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Kyiv - Ukraine

European Biodiesel Market Developments

Case study: Oxem SpA

- Paolo Corvo -

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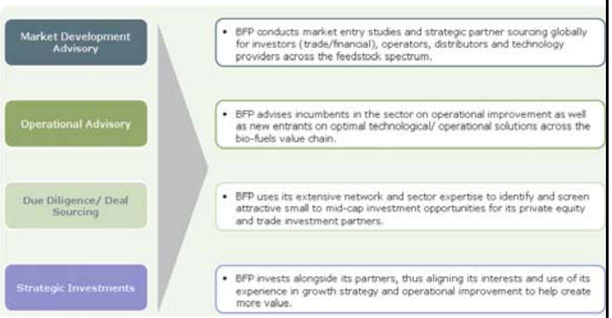
Biofuels Partners: overview

Biofuels Partners: expertise



Biofuels Partners: representative projects

Examples of strategic projects:

Type	Client	Project	Location	NOTE
Market Development Advisory	DESMET BALLESTRA	Strategic market development support to world leader technology provider	WORLDWIDE	Ongoing since 2005
	CONFIDENTIAL	Market entry studies, 2 biodiesel plants project & implementation support	UK	Ongoing since 2005
	CONFIDENTIAL	Market entry studies and strategic partner sourcing for feedstock supply (jatropha, algae)	CENTRAL AFRICA, EGYPT	Ongoing since 2006
	CONFIDENTIAL	European Biofuel market and legislation monitoring	CANADA	Ongoing since 2006
Operational Advisory	CONFIDENTIAL	Operational improvement, organizational set up, know-how transfer -> biodiesel plant	PORTUGAL	Ongoing since 2005
	CONFIDENTIAL	Operational improvement, organizational set up, know-how transfer -> biodiesel plant	SPAIN	Ongoing
	CONFIDENTIAL	Operational improvement, organizational set up, know-how transfer -> biodiesel plant	SPAIN	Ongoing
Strategic Investments	OXEM	Building largest Italian biodiesel plant currently under construction	ITALY	Ongoing
	BIM	Rapeseed crushing/biodiesel feasibility - newco	ROMANIA	Ongoing

European legislation

Evolution of EU legislation

• Directive 2003/30: only indicative targets were proposed: 2% in 2005 up to 5,75% in energy content by 2010

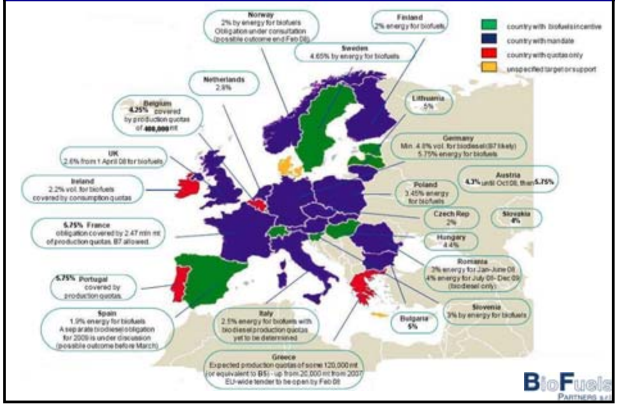
• Member States set national targets and choose support mechanism.

• TAX: - from full tax exemption to reduced biodiesel tax exemption;
- some countries (Italy, France, Portugal, Belgium etc) have quotas: max amount of detaxed biodiesel;
- very different level of gasoil (BD) taxation, current values:

Greece 276 €/m3 (BD tax: 0)	Italy 423 €/m3 (BD tax: 85 €/m3)
Spain 300 €/m3 (BD tax: 0)	Germany 470 €/m3 (BD tax: 150 €/m3)
France ~400 €/m3 (BD tax: 170 €/m3)	UK 600 €/m3 (BD tax: 250 €/m3)

• The initial indicative biodiesel-use targets evolved into mandatory use targets.

EU-27 biofuels legislation in 2008



Impact of EU Directive on biofuels consumption

EU-25 Fuel consumption

m t	2005	2006	2007	2008	2009	2010
Fosile gasoline	133.0	134.2	135.4	136.6	137.8	139.1
Fosile diesel	159.9	163.3	166.8	170.4	174.1	177.8
Total fossil fuel	**292.9**	**297.5**	**302.2**	**307.0**	**311.9**	**316.9**
Biofuel objectives in %	2.00%	2.75%	3.50%	4.25%	5.00%	5.75%
Bioethanol *	2.7	3.7	4.7	5.8	6.9	8.0
Biodiesel *	3.2	4.5	5.8	7.2	8.7	10.2
Total biofuels	**5.9**	**8.2**	**10.6**	**13.0**	**15.6**	**18.2**

Source: Kavalov / EC Joint Research Centre - Biofuel Potentials in the EU

Assuming separate targets however currently most countries have just one biofuel target

• Biodiesel represents about 80% of all biofuels produced in EU

• Petrol players interest on biodiesel mainly due to short-diesel/long-gasoline

Developments in EU biofuels legislation - 2020 targets

Developments in EU biofuels legislation – 2020 targets

• The EU Commission approves on January 23rd 2008 a proposal for a new framework Directive on the promotion of renewable energy sources.

• One crucial amendment to the biofuels directive is the legal nature of the target: from "indicative" to "mandatory":

✓ 2020's overall binding target of a 20% share of renewable energy sources in energy consumption

✓ 10% binding minimum target for biofuels in transport to be achieved by each Member State

Developments in EU biofuels legislation – 2020 targets

• Introduction of sustainability criteria: failing to meet one of the criteria will not count towards national biofuel obligations/mandates and will not be eligible for tax reductions and financial support.

• Among the sustainability criteria will be the requirement to achieve a certain level of GHG savings (at least 35%).

• Revision of EN 590 standard (diesel fuel): increasing biodiesel max % from 5% to 10%.

• Revision of EN 14214 standard (biodiesel): more restrictive parameters.

European biodiesel market overview

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EU-27 Biodiesel plant capacities (3)

	2007	2010
Plants in operation	102	159
Total plant capacity	8.6 Mt	20.1 Mt
Average plant capacity	89 Kt	123 Kt

	N° of plants	% Total capacity
Plant capacity (2010)		
• *200 Kt and above*	33	42%
• *100 - 199 Kt*	74	43%
• *40 - 99 Kt*	52	15%
Integration		
• *Upstream with oilseed crushing*	23	20%
• *Downstream with petroleum refinery*	15	19%
• *Stand alone*	121	61%
Glycerine refinery	24	18%
Coastal location	65	53%

• Directive target should demand some 12-13 M tons by 2010 considered over diesel only, if over gasoil+gasoline consumption it could reach some 18 M tons in 2010

• Surely some overcapacity midterm, but not as huge as it might look like

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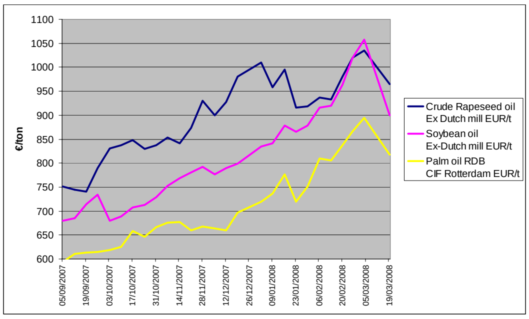
Key issue: vegoil prices short term



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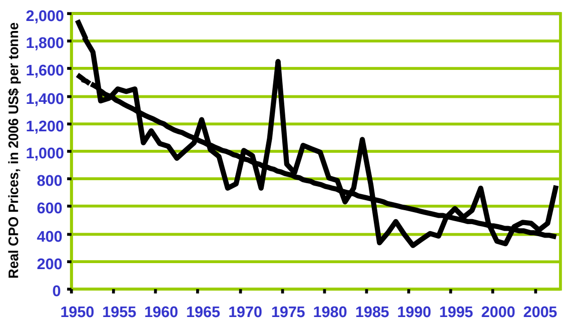
Key issue: vegoil prices long term (2)



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Key issue: vegoil prices (3)

• Considering the last 50 years price trend:

- sudden booms in commodity prices are not particularly rare
- general trend in real agricultural crop prices is downwards
- in the last 10 years the vegoil supply increased by 40 Mtons

• Vegoil price increase makes the soil exploitation of new land more economical/interesting

• Yields results can still be improved

• There is no reason to believe that it cannot go on this way -> annual vegoil availability will increase in the upcoming years

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Global market challenges

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EU-27 – global market challenges

INTERNAL MARKET

• High vegetable oils price - margins under squeeze → high feestock prices mainly due to sharp drop in supply caused by adverse weather conditions in producing countries and higher demand for food in developing countries.

• Growing media criticism.

• Overall market overcapacity in respect to EU biodiesel targets.

• In the middle of changing legislative approach.

• Introduction of more restrictive parameters regarding biodiesel quality standards and sustainability.

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EU-27 – global market challenges (2)

DUMPING IMPORTS

• **B99**:
- 1 $/gallon credit (about 300 USD/ton) to US biodiesel producers for B99 blend;
- increasing volume of B99 from US to EU: some 1M tons in 2007;
- EU BD producers unable to compete → inefficient plants closing down;
- European Biodiesel Board pursues anti-dumping and WTO case against US to offset "splash & dash" mechanism.

• **Argentina**: different export tax between crude soy vegoil (40%) and biodiesel (20%). The two subsidies can be additional with a potential dumping space of **500 $/t** (less logistics) vs. EU producer.

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Future feedstocks

Main BD producers focus/interest/investments on non food/low cost 2° gen. feedstocks.

Jatropha and algae have great potential to use as feedstock for biodiesel production:

• Jatropha:
  - ✓ Some production volumes expected by 2010 in India, South-East Asia & Africa;
  - ✓ Planted to date 500 kha x 1,5t/hay = 750 kt/y oil estimate 2011?

• Algae
  - ✓ high yield of oil per hectar → rapid growth rates;
  - ✓ chance of CO_2 sequestration;
  - ✓ little geographical/climatic constrain

BUT… a long way to go!

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Case study: OXEM

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Italy: Biodiesel market

• Currently 8 BD plants in operation, 5 in construction/project phase

• Available production capacity expected to grow from 700,000 tons in 2007 to 1,500,000 tons by 2009.

Assuming full implementation of EU Directive:

	2008	2009	2010
% Mandatory blend	2%	3,50%	5,75%
Italian market demand	800	1400	**2100**

• Scenario is based upon the assumption that the obligatory biodiesel blend percentage is applied to gasoil + gasoline (a part of bioethanol share).

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Italian Legislation

• Italian Budget Law 2007 following and adopting EU Directive 2003/30
- 2% obligatory blend with gasoil from 2008 till a 5,75% blend by 2010
- excise duty: 20% gasoil exice (85 €/m3 vs 423 €/m3)
- penalties for not blending
- support to the national crops

• Above Budget Law 2007: good proposals but market still not take off yet

• Main hurdle coexistence of 250 kt detaxed quota vs 600 kt mandatory goal

OXEM: An overview

• OXEM - Oxon Energia Mezzana - founded in 2006.

• Its goal is biodiesel production and marketing through the construction of a production plant on the site of Oxon Italia S.p.A. in Mezzana Bigli (Pavia) to become a first class efficient and reliable biodiesel supplier.

• OXEM has already started the construction of a 200,000 tons/year biodiesel plant, with technology provider Desmet Ballestra → it will be fully operative by October 2008.

Oxem: Location

OXEM: Key points of the project

• Location:
  - Proximity to ENI largest oil refinery with pipeline connection
  - Oxon chemical know-how and facilities
  - Agricultural area to develop rapeseed crop

• Consolidated state of the art technology

• International raw materials procurement and trading

• Experienced management

• Crop yield optimization/seeds and agrochemicals technical support → Agrodinamica & Sipcam

• International know-how

• Securing feedstock →BIM Romania

OXEM: BIM Romania

• BIM is a new Romanian company established in early 2007 with the goal to create a framework for the rapeseed/sunseed cultivation to secure part of the feedstock needs of Oxem → support the integration with national/EU crops

• OXEM is strategic shareholder of BIM

• BIM has an option for the purchase land for the construction of an integrated crushing and biodiesel plant

• Signed contracts for initial 35,000 ha rapeseed cultivation

• Established links with all Romanian petroleum refineries

• Romania is one of the few European countries with an important agricultural area not yet exploited

Ukraine - EU market opportunities

Opportunities for Ukraine

• Great feedstock supply capabilities: good geografical location to export vegoil for biodiesel use

• Long term contract farming: crop yield optimization/seeds and agrochemicals technical support

• Biodiesel internal market development:
  → increase energy independence
  → export to neighbour contries

• Glycerine: very high glycerine demand both crude (currently about 500 Euro/t NWE) and pharma grade (currently about 1,100 Euro/t)

Conclusions

- Biodiesel is a great product / full potential still to be exploited.
- Ukraine offers huge potential, initially as feedstock supplies.
- European Industry ready to share its know-how and experience.
- Agriculture / Energy / Environment / Consumer → Win-Win Projects

Contact

BioFuels Partners s.r.l.
Via Piero Portaluppi, 17
20138 Milano - Italy
Ph: +39 02 58013396
Fax: +39 02 58013381
E-mail: pc@bfpartners.net

DATA

- **Diesel consumption= 15 Mty in 2007 (12Mty gasoline)**
- **Current biodiesel plants= 40 per total 32kty (avarage 800 kty)**
- **Total rapeoil produced: 1,7M in 2007 – 654 kt in 2006**