

Practical implementation of sustainability criteria in Greece

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Institutional framework

- The harmonisation with the EU Directive 2003/30/EC and the introduction of biofuels in the Greek market was through their integration into the existing institutional framework for petroleum products, with an appropriate supplement and amendment of Law 3054/2002 "Organization of the oil market and other provisions, by Law 3423/2005 "Introduction to Greek Market biofuels and other renewable fuels".
- According to Law 3653/2008, biodiesel is no more subjected to the special tax status meaning that practically the distributed biodiesel is no longer tax exempted. The same Law also regulates the quota allocation, the call for tenders, and the final decisions, especially for the year 2008.
- Law 3769/2009 allows the distribution of biofuel blends with refined crude oil beyond the limit specified in the Decisions of the Supreme Chemical Council (ACHS), if the other specifications of these blends lie within the limits of standards. In these cases a special mark in the fuel tanks has to be displayed.
- Specific issues like the amount of quota allocation, call for tenders and evaluation criteria are managed through Joint Ministerial Decisions.





Current situation

- Biodiesel is still the main biofuel for the Greek transport sector
- Biodiesel quantities required to meet the 5.57% target were fully tax exempted until 2007.
- Biodiesel quantities blended with oil are defined on an annual basis under a quota scheme. A call for tender is announced every year by the Ministry of Environment, Energy and Climate Change.
- The market for pure biodiesel does not exist as yet.
- Bioethanol is not produced or consumed as yet.



Biodiesel supply and consumption (2005 - 2010)

Year	Estimated Automotive Diesel Consumption ('000 tons)	Biodiesel required (%)	Biodiesel Required (tons)	Inland production (tons)	Imports (tons)	Total consumption (tons)
2005	2.084	2,00	46,976			
2006	2.125	3,00	80,000	47,743	3,803	51,546
2007	2.167	4,00	100,000	91,863	2,605	94,468
2008	2.208	4,50	112,117	69,356	6,909	76,265
2009*	2.296	5,00	160,000	78,202	8,021	86,223
2010*	2.290	5,75	144,000	124,443	16,788	141,231

* Figures for 2009 and 2010 are temporary

Source: <u>www.ypan.gr</u>, <u>www.ypeka.gr</u>



Estimation of Bioethanol required (2005 - 2010)

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



Source: www.ypan.gr



Biodiesel production and supply

Company	Capacity (t)	Quota for 2010 (t)
Agroinvest S.A,	230,000	13,484
P.N Pettas S.A, Patras	99,000	24,545
GF ENERGY A.E	99,000	15,747
ELVI-Hellinika Viopetrelaia S.A, Kilkis	79,200	28,290
ELIN Biokafsima S.A, Volos	73,300	9,422
MANOS S.A	33,000	10,105
Biodiesel Ltd, Thessaloniki	21,000	6,222
FYTOENERGEIA S.A	21,000	11,076
Staff Colour S.A, Larisa	11,000	2,460
Vert Oil S.A, Thessaloniki	10,450	0
Mil Oil Hellas S.A, K ilkis	9,900	3,010
Bioenergia Papantoniou S.A, Halkidiki	9,000	0
Ekkokistiria-Klostiria B.Ellados S.A, Xanthi	6,600	3,914
Imports		15,724
Total	702,450	144,000
Note: Imported oils (seed oils, soya oils)	30%	·

Locally produced (cottonseed/sunflower/cooking oils) 70%



Biodiesel plants allocation





National 2020 target and estimated trajectory of energy from renewable sources in heating and cooling, electricity and transport

%	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
RES-H&C	12,76	14,7	15,7	16,2	16,8	17,3	17,9	18,3	18,4	18,8	18,9	19,7
RES-E	8,03	13,3	15,7	18,8	21,8	25,1	27,6	29,7	31,8	33,7	36,7	39,8
RES-T	0,02	1,7	3,3	4,1	4,8	5,6	6,3	7,1	7,8	8,6	9,4	10,1
Overall RES share	6,96	8,0	8,8	9,5	9,9	10,5	11,4	12,4	13,7	14,6	16,0	18,0

Source: NREAP for 20-20-20, 2010, www.ypeka.gr



Actions taken by Greece to harmonize the RED into national legislation

Three working groups have been formed by the Ministry of Environment, Energy and Climate Change for the harmonization of Directive 2009/28/EC and 2009/30/EC

- Group 1: Deals with all issues except for the biofuels and other bioliquids for transport and relevant sustainability criteria
- Group 2: Deals with harmonization of Directive 2009/28/EC (mainly articles 17-21) and 2009/30/EC (mainly articles 7b-7e)
- Group 3: Deals with harmonization of Directive 2009/30/EC (mainly article 7a)





Actions taken by Greece to harmonize the RED into national legislation

Group 2 Coordinated by: MEECC

Members from

- Supreme Chemical Council (ACHS),
- Ministry of Rural Development and Food
- Ministry of Infrastructure, Transport and Networks
- Ministry of Finance
- CRES
- National Technical University of Athens
- Agricultural University of Athens
- PASEGES (National Union of Agricultural Unions in Greece
- ELPE Hellenic Petroleum S.A
- Unions of Biodiesel producers





Main points of draft document prepared by Group 2 (1/4)

- Adopt of the new terms of 'biomass' and 'biofuels'
- Insert of the new terms 'bioliquids' that replaces the 'other RES fuels',
- Insert of the terms 'actual value', 'typical value' and 'default value'
- Define of the 'economic operator' and the 'verification authority'
- Ensure that the share of energy from RES in all forms of transport is at least 10% of the final energy consumption in transport
- Ensure the double counting on biofuels produced by wastes, residues and lignocellulosic materials
- Adopt the sustainability criteria as defined in the Directives, in compliance with the Greek legislation on the protected areas and the areas that could be possibly available for growing energy crops.





Main points of draft document prepared by Group 2 (2/4)

- Adopt the sustainability criteria as defined in the Directives, in compliance with the Greek legislation on the protected areas and the areas that could be possibly available for growing energy crops.
 - On terms and conditions
 - On biodiverse grasslands
 - On lands with high carbon stock
 - On peatlands
 - On requirements and standards for good agricultural and environmental practices and conditions





Main points of draft document prepared by Group 2 (3/4)

- Adopt the verification compliance with the sustainability criteria for biofuels and bioliquids, in compliance with the legislation framework which would define the sustainability criteria, and the procedures for their verification, accreditation and control.
- Adopt the Annex V of the Directives on the rules for calculating the greenhouse gas impact, using actual values for some factors and/or default values for others, calculated according to the methodology provided.
 - A modification proposed is the insertion of the biodiesel from cootonseed oil stream that is not included in the Annex. The impact will be calculated using actual values
- Use voluntary national schemes and also accept voluntary schemes of other M-S adopted by the Commission.





Main points of draft document prepared by Group 2 (4/4)

- Prepare a NUTS-2 Report for the biodiesel streams -bioethanol is not yet produced in Greece
- Consider using the prEN when adopted
 - <u>prEN 16214-1:2010</u>: Sustainably produced biomass for energy applications - Principles, criteria, indicators and verifiers for biofuels and bioliquids - <u>Part 1</u>: Terminology,
 - <u>prEN 16214-2:2010</u>: Sustainably produced biomass for energy applications - Principles, criteria, indicators and verifiers for biofuels and bioliquids - <u>Part 2</u>: Conformity assessment including chain of custody and mass balance,
 - <u>prEN 16214-3:2010</u>: Sustainably produced biomass for energy applications - Principles, criteria, indicators and verifiers for biofuels and bioliquids - <u>Part 3</u>: Biodiversity and environmental aspects,
 - <u>prEN 16214-4:2010</u>: Sustainably produced biomass for energy applications - Principles, criteria, indicators and verifiers for biofuels and bioliquids - <u>Part 4</u>: Calculation methods of the greenhouse gas emission balance using a life cycle analysis,





NUTS 2 REPORT

Typical values calculated for greenhouse gas emissions from the cultivation of energy crops by NUTS2 region in Greece are presented in the following table:

	Energy crop	Sunflower	Oilseed rape	Soybean	
	Year of data	2008*	2009-2010**	2010***	
No	NUTS2 region	gr of CO ₂ eq/MJ of FAME			
1	Thessaly	17,61	-	17.36	
2	Epirus	17,61	-	17.36	
3	West Macedonia	17,44	-	17.36	
4	East Macedonia and Thrace	16,98	28,32	17.36	
5	Central Macedonia	16,26	27,79	17.36	
6	Continental Greece/Euboea	17,96		17.36	
7	Western Greece	17,32⁺	-	17.36	
	Disaggregated default values e _{ec}	18	29	19	

- * Actual data from relevant operators (no statistical data officially available).
- * Data derived from the Hellenic Statistical Authority.
- ** Average actual data from relevant operators (no statistical data officially available).
- *** Average actual data from relevant operators in 2010 (no statistical data officially available), as well as historical data from pilot cultivation in the 80's.





NUTS 2 REPORT

An example of CHG calculations for the biodiesel-fromrapeseed stream

 <u>New_Biodiesel_production_em_sav_n</u> <u>uts_oilseed_rape.xlsx</u>





Thank you for your attention!

