Prospects for the International Bioenergy Market and Scientific-technical Cooperation

International Conference on Bioenergy in Russia

Moscow, 5 – 6 June 2012

Josef Spitzer – IEA Bioenergy

Content

- International biomass and bioenergy trade: past, present, future
- IEA Bioenergy: International bioenergy RD&D cooperation

Development of international biofuels production and trade

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(Sources: Lamers et al.)

Solid biofuels trade

- Total 2000 → 2010: 56 → 300 PJ
- Pellets 2000 → 2010: 8,5 → 120 PJ
- Combustion systems near competitiveness

Liquid biofuels production

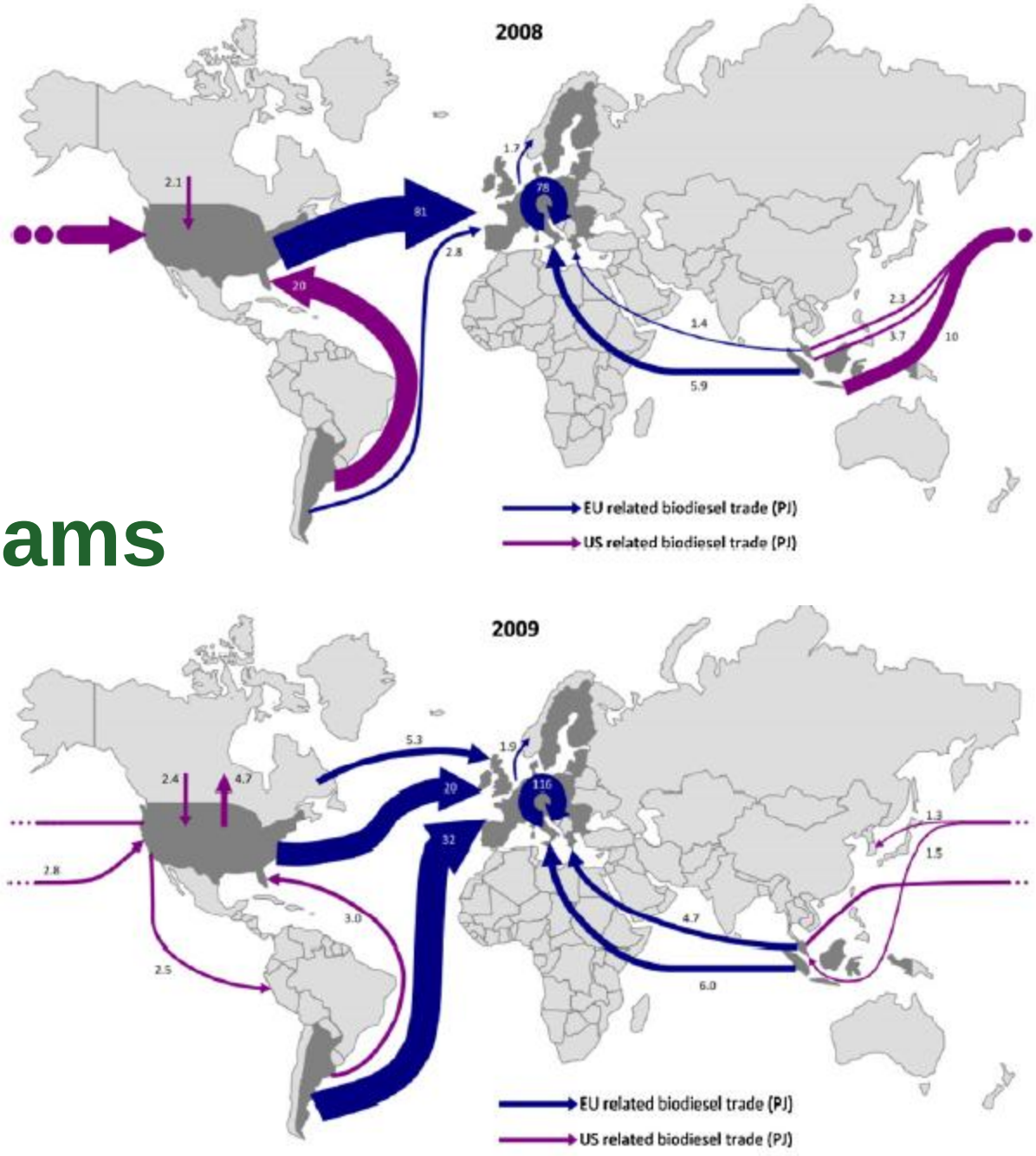
- Biodiesel 2000 → 2009: 30 → 572 PJ
- Bioethanol 2000 → 2009 340 → 1540 PJ
- "Net trade" 2009: 120-130 PJ
- New technologies under development (cellulose fermentation, synthetic fuels)
- Not competitive without policy measures

Role of policy

- Biofuel market targets, trade barriers
- Competition with food, feed and fiber uses
- Certification (sustainability)

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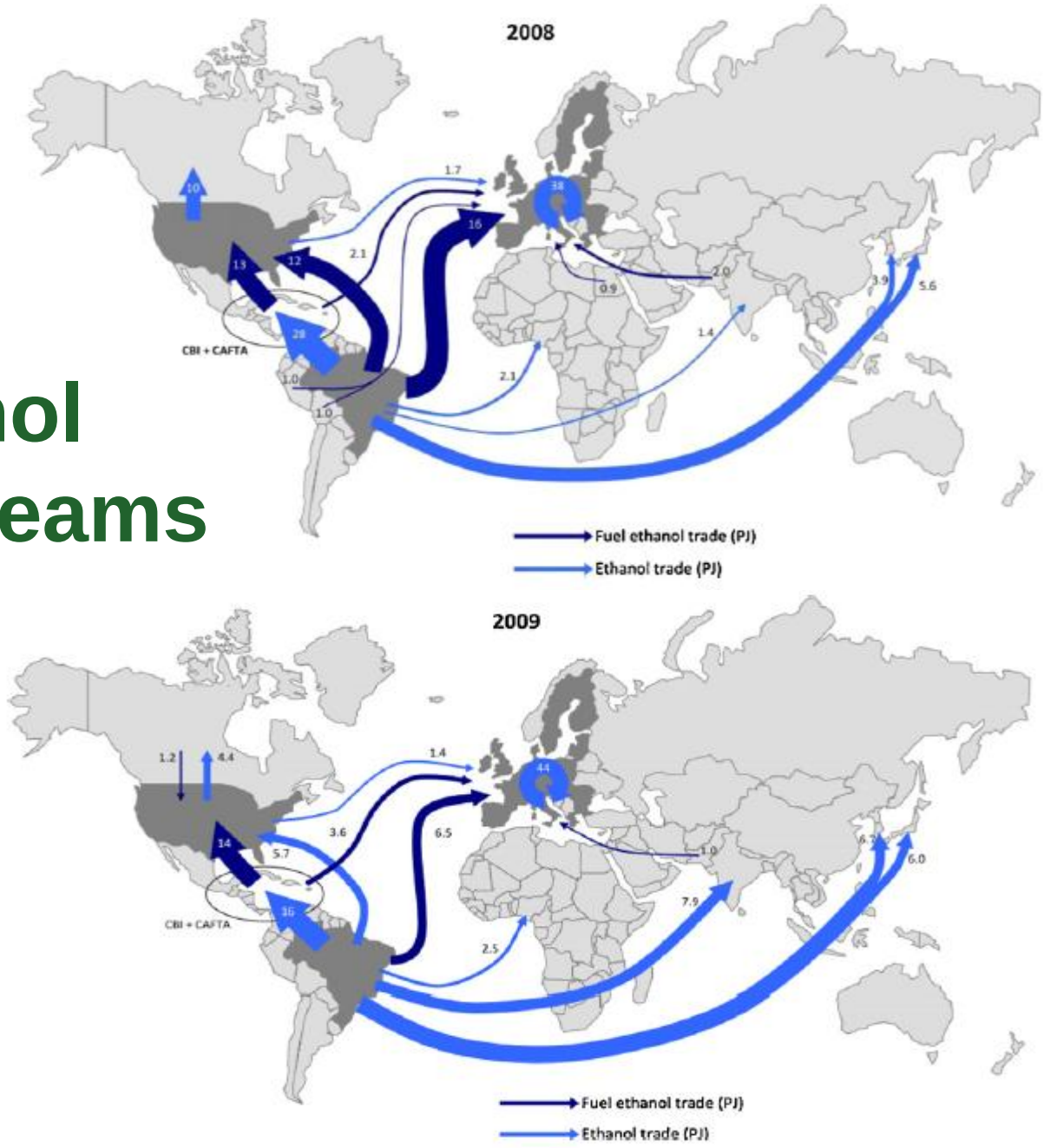
Global biodiesel trade streams



Source: P. Lamers et al. / Renewable and Sustainable Energy Reviews *15 (2011) 2655– 2676*

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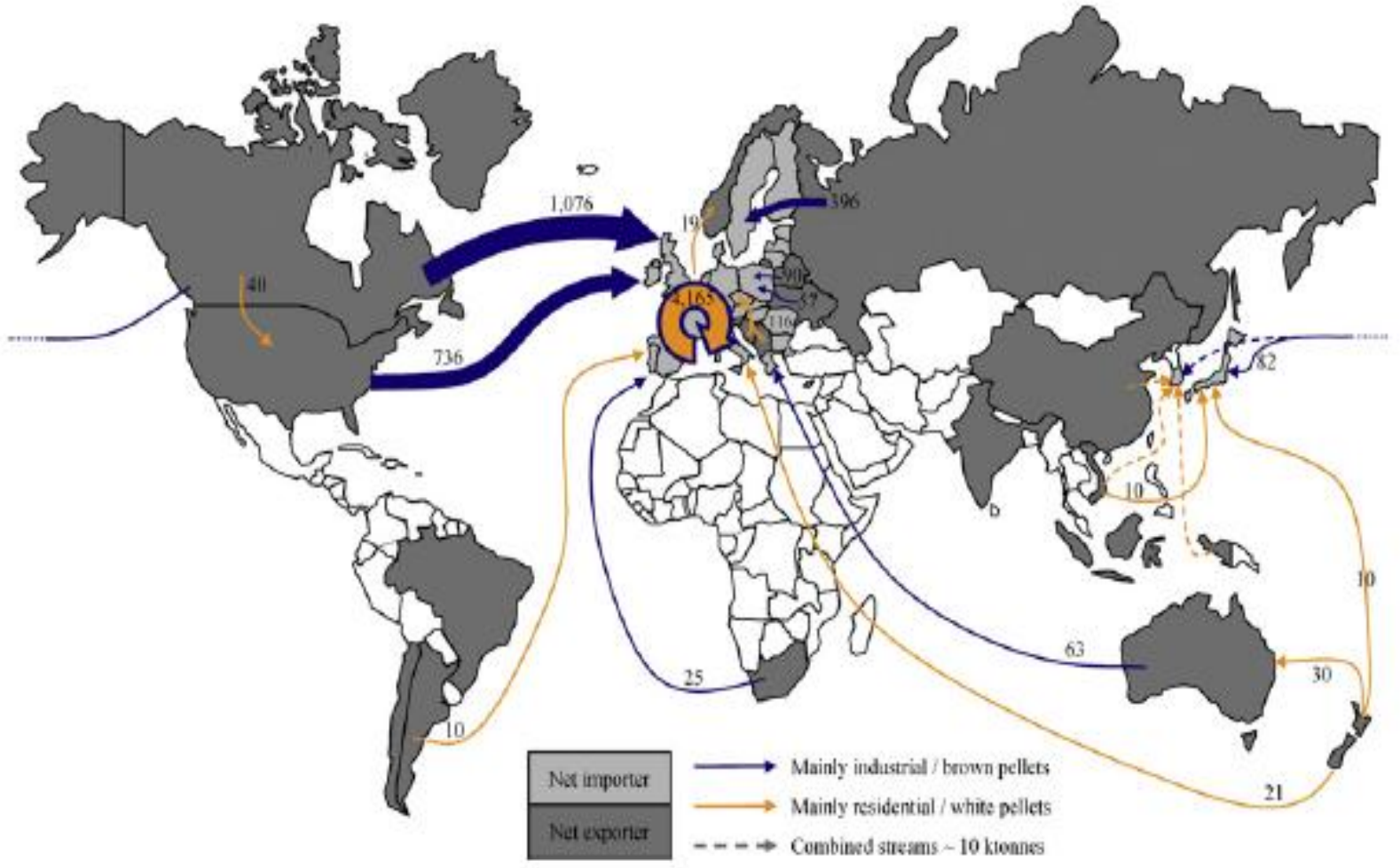
Global bioethanol trade streams



Source: P. Lamers et al. / Renewable and Sustainable Energy Reviews *15 (2011) 2655– 2676*

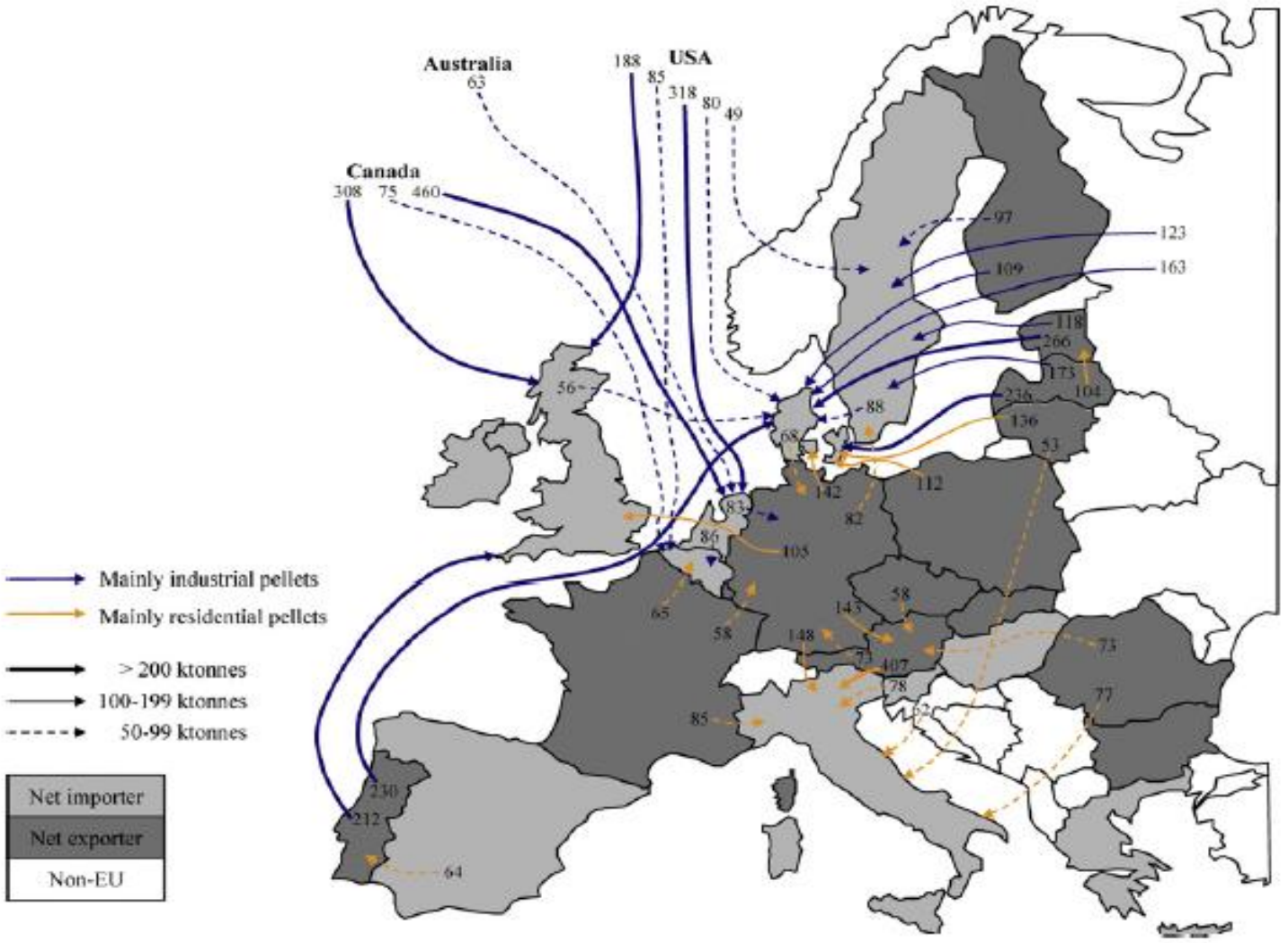
World wood pellet trade streams in 2010 (>10 kt)

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Source: P. Lamers et al. / Renewable and Sustainable Energy Reviews *16 (2012) 3176– 3199*

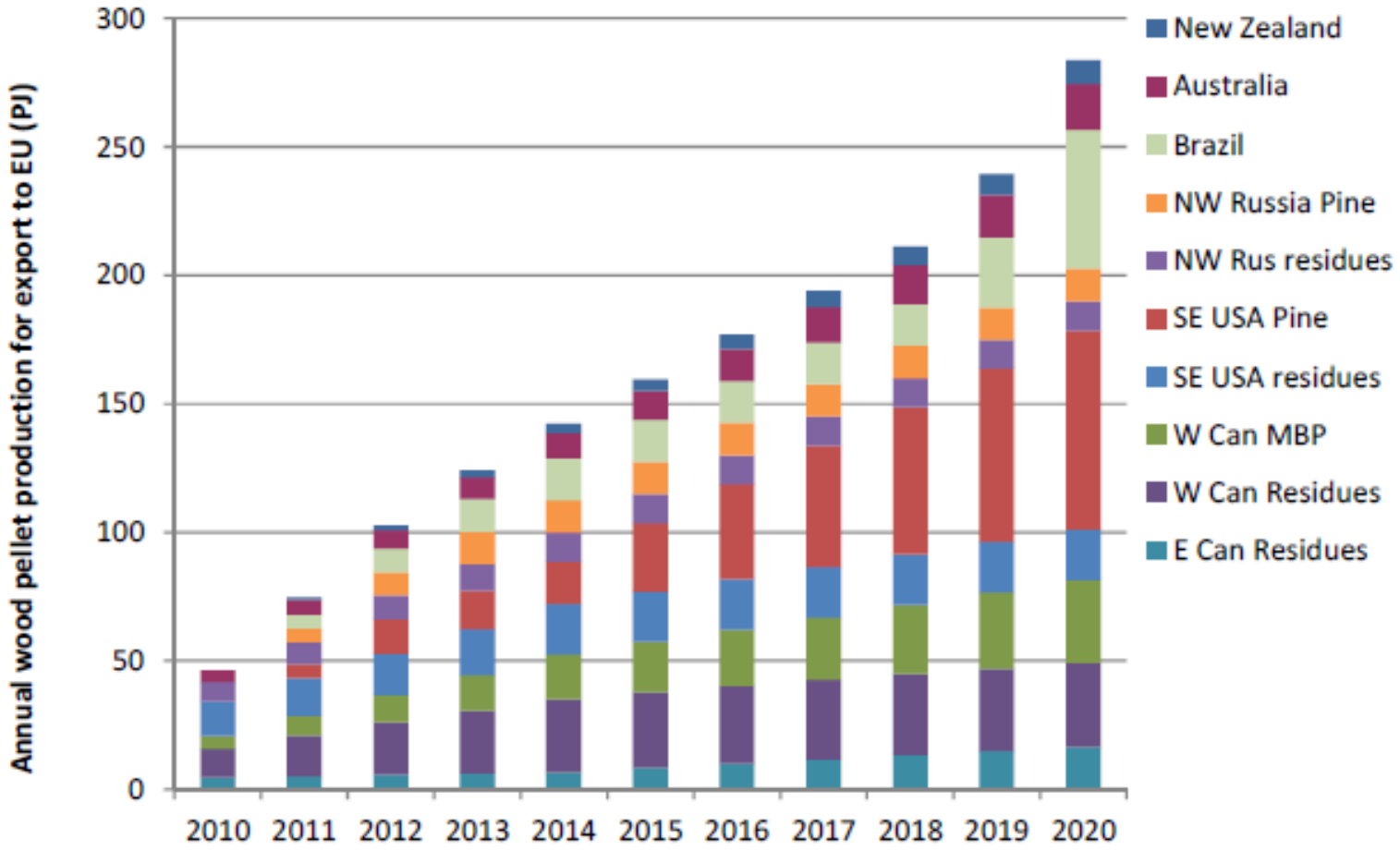
Wood pellet trade streams in Europe 2010 (>10 kt)



Source: P. Lamers et al. / Renewable and Sustainable Energy Reviews *16 (2012) 3176– 3199*

Future development of international pellets trade

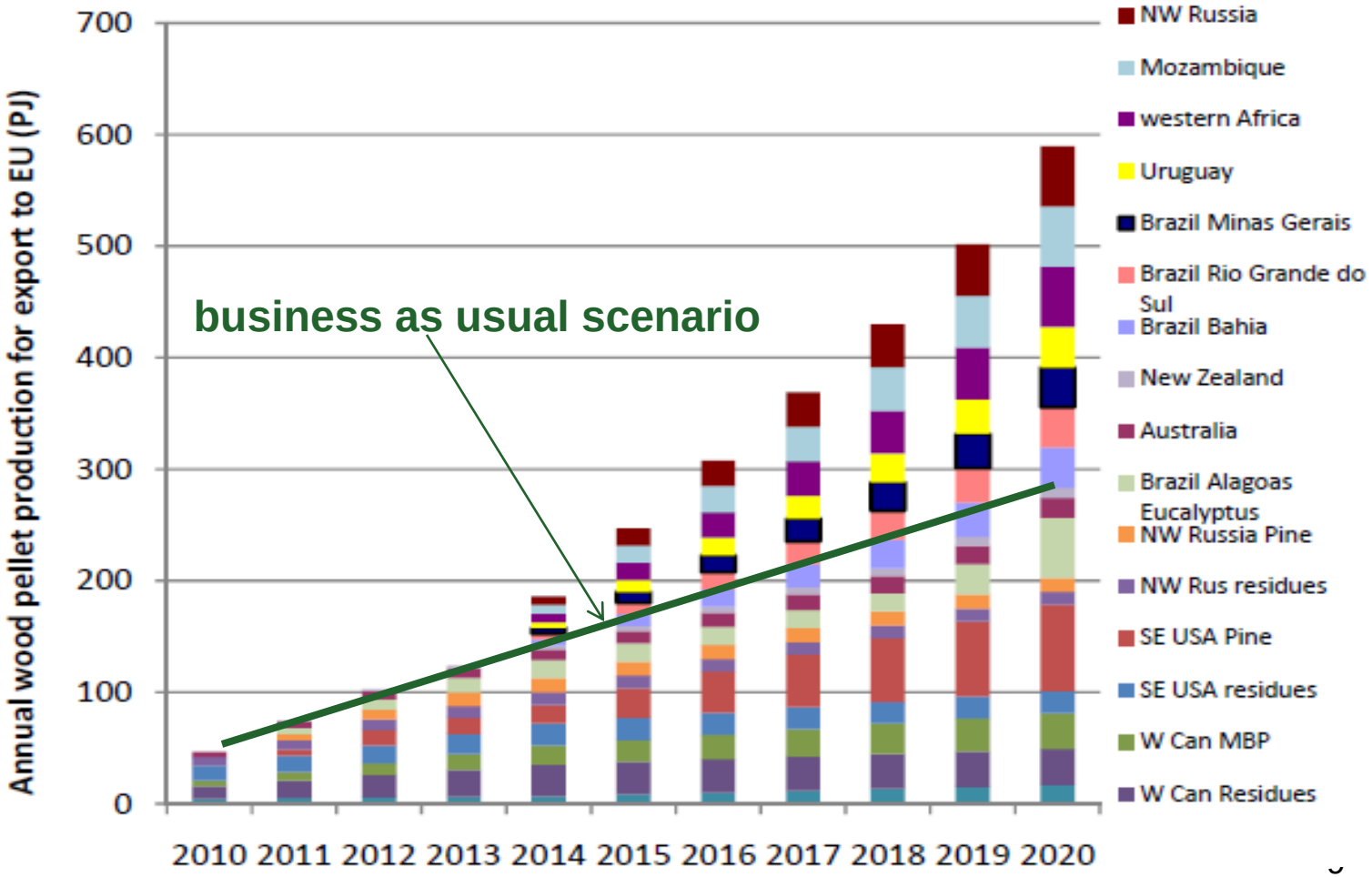
(business as usual scenario)



Source: M. Junginger, IEA Bioenergy Task 40, 2 Feb 2012

Future development of international pellets trade

(high import scenario)



Source: M. Junginger, IEA Bioenergy Task 40, 2 Feb 2012

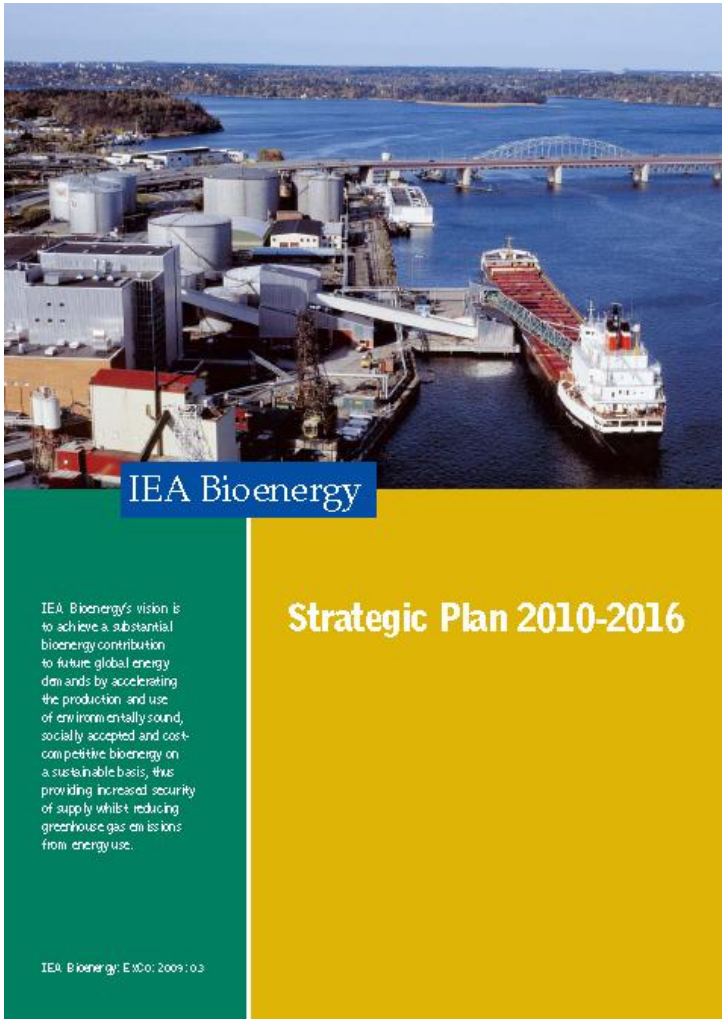
IEA Bioenergy

IEA Bioenergy is an international collaboration set up in 1978 by the International Energy Agency (IEA) as one of more than 40 "Implementing Agreements" within IEA's Energy Technology Network

Strategic Plan

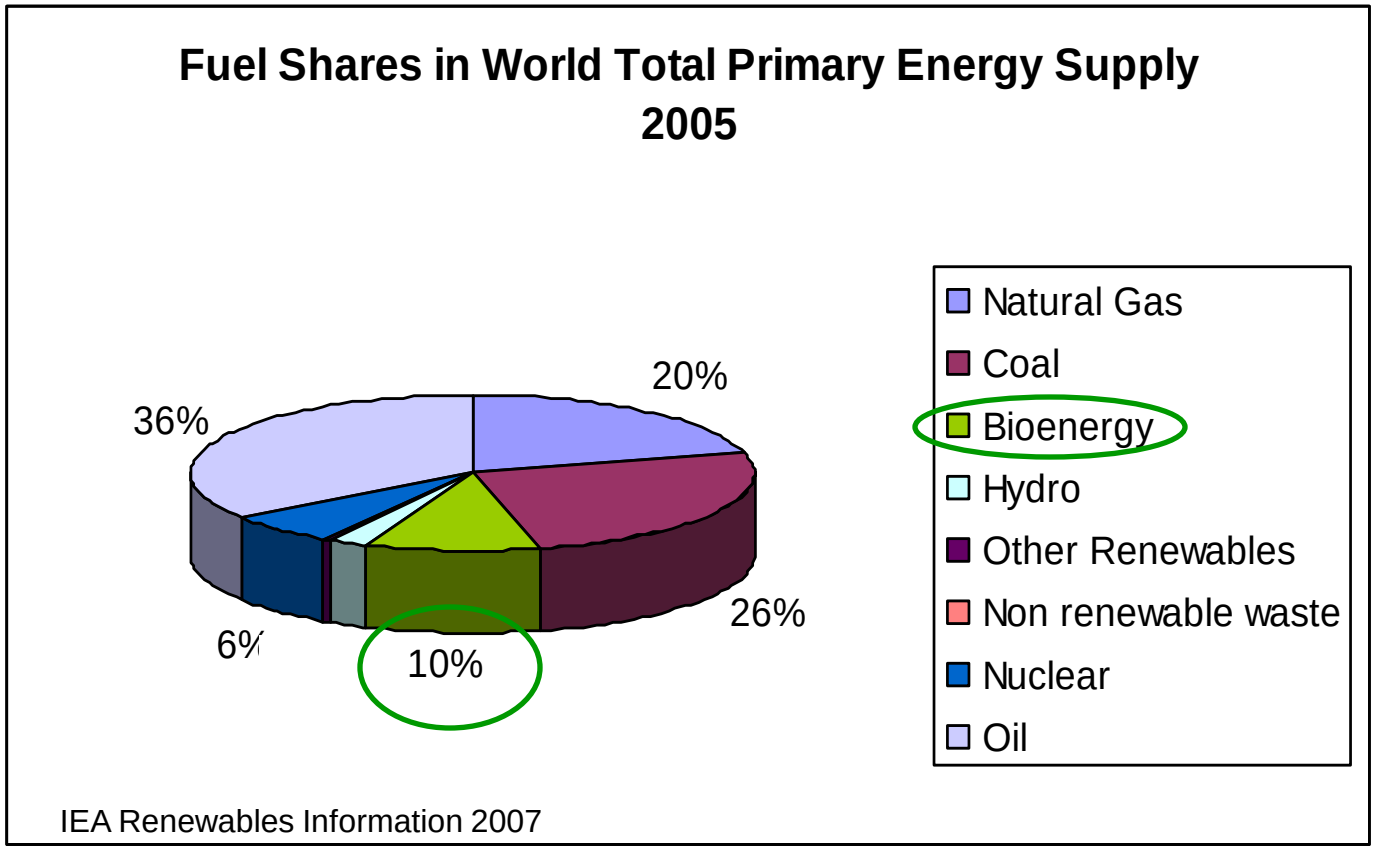
IEA Bioenergy

Vision: To achieve a substantial bioenergy contribution to future global energy supplies by accelerating the production and use of environmentally sound, socially accepted and cost-competitive bioenergy on a sustainable basis, thus providing increased security of supply whilst reducing greenhouse gas emissions from energy use.



Bioenergy

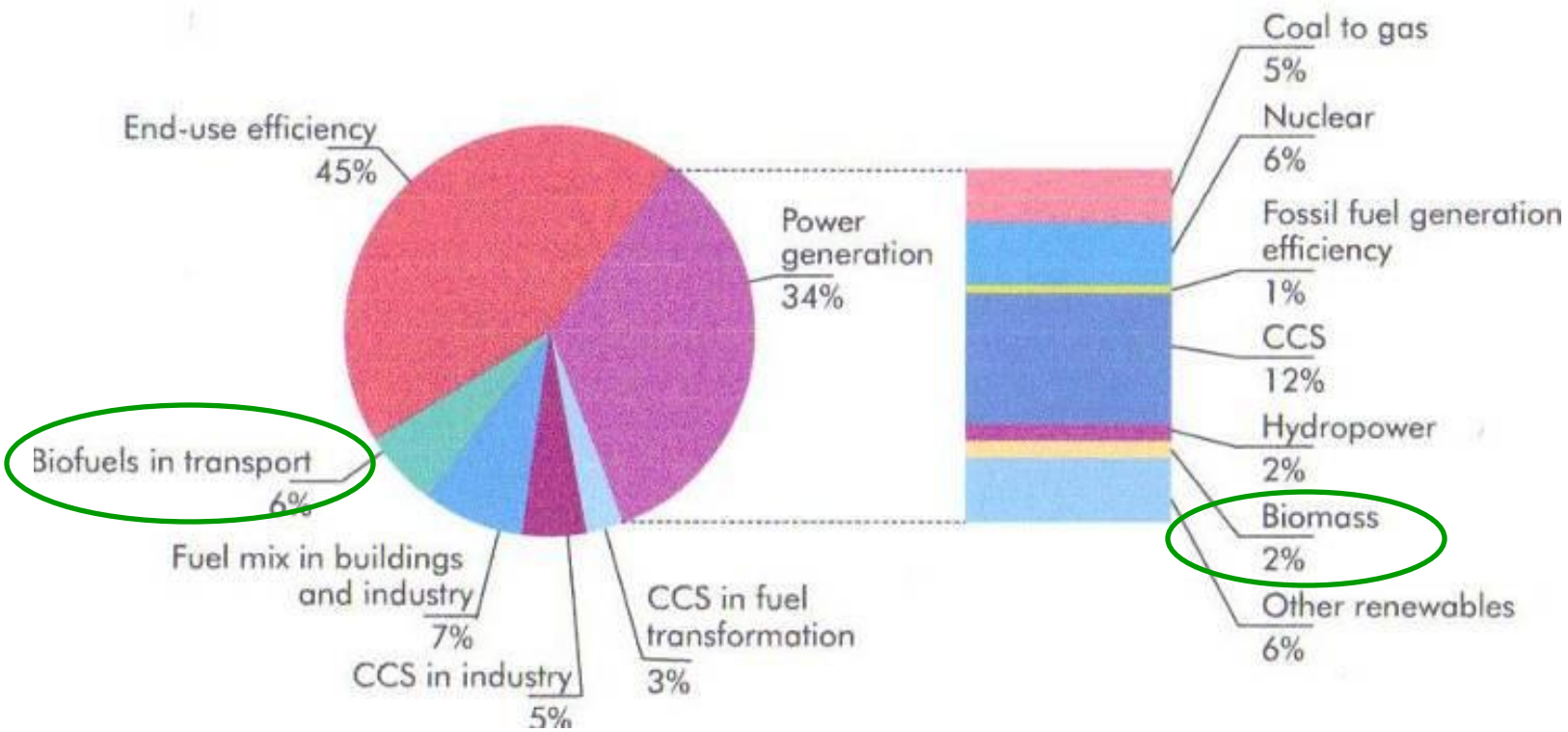
- ***already plays a major role supplying ~10% of world primary energy supplies***



Bioenergy

- ***has significant scope to make a greater contribution to secure and sustainable energy provision***

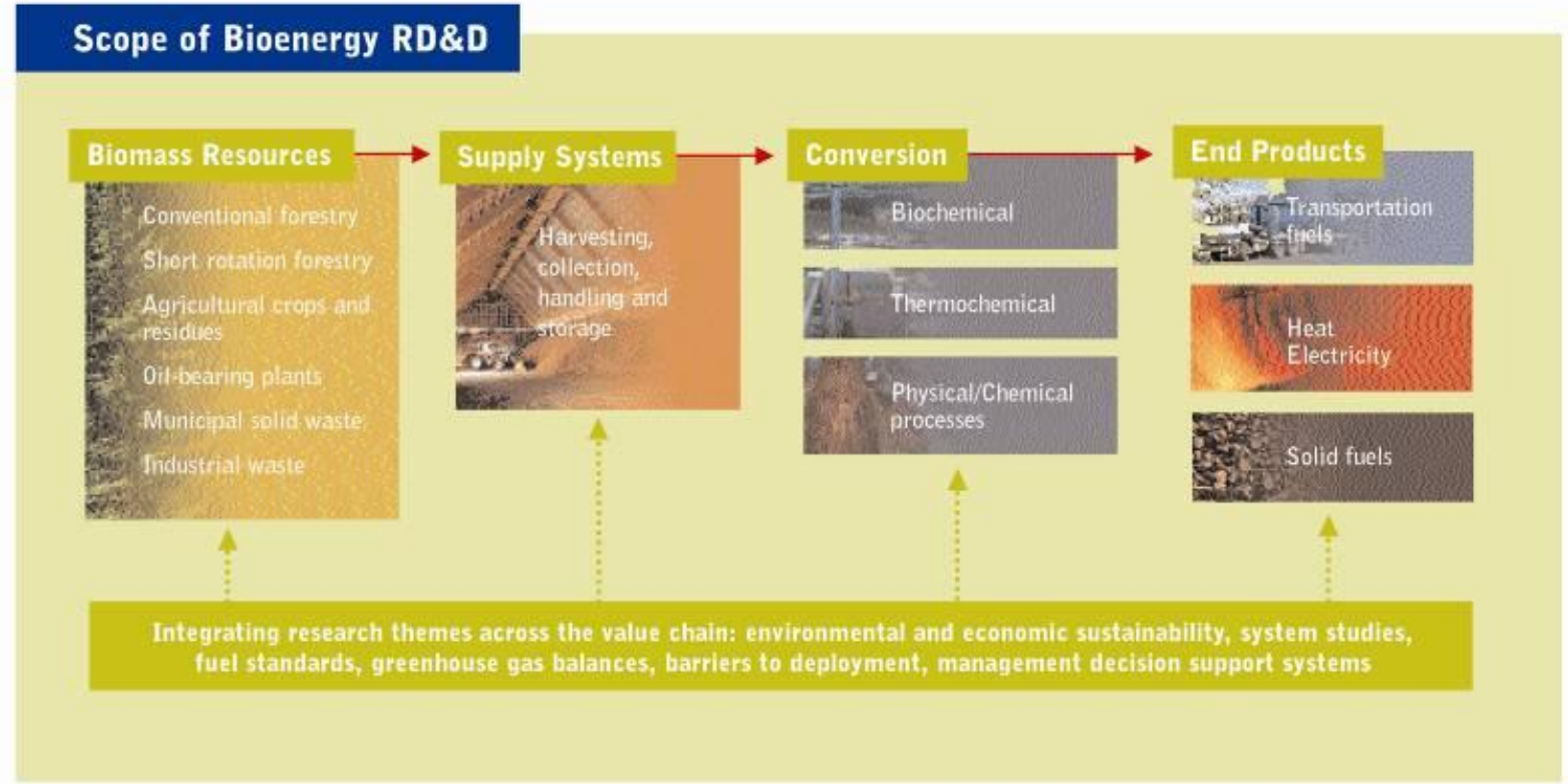
Figure 2.3 ▶ **Reduction in CO_2 emissions in the Map scenario by technology area**
(share of reduction below Baseline Scenario in 2050)



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Bioenergy

- *involves a range of feedstocks and technology options that can produce heat, power and liquid fuels*



Agreement Activities

Executive Committee

- Bi-annual ExCo meetings, management of the IA
- Topical Workshops
- Annual report, newsletters, website
- Strategic Position Papers

Tasks

- Coordination of national RD&D programmes, information exchange and joint projects
- Task meetings, study tours and workshops
- Publications, reports, newsletters, websites
- Networking with industrial and other stakeholders

24 Contracting Parties

- Australia
- Austria
- Belgium
- Brazil
- Canada
- Croatia
- Denmark
- European Commission
- Finland
- France
- Germany
- Ireland
- Italy
- Japan
- Korea
- Netherlands
- New Zealand
- Norway
- South Africa
- Sweden
- Switzerland
- Turkey
- United Kingdom
- United States

12 Task in three areas

- **Feedstock**
  Forest and agricultural products, MSW and recovered fuels

- **Conversion**
  Combustion, gasification, pyrolysis, anaerobic digestion, fermentation, biorefineries

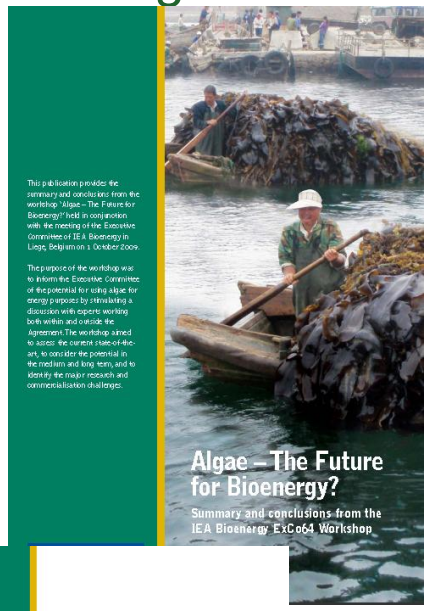
- **Integrating Research Issues**
  GHG balances, socioeconomic drivers, international trade, systems analysis

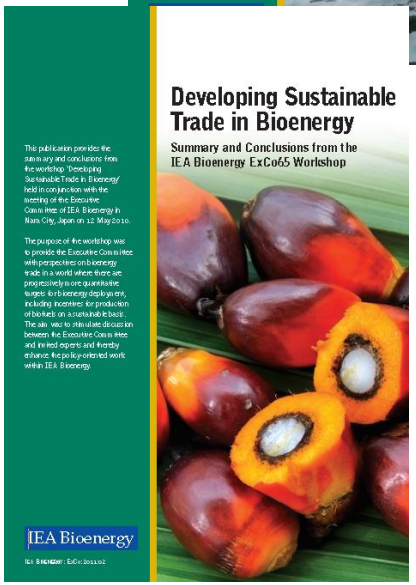
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Workshops

- held in conjunction with Executive Committee Meetings…..

- **Integrated waste management and utilisation of the products for energy**
- **Availability of biomass resources**
- **The biorefinery concept**
- **Biofuels for transport - part of a sustainable future**
- **Bioenergy – the impact of indirect land use change**
- **Algae the future for bioenergy?**
- **Developing sustainable trade in bioenergy**

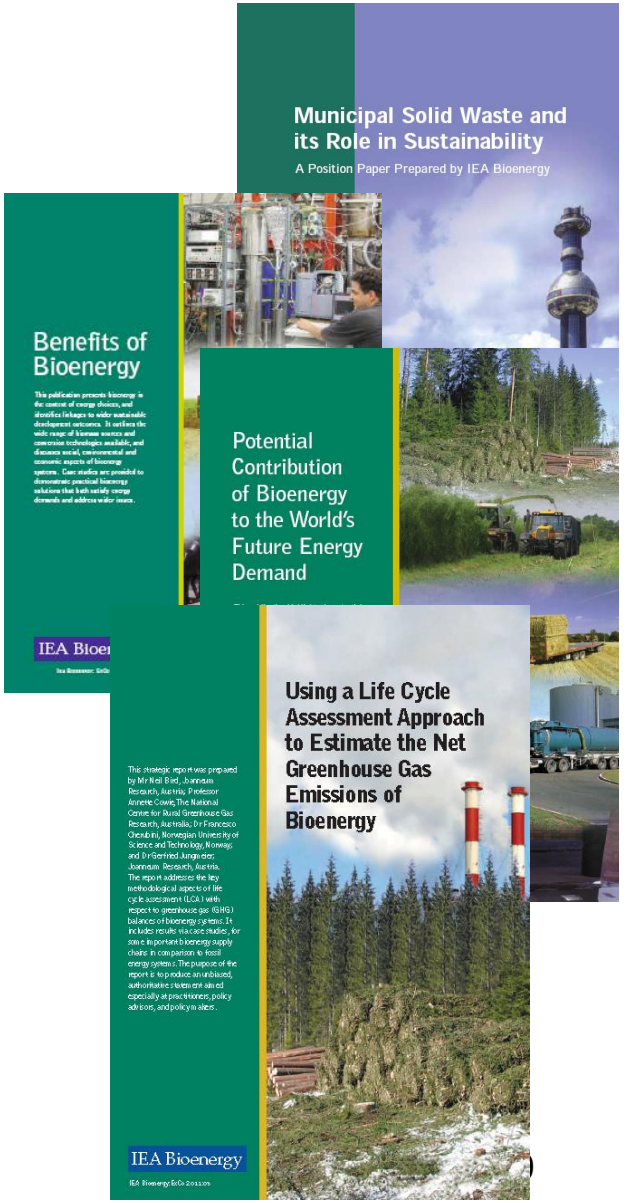




Strategic Position Papers

IEA Bioenergy

- Sustainable Production of Woody Biomass for Energy
- Municipal Solid Waste and Its Role in Sustainability
- Benefits of Bioenergy
- Potential Contribution of Bioenergy to Future World Energy Needs
- Using a Lifecycle Assessment Approach to Estimate the Greenhouse Gas Emissions of Bioenergy



Annual Reports and Newsletters

IEA Bioenergy

- **Annual Report:** Report from the Executive Committee, progress reports on each Task, feature article and information on budgets and participation

- **IEA Bioenergy News:** Report on ExCo meeting and workshop, editorial from a Member Country, news from the Tasks recent publications and upcoming events





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