

EXCLUSIVE REPORT

by Biofuels International



Biofuels leaders share their
thoughts on the year ahead.

Download your **FREE** copy now

biofuels
international

Leading figures outline the expectations and challenges that await the industry over the course of the year

Looking ahead to a special year for the biofuels industry



2024 regulatory outlook on biofuels – winds of change?

By Marko Janhunen, director, public affairs at UPM. He is also a member of the executive committee of the Advanced Biofuels Coalition

One thing is for sure – this year will bring about significant changes for the advanced biofuels industry. However, what are the key developments we can expect and what type of positive, or negative, impacts are most likely to influence our industry?

Last year will be remembered for at least two developments.

First, significant changes were introduced in key regulations shaping the business environment for biofuels – more than ever before.

In addition to the final agreement on the Renewable Energy Directive (REDIII), the EU's latest RED, new targets were introduced to boost

the uptake of biofuels both in aviation and maritime.

Second, some EU markets were dramatically affected by increased amounts of advanced biofuels being sold. This, in turn, led to legal measures taken by the European Commission to investigate and ensure that there is no fraudulent behaviour in the biofuel markets.

What do we expect in 2024? I believe this year will be dominated by discussions on how to ensure a competitive European industry.

As the new European Commission agenda is discussed, focus will not only be on what the 2040 climate target is, but also on how to create the investments needed to achieve those ambitious goals and how to reduce regulatory risks. Renewables and sustainable biomass will emerge in discussions on the EU's strategic autonomy.

Finally, credibility of transparent reporting and sustainability value chains will remain a key topic this year.

The European Commission will need to assess how to ensure that not only advanced biofuels but also the whole green transition, for example green hydrogen and green steel, is supported by certification schemes that give sufficient guarantees of genuine green and sustainable performance.

We at UPM Biofuels believe all these developments will support our industry

and the business case of advanced biofuels.

However, there are also other significant policy processes this year. Let's turn to three important policy developments for the year ahead.

Red card from the Court of Auditors on EU biofuel policies

Last December, the European Court of Auditors published an alarming report, based on their in-depth investigation on the sector about the quality of EU biofuels policies.

In short, the report stated that the EU has failed to give sufficient policy stability to the biofuel sector and that more stringent categorisation of truly advanced feedstock is needed, and more transparency in reporting.

It is remarkable that a EU body responsible for EU institutions' financial transparency and accountability raises such significant concerns on the EU's biofuel policies.

We welcome the fact that the European Council has already established a working group to respond to these accusations.

UPM Biofuels recognises the significance of the findings of the report.

Stricter certification and more transparency along the whole value chain is needed. We look forward to engaging with the EU institutions in working towards a comprehensive reaction

to the auditors' report.

Such measures should obviously be incorporated into the next Commission agenda.

New approach on renewables – including sustainable biomass?

During the first quarter of this year the European Commission will publish a communication on biotech and biomanufacturing.

It will be very interesting to see how much focus there will be on the circular bioeconomy.

This initiative should define sustainable biomass usage as an integral part of the European Union's strategic autonomy.

The report is also another great opportunity for the EU to reassess our approach to using sustainable, domestic and renewable raw materials as a replacement for fossil consumption.

Advanced biofuels are a fantastic example of using sustainable biomass, wastes and residues to reduce our dependence on fossil oil.

New feedstock to be included in Annex IX to boost SAF development?

Also, during the first quarter of this year we expect the European Commission to publish its decision on the much-delayed revision of Annex IX of RED.

The relevance of the Annex is much greater today than some years ago as it has

been decided that the Annex defines those feedstocks that are eligible not only for the road transport mandate but also for the sustainable aviation fuels mandate.

This significantly increases the relevance of the Annex.

UPM has requested appropriate recognition of new innovative agricultural methods such as silvopasture and agroforestry – both integrating trees, livestock, and grazing – to enable new sustainable feedstock development for advanced biofuels.

These innovative agricultural techniques combined with the principle of additionality and certain degraded soil elements could provide highly interesting opportunities for sustainable feedstock sourcing.

We also call for appropriate recognition of cover cropping to ensure sufficient feedstock availability for the sustainable aviation fuel (SAF) sector.

Is the wind changing?

There is no doubt that 2024 will again be a hugely relevant year for the advanced biofuels policy landscape.

While in past years we have faced some headwinds, an increasingly complex regulatory framework that is tough to navigate, and increased focus on next generation potential solutions for climate mitigation also in the transport sector, certain policy change is taking place in Brussels.

It is now also up to us in the industry to make our voices heard and to bring forward concrete proposals on how our sector can get the right support when the next Commission takes over the offices of Berlaymont by the end of this year.

I am looking forward to engaging with industry partners to make the best out of these policy processes.

For more information:
Visit: upmbiofuel.com



Making progress in developing the market

By Pat Gruber, CEO of Gevo

The last 12 months in the biofuels industry can be summarised in one word ‘limbo’.

I believe that the company has made progress on things like developing the market, and figuring out more information and analysing data, but in large parts it is in limbo because of the markets and the lack of clarity around the new US Inflation Reduction Act (IRA).

As the industry enters the new year, many companies still do not know what the credits are worth and it is, therefore, hard to calculate margins and essentially the profitability of a particular project.

Changing times

We currently have an inflationary environment where prices are changing all the time and project costs have gone up, and you have to double check, triple and quadruple check the bottom line and every time you go ‘What?’. You also have all sorts of different noises in the biofuel market place, which sows confusion.

Some of the voices are saying ‘let’s do power-to-liquids’, OK sure, if you want to spend an extra \$10 a gallon (€9.15) and have a net energy loss overall.

I feel alcohol to jet (AtJ) is clearly going to win economically, we have the data to show that.

For example, we know there is an ample availability of

feedstock. However, for me it’s still Groundhog Day. The same questions keep cropping up all the time. People want it to be simpler than it is, but it is not. It’s a big business system.

When you think about a carbon negative fuel that we are delivering, it’s a pretty miraculous thing when you look at it on a cost effective per gallon basis. I feel it is remarkable that Gevo can deliver this to its customers.

I was at COP28 last year and I have to say there is a big dose of fantasy land out there.

For instance, there was a piece in Bloomberg which argued that if you want jet fuel in Europe it all has to be power to liquids with solar panels, everywhere. Does that sound realistic?

This technology uses 37 times more hydrogen than if it is done by the biogenic route, that is, with HEFA or AtJ. Government policies across Europe are focused on power to liquids, but this is not generating enough power to do the regular stuff that society needs.

There is not enough power to make an adequate amount of hydrogen, or heating, and companies want to divert this and make jet fuel out of it? I don’t think so.

I think there is a lack of practicality and a lot of it comes from this very naive and simplistic approach – ‘we are never going to use land because using land is bad and it impacts on food production.’ I say this is not true.

Food versus fuel

The world needs more food, we are going to grow food, which means we are managing the land and this also creates the opportunity to develop raw materials for making renewable fuel and for capturing carbon in the soil.

When we talk about hard-to-abate carbon sectors, the technology is going to be bio-based renewable resources where the carbon is going to be captured on the land and

we are going to produce food while harnessing the extra stuff to make fuel and energy.

My broad frustration is the way people want to hit the easy button and fantasise with ‘sounds good’ policies.

Everyone should step back, take a breath and take a look at what’s practical and possible.

Yes, we should have clean hydrogen, it has great potential, but it doesn’t really exist today and renewable electricity does not really exist today either.

It is very fundamental to me, where are we going to get the electricity, where are we going to get the heat sources?

These environmental groups make money by creating every red herring they can get their hands on. They make money by inventing these issues – that is their business model.

We need to get people to be realistic about what’s possible. I am frustrated, I have been doing this for 30 years, and the old tired arguments about indirect land use is one that is easily disproved today.

Once upon a time, someone had concerns about it and put together an economic model to show that this was the case. It is not correct. Rainforests declined in Brazil when ethanol was being built up in the US, they argued, but this is an indirect link.

It’s a political ‘hot’ button. Ethanol has a bad name, when you say you are going to make jet fuel from ethanol people say this is bad.

In the US, the ideal of the IRA bill is that you have a score and you get rewarded financially for every carbon intensity (CI) improvement beyond that score.

To achieve this, companies will have to document it, it all has to be legitimate, it has to be transparent and it has to be auditable and all of this makes it a bit of a challenge.

How do you measure it? The Argon GREET method is what everyone uses. The GREET model is specified in the IRA as the methodology to calculate the lifecycle greenhouse gas emissions “through the point of production (well-

to-gate)” when determining the level of tax credits.

Some environmental groups do not like its data sets, as it appears too favourable to people like us.

However, plants have become more efficient, so their carbon footprints have gone down. There is still room for improvement and there will be.

Going forward

So what are the new rules? We are still trying to figure them out. We heard it’s going to be GREET with tweaks.

When tracking carbon what’s really important is you are rewarded for your carbon reduction, so tracing and tracking it will be crucial.

That is the way it should be done – field by field, source by source. Everyone now is talking about counterfeiting with stuff coming out of China, so let’s track it.

It looks like the rules are going in the right direction and I hope they do it field by field so we can build the data and we can blow away all the wrong arguments put forward by these groups.

I feel Europe is still confused on the types of feedstocks with the Renewable Energy Directive’s Annex IX. It’s not realistic, these goals will never be achieved, I do not think it can be done.

Last year, we did this huge project where we looked to troubleshoot everything we’ve got, from SAF production through to tracking.

The findings showed that we had the lowest cost carbon abatement system – it was about half of any other system making SAF.

That was about \$450 (€412) per metric tonne – a big deal. I think we can improve this even further, so we are on the right track.

This year we will have to look at our capital costs and pin them down, they are always a moving target.

There is enough interest in the marketplace and there is enough demand – people understand the story of AtJ and carbohydrate to jet.

Figure 1 shows the amount of food that is produced when developing jet fuel, it is immense.

I expect more of our projects to get financed this year so we can go out and build plants.

We have enough customers, but the question is how we do it bigger and faster while fixing our capital costs. One of the issues is skilled labour, it does not exist. This is one of the uncertainties we face.

We will see AtJ really develop this year. I feel optimistic for the year ahead, there will be arguments over indirect land use with environmental groups, but

that is the last lever they have.

The argument about felling rainforests is just not true. We have to counter this argument and show where our feedstocks come from through data tracking.

We need to grow food, take out the raw materials that are not needed for food, put them into energy products and use the land to capture carbon and manage it well.

At the moment 30% of food is wasted in the supply chain.

We do not need more land in this world for agriculture. When systems work in an integrated way we can meet the needs for food as well as for energy while meeting the goal of capturing carbon. You can’t do it by being arbitrary.

For more information:

Visit: gevo.com



Ready to deliver SAF

By Andreea Moyes, Air bp’s global head of sustainability

We at Air bp believe that we have a lot we can bring to the table that will be crucial in developing the global scale for SAF. Let me share some of these areas:

First, is our deep experience in aviation fuel distribution.

Today, bp supplies 6 billion gallons of aviation fuel per year in over 700 locations in more than 45 countries, and we have supplied SAF to over 30 locations and counting.

Second is technology.

There is no silver bullet when it comes to SAF technology – all pathways and feedstocks should be considered. Some are commercial and scalable today, like HEFA and others require more research and development.

Third is production.

To meet our SAF aims, we are scaling production through co-processing at some of our refineries. We currently supply co-processed SAF from two bp refineries – Lingen in Germany and Castellon in Spain. Air bp is planning major projects involving a multi-billion dollar investments across five existing bp facilities – Rotterdam in the Netherlands, Lingen in Germany, Castellón in Spain, Cherry Point in the US, and Kwinana in Australia – with the aim for all five to start up before 2030.

These projects are expected to make a significant contribution towards bp’s aim to produce around 100,000 barrels of biofuels per day by 2030. A significant portion of the biofuels produced will be blended to make SAF.

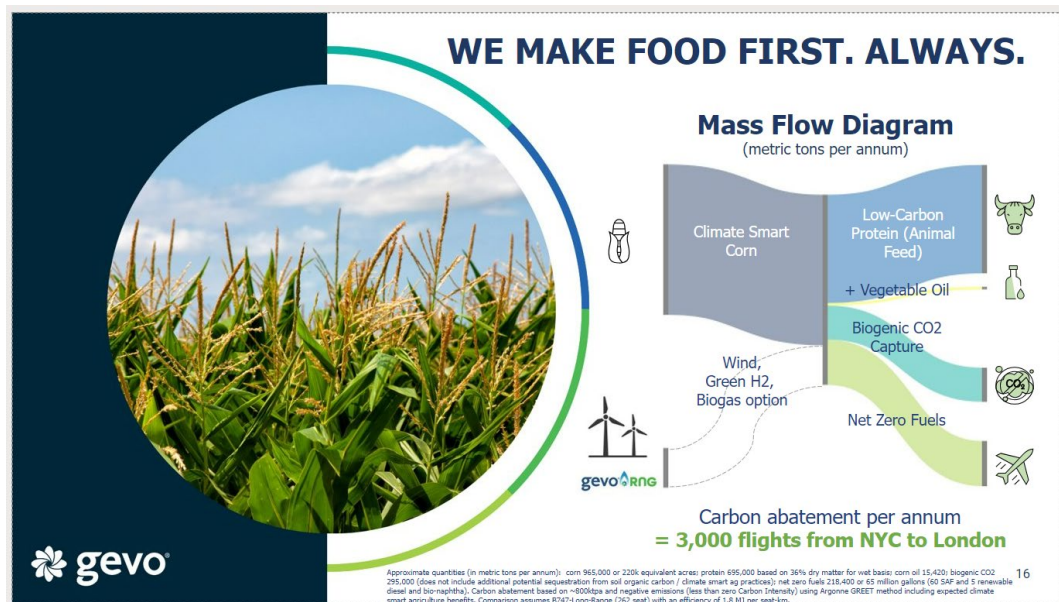


Figure 1

Fourth is strategic partnership and collaboration.

We take great pride in building long-term, mutually beneficial relationships with customers, OEMs, governments and other stakeholders. The company has been working hard to build new strategic collaborations that will help to scale up demand for SAF. In 2022, a strategic agreement was signed with DHL Express for 211 million gallons from two suppliers (bp and Neste) over a five-year period.

In November last year, we supplied SAF for a world first – a 100% SAF-powered flight across the Atlantic Ocean – in collaboration with Rolls-Royce, Virgin Atlantic, Boeing and others.

The importance of SAF is to the aviation sector as it aims to decarbonise

Today, aviation contributes around 2% of global carbon emissions and 12% of the transport sector's emissions¹.

It is also a fast-growing sector – this year we expect passenger numbers to reach pre-pandemic levels.

Additionally, by 2040 IATA has forecast that annual air passenger numbers will rise to 7.8 billion – which is roughly double the global passenger numbers today². It's also more difficult to decarbonise than many other forms of transport³.

Around 70% of emissions from aviation come from medium and long-haul flights, which currently cannot be readily powered by batteries or hydrogen⁴.

Without intervention, aviation is on course to become the single biggest source of transport emissions as demand grows and other forms of transport make significant progress in decarbonising.

This is where SAF comes in. In the near to medium term, it is the most viable decarbonising option because of its compatibility with existing aircraft and fuel infrastructure.

In fact, industry forecasts predict that SAF demand is set to grow from around

200,00 tonnes today to over 300 million tonnes by 2050⁵.

That is a staggering 1,500-fold increase in just over 25 years and highlights why, at bp, we believe SAF will help advance decarbonisation and create business value for our customers, our partners and our organisation.

Challenges facing the developing of the fuel

There are a number of challenges associated with producing and implementing SAF on a large scale.

Firstly, ensuring enough SAF supply; the production of SAF starts with one of five main families of raw materials – oils and fats, sugar and cereal, municipal solid waste, wood and agricultural residue, or renewable energy and carbon used to replace a proportion of the crude oil feedstock.

Each of these feedstocks uses a particular production technology, with each specific technology pathway needing approval from the fuel standard body ASTM before being commercially deployed.

Utilising a wide range of feedstocks as well as the technology pathways is integral to maximising the production and supply of SAF.

For example, bp entered into a long-term strategic offtake and market development agreement with Nuseed, that will see bp, or its affiliates, purchase Nuseed Carinata oil to process or sell into growing markets for the production of sustainable biofuels.

Nuseed Carinata is a non-food cover crop that can be used to produce low-carbon biofuel feedstock that is independently certified, sustainable and scalable.

The challenge of supply can also be addressed with co-processing. bp believes that producing SAF through co-processing at existing refineries will help the aviation sector as it transitions to a lower-carbon industry and builds dedicated and more efficient standalone units for SAF production.

Today, existing refineries can be used to co-process 5% approved renewable feedstocks alongside the crude oil streams to meet the requirements of the industry jet fuel standard ASTM D1655.

bp's Lingen refinery in Germany and Castellon refinery in Spain are already being used to produce SAF through co-processing.

A further challenge is around providing efficient SAF supply. Currently, there are three different options available to customers wanting to benefit from SAF which can help remove barriers to accessing the fuel from a logistics perspective.

Firstly, some airports may have a preference to keep the SAF blend completely segregated in tanks and fuelling vehicles separated from traditional jet fuel. Customers requesting the SAF blend are then fuelled from those dedicated vehicles.

This can make the delivery of SAF more transparent, but may increase costs or complexity for airports that don't have separate infrastructure available and as

the SAF blend is certified to the jet specification (Jet A-1 or Jet A), it is a drop in fuel and there is no technical requirement to segregate the fuel.

Secondly, SAF may be stored using mass balance whereby the fuel is mixed in the same tanks as traditional jet fuel at the airport.

As it is typically delivered at a 30-45% blend to airports the SAF is diluted further in these storage tanks before it is used to refuel aircraft.

This provides a more efficient means of supply and in 2016, Air bp was the first operator to commence commercial supply of SAF through an existing hydrant fuelling system at Norway's Oslo Airport.

Although, by co-mingling the SAF, all customers fuelling at the airport may receive a proportion of sustainable feedstocks in their fuel, only those purchasing the SAF can claim the associated sustainability benefits.

This is backed-up by the independent certification that accompanies the purchase of SAF.

Thirdly, a customer may opt to use a book and claim system to purchase the benefits of SAF such as the one Air bp is currently piloting.

SAF pricing – reducing production costs

At the moment, production of SAF is limited as the higher cost for the fuel compared to jet fuel is preventing wider uptake.

A reduction in cost is the key to greater demand for SAF. Air bp is working with customers to create more demand in the short-term, which will lead to more production and hopefully lower costs in future.

We are seeing multiple efforts from governments and private industry to address the pricing gap between SAF and conventional Jet A-1, such as the exception of SAF from EU ETS and increased investments into SAF production. Over time, market participants are hoping for a decrease in the SAF premium, but this could continue

“bp believes that producing SAF through co-processing at existing refineries will help the aviation sector as it transitions to a lower-carbon industry and builds dedicated and more efficient standalone units for SAF production”

to vary over the next years.

Over the long term, investment in advanced technologies is required to process SAF feedstocks more efficiently at greater scale and investment in the development of sustainable and scalable feedstock options.

Governments have a role here as increasing production requires long-term policy certainty to reduce investment risks, as well as a focus on the research, development and commercialisation of improved production technologies and innovative sustainable feedstocks.

For more information:
Visit: bp.com



New year, same resolution – A more coherent EU approach to biofuels

By David Carpintero, the director general of ePURE, the European renewable ethanol association

The last few years of EU climate and energy policy have demonstrated more than ever that Europe needs a new way to think about biofuels and their contribution to transport defossilisation.

As the EU enters a new political cycle – European Parliament elections and a new Commission in 2024 – the European renewable ethanol industry will be working along with a wide range of stakeholders in the biofuels and food and feed value chains to help build awareness of

the strategic importance of renewable ethanol production.

Policy direction

A recent report from the European Court of Auditors described a “lack of policy predictability” that has increased the risks for private investments and reduced the attractiveness of the sector.

This has made it harder for the EU to achieve its ambitions for transport decarbonisation – an area in which failure is not an option, but in which success has been very hard to come by.

This lack of coherence has been demonstrated most recently in the patchwork approach to biofuels in various EU pieces of legislation.

For example, while the revised Renewable Energy Directive recognises the importance and sustainability of crop-based biofuels such as renewable ethanol, the RefuelEU Aviation and FuelEU Maritime exclude crop-based biofuels or treat them the same as fossil fuels.

At a time when the EU needs every workable and sustainable solution it has to achieve climate and energy goals, this approach has to change.

Sure, there have been some recent positive signs about the coming years for ethanol demand.

More EU countries have adopted E10 (even if there are some holdouts such as Spain and Italy, where E10 could make an immediate and dramatic impact) and there is growing interest from auto manufacturers in higher ethanol blends such as E20.

Ethanol demand in Europe should be buoyed as EU member states try to remain on course to meet ambitions renewable energy targets.

Also, there is increased interest from biopolymers industry about ethanol as a feedstock.

These kinds of mindset-shifts on the need for a strong domestic ethanol industry are essential if the EU wants to achieve its goals for climate change mitigation, food security

and energy independence.

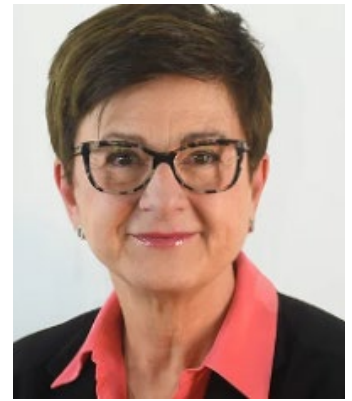
That’s because ethanol biorefineries across the EU contribute to several European strategic objectives, including:

- **Climate change mitigation:** Biofuels continue to be the main renewable energy in EU transport and a proven solution for reducing emissions from cars. According to the latest data, renewable ethanol produced by ePURE members reduced GHG emissions by more than 78% compared to fossil fuel – and is getting closer to carbon-neutrality every year.
- **Energy independence:** Domestic production of renewable ethanol helps reduce the EU’s dependence on imported fossil fuel. EU policies that unfairly hamper the use of sustainable biofuels such as ethanol are by definition opening the door to more fossil oil.
- **Food security:** The ‘food versus fuel’ argument continues to persist even though it has been shown to be a myth. In fact, EU biorefineries produced more food and animal feed than fuel in 2022 – helping reduce the EU’s need to import protein.
- **Strategic autonomy:** Domestic ethanol production also creates other beneficial products, including biogenic CO₂ to replace fossil CO₂ in beverage and industrial applications. This domestic production is essential to ensure supply.

In the months ahead, as the political rhetoric around EU energy and climate policy intensifies, we encourage policymakers to consider these benefits and adopt a more inclusive and technology-open approach.

It’s a win-win-win situation for achieving EU strategic goals, supporting domestic agricultural production and industry, and making sure all Europeans can play a role in the fight against climate change.

For more information:
Visit: epure.org



Creating a virtuous circle of investment in SAF

By Marie Owens Thomsen, IATA senior vice-president sustainability and chief economist

In theory, the necessary long-term signals to encourage energy producers to accelerate production of sustainable aviation fuels (SAF) for aviation are already in place.

In 2021 the aviation sector adopted the goal of achieving net-zero carbon emissions by 2050, and governments also committed to the same goal during the 41st Assembly of the International Civil Aviation Organization (ICAO). Furthermore, public opinion places a particular importance on limiting emissions from civil aviation and expects progress to be made.

Unfortunately, however, the demand for such fuel from airlines is far outstripping the mobilisation of resources for the production of SAF.

Meeting demand

In the immediate term, SAF is the only proven solution to replace traditional aircraft kerosene. As part of its industry sustainability strategy, IATA estimates that SAF will represent around 62% of carbon abatement necessary to reach net-zero emissions by 2050.

In 2022, SAF production reached 300 million litres, a 200% year-on-year increase.

However, this constituted only 0.1% of aviation’s total kerosene

consumption for the same year.

The SAF market is in its infancy, and energy producers are slow to seize what should be a golden opportunity, especially considering that the price of SAF is two to four times higher than that of kerosene.

Normally, in more mature markets, a high price stimulates production until demand is satisfied, at which point the price moderates.

The fact that the sustainable fuels market is not currently following this pattern is a sign that other constraints are hindering its development.

One of these constraints is that public and private money continues to flow abundantly into the fossil energy sector – over \$1 trillion (€0.9 trillion) in 2023. The International Energy Agency has analysed that this amount is twice the annual investment needed in this sector in the scenario aimed at achieving global net-zero carbon emissions by 2050.

World Oil magazine published a forecast in September showing that the number of oil wells will have increased by 6.6% by the end of last year, more than twice the rate of global GDP growth.

Oil and gas companies themselves spent less than 5% of their investments on renewable energy development in 2022, a figure unchanged since 2021. Thus, despite profits of nearly \$200 billion (€182 billion) in 2022, the five largest oil companies favoured buying back their own shares and distributing dividends, at the expense of sustainable development.

Renewable investment

In addition to this lack of investment in renewable

energy as a whole, there is the disadvantage of the low share of kerosene in total refinery production.

In 2022, refineries allocated 25% of their capacity to petroleum production and only 8% to kerosene production.

Air transport, therefore, plays a very limited role in the profit optimisation of an oil company, and the incentive to invest substantial sums in the production of SAF, despite their high price, is low.

Clearly, investors calculate that the risk-return ratio is still very attractive for fossil energy.

To accelerate the reallocation of capital in favour of renewable energy, it is necessary to increase the risks and limit the returns associated with fossil energy.

To do this, it is important for governments to eliminate their support for this sector, at least reaching a level playing field that gives equal chances to all forms of energy.

Governments could also replicate support measures in favour of SAF which were used to good effect in the process of developing wind and solar energies. Such was the success in those domains that they are now abundant and cheaper than any other forms of energy the world over.

With these forms of policy support, the pathway to increasing SAF becomes a virtuous circle of accelerating production, lower cost and higher use, taking us towards our 2050 net-zero carbon goal.

For more information:
Visit: [iata.org](https://www.iata.org)



An economic and environmental opportunity

By Nicole Sautter, director of global sustainability at American Express Global Business Travel

The UK has an increasingly narrow opportunity to develop a domestic sustainable aviation fuel (SAF) industry that can help achieve its 2050 net-zero ambitions and create a long-term viable future for the aviation industry.

SAF is more than a critical pathway for sustainable aviation growth – it's a pathway for economic growth. With the right regulatory framework and foundation for SAF to take off, the UK can establish a new, world-leading industry with potential for decades of economic growth.

Importance of SAF in the aviation industry

The economic importance of a domestic UK SAF industry cannot be understated.

In 2019, the country had the largest aviation sector in Europe, with air transport and aerospace contributing £22 billion (€2.32 billion) to the national economy and providing nearly a quarter of a million jobs. A well-established SAF industry can protect the future viability of aviation – a critical part of the country's economy – and create up to 60,000 jobs and £10 billion in Gross Value Added by 2050.

The government has indicated it recognises the potential of a UK industry.

To help kick start it, the

government is introducing a mandate requiring at least 10% of the country's jet fuel demand to be met through SAF by 2030 and has provided funding for SAF plant construction.

However, additional policy intervention is needed to develop a domestic SAF industry that can meet the it's net-zero commitments.

The role of business travel

The cost of scaling decarbonisation technologies for hard-to-abate sectors like aviation is too much for government to shoulder on its own.

The business travel industry recognises this responsibility and continues to harness its purchasing power to send demand signals for SAF.

To help aggregate SAF demand, Amex GBT and Shell Aviation launched one of the world's first blockchain powered book-and-claim platforms for business travel.

The programme empowers businesses to invest in SAF, justify their investments to stakeholders, and monitor and report how SAF adoption is helping achieve their climate goals.

Participants include Google, Aon, Bank of America, Cathay Pacific, JetBlue and Delta. With business travellers accounting for 12% of passenger volume but up to 75% of airline revenue on certain routes, this is a community with impact.

Building investor confidence

Investors need to have a degree of certainty to encourage their commitment to spend.

In the case of SAF, they need a policy landscape that provides a reliable framework and gives confidence that their investment can lead to growth. We are seeing this play out on either side of the Atlantic with the US's Inflation Reduction Act and the EU's ReFuelEU Aviation Initiative already spurring economic investment and progress in the race to 'jet-zero'.

“The SAF market is in its infancy, and energy producers are slow to seize what should be a golden opportunity, especially considering that the price of SAF is two to four times higher than that of kerosene”

LISTEN, LEARN AND NETWORK

biofuels international CONFERENCE & EXPO

BRUSSELS | 18-19 June 2024

Listen, learn and network

REGISTER
NOW

“

“The Biofuels Conference provided a great venue to hear about the latest developments in technology and the progress made in legislation to increase the application of biofuels in the transport sector. The presentations covered a large spectrum giving the right blend to create unforeseen networking opportunities at the event”

Laszlo Domokos,
SHELL

This world class event was **SOLD out** in 2023.
Join us in 2024 for our 15th year.

- Meet over 300 bio-related experts
- Choose from 3 bio streams
- High-profile speakers
- Delegates previously from over 30 countries
- Organised by the world's ONLY global Biofuels magazine
- Co-hosted with the SAF Summit & Expo and International Biogas Congress & Expo
- Excellent networking opportunities, now including a pre-conference drinks
- Fantastic opportunity to highlight your company's products and services at this established event

Hot topics covered will include:

- European and global biofuels markets and drivers
- How the EU's Fit-for-55 package and REPower plan can benefit the biofuels sector
- Advanced biofuels – how far can the sector grow
- Updates on the latest policies and regulations affecting the industry
- How technology can improve performance and plant efficiencies
- Growth opportunities within the sustainable aviation and marine biofuels sectors
- How to choose the best feedstocks
- Unlocking the potential of biorefineries
- Plus much, much more over the two days of the conference

For a tailor-made package that meets your needs please contact: Claire Smith, + 44 20 3551 5751
claire@woodcotemedia.com

The UK is uniquely geographically and philosophically positioned between the US and EU to do SAF policy well.

It must act now to enact holistic policies that enable it to capitalise on the huge environmental and economic opportunities of a robust domestic SAF industry, or risk missing its 'jet-zero' targets and fall further behind its neighbours.

A roadmap for government action

An emerging SAF industry needs a predictable and stable environment. While mandates for SAF use provide important regulatory certainty for producers and markets, without a comprehensive policy framework to incentivise cheaper production and more flexible rules of supply, mandates alone risk increasing cost.

To accelerate domestic SAF production, the government must enact policies that tangibly support the establishment of SAF plants.

One such policy is a recommendation in the Philip New report of an "icebreaker" proposal for government to directly support the development of one or two SAF plants.

Funding mechanisms by the public sector to catalyse private sector finance could help secure at least one advanced commercial SAF plant in the country to provide confidence in the technology and for the industry, stimulating further SAF developments.

The government should also invest in R&D for feedstock diversification, including renewable energy for synthetic fuels.

Technology neutrality is important while industry is budding, but governments can build policies based upon local feedstock limitations and opportunities, focusing on synthetic feedstock potential.

Competition for bio-feedstocks will always remain

high and land restraints further constrain existing feedstock channels.

Consequently, synthetic SAF will be key for UK domestic production. Green hydrogen is a core input in the creation of SAF, and massive amounts of renewable energy are required to produce green hydrogen. Good energy policy is good SAF policy.

Lastly, corporates are a critical funding source for SAF, and they are reliant on book-and-claim.

They want access to SAF, but it's not always available where they are flying from.

That's why Amex GBT's SAF programme uses book-and-claim – it can materialise purchasing power by enabling everyone, everywhere to access SAF while demonstrating market demand and supporting SAF development. Investing in SAF environmental attributes can also help companies work towards their carbon emissions reduction targets.

However, corporates are hesitant to purchase SAF without assured acceptance of book-and-claim. We know this first-hand from conversations with our customers, who are some of the largest travel buyers in the world.

The government should formally accept book-and-claim to help strengthen investor confidence in SAF and overcome some of the cost and supply barriers hindering the transformation of this nascent industry.

Next steps

As we stand at this crossroads, the urgency of taking meaningful steps toward SAF production cannot be overstated.

There is clear demand for SAF from airlines, suppliers, and corporates – the country now needs to drive supply by accelerating the construction of new SAF plants and ensuring a domestic supply chain.

Fostering economic growth and promoting sustainability are not mutually exclusive goals.

By embracing these measures, the UK can send powerful signals to the global market and position itself as a leader in aviation decarbonisation, ensuring a future that is both economically prosperous and environmentally responsible.

For more information:
Visit: amexglobalbusinessstravel.com



Fuelling change – a new era of energy begins

By Philip Siu, co-founder and CEO of EcoCeres

The world stands at a pivotal crossroads in its energy journey. December's ground-breaking agreement at COP28 in Dubai marked a historic commitment to start moving away from fossil fuels, setting the stage for an intensified focus on renewable energy sources.

Biofuels, particularly sustainable aviation fuel (SAF), are emerging as key players in this transition.

This year, the industry is set to see a major evolution in the role and application of biofuels, underpinned by technological breakthroughs, progressive policies, and a unified global push towards cleaner energy.

As biofuels gear up to lead the discussions at COP29, they are not just alternative energy sources anymore – they are key drivers in our sustainable energy future.

Increasing global consensus

The surge in biofuel adoption is primarily driven by the

global consensus on climate action reaffirmed by COP28, which marked the 'beginning of the end' of the fossil fuel era, emphasising a swift and equitable transition to renewable energy sources, including biofuels.

COP28's outcomes highlight the urgent need to cut global greenhouse gas emissions by 43% by 2030 compared to 2019 levels.

This ambitious goal reinforces the role of biofuels in reducing aviation's carbon footprint, aligning with the industry's commitment to net-zero emissions by 2050.

Additionally, the European Union's recent decision to mandate a progressive increase in the use of SAF at EU airports, starting at 2% in 2025 and reaching 70% by 2050, offers a glimpse into a future where renewable energy sources are not just alternatives but essential components of our energy mix.

This early adoption is expected to stimulate innovations, ramp up production capabilities, and inspire similar legislative initiatives globally.

A revolution in biofuel technology

The biofuel industry is preparing for a significant leap in technology and production capabilities.

A crucial aspect of this development is the anticipated increase in the use of Hydrotreated Esters and Fatty Acids (HEFA) technology in SAF production. Approximately 85% of upcoming SAF facilities are expected to employ HEFA technology by 2030, underscoring the industry's commitment to catch up with time for more SAF supply capacities.

This technology is essential for efficiently converting bio/agricultural waste and residues into high-grade biofuels, thereby supporting the circular economy. Strategic investments in biofuel production and technology

are critical in this context.

With increasing financial commitments from both public and private sectors, the industry is witnessing a significant investment increase, driving technological advancements and scalability.

SAF to triple its supply

The growth in SAF production is both impressive and essential. After the production of SAF doubled in 2023, reaching more than 600 million litres from 300 million litres in 2022, it is expected to triple in 2024 to nearly 1.9 billion litres, according to the International Air Transport Association.

This rapid expansion is a direct response to the ambitious targets set by global initiatives, such as the Third Conference on Aviation Alternative Fuels (CAAF/3), which aims for a 5% reduction in carbon emissions in international aviation by 2030, through the use of SAF and Low Carbon Aviation Fuels (LCAF). Around 17.5 billion litres of SAF are required to meet this target, indicating a substantial increase in demand and production.

The aviation sector's commitment to SAF goes beyond compliance – it represents a fundamental change in operational philosophy.

Airlines are increasingly adopting SAF to meet regulatory targets and align with public expectations for more sustainable travel options.

This trend is further supported by the commitment of numerous airlines to significant SAF usage by 2030, indicating a strategic shift towards environmentally responsible fuel options.

Asia Pacific's growing role in biofuels

In the Asia Pacific, the biofuel sector is gearing up for significant growth this year, driven by proactive government policies and initiatives.

China is advancing its biofuel agenda and starting

to put forward a SAF policy, marking a shift from earlier limited policy support under a “wait and see” approach.

Malaysia, an emerging South-East Asian economic hub, is also actively exploring and promoting the use of SAF to achieve sustainability goals. The country has set a target of 5% of its total aviation fuel consumption from sustainable sources by 2030.

EcoCeres's announcement of an investment in a new biofuel production facility in Pasir Gudang, Johor, Malaysia, was warmly welcomed and highly praised, as it would profoundly impact the nation and the community.

Charting the future: Biofuels in 2024 and beyond

As we embark on 2024, it's clear that biofuels are more than just an alternative energy source – they are central to our sustainable energy future.

The advancements in technology, legislative support and growing global consensus are converging to make this year a turning point for biofuels.

This wave of change, led by initiatives across continents, from the EU to Asia Pacific, reflects a global recognition of biofuels' critical role in our journey towards a cleaner, more sustainable world.

For more information

Visit: eco-ceres.com



Using solid waste to decarbonise aviation

By Milica Folić, production line director, clean fuels and chemicals at Topsoe

The strongest biofuel trends we see for this year are mostly in the realm of SAF production growth, which is supported by new mandates in the EU and Japan (more Asian countries are also likely to issue mandates over the coming period). The SAF market is readying for take-off, and we are beginning to witness significant global expansion with numerous projects being announced and implemented, though the pace and maturity varies across regions.

Growing SAF market

There is an increasing interest in co-processing as a production method to provide the required short-term ramp up in SAF production.

Co-processing allows refineries to convert renewable feedstocks into drop-in, biojet fuel at economically competitive prices, meaning it can swiftly boost the availability of SAF in the short run.

Existing refining, transport, and storage facilities can be used, so co-processing is cost-effective (CAPEX and OPEX), delivers carbon footprint reduction, and eliminates the need to construct new specialised processing units.

This will be more prevalent outside the US, mainly as IRA production tax credits (45Z) for SAF are not granted when it is pre-processed with fossil

fuels in the US (RFS and LCFS credits are available).

Achieving the necessary production capacities and adoption of SAF long-term will require a mix of feedstocks and diversification of process pathways.

Over the next 12 months, we are likely to see further growth in non-edible oils as feedstocks (rotational/winter crops) due to limitations on feedstocks accepted for SAF in Europe and partially in the US.

In addition to co-processing mentioned above, another continuing trend in 2024 for existing refineries will be the upgrading, diversifying, or reconstructing their operations to produce SAF from HEFA or FT-SPK pathways.

More companies are evaluating ways to repurpose existing resources and leverage locally accessible raw materials.

The practical points to consider when thinking about a plant conversion, include feedstock proximity and availability, scale of the project and the complexity involved.

More customers are looking at SAF production and we are now discussing with a number of them how to efficiently revamp a number of HydroFlex™ units, which are currently making renewable diesel, so they also make renewable jet fuel as well.

Increasing production

By the end of 2022, eight refineries in the United States had completed conversions to produce Renewable Diesel (RD) or SAF, or a combination.

A year later, an additional six sustainable fuels plants joined their ranks in the US. This trend will continue this year.

In 2024, we also anticipate more investment heading toward pathways like alcohol-to-jet (AtJ) and gasification combined with the Fischer-Tropsch process, which uses feedstock such as agricultural and forest residues, as well as municipal solid waste.

Solid waste (third generation feedstocks) is a much more abundant resource than first

and second generation and will remain so for years.

It is estimated that annual worldwide municipal solid waste, a source of biomass material, will reach approximately 3.4 billion tonnes by 2050, in part due to rapid urbanisation and rising global populations.

Although in its earlier stages of development, it is clear that maximising utilisation of solid waste feedstock will be key to decarbonising aviation.

If we look at the Americas, we also see a number of new renewable jet and diesel projects in Canada and South America during the year.

There are some headwinds in the US due to the availability of additional feedstock, so we are interested in seeing how this plays out over the next 12 months and beyond and what kind of diversification we will see.

Finally, there is growing momentum in the decarbonisation of maritime and we expect this will continue this year.

In July 2023, the 175 member states of the International Maritime Organization (IMO) committed to reach net-zero in 2050 and adopted a new GHG strategy. International mandatory measures to enforce this strategy will come into play in 2027.

To achieve the targets set out in the strategy, the average ship's GHG intensity will need to be reduced by 86% by 2040.

This can only be achieved with the massive uptake of alternative marine fuels, such as hydrogen, ammonia, biofuels and e-methanol.

Obviously, methanol and ammonia will play an important role in decarbonisation of shipping, but just as many feedstocks and pathways will be needed in aviation, so will there be a need for many fuel types in maritime's decarbonisation journey.

It is unlikely that there will be one silver bullet for maritime in the short-, medium- and even long-term.

In short, we need to move the needle on decarbonisation now for shipping and this

will require a fuel mix.

Will we see a growth in demand for processing and co-processing biocrudes/biooils derived from solid biogenic waste to marine fuels in 2024? It's a wish, and perhaps it's possible.

For more information:

Visit: topsoe.com



Accelerating the decarbonisation of aviation

By Sami Jauhiainen, vice-president, Neste

The end of last year brought an encouraging beginning of the end of the fossil fuel era as the result of the United Nations Climate Change Conference (COP28).

However, the challenge is turning ambitions into concrete actions. So what will this bring for the aviation sector this year as aviation is on the cusp of reaching pre-pandemic levels and resuming its growth path.

COP28 closed with an agreement that signals the "beginning of the end" of the fossil fuel era.

The completion of the world's first 'global stocktake' is an important stepping stone to accelerate climate action.

Just ahead of the global conference, the aviation industry also achieved a historical milestone, when ICAO's third Conference on Aviation and Alternative Fuels (CAAF/3) concluded on the goal of reducing carbon emissions in international aviation by

5% by 2030 via the use of sustainable aviation fuel (SAF) and other cleaner energies.

This goal now needs to be translated into binding targets and SAF policy frameworks at member state level to create bankable demand for investments in SAF production capacity.

Impacting the aviation industry

Aviation is a hard-to-abate sector that today contributes around 2-3% to global carbon emissions, but this share will grow to over 20% by 2050 if sufficient action is not taken.

Additionally, that is without taking into account aviation's non-CO₂ emissions, estimated to contribute around two-thirds of the industry's total climate impact.

As aviation is a globally highly interconnected market, global collaboration and alignment is especially critical for aviation to progress on its emission reduction journey.

International alignment is needed on targets for emission reduction, as well as on the emission accounting rules and sustainability standards for the sustainable aviation fuel market to enable the aviation sector to progress towards ICAO's goal of net-zero carbon emissions by 2050.

Sustainable aviation fuel as a key lever

IATA estimates that using SAF needs to drive around 65% of the emission reduction needed, next to levers as operational efficiency and new aircraft technologies.

However, the reality is that

SAF production is limited and there is a huge gap to close.

The private sector is well positioned to develop the necessary solutions for reducing climate emissions and phasing out fossil fuels, but governments globally need to create the market for those via policies and binding emission reduction targets.

The aviation industry is highly competitive and airlines are operating on small margins.

SAF typically costs three to five times more than conventional jet fuel and as fuel is one of the main cost drivers for an airline, the challenge is bridging the cost gap.

Policies are a proven instrument to get more sustainable alternatives off the ground as for example the road fuel sector shows. The bottom line is that we need to reduce emissions in all sectors at the same time and not only where it is cheap and convenient.

SAF policy developments

Supporting policies play a crucial role in creating a viable market for SAF. The global picture on SAF policies is getting increasingly clear and developments have been set in motion.

In Europe, countries like Norway, Sweden and France already have SAF mandates in place and the European Union's ReFuelEU Aviation Regulation mandates a gradually increasing percentage of SAF to be used, starting at 2% in 2025.

The UK is aiming for implementing a SAF mandate in 2025 rising to 10% in 2030.

On the other side of the Atlantic, the US and individual states are following the incentive



route, although the incentives benefiting aviation are backed by mandated biofuel demand on the road transport side.

California has been leading the way with the aviation opt-in for its Low Carbon Fuel Standard (LCFS) scheme, and a similar opt-in is also part of the federal Renewable Fuel Standard (RFS). The Inflationary Reduction Act provides additional federal incentives. British Columbia in Canada has established binding emission reduction targets for aviation, providing the first example on the deployment of mandate-type of policies in the Americas.

What about the biggest aviation market, the Asia Pacific region?

Despite trailing behind Europe and the US, governments in the APAC region are working on policies. Japan set a 10% SAF target and countries like Singapore, New Zealand and Australia are also exploring options.

Similar indications are also coming from India, one of the biggest aviation markets in the region.

Ramping-up SAF production

With governmental policies developing into the right direction can we ramp-up SAF production? The raw materials are not the bottleneck – the global availability of waste and residue raw materials is expected to exceed 40 million tons per annum by 2030.

Unlocking new feedstock like novel vegetable oils and lignocellulosic residues, and scaling up new production technologies like power-to-x, provide significant long-term growth potential.

On the production side, Neste, the world's leading producer of SAF, has set the example starting its investments in renewable fuel production capacity over 15 years ago and with more recent investments to expand SAF production capability at its existing renewables refineries in Singapore and the Netherlands.

These investments will bring

Neste's global SAF production capability to 1.5 million tonnes (515 million gallons) per annum in 2024 and a further to 2.2 million tonnes (750 millions gallons) per annum in 2026.

Together with an expanding global distribution network in cooperation with partners, it will provide a solid base for IATA's SAF production outlook of 1.5 million tonnes in early 2024 and further growth of SAF uplift by airlines across the globe.

The end of the fossil fuel era for aviation

Have we now embarked on a journey toward the end of fossil fuel for aviation? Aviation's long term aspirational goal is clear and the outcome of ICAO's CAAF/3 climate summit signals a clear target for international governments to aim for when defining their roadmaps for aviation decarbonisation.

The aviation sector faces an enormous challenge and has a long way to go, but it is taking its first steps on the transformation journey.

For more information:
Visit: neste.com



What will 2024 bring to the EU biofuels sector?

By Angel Alvarez Alberdi, the secretary general of the European Waste-based and Advanced Biofuels Association (EWABA)

Having been active in the biofuels sector for 15 years I can testify that there is no such thing

as a calm year for the industry.

One might have expected that 2024 could in fact be this proverbial calm year as it follows the closure of major EU laws revamping the biofuels regulatory framework in 2023 (notably the revision of the Renewable Energy Directive-REDIII, the FuelEU Maritime Regulation and the ReFuelEU Aviation Regulation, among other Fit for 55 legislative instruments). Well, once again, this will not be the case. Far from it. I briefly elaborate below on a number of the issues that will keep us all busy this year.

Annex IX Revision

It is taking a lot longer than what everyone expected, but it is safe to say that the much anticipated revision of Annex IX will be adopted in the first half of this year.

The industry at large needs new, more abundant feedstocks to scale up production to decarbonise road, maritime and aviation transport alike. According to subsequent drafts, the industry will see promising lipidic feedstocks populating the Annex, especially cover crops, whose game-changing potential is tremendous.

As new feedstocks enter Annex IX Part B we will need to sufficiently raise the 1.7% cap immediately, that is in the same legal instrument.

Failing that, the Commission should issue a clear commitment to raise the limitation via a delegated act as soon as possible and in any case well ahead of the Annex IX revision's 18-month transposition deadline.

Once again, the revision of the Annex and the inclusion of new and more abundant feedstocks show that the limitation is ill-conceived – we shall all take the upcoming increase as a stepping stone towards its complete elimination in a subsequent revision of the REDIII.

Trade defence measures

We enter the year with the Commission's DG TRADE busy with an anti-dumping/anti-subsidy

investigation against biodiesel imports with origin in China.

2023 was one of the worst years on record for the European industry at large. EWABA members suffered greatly from unfair competition from third countries, with many companies stopping production throughout the year.

This economic and social drama should be stopped.

We expect the EU to impose preliminary duties as soon as possible (even earlier than the customary six months from the initiation of the investigation) to bring much needed respite to the industry.

Last year's troubles were the result of a combination of unfair competition and potential fraudulent streams of biodiesel.

More stringent certification and UDB live

That is why the entry into force in late December 2023 of the Commission Implementing Regulation on rules to verify sustainability and greenhouse gas emissions saving criteria, which makes certification practices more stringent is to be welcomed.

So is the official entry into force on January 15 of the Union Database for Biofuels.

These two developments are important in themselves and pave the way for greater transparency and traceability in the EU biofuels markets.

We certainly are not there yet – certification and auditing practices need to be greatly improved and the database is still far away from being completely functional and operative.

The industry will keep working collectively on these because the system is not there yet – a proposal for a further revision and improvement of the Implementing Regulation should equally be prepared during the year.

REDIII transposition race starts

Given that the REDIII transposition period expires in May 2025, several member

states have already started to prepare their national implementing legislation.

During this period the industry will need to ensure that important provisions, like the new compulsory multipliers applicable to the whole Annex IX, the new sub-target for advanced biofuels and especially the provisions allowing for a 10% biodiesel incorporation at the pump (B10) are effectively implemented in national legislations.

Industry transitions to maritime

The FuelEU maritime Regulation GHG reduction kicks in next year. The unanimous opinion is that at least in the short-to medium term the decarbonisation of the maritime sector will be achieved to a great extent by waste-based and advanced biodiesels.

This product is already commercially available, uses eligible and sustainable feedstocks, provides comparatively higher GHG savings (+90%), it has a high energy density and it does not require alterations on existing vessels or port infrastructure.

The industry will have to adapt to the requirements from ship owners in terms of quality and price in a short period of time. We stand ready to do so!

European Parliament elections and new Commission – Green Deal backlash?

The European Parliament elections will be held on 6-9 June. Thereafter we will see a new European Parliament being formed, first, and a new European Commission second.

While some sort of continuity is to be expected with President von der Leyen at the helm of the Commission, many predict a more conservative parliament (and a more conservative Commission) to challenge recently agreed EU laws at the core of the Fit-for-55 package and the Green Deal itself.

A good indicator of this backlash can be seen in the draft electoral manifesto of the European People's Party (EPP – largest group in the European Parliament), which pledges to reverse the 2035 ban on Internal Combustion Engines (ICEs). Indeed, all Fit-for-55 laws (including REDIII, ReFuelEU aviation, FuelEU maritime and CO₂ standards for cars and vans) will be revised already in the upcoming term.

This means that preparatory work on the Commission proposals will start in earnest in early 2025. So here we go again – let's brace ourselves. ●

For more information:
Visit: ewaba.eu



Facing up to changes in regulations

By Dickon Posnett, president of the European Biodiesel Board (EBB)

As anyone who has been in this industry for a period of time knows, nothing stands still for a second.

Here, at the start of the year, the EBB is looking forward to more of nothing being the same.

What we see coming over the horizon are more changes to regulations, more sustainability and certification improvements, more opportunities for the industry and more threats.

The growth of the number of issues that renewable fuels are dealing with seems to increase almost exponentially. However, there are a few

big-hitting topics that we see as crucial and will demand much of our attention.

1. Improvements to anti-fraud efforts. Whether it is circumvention of import duties, mislabelling of feedstock or suspect points of sale (PoS), fraudulent actions are causing enormous damage to the industry, harming EU producers and turning investors away. The UDB (something the EBB has been stridently calling for since 2012) still needs a lot of work, yet even at its simplest, it will be the single EU-wide register of product trades and so will deliver a considerable boost to security of certification.

A joint initiative between the EBB, our colleagues at EWABA, voluntary schemes, the EC and other stakeholders will also be identifying other gaps in the armoury and working with the various institutions to find ways of closing them.

2. Trade defence. This year will see the culmination of the European Commission's investigation into suspected dumping of Chinese biodiesel. Our market has not seen such damage since the B99 crisis of US imports before anti-subsidy measures were subsequently imposed and we simply have to get the trading playing field re-balanced in a fair way.

The WTO process is slow, but robust and we will be working to get provisional duties in place as soon as can be justified. The anti-circumvention case worked well in the short-term to stem some of the flow and identify unwanted trading activities, but we anticipate AD duties being in place for some time.

What the inevitable reaction from China will be is important to consider too. If the EU market becomes restricted for Chinese producers it may seem obvious that they will be prepared to enter other markets, the US for instance.

We can also predict that China is already working on plans to develop their own mandate to create internal demand. After all, it was a very

similar situation that led to the birth of the RFS in America.

The EBB is also calling for, and is fully expecting, an expiry review of the measures on Argentinean biodiesel imports (shown to have subsidies worth 25-33.4%). It is a lot of work and demands substantial legal resources, but it is a commitment we all know is crucial.

3. Implementation of REDIII by member states.

The work by member states on transposing REDIII into national legislation takes place with a varying sense of urgency.

This is helpful for us, allowing us to apply ourselves to one at a time. The Netherlands is certainly one of the front runners and has developed their thinking substantially. The problem for early movers though is the lack of information. The member states – and the whole industry – are, for example, desperate to see the result of the last two years' revision of Annex IX, including definitions for some of the new feedstocks. It is coming soon, and when it does, we will have a flurry of activity in MS policy departments while the market works out how best to deliver the demand.

The EBB is also focused closely on understanding the details of how the targets of ReFuel EU Aviation and Fuel EU Maritime will be integrated with RED by member states and what that means to members (producers) and the market.

How will sustainability rules be harmonised, will biofuels count to all global decarbonisation efforts in the maritime sector and, if so, will fuel standards be revised to create consistency? All this will become clear during the year.

4. High blends. Heavy duty vehicles are one of the three 'difficult to decarbonise' transport sectors. Aviation and shipping tend to grab the attention of political policy makers, but the EBB is working with others in the industry to make sure member states understand the possibilities

Sustainable Aviation

FUELS SUMMIT

BRUSSELS | 18-19 June 2024



**SPONSOR
NOW**

**LIMITED
EXHIBITION
STANDS
AVAILABLE**

- > We are pleased to announce that the Sustainable Aviation Fuels Summit will run alongside our **long-standing** and **well-respected** Biofuels International conference & expo.
- > **The SAF Summit** will bring together airlines, fuel producers, airports, fuel service providers, regulators and other engaged parties.
- > We have **limited exhibition space** so contact us now to learn more about exhibiting or sponsoring this important event.
- > To **pre-register** or to submit a paper for consideration please refer to www.biofuels-news.com/conference

CO-JOINED WITH

 **international Biogas
CONGRESS & EXPO**

BRUSSELS | 18-19 June 2024
innovations in biogas

biofuels international
CONFERENCE & EXPO

BRUSSELS | 18-19 June 2024
Listen, learn and network

To find out more or have a bespoke package call:

Claire Smith +44 (0) 203 551 5751

**Interested in speaking, submit your abstract to
conference@biofuels-news.com**

for biodiesel and HVO in the form of high blends.

HDVs can and do operate very successfully on high blends from B20 to B100. Even with the best efforts of the electrification industry, HDVs are going to be using diesel beyond 2040. We need to quickly start displacing all that fossil diesel with biodiesel and HVO and high blends incentives are the way to trigger that switch.

On top of that, B10 will be the new diesel standard for all diesel vehicles.

It is already a European fuel standard and it now needs to be adopted as the go-to diesel in retail outlets. The biodiesel industry is getting better at showcasing high blends and B10 – watch out for the B+ brand and events coming up this year.

The list of other issues we will be dealing with this year is a long one, but in a nutshell we see 2024 as being one full of opportunity.

For more information:

Visit: ebb-eu.org



Let's all get aboard

By Ronald Backers, advisor business intelligence at the Port of Rotterdam

The advantage of having a long spell in one company is the ability to include some historical perspectives. So let's do that.

To paraphrase Sergeant Pepper from the Beatles: "It was 20 years ago", as 8 May 2003 was the birth of Directive 2003/30/EC and a big push for biofuel blending in the European Union.

In the years thereafter, we

were approached by at least 30 companies, ranging from 'a man with a plan' to large corporations with ambitions to construct biofuels plants in our port.

There was also a lot of interest in the construction of biodiesel plants – likely related to the large role that Rotterdam played in vegetable oil storage and processing.

Growing market

Ultimately out of all of these proposals, four biofuels plants have been constructed in the region.

Three biodiesel plants were for Peter Goedvolks' Argos Oil (under the name Dutch Biodiesel), BioPetrol (owned by Viterra today) and by Unimills.

Abengoa successfully constructed a bioethanol plant, currently owned and operated by Alco.

Next to that, Lyondell invested in a methyl tertiary butyl ether (MTBE) plant, which can use bioethanol for ethyl tertiary butyl ether (ETBE) production.

Neste swiftly followed and started operating their renewable diesel plant in 2011.

This site has continued to expand as two new plants for renewable diesel and SAF are being constructed by Neste and Shell.

bp has also announced that it is co-processing vegetable oils in their refinery. Varo aims to build a plant to produce SAF and biogenic feedstocks for the chemical industry (like biopropane and bionaphtha).

UPM is working towards FID on their plant for advanced biofuels and bio-feedstocks.

With all these plans, nameplate capacity for biofuels in Rotterdam is expected to grow from 2.4 million tonnes to more than 5.5 million tonnes. It could grow even further.

The use of waste-based and advanced feedstocks in Rotterdam is developing. Most interestingly of all, the first bulk cover crop cargo was delivered in the last year.

According to storage brokers, biodiesel tanks were less in

demand last year. This could be because of new-build capacity, conversions of fuel oil tanks and future plans at several terminals – Vopak Vlaardingen, Koole Maastank, Neste Terminal and Koole Botlek.

This will add storage to the existing capacity in terminals like HES Botlek Tank Terminal, Koole Pernis and Standic. We must also welcome Liquin as the new owner of the chemical terminals of Vopak. Liquin Botlek is very well known for (bio) methanol and ethanol storage.

The biofuels bunker market in Rotterdam saw the first biomethanol deliveries to the Laura Maersk. This will continue with regular deliveries this year.

Sales of marine biofuel blends (blends of conventional bunker fuels with a certain percentage of bio-components) ended at 750,000 tonnes of which 93% was in fuel oil and 7% in distillates.

This year will be a special one for the marine biofuels business in the Netherlands. The HBE-multiplier will be 0.4 in 2024, while it was 0.8 last year.

This could decrease the bunker sales, while on the other hand, the start of the EU ETS for shipping could increase the sales of biofuels in the bunker market.

This year will be the last one for the current REDII, as from next year, REDIII will be the EU directive driving this market.

So far it is clear that The Netherlands will go from HBE's (Hernieuwbare-BrandstofEenheden or Renewable Fuel Units) to ERE's (Emissie-ReductieEenheden or Emission Reduction Units).

Rotterdam is the main refining, chemicals and biofuels cluster in north-west Europe and we want to strengthen this position in view of the energy and feedstock transition reaching for carbon neutrality in 2050.

That requires a steady and long term European regulatory framework that has a broad feedstock base and provides (investment) certainty over time.

For more information:

Visit: portorotterdam.com



2024: A defining year for biofuels in the energy transition

By Jeremy Moorhouse, bioenergy analyst at the International Energy Agency (IEA)

This year there are ample opportunities to accelerate the adoption of biofuels as reliable and affordable solutions that are essential to global energy transition efforts to reduce emissions. Governments and biofuel producers will also need to focus on expanding feedstock supply and keeping costs in check.

Emerging economies offer significant potential for growth

Brazil, India and Indonesia dominate growth prospects for biofuels in 2024. Supported by strong domestic policies, rising transport fuel demand and robust feedstock potential, the biofuels sector is expected to grow by 10% annually in these countries, with cumulative growth of 35% over the next five years.

Quicker expansion of biofuels hinges on policy frameworks that are already under discussion. In Brazil, this includes the Future of Fuels programme, delivered to congress on 14 September 2023, which encompasses a National Sustainable Aviation Programme, a National Green Diesel Programme, and proposes to increase maximum level of ethanol blending from 27.5% to 30%.

In India, the government

continues to push towards its 20% ethanol blending target despite facing feedstock supply challenges toward the end of last year. It has also announced blending targets for biojet fuel on international flights of 1% by 2027 and 2% by 2028, with a 5% goal for biodiesel blending by 2030.

Meanwhile, Indonesia upped its biodiesel blending target to 35% last year and is eyeing 40% in the coming years. The government has also revived its ethanol blending aspirations with the Bioethanol for Energy Security Programme with further developments expected in 2024.

All told, positive outcomes of policy discussions in just these three markets would see a near 20% jump in global demand by 2028.

Biojet growth potential hinges on policy decisions in 2024

The introduction of ambitious policies this year could see sustainable aviation fuel (SAF) make up 3.5% of global jet fuel demand by 2028, almost 25 times current levels.

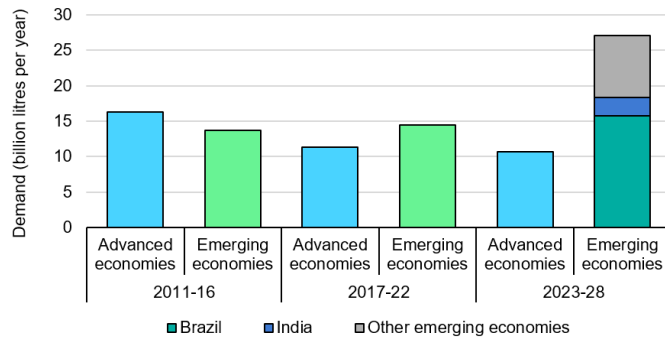
Ongoing policy discussions in Singapore, Malaysia, Indonesia, India, the United Arab Emirates, Brazil and the United Kingdom have the potential to increase this demand further by 2028.

However, it is the US where the upside potential for SAF is greatest.

Under a more stringent Renewable Fuel Standard, higher state-level low-carbon fuel standards and extended Inflation Reduction Act (IRA) credits, biojet fuel production could triple, advancing the country two-thirds of the way to achieving its SAF Grand Challenge goal.

Beyond implementing new policies, it is critical to establish new feedstock sources as residue fat, oil and grease supplies are limited and some regulatory domains, such as the European Union, require non-food/feed sources for feedstock.

Five-year biofuel demand growth main case, 2011-2028



IEA, CC by 4.0.

Notes: Adv. = advanced economies. Emer. = emerging economies. Source: Renewables 2023

In the accelerated case, planned alcohol-to-jet projects deliver almost 2 billion litres of new capacity, and the gasification of woody residues and municipal solid waste offer another 2 billion litres of potential.

Feedstocks and costs remain real challenges

While biofuels traditionally cost more than fossil fuels, the price impact has been modest ranging from 1-4 US cents per litre-equivalent of blended fuel (on an energy-equivalency basis) over the past 13 years in the United States, Brazil, Europe, Indonesia and India.

These costs help achieve other objectives such as reducing greenhouse gas emissions, reducing oil imports and to supporting agricultural development. Governments often cushion consumer exposure to these costs via tax breaks and incentives.

However, historically high feedstock costs and higher blending mandates are likely to push prices for biodiesel and renewable diesel blended fuel above historical highs.

Cost increases can lead to pauses or cancellations of support policies. For instance, in Indonesia rising palm oil prices and higher biodiesel mandates pushed subsidy costs from 1 US cent in 2019 to 10 US cents per litre-equivalent in 2021, leading to subsidy adjustments and a

halt in blending increases.

Brazil faced a similar situation, with the cost of blended diesel fuel rising from near zero to 4 US cents per litre-equivalent in 2021 due to higher soybean oil prices, prompting a slowdown in biodiesel mandate increases.

Diversifying feedstock supplies, especially for biodiesel, renewable diesel and biojet fuel are crucial to reduce pressure on vegetable and residue oils used to produce these fuels today.

The Global Biofuels Alliance and G20 set a global stage for biofuels

The G20 presidency and the Global Biofuels Alliance offer the opportunity to establish biofuels as one of the keys to the orderly transition away from fossil fuels.

The task for the Global Biofuels Alliance this year is to translate that momentum into a focused workplan and governance system to help accelerate sustainable biofuels deployment.

In an IEA report released last year, we suggest the Alliance focus on accelerating technology deployment and commercialisation, seeking consensus on sustainability frameworks (such as lifecycle carbon accounting) and expanding existing and new biofuel markets via sharing policy lessons and helping expand feedstock supplies.

Expanding new biofuel markets is critical, since over 80% of production is concentrated in four regions: the United States, Brazil, Europe and Indonesia, which account for only half of global transport fuel demand.

The alliance was launched on 9 September last year by Prime Minister Modi of India, President Lula of Brazil and President Biden of the United States alongside six other countries with the aim to accelerate sustainable biofuel use.

It now includes 22 member countries accounting for more than three-quarters of global biofuel use.

A key priority for both India and Brazil's G20 presidencies is biofuels, an important and growing area of clean energy where both countries are playing a leading role.

Brazil is a biofuel powerhouse, second only to the US in global production and has already launched the Bioeconomy Initiative, which includes bioenergy amongst other topics.

Policymakers and biofuel producers are presented with a unique opportunity this year to lay the groundwork to significantly increase biofuels production.

Utilising this window wisely is essential for accelerating the shift towards more sustainable energy sources. ●

For more information:

Visit: iea.org

References

- 1 Facts & figures (atag.org)
- 2 iata.org/en/iata-repository/publications/economic-reports/airline-industry-economic-performance-june-2022-report/ – pg 13
- 3 Aviation, decarbonisation and climate change – House of Commons Library (parliament.uk)
- 4 CO₂ emissions from commercial aviation: 2013, 2018, and 2019 (theicct.org)
- 5 All Aircraft Could Fly on Sustainable Fuel by 2030, Says World Economic Forum Report > Press releases | World Economic Forum (weforum.org)