Applicable subject number: 1.1. **Assessment of the availability of resources, land use issues, recovery of feedstock, environmental impact of resource recovery**

Full title: Resource options for bioethanol in Greece

Author for correspondence: Dr Calliope Panoutsou and Namatov Irene, Center for Renewable Energy Sources (CRES),

19th km Marathonos Avenue, 19009 Pikermi, Greece, Tel: +30 210 6603300, Fax: +30 210 6603301,2, email: ppanouts@cres.gr, namatov@cres.gr

Purpose of the work

Following the Directive 2003/30/EC, the Greek Government has recently conducted a study on biofuels in Greece. According to this, biodiesel and bioethanol will be the main biofuels for the Greek transport sector.

This paper will map the available resources for bioethanol production and identify the most realistic options under technical, economic and environmental terms.

Approach

The main crops for bioethanol production in Greece are cereals (wheat, barley, etc.), corn, sugarbeets as well as sweet sorghum.

The paper will evaluate data from recent statistics and national reports on agriculture, including imports and exports as well as cost data (production costs, market prices) for the most promising resource options for bioethanol in Greece.

Scientific innovation and relevance

The main resource options for bioethanol production in Greece will be presented under technical, economic and environmental terms in order to evaluate the potential to fulfill the national biofuel targets with indigenous sources.

Results

The results from this evaluation of indigenous resources for bioethanol are very optimistic, mainly due to the higher yields per land unit.

Available statistics indicate that only 12.7 % of the total area cultivated with wheat (durum and soft) would be enough to meet the targets for 2005 (120,000 tonnes according to 2003/30 EC), while the respective figure for corn is slightly higher and reaches up to 21% of the land cultivated with corn in 2000. The respective percentages for 2010 (390,000 tonnes) are 41 % and 68% (wheat and corn).

Sugarbeets are also very promising in theoretical estimations (63% of the land for 2005 targets and twice the cultivated area for 2010) but a lot remains to be done in the framework of EU (and Greece respectively) sugar production rules.

Conclusions

From the presented information we can conclude that both the qualitative (fuel characteristics) and quantitative (land use, yielding capacities, prices, etc) data presented, indicate that future bioethanol production in Greece can be based to a major extent in indigenous raw materials.