



## Challenges and Downsides of biofuels

---

AGRIEnergy Conference:

Challenges and Downsides of the EU Biofuel Target

Christian Hey  
EEAC Energy Working Group/SRU

Brussels, May 19<sup>th</sup> 2008



**„biomass is not an infinite resource“  
Limiting Factor for domestic biomass is available  
land**

---

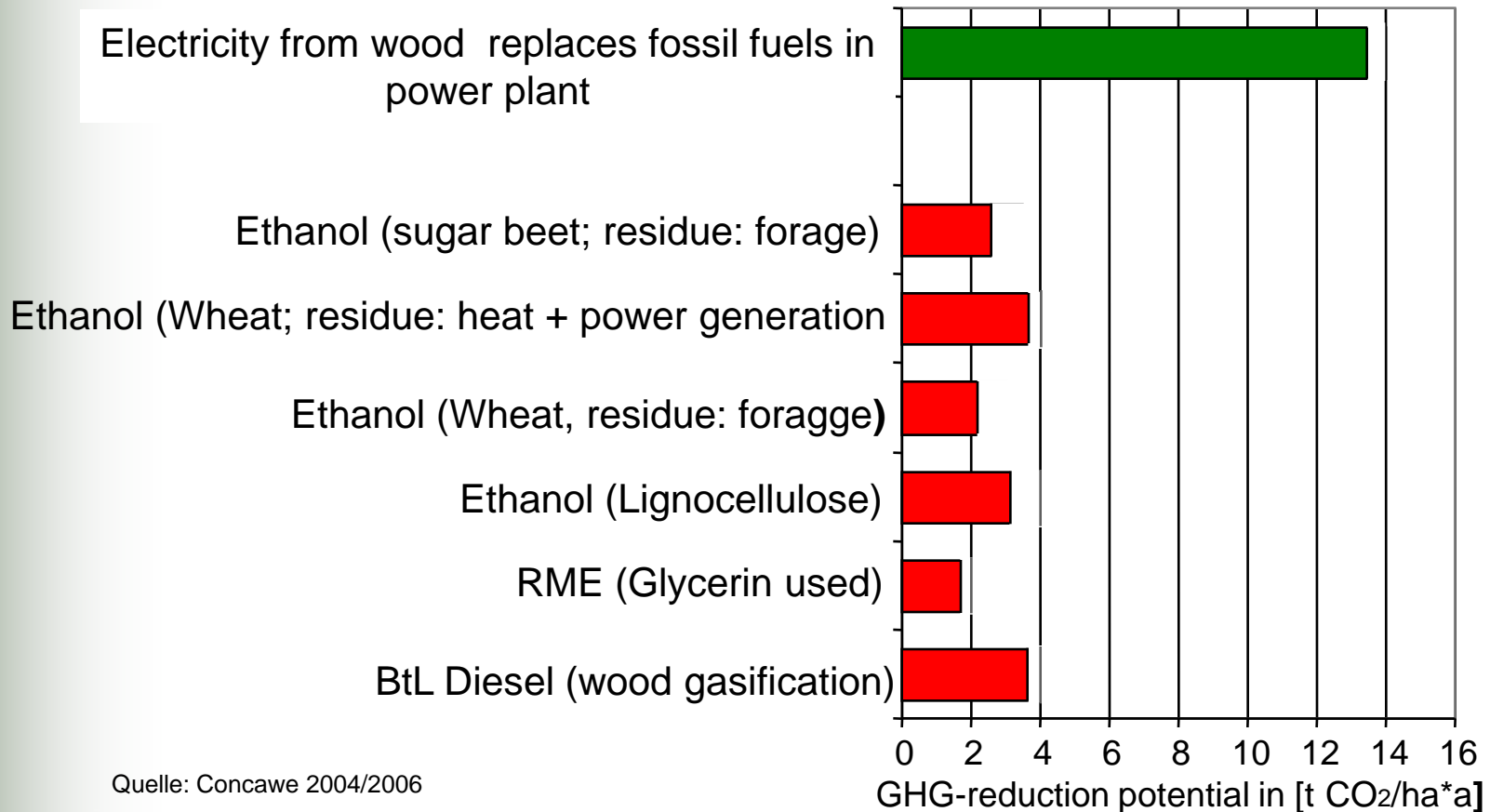
**Back to the Envelope Calculation for EU 25**

Available land potential 2030:	20,0 mio ha (EEA,2008)
- Land use for 10% biofuels (no imports/30% 2nd generation)	19,1 mio ha (DG AGRI)
= Remaining land for meeting 20% REN Target	0,9 mio ha

*95% of available land in EU for meeting ca. 15% of  
REN Target: a wise priority?*

## ... A scarce resource needs to be used most effectively for climate mitigation

Potentials for saving of GHG emissions of different biofuels compared to better uses:



Quelle: Concawe 2004/2006

# ... and also efficiently ....

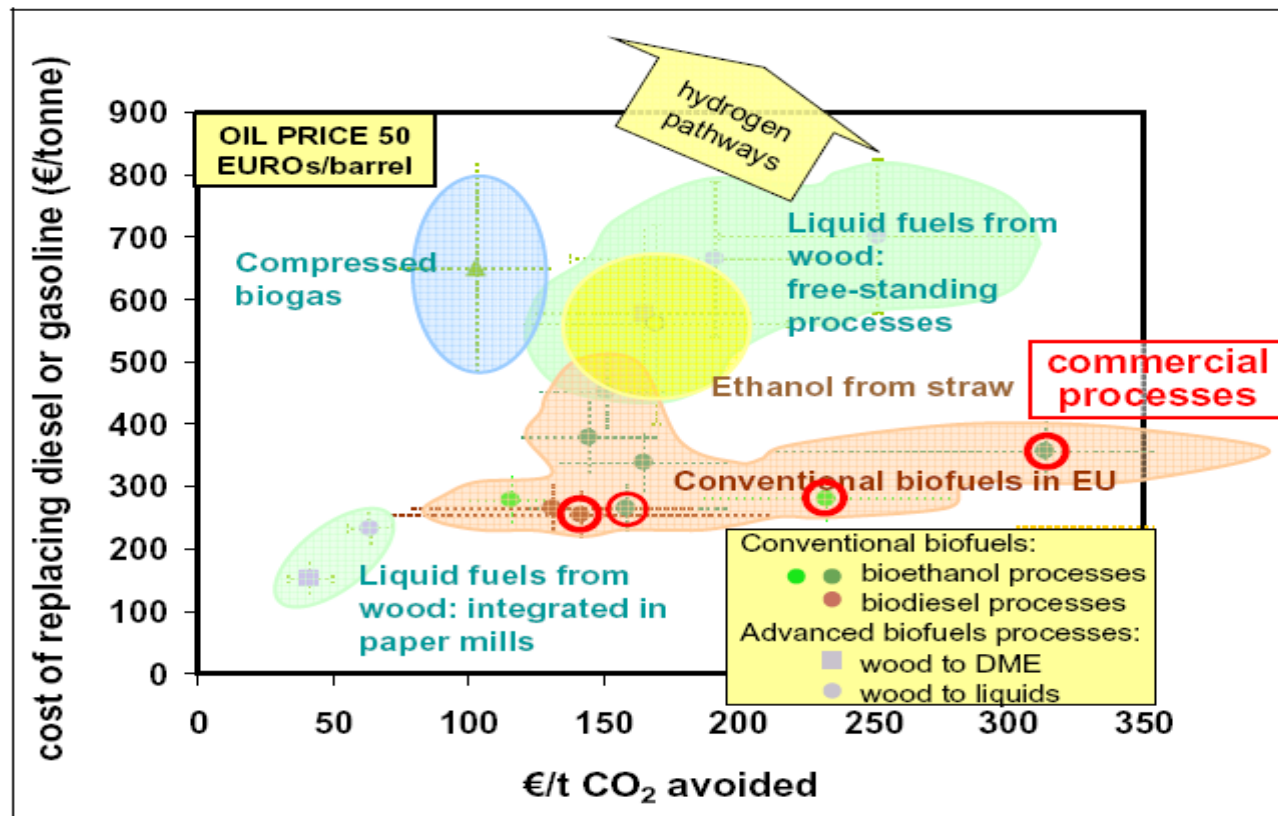


Fig. 1: Cost of replacing fossil fuel and of reducing CO<sub>2</sub> emissions



## „Ambitious targets induce high imports“ A 10% biofuel target requires:

---

- 50% imports, if no 2nd generation is available by 2020
- 30% imports, if 2nd generation reaches 30% share (DG AGRI, 2007)
- 56 – 64 % imports, without 2nd generation, if indirect effects (diversion to food imports) are calculated (JRC, 2007)

And how many imports, if all biomass for the 20% renewables target is calculated?

# „and is just one important driver of driver of agriculture prices“

**Table 7.1 Summary of price effects of stimulation of biofuels in different studies.**

Study	Quantity of biofuels taken into account	Aspects per topic to be considered
OECD, 2006	US: 7.5 billion gallons EU: 5.75% Canada: 500 million litres	Vegetable oil :+ 20% Sugar: + 60% Wheat : + 4%
EC, 2007b	Implementation of EU-directive (10%)	Cereals: + 3-5% Rapeseed: + 8-10% Sunseed: + 15%
Schmidhuber, 2006	Additional 10 million tonnes	Sugar: + 2-11% Maize: + 2-4% Wheat: + 1-2%
Msangi et al., 2007	Lower figures for 2nd generation ; higher figures 1st generation only	Maize : + 26-41% Oilseeds : + 45-76% Sugar cane: + 49-66% Wheat : + 21-30%
Elobeid and Hart, 2007	US: 22 billion gallons	Maize: + 20% Oilseeds : + 9% Wheat : + 9%
Banse et al., 2008	Implementation of EU-directive (10%)	Cereals: + 6% Oilseeds: + 8% Sugar: + 3%

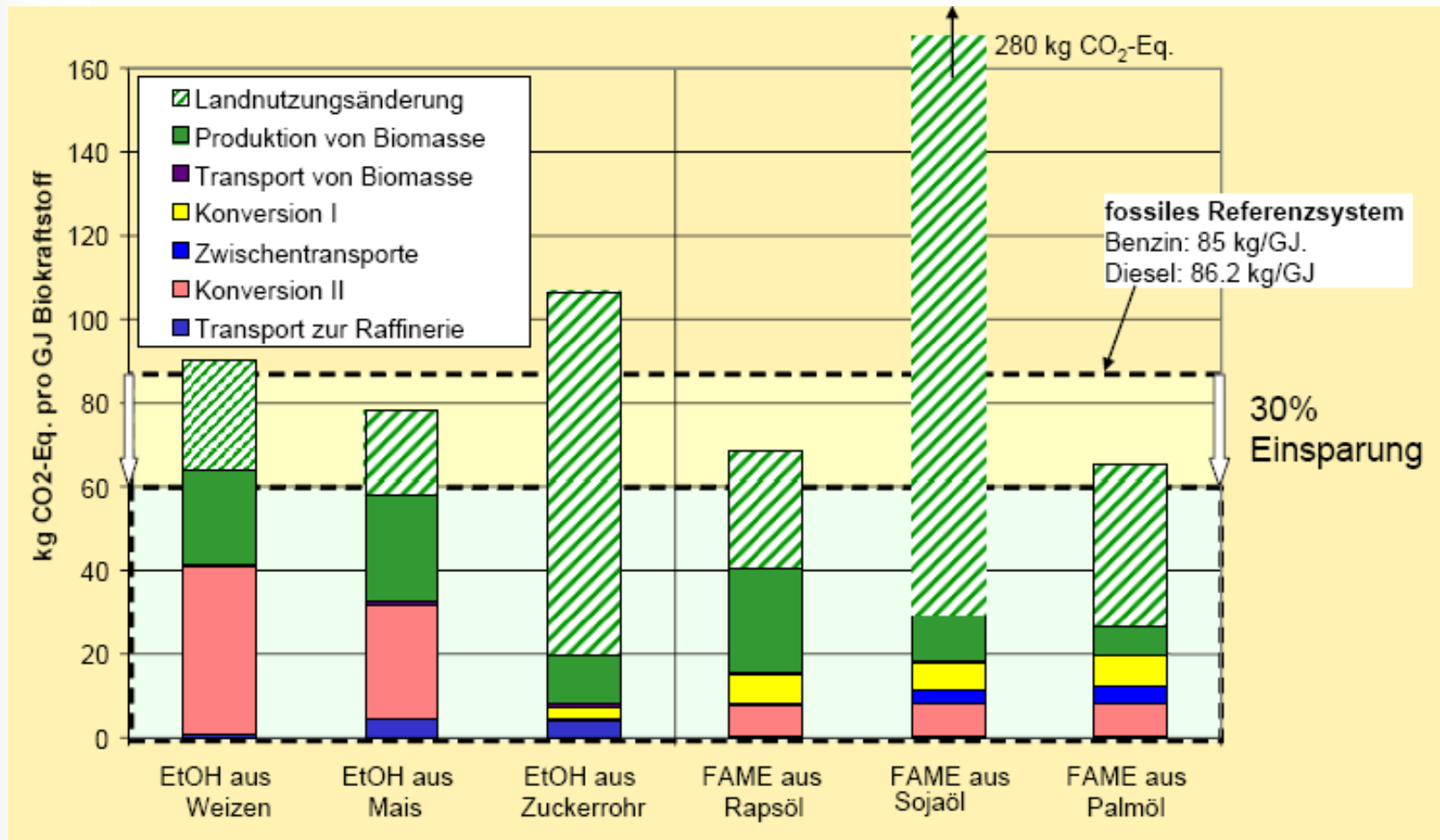
## „with considerable risks for food security, land use and greenhouse gas performance“

---









- Price of oil determines biofuel prices, which determine agriculture prices (IMF, 2008)
- 20-50% of feedstock diverted from food to biofuels in some countries (US)
- Higher food bills for the urban poor: 16 million hungry/ percentage point food price increase
- High prices accelerate forest and grassland conversion even if excess cropland exists elsewhere
- Carbon Debt of grassland or forest conversion: 17 to 420 years payback time
- US agrofuel targets double GHG-Emissions in 30years and the

*Additional Impacts of the EU targets?*

# ...land use changes matter most for GHG-balance ..



## EU SD Criteria are on the right track, but insufficient

Key requirement	Council 28/3/2008	Comment
Address land-use changes in GHG-Balance		Not in the “default” values for imports, only considered for to domestic biomass: even 50% GHG-Saving is weak
Address indirect effects		Cross Compliance with International Conventions + prior informed consent principle
Address social issues		
Broaden SD Criteria to all Ren from Biomass		Commission report by 2010: Creates incentives to shift unsustainable imports to other uses
Broaden SD Criteria to other agriculture imports		Creates incentives to shift unsustainable imports to other uses
Criteria for “no go areas”		Not ready for application/ too many qualifiers
Verification Mechanisms		Private Mechanisms not sufficient/detailed Land-Use Reporting needed
<b>Overall assessment:</b>		<b>Some progress over Commission proposal, but overall insufficient safeguards + insecurity over implementation</b>

## Principles of a support scheme



- Prioritize climate protection over energy security and agriculture support



- Overcome segmented support systems by an integrated biomass strategy



- Maximize biomass contribution to greenhouse gas reduction step by step:

⇒ Transition from technology orientation to emission trading



## Draft Turmes Report is on the right track towards an integrated approach

---

- No EU biofuels target
- National responsibility for integrated biomass and renewables policy to deliver national REN targets
- member states define shares for different uses
- SD criteria apply to all bioenergy, not only biofuels