PROLiGNIS

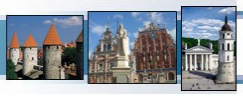
renewable IDEAS

PROLiGNIS ENERGIE CONSULTING GMBH & CO. KG

17. November

2009

AHK Deutsch-Baltische Handelskammer in Estland, Lettland, Litauen
Saksa-Balti Kaubanduskoda Eestis, Lätis, Leedus
Vācijas-Baltijas Tirdzniecības kamera Igaunijā, Latvijā, Lietuvā
Vokietijos ir Baltijos šalių prekybos rūmai Estijoje, Latvijoje, Lietuvoje



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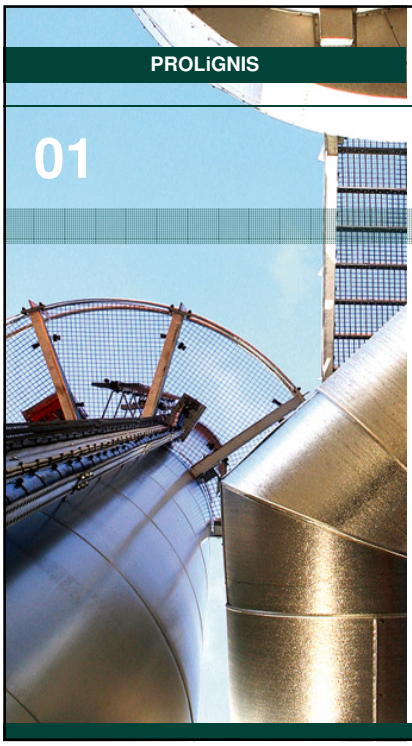
01



**PROLiGNIS – Consulting Company, focused on**

Project planning and development
- System design
- Supply management
- Operational- and Project management

**of wood-fired power plants based on regrowing material**

**Found 2006 by specialist in**

- Energy sector
- Forestry
- Finance services

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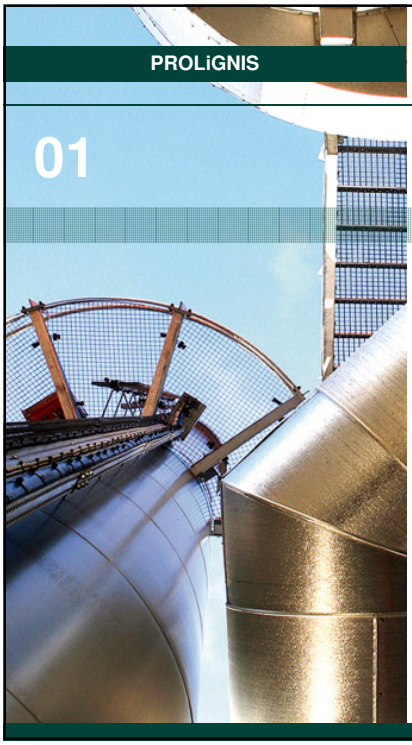


**Our Services**:

- We plan and organize construction of wood-fired power plants with cogeneration technology

- We guarantee long-term security of raw material supplies

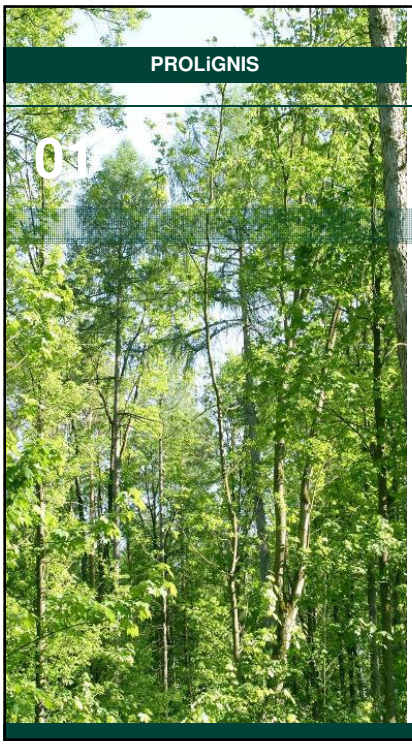
- We guarantee all-year-long supplies of heat and stabile supplies of electricity

- Together with our investors, we take care of necessary funding (money)

**Our Customers get:**

- Process steam and thermal heat 24 hours a day all year long

- Stabile electricity supplies



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01

## Figures, Data, Facts

**Company found:** 2006

**Number of employees:** 14

**Project turnover:** ca. 150 Million Euro

**Turnover 2008:** ca. 6,3 Million Euro p.a.

**Domicile:** Ingolstadt

## Scientific cooperation

**Universität Augsburg:** Prof. Dr. Dr. Bernd Wagner

**Fachhochschule Ingolstadt:** Prof. Dr. Wilfried Zörner

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## Goals and objectives

Project development and long term management of climate and environmental friendly wood-fired power plants

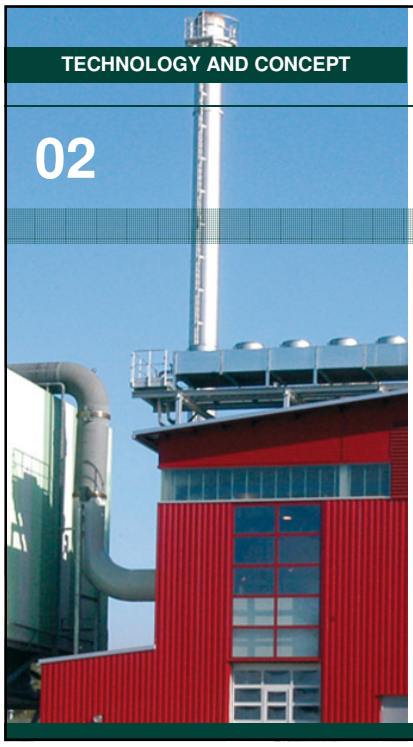
Production of clean electricity and ecological heat from renewable energy sources

Efficiency increase through cogeneration of heat and power

Using of domestic regrowing raw material

Sustainable energy production by modern $CO_2$-neutral power plants

Support of long term scientific projects „Regenerative energy“



TECHNOLOGY AND CONCEPT

02

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## Technology and concept

Wood-fired power plants with heat and power cogeneration technology based on regrowing raw materials

Reference plants: 6 plants of type Biopower 5 produced by Wärtsilä Finnland

Installed power
20,5 MW

Fresh steam production
21,7 t/h

Fresh steam parameter
485°C, 63 bar

Electricity output
5,57 MW

Thermo output
10 MW

Raw material need
ca. 65.000 t/year

TECHNOLOGY AND CONCEPT

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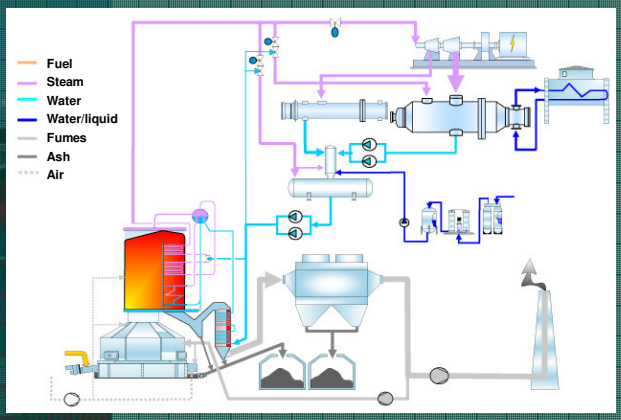

RAW MATERIALS

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## Supply of biomass material
(regrowing raw materials)

Tree-cut from maintenance measures (e.g. along roads, power lines, canals)

Woodchips from scrap wood in forests

Busch-cut and loppings from landscape maintenance

RAW MATERIALS

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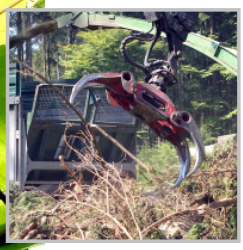
## Wood processing in forest



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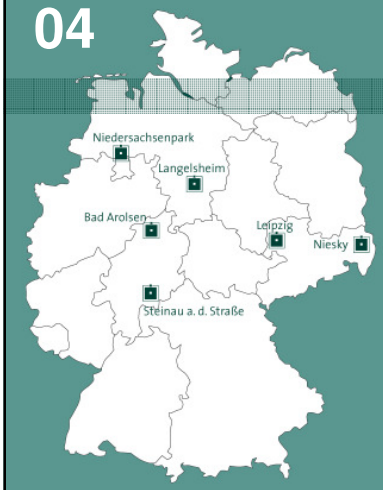


## Reference – Projects
## Bayernfonds BestEnergy 1 (BBE 1)

**PORTFOLIO OF 6 WOOD-FIRED POWER PLANTS IN GERMANY**

Investment volume BBE 1
145 Mio. EUR

Max. electricity production p.a.
up to 270.000 MWh

Max. heat production p.a.
up to 480.000 MWh

Max. raw material need p.a.
ca. 380.000 t

REFERENCE

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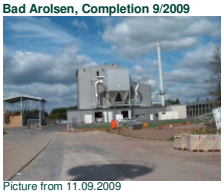
**Bad Arolsen, Completion 9/2009**



Picture from 11.09.2009

**Niedersachsenpark, Completion 4/2010**

Picture from 10.09.2009

**Langelsheim, Completion 11/2009**

Picture from 28.08.2009

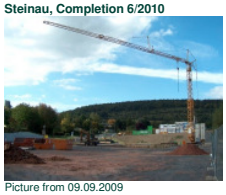
**Niesky, Completion 8/2010**

Picture from 02.06.2009

**Leipzig, Completion 10/2009**

Picture from 30.07.2009

**Steinau, Completion 6/2010**



Picture from 09.09.2009

## ENVIRON. AND CLIMAT PROTECTION

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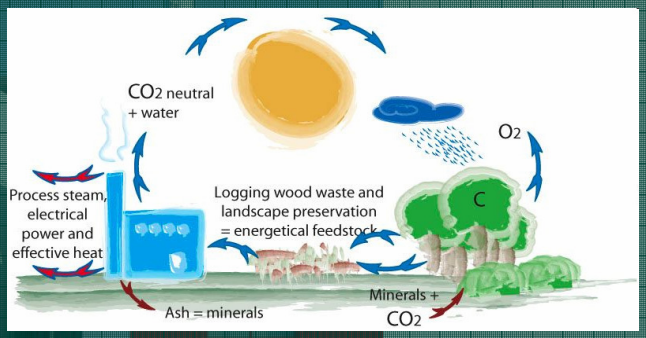


**Climate and environmental friendly energy supply from heat and power cogeneration**

**$CO_2$ neutral energy production from regrowing materials**

**Essential contribution to environment and climate protection (energy production of one power plant correspondent to an equivalent of ca. 10 mil. Litre heating oil and saves ca. 25.000 t $CO_2$ p.a.)**

## PROJECT BALTIC STATES

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### Wood-fired power plants - Baltic states

### Why Baltic states? - 3 main reasons:

**Raw materials**

On the average is 39% of all Baltic states covered by forest

**EU membership**

The membership of Baltic states in the EU guarantees stabile economic and legal environment for our investors

**Human resources**

The labour market in Baltic states provide an amount of high qualified employees that are necessary for building and operating projects in the energy sector

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## Wood-fired power plants - Baltic states

### Advantages for Baltic states

Capital inflow in the times of global crisis

Transfer of technologies and unique know how

Both direct and indirect (local suppliers) creation of new jobs

Contribution to the EU-commitment, that promised to increase the share of renewable-energy sources in the energy mix

Independency on foreign energy supplies and fossil fuel prices



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## Wood-fired power plants - Baltic states

### Next steps

Establishing cooperation with suitable partners

Defining concrete locations for project placing with connection to the grid and future heat customers

Taking advantage of EU-funds and subsidies

Starting up the first projects

## CONTACT

07

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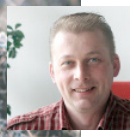

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**Thank you for your attention!**

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