

Energy politics and climate protection

The future of growth; Riga Conference 23.02.2012

Innovations in the energy sector as
engines of the economy

**“Green technologies as power engines of the
economy”**

Dr. Bernhard Dietz; Pyrox GmbH Germany

Pyrox power plant technology as an example for the chance to green economy

Pyrox is an innovative company which has developed a new wood gasification based power plant technology

Our target:

Create the solution for next generation of energy production

- neutral carbon dioxide balance; no greenhouse effect
 - high efficiency, no waste production
 - only natural resources, no competition to food production
 - realisation on an industrial standard
 - energy production independent from weather conditions
 - basic load production of heat and electricity
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Why wood gasification ?

Carbon dioxide balance is neutral in case of sustainable wood management

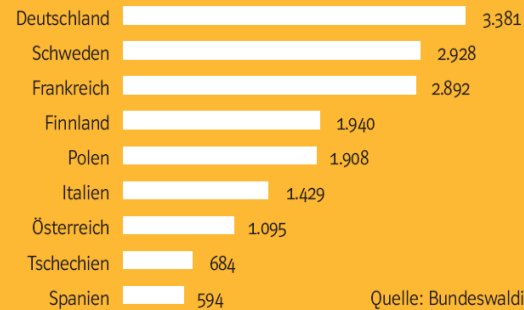
Gasification has the highest efficiency because cogeneration with gas engines are possible

Total 66 %: 30 % electricity, 36 % heat

Potential f.e. Germany:

The not used part of yearly new growing wood (50 Mio. m³) would be enough for 2000 co-generation power plants each with 1 MW el. and 1,2 MW th.

Holzvorräte in Europa in Mio. m³



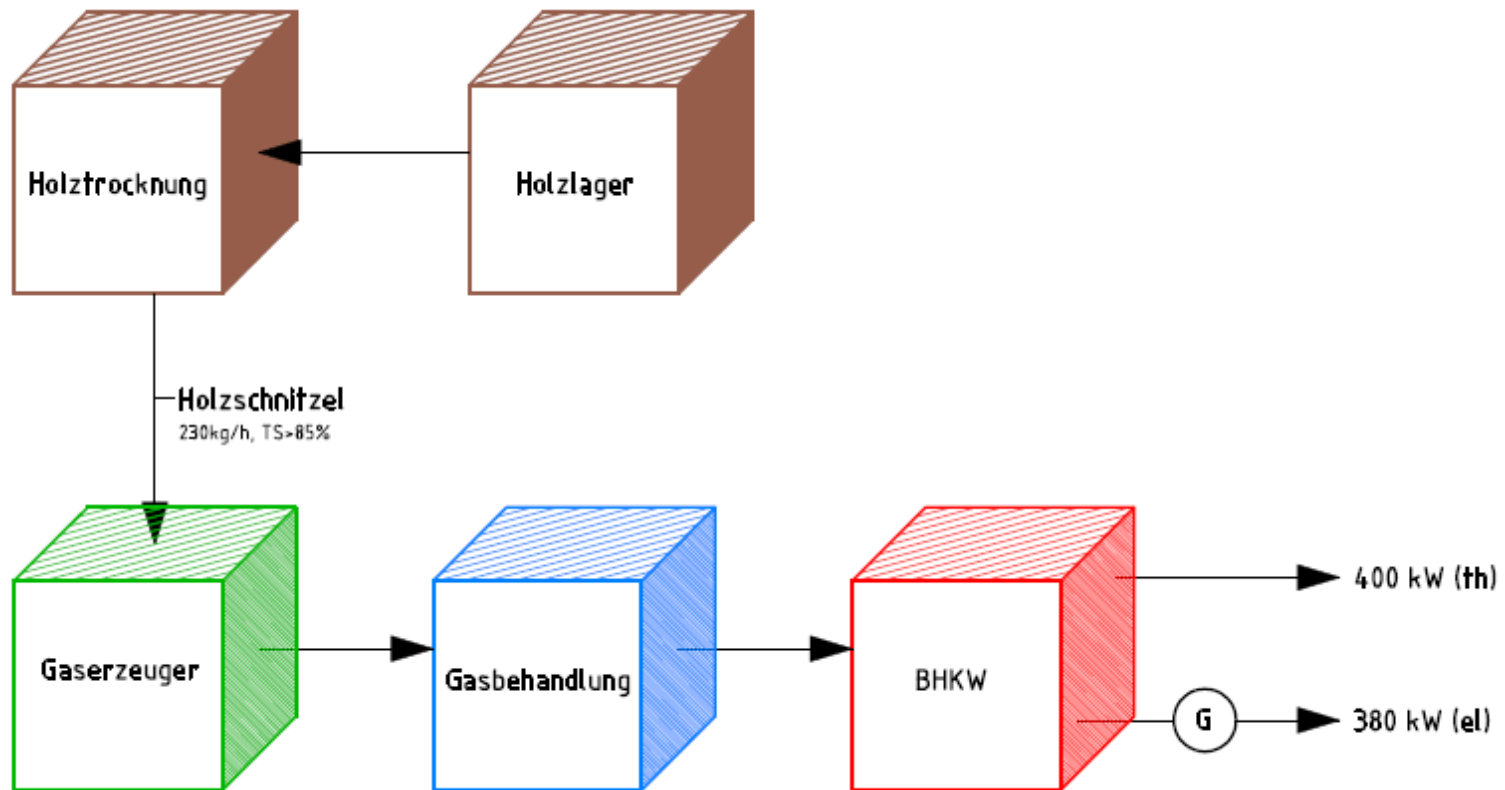
Quelle: Bundeswaldinventur² (BWI²), 2004

Vorrat und Nutzung von heimischem Holz



Quelle: BWI², 2004

Basics of the Pyrox technology



Basic numbers of Pyrox woodgas technology

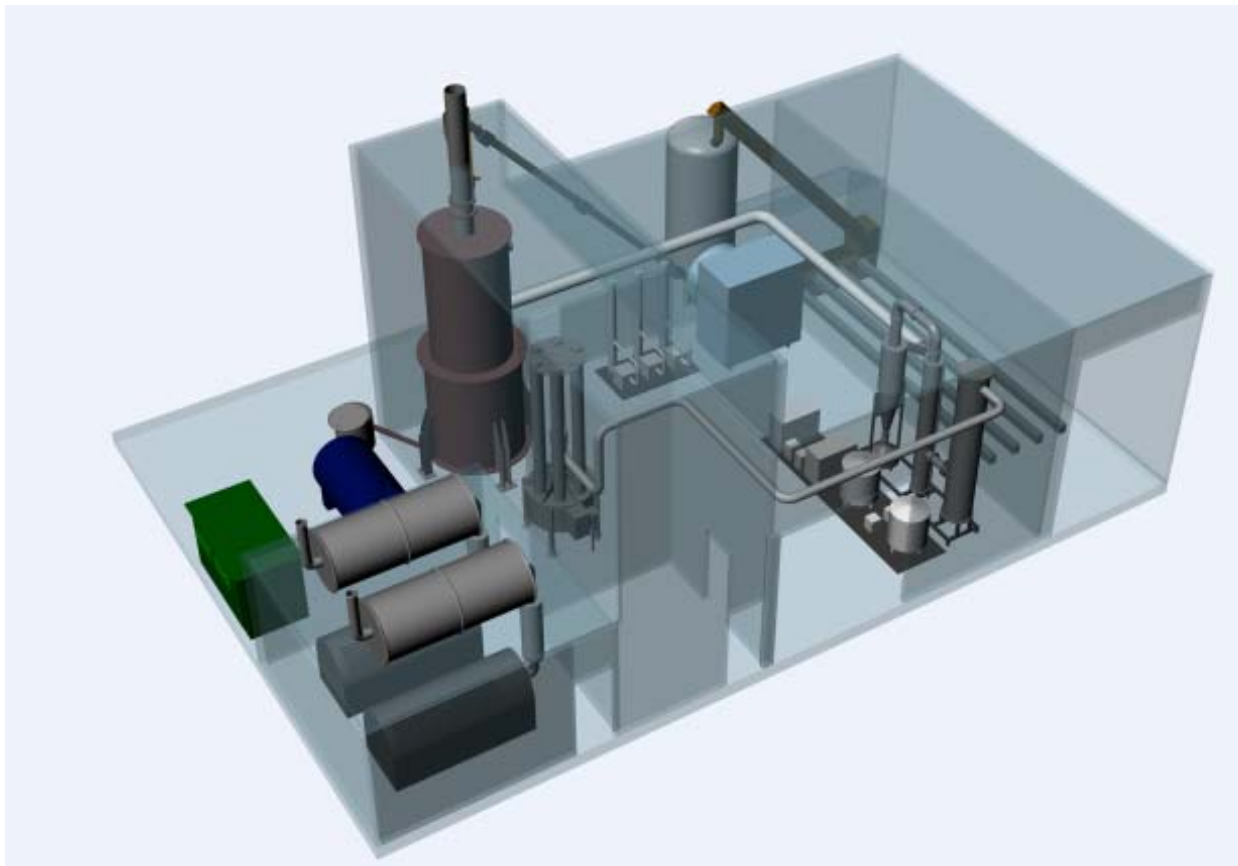
Ressources: natural wood chips, all wood qualities possible

Data:

- 1000 KWe_{el.}, 1200 KW_{th.}
 - wood consumption 1100 kg/h (wood chips, w = 40 %)
 - efficiency ca. 30 % (el.), 36 % (th.)
 - total use about 66 %
 - full automaticly operation
 - only waste is wood ash, can be used as fertiliser
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Structure of a Pyrox Power plant



Pyrox power in Mondovi/ Piemont Italy



Pyrox power plant in Mondovi/ Piemont Italy





Pyrox power plant in Mondovi/ Piemont Italy



Pyrox power plant and green houses (building process) in Mezvidi/ Latvia



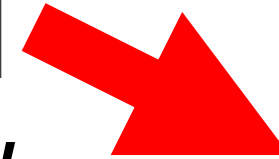


Value creation by using green technology

1t wood chips
W 40 (3000 KWh)
30 €/t



electricity
900 KWh
-> 160 €/t



heat
1200 KWh
-> 40 €/t

8.000 t/a x 170 €/t = 1.360.000 €p.a./MW

Latvian (energy) wood chip export (2011):

1,8 Mio. t/a = ca. 300 Mio.€/a

(new potential for economical growth)

(acc. to 300 MW_{th}, ca. cap. of consumption for Riga district heating)

net. 170 €/ t

Summary

the next generation power plant is available

neutral carbon dioxide balance

no waste water

industrial standard realized

high efficiency (66 %)

profitable

let's use it!

9. Contact

Pyrox GmbH

Dr.-Ing. Bernhard Dietz

Ruhrallee 9
D-44139 Dortmund
Germany

Tel.: +49 231 95250
mobil: +49 172 840 84 89

bernhard.dietz@pyrox-germany.de

New TEC Latvija SIA

Edgars Romanovskis

Riga
Latvia

mobil:+371 29135221
edgars@newtec.lv
