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# PROMOTION OF WOOD BIOMASS AND PELLET IN CROATIA

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WOODEMA CONFERENCE, GDANSK 2013

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**DRVNI**  
KLASITER

# Problems!

- Wood pellet and biomass is often **marginalized** in Croatian energy strategies and documents
- Symbolic interest of media in promotion of this ecological fuel
- **95% of produced quantities have been exported**

The pellet and other wood biomass production become on global level more and **more lucrative business!**

The European Commission **proposal is to maintain the EU's position** as a **world leader in renewable energy!**



# What is Pellet?



Wood pellet is a **type of wood fuel**, generally made from compacted sawdust or other wastes from sawmilling.

The humidity of the wood pellets is only 10 percent and that is the reason for high **energetic efficiency of the pellet**. The pellet is mostly used in North America and Scandinavia but also in Austria, Italy and Germany.

It is suitable for **residential and public heating** and also for big industrial plants.

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# Pellets Advantages

The use of pellet brings many advantages: it **replaces import of fossil fuels**, balances account deficit, **increases employment** in rural areas and contributes to **Kyoto protocol** and EU strategy tasks (20:20:20).

The media campaign will include **large spectar of promotional activities** and the goal is to popularize the pellet among general population.



# Global Markets

The wood pellet market has experienced a **large growth in the last five years**. In 2006 the production of wood pellets was **estimated between 6 and 7 million tons worldwide** (not including Asia, Latin America and Australia).

In 2010 the global wood pellet production reached 14.3 million tons, including the mentioned countries, while the consumption **was close to 13.5 million tons<sup>2</sup>** thus recording an increase of more than 110 percent if compared to 2006.



# Association Initiatives

Association of Croatian Pellet, Briquette and Wood Biomass Producers) have therefore started a promotional campaign, with the **help of domestic pellet stove producers.**

The campaign has been presented during the Ambianta fair 2012, and the pellet producers **donated half of a kilogram** of pellets to each visitor (38.000 pax).



# Pellet Promotion

Pellet consumption in Croatia **is in the beginning; manufacturers turn to pellet promotion with the support of competent institutions.**

To provide these activities in 2013 the Association **needs funds** in the amount of 102.700 EUR. The funds should be raised **through membership fees and donations as well as through participation in national and European projects.**

The **measurement of the success** (carried out by Faculty of Forestry, University of Zagreb) **will be parallel** with the implementation of the activities.

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# Raw material and market position

Wood processing industry represents an important sector and more and **more investors choose wood energy projects.**

Forestry on the other hand, disposes with great amount of wood, **thanks to the sustainable forest management (FSC).**

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# Popularize the Pellet

The media campaign **will include large spectar of promotional activities** and the goal is to popularize the pellet among general population.

**Develop socially responsible business,** especially if using wood waste energy or produce energy fuels such as pellets or briquettes



# Project 300 public buldings!

Possible partners in Croatia

- AEBIOM
- KfW Bank Germany
- UNDP



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# Peleti, gorivo budućnosti

Nikolina Ugrin

Nekoliko europskih zemalja fokusiralo se na smanjenje efekta staklenika sustavno povećavajući korištenje energetskih izvora koji se obnavljaju. Tome cilju uvelike pomaže korištenje drva kao goriva. Njemačka je na tu temu predložila obnovu oko 4,5 milijuna sustava za grijanje do 2005. godine. Pokrenuta je informativna kampanja kako bi se razbile sve predrasude i bolje upoznao drvo i njegova primjena u ogrjevnoj industriji u različitim oblicima, jednostavnost uporabe, sigurnost i evolucija u tehnologiji izgaranja, zahvaljujući čemu se može usporediti sa korištenjem ložnog ulja ili plina. S razvojem drvenih peleta i odgovarajućih pogona, drvo predstavlja efektivno i sigurno ekološki prihvatljivo gorivo, tj. kvalitetnu zamjenu za fosilna goriva.

Neke zemlje su izdale posebni standard o kvaliteti kontrole i standardizaciji goriva, i podaci su jednaki, osim kod pitanja korištenja prirodnih aditiva (kukuruzni i krumpirov amidi):

Austrija – ÖNORM M 7135  
Njemačka – DIN 51731  
Švedska – SS18 71 20

Neutralnost peleta kod emisije CO2 odnosi se samo na proces izgaranja, ali ne i na pripremu, proizvodnju i transport: ti procesi kao i kod proizvodnje drugih goriva uzrokuju otpuštanje CO2 što pridonosi povećanju efekta staklenika.

**Smanjenje kiseline kiša.** Izgaranje peleta također pridonosi smanjenju emisije sumpornog dioksida. Taj plin je glavni uzročnik stvaranja tzv. kiseline kiša koje pridonose unisto tako i u agrikulturi i šumarstvu, sve zajedno pridonoseći porastu lokalne dobrobiti i društvenom razvoju.

**Stabilne i konkurentne cijene.** Cijena peleta je u potpunosti neovisna o promjenama cijena kod plina ili ulja, koje samo mogu rasti, uzmemo li u obzir smanjenje postojećih resursa te sve veću primjenu poreza na zaštitu okoliša (Ugljični porez). Treba spomenuti i cikličnu

Mnogi su razdori koji sugeriraju na uporabu peleta kao goriva, zajedno sa ekološkim i ekonomskim prednostima koja su često zanemarivane.

## Ekološke prednosti

Proizvodnja ugljičnog dioksida iz peleta definirana je kao neutralna, što znači da je ugljični dioksid, oslobođen pri izgaranju prethodno upilo drveće prilikom rasta (ugljični zatvoreni ciklus). Kako nije moguće paliti više drveća nego što postoji, trebala bi se smanjiti količina ugljičnog dioksida u zraku. Fosilna goriva, koja u atmosferu puštaju ugljični dioksid koji se taloži milijunima godina; povećavaju razinu CO2 u atmosferi što je najveći uzročnik efekta staklenika.

štanju šuma. Grijanje peletima sustavno pridonosi zaštiti šuma.

**Smanjenje transportnih rizika.** Korištenjem peleta, ekološka zagađenja, nastala zbog kavarjanja nativnih tankera ili curenja plina iz cijevi, dovedena su do nule, a isto je umanjeno rizik od eksplozija, požara i zagađenja vode za vrijeme transporta i uskladištenja. Takvih rizika praktički nema ili ih je neznatno.

## Ekonomske prednosti

**Otvaranje lokalnih radnih mjesta.** Proizvodnja i uporaba drva u osnovi kreira nekoliko poslova u području industrije, trgovine i usluga, ali

glo pridonjeti djelatniču isporuku plina i ulja koji su uglavnom uvozni proizvod.

**Prednost peleta prema ostalim bio-gorivima.** Peleti imaju određene prednosti ne samo prema fosilnim gorivima, već i značajne prednosti u usporedbi sa čvrstim bio-gorivima kao što su ogrijevo drvo i krhotine.

**Za primjer, kad bi jedna obitelj prešla sa sustava grijanja ložnim uljem na pelete, otpuštanje CO2 bi se smanjilo za 4,8 t/god., dok bi promjena s plina na peleti smanjila emisiju za 2,5 t/god.**

**Jednostavno skladištenje.** Zbog visoke gustoće, peleti zahtijevaju apsolutno niži volumni prostor nego bilo koje drugo bio-gorivo, što dozvoljava i kućnim spremnicima dovoljno prostora za spremanje peleta za cijelu sezonu.

**Jednostavan transport.** Mogućnost protoka i istovrsnost peleta pojednostavljuje njihovu manipulaciju i prijevoz, omogućujući uporabu automatiziranih sustava. Omogućeno je korištenje tankera za transport, dovodjenje pumpom do spremnika ili kontejnera i automatsko pretvaranje u ogrijevni sustav. Stoga je takav ogrijevni sistem, u tom pogledu, jednak sistemu plina i ložnog ulja.

## Karakteristični elementi.

Niža količina pepela u sastavu (<1.5%) i niži postotak vlage (12%) u usporedbi sa drugim bio-gorivima, konsekventno vode do većeg toplinskog kapaciteta; štovi-

**Zagađenje**  
U uvjetima niže termalne snage peleti otpuštaju nižu količinu zagađivača (CO i prašina) nego druga bio-goriva.

še, niža relativna vlaga dozvoljava skladištenje peleta u zatvorenom prostoru, koje ipak mora biti suho da bi se održale sve pozitivne karakteristike.

## GRIJANJE NA DRVNI PELETI 2-3 PUTINJE 240% DODATNA PLETINA?



Moderne doma e tehnologije  
www.centrometal.hr



Ekološko gorivo s velikim  
ušteđama



Prijevoz kamionima za ve  
potroša e



Visoka kalori na vrijednost i  
prakti na pakovanja



### Proizvođači peleta

www.finvestcorp.hr  
www.sisarka.com  
www.drvnjca.hr  
www.mundus-viridis.hr  
www.pellets.hr  
www.spacva.hr  
Moderator d.o.o., Podudbina bb,  
53234 Udbina

**Udruga proizvođača peleta,  
bričeta i drve biomass**  
Krišnjavoga 1 (Westin/II)  
10000 Zagreb  
Tel.: 01 6329 111  
Faks.: 01 6329 113



- Pelet je prešani drveni ostatak vlažnosti manje od 10 % što mu daje visoku energetsku učinkovitost
- Vrlo rašireno gorivo u Sjevernoj Americi i Skandinaviji te posebice u germanskim zemljama (Austrija, Njemačka, Švicarska)
- Pogodan za grijanje obiteljskih kuća, hotela, bolnica, vrtića kao i za velike industrijske sustave
- Praktičan za uporabu i jeftiniji od svih drugih fosilnih goriva
- 2 kg peleta = 1 litra ložnog ulja
- Energetska vrijednost peleta je oko 18 MJ/kg (5 kWh)
- Peleti su ekološko biogorivo sa CO2 neutralnim učinkom

### Što su peleti?

Peleti su mali prešani cilindri napravljeni od prirodnog osušenog drvenog ostatka (piljevine, krhotine, grane), promjena 6-8 mm i dužine 10-30 mm; oblikovani pod visokim pritiskom bez kemijskih aditiva a snage izgaranja od 4-9 kWh/kg. Energetska vrijednost jednog kg peleta otprilike korespondira sa pola litre ložnog ulja.

# Partners

- Fund for Environmental Protection and Energy Efficiency
- Promotional campaign “Wood Comes First” (Croatian Chamber of Economy)
- Croatian Ministry of Economy; Department for Industry Policies, Energy and Mining
- Croatian Ministry of Environmental Protection
- Energy Institute Hrvoje Pozar
- HEP d.d. (Croatian Electricity Company)
- Center for Monitoring Business Activities in the Energy Sector and Investments.



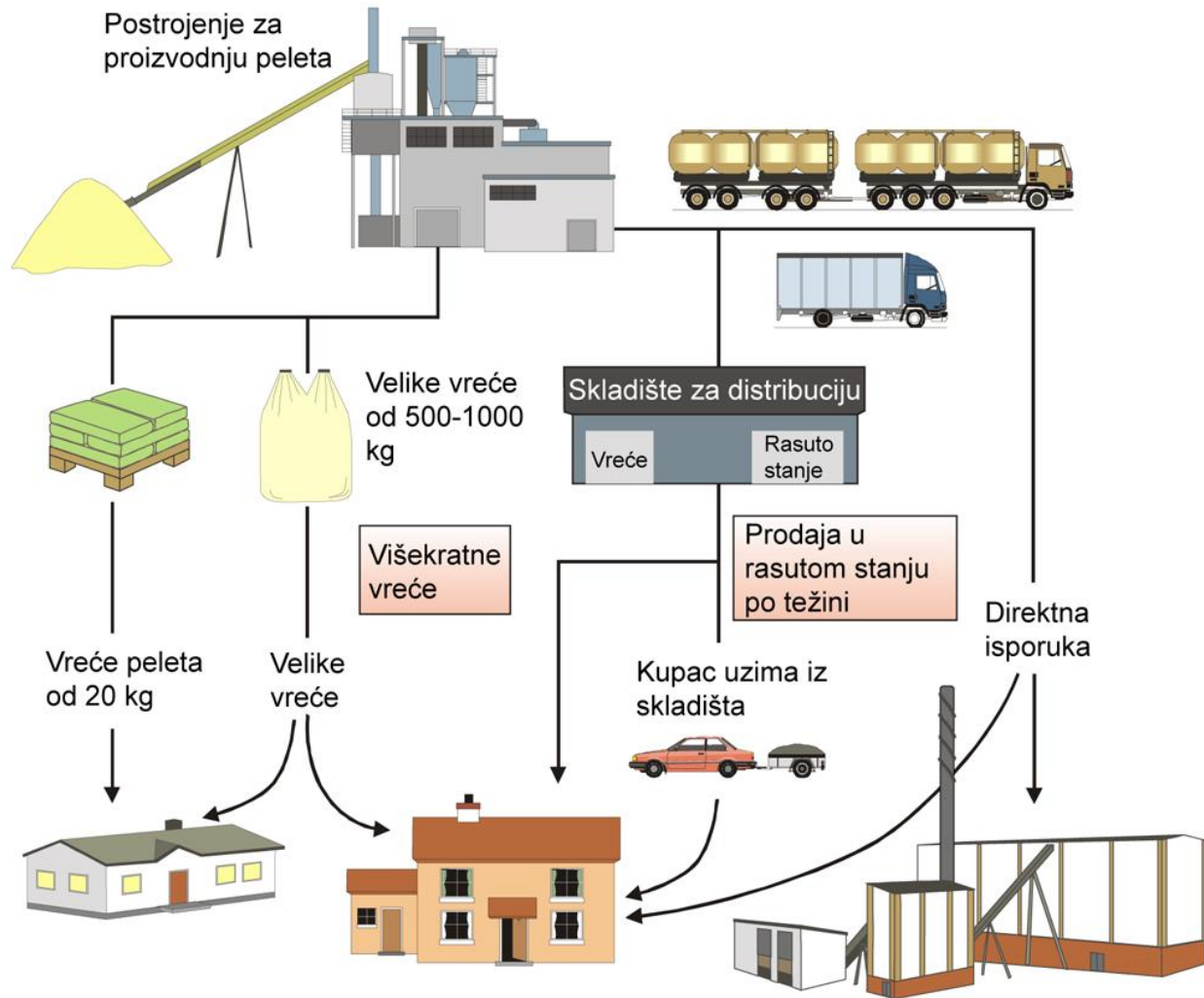
# Distribution?



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# Distribution?



# Expected Effects

- Creation of the domestic market of pellets
- Rational and increased use of renewable energy sources
- Approaching to targets of Kyoto Protocol and EU regulations
- Greater representation of pellet stoves and pellet heating technology in the projects of new housing and public buildings
- More responsible approach to the environment, forest, wood and products from renewable sources
- Raising awareness of the relevant institutions for the problems of production and marketing of pellets in Croatia.



# Promotion Results

- After only few months of promotional activities, some changes can be observed regarding pellet selling and consumption.
- Also, some new projects of biomass distance heating are started as a direct result of this promotion.





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# CLUSTER ACTIVITIES

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Marijan Kavran, Cluster Manager, Croatian Wood Cluster



**DRVNI**  
KLASTER

# Clustering in Croatia

Similar to other **transitional countries** the concept of '**clusters**' is being utilized in Croatia, but without any **real understanding** of its nature, management or linkage with impeding and impelling development factors.

**Research and development** has been interpreted as indicating that “clustering” creates effects which help **sustain long-term competitive production systems**, even when they comprise predominantly small firms (Nadvi and Schmitz 1994).

However, even though **cluster theory** has been receiving praises among scholars, **this theory also has not been far from critics.**



# What is Cluster?

The term business cluster, also known as an **industry cluster**, **competitive cluster**, or **Porterian cluster**, was introduced and popularized by **Michael Porter** in *The Competitive Advantage of Nations* (1990)

The importance of economic geography, or more correctly geographical economics, was also brought to attention by Paul Krugman in *Geography and Trade* (1991). **Cluster development has since become a focus for many government program**

**NEW PARADIGMA FOR WOOD\_PROCESSING INDUSTRY: Raw material and tradition are not sufficient to guarantee survival!**



# What is Cluster?

Rosenfield (1997) has defined clusters **simply as ‘concentration of firms that are able to produce synergy** because of their geographical proximity and interdependence’

Alfred **Marshall**, in his book **Principles of Economics** (1890), characterised **‘concentration of specialised industries** in particular localities’ that he termed **as industrial districts**.



# Wood Clusters in Croatia



Croatian Ministry of Economy and the Agency for Investments and Competitiveness establishes **three pilot Competitiveness Clusters** with support from the „Support to cluster development“ Project.

**Nine more are currently in the process of establishment.**



# Activities: Intensive international cooperation



Study tour: Austria 2006, Italy 2009, Bask Country 2012, Poland 2013, etc...

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# Activities: International Projects IN2WOOD, ID:WOOD



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# Big Potential in SEE Region



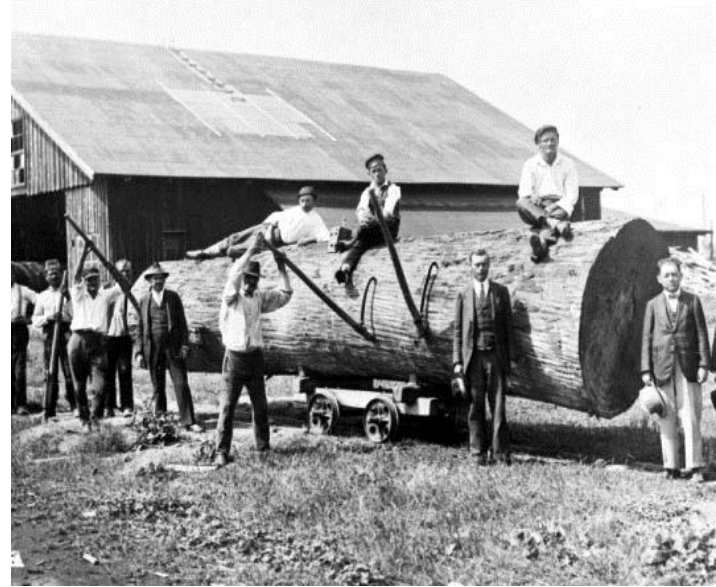
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# Breeding: Slavonian Oak!

## Oak is Our Gold!



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# THANK YOU FOR ATTENTION!

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