Sustainable Biomass Supply:

Criteria and Potentials in Europe

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presented at the 4FCROPS Workshop
"Towards a successful insertion of the non-food crops in the EU27 agricuture"
Side event of the 18th European Bioenergy Conference & Exhibition,
held May 4, 2010 in Lyon

Consider all Biomass Flows

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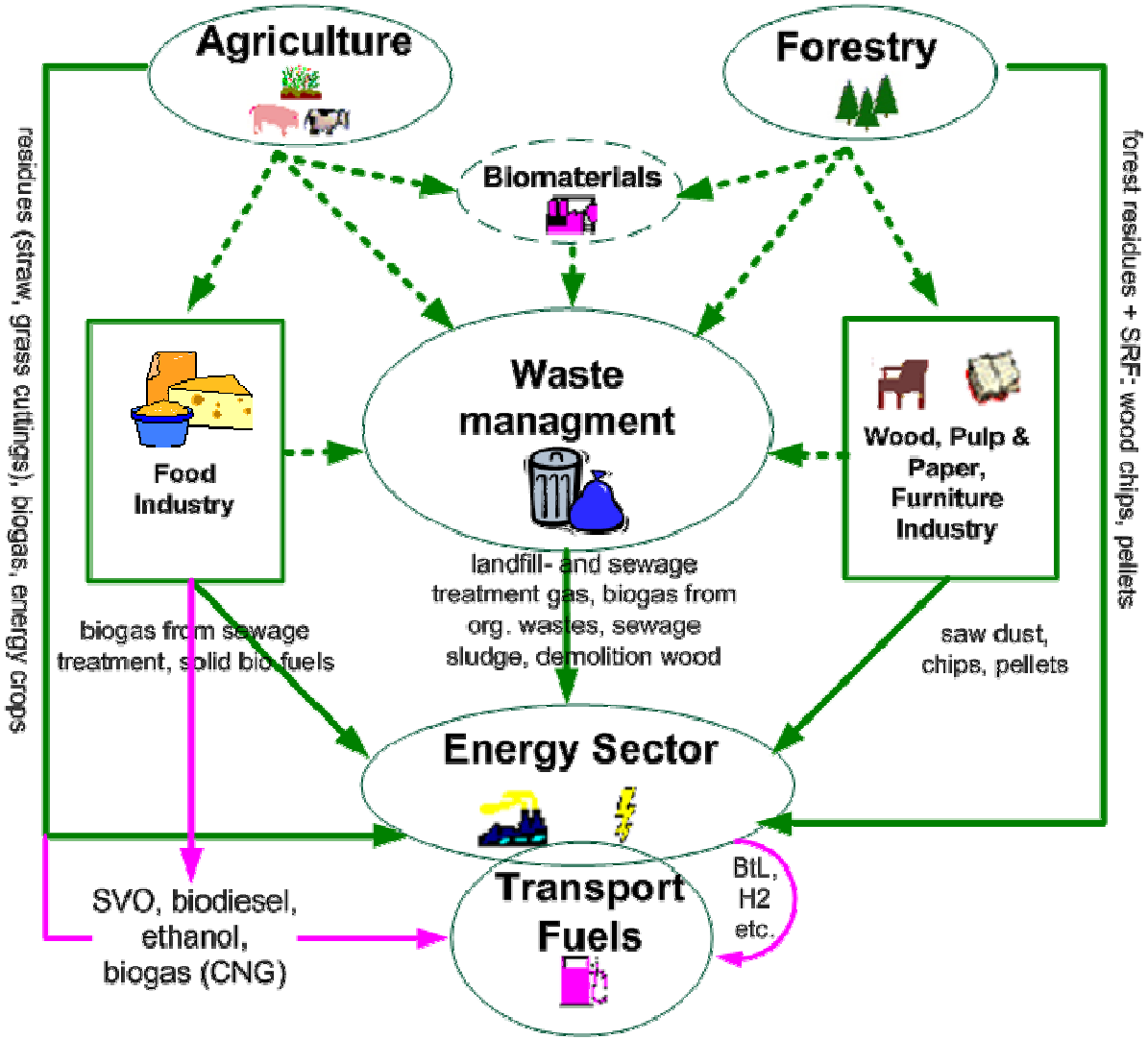

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Key Sustainability Criteria

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- **Sustainability issues to be focussed on:**
  - direct and indirect land use change (LUC), and its impacts on GHG emissions, and biodiversity
  - impacts on air, water and soil quality
  - (global) food security impacts
  - social: employment, rural income

- **Need to establish coherent set for all biomass/bioenergy applications across heat, electricity/CHP, transport and material sectors**

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Sustainability Standards (global)

- **ISO**: Project Committee created to prepare report on indirect effects (1st meeting end April 2010)
- **RSB**: Version 1 for pilot phase; ongoing discussion on GHG reduction targets + iLUC
- **GBEP**: ongoing work of Sustainability Task Force on criteria and indicators in 3 sub-groups: environment, economy, and social; draft list of criteria available, draft list of indicators May 2010
- **GEF**: ongoing study, interim results Summer 2010

Sustainability Standards (EU, USA)

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- **EU RED**: to be implemented in MS in 2010; no social requirements, none for soil/water (reporting only); ongoing work on clarification of high-biodiverse grassland (current consultation!), and inclusion of iLUC (consultation upcoming)
- **CEN**: work on substantiating RED; further discussions on extended standard
- **USA**: federal level only direct GHG emissions, no biodiversity or other criteria; but Californian **LCFS** has ILUC factor, and considers other sustainability requirements (biodiversity, soil, water, food security); more details to be expected in late 2010

Sustainability Standards EU

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EUROPEAN COMMISSION

Brussels, yyy
COM(2010) XXX final

REPORT FROM THE COMMISSION TO THE COUNCIL AND THE EUROPEAN PARLIAMENT

on sustainability requirements for the use of solid and gaseous biomass sources in electricity, heating and cooling

SEC(2010) 65
SEC(2010) 66

→ **Conclusion: voluntary implementation by MS, but using RED methodology**

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EU Bioenergy Potentials

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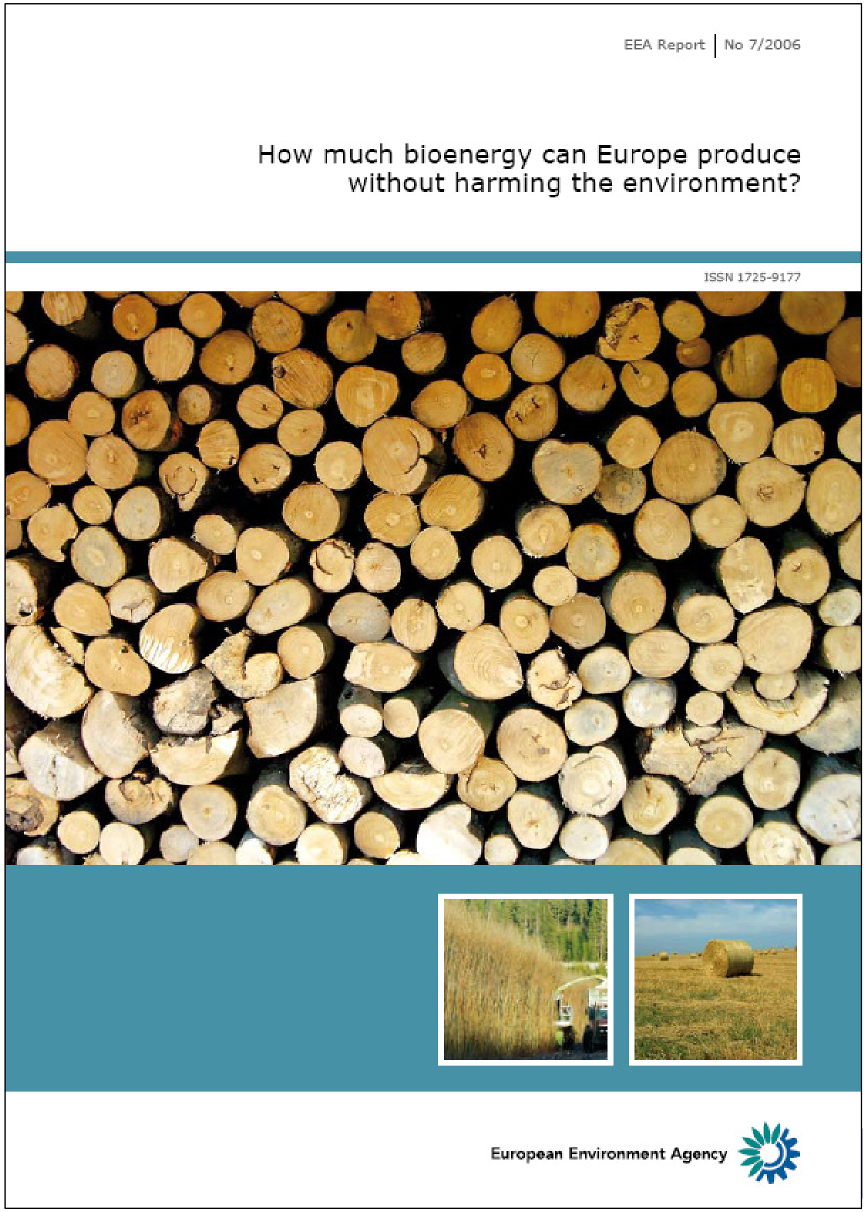
How much bioenergy can Europe produce without harming the environment? (EEA, 2006)

- ***Environmentally-compatible*** **primary bioenergy potentials in the EU-25 until 2030**
- **Sectors: agriculture, forestry and waste management**
- **Öko-Institut (DE) in cooperation with Alterra (NL), AEAT (UK), EFI (SF)**



Biodiversity and HNV Farming

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Examples of HNV farming which could become „extinct“ due to direct or indirect intensification: Dehesas/Montados in Portugal/Spain

Source: JRC/EEA 2006 (Proceedings Sust. Bioenergy in the Mediterranean)

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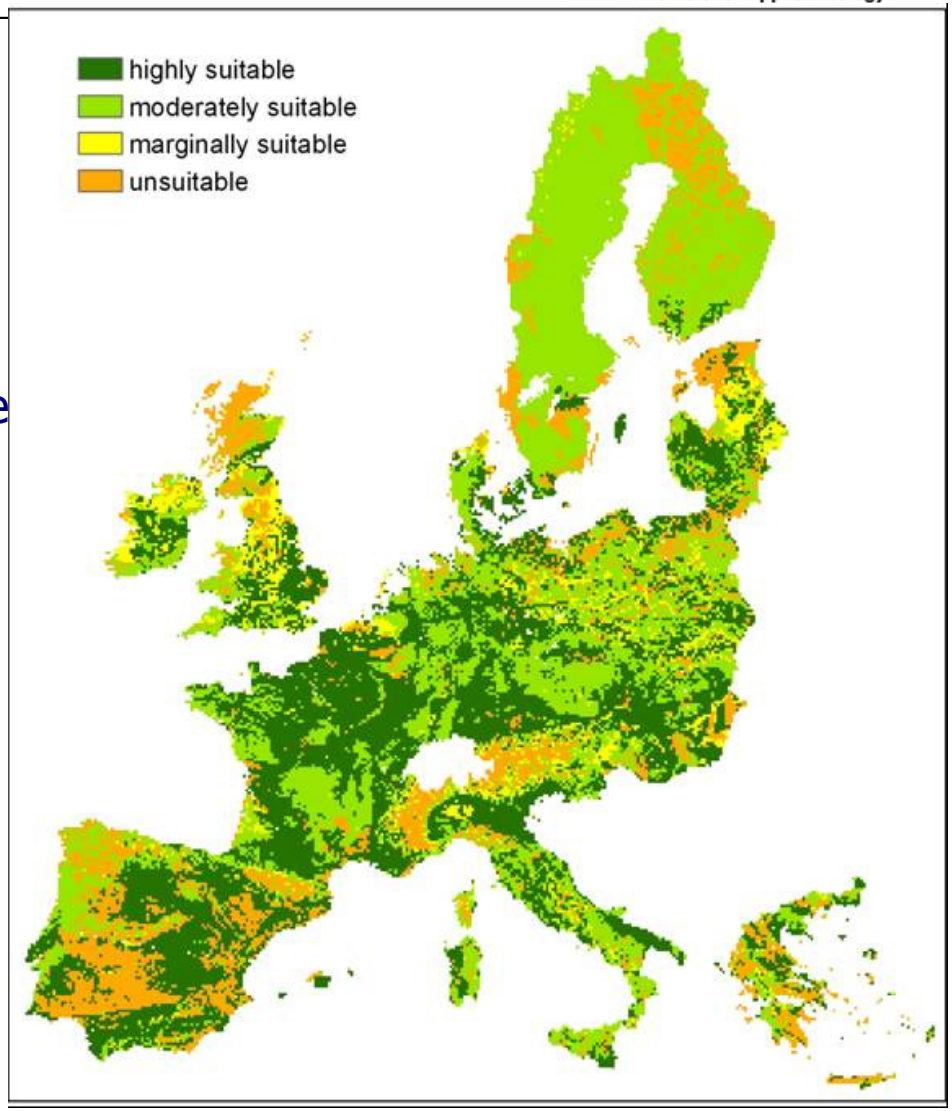
Forest residues

- No intensification on protected areas
- roots and foliage remain in the forest
- sustainable nutrient balance
  - soil type
  - base saturation
- soil erosion
  - steepness
  - elevation
- soil compaction
  - peat land
  - soil water regime



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Agricultural biomass
- what crops are best to grow where?

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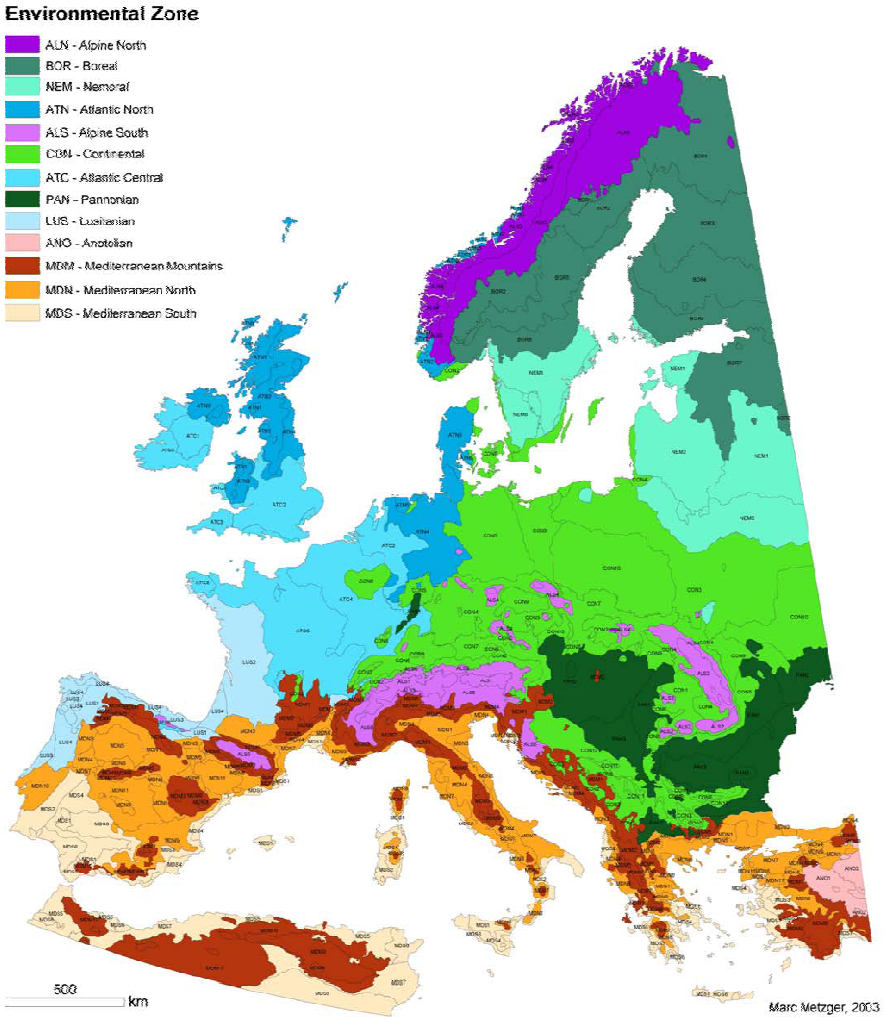
Approach

Differentiate between "climatic" zones

Determine environmental impact of bioenergy crops

Introduce a mix of bioenergy crops (maintain crop and landscape diversity)



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EU Bioenergy Potentials

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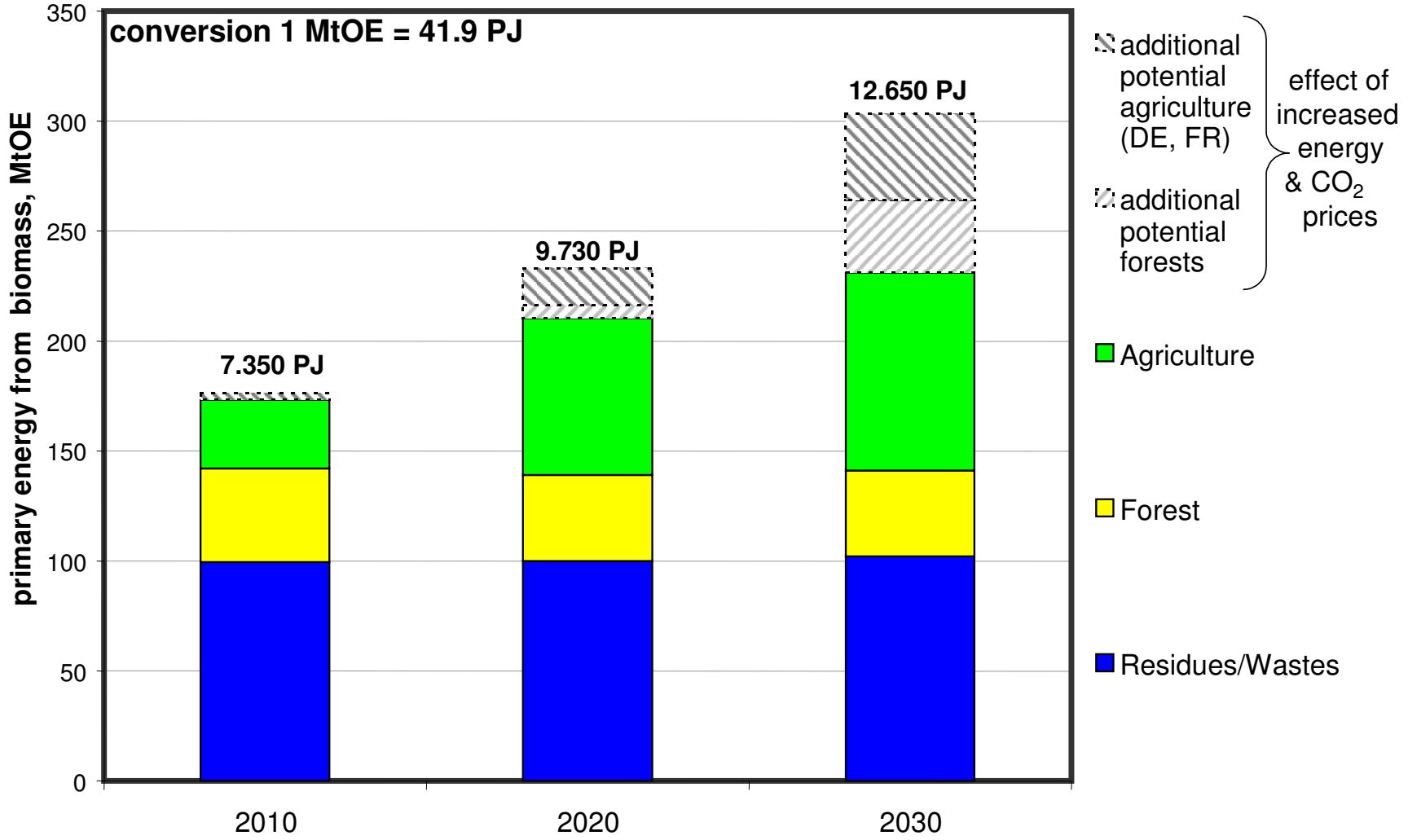

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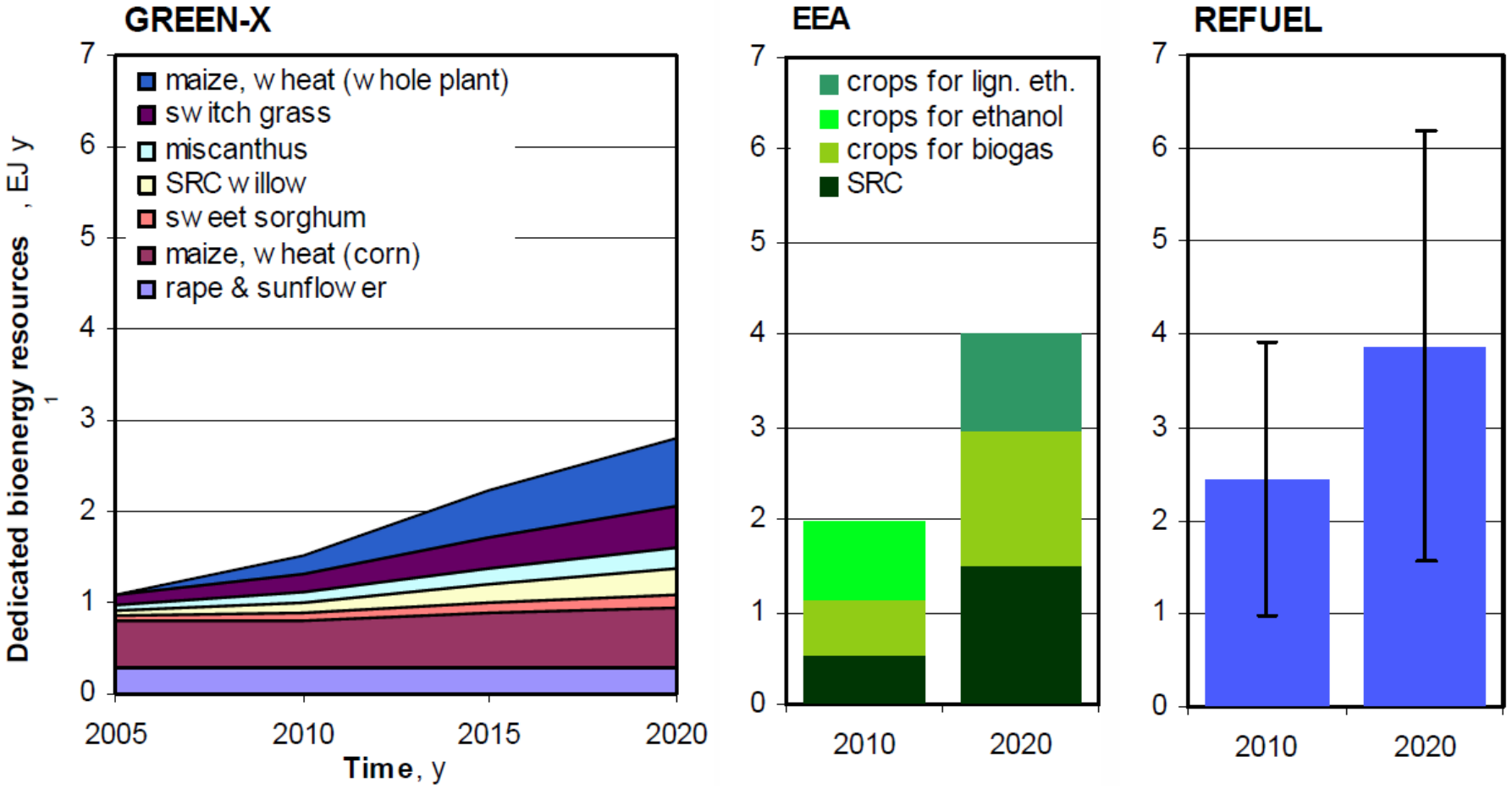

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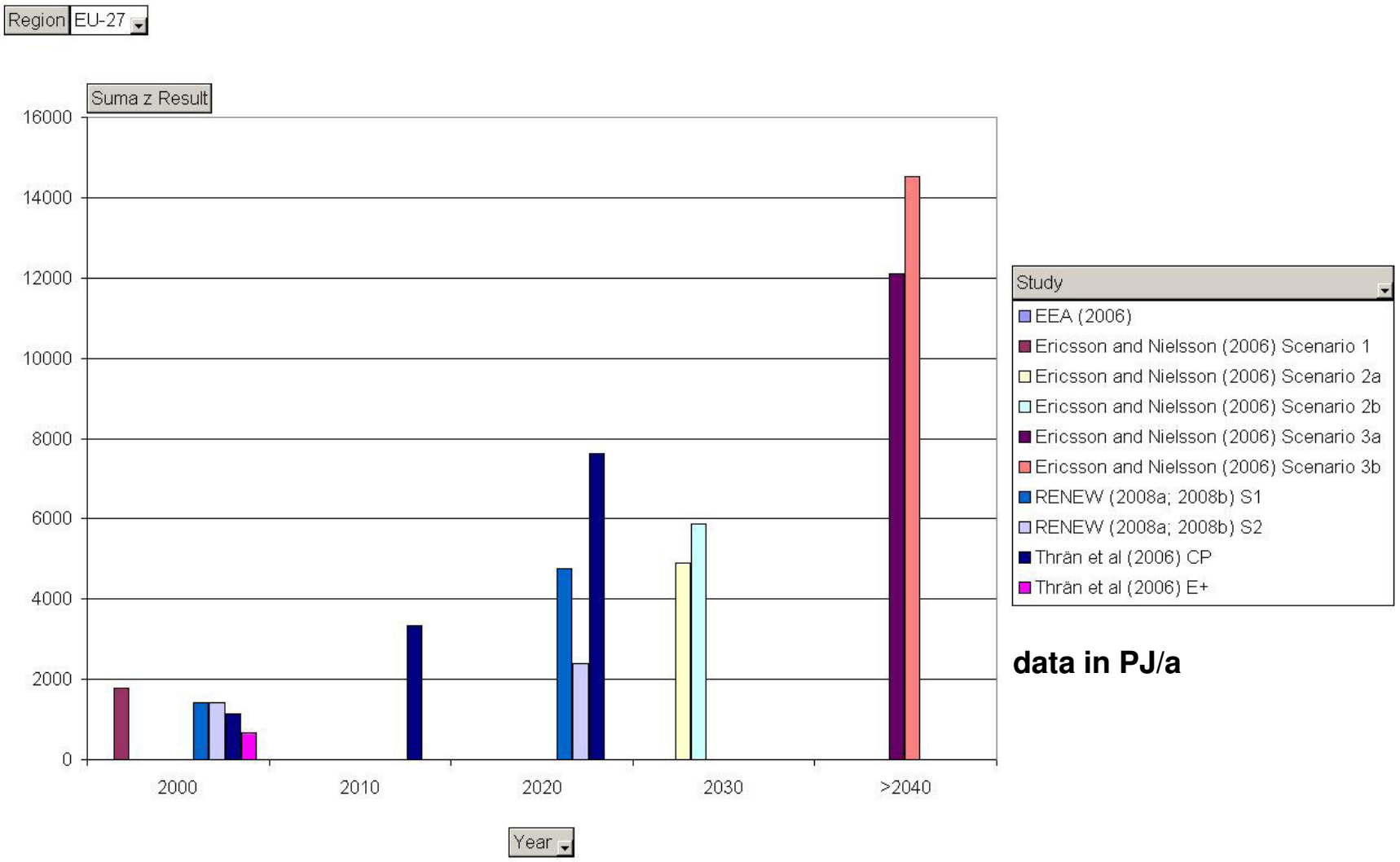

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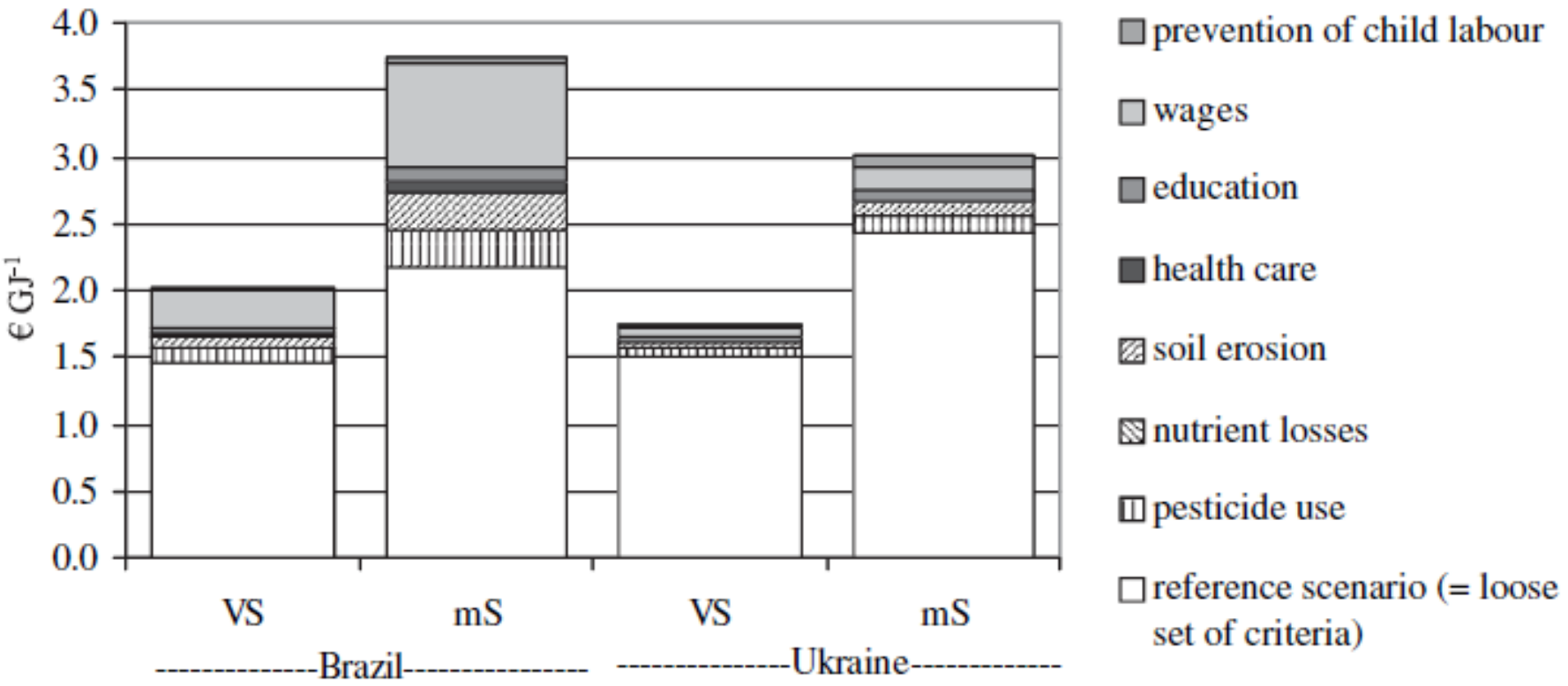
Sustainability and Costs



Social and environmental criteria increase costs, but less than often argued

Source: Faaij et al. 2010; data for 2015; VS = very suitable, mS= marginally suitable

Integration of sustainability criteria into biomass resource assessments

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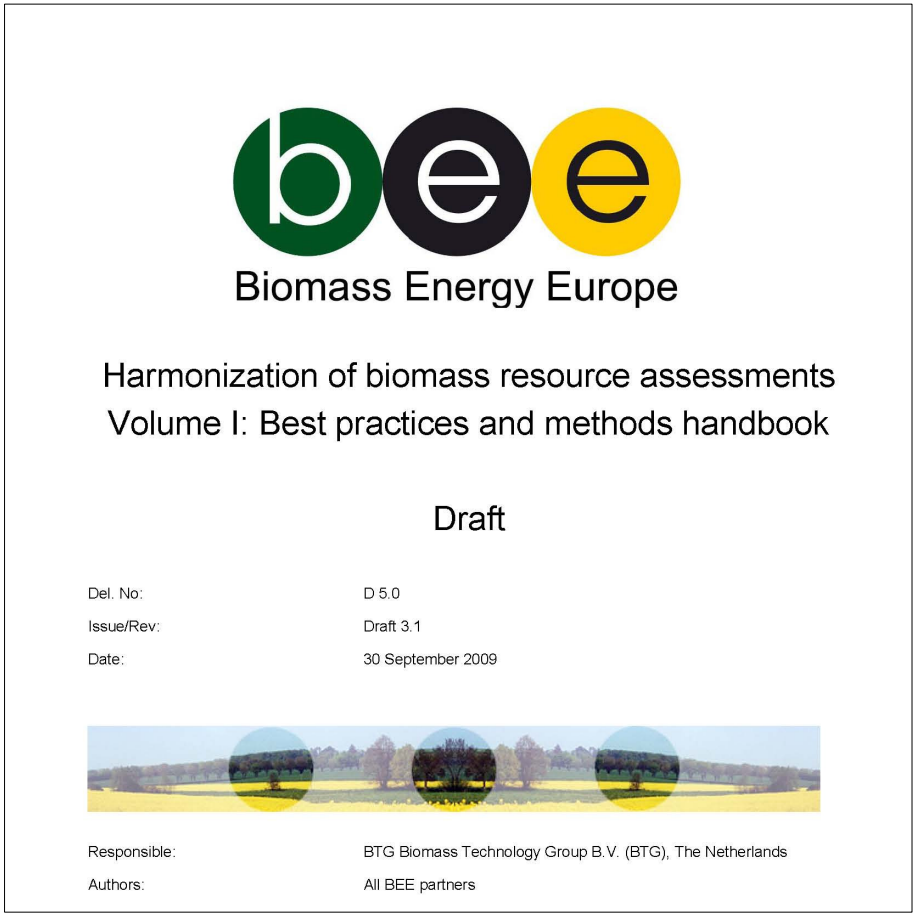
Status quo analysis

Harmonisation of methodology


Biomass Energy Europe

Harmonization of biomass resource assessments
Volume I: Best practices and methods handbook

Draft

Del. No:	D 5.0
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Authors:	All BEE partners

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Sustainable Biomass in DE

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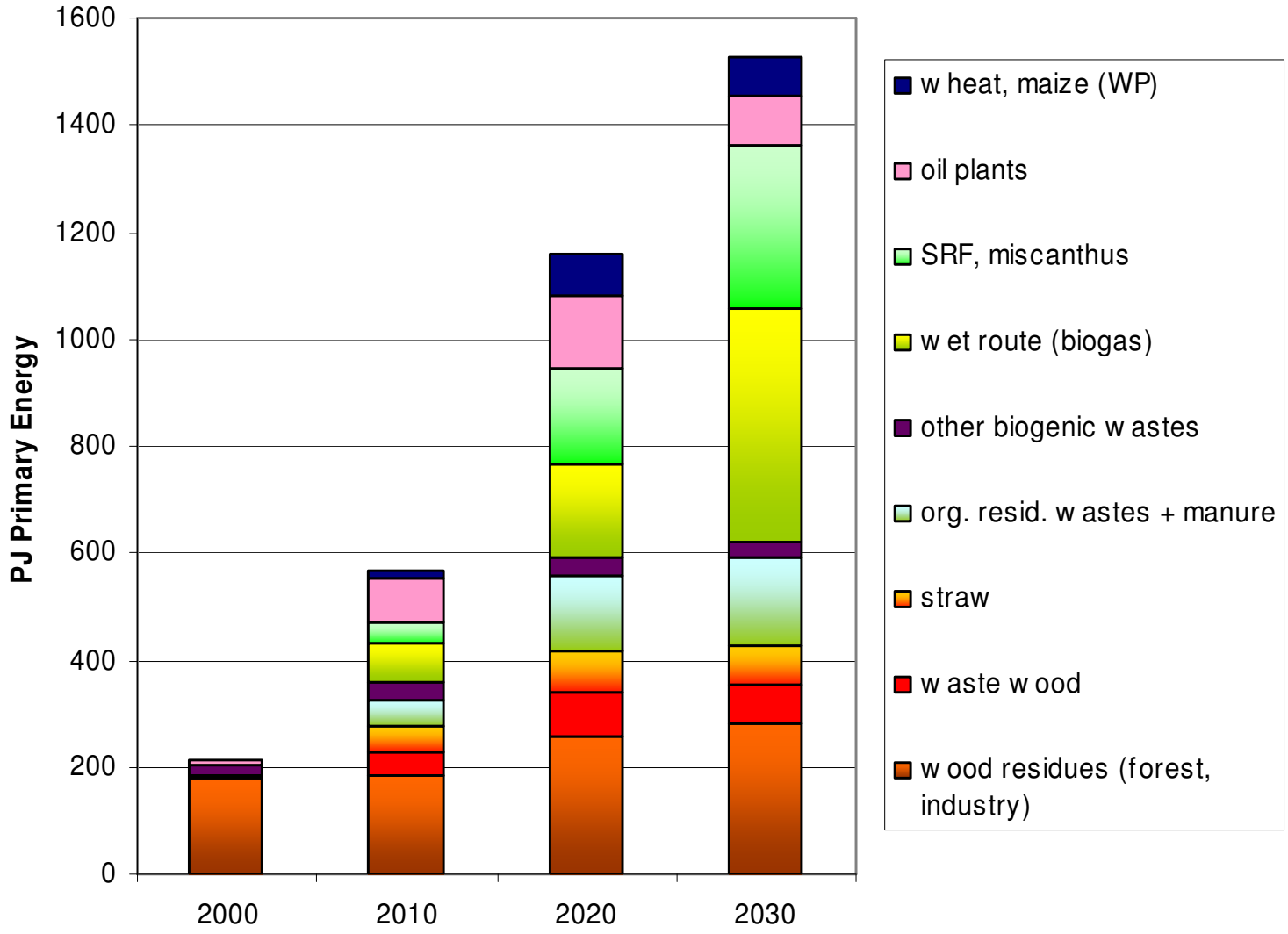

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Bio-Jobs in Germany

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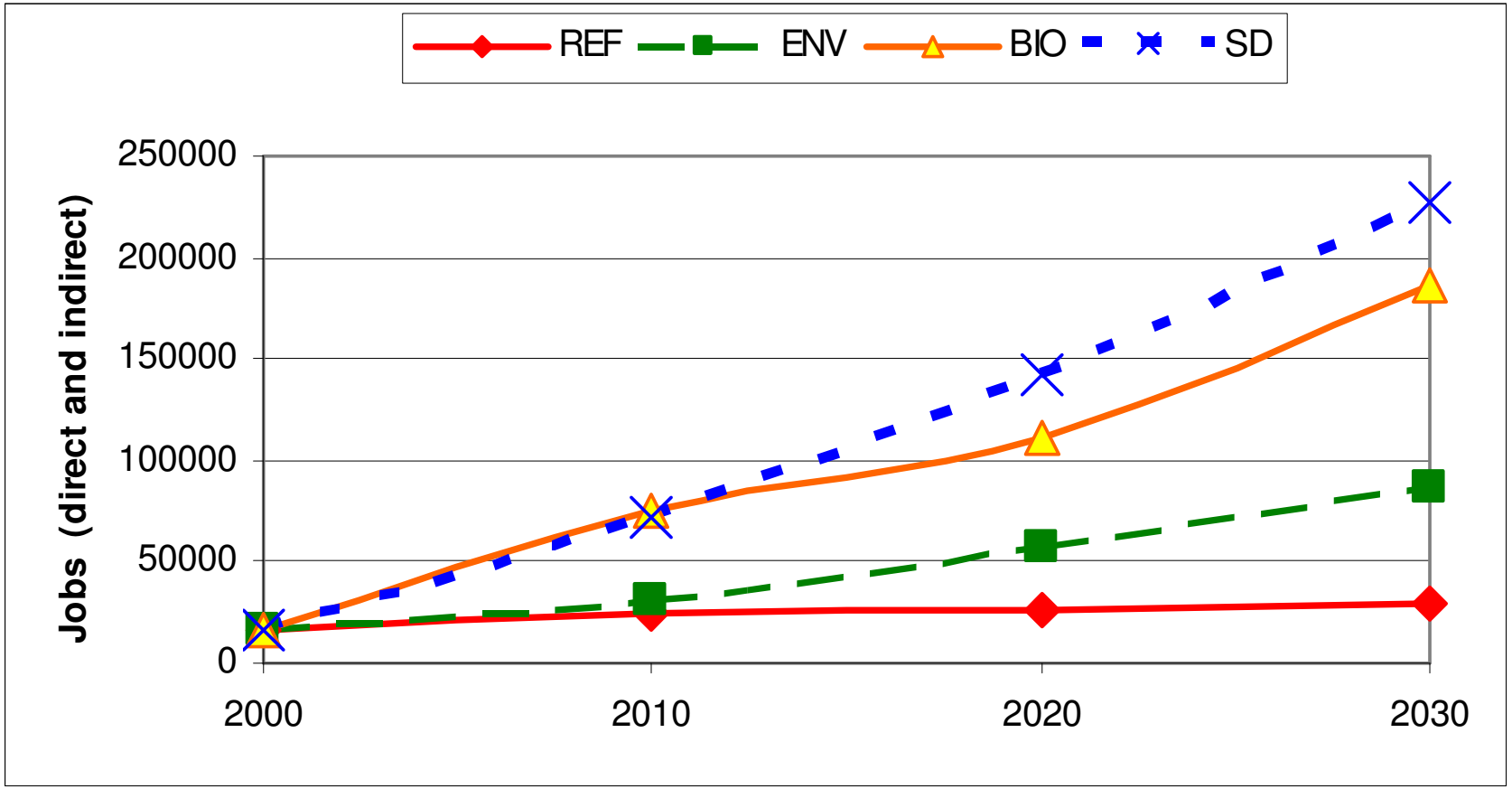

Total employment (net balance) in scenarios for electricity, heat, and transport - national boundary

Source: ÖKO 2004 study for BMU

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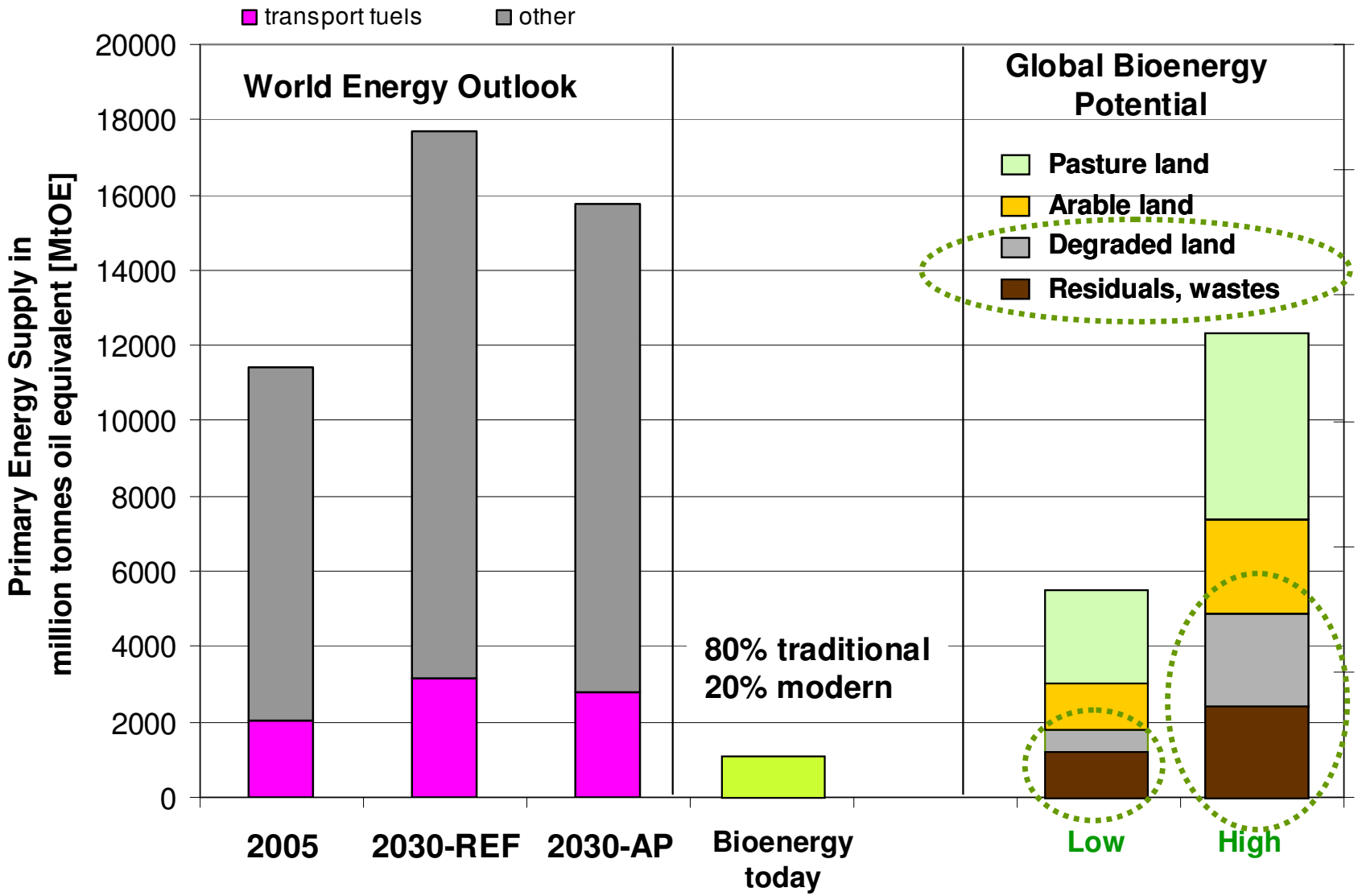
Low-LUC Bio Potentials



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More Information

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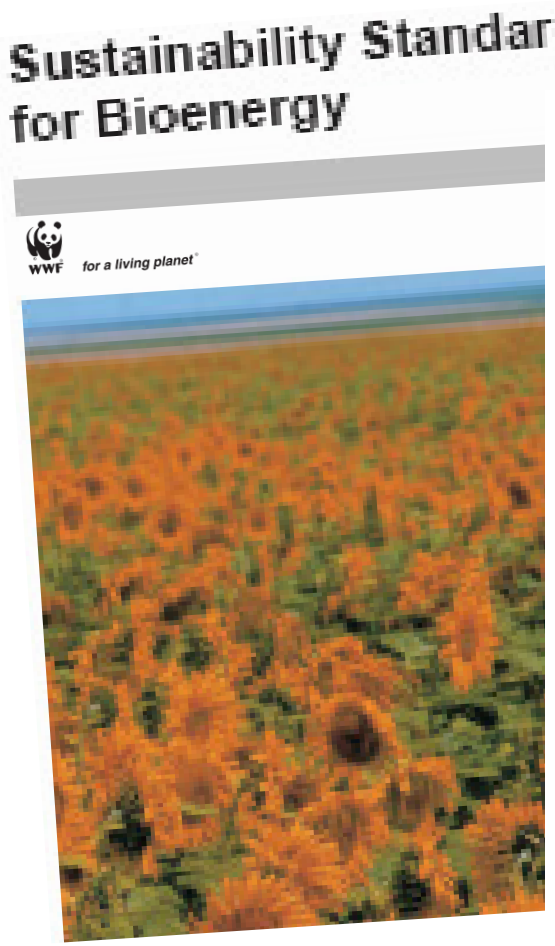

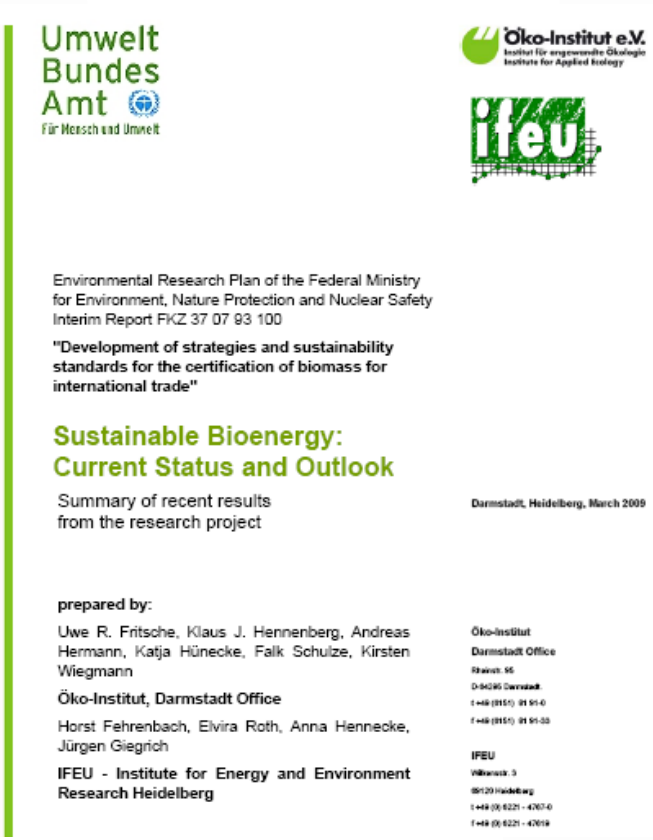

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