



Novozymes and **Inbicon** appreciate the opportunity to submit our comments to the European Commission's ILUC Consultation.

Novozymes (www.novozymes.com) is the World's leading producer of enzyme solutions for bioethanol. We work closely with partners worldwide including several in Europe¹ on demonstrating that second generation bioethanol is ready to be commercialized.

Inbicon (www.inbicon.com) is a company developing technology for producing ethanol, fuel and animal feed of non-tree cellulose based biomass. Inbicon has operated a pilot plant since 2003 in Skærbæk at Fredericia, Denmark and is presently operating a demonstration plant in Kalundborg, Denmark. The plant converts wheat straw into ethanol, feed and lignin pellets. Inbicon is a subsidiary of DONG Energy A/S, Denmark.

Novozymes and Inbicon believe that second generation bioethanol holds out a great opportunity for the EU in terms of job creation and economic growth, energy independence and environmental protection. However, we believe that in order to encourage the roll-out of this innovative industry, improved framework conditions are needed at both the EU and member state level.

1) Do you consider that the analytical work referred to above, and/or other analytical work in this field, provides a good basis for determining how significant indirect land use change resulting from the production of biofuels is?

The analytical work is weak in terms of its assessment of the sensitivity of the modelling outcomes to changes in the projected ratio of conventional to second generation bioethanol. This is a major shortcoming as recent work (such as the US Environmental Protection Agency²) shows that the production of second generation bioethanol has no or even positive indirect land use change effects.

Furthermore, the analytical work fails to make the case for policies that could help spur advancements in second generation biofuel technologies that would directly address ILUC

¹ e.g. Italy, Spain, France, UK, Sweden, Finland and Denmark

² US EPA: Renewable Fuel Standard (RFS-II) Regulatory Impact Analysis, February 2010 (<http://www.epa.gov/oms/renewablefuels/420r10006.pdf>). See e.g. figure 2.6-12

concerns, such as second generation bioethanol as a strategic response to ILUC concerns. Attention should be given to [a recent study](#)³ conducted by Bloomberg New Energy Finance which shows that advanced ethanol produced from European agricultural and forestry residues and municipal solid waste can replace between 52 and 62% of the EU's imported fossil gasoline by 2020 with no direct or indirect land use change effects. This is due to the fact that second generation bioethanol are produced from waste and residues which today are not exploited. Hence, no direct land use changes are needed and the production will not result in any indirect land use changes.

2) On the basis of the available evidence, do you think that EU action is needed to address indirect land use change?

On the basis of the Bloomberg New Energy Finance study, it is clear that ambitious EU action to stimulate investment in European second generation bioethanol production capacity based on sound scientific evidence of its advantages, would greatly help relieve concerns over possible ILUC effects of bioethanol.

3) If action is to be taken, and if it is to have the effect of encouraging greater use of some categories of biofuel and/or less use of other categories of biofuel than would otherwise be the case, it would be necessary to identify these categories of biofuel on the basis of the analytical work. As such, do you think it is possible to draw sufficiently reliable conclusions on whether indirect land use change impacts of biofuels vary according to: feedstock type, geographical location land management?

The use of waste and residues as feedstock for second generation bioethanol that today have no use result in no direct or indirect land use changes – irrespective of geographical location. Refer to recent studies by Bloomberg New Energy Finance⁴ and US Environmental Protection Agency⁵.

³ Link to study:
http://bioenergy.novozymes.com/files/documents/BNEF_report_nextgeneration_biofuels.pdf

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http://bioenergy.novozymes.com/files/documents/BNEF_report_nextgeneration_biofuels.pdf

⁵ US EPA: Renewable Fuel Standard (RFS-II) Regulatory Impact Analysis, February 2010 (<http://www.epa.gov/oms/renewablefuels/420r10006.pdf>). See e.g. figure 2.6-12

4) Based on your responses to the above questions, what course of action do you think appropriate?

A. Take no action for the time being, while monitoring impacts including trends in certain key parameters and, if appropriate, proposing corrective action at a later date Please say how the monitoring should be done and what these parameters should be.

B. Take action by encouraging greater use of some categories of biofuel Please say which biofuels, why and what sort of encouragement should be given.

C. Take action by discouraging the use of some categories of biofuel Please say which biofuels and why, as well as what sort of measure should be taken,

Novozymes and Inbicon support option B: *take action by encouraging greater production and use of second generation biofuels.*

If the European Union is to realize the benefits of second generation bioethanol, it must rapidly introduce a much more ambitious legislative framework that helps entrepreneurs overcome the market and technical barriers that currently undermine investments in the sector. The very low projected use of second generation bioethanol in the recently submitted National Action Plans confirms our concerns that member states are not planning to put in place supporting measures: If no further support measures are implemented, the European Union will not exploit the potentials or reap the environmental and economic benefits offered by this technology.

Market based barriers

The Renewable Energy Directive (RED) imposes no mandatory targets for second generation bioethanol so the only support mechanism in place for second generation bioethanol is the so-called “double counting” mechanism which ensure that second generation biofuels count double towards the target of 10% renewable energy in transportation by 2020.

The value and attractiveness of second generation bioethanol depends on its relative cost compared to conventional bioethanol and gasoline. Being a relatively mature industry, conventional bioethanol benefit from attractive market prices making it relatively cheap for oil companies to meet EU’s 10% targets without double counting. As an emerging industry, second generation bioethanol - with currently high but rapidly declining prices - requires temporary support in order to compete with conventional bioethanol and gasoline. Double counting on its own is not enough to overcome the price advantage of conventional gasoline and bioethanol.

Technical barriers

The infrastructure for blending, storing and transporting liquid fuels creates several technical barriers for oil companies to take advantage of double counting. As an illustration of this,

gasoline quality (e.g. the octane level) is adjusted at the beginning of the refining process according to the expected ethanol blend further downstream, so an oil firm cannot decide at a later stage to switch from conventional to half volume of second generation bioethanol. Moreover, the practice of oil companies sharing storage facilities at various stages in the supply chain further underscores the need for standardized gasoline.

To remedy this situation, the first priority is to introduce an EU-wide mandate for biofuels production pathways that - with reference to sound scientific work carries - no or even negative ILUC effects such as second generation ethanol. European policy-makers must also introduce incentives for the collection of the biomass suited for the production of biofuels following these production pathways through biomass assistance programmes and the Common Agricultural Policy.

The US, China and Brazil are all advancing rapidly in the area of second generation bioethanol thanks to ambitious targets and ambitious policy frameworks, and there is every reason to believe that Europe – with the necessary framework conditions in place – could do the same. Double counting represented an important first step towards building this dynamic sector, but it is not enough. Without the additional targets and incentives tools, Europe will not reap the full benefits of second generation bioethanol.

Novozymes and Inbicon would welcome the opportunity to discuss any of the above comments further and the two organisations can be contacted via the following contact details:

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