

# Crops2Industry

## “Non-food Crops-to-Industry schemes in EU27”

WP 5 Sustainability

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**INDUSTRY**



# About us...

**Energy &  
Climate**

**Industry &  
Infrastructure**



**Governance &  
Environmental  
Law**

**Nuclear &  
Plant Safety**

**Products &  
Material Flows**

private, non-profit sustainability research, founded in 1977;  
staff > 120; budget 10 mio. €; local to global scope of (net)work

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- “Critical” environmental issues
  - **direct and indirect land use change** (LUC) and its impacts on GHG balances, and biodiversity: non-food crops grown on **arable** could lead to ILUC...
  - agrobiodiversity: possibly positive (scale!)
- “Critical” social issues
  - **food security** impacts: depend on arable land use





# Which LUC Where?

- **Most agricultural land originated from forests**  
Roughly 50% of new cropland replaced forests,  
and another 30% replaced disturbed forests
- **6% more forest was cleared for cropland in 1990s,**  
likely due to mounting economic incentives
- Documented trends leading to **increasing carbon emissions** from agricultural expansion

**Source:** “Mapping Land Sources for New Biofuel Croplands” **Holly K. Gibbs,**  
Food Security and Environment Program, Stanford University, presented  
at the AAAS Annual Meeting, Feb. 14, 2009



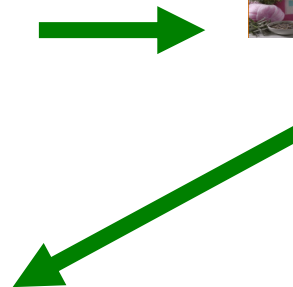
- **Indirect LUC: all incremental biomass crops** (electricity, heat, transport, materials, food, feed, fiber)
- **Options to reduce ILUC risk:**
  - Use “degraded“ land → higher costs, **incentives needed** + biodiv/social safeguards
  - Use land „freed“ from yield increase: how to measure?
- **Long-term: strengthen global conventions to “cap“ iLUC effects on GHG + biodiversity → only real solution!**



## Biomass crops



## Start with: Material Use

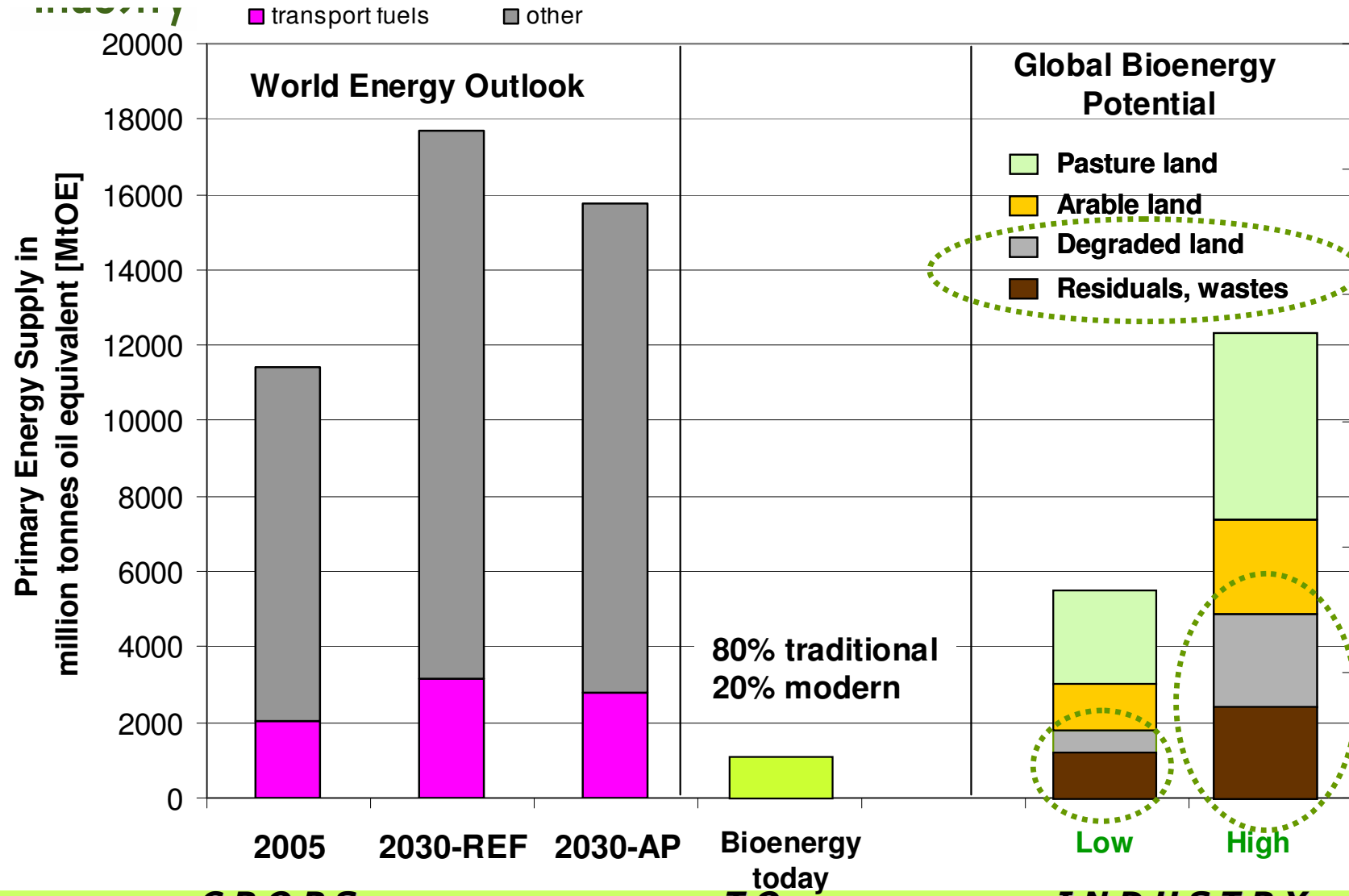


## Residues/wastes



## End: Energy Use





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→ Key role of agriculture productivity to “free” land

