



AusBiotech 2009
AUSTRALIA'S BIOTECHNOLOGY CONFERENCE

Asia Pacific
Region of Opportunities

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Biofuels

Dr Les A Edge

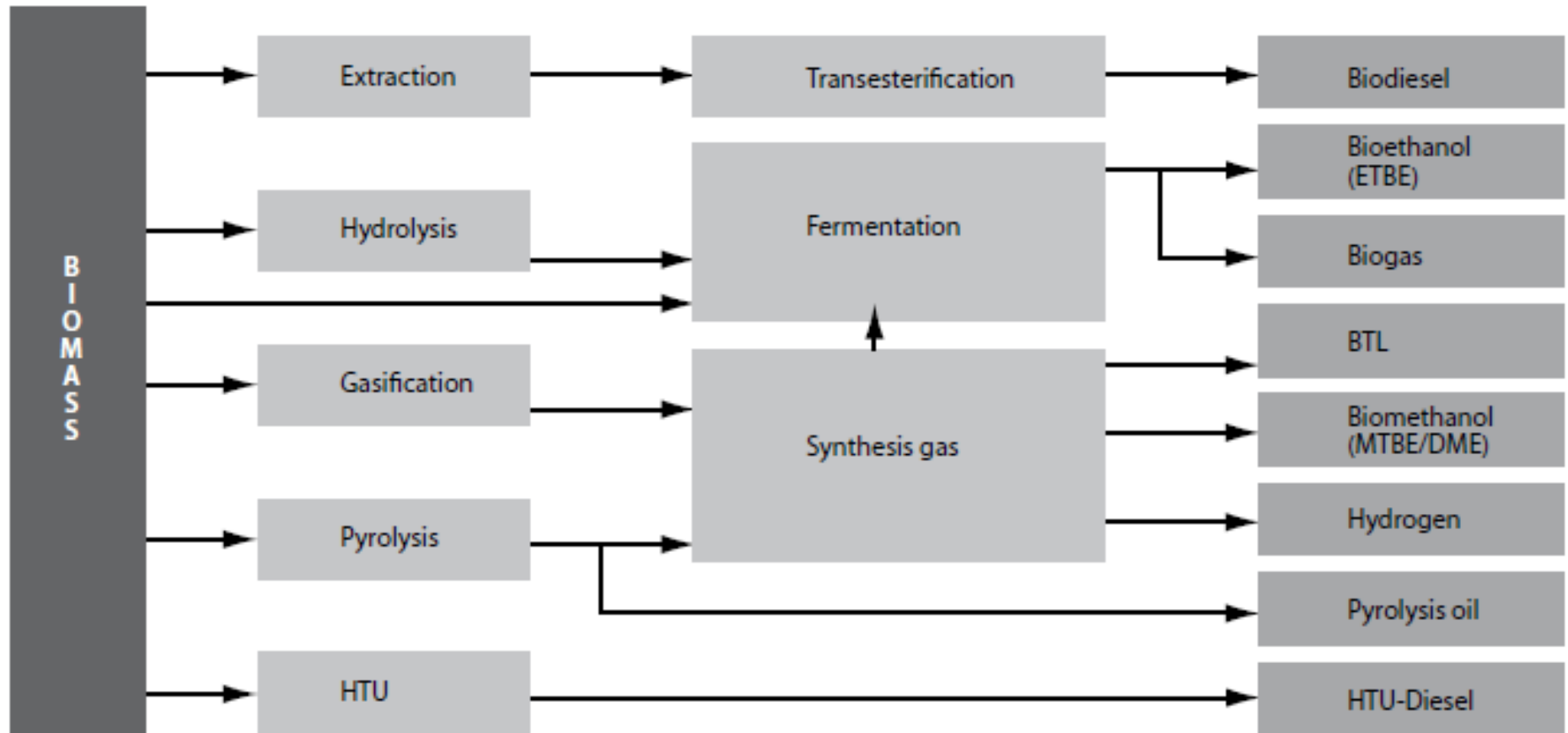
Principal Research Fellow, Queensland
University of Technology

Director, BioIndustry Partners Pty Ltd

**BioIndustry
Partners**



Biomass to transportation fuels technologies



Update on implementation agendas 2009

A review of key biofuel producing countries

A REPORT TO IEA BIOENERGY TASK 39

EDITORS:

Mabee, Warren

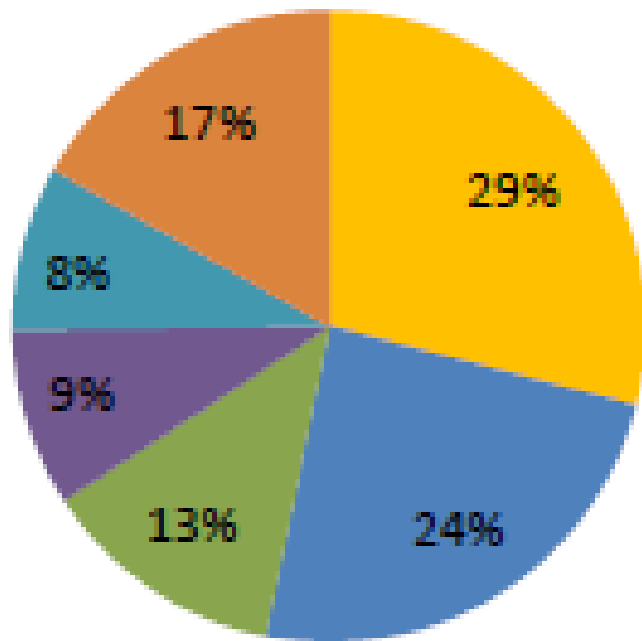
Neeft, John

Van Keulen, Bregje

Biodiesel

(10.9 billion litres)

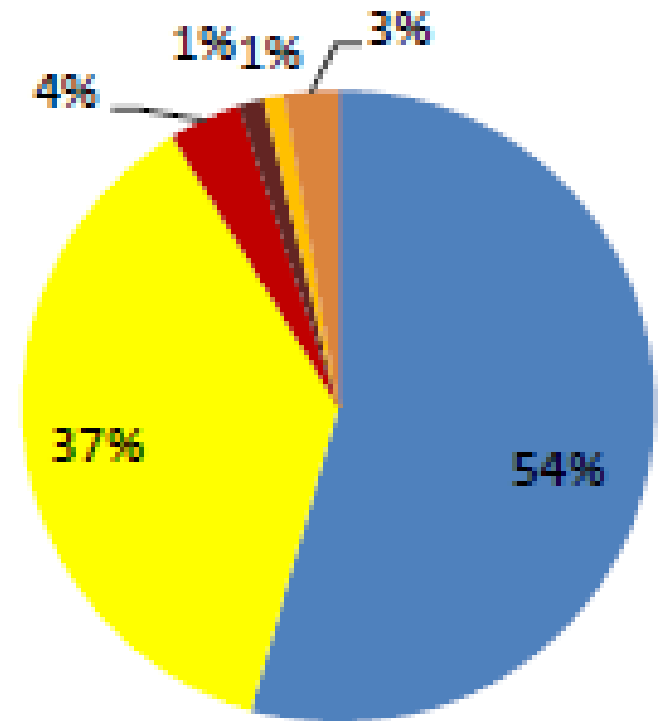
- Germany
- United States
- Netherlands
- France
- Spain
- Rest of World



Bioethanol

(66.6 billion litres)

- United States
- Brazil
- China
- Canada
- Germany
- Rest of World



Country	Biodiesel (million L/a)
Germany	3,180
United States	2,650
Netherlands	1,372
France	991
Spain	926
United Kingdom	347
Australia	260
Austria	252
Portugal	227
Sweden	127
Brazil	110
Belgium	108
Denmark	103
Canada	100
Poland	91
Ireland	63
China	60
Norway	39
Japan	10
Finland	0

Country	Bioethanol (million L/a)
United States	36,300
Brazil	24,497
China	2,448
Canada	870
Germany	730
France	578
Spain	578
Australia	164
United Kingdom	153
Poland	151
Ireland	85
Sweden	65
Austria	13
Finland	3
Belgium	0
Denmark	0
Japan	0
Netherlands	0
Norway	0
Portugal	0

In the short term, the situation is bleak for biofuels production; lack of government support for the market has resulted in overcapacity and a move towards offshore production of biofuels. However, overall environmental policy (particularly related to climate change) has improved since the last federal election, and long-term outlook is healthy considering the level of funding for R&D. Assuming full auctioning of emissions permits and the return of some revenue to R&D, the long-term deployment of biofuels remains bright in Australia.

*Towards sustainable production
and use of resources:*

ASSESSING BIOFUELS



- Crop yield increases will probably not compensate for the growing and changing food demand.
 - Estimated additional requirement of 144 to 334 Mha of global cropland for food in 2020
 - Requirements for fuel crops are additional
- Biofuels show a wide range of net greenhouse gas savings compared to fossil fuels.
 - feedstock, conversion technology, methodological assumptions
- Many biofuels cause higher environmental pressures than fossil fuels (e.g. Increased eutrophication)
- Land use change – both direct & indirect driven by growing demand for biofuels and the subsequent GHG emissions and consequences for biodiversity
- Stationary use of biomass — to generate heat and/or electricity — is typically more energy efficient than converting biomass to a liquid fuel
- ‘GHG mitigation potential of biofuels to-date are rather minimal overall and the costs so far seem disproportionately high’
- Call for demand side initiatives to reduce transport fuel use

<http://www.unep.fr/scp/rpanel/biofuels.htm>

**Liquid biofuels do have
GHG mitigation potential
and are fungible with
existing liquid fuels and fit
into infrastructure**

**Liquid biofuels offer only
alternative to petroleum
fuels for aviation**

Societies value mobility

**Energy forms are not equally
valued**

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