

Liquid biofuels in Greece

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National workshop in Bucharest, 28th June 2007



Overview

- The Biofuels directive 2003/30 has been adopted by the Greek government as Law 3423/05.
- Biodiesel will be the main biofuel for the Greek transport sector with bioethanol playing a less important role until 2008.
- The current law imposes the obligatory use of all detaxed biodiesel in the existing refineries (in an up to 5% blend). Detaxed quantities are decided on an annual basis under a quota scheme.
- In 2005 only 420 tons of biodiesel were produced.
- In 2006 14 investors have applied for detaxed biodiesel production amounting to the 91,000 m³ set for the year. Due to lack of bioethanol, the target reached was only 1.15%.
- In 2007 13 investors have applied for detaxed biodiesel amounting to 114,000 m³. Again, due to lack of bioethanol, the target for biofuels penetration is limited to only 1.40%.
- ✓ For 2007 the 30% of the 3 final months (Oct, Nov, Dec) has to be supplied by locally produced seed oils.
- The market for pure biodiesel does not exist as yet.



Estimation of Biodiesel Required (2005 - 2010)

(1st National Annual Report on Biofuels www.ypan.gr)

Year	Estimated Automotive Diesel Consumption ('000 tons)	Biodiesel used (%)	Biodiesel Required (tons)
2005	2.055	2,00	46.976
2006	2.125	3,00	71.851
2007	2.167	4,00	97.695
2008	2.208	4,50	114.000
2009	2.249	5,00	126.739
2010	2.290	5,75	148.407



Estimation of Bioethanol required (2005 - 2010)

(1st National Annual Report on Biofuels www.ypan.gr)

Year	Estimated Automotive Gasoline Consumption ('000 tons)	Bioethanol used (%)	Bioethanol Required (tons)
2005	3.707	2,00	120.442
2006	3.800	2,50	154.329
2007	3.892	3,00	189.678
2008	3.984	4,00	258.883
2009	4.077	5,00	331.157
2010	4.169	5,75	389.424



Biodiesel producing companies (2007)

Company	Allocated Quota (in m ³)
1. EKKOKKISTIRIA KLOSTIRIA BOREIOU ELLADOS S.A (producer)	3,000
2. ETB BIOKAFSIMA S.A (importer)	4,000
3. PAVLOS PETTAS S.A (45,000 tons)	31,000
4. BIODIESEL LTD (producer)	3,500
5. BIODIESEL S.A (importer)	2,000
6. VERT OIL S.A (25,000 tons)	9,000
7. AGROINVEST S.A (200,000 tons)	11,500
8. STAFF COLOUR ENERGY S.A (producer)	5,000
9. ELVI HELLENIC BIOPETRELAIA S.A (45,000 tons)	34,000
10. ELIN BIODIESEL A.E (expected 80,000 tons)	8,000
11. MIL OIL HELLAS S.A (producer)	800
12. DP LUBRIFICANTI SRL (importer)	1,000
13. BIOENERGIA PAPANTONIOU S.A (producer)	1,200

Note:

Imported oils (seed oils, soya oils)	70-80%
Locally produced (cottonseed/sunflower/cooking oils)	10-20%



Key points in the annual quota scheme

In case of producing biodiesel

- *Operation permit*, according to the Law 3325/2005 for the construction and operation of industrial plants
- *Installation permit*, according to the same Law
- *Detailed data on the resources used* (seed oils, contracts with farmers, etc)

In case of importing biodiesel from abroad or other biodiesel plants in Greece

- *Verified contracts* (duration of contracts, total quantities imported, provisions on a monthly basis)



Bottlenecks

- ✓ *Annual quota scheme*
 - Insecure conditions for investments
 - Competition
- ✓ *Biodiesel quality*
 - Biodiesel standards: EN 14214
 - Testing methods standards: EN 3170, or 3171, or 14275
- ✓ *Biodiesel production year around*
 - Obligating biodiesel provision to the refineries on a monthly basis



Support measures

There are two main financial-support instruments that provide substantial public subsidies to RES investment projects:

- ✓ **National Development Law (Law 3299/2004).** Subsidies vary from 40- 55% according to region and the type of the enterprise (in case of SMEs and specific regions they can reach up to 55%)
- ✓ **Greek Operational Programme for Competitiveness,** active until the end of 2006. Support on capital cost (up to 40%) for biodiesel plants was included in the 3rd Community Support Framework (Energy). The 4th Framework is under development and respective provisions are expected to be put forth.



Biodiesel

2005 (2%) 47,000 tons

2010 (5.75%) 148,000 tons

Resources

- ✓ *Vegetable oils (cotton seed oil, soy oil, etc.)*
- ✓ *sunflower*
- ✓ *rapeseed*
- ✓ *Tobacco seed*
- ✓ *Tomato seed*

Facts

- ✓ Competition from food sector
- ✓ New CAP (Reg. 2003/1782/EC)
- ✓ Energy crops subsidy of 45/ha
- ✓ Imports from Balkan countries, Turkey, etc.
- ✓ Substantial quantities available in the Greek market
- ✓ Good yielding potential for sunflower & rapeseed.



Bioethanol

2005 (2%) 120,000 tonnes
2010 (5.75%) 390,000 tonnes

Resources

- ✓ Small grain cereals
- ✓ Corn
- ✓ Sugarbeets
- ✓ Sweet Sorghum

Facts

- ✓ High subsidy levels for cereals & corn cause market distortions
- ✓ New CAP (Reg. 2003/1782/EC)
- ✓ Energy crops subsidy of 45/ha
- ✓ Biorefineries in sugar industry, etc.
- ✓ High yields for sweet sorghum





National Plan for Strategic Rural Development of Greece for the 4th programmatic period 2007-2013

- Measure 1. Enhancement of competitiveness in Agriculture and Forestry sectors
 - Cultivation of energy (non-food) crops is envisaged, to provide alternative solutions for agriculture, in order to avoid abandonment of agricultural lands (now cultivated with tobacco, cotton and sugar beets) and maintenance or increase of farmers' incomes. Specifying the new CAP regime, the Greek government applied full decoupling to all arable crops and 65% decoupling for cotton.
- Measure 2. Protection of environment and rural areas
 - Specific target 1. Soil protection
 - Specific target 2. Water protection
 - Specific target 3. Maintenance of biodiversity
 - Specific target 4. Prevention of climate change (through energy crops cultivation)
 - Specific target 6. Reinforcement of the effectiveness of all above with technical support and public awareness

Projections announced by the Ministry of Rural Development and Food

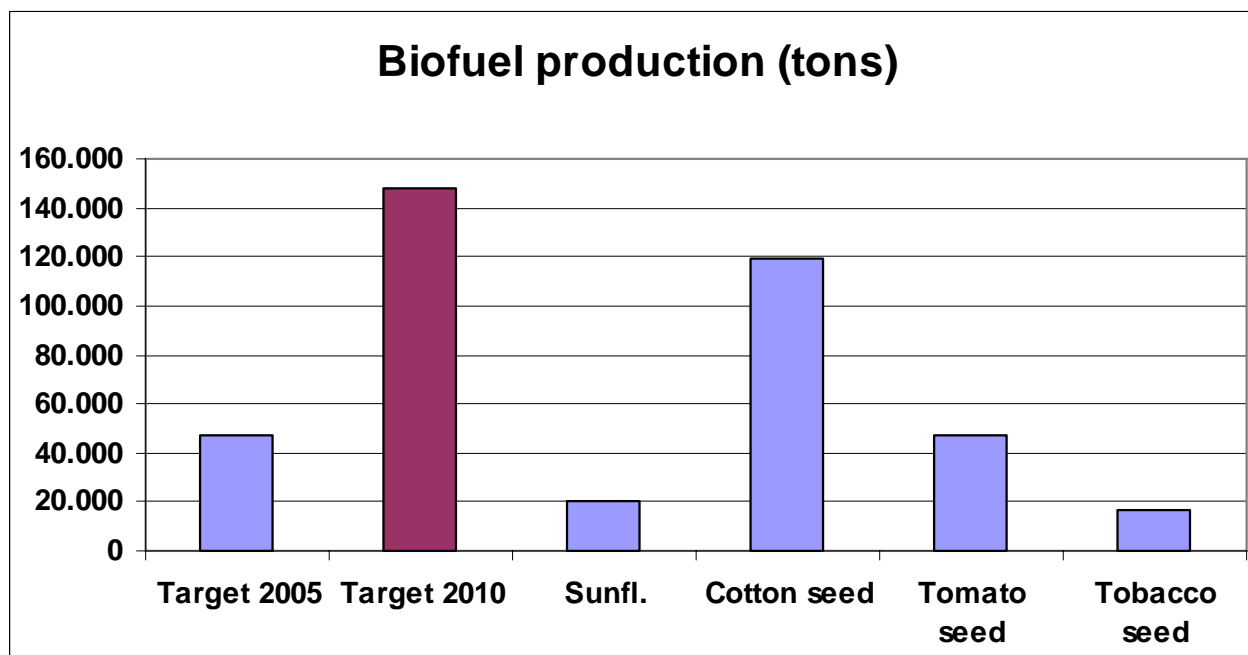
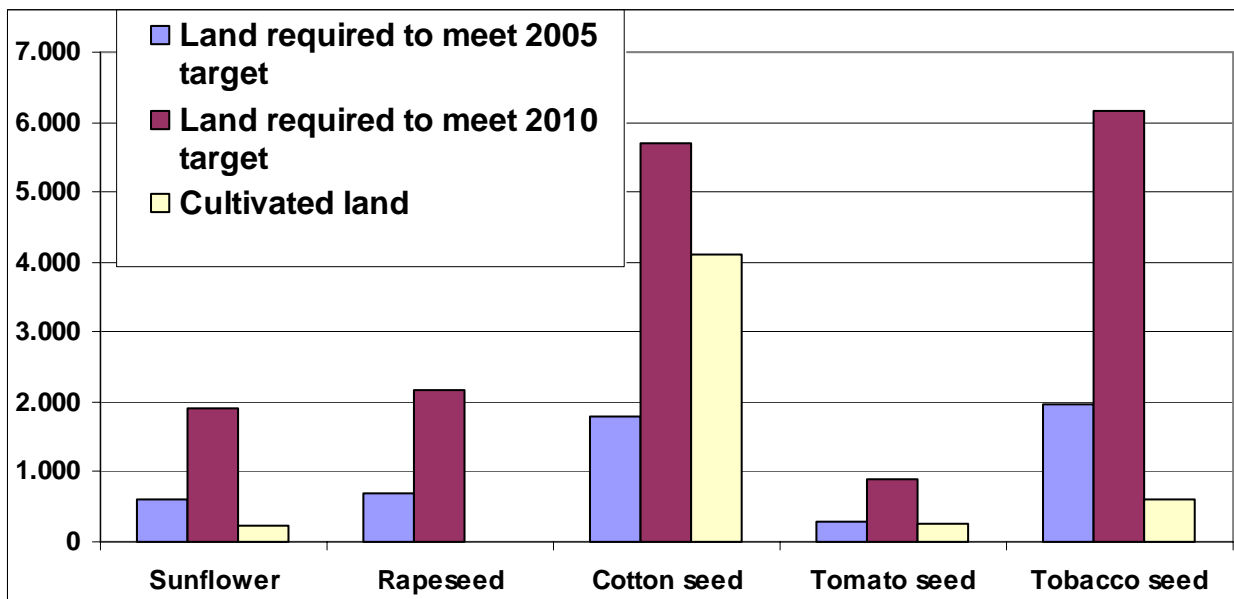
In 2007:

- ✓ 11.200 ha will be grown with energy crops, with relevant contracts, for biodiesel production.
- ✓ In addition, 72.833 tons of locally produced oil seeds, mainly cotton oil seeds (68.833), will be used for biodiesel production.
- ✓ The pure biodiesel that will be produced, will derive by 23,7% from local resources, a percentage that could increase to even 39%.
- ✓ Two sugar plants of the Greek Sugar Industry in Xanthi and Larisa will shift to ethanol production. That will give a strong boost in energy crops, as the resources to be used in the two plant will amount to 600,000 tons of sugar beets and 600,000 tons of cereals.

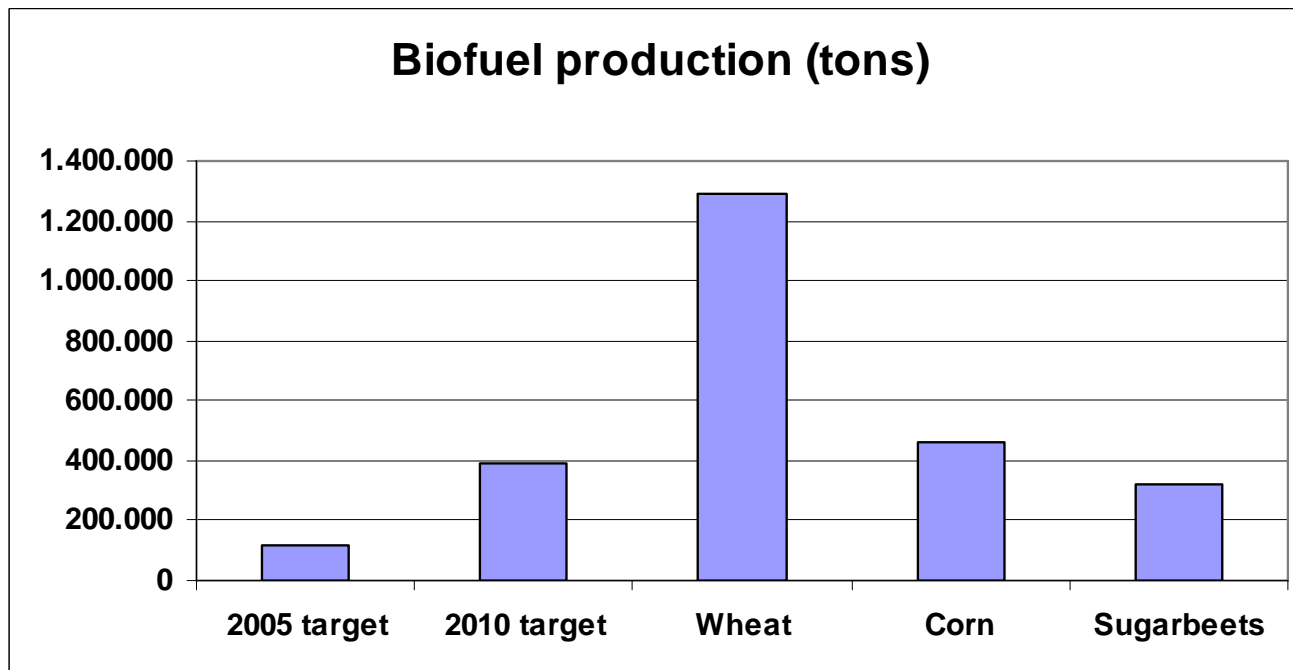
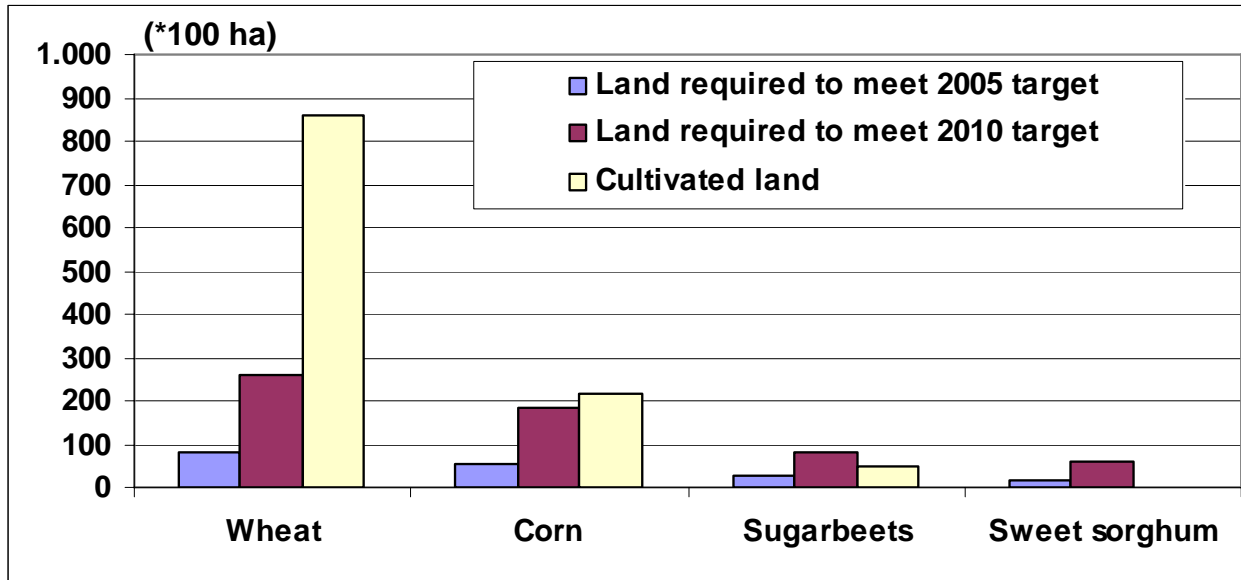


Biodiesel

(* 100 ha)



Bioethanol



Thank you!

For more information:

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Links:

www.cres.gr/biodiesel

www.ypan.gr

www.elke.gr

