The European Ethanol sector
Market and Challenges

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Outline

- Market
- Challenges
- Summary
World- Biofuel investment slips

Global investment in clean energy fell by 12% on the year in 2013 to US$ 254 billion, the second consecutive year of falling renewables investment, Bloomberg New Energy Finance said, See News reports. Most investments in the sector were attracted by solar projects which received a total of US$114.7 billion. Biofuel projects attracted US$4.9 billion in investment, down from US$6.6 billion in 2012. (16 January 2014)

No trust in Europe

Plans by Vireol Bio-Industries to build a £150 million bioethanol plant in Grimsby, Humberside, in the UK that would convert wheat into 200 million litres of bioethanol a year have been shelved, Environmental Finance reports. Vireol has instead decided to re-commission a plant in Hopewell, Virginia in the US, where legislation is more favourable to investment. “The market situation in Europe is less favourable than it was, and the situation in the US is much more clear-cut. Raising debt in the current legislative environment is virtually impossible-the EU cannot make up its mind what it’s doing,” Vireol’s finance director said. (16 January 2014)
Fuel ethanol production and consumption in the EU (2000-2014*)

- EU production ethanol for fuel
- Installed Production Capacity fuel ethanol*
- Imports for all uses

x mln litres

EU Fuel ethanol consumption

Sources: F.O. Licht’s, Eurostat, SECEX, USITC

*estimate
Ethanol exports to the EU by region (2008-2013e)

<table>
<thead>
<tr>
<th>Year</th>
<th>Brazil</th>
<th>U.S.A.</th>
<th>Asia</th>
<th>Central-America</th>
<th>Africa</th>
<th>South-America (ex BRZ)</th>
<th>RoW</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>1890</td>
<td>1470</td>
<td>1260</td>
<td>1050</td>
<td>840</td>
<td>630</td>
<td>500</td>
</tr>
<tr>
<td>2009</td>
<td>1680</td>
<td>1050</td>
<td>1050</td>
<td>840</td>
<td>630</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>2010</td>
<td>1470</td>
<td>1050</td>
<td>1050</td>
<td>840</td>
<td>630</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>2011</td>
<td>1260</td>
<td>1050</td>
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<td>840</td>
<td>630</td>
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<tr>
<td>2012</td>
<td>1050</td>
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<td>840</td>
<td>630</td>
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<td>1050</td>
<td>1050</td>
<td>840</td>
<td>630</td>
<td>500</td>
<td>500</td>
</tr>
</tbody>
</table>

Sources: F.O.Licht’s, Eurostat, SECEX, USITC

*January-October
Ethanol for fuel imports EU from the U.S.A. and Brazil (2007-2013*)

Sources: COMEX, USITC

* estimate
### Origin of final biofuels consumed in the EU in 2010

<table>
<thead>
<tr>
<th>Country</th>
<th>Biodiesel</th>
<th>Bioethanol</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Volume (ktoe)</td>
<td>Share</td>
</tr>
<tr>
<td>EU</td>
<td>8,270</td>
<td>83.2%</td>
</tr>
<tr>
<td>Argentina</td>
<td>1,003</td>
<td>10.1%</td>
</tr>
<tr>
<td>Indonesia</td>
<td>285</td>
<td>2.9%</td>
</tr>
<tr>
<td>Malaysia</td>
<td>123</td>
<td>1.2%</td>
</tr>
<tr>
<td>China</td>
<td>67</td>
<td>0.7%</td>
</tr>
<tr>
<td>U.S.</td>
<td>61</td>
<td>0.6%</td>
</tr>
<tr>
<td>Other countries</td>
<td>129</td>
<td>1.3%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>9938</td>
<td></td>
</tr>
</tbody>
</table>

Source: EUROSTAT, COMTRADE.

1 toe = 2 000 litres of EtOH
The USA-EU gap

Million litres

<table>
<thead>
<tr>
<th>Year</th>
<th>USITC</th>
<th>COMEXT</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>455</td>
<td>242</td>
</tr>
<tr>
<td>2008</td>
<td>37</td>
<td>1</td>
</tr>
<tr>
<td>2009</td>
<td>402</td>
<td>0</td>
</tr>
<tr>
<td>2010</td>
<td>205</td>
<td>0</td>
</tr>
<tr>
<td>2011</td>
<td>402</td>
<td>0</td>
</tr>
<tr>
<td>2012</td>
<td>1</td>
<td>1</td>
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</tbody>
</table>

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The Brazil-EU gap

Million litres

2007 2008 2009 2010 2011 2012

SECEX COMEXT

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Main challenges for the industry in coming years

- **Image:** regaining (public) support for biofuels

- **Policy:**
  - RED/FQD: implementation and reform (iLUC),
  - trade & customs,
  - Energy Taxation Directive,
  - climate & energy 2030

- **Market:**
  - developing E10 market,
  - E20 market,
  - Technology (bio-economy)
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Campaigning for renewable ethanol **Made in Europe**

**RESponsible and smarter**

**use of European agriculture lands**

- **Total EU land surface**
  - **Other**
  - **EU land used for agriculture**
  - **The production of renewable ethanol uses less than 1% of EU agricultural land**
  - **Europe has the world's highest environmental and sustainability standards for the production and supply chain of biofuels**

**EU land used for agriculture**

- **The production of renewable ethanol uses of EU agricultural land less than 1%**
- **Other**
- **EU land used for agriculture**
- **The production of renewable ethanol uses of EU agricultural land less than 1%**

**Ethanol plant**

- **Ethanol**
  - **Starch**
  - **Protein**

**3.3 million tonnes of protein-rich animal feed**

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**4.8 billion litres of ethanol**

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**10 million tonnes of grain**

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**3.3 million tonnes of high protein GMO-free animal feed**

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**2012, the EU ethanol industry produced more than**

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**70**

**70 renewable ethanol plants in operation in Europe**

**70,000**

**70,000 direct and indirect jobs in Europe**

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**Europe can produce fuel and food at the same time**

**Ethanol plant**

- **Starch**
  - **Protein**
- **Ethanol**

**2.5 million dairy cows every day in Europe on 1% of EU agricultural land**

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**B.**

**Essentially GMO soybean meal from South America - BIOFUEL CO-PRODUCTS AS LIVESTOCK FEED, FAO. 2012**
Problem: From being once the darling of regulators, NGOs, left-wing politicians we have become in less than 5 years time a hot potato.

Branding & campaigning: We need to regain public support and trust. It requires campaigning & branding: telling the story about food and fuel, employment, regional development and new opportunities for farmers, less fossil fuel, less GHG emissions and opportunities for boosting technology (2G).

Finding champions: We have lost champions that truly believe in us and will defend us. Who is our champion in the European Commission? Do we have one in the EP and in the Council?

Building coalitions: We are operating on a battlefield. Instead of seeking shelter in the tranches we need to reach out and find/build coalitions with other stakeholders.

Develop a research programme: Facts & figures do matter and have an important role to play to back up our story line. Like car (EUCAR) and oil (CONCAWE) we need a research programme and ideally in close cooperation with DG JRC.
Main challenges for the industry in coming years

- **Image:**

- **Policy:**
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The policy agenda: our 5 priorities

- **Solving the iLUC problem:** the endless discussions on iLUC are undermining trust in biofuels and have stopped every possible investment (also in 2G). We are close to a pyrrhic victory.

- **Making progress on the Energy Taxation Directive:** in obtaining a) a balance in the fuel market and b) a fair taxation of all fuels.

- **A trade policy that is fair and balanced:** vigorously in cases of dumping and trade-distorting subsidies. 2) Loopholes like E48 imports should be punished retroactively. 3) Biofuels should in trade agreements be considered as sensitive, strategic products and an import duty has to be.

- **A coherent customs policy:** blends. A coherent implementation of the customs rules in the Union is equally important.

- **Post 2020 RE policy:** target is equal to pulling the plug on renewables. Transport remains the biggest emitter of GHG: a binding target is needed to achieve progress. Moreover, a consistent long-term policy framework will deliver the industry investments (both 1G and 2G) needed to us less dependent on fossil fuels.
(iLUC) problem solving
The policy agenda: our 5 priorities

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Market:

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Developing the ethanol market: addressing the Blend Wall (1)

**Rolling-out E10 EU-wide:**

- Even though the EU legislation allows fuel blends up to 10% ethanol the market introduction and share of E10 is disappointing.
- In many EU countries the Blend Wall seems to be 5% ethanol whereas every petrol car built since 2000 is E10 compatible.
- Needed is a E10 (public) campaign and branding strategy based on the experiences in France and Germany.

**Going beyond E10 towards E20:**

- Car and Oil stakeholders agree that the current blending limit (of 10%) prevents RED and FQD targets to be achieved.
- Research has demonstrated that E20 would provide opportunities for OEMs to optimise the combustion process in the engine, allowing lower fuel consumption, reduction of CO2 emissions and other pollutants.
- Needed a E20 fuel standard: ePURE started the preparatory work to obtain a standard by 2017.
Developing the ethanol market: boosting the bio-economy

- **Political imperative**: if the development of non-food/feed biofuels will not happen all public support for biofuels will disappear.

- **A predictable and stable policy environment needed**: investments in 2G production capacity will not take place in Europe unless this condition is fulfilled. Now the EU is investing money in research and pilot plants but the production capacity is being build, mainly, outside the EU.

- **Creating bio-refineries**: the existing ethanol plants are perfectly suited to be turned into bio-refineries reaping the benefits of two worlds: 1G and 2G biofuel and boosting technology at the same time.

- **Developing the bio-economy**: the ethanol industry can become a key player in boosting a green chemical industry that will reduce the use of fossil fuel even further. A new market is within grips.
Certifying sustainability

- Demonstrating sustainability (including iLUC) is key to regain trust and support as well as to develop the market.

- Schemes need to a) maintain the high standard as set out in the law and b) need to be trustworthy.

- Schemes not complying with the above should be blacklisted. The COM should be much more active in policing, proposing improvements and stimulating EU cooperation.

- Sustainability certificates are a suitable tool to track biofuel trade flows. The EU law should be adjusted to make this happen so that trade loopholes can be easier addressed.
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In summary: the renewable ethanol agenda

- Regain public support through (re)branding and campaigning.
- Find new champions in the EP, COM and Council (this year); build strategic alliances with stakeholders.
- Solve the iLUC problem (this year); unlock the ETD; achieve a trade policy based on fairness and balance; no more loopholes in customs legislation.
- Roll-out E10 EU-wide by 2016 and get a E20 standard in place by 2017.
- Contribute and be part of the bio-economy.
- Fight for a coherent and stable legislative environment post 2020 including a binding mandate for reducing emissions in the transport sector.
- Sustainability certificates should be used for capturing trade flows.
About ePURE

- Voice of the **European Renewable Ethanol** industry
- Representing EU ethanol producers for all end-uses, e.g. energy, potable, industrial.
- Accounts for close to 90% of EU installed production capacity (around 9 billion litres).
- Has world and regional leaders amongst its 54 members: CropEnergies, Abengoa, Tereos, DuPont, Novozymes.
- Ensuring EU policies that promote the production and use of **renewable and sustainable** ethanol.
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