

To:

biomass.conference@etaflorence.it

Suggestion to

**16th European Biomass Conference and Exhibition,
Valencia, 02-06 June, 2008**

From Professor Dr. Peter Lohmander

Dear Conference Organizers:

In case there is still room, I would be willing to give the following presentation.

Please let me know your decision via a reply to my e-mail address.

My very best regards from Sweden,

Peter Lohmander

Professor

**Guidelines for economically rational and coordinated dynamic development
of the forest and bio energy sectors with CO₂ constraints**

ABSTRACT:

This study focuses on economic optimization of the total present value of the forest and bio energy sectors in a region, for instance a nation. Empirical information from Sweden is used as an example. Sweden is a country with very large forest resources. The standing volume has been growing very much since the year 1920 since the harvest level presently is, and historically has been, very much lower than the growth. A general mathematical proof is given that explicitly shows that the optimal harvest level and the total capacity level in the forest and bio energy sectors should be increased very much as soon as possible. Two kinds of new interactive optimization software have been developed and will be demonstrated. These are now possible to use directly from the internet. Numerical optimization shows that the harvest level and the total capacity in the forest and bio energy sectors should be increased by approximately 50% in order to optimize the total present value. The optimal dynamic time path of the forest resource is calculated and described in the presentation. The importance and consequences of alternative levels of growth in new plantations via improved plant material and other forest management methods are demonstrated. *Increased forest harvesting and new plantations, in combination with energy production, CO₂ separation and CO₂ storage, will reduce the CO₂ contents of the atmosphere. With a dynamic sequence of this process, any future CO₂ level can be reached!*

References:

Lohmander, P., *Ekonomiskt rationell dynamisk utveckling för skogen, skogsindustrin och energiindustrin i Sverige*, Energy Forum, Stockholm, February 2008

<http://www.energyforum.com/images/ef2008lohmander-1.pdf>

<http://www.energyforum.com/events/conferences/2008/c802/program.php>

<http://www.lohmander.com/EF2008/EF2008Lohmander.htm>

Note: Before the conference, the report will be translated to English. In the present version of the report, the mathematical proofs in the appendices and the software are given in English.

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