



WIP

Advanced Biofuels – EC Policies and Support Schemes

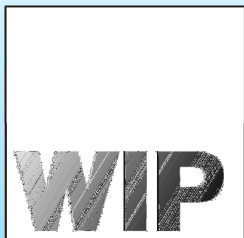
Rainer Janssen

WIP – Renewable Energies, Munich, Germany

**BIOLYFE Conference
on 2nd Generation Bioethanol Production**

EU BC&E 2013

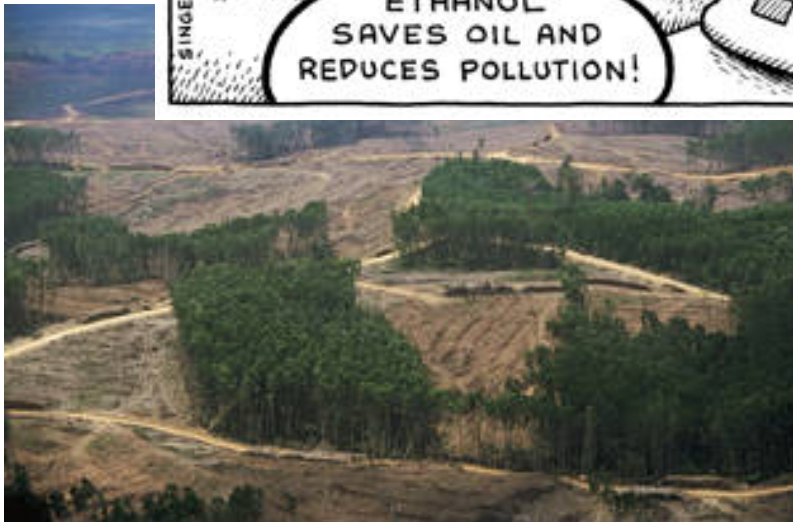
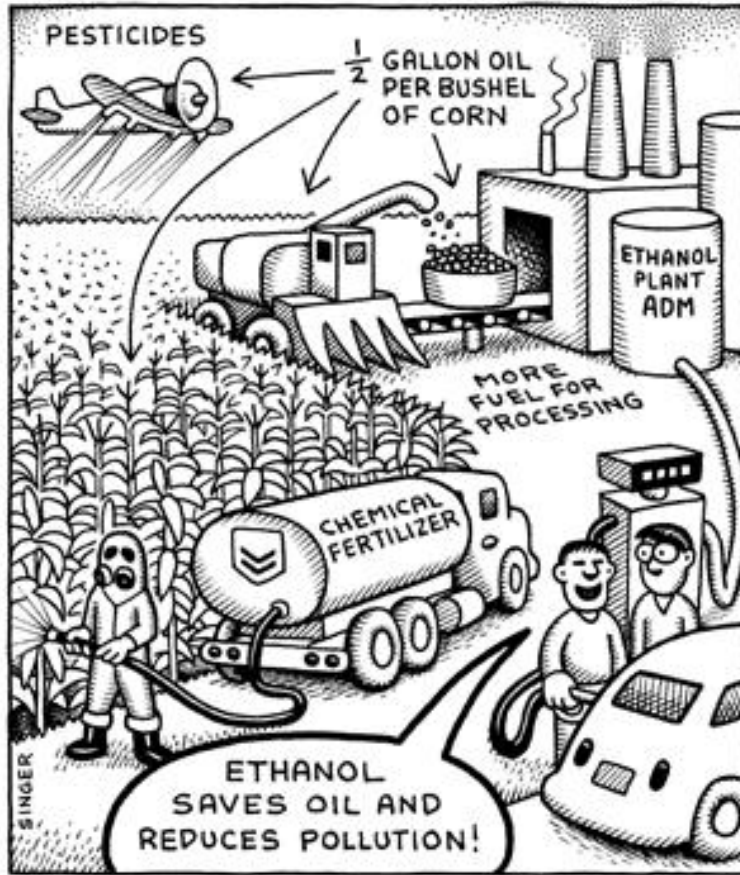
Copenhagen, 4 June 2013





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TELL THE GOVERNMENT TO CHOOSE THE RIGHT BIOFUEL OR THE ORANG-UTAN GETS IT

THEY SAY THEY DON'T WANT TO BE DEAD before the American Oranges that eat of biofuels are able to get back. With the world's most advanced technology in the field of biofuel, Oranges should be able to grow faster than ever before. Because without using standards, there is a danger that some manufacturers will be able to grow 'green fuel'.

About Oranges developing better for animals like the orangutans and endangering poor people's access to food, fuel and water, this will also be catastrophic for the climate - reducing more greenhouse gases from burning biofuel than will be saved by using biofuel.

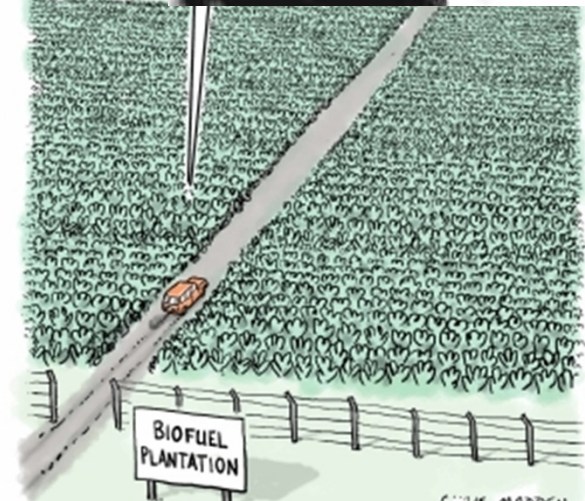
We must act now to ensure that any biofuels should have strict and comprehensive standards so that they:

- reduce overall greenhouse gases by their use in more
- don't destroy valuable wildlife and habitats like rainforests
- don't threaten the food supply and livelihoods of the world's most vulnerable people
- are produced through independent checks

The government is asking the people's views about biofuels. Help us to voice our concerns about the impact of biofuels on the environment and the people who depend on it. Write to the Minister of Energy for Transport, Richard Branson to stop the 400 American Oranges production in use, at Department for Transport, White Horse Road, 10 White Horse Road, London, SW1P 4DT. Or e-mail POLICY@DTP.DEPTRAVEL.GOV.UK

For more information visit www.greenpeace.org/usa/biofuel

enoughisough.org

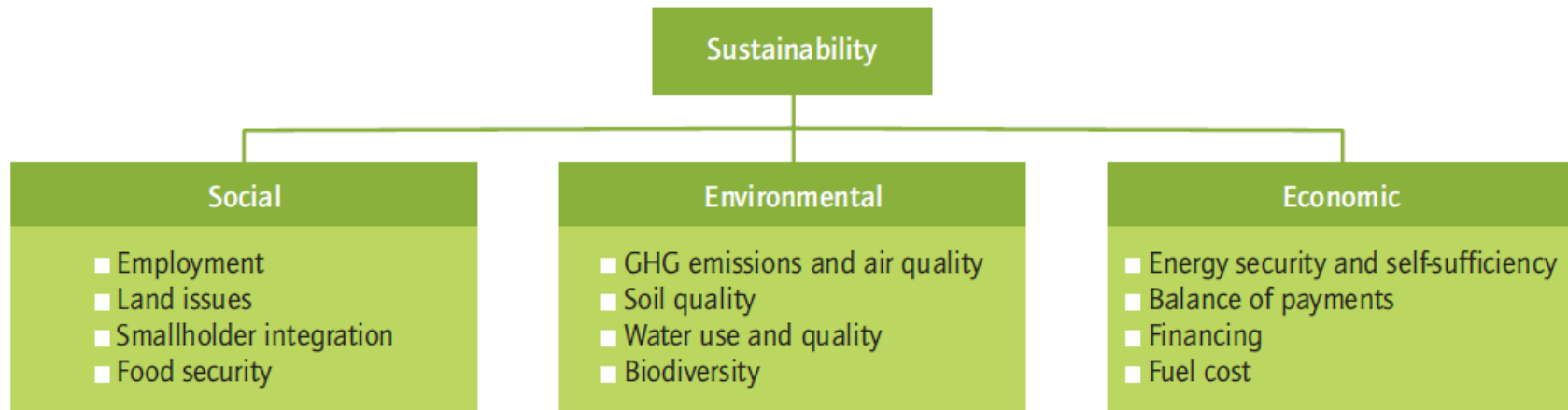


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Introduction – Environmental, Social and Economic Impacts



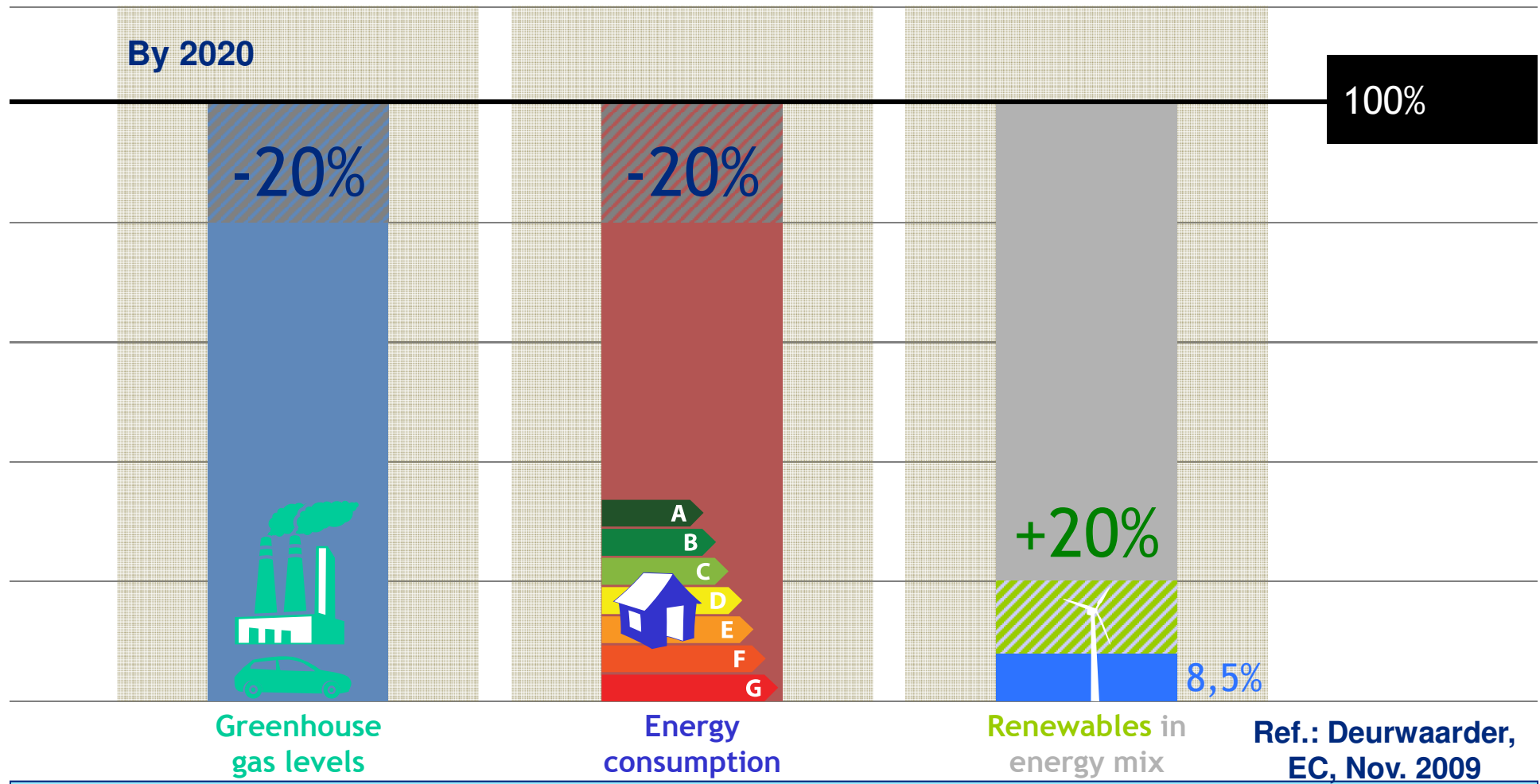
Ref: IEA 2011



EU Policies (RED)

EU Climate and Energy Package (June 2009)

The “20-20-20” targets





Renewable Energy Directive (RED)

- Combat climate change
- Security of energy supply
- Green jobs and innovation
- Directive 2009/28/EC, Publication in Official Journal on 5 June 2009

- Fuel Quality Directive, Directive 2009/30/EC, 23 April 2009
 - Fuel suppliers must reduce fuel GHG-intensity by 6% in 2020 (efficiency in fossil fuel chain, biofuels, alternative power trains)



Renewable Energy Directive (RED)

1. Sets **mandatory national targets** for renewable energy shares, including 10% renewables in transport (incl. biofuels) in 2020
 - Biofuels from wastes, residues, non-food cellulosic material, ligno-cellulosic material count double towards targets (Article 21)
2. Requires **national renewable energy action plans (NREAPs)**
3. Requires **reduction of administrative and regulatory barriers**, improvements in provision of information and training and improves renewables' access to the electricity grid
4. Creates a **sustainability regime** for biofuels (Articles 17 - 19) (criteria for economic operators, monitoring for the Commission)



Summary of criteria in the RED Directive

Art. 15: Requirements of biofuels for *quotas and targets* *eligibility for subsidies*

Minimum GHG savings	No areas with high biodiversity	No areas with high carbon stocks	Cross Compliance / CAP
35% by 2009/2013 50% by 2017 60% after 2017	Primary forests and wooded land	Peatland / wetlands	Environment
Only direct land use change considered	Protected natural areas	Cont. forested areas (trees higher 5m)	Requirements for good agri. and env. conditions
	Highly biodiverse land (grassland and non-grassland)	Only if it affects carbon stocks	Applicable only within EU
		Reference date: January 2008	



Summary of criteria in the RED Directive

Art. 15: Reporting Requirements of the EC to the European Parliament and Council

Land use rights

Availability of foodstuff at affordable prices

Wider development issues

Cartagena Protocol on Biosafety

Convention on trade in endangered species

ILO conventions

- The first report shall be submitted until 2012 (report published in March 2013)



Sustainability – Criteria and Standards

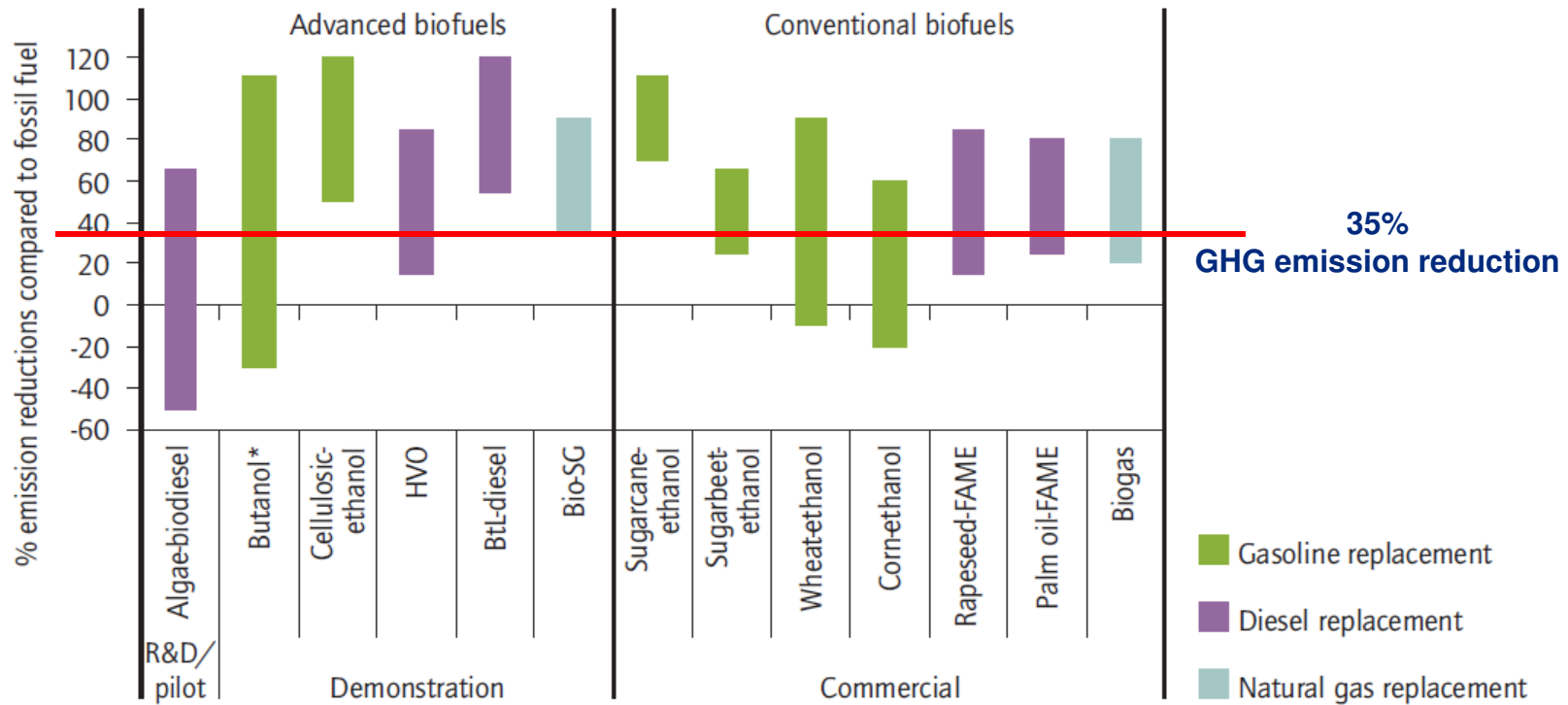
- **GBEP: Global Bioenergy Partnership** (www.globalbioenergy.org/bioenergyinfo/bioenergy-and-sustainability/en/)
- **RSB: Roundtable on Sustainable Biofuels** (<http://rsb.epfl.ch/>)
- **ISCC: International Sustainability and Carbon Certification System** (www.iscc-system.org)

- Standards for specific agricultural products
 - **RSPO: Roundtable for Sustainable Palm Oil**
 - **RTRS: Roundtable for Responsible Soy**
 - **BSI: Better Sugarcane Initiative**





Greenhouse-gas (GHG) Emissions



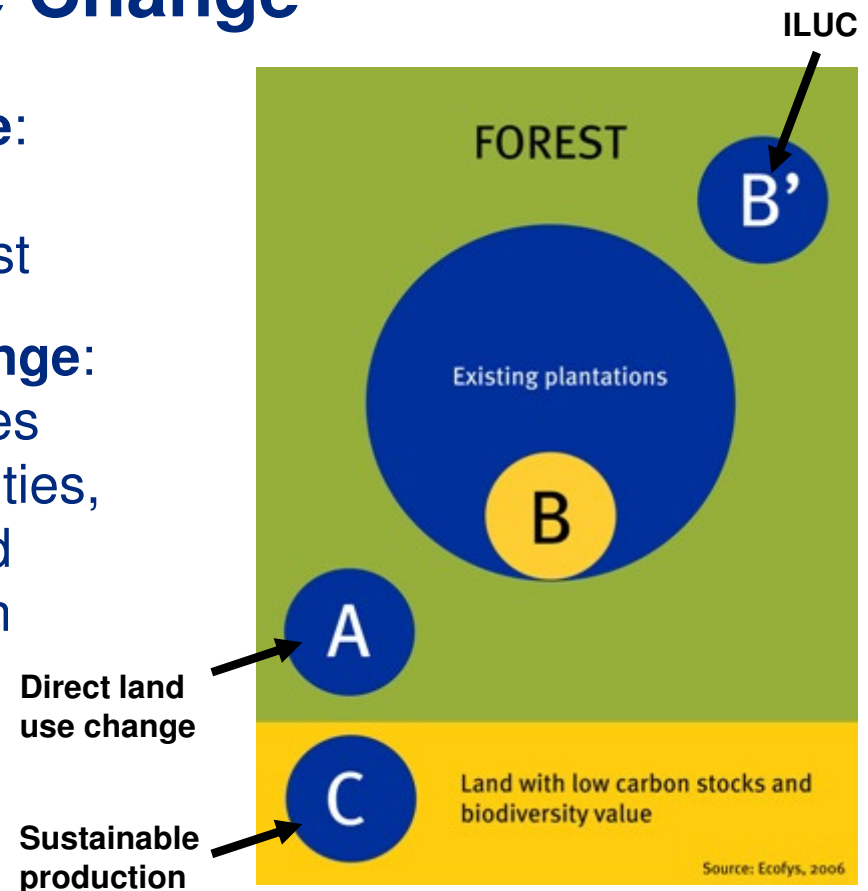
Note: The assessments exclude emissions from indirect land-use change. Emission savings of more than 100% are possible through use of co-products. Bio-SG = bio-synthetic gas; BtL = biomass-to-liquids; FAME = fatty acid methyl esters; HVO = hydrotreated vegetable oil.

Source: IEA analysis based on UNEP and IEA review of 60 LCA studies, published in OECD, 2008; IEA, 2009; DBFZ, 2009.



Land Use Change

- **LUC - Direct Land Use Change:**
e.g. when feedstocks are grown on land that was previously forest
- **ILUC – Indirect Land Use Change:**
when biofuel production displaces the production of other commodities, which are then produced on land converted elsewhere (perhaps in another region or country)

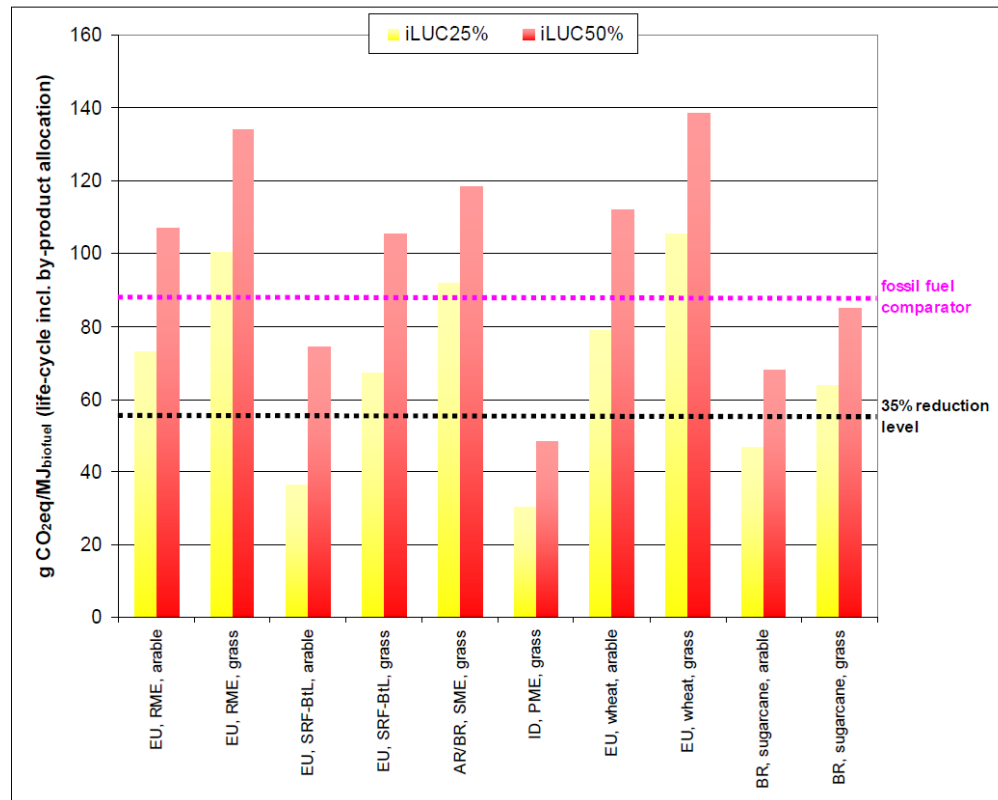


http://www.ecofys.it/com/areasofexpertise/renewable_energy_technologies/indirect_impacts_ofbiofuels_production_explained.htm



Land Use Change Impact on GHG

Figure 3 Life-Cycle GHG Emissions of Biofuels and Impacts from ILUC in 2010



Source: own calculation with GEMIS 4.6, iLUC factor for 2010, fossil comparators from EU RED
 RME = rapeseedoil methylester; SRF = short-rotation forestry; BtL = biomass-to-liquid (Fischer-Tropsch) diesel; SME = soybeanoil methylester; PME = palmoil methylester

Ref: Oeko Institute 2010



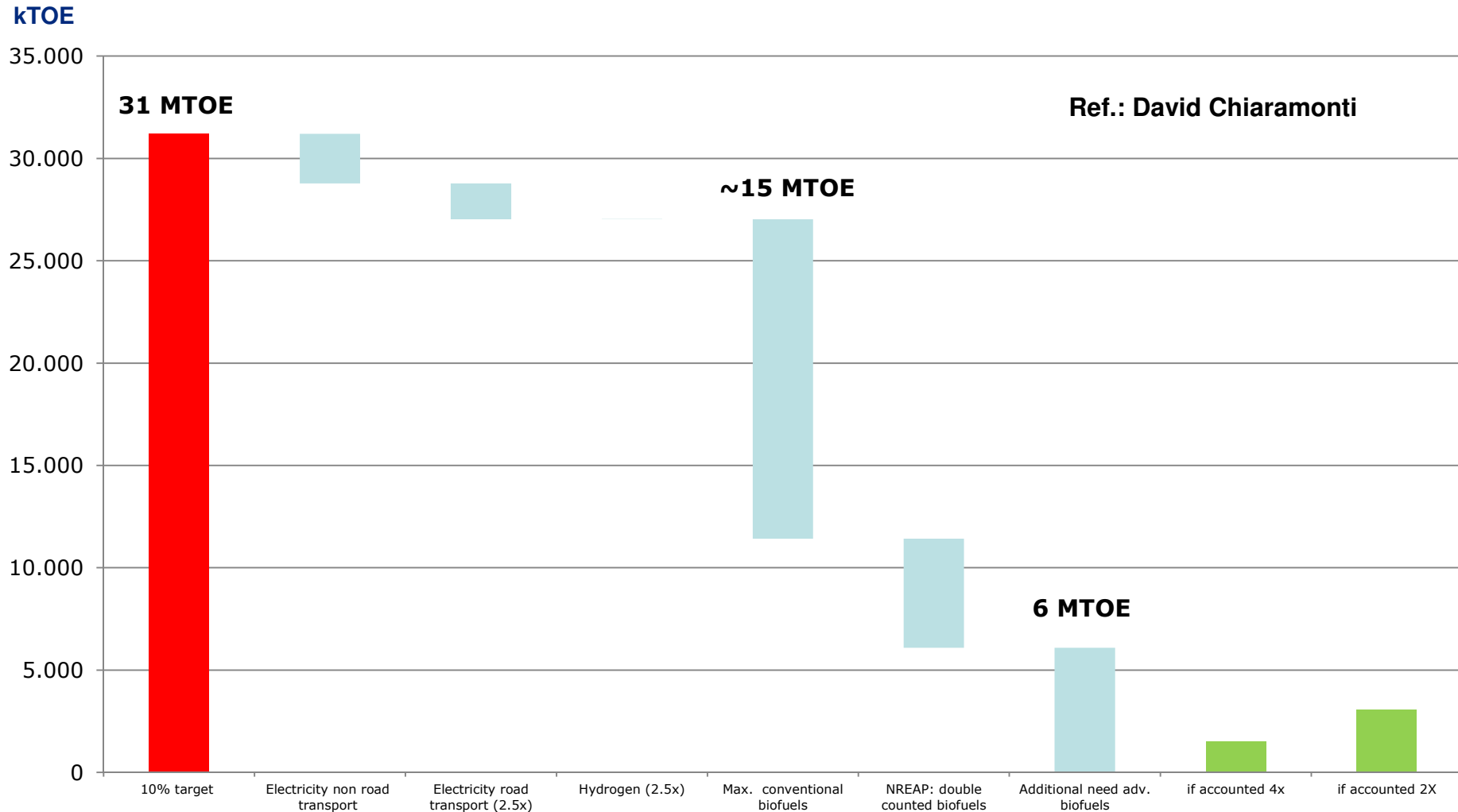
Recent EC Policy Proposal



Commission Proposal on ILUC

- Published on 17.10.2012, and currently under discussion at the Council and European Parliament
- **5% limit to the amount of 1G biofuels** that can count towards the RED targets
- Enhanced **incentives for advanced non-land using biofuels** (quadruple accounting)
- **Increase to 60% greenhouse gas savings requirement** for new installations
- **ILUC-factors included in the reporting** of greenhouse gas savings in both Directives

Implications for Meeting 2020 Targets








Additional demand for advanced biofuels would be **6 Mtoe**

Assuming **quadruple counting** → **15 plants (100 kTOE capacity) needed by 2020**
to meet the additional demand (for ethanol: 155.000 t capacity, each)



Recent EC Renewable Energy Progress Report

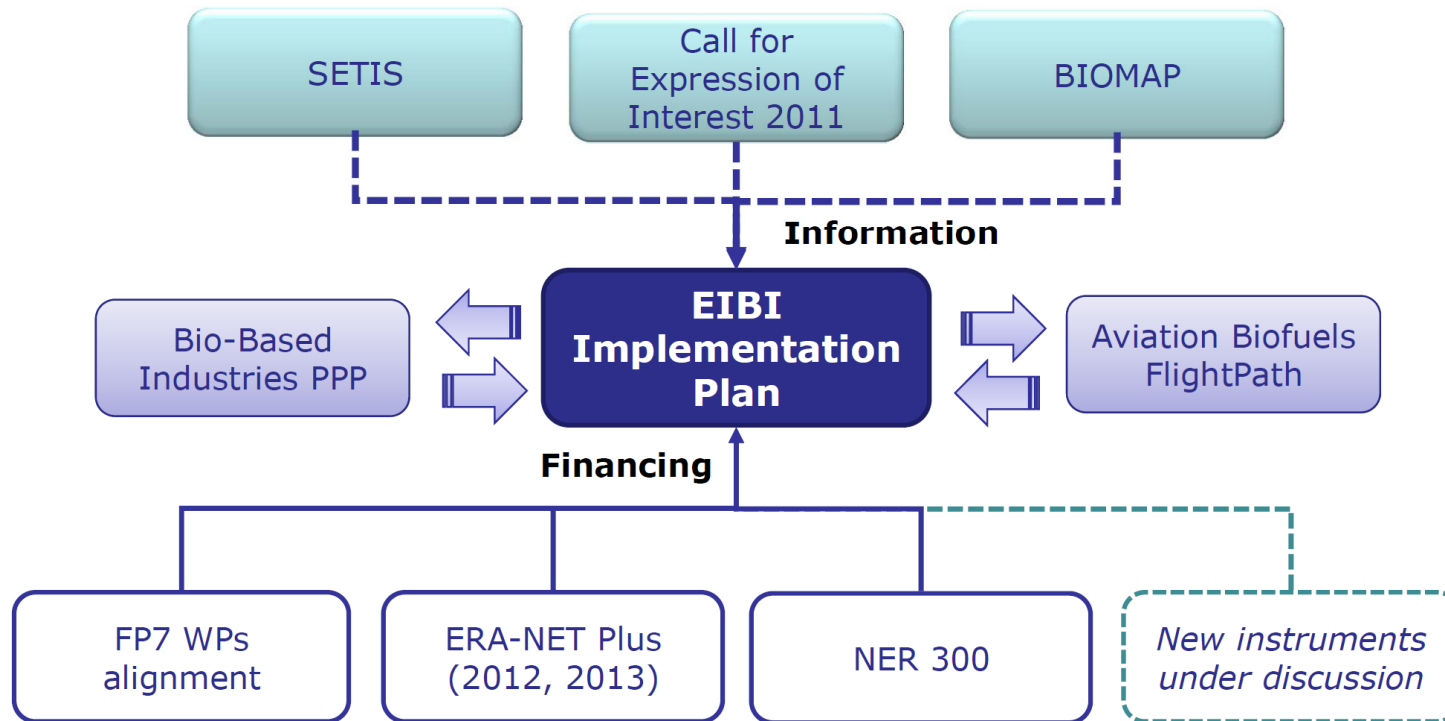
- Published on 27 March 2013
- Specific measures for **air, soil and water protection** not necessary
  covered by EU CAP
- Impacts on **land use rights**  not clear, if EU biofuels demand contributes to any abuse of land use rights
- Food price increases
 - Bioethanol  1-2% price effect on global cereals market
 - Biodiesel  4% price effect on food oil crops Biofuel demand more price sensitive than food market
- Social benefits: 220.000 jobs in EU and 1.4 m jobs globally



EC Support Schemes



EC Support to Advanced Biofuels



Strategic Energy Technology (SET) Plan (technology pillar of EU c&e policy)
October 2010: Launch of European Industrial Bioenergy Initiative (EIBI)



Outlook



Outlook – Critical Market & Deployment Issues

- Legislation gives **low certainty** on renewable premium over fossil
→ **difficult project financing**
- **Extension of RED for 2G to 2025/30**
→ ensure **investor's security**
- **2% specific target (mandate) for 2G blending** (~ 6 Mtoe)
- Within an extension **from 2020 to 2025/30 a clear growth path** for 2G should be implemented



**THANK YOU VERY MUCH FOR YOUR
ATTENTION!!**



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