despite the uncertain political context, biofuel consumption growth was firm in the European Union, rising to almost 14.4 million toe in 2012, i.e. a year-on-year increase of 0.4 million toe. However the previous years’ weaker growth trend is confirmed with growth at just 2.9% between 2011 and 2012.

Gasification plant developed by Air Liquide and KIT (the Karlsruhe Institute of Technology) using the Bioliq® process for producing methanol from straw.
As expected, 2012 confirmed the trend started in 2011, and European Union biofuel consumption growth just about held up. The EurObserv’ER survey conducted in June 2013 points to consumption (both certified as sustainable and otherwise) of about 14.4 Mtoe in 2012 compared to 14 Mtoe in 2011 (Tables 1 and 2) – equivalent to 2.9% growth over 2011 (3.3% between 2010 and 2011). This slowdown follows the strong build-up in biofuel consumption between 2005 and 2010 (graph 1). Growth in 2012 was anything but even across the European Union, for while 14 countries increase their consumption (including France, Spain, Sweden and Finland), 10 others (such as the UK, Poland, Hungary and Italy) decreased it.

The slow lane in the European market

As expected, 2012 confirmed the trend started in 2011, and European Union biofuel consumption growth just about held up. The EurObserv’ER survey conducted in June 2013 points to consumption (both certified as sustainable and otherwise) of about 14.4 Mtoe in 2012 compared to 14 Mtoe in 2011 (Tables 1 and 2) – equivalent to 2.9% growth over 2011 (3.3% between 2010 and 2011). This slowdown follows the strong build-up in biofuel consumption between 2005 and 2010 (graph 1). Growth in 2012 was anything but even across the European Union, for while 14 countries increase their consumption (including France, Spain, Sweden and Finland), 10 others (such as the UK, Poland, Hungary and Italy) decreased it.

The remainder either did not incorporate biofuel in 2011 (Malta and Estonia) or did not fill in our survey (Romania).

We propose two reasons for the drop in consumption witnessed in a number of countries – firstly, the economic crisis which prompted certain importing countries to reduce their incorporation level and secondly the uncertainties surrounding forthcoming European legislation (see below). The breakdown of biofuel consumption was appreciably the same as in previous years, with biodiesel accounting for 73.1% of total energy content consumption, far ahead of bioethanol (19.9%). Pure vegetable oil and biogas accounted for 2% of total consumption (graph 2). In addition to the data relating to biofuel consumption in transport, EurObserv’ER also sought to determine the share of this consumption that was covered by sustainability criteria, which are now mandatory for the purposes of Renewable Energy Directive 2009/28/EC target calculations. These criteria apply to the whole biofuel production and distribution chain within the European Economic Area, and also to biofuel produced from raw materials from non-EU countries.
sustainability certification in 2011 and 2012. Sustainability is now a consumption accounting eligibility criterion in the Directive’s objectives. In June 2012, the information was forthcoming from some ten countries and in 2012 accounted for 8.2 Mtoe of consumption, or 57% of total consumption. For the most countries that have statistical reporting on this new indicator, almost all the consumption is already certified. As far as the others are concerned, biofuel consumption certification was either under way or non-existent in 2011. Wherever there is no certification, the renewable energy share will be adversely affected as it was back in 2012.

**NEWS FROM THE MAIN PRODUCER COUNTRIES**

**Germany still leads the pack**

In 2012 Germany increased its biofuel consumption slightly after the decline in 2011. AGEEStat (the Ministry of the Environment’s working group on renewable energy statistics) reported that 2,390,767 toe of biodiesel, 805,460 toe of bioethanol and 22,093 toe of pure vegetable oil were used in 2012. Germany is thus the leading European biofuel consumer. All of this consumption (both in 2011 and 2012) was certified, meaning that the country can include it in its calculations towards meeting its renewable energy target. Germany’s official biofuel share of total road fuel consumption rose 5.7% in 2012 from its 2011 level of 5.5%. The bioethanol incorporation rate should continue to increase as E10 (fuel with 10% bioethanol) fuel consumption rises in Germany. The BDRE industrial association claims that bioethanol output increased by 7.4% in 2012 to 613.381 tonnes partly thanks to stepped-up sugar beet processing. In March 2013, AGEEStat reported the number of direct jobs in the biofuel sector at 22,701 in 2012 as against 23,200 in 2011.

**France the top biodiesel consumer**

France is not Europe’s leading biofuel consumer, but in 2012 it retained its place as the top biodiesel consumer. Statistics published by the observation and statistics office (DGESI), show that France used 2,299,801 toe of biodiesel in 2012 and 417,600 toe of bioethanol, making for total consumption of 2,717,400 toe. French biodiesel consumption thus increased by 12% year on year. If we factor in the premiums awarded to methyl esters of animal oils and methyl esters of used oil, the incorporation rate in mainland France’s road transport is 6.8% — one of the highest rates in Europe. As regards consumption certification, France was late in transposing the Directive (it happened in 2012, although it was scheduled for 2011). Accordingly, its biofuel was not covered by sustainability certificates in 2012 and thus could not be included in the year’s calculations towards the Directive’s target. This contrasts with 2012 when all the biofuel consumption was properly certified. In September 2012, the government presented a new action plan for agriculture that stipulated a maximum first generation biofuel incorporation rate of 7%. The measure does not affect the growing distribution of E10 in filling stations. The 10% target should be achieved through the development of second- or third-generation biofuel based on crop, waste, algae or cellulose residue and through the development of electric or hydrogen-powered vehicles.

**UK consumption tails off**

HM Revenue and Customs data based on road fuel taxation statistics, shows that 654 million litres of biodiesel (32% less than in 2011) and 775 million litres of bioethanol (39% more) were used in 2012. This same data, converted into energy content, indicates a decrease drop of 13% between 2011 and 2012 (from 1.056 ktoe in 2011 to 0.888 ktoe in 2012) (see methodology note). Furthermore biodiesel and bioethanol consumption evened out as the biodiesel share of energy content dropped from 71.3% in 2010, to 69.0% in 2011, slipping to 66.3% in 2012. DECC (the Department of Energy and Climate Change) explains that the change in legislation from April 2012 onwards is responsible for this drop in biodiesel consumption. Since then, the credits granted under the RDFD framework (Renewable Transport Fuel Obligation) have been doubled for certain types of biodiesel produced from used oil, which enabled distributors to reduce their incorporation level in 2012. DECC also points out that over the 12-month period, about 83% of biofuel consumption was certified as sustainable and that the renewable share in transport rose to 3% under the terms of the Directive.

**Spain to pare down its incorporation rate**

Spain is one of the countries where biofuel consumption growth remained buoyant. The IDAE (Instituto para la Diversificación y Ahorro de la Energía) reports that about 1,947,767 tonnes of bio-

---

**Methodology note**

EurObserv’ER has decided to harmonise its data-gathering method by asking the interviewed experts to express their biofuel consumption data in tonnes rather than energy units (toe or TJ). This is because minor distortions may be occurring between countries since many of them use their own individual weight (tonnes) or energy equivalent volume conversion ratios. To avoid these discrepancies, Systèmes Solaires has adopted the conversion coefficients specified in Appendix III of the new renewable energies directive for calculating the energy density of transport fuels and expresses them in LHV (lower heating value). The coefficients are 27 MJ/kg (equivalent to 6,649 toe per tonne) and 22 MJ/l (equivalent to 5,435 toe per m³) for biodiesel, 37 MJ/kg (equivalent to 9,683 toe per tonne) and 33 MJ/l (equivalent to 9,382 toe per m³) for bioethanol, and 37 MJ/kg (equivalent to 9,683 toe per tonne) and 34 MJ/l (equivalent to 9,121 toe per m³) for pure vegetable oil. For purified binges of natural gas quality it is 50 MJ/kg (1,294 toe per tonne) and 46 MJ/l (1,080 toe per m³).
Certified as 100% sustainable

Biofuel consumption in transport in the European Union Member States at the end of 2012* (ktOE) broken down by sector share

<table>
<thead>
<tr>
<th>Country</th>
<th>Biodiesel</th>
<th>Bioethanol</th>
<th>Others</th>
<th>Others certified as 100% sustainable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweden</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Germany</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Biofuels Barometer - EUROSERVE - JULY 2013

Sweden goes for 100% clean vehicles by 2040

Sweden has the highest incorporation rate of all the European Union countries. The initial estimates of the sustainable biofuel share of fuel consumption in transport supplied by the national statistics (Statistics Sweden) and energy agency (Energimyndigheten) indicate that it increased from 4.6% in 2012 to 7.1% in 2013.

Biofuels Barometer - EUROSERVE - JULY 2013

EUROPEAN INDUSTRY FACES UNCERTAINTY

Caught in the Crossfire

The European first-generation biofuel industry has been hit by the following challenges over the past two years: continuously facing off challenges from two fronts, increasing political pressure, and the expansion of sustainable biofuel consumption.

The impact of indirect land-use changes (ILUC)

The current European political context is particularly alarming for the European biofuel sector. On October 2012, the publication of a proposed “renewable energies” and “fuel quality” directives amendment ushered in a sea change in European biofuel strategy. The proposal contains the following measures: the capping of the first-generation biofuel at 3% in the renewably-sourced

* Estimate ** Vegetable oils used in the pure state for Germany, Austria, Ireland, Luxembourg, Romania; biogas fuel for Sweden and Denmark. source: EurObserv’ER 2013.
energy incorporation targets for transport, factoring in indirect land-use changes (ILUC) into the greenhouse gas emission calculations established using fixed coefficients in the proposal) and tightening the sustainability criteria by bringing forward to July 2014 (rather than 2015) the enforced 60% reduction of greenhouse gas emissions for petroleum fuel for all new facilities. It also proposes applying a multiplying factor of 2 to a to the corresponding quantities in national accounting, to accelerate the transition to "advanced" biofuel types.

Given the current level of biofuel incorporation in road and rail transport, estimated by EuroObserv’ER at 4.7% in 2012 (namely 14 Mt of an estimated 305 Mt of consumption), this proposal would effectively put a stop to the development of first-generation production sectors. The European Commission justifies it by the impact of indirect land-use changes (ILUC) on greenhouse gas emissions, which occur when biofuels displace crops that will occupy soils that were previously preserved (such as forests, natural meadows or peat bogs). The findings of studies conducted on behalf of the European Commission (such as by the American IFPRI) demonstrate that the impact of the ILUC effect on emissions is substantial, and particularly so in the case of biodiesel. Annex II of the RED’s amendment proposal and Annex V which covers the Fuel Quality Directive have already set the additional emission values linked to the ILUC effect. They will be 12 g CO₂ equivalent per MJ for oil-based biodiesel, 29 g CO₂ equivalent per MJ for sugar plants (sugar cane, sugar beet) and 55 g CO₂ equivalent per MJ for biofuel using oilseeds (rapeseed, palm oil, etc.). Taking the example of biodiesel from rapeseed, which is the main oilseed plant used for biofuel production in Europe, 55 g CO₂ equivalent per MJ for the ILUC effect will have to be added to the 46 g equivalent per MJ including the emissions related to growing, processing, transport and distribution (defined in annex V of the RED), making a total of 101 g CO₂ equivalent per MJ. This takes the emission level over that of fossil diesel, which according to the ICT (International Council of Clean Transportation), is about 89 g CO₂ equivalent per MJ for the whole of its lifecycle. Thus if the ILUC effect is taken into account the biodiesel’s balance becomes negative whereas the bioethanol balance remains positive--but much less attractive.

The sector views this proposal as a particularly harsh reversal that penalises the European bioethanol and biodiesel industry. It comes only four years after the Climate Change and Energy Package was implemented in 2009, which had set at 15% Europe-wide renewable energy incorporation target for transport through the Renewable Energy Directive. At that time, the target effectively stimulated major development of first-generation biofuel, whose various forms were seen as the only viable alternative to petroleum fuel in transport in terms of cost considerations. The target, which was also in line with the reduction of dependency on fossil energies strategy, seemed to offer solid growth prospects. Consequently, the European industry players decided to make heavy investments in production capacity. Biodiesel seemed a logical choice in view of diesel’s penetration in the European vehicle base. The European (biodiesel and bioethanol) industry is now in a situation where it will be unable to recoup much of its investment through insufficient growth prospects. According to the EBB (European Biodiesel Board), biodiesel production capacity in 2012 amounted to 23.5 million tonnes with European output standing at 8.6 million tonnes (table 3; the 2012 figure is not yet available). EuroObserv’ER puts European biodiesel consumption at 22.5 million tonnes for the year, meaning that 30% of Europe’s consumption is imported. As for ePURE (European Renewable Ethanol Association), it puts bioethanol fuel production capacity at 8.1 billion litres with actual output running at 7.4 billion litres in 2012 (table 4). The EuroObserv’ER estimate of European bioethanol consumption in transport is 6.6 billion litres in 2011 (4.8 million tonnes), which implies that about 25% of this volume is imported.

The deliberately slanted European Commission proposal will form the basis for negotiations. In view of the stakes, the discussions between the concerned parties (governments, European Parliament, producers) are extremely tense as each party seeks to present its case. The biofuel producers dispute the scientific bases and results of the ILUC models, which they claim cannot be taken into account as they stand. They also claim that the proposal will have a serious impact on employment (240 000 jobs across Europe), the industrialisation of regions and farming. Furthermore they imply that this proposal will increase food dependence in Europe with the depletion of oilseeds, biodiesel co-products – which are indispensable animal feed components. They also stress that innovations in second-generation biofuel and new sectors such as algae or certain types of waste. According to ENVI, the share of first-generation biofuel, produced from food and energy crops, should not exceed 5.5% of the final energy used in transport in 2020. Advanced (second- and third-generation) biofuels should amount to at least 24% of consumption in 2020. The ENVI committee insists that this development should not deprive other sectors of raw materials, destabilise European waste or forestry policy or have a negative impact on biodiversity. Renewable sourced electricity should also amount to 24% of overall energy consumption in transport by 2020 to ensure that number of electric vehicles on the market is higher. Three weeks prior to the proposal date, on 20 June 2013, the European Parliament’s Energy Committee had already drawn up its own measures. It viewed that the European Union should encourage the use of ‘advanced’ biofuel by setting binding targets, and find a reliable model for measuring the indirect land-use changes before including it in the legislation. Accordingly it asked...
Unfair competition International disputes over unfair competition are another sore point for the biofuel sector and in this respect the European Commission’s inquiries have started to produce results. Following a complaint filed by the European Biodiesel Board (EBB) in July 2012, the European Commission opened two inquiries in August and November 2012 into antidumping and anti-subsidies concerning the differential export tax system introduced by Argentina and Indonesia respectively. The system enables these countries to sell cut-price biodiesel into the European market, with an export price that sometimes undercuts the cost of the raw material used to make it. This inquiry has been completed and on 27 May 2013 a European ruling instituted provisional 6-month antidumping tax on biodiesel imports from Argentina and Indonesia. According to EBB Secretary-General, Raffaello Garofalo, “This decision represents a first step to counter unfair and uncompétitive biodiesel imports from these countries”. But he considers that “the level of anti-dumping provisional duties defined so far is in fact insufficient to stop this unfair trade”. Thus he calls for additional anti-subsidy duties to be fixed as a matter of urgency, under the framework of the on-going anti-subsidy proceedings. Spain’s industry was particularly hard hit, leading to a number of players going out of business. This is because Spain had become the major purchaser of Argentina biodiesel (about half of Argentina’s biodiesel exports) ahead of Italy and the Netherlands. On a positive note, this time for the European bioethanol sector, the European Council published a ruling on 22 February 2013 imposing anti-dumping duties on American bioethanol imports. Henceforth and for the next five years, duty will be applied to American bioethanol at a rate of €6.24 per tonne. However the anti-subsidy proceedings (conducted in parallel with the anti-dumping proceedings) have yet to be closed as the Council considered that in view of the length of the prejudice incurred, the implementation of anti-dumping duties suffices. According to EUREP, this decision amounts to legitimate recognition of the damage caused to the European bioethanol industry. The American subsidiaries enabled US bioethanol exports to increase from 202 million litres in 2009 to 1.17 billion litres in 2011, or 20% of European consumption.

NEWS FROM AROUND THE MAIN MANUFACTURERS

**Tereos is banking on flexibility** The bioethanol sector players do not have the same resources to face the recession and the modifications to European legislation (table 4). Thanks to the flexibility of their industrial facilities, and their presence on the international market, some of them are seeking to diversify the production balance between sugar, alcohol and bioethanol as market trends emerge. French group Tereos is one of the top European sector players. Its bioethanol sales in FY 2011/2012 amounted to 1.1 million m³. It seems that the South American market is currently less complicated than the European market. Guarani, its Brazilian subsidiary, is riding high in its local expanding market. The situation enabled Guarani to seal a strategic partnership with Petrobras, the oil company, in 2010 in a contract that alone covers almost all Guarani’s sugar cane-based ethanol sales. In Europe, the volume of Tereos’ sales of cereal and sugar beet ethanol increased by 20% over FY 2011/2012, making the most of excellent beet harvests in France and the Czech Republic. The company also benefited from an increase in prices from the second half-year onwards (that rose from about 600 to 720 euros/m³) after “denatured ethanol” in the E90 blend (90% ethanol, 10% petrol) from the United States, whose imports initially classified as “chemicals” benefiting from lower customs duties that destabilised the market (see the July 2012 Biofuel barometer), was reclassified. French and European market growth prospects are still much less attractive because of the pending European legislation. France’s choice to cap the incorporation rate at 7% has the merit of contributing towards the aim of keeping industrial facilities open. However in the light of the high cereal prices, Tereos has decided to develop food production, substrating part of its bioethanol production on its Liebourn site. The year 2012 was good for the group as a whole. Its turnover rose from 4,409 million euros in 2011 to 5,593 million euros in 2012 with a net profit at 312.6 million euros compared to 237 million euros in 2011.

**Abengoa Bioenergy enters the second-generation era** Not only is Abengoa Bioenergy the leading European biofuel producer (with 15 million m³ of production capacity, including 3.1 million m³ of bioethanol, but it is also one of the major producers of second-generation ethanol. The Futurol project, so-called second-generation bioethanol production process, from lignocellulose (from cellulose, hemicellulose, and lignin), has been completed and on 27 May 2013 a European ruling instituted provisional 6-month antidumping tax on bioethanol imports from Argentina and Indonesia. According to EBB Secretary-General, Raffaello Garofalo, “This decision represents a first step to counter unfair and uncompétitive biodiesel imports from these countries”. But he considers that “the level of anti-dumping provisional duties defined so far is in fact insufficient to stop this unfair trade”. Thus he calls for additional anti-subsidy duties to be fixed as a matter of urgency, under the framework of the on-going anti-subsidy proceedings. Spain’s industry was particularly hard hit, leading to a number of players going out of business. This is because Spain had become the major purchaser of Argentina biodiesel (about half of Argentina’s biodiesel exports) ahead of Italy and the Netherlands.

**Tereos is banking on flexibility** The bioethanol sector players do not have the same resources to face the recession and the modifications to European legislation (table 4). Thanks to the flexibility of their industrial facilities, and their presence on the international market, some of them are seeking to diversify the production balance between sugar, alcohol and bioethanol as market trends emerge. French group Tereos is one of the top European sector players. Its bioethanol sales in FY 2011/2012 amounted to 1.1 million m³. It seems that the South American market is currently less complicated than the European market. Guarani, its Brazilian subsidiary, is riding high in its local expanding market. The situation enabled Guarani to seal a strategic partnership with Petrobras, the oil company, in 2010 in a contract that alone covers almost all Guarani’s sugar cane-based ethanol sales. In Europe, the volume of Tereos’ sales of cereal and sugar beet ethanol increased by 20% over FY 2011/2012, making the most of excellent beet harvests in France and the Czech Republic. The company also benefited from an increase in prices from the second half-year onwards (that rose from about 600 to 720 euros/m³) after “denatured ethanol” in the E90 blend (90% ethanol, 10% petrol) from the United States, whose imports initially classified as “chemicals” benefiting from lower customs duties that destabilised the market (see the July 2012 Biofuel barometer), was reclassified. French and European market growth prospects are still much less attractive because of the pending European legislation. France’s choice to cap the incorporation rate at 7% has the merit of contributing towards the aim of keeping industrial facilities open. However in the light of the high cereal prices, Tereos has decided to develop food production, substrating part of its bioethanol production on its Liebourn site. The year 2012 was good for the group as a whole. Its turnover rose from 4,409 million euros in 2011 to 5,593 million euros in 2012 with a net profit at 312.6 million euros compared to 237 million euros in 2011.

**Abengoa Bioenergy enters the second-generation era** Not only is Abengoa Bioenergy the leading European biofuel producer (with 15 million m³ of production capacity, including 3.1 million m³ of bioethanol, but it is also one of the major producers of second-generation ethanol. The Futurol project, so-called second-generation bioethanol production process, from lignocellulose (from cellulose, hemicellulose, and lignin), has been completed and on 27 May 2013 a European ruling instituted provisional 6-month antidumping tax on bioethanol imports from Argentina and Indonesia. According to EBB Secretary-General, Raffaello Garofalo, “This decision represents a first step to counter unfair and uncompétitive biodiesel imports from these countries”. But he considers that “the level of anti-dumping provisional duties defined so far is in fact insufficient to stop this unfair trade”. Thus he calls for additional anti-subsidy duties to be fixed as a matter of urgency, under the framework of the on-going anti-subsidy proceedings. Spain’s industry was particularly hard hit, leading to a number of players going out of business. This is because Spain had become the major purchaser of Argentina biodiesel (about half of Argentina’s biodiesel exports) ahead of Italy and the Netherlands.
A Bioenergy and Biocatalysis Demonstration plant in Babilafuente, Spain. The plant will have capacity to process 250,000 tonnes of solid municipal waste to produce 1.5 million litres in 2011. The plant will be operated by Abengoa Bioenergía Nuevas Tecnología sub-project, and it claims to have six research centres (four in Spain and two in the United States) employing as many as 45 research workers. Its technology investments increased from 234 million euros in 2011 to 207.2 million euros in 2012, with backing from both the American Department of Energy, the Spanish Ministry of Industry and the European Union Framework Programme.

Turning to second-generation biofuel, Diester Industrie (of the industrial consortium that owns Diester Industrie, is involved in the BioTual project (budget of 131 million euros). The project aims to develop and launch a full chain of biodiesel and biojet fuel production processes from lignocellulosic biomass – straw, forest waste, etc., by 2020.

### Production capacities of the main bioethanol producers in Europe in 2012* (millions of litres)

<table>
<thead>
<tr>
<th>Company</th>
<th>Country</th>
<th>Production sites</th>
<th>Number of plants in Europe</th>
<th>Production capacity in 2012 (millions of litres)</th>
<th>Raw materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abengoa Bioenergy</td>
<td>Spain</td>
<td>Spain (4), Netherlands (3), France (2)</td>
<td>6</td>
<td>1,281</td>
<td>Barley, wheat, cereals, raw alcohol, maize, maize, lignocellulose</td>
</tr>
<tr>
<td>Tereos</td>
<td>France</td>
<td>France (6), Czech Rep. (2), Belgium (2)</td>
<td>6</td>
<td>483</td>
<td>Sugar juices, sugar beet, wheat</td>
</tr>
<tr>
<td>CropEnergies/BioWanze (BE)</td>
<td>Germany</td>
<td>Germany (1), Belgium (1), France (3)</td>
<td>3</td>
<td>808</td>
<td>Sugar juices, sugar beet, cereals, wheat</td>
</tr>
<tr>
<td>Cristalol</td>
<td>France</td>
<td>France (4)</td>
<td>4</td>
<td>540</td>
<td>Sugar juices, sugar beet, wheat, glucose, raw alcohol</td>
</tr>
<tr>
<td>Ensus</td>
<td>United Kingdom</td>
<td>United Kingdom</td>
<td>2</td>
<td>400</td>
<td>Wheat</td>
</tr>
<tr>
<td>Agrana</td>
<td>Austria</td>
<td>Austria (1), Hungary (1)</td>
<td>2</td>
<td>600</td>
<td>Wheat, maize</td>
</tr>
<tr>
<td>Verbio</td>
<td>Germany</td>
<td>Germany (2)</td>
<td>2</td>
<td>380</td>
<td>Sugar juices, cereals</td>
</tr>
<tr>
<td>Agroetanol</td>
<td>Sweden</td>
<td>Sweden (1), Czech Rep. (2)</td>
<td>2</td>
<td>220</td>
<td>Cereals</td>
</tr>
</tbody>
</table>

* Only European plants are included. Source: BioFuelsBarometer 2013.
Current discussions revolving around the modification of the two directives will not affect the 10% renewable energy target for transport in 2020, but will affect the proportions of the types of biofuel involved in fuelling this target.

However the issue of energy equivalent incorporation amounts could also be raised when the final vote on the directive is made. If the European Union decides to limit the incorporation rate of first-generation biofuel (to 5%, 6.5%, or even 7%) from 2020 onwards and introduce a minimum incorporation rate for “advanced” biofuel (such as 2.5%), which would be subject to premium, these decisions could significantly reduce the volumes to be incorporated. An amendment allocating a mandatory percentage for using renewably sourced electricity in transport (such as 1.4%) is also likely to reduce biofuel incorporation volumes. Thus the targets set in the National Renewable Energy Action Plans could become inappropriate for the new regulation. Furthermore calculating incorporation volume projections to the 2020 timeline has turned into a minefield. Pending the European Union decisions, EuroObserv’ER has decided to adhere to the consumption forecasts it made for 2020 (graph 3), that are in phase with the NREAPs in effect on the publication date of this barometer. These forecasts will be revised at the end of the year in our annual barometer to factor in the new strategic reorientation of European Union biofuel policy.

The amendments passed that will affect the Renewable Energy and Fuel Quality Directives are just one step and will be a single element of a much broader framework. The European Commission, in a January 2013 communiqué accompanied by a draft directive, spelled out the Union’s fuel substitution strategy. The document claims that the solution for the future of mobility cannot rely on a single type of fuel and thus all possible substitute fuels should be tapped (biofuel, electricity, hydrogen, LPG, natural gas), by focusing on the energy infrastructures. “Advanced” biofuel is one of the solutions and accordingly, the Commission intends to boost incentive measures to encourage its use. It also takes the view that only “advanced” types of biofuel should benefit from public aid after 2020.

This policy is sound because it will contribute to improving energy supply security, restart economic growth, boost the competitiveness of European industry and reduce greenhouse gas emissions attributable to transport.

The next barometer will cover the subject of heat pumps.

**Study of biomass production systems from microalgae in bioreactors (Karlsruhe Institute of Technology).**