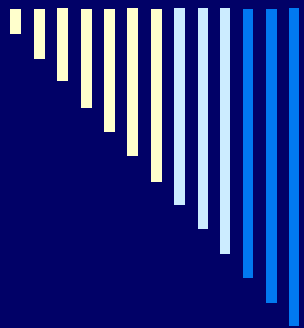


Activities in the frame of the project Virtual University

CZ Biom - Czech Biomass Association
Antonín Slejška



Main activities

- Creating of a web page of the project
- Writing examples of plants for energy utilization of wood
- Preparing of on-line questionnaire
- Promoting of Virtual University
 - At the fair „Země živelka“
 - Through the Internet

Web page of the project



- ❑ <http://www.biom.cz/vu/>
- ❑ English and Czech version
- ❑ Content: project summary, leaflet, questionnaire, examples, this presentation,...

Examples of plants for energy utilization of wood

biom.cz

Publikujte na Biom.cz informace o své organizaci!

CZ Biom | AEBIOM | ECN | Atlas OZE | English

Akce, články a novinky

Akce

Diskuse

Novinky

Články dle data

Články dle čtenosti

Témata článků

Články jinde

Autoři

Publikace

Odkazovník

Databáze subjektů

Burza

Stroje

Výpočty

Legislativa

Fotogalerie

Soubory

Zakázky a poptávky

Posudky o vlivu na ŽP

Encyklopedie

Spolupráce + RSS

Starý web CZ Biom

Váš osobní profil

Odhlášení

prohledávání Biom

☒ Články

☒ Novinky

☐ Odkazy

Examples of plants for energy utilization of wood

Wood-fired district heating plant in Ignalina, Lithuania

This project has been realised as a Swedish-Lithuanian bilateral project with support from the Swedish EAES Programme as part of Sweden's international climate-related energy programme.

Region: Lithuania

Large scale wood-fired CHP plant in Forssa, Finland

This 48MWth and 17,2 MWeI plant runs 100% on biomass, of which 20% is peat and 80% bark, saw dust, wood chips and other wood residues from local sources less than 50 km away.

Region: Finland

4,8-MW biomass heating plant in Norden, Germany

This wood-fired plant is a good demonstration project for a system integrated into existing infrastructure.

Region: Germany

Examples - detail

18 examples from
different european
countries.

Large scale wood-fired CHP plant in Forssa, Finland

This 48MWth and 17,2 MWeI plant runs 100% on biomass, of which 20% is peat and 80% bark, saw dust, wood chips and other wood residues from local sources less than 50 km away.



Background

The municipality in Forssa has a special interest in energy questions and is member of an EU-funded Energy Agency in the South of Finland. Faced with an increase in heating demand and the need to replace the old-fired boilers, the local, municipality owned utility (Forssan Energia Oy) built the then largest wood-fired CHP plant in Finland. The annual wood fuel demand is around 400,000 m³.

Technology

The power plant comprises a Foster Wheeler BFB boiler with steam parameters of 60 bar, 510°C and a rate of 22.8 kg/s. A Bubbling Fluidised Bed (BFB) boiler is preferred when biomass or similar low-grade fuels containing highly volatile matters are used. BFB is a cheaper solution than a Circulating Fluidised Bed (CFB). The 17,2 MW back pressure turbine is supplied by Asea Brown Boveri. The plant is equipped with a high level of emission control. The

Target area

♦ Cogeneration appliances ♦ Incineration of biomass ♦ Finland

Category

Region

Adresa: PO Box 111, 30101 - Forssa, okres: Zahraničí

Contact person: Erkki Vähätalo (Forssan Energia Oy)

Phone: +35 834126700

Fax: +35 834126750

E-mail: erkki.vahatalo@forssanenergia.fi

Economic data

Date of realization / start of operation: 1.9.1996

Investment cost: 16600000 EUR

Operational cost: 58000 EUR

Capacity for wood utilization:

Production of fuel:

Production of heat: 579600000 GJ/year


Production of cold:

Production of electricity: 54000000 kWh/year

➤ Detailed categorization

➤ Possibility of export of the data or
change of the design

Examples administration - list



Správa zpráv - Biom.cz - DF zařízení
biom007 [odhlásit](#)

[Zobraz](#) | [Přidat zprávu](#) | [Správa zpráv](#) | [Nastavení](#) | AA

Biom.cz - DF zařízení

Vyhledat Kategorie obsahuje

Seřadit Datum zveřejnění Sestupně

[Vyhledat](#) / [Vyčistit](#) [Uložit](#)

Ostatní zprávy

✓ Aktuální (29)

... připravené (0)

... expirované (0)

Zásobník (2)

Koš (3)

Různé

Vysypat koš

[Import CSV](#)

[Set Debug ON](#)

Zasíláno přes ?

Biom.cz - e-mailem

[Help](#)

Reference	Add a new example	URL	Date
<input type="checkbox"/> Wood-fired district heating plant in Ignalina, Lithuania	Edit this example	Link	8.9.2005
<input type="checkbox"/> Large scale wood-fired CHP plant in Forssa, Finland	Edit this example	Link	8.9.2005
<input type="checkbox"/> 4,8-MW biomass heating plant in Norden, Germany	Edit this example	Link	7.9.2005
<input type="checkbox"/> Biomass boiler on waste wood from maintenance in Jelenia Gora, Poland	Edit this example	Link	7.9.2005
<input type="checkbox"/> District heating plant at Oslo airport, Norway	Edit this example	Link	6.9.2005
<input type="checkbox"/> Biomass heating plant in Hostětín, Czech Republic	Edit this example	Link	6.9.2005
<input type="checkbox"/> Biomass heating boiler in Jindřichovice pod Smrkem, Czech Republic	Edit this example	Link	6.9.2005
<input type="checkbox"/> CHP plant on ORC process in Admont, Austria	Edit this example	Link	2.9.2005
<input type="checkbox"/> Wood-fired CHP plant based on ORC process in Lienz, Austria	Edit this example	Link	2.9.2005
<input type="checkbox"/> ORC cycle with absorption chiller at Fussach, Austria	Edit this example	Link	2.9.2005
<input type="checkbox"/> CHP plant based on Stirling engine in Oberlech, Austria	Edit this example	Link	2.9.2005
<input type="checkbox"/> Heating plant for new housing estate in Walsdorf, Germany	Edit this example	Link	1.9.2005
<input type="checkbox"/> Wood-fired heating plant at UK school	Edit this example	Link	1.9.2005
<input type="checkbox"/> Heating plant on wood and sludge in Sarpsborg, Norway	Edit this example	Link	1.9.2005
<input type="checkbox"/> Multi-purpose bioenergy plant Skelleftea, Sweden	Edit this example	Link	31.8.2005
<input type="checkbox"/> Wood-fired power station in Egghornough, England	Edit this example	Link	31.8.2005

Examples administration - form

The form
can be
translated
to english

The
access to
the
publishing
system
can be
enabled to
other
editors.

Švédsko
Norsko
Finsko

Kompostárny
Kotelny na biopaliva
Kogenerační zařízení

Pěstování fytomasy
Spalování fytomasy
Průmyslové využití rostlin

SANDBERGER ST 200
SANDBERGER ST 250
SANDBERGER ST 300

Bioplyn
Bionafta
Bioetanol

Used technology

Type	Sort	Equipment	Vybrané hodnoty
Kompostování	Spalování	Parní turbína	Energetické využívání
Anaerobní digestce	Zplyňování	Paroplynový cyklus	Spalování
Alkoholové kvašení	Kogenerace	Plynová turbína	
Reesterifikace		Mikroturbína	
Výroba biopaliv		Spalovací motor	
Energetické využívání		Palivový článek	
		Stirlingův motor	

Zvolit Zvolit Zvolit

City, district, postal code
Forssa, Zahraničí, 30101

Street and number
PO Box, 111

Title / name *
Large scale wood-fired CHP plant in Forssa, Finland

Short description *
This 48MWth and 17,2 MWe1 plant runs 100% on biomass, of which 20% is peat and 80% bark, saw dust, wood chips and other wood residues from local sources less than 50 km away.

Link to details
http://www.forssanenergia.fi

Vložte odkaz na referenci na jiném webu ve tvaru http://www.web.cz/reference.htm

[Zobraz Editor](#) [DOC/PDF/XLS/PPT načíst](#)

Background

The municipality in Forssa has a special interest in energy questions and is member of an EU-funded Energy Agency in the South of Finland. Faced with an increase in heating demand and the need to replace the old-fired boilers, the local,



On-line questionnaire - questions

Interest for bioenergy eLearning university

The questionnaire was prepared in the frame of the project: BIO ENERGY - Virtual University

1. Your highest reached education:

- ☐ Basic
- ☐ High school
- ☐ Bachelor
- ☐ University
- ☐ Postgraduate
- ☐ Other

2. Your employment:

- ☐ Student
- ☐ Professor
- ☐ Employee

3. Are you interested in taking the course?:

- ☐ Yes
- ☐ May be
- ☐ No

4. With which level of services would you be interested?:

- ☐ Minimum services : subscription < 1000 €
- ☐ Maximum services : subscription > 1000 €

5. In which topics are you most interested?:

(see the Summary of the pilot course)

6. How many hours are you able to study weekly?:

- ☐ 1 hour
- ☐ 2 hours
- ☐ 5 hours
- ☐ 10 hours
- ☐ 15 hours

Your answer was succesfully sent to ITEBE.

Thank you for your answer to our questionnaire.

Now you can see the answers:

1. Your highest reached education
2. Your employment
3. Are you interested in taking the course?
4. With which level of services would you be interested?
5. In which topics are you most interested?
6. How many hours are you able to study weekly?
7. Would be your employer interested to be a partner/sponsor?
8. Company/Institute, Website, Country
9. Remarks

Or you can go:

- ◆ [back to the project,](#)
- ◆ [to the main page of Biom.cz.](#)

Questionnaire - answers

- The answers are automatically summarised
- The data can be exported to CVS
- The design can be changed

Organisations, web sites and regions

Organisation	Web site of the organisation	Country
AGROINTEG s.r.o.	http://www.agrointeg.cz	
Technical University	http://www.vsb.cz	Czech Rep.
	http://www.agtconsulting.wz.cz	Czech Republic
	http://	Czech Republic
CZ Biom - České sdružení pro biomasu	http://biom.cz	Czech Republic

Answers to the question "With which level of services would you be interested?"

Minimum services : subscription < 1000 €	Maximum services : subscription > 1000 €
1	0
1	0
1	0
1	0
1	0
Sum total	
5	0
Minimum services : subscription < 1000 €	Maximum services : subscription > 1000 €

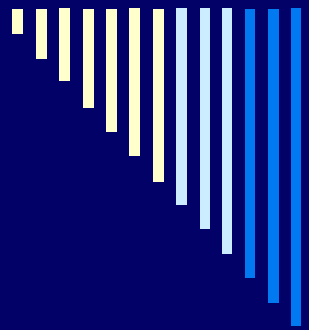
Answers to the question "Your highest reached education"

Basic	High school	Bachelor	University	Postgraduate	Other
0	0	0	0	1	0
0	0	0	0	1	0
0	0	1	0	0	0
0	0	0	0	1	0
0	0	0	1	0	0
Sum total					
0	0	1	1	3	0
Basic	High school	Bachelor	University	Postgraduate	Other

Promoting of the Virtual University – Země Živitelka

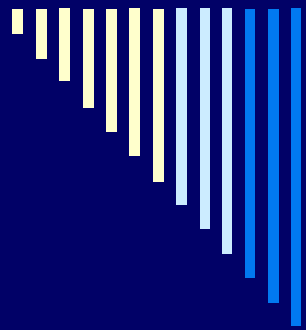
- ❑ The oldest and largest agricultural fair in Czech Republic
- ❑ Visitors are mainly farmers and general public.
- ❑ Not many leaflets were distributed.





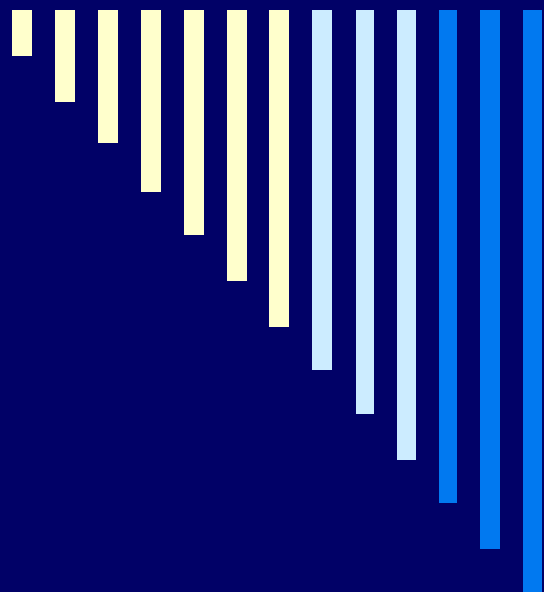
Promoting of the Virtual University - web

- Link from list of projects
- Published one news about the questionnaire



Promoting of the Virtual University – other possibilities

- Seminars, conferences, fairs
- Press releases
- Logo of the Virtual University
- Text advertisements
- Communication with universities, companies and ministeries



Thank you for your
attention.

CZ Biom – Czech Biomass Association
Antonín Slejška
