

The biodiesel market in Greece

Biodiesel production started in December 2005 with 3,000 tonnes biodiesel produced by Hellenic Biopetroleum. Biodiesel production took off in the next year totalling about 42,000 tonnes of biodiesel. Biodiesel capacities more than doubled from 35,000 tonnes in 2005 to 75,000 tonnes in 2006. A sharp increase of biodiesel projects has been realised. Currently 9 biodiesel plants with a total capacity of 440,000 tonnes per year are operational in Greece.

Legislative framework

Transposition of Directive 2003/30 and national indicative targets

Directive 2003/30 has been transposed through the Greek Act 3423/2005 on the introduction of biofuels and other renewable fuels on the Greek market. This legislation sets down a national indicative target of 5,75% for 2010.

Taxation

In Greece, the normal excise duty for diesel is of 276€. Biodiesel produced within the quotas is totally exempted from the excise.

Mandates

According to the Greek authorities, legislative measures applying to biofuels should be revised as from 2008 and should establish mandatory targets, both for biodiesel and for bioethanol.

Quotas

A provision incorporated in Article 34 of Act 3340/2005 provides for a full exemption from excise duties for the following quantities of pure biodiesel:

- for 2005: 51 000 m³ (in 2005)
- for 2006: 91 000 m³ (published by the end of 2005)
- for 2007: 114 000 m³ (published in December 2006)

The full exemption represents about 33 million € for the year 2007.

Norms and standards for biodiesel

Biodiesel distributed in Greece has to comply with the specifications of the ELOT EN 14214 standard, adopted by Decision 334/2004 of the Supreme Chemical Council on automotive fuels. The ELOT EN590 allows to blend biodiesel up to 5% in volume. At a later stage, the Greek government planned to distribute blends of biodiesel with diesel exceeding 5% in volume and also pure biodiesel.

Feedstocks

Agricultural feedstock

Most of biodiesel raw materials (70%) are imported by Greek producers (mostly rapeseed and soybean oils). The remaining 30% is domestically produced: cotton-seed, sunflower and used cooking oils. In 2005 most of the oilseeds produced locally were cottonseeds (720,000 tonnes) which produced 39,000 tonnes of cottonseed oil. About 26,000 tonnes of sunflowerseeds were produced in 2005, the quantity rose to 31,000 tonnes in 2006. In 2007 is expected a production of 22,000 tonnes

Currently only cottonseed and sunflowerseeds are produced indigenously in Greece. Average yields for rape and sunflower seed are very low for Greece (about 1,75 tonnes/ hectare) and oil yields of cotton seeds are low (about 325 litres of oil/ ha). *Non-agricultural feedstock*

Used cooking oil and animal fats may also play an important role for biodiesel production in Greece. The potential and availability of such feedstock need to be further assessed.

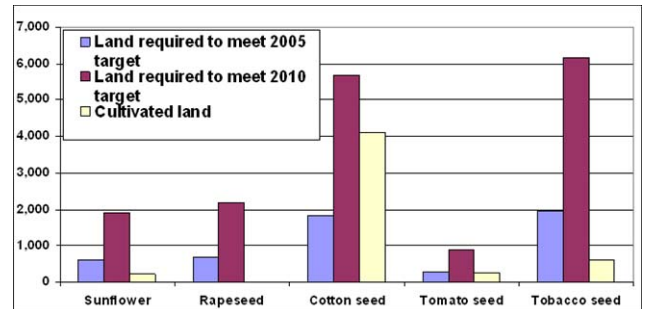


Figure 1. Estimated land requirements to meet the EC 2003/30 targets

SWOT analysis

Strengths

✓ Beside a quite high and encouraging awareness about biodiesel among Greek citizens, Greece can count on diverse feedstock options: e.g. sunflower, rapeseed, soy and especially cotton (because of the flourishing Greek cotton industry). Biodiesel production capacities are very high. Uncertain policy framework (CAP reform) leads farmers to seek new cropping options. Another asset is represented by the establishment of some regional support for the first Biofuels Platform (in central Greece).

Weaknesses

✓ Semi-arid climate conditions restrict yield potentials and lack of available cultivable land: average yields for rape and sunflower seed are about 1,75 tonnes/ hectare which is nearly half of the EU average. Oil yields of cotton seeds are low (about 325 litres of oil/ ha). Dry arid conditions prevailing in the country restrict yielding potential without irrigation.

✓ Small farming size and low yields prevent cost effectiveness; therefore most of the biodiesel plants rely on imports. It is estimated that only about 1/3 of the feedstock for biodiesel production may be supplied domestically. The current quota system does not create secure market conditions for investors. There is also an ongoing quality debate on biodiesel versus pure plant oil.

Opportunities

✓ There is a need to identify low input supply options as part of land use strategies to cope with more stringent future restrictions (e.g. water restrictions, etc.). Optimisation of the use of residues and processing of by-products could also be crucial to improve biodiesel economics.

✓ Increase biodiesel uses for heating applications may also provide more market opportunities. The introduction of a 'policy mix' with tax exemptions & mandatory targets will enable to create more certain market conditions.

Threats

✓ *Quality*: Variety of feedstocks with different physical and chemical properties.

✓ *Market*: not well established, limited end uses (only transport sector in certain areas for certain end users) and inflexible production quotas.

✓ *Policy*: uncertainty deriving from the annual quota system and annual allocation of detaxation.

✓ *Sustainability*: careful selection of crops to minimise risks of erosion, water scarcity, etc. in the future supply chains.

✓ *International trade*: low cost supply from neighbouring Balkan countries although this is also an opportunity for cheap raw materials use.

✓ *Awareness*: Create communication channels & synergies with the farming community.