
Regulating sustainable bioenergy – are we on the right track?

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Outline

- Why bioenergy?
 - Bioenergy policies
 - Sustainability considerations
- Regulatory approaches to ensure sustainability
 - Legal challenges
 - The EU sustainability criteria for biofuels
 - Other regulatory options?
- "Non-regulatory" approaches?
- On the right track..?

Why bioenergy?

- Overall arguments:
 - Reduce reliance on fossil fuels
 - Mitigate climate change
 - Underlying agendas (bio-industry, agricultural subsidies)?
- Defining "bioenergy":
 - Energy production based on biological material (biomass)
 - Types of feedstock: food crops, energy crops, wood, residues, waste
 - Types of product: liquid, gaseous, solid
 - Types of use: transport, heating, electricity
- NB: increased interest in biomass for other purposes (the biobased society)

Bioenergy policies...(and pressures)

- International Energy Agency (IEA, 2008):
 - Potentially more than 20 % bioenergy of world energy supply by 2050
 - = doubling of the total amount of plant material harvested from the planets land (EEA SC, 2011)
- EU (Energy Package, 2008):
 - 20 % RE by 2020 (10 % RE in transport by 2020)
 - 10 % "biofuels" require 4,5 mio ha land (= DK)
- DK (Energy Agreement, 2012):
 - 35 % RE by 2020 (primarily wind, biogas a.o. biomass)

Sustainability considerations

- Environmental, land use and climate issues (biodiversity, water, soil, carbon stock balance, fertilisers/pesticides etc.)
 - GHG emissions (feedstock/product dependent)
 - Direct land use changes (dLUC)
 - Indirect land use changes (iLUC)
- Social issues
 - Fuel for food debate
 - Local communities, production etc.

Regulatory challenges

- Addressing complex sustainability issues
 - How to regulate iLUC?
 - How to balance different arguments and concerns related to different types of bioenergy?
 - How to make different types of RE supplementary?
- Fragmented regimes, e.g.
 - Trade, energy, climate, environment, agriculture
 - International, regional (EU), national
- Transnational dimensions
 - Ensuring "sustainable" production in other countries, e.g. EU biofuels sustainability criteria

EU 2009 Renewable Energy Directive

- 20 % renewable energy (RE) by 2020
- Min. 10 % RE in transport by 2020
- Sustainability criteria for biofuels (RED art. 17)
 - To be counted within the 10 % target (or receive financial support)
 - Complex "compliance" system
 - Min. GHG emission savings: 35 % (50 % by 2017)
 - "No go areas": high biodiversity value land, high carbon stock land (e.g. wetlands), peatland
 - NB: iLUC not (yet) included in the criteria
- Sustainability criteria for other bioenergy sources? pending ..(MS criteria and business schemes)!

EU "compliance" system

- Compliance assessment at member state level
- Economic operators shall arrange for an adequate standard of independent auditing by
 - Voluntary schemes (recognised by the Commission),
 - Bilateral or multilateral agreements (with the EU)
 - Adequate information and documentation

Are the EU sustainability criteria appropriate?

- Addressing the complex sustainability issues?
 - GHG savings have been questioned
 - How to incorporate iLUC?
 - Calculation models (GHG) – high uncertainty
- Fragmented or integrated regime?
 - Designed to accommodate WTO concerns, but
 - Will the complex certification scheme work?
- Transnational dimensions
 - "eco-imperialism" (Lin, 2011)?

Regulatory options?

- Direct regulation, e.g.
 - Product restrictions
 - NB: WTO and trade law
 - Protected areas/habitats or cultivation restrictions
 - NB: national sovereignty
- Indirect regulation, e.g.
 - Economic (dis)incentives (subsidies, taxes etc.)
 - Certification schemes
 - Labelling schemes
 - Sustainability criteria

Non-regulatory options?

- Purely voluntary certification schemes
 - Avoid “uniform” definitions of sustainability
- Information and transparency
 - Provide reliable information about bioenergy and sustainability

What land use changes can we regulate?

- ❑ **Conversion of food crops to "fuel" crops**
 - Discourage via market mechanisms
- ❑ **Conversion of uncultivated land to cultivated land**
 - Difficult to address via market mechanisms
 - Direct protection of valuable areas



On the right track ...?

- ❑ **Emergence of new (transnational) modes of regulation (e.g. EU sustainability criteria)**
 - May encourage sustainable bioenergy if carefully designed
- ❑ **Need to reconsider "simple" promotion of bioenergy**
 - Promote sustainable bioenergy only ("additional" biomass and waste)
- ❑ **Need to reconsider other regulatory options re. non-GHG concerns, e.g.**
 - Strengthen protection of valuable resources (biodiversity, land, water, soil and air)
 - Revitalise national and international environmental law!