list of potential beneficiaries includes educational institutions (schools, kindergartens), medicinal institutions, private companies, citizen associations, administrative bodies, associations for development, municipalities, nature protection, members of wood cluster, development agencies, tenant representatives etc. The invitations were sent via several channels. Several associations were asked to circulate the invitations among their regional contacts. After the first round of invitations, the second was sent several days before the training (see Annex for the invitation).

The collection of applications for the seminar was enabled through Google forms or directly through email and telephone of the organiser (EIHP). 25 applications were received via Google forms, while 19 applicants apply directly via e-mail. There were 7 participants that attended the event without prior application.

## 3 Participants

In total, the organization received 44 applications. Finally, at the seminar there were 39 participants and 3 EIHP staff, making in total 42 participants (see annex). Looking at the participant list, it could be noticed that three presenters did not sign the list, but they were present at the meeting, what can be confirmed by photos taken. We can presume that there were more people that did not sign the list.

The structure of the participants- trainees (39) is shown below:



**Figure 2: The structure of the participants (trainees)**

The percentage of local authorities is quite significant. Even they are separated here from direct potential biomass users, they can also be seen as potential users since with their policies they can influence and support biomass usage and enable biomass projects. One of such examples is the city of Vukovar that financed biomass boiler for heating of several residential buildings and replaced heating oil as energy source.

## 4 Training concept

The seminar was open by Head of the Department of Agriculture, Forestry and Rural Development of Vukovar- Srijem County (VSC), Mr. Andrija Matić, who warmly welcomed the participants and the topic. He pointed out that the County has significant areas of marginal land, and that part of it can be put into production for biomass as short rotation coppice. The County is committed to improve the environmental, social and economic status of the citizens

and therefore events like this are welcomed. The vision that we should strive to is food and energy self-sufficient county. In order to achieve this, it is important to take advantage of rural development funds which are available. The Head of wood cluster Slavonski hrast, Josip Faletar also welcomed the participants and presented the wood cluster and its activities. He emphasised that it is necessary to make RES more profitable than heating oil. There is much potential in residues from the wood industry that should be used for energy production. Most of the pellets produced in Croatia are exported to foreign markets, mostly Italian. With local production and consumption these expenses and CO2 emissions can be minimised.



**Figure 3. Welcoming words by Mr. Matić (VS County) and Mr. Faletar (wood cluster Slavonski hrast)**

After the introduction to the problem and the topic by previously mentioned participants and Mrs. Kulišić in front of SRC project, the seminar continued with presentations. In total, the seminar was composed of 2 presentations presented by EIHP project staff and 8 presentations from invited speakers.

Ms. Fištrek (EIHP) presented SRCplus project, the project objectives, activities and results so far, followed by the general presentation on SRC with focus on species, legislation, and sustainability issues and SRC. The business models were presented as well as successful examples of SRC production and local SRC woodchip consumption. Further on, she presented experiences from countries with advanced SRC market, and possibility of development of local supply chains from perspective of heat consumption within the country.



**Figure 4: Ms. Fištrek (EIHP)**

Mr. Ilija Prskalo and Ms. Marija Trkmić are experts in biomass fuel sampling and quality. They are representatives of companies accredited for sampling (Euroinspekt- drvokontrola d.o.o) and quality measurement (HEP- Proizvodnja d.o.o. Centralni kemijsko-tehnološki laboratorij). Mr. Prskalo explained the method of sampling and Mr. Trkmić norms and standards that the woodchip and pellets must comply to. The norms are very important, as it could be seen from presentation of Mr. Grđan, since the producer of biomass boilers and stoves has adapted the boiler technology to biomass of specific quality standards that should be used in order to achieve best results in boiler performance.



**Figure 5: Mr. Prskalo (Euroinspekt- drvokontrola) and Mrs. Trkmić (HEP- Proizvodnja)**

Centrometal is a major boiler producer from Croatia that previously worked with DN52731, but today they use DIN plus and ENplus A1 norms. A1 and A2 quality are required for smaller boilers while B1 and B2 are required for industrial boilers. Mr. Grđan presented many examples how wood chips and pellets are used in concrete examples in Croatia. He emphasised that the amount of ash is quite a significant parameter, since it determinates how much time will be needed for weekly boiler maintenance (including ash removal). Most of the clients are more in favour of pellets than woodchips even though woodchips are cheaper. Pellets are easier to handle and it is easier to secure their supply: you can buy pellets today even in supermarkets, while woodchips you have to order by truck. The position and available space for biomass storage is one of the main things to consider in the planning process. Pellets need three times less space in relation to woodchip (of same heating value). Since availability of space for boiler is often a problem, container boilers are interesting solution that can be mounted outside buildings. This system allows the coexistence of two systems, the old one and the new one on biomass. The old system can serve as a backup.



**Figure 6: Mr. Grđan (Centrometal d.o.o)**

After a short coffee break, the seminar continued with presentation from Ms. Kozina from organisation Eko Slavonija, who pointed out some severe problems in Slavonija that should be addresses. She presented the conclusions from the conference held in January 2015 with an aim to stimulate the activation of marginal land for biomass production. She also pointed out that biomass creates working places, something much needed in the region. Ms. Kulišić (EIHP) performed an economic analysis of SRC production on an example of Vukovar-Srijem County. She demonstrated and compared the economy of various option for farmer regarding the land usage in comparison to SRC production.



**Figure 7: Ms. Kozina (Eko Slavonija) and Mrs. Kulišić (EIHP)**

Mr. Perković and Mr. Lovrenšćak presented two successfully implemented projects of heating systems on biomass, with focus on process, problems and benefits. The first example is Spačva, a wood processing factory company that performs five activities (sawmill, parquet production, final products factory, veneer factory and pellet factory) and has three boilers of 17,5 MWt together, that are needed for industrial purposes. Due to increased pellet production, also an increase in heat demand is expected. The second example is heat supply for residential buildings in the city of Vukovar by company Tehnostan. New biomass boiler (430 kW), replaced the old one powered by heating oil. The old boiler was expensive to maintain. Despite the drop in price of heating oil, the savings with the biomass are evident, as are the environmental benefits. Since the implementation of the new biomass heating system, the price of the heat energy sold to the customers is lower for 20%, and it is now 44lp/kWh. They stressed again the problem of biomass storage, and due to low space availability they have decided to choose pellets as heating fuel instead of woodchips, despite higher price. One of the identified problems is that biomass boilers demand more involvement of a person that is taking care of the system. The person has to remove the ash, fill in the fuel, and that is something not particularly attractive to the people handling the system. Sometimes they also are not willing to embrace new technologies, and this seems as additional work for them. Despite few disadvantages, the advantages are far greater and the company is working on introduction of the second boiler. The city of Vukovar financed the project as part of its new policy to cast out heating oil from the city.



**Figure 8: Mr. Perković (Spačva d.o.o) and Mr. Lovrenšćak (Tehnostan Vukovar)**

Mr. Ćutić from Environmental Protection and Energy Efficiency Fund (FZOEU) presented the programs and tenders for the subjects that want to install biomass boilers and stoves for heating. He also presented many examples where Fund participated with co-financing. The Funds provides co-financing for citizens, companies, public institutions etc., for equipment but also for starting production processes (for example for pallet production). The Vukovar-Srijem County is a significant user of Fund funds. At the end Mr. Lovrak presented ESCO model for heating on biomass. ESCO guaranties the same price for heat energy as in the case of already mention existing example (44-48 lp/kWh).



**Figure 9: Mr. Ćutić (FZOEU) and Mr. Lovrak (Pelet project do.o.)**

After the presentations, the final part of the seminar was reserved for discussion (chapter 5).

During the seminar one coffee break was organised. Seminar was concluded with lunch for the participants and opportunity for networking, exchange of experience and development of ideas for business collaboration.



**Figure 10: Lunch and networking**

For the preparation of the seminars, mostly materials developed within SRC plus were used, but as well materials from other projects. The seminar was a great opportunity to present the handbook and distribute it among participants.



**Figure 11: Project material available for participants (handbook, flyer for farmers, flyer for woodchip users, agenda)**

## 5 Discussion

The discussion was quite fruitful as it generated information that could facilitate further implementation of project goals. The discussion was moderated by Ms. Kulišić.

The question she asked is why these projects are not widely accepted, and why there are no mayor investments in biomass and SRC in particular. Tehnostan responded that the Methodology set in Regulations doesn't not allow achievement of fast returns for biomass central heating system, and that the changes in the system are needed. Furthermore, natural gas is widely available and easy to handle. A significant resistance to biomass comes from managers of the technical facilities that find biomass boilers more complicated and labour demanding than gas/oil boilers.

Heat produced in cogeneration could be very cheap, however most of the current cogeneration facilities do not have significant heat consume nor do they plan to have it. From 120 MW of biomass cogeneration projects in Croatia (already developed or planned), 71 MW is taken by projects that do not have heat consume. Proposed new Regulation following the Act on RES would allow the biomass cogeneration projects up to three years to develop the

solution for heat usage. This would enable further development of energy inefficient projects that produce electricity but do not utilise heat. This is something that wood industry cannot accept, since they have fuel supply and heat consume, but they are below the quota line. Mr. Faletar pointed out that most of the cogenerations work on quality woodchip which could be used for pellet production. He argues that the material of worst quality should be used for cogeneration. Also, the production of electricity and pellets makes sense. Cogenerations should also use the wood from pruning and maintenance of public areas.

The scheme for application to the Fund is presented. If you are a representative of the tenants, you should contact residential building manager who should apply to Fund for co-financing.



Figure 12: Discussion (led by Mrs. Kulišić, EIHP)

## 6 Evaluation of training

A questionnaire was prepared in order to receive a feedback from trainees on the training activities and the training concept, but as well to understand their general attitude towards SRC. The feedback after the first training will serve as a basis for development of improved concept and materials for the 2<sup>nd</sup> training.

The questionnaire was filled in by 23 responders, which is 59% of participants. Most of the responders (20) attended the seminar due to general interest in renewable energy sources, while only 2 attended due to particular interest in SRC. When asked to rate their knowledge on SRC prior the seminar, the responses were very diverse, but in general most of the responders rated their knowledge on SRC as fair to very good. When asked to rate the improvement of their knowledge on the topic, most of the responders indicated very well to excellent knowledge on the topic. 70% of responders were absolutely satisfied with the seminar, while 30% were satisfied with some segments of seminar.

74% of responders would like to be included in SRC chain as producers, woodchip users or in some other role, while 26% of responders either need more information or do not see their role in the chain.

Several comments:

- Opening of new business opportunities and working places in definitely a reason why biomass should be promoted.
- Everything was excellent but I would like to hear more information on economy and legal aspects /stability, prices fluctuations, stability of legal framework)...
- There is no local entrepreneurs and farmers interested in this topic, political support is not adequate, it would be great to start integral project at the level of the County.
- A suggestion is to organise a seminar on the level of local self-governance for all potential users and possible investors. Pilot projects in the County, better communication with media and public.

The responders were asked to rate the significance of different benefits from KKO for environment and society. Energy security and new opportunities for local community are rated as the most significant benefits, followed by neutral balance of CO<sub>2</sub> emissions. SRC as

additional structural element in landscaped and increase of biodiversity are rated as least significant benefits, but still with a high score of 3.5 from maximum 5 points.



Figure 13: Significance of benefits from SRC for responders (in Croatian)

## 7 Media coverage

The event was well covered by local media (television, newspapers, radio and web portals).

Table 1: Media coverage of the seminar

MEDIA	TYPE	TITLE
www.glas-slavonije.hr	Local web portal	Toplina iz lokalnih izvora biomase
www.vusz.hr	Official web portal of Vukovar-Srijem county	U Vinkovcima održan seminar o kulturama kratkih ophodnji za energiju – Smanjenje emisija CO2 i uštede iz grijanja: Toplina iz lokalnih izvora biomase.
www.eko-sustav.hr	Official web of company Eko Sustav	U Vinkovcima održan seminar o kulturama kratkih ophodnji za energiju – Smanjenje emisija CO2 i uštede iz grijanja: Toplina iz lokalnih izvora biomase.
www.cibalia.info	Local web portal	Seminar "Toplina iz lokalnih izvora biomase" održan u Vinkovcima
www.vinkovci.com.hr	Local web portal	Smanjenje emisija CO2 i uštede iz grijanja: Toplina iz lokalnih izvora biomase.
Vinkovačka TV	Local television	Information in daily news