IAMA's 19th Annual World Forum, Budapest, June 2009
Biofuels Session I – Sunday 21

Biofuel Development in Spain

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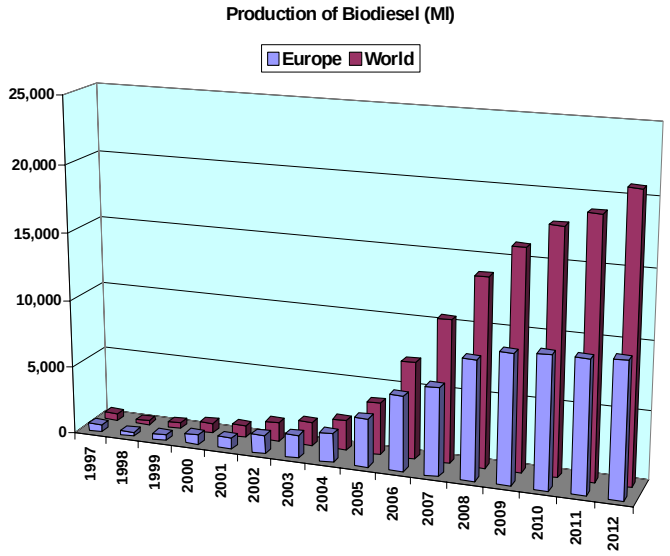
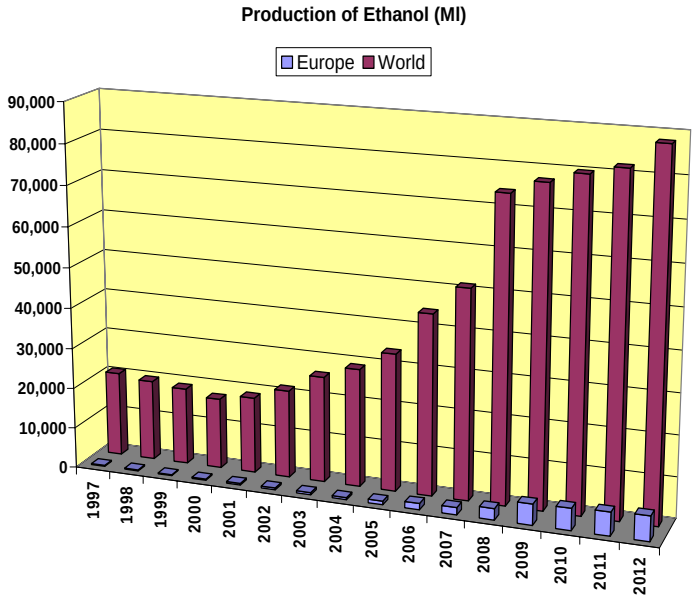
Development of biofuel production in EU

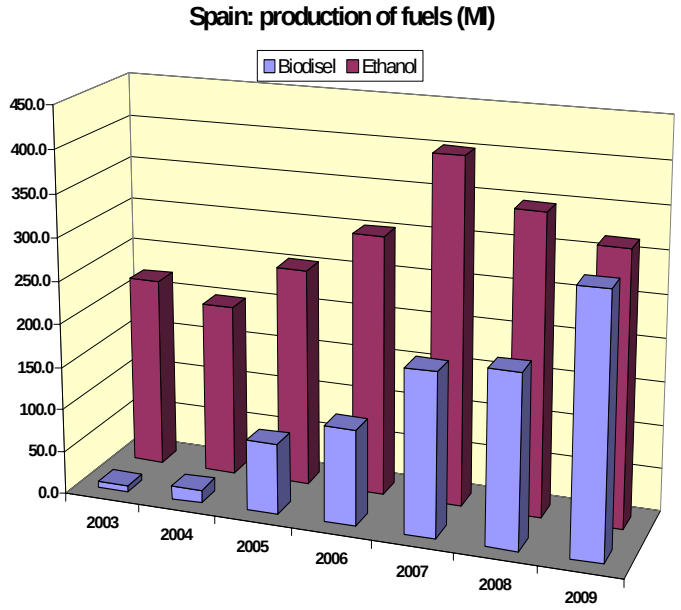
- <u>Biodiesel production,</u> “boom” in the EU since the end of the 90s ➔ EU, world’s most important producer.
- <u>Development of the Ethanol</u> production in the EU since 2000 ➔ EU, world’s third producer, far behind US and Brazil.
- Plans to increase EU biodiesel and ethanol production

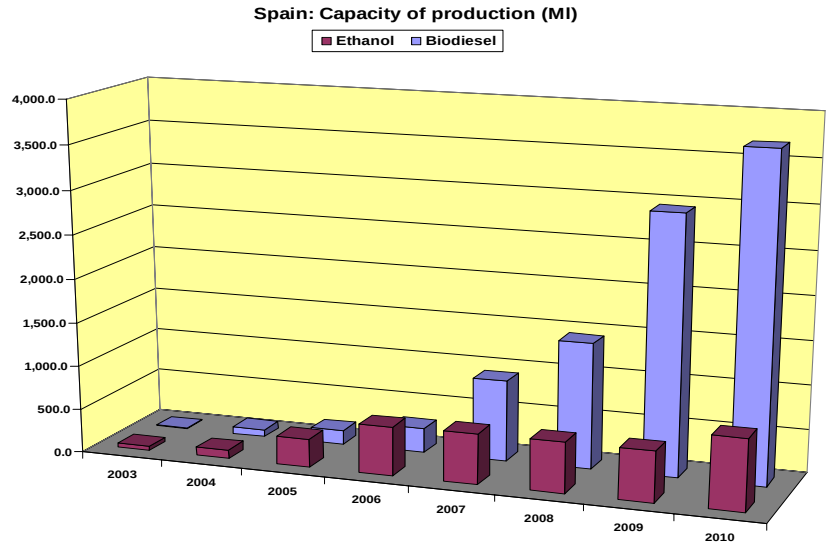




Development of biofuel production in Spain

- In Spain, ethanol production is greater than that of biodiesel (contrary to EU).
- Spain is Europe's third producer of ethanol and a marginal biodiesel producer.
- Ambitious plans for future development of ethanol and biodiesel production.





Development of biofuel production

Three reasons for public support of biofuel development:

- To **reduce greenhouse gas** (CHG) emissions.

  ➔ Kyoto Protocol: EU has agreed to a cut, on average, by 8% from 1990 emission levels.

- To **decrease the oil energy dependence** and to diversify the energy sources.

- To **support rural development** creating activities in rural areas and creating demand for agricultural products.

Main tools used for biofuel development

Mandatory renewable fuels blending requirements of the European Commission :

- **Directive 2003/30/EC** sets a minimum percentage of biofuels to replace diesel or gasoline in transportation: 2005 - 2%; 2006 - 2.75%; 2007 - 3.5%; 2008 - 4.25%; 2009 - 5%; **2010 - 5.75%.**
- the share of energy from renewable sources in all forms of transport in **2020 should be at least 10** % of the final consumption of energy in transport (**Directive on the promotion of the use of energy from renewable sources**, 2009)

➔ **Regular increase of biofuels consumption is expected.**

Main tools used for biofuel development

- Other supporting measures in the EU and Spain: **tax exemption in the special tax on hydrocarbons** and **tariff protection**.

- **Strong financial support (subsidies)** for investments aimed at creating production plants in Spain through:
  - Regional incentives: non-refundable subsidies for productive investment (in less developed or “objective 1” regions)
  - Aids of support energy diversification national and regional plans.
  - Restructuring of the sugar industry aids

Biofuels problematic in the UE and Spain

Dependence on imports for feedstocks

- EU has a permanent oilseeds external trade deficit, so biodiesel production increases oilseeds imports.

- Spain has a **permanent deficit in cereals and oilseeds**, so both biodiesel and ethanol production translates into a higher trade deficit of these products.

- The high prices of agricultural raw materials in 2008 seriously affected the sector, especially in Spain due to the dependency on imported feedstocks (collapse of the ethanol production).

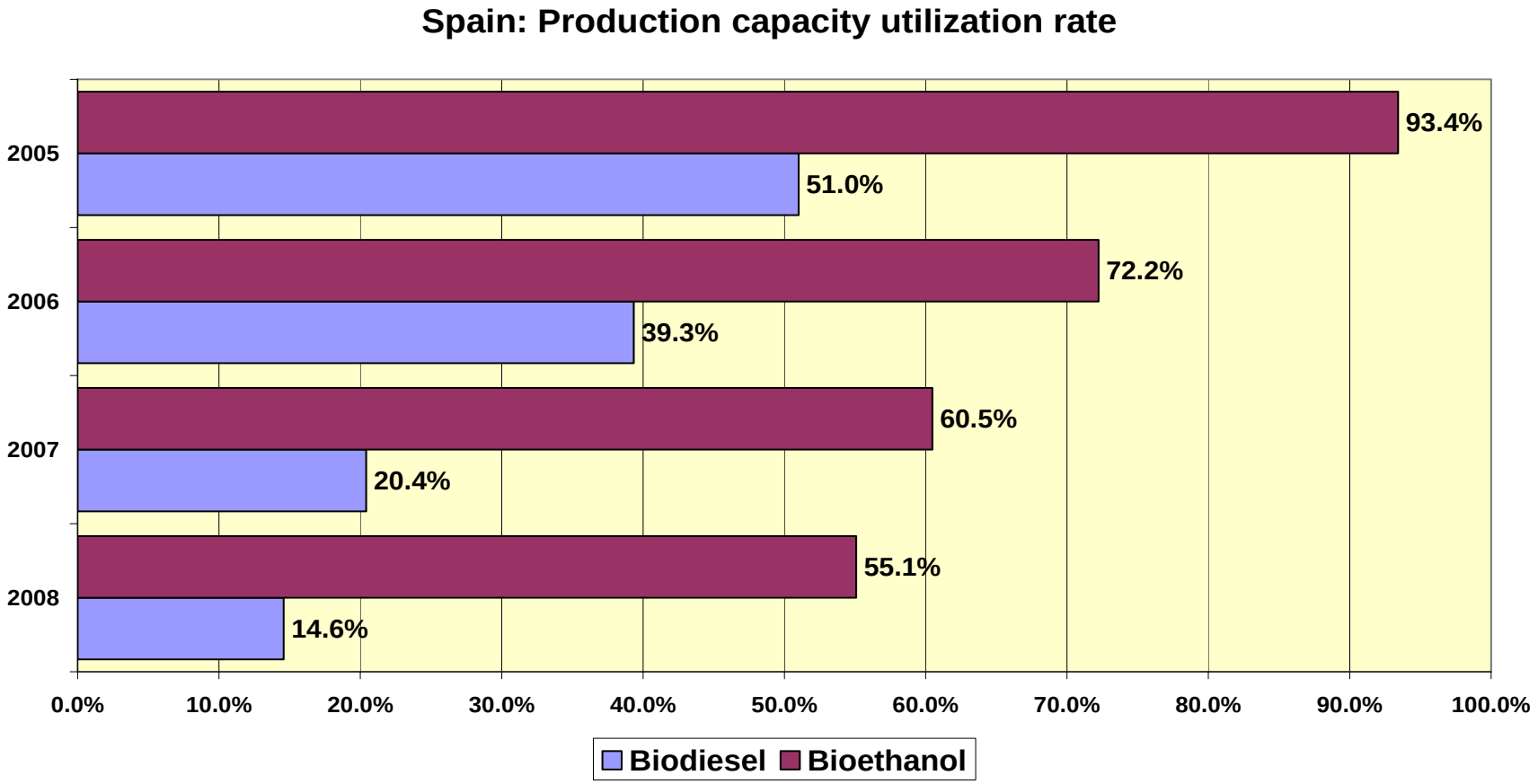
- Only a fraction of the production is made with non-food raw materials: recycled vegetables, animal fats, wine surpluses…

➢ ***While the US and Brazil produce biofuels through raw materials of which they are big producers and exporters (corn and sugarcane), the EU produces biodiesel through oilseeds of which it has a deficit. The Spanish case is yet clearer, being Spain a deficit country in*** **grains and oilseeds.**

Biofuels problematic in the UE and Spain

As a consequence of the **lack of competitiveness** of the Spanish production system:

- i**mportant rise in imports and**
- **a very low production capacity utilization rate in the Spanish biofuel industry**



Biofuels problematic in the UE and Spain

Reduction of GHC emissions:

- Reasonable doubts about the contribution of Biofuels to CHG emission cuts.
- Land Use Changes due to the production of feedstocks for biofuel production.

Rural Development:

- Most of the biofuel factories in Spain are close to ports, not in rural areas
- Most raw material are imported.

Future: some questions relevant for the future of the Spanish (and EU) biofuel industry

- Consumption of biofuels seem to be guaranteed by the **mandatory renewable fuels blending** from EU Directifves
- What feedstocks will be used: cereals versus sugar beet/cane; rapeseed oil versus palm oil?
- Who will produce biofuels?: consumers countries or feedstock producer countries (Brazil, Indonesia, Colombia, Argentina,…)?
- Focused on local production (Spain, France and Germany) or open to the trading system (Sweden)? How important will imports be in order to reach EU goal of a 10% share of biofuels by 2020?
- Second generation biofuels: how fast will these be developed?