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**Perguntas / Questions**

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**Pergunta nº: 853/Question nº: 853**

**Título: /Title: *Eucalyptus* wood and charcoal manufacturing processes**

Por: / By: Diesen Magnus

**E-mail:** magnus.diesen@tkk.fi

**Questão: /Question:**

**Dear Celso,**

My name is Magnus Diesen and I am working at the Helsinki University of Technology at the Department of Forest Products Technology. I have received your name from a friend of mine, Doctor Herbert Sixta. I have understood that the steel industry in Brazil needs and uses a lot of *Eucalyptus* based charcoal to produce steel. I would be very interested to learn more about this process.

1. Am I right assuming that *Eucalyptus* first is gasified thus producing energy?

2. As a "residue" of above process charcoal is generated. This can be transported to a steel mill or alternatively to a power plant to generate more energy.
3. If above understanding is correct, how much *Eucalyptus* is used in the above process in Brazil?
4. Where could I find more information of this process?

Thank you for your help.

**Regards**
**Magnus Diesen**

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**Resposta por Celso Foelkel: / Answer by Celso Foelkel:**

**Dear Magnus,** good morning. Eu
You are just right, the wood from *Eucalyptus* trees are very much used to the manufacture of charcoal for the Brazilian steel industry. This happens mainly in the state of Minas Gerais.
However, the technologies are still primitive in some cases, and more updated in others. The yield based on dry wood is about 40%.
This means that close to 60% of the wood weight in the pre-historic technologies is wasted - going to deplete the environment as $CO_2$ emissions. There are also more modern techs, you may notice this. I'm not sure about the ratio of them. Perhaps you could get this information from a friend of mine Professor Dr. Jose Otavio Brito, from the University of Sao Paulo - jotbrito@esalq.usp.br
There are attached some addresses you may watch: two videos (both in Portuguese). In both, there are mentions about the old and the most recent technologies being used for charcoal-making.
Also, you may visit a website to download speeches from a Charcoal Conference it happened in Brazil in 2008.
Watch the movies and download the speeches, even being in Portuguese, you may better understand all the process:
Videos:
http://florestalnews.mkt9.com/registra_clique.php?id=H|23146092|22010|10450&url=http%3A%2F%2Fwww.painelflorestal.com.br%2Fmidias%2F220_bl.wmv

http://www.painelflorestal.com.br/exibeVideo.php?id=375

Charcoal Event:
http://painelflorestal.com.br/exibeNews.php?id=1784

After your homework, get back.
**Best regards**
**Celso**

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**Outros Comentários: / Other Comments:**

**Por: / By:** Diesen Magnus

**E-mail:** magnus.diesen@tkk.fi

Dear Celso,
Thank you very much for your kind and quick answer.
I will certanly look into the websites you kindly gave me.
The use of biomass, including wood and *Eucalyptus* in particular, to generate energy, both electricity and heat, with modern technology, is in my opinion an excellent way to replace non-renewable energy sources. The way I understand it there are very few (if any?) comercial, full-scale industrial application yet due to the gasification process, that still is in development phase.
Thank you again for your kind response.
With best personal regards
Magnus Diesen

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**Outros Comentários: / Other Comments:**

**Por: / By: Celso Foelkel**

**Dear Magnus**, you are absolutely right, it is an excellent option to be implemented.
**Regards**
**Celso**