

# EBB

European Biodiesel Board

## BIODIESEL IN EUROPE AND WORLD-WIDE: OVERVIEW AND DEVELOPMENT PERSPECTIVES

*Raffaello GAROFALO*

*Secretary General*

**EBB - EUROPEAN BIODIESEL BOARD**

*Renewable Resources and Renewable Energy: A Global Challenge*

Trieste June 10-12<sup>th</sup>, 2004



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## **BIODIESEL IN EUROPE AND WORLD-WIDE: OVERVIEW AND DEVELOPMENT PERSPECTIVES**

- I. INTRODUCTION: WHY BIODIESEL - BIODIESEL AND ITS ENVIRONMENTAL ADVANTAGES**
- II. THE EUROPEAN BIODIESEL INDUSTRY**
- III. BIODIESEL WORLDWIDE: NEED FOR ESTABLISHING INTERNATIONAL SUPPORT AND CO-OPERATION**



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### What is biodiesel?

- **A renewable liquid fuel produced from vegetable oils**
  - *Most commonly from rapeseed, sun, soybean oils*
  - *but official definition is FAME (Fatty Acid Methyl Esters)*
  - *it includes as well other kind of fats such as recycled fat, animal fats, or mamona, jatropha oils in developing countries*
- **Biodiesel processing (transesterification)**
  - *relatively simple: 100 parts of vegetable oils + 10 parts of methanol =*
  - *= 100 parts of biodiesel + 10 parts of glycerine*
  - *A transesterification plant is a relatively cheap investment (especially when compared to bioethanol plant)*



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### How is biodiesel marketed?

- **Biodiesel use and marketing**

- *In blends (B5, B30, B100) or pure*
- *Strategic advantage: does not require any engine modification especially if used in blends (some minor modifications for pure use)*
- *There are already very tight quality standards (CEN 14214, ASTM standard in the US, and others) defining FAME quality requirements*
- *In the EU diesel containing up to 5% biodiesel is considered as diesel at all effects and is covered by normal diesel standard EN 590*

- **Biodiesel (and biofuels') cost is normally twice as high as mineral diesel**

- *As a result detaxation or legislative support are necessary in order to make it competitive with mineral diesel*
- *Cost related to support are balanced by advantages in terms of environment job creation, local taxes and VAT income, etc.*



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## Introducing EBB

- **The European Federation of biodiesel producers**
  - *Co-ordinates and represents the industry at EU and national level*
  - *Permanent offices in Brussels*
- **Representing 90% of the EU Biodiesel production**
- **21 members (17 full members and 4 associates)**
- **Private companies are directly members of the EBB**
  - *Multinational companies of the Agricultural processing and vegetable oils sectors (ADM, Bunge, Cargill)*
  - *Industry from the fuel and renewable energy sector (Sauter, EHN, Fox)*
  - *Medium size industries active in rural areas*



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## Why biodiesel and biofuels? their advantages in terms of:

### ■ Environment

- Biofuels are fully renewable energies and do not entail CO2 emissions
- The EU transport sector is practically 100% dependent on oil
- CO2 emission from the transport sector are expected to keep rising worldwide
- Biofuels are the only way for reducing CO2 emissions from transport

### ■ Human health

- Reduction in particulate matter emission
- Biodiesel particulate is much less carcinogenic

### ■ Security and independence of supply

### ■ Rural development

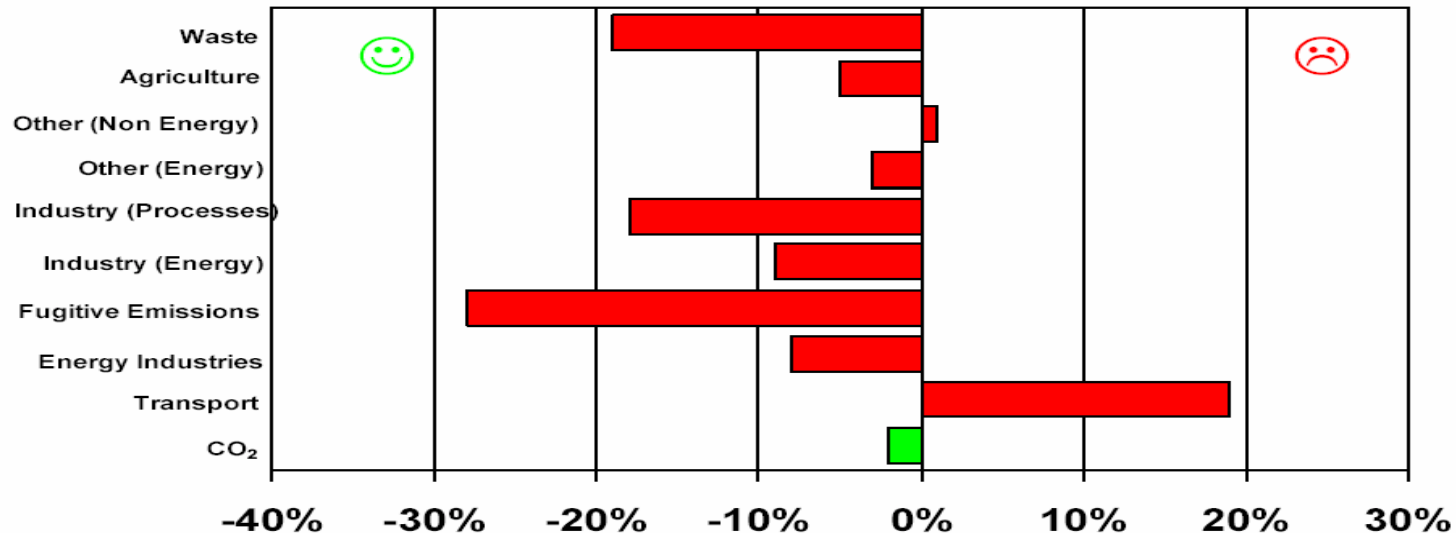


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### Changes (%) in EU greenhouse gas emissions by sector (1990-99)

Sources: European Environment Agency, BAFF



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### The EU and biodiesel: a short introduction

- The EU is the world leader in biodiesel production
- EU mineral oil markets are short in diesel and long in gasoline
- Biodiesel is the first biofuel produced in Europe (in terms of quantities 1,4 mt: biodiesel, 0,4mt: bioethanol : graphic)

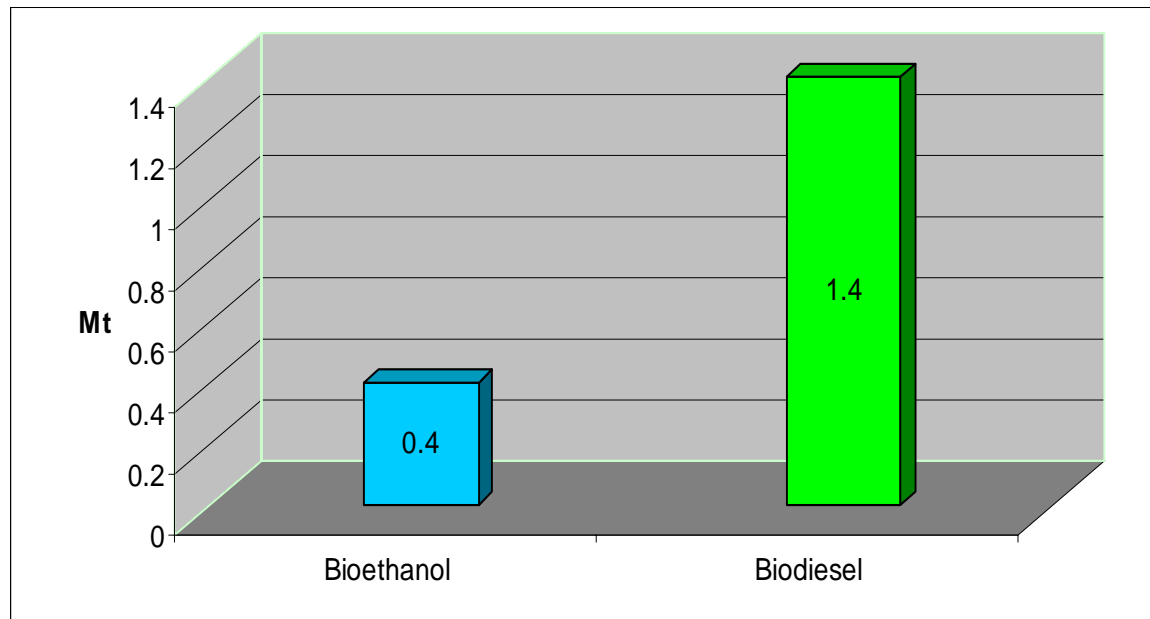


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### 2003 production of biofuels in the EU-15

Sources: EBB, ADECA



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## 2003: a crucial year for biodiesel in Europe

- **Directive 2003/30 on the promotion of biofuels**
  - *Setting a target of 2% market penetration in 2005 and a 5,75% in 2010*
- **Directive 2003/96 on biofuels detaxation**
- **CEN Specs (EN 14214 and revision EN 590)**
- **Energy crops scheme under the Common Agricultural Policy**



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### New legislations in favour of biodiesel in EU Member States

- The impact of 2% and 5,75% targets beyond arithmetics: a political debate has been opened at Member States' level
- Sweden, Spain, Poland and Germany : new legislations for biodiesel
- Legislative drafts in NL, BE, P, UK, ...



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### A large Scale Industry

- Investment is increasing
- The average size of biodiesel production units is getting larger
- Biodiesel consolidating its position of first biofuel produced in the EU (in terms of quantity)
- Actual production and EU industrial capacities  
- data -



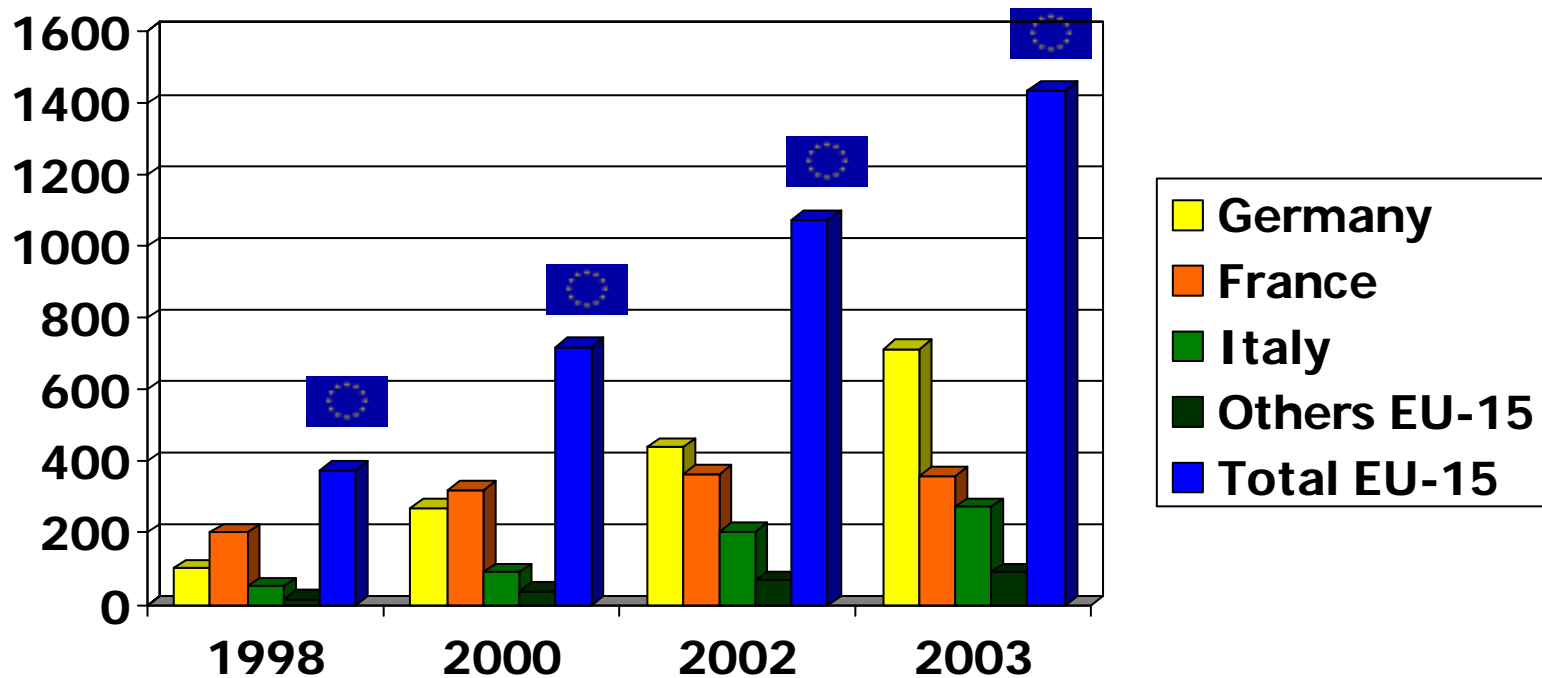
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## EU Biodiesel production in Member States and in the EU ('000 t)



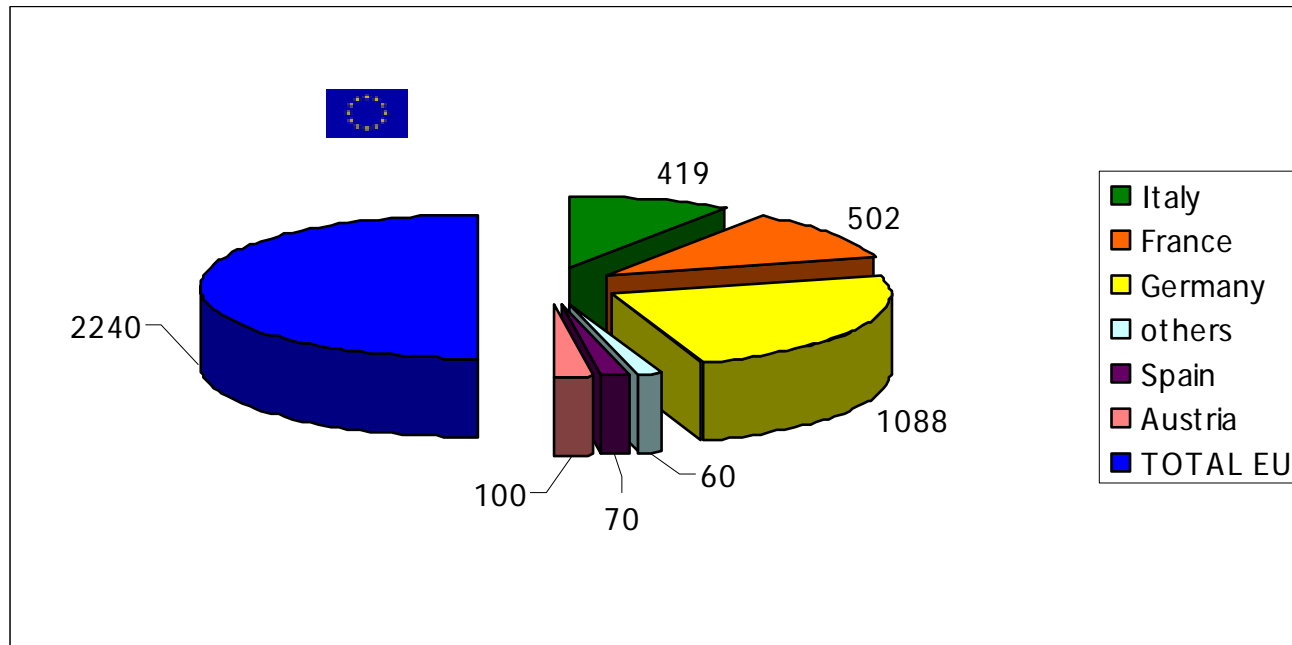
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## 2004 Biodiesel production capacities in the EU-15 and its Member States ('000 t) Situation in date 1/01/2004



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## Biodiesel is becoming a world wide reality

- **Developments in the US**
- **US production is 1/10<sup>th</sup> of EU production but keeps progressing**
- **Co-operation between EBB and the US National Biodiesel Board**
- **Biodiesel programme in Brazil**
- **New investments in Malaysia, India, Philippines, Thailand, Australia, Canada, etc.**



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## WHAT ABOUT BIODIESEL AS ALTERNATIVE FUEL IN DEVELOPING COUNTRIES?

- **Hydrogen era is still far away. Additionnally hydrogen is an energy career and not an energy source**
- **Biodiesel is a very versatile transport fuel: does not require infrastructure change**
- **Can be produced from local raw materials (or collection of used vegetable or frying oils)**
- **Extremely positive impact on rural development, security of supply (country debt), employment**
- **Global positive impact as alternative source of supply for developing countries (mineral oil demand for transport is increasing dramatically following Chinese and Indian development)**



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## Need for international co-operation and support in favour of biodiesel and liquid biofuels

- Today the technology is available and there is an industry, which is ready to invest
- EU experience and knowledge can be easily transferred
- Trials and research need to be started in order to adapt biodiesel technology to needs of developing countries (*local raw materials, specific technologies, ...*)
- Other uses of biodiesel are to be explored such as power fuel or navigation fuel in protected areas (*biodiesel is fully biodegradable and less toxic than salt*)
- So far no real international UN initiative supporting biodiesel or bioethanol



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## CONCLUSION

- Biodiesel and biofuels are today the only viable way of reducing GHG emissions from transport sector (i.e. the sector globally more dependent on imports, fossil energy and where CO<sub>2</sub> emissions keep rising)
- The EU biodiesel industry is well established and will continue to increase its production. Meantime biodiesel is also becoming a world wide reality
- There is a need for an international co-operation in order to support the use of biodiesel and biofuels world-wide especially in developing countries, where fossil energy use and GHG emission from transport will rise exponentially next years



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