

# Availabilities of biofuels from EU25 sources, 2010

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Extracted from:

“Well-to-wheels analysis of future automotive fuels and powertrains in the European context”

by

CONCAWE


EUCAR

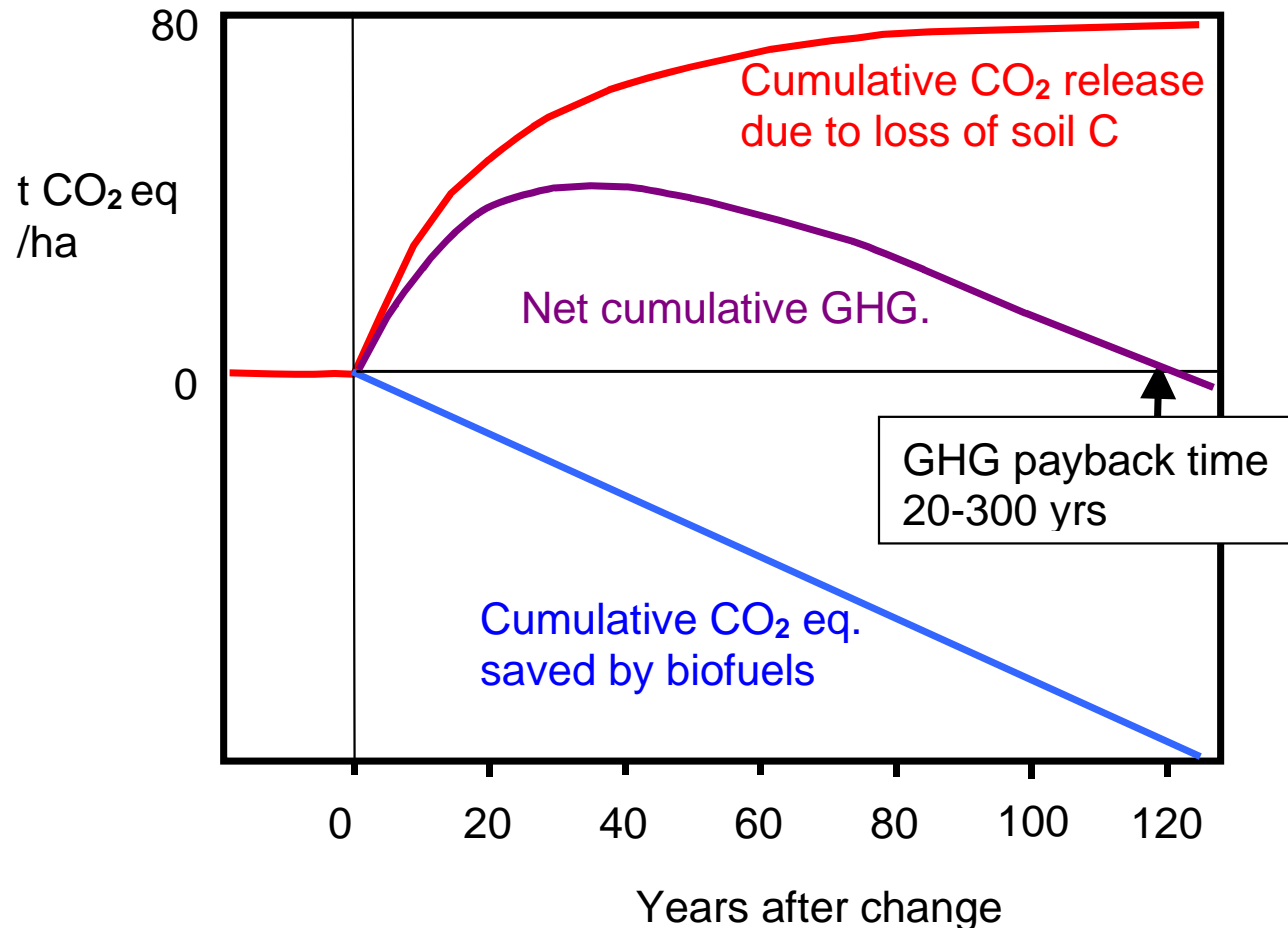
DG-Joint Research Centre, European Commission

Download the full report from:-

<http://ies.jrc.cec.eu.int/Download/eh>

# CHANGE IN LAND USE IS THE BIGGEST EFFECT OF ALL

- e.g. change from grassland to arable biofuel crops:  - one-off, but **large**, release of soil C
- (woodland is between grassland and arable land)
- Huge uncertainty
- **USUALLY IGNORED** in WTW studies!
- **Conclusion: don't increase arable area!**



# AVAILABILITY OF FARMED BIO-FUELS

- EU-25 production 2010
- Reference case: DG-AGRI extrapolation for existing CAP rules in EU25

...warns of 43 Mt cereals surplus in 2010.

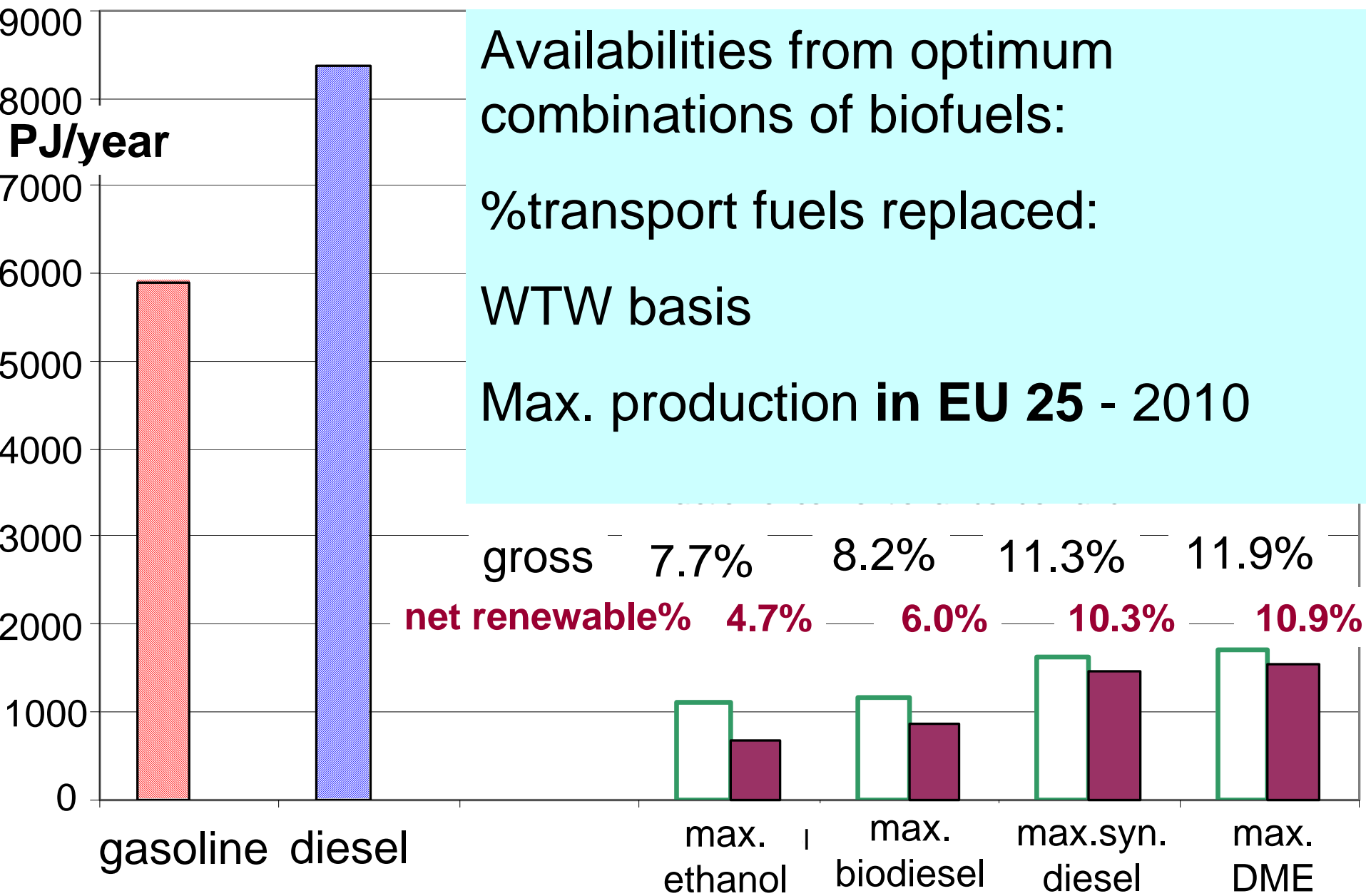
- **Same-arable-area** requirement: most biofuels in replacement of cereals surplus (= some of set-aside area)
- Avoid “average yield x available area” calculations  
...simpler and better to convert directly with yield ratios:

1 tonne biofuel-cereals,  
or 0.63 tonne rapeseed,  
or 0.68 tonne sunflowerseed  
or 1.8 tonne farmed wood

... replaces 1 tonne food-cereals

# Wood waste and straw availability

- Industrial and used wood already recycled in the wood industry
- Forest residuals
  - by-product of commercial forestry: calculated from **wood production forecast**, not “total EU wood increment is....”
  - use at pulp mills; black liquor route
  - economic limit on availability: **1.9% of road fuels**, or price goes above stem-wood
  - Agricultural residues mostly too expensive to collect, except for concentrated resources like straw
  - Straw only can be taken from certain soils types (DG Agri experts). Maximum possible straw-to-ethanol replaces **4.4% of gasoline (1.8% roadfuels)**.



# HOW MUCH BIO-FUELS CAN WE MAKE?

- EU-25 production 2010 (no imports, for security of supply)
- FOOD SURPLUS TO BIOFUELS
- surplus from a careful DG-AGRI estimate for business-as-usual CAP extended to EU25-2010
- NOT from “10% set-aside x average yield”
  - Wheat availability = cereals surplus of 43Mt (**7% of gasoline**)
    - + possible use of rotational **set-aside** 20Mt (**3% of gasoline**)
  - Sugar Beet can replace some of the cereals surplus
    - + present SB surplus of 40 Mt@75% water
  - Rape-seed and sunflower-seed: we calculated replacement of surplus cereals taking break-crop effect into account. (**6%+2% of diesel**).
  - Farmed wood in replacement of cereals surplus: we estimated 1.8 times the cereals yield, so 78+36Mt (= total **3.5-7.5% of diesel+gasoline**, depending on process used).

# Potential for conventional fuels substitution with biomass-derived fuels

