

Now that the New Year has officially begun *Biofuels International* gets the thoughts of high-profile producers to see what the next 12 months may hold in store for the industry

2013 global outlook

Reaching milestones

Andre Koltermann
Biotech and Renewables
Centre, Clariant
Headquarters: Switzerland

“Biofuels have been regarded as the ‘magic bullet’ to reduce greenhouse gases (GHGs) in transportation for years. Nevertheless, recent years has seen criticism for first generation biofuels as GHG savings are seen to be limited and may even further be reduced due to land use change effects due to the ‘food versus fuel’ debate.

Advanced biofuels technology is becoming increasingly mature however, a development necessary to ensure that GHG saving targets can be reached. I believe liquid biofuels will continue to play a major part for increasing sustainability throughout transportation in the EU and worldwide.

The concept of using lignocellulosic feedstock, especially in agricultural residues form, for bio-based chemical and fuel production, such as cellulosic ethanol,



Koltermann says all countries could benefit from cellulosic plant deployment

is interesting and promises to have high potential across the globe. Several technological advances have taken place recently, with some companies on

the brink of commercialising via demonstration plants. The next couple of years will show which companies are most up for the challenge of competitively producing

cellulosic ethanol.

We have been developing a process for the production of cellulosic ethanol from agricultural residues like cereal straw, corn stover or bagasse and, last July, we reached a milestone in the commercialisation of the technology with the opening of a demonstration plant in Germany. Our next step will be to set up a first commercial production plant to bring this technology to market.

Every region could benefit from the deployment of cellulosic ethanol production plants. In Europe alone around 25% of the EU’s demand for petrol predicted for 2020 could be met by cellulosic ethanol from cereal straw.

The main obstacle is to stimulate investment in this sector. A stable political framework is key for investors’ security, particularly in respect to current debates on indirect land use change regulations, which creates uncertainty for the sector in Europe. A quick and sensible solution to promote biofuels made from cellulosic biomass is needed here, especially one that includes a mandatory blending quota for second generation biofuels. ”

Ambitious targets

Henrik Maimann
Vice president
new biosolutions,
Dong Energy
Headquarters: Denmark

“2012 was an interesting year for the bioethanol sector. The EU Commission presented two new directives that will affect the sector’s opportunities to develop in the European market, plus China has decided to focus more extensively on second generation bioethanol. The outcome of these decisions will start to show in 2013.

Political targets are ambitious across the globe but we see the industry as being ready to deploy technology to support them. To attract the necessary investors needed to develop the industry to the scale required however, and in order to achieve the targets, a political

framework that supports a stable and predictable market for cellulosic bioethanol will be required.

We see positive signs in the cellulosic bioethanol market. However, we see some differences between regions across the world. We expect Asia, especially China, will move forward fast in 2013 based on strong support from the central Chinese government. Furthermore, we see a market for second generation bioethanol being established in Brazil with focus on using waste biomass from the production of sugar-based bioethanol.

In regard to the main US and EU markets the forecast looks different. Despite intentions by the US federal government we still see challenges in attracting investors in that market. In Europe, 2013 will be the year we will see a new renewable fuel directive taking shape, which will form the basis for the industry to develop. 2013 will show whether the



Maimann expects to see rapid progression in Asia, particularly in China

EU will be able to create a market sufficiently stable for cellulosic bioethanol to develop on a short-term basis.

The bioethanol sector is set for an exciting year, both

for the global industry and for us. The political targets are ambitious but we expect to see a number of projects being initiated during the next 12 months. ”



Koninckx hopes for a better year for US biofuels production

Stability is key

Jan Koninckx
Global business director
for biorefineries, Dupont
Headquarters: US

“I’d expect the biofuels industry to start picking up again this year, particularly in regard to second generation production, after a bit of a poor 2012 thanks in no small part to the summer drought and fluctuating corn prices.

I personally was very encouraged by the way the industry fought its corner last year in regard to the proposed halt on the Renewable Fuel Standard. Everything went through a proper process and due diligence, including the complaints filed to the EPA, and a positive outcome was announced for our industry to firm up a little bit of future stability.

That is my key word for

2013 – I want to see stability for the industry. The progress Dupont has made over the past five years, when we were just working in our research labs at the start, has been at breakneck speed. The supply chains that are opening, facilities being built and the technology coming out means the industry is in a good position to push on. With firm regulatory aims to shoot for, the future looks bright.

Looking in-house, construction on our new 30 million gallons a year ethanol plant in Iowa will continue as we look to complete one of the largest cellulosic biofuels plants in the world. We’ve already started ratifying contracts with feedstock providers for the project too. Back at the research labs we will start looking into switchgrass as a potential feedstock, plus one other which will be confirmed later on this year. ”

Know the rules

James Hygate
CEO, Green Fuels
Headquarters: UK

“We have seen a definite trend towards smaller, decentralised biodiesel plants over the past few years which can be sited closer to feedstock sources and biodiesel users. I think this trend will continue into 2013 simply because it works.

That means reduced movement for feedstock as local demands increase and customers make biodiesel from local sources, ours tending to favour waste cooking oil. As refineries are being situated closer to the oil wells, rather than as centralised facilities that require feedstock to be shipped to them, the resulting biodiesel is used to meet local demand in road fuel and renewable energy production, creating a highly localised closed loop model.

We think ‘hot areas’ this year are going to be Asia Pacific and South Africa as biodiesel is fast catching on. Anyone who has ever done business

in the Far East however will know that a different set of rules apply to doing business. If you can master them you can be successful, as community-scale biodiesel production fits in well there, but the rules do require a great deal of understanding.

It seems, interestingly, that there could also be resurgence in North America but, again, the interest seems to be at community scale which, in my opinion, is about right. Customers are mainly co-operatives or closed loop recycling projects where waste can be used to fuel their fleets. We believe this scale of production can be successful in the US with the current incentives, and gradual movement of yellow grease away from animal feed, in place.

The only worry we have for this year surrounds targets as, although entirely necessary, not many can be realistically met. This is partly because there isn’t enough available feedstock and partly because policies are not in place to



Hygate is enthused by rising small- and community-scale interest in bioenergy

allow them to happen, so there will inevitably be a shortfall. That said we are seeing more localisation of supply and usage which is how we think the industry

will grow. Overall 2013 needs to see greater utilisation of waste materials, like waste vegetable oil, more sustainable feedstock and more local manufacturing and supply. ”

Seeing more interest

Pramod Chaudhari
Executive chairman,
Praj Industries
Headquarters: India

“The bioethanol industry, both in India and the world over, will find 2013 to be a year of consolidation as trends seem to indicate the incorporation of second generation biofuels mandates and drop-in fuels building faster. Going forward, I also envisage greater integration of first and second generation biofuels.

In regard to global first generation ethanol mandates, the US has reached a blend wall but we see countries in the emerging economies showing greater commitment to first generation production, including countries in Latin America, south east and southern Asia and Africa. I must emphasise however that mandates need to evaluate sustainability on all fronts before they are implemented. Interestingly, there has also been an even greater interest in second generation biofuels across these

regions. Several countries are expected to follow the US’ lead. In my view the US is to second generation biofuels what Brazil was for first generation bioethanol.

Praj itself has been making advancements in second generation ethanol technology and we are now all set to launch a demonstration plant. We will be the first company in the tropical regions to set up such an integrated facility which will be scaled up 100 times when compared to the pilot plant.

As far as feedstocks go, diversity and flexibility will be key and I particularly see great promise in empty fruit bunches as it is integrated with the palm oil industry, a mainstay in the south east Asian region.

The implementation of second generation ethanol mandates with blending incentives needs to be sustained; they should be kept in place or introduced where they do not exist because second generation biofuels will be the foundation of the bio-based economy. My real hope for 2013 is to see ‘true biorefinery’ emerge – that is the crux of a sustainable, net energy positive business. ”



Chaudhari is hoping for a year of global consolidation

Obtaining success

Robert Johnsen
CEO, Primus
Green Energy
Headquarters: US

“The biofuels industry is in the midst of a critical transition, one where there is a wave of second generation alternative fuel technologies trying to move out of the laboratory and into commercialisation.

Though there has been some progress, technology companies have had varying degrees of success and, as a result, key strategic and financial partners are now appropriately skeptical.

This mentality is evident in the huge financing gap that exists throughout the industry today, as ambitious biofuel production targets have not been met because production capacity is generally not able to meet demand. The International Air Transport Association (IATA) is one



Johnsen believes the biofuels industry is in a 'critical transition'

example after it set a goal of producing enough biojet fuel to meet 10% of all jet fuel demand by 2017, or 7

billion gallons per year.

Biojet production capacity currently stands at 400 million gallons per year so

the industry would have to increase capacity by over 6 billion gallons in only four years to meet IATA's goals. Assuming an average capital expenditure cost of \$10 (€7.5) per gallon, this amounts to a total of \$62 billion of required financing and strategic investors are not yet at a stage where they are ready to open their wallets wide for alternative fuels.

It is this cautious environment that will define the industry's operating conditions for 2013, but the good news is that enthusiasm for alternative fuel technologies has not waned – on the contrary, it has grown significantly and, in that spirit, we have developed an alternative fuel technology that converts syngas produced from either biomass or natural gas into a product that is a drop-in substitute for petrol, jet fuel and diesel. A pilot plant is currently in operation and I expect us to complete construction of our demonstration plant by Q1 2013.”

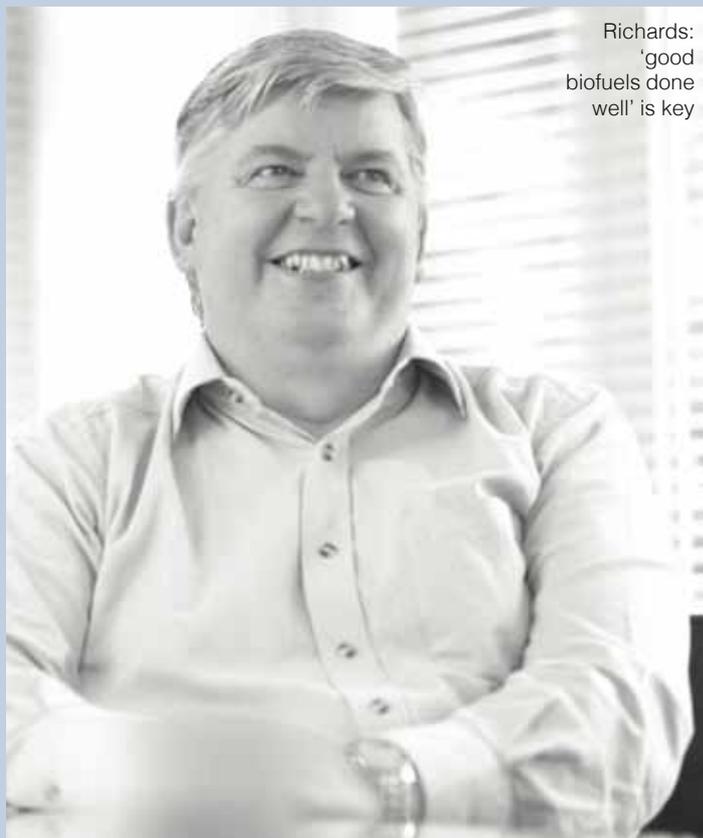
Well worth it

Dave Richards
MD, Vivergo
Headquarters: UK

“The coming year will pose a number of challenges for the European biofuels industry, and I personally would like to see more support from both public and political avenues. The issues we all face in providing more sustainable sources of energy for a growing global population are highly complex, but the positive impact of good biofuels done well is often overlooked. What is clear however is that there is no 'silver bullet', by which I mean there is no single source that will solve our energy needs.

The best answer is to have a mix of alternative energy supplies and Vivergo also firmly believes that biofuels can make a material difference to providing more sustainable sources of both fuel and food. As a working example, we take 1.1 million tonnes of the UK's feed-wheat surplus and convert it into high-value commodities, like bioethanol and animal feed, which the UK would normally import.

Towards the end of the first quarter our 420 million litre wheat-to-bioethanol plant will be fully operational and our investment of £350 million will create and sustain over 1,000 skilled jobs. As the company is so involved in the European biofuels industry, I'm personally looking forward to playing a part in creating support for biofuels done well this year, plus engaging in the wider debate of how to address our energy needs in a more sustainable way.”



Richards: 'good biofuels done well' is key