LOOKING BEYOND CO_2

BY ROLF HOGAN (RSB)

The aviation industry contributes an estimated 13% of global transport CO_2 emissions[1], but simply looking at the climate impacts does not offer a full picture of aviation's impact. Even when biofuels are used for jet fuel in place of fossil fuels, they are not necessarily sustainable just because they are bio-based or made of renewable materials. The sustainability of biofuels goes beyond its environmental life-cycle. In line with the three pillars of sustainability, economic and social aspects can also be considered along with CO_2 emissions. This can cover: human and labor rights, rural and social development, local food security, conservation and biodiversity, soil impact, water and waste management, air quality, impact on small farmers, land use rights, and more. The good news is that there is movement towards achieving improvements in aviation's global impact.

Relevant stakeholders within the aviation sector are utilizing the standards and certification system developed by the Roundtable on Sustainable Biomaterials (RSB) as a way to improve its entire environmental and social impact, not just CO_2 emissions. RSB certification is helping key aviation players track and prove the sustainability of their biofuels. They use RSB's 12 principles and criteria to look at the aforementioned areas of concern, such as human rights, water management, local food security, etc. By looking at the entire biofuel impact and earning RSB certification, aviation companies can ensure that their biofuels are truly sustainable.

Importance of Strong Sustainability Standards

There are many benefits for aviation leaders to implement more rigorous and credible standards like the RSB standard to demonstrate sustainable biofuel, as follows:

- Implementing RSB's standard, can guarantee that an operation, or supply chain, is sustainable and addresses key global challenges, not just CO_2 emissions: food security, biodiversity, water, and poverty.
- It incorporates the sustainability issues that matter to leading global NGOs like WWF and UN agencies such as UNEP and FAO.
- It is recognized world-wide and provides access to global voluntary sustainable markets (as well as regulated markets).
- Associating with RSB can strengthen an airline's brand as a front-runner in aviation sustainability.

Once proven to meet RSB's standards, certified aviation operations are able to:

- Gain support from local communities, NGOs and governments by applying the RSB's stakeholder approach.
- Apply one system for all feedstocks and any bio-products.
- Have flexibility for local conditions as well as novel feedstocks and new technology.
- Identify and mitigate risks using the RSB's risk-based management approach.
- Ensure easy access for smallholders into supply chains with RSB's simplified approach for smallholders.
- Apply one system to the full supply chain and choose from different traceability options including mass balance.

For these reasons, the Sustainable Aviation Fuel Users Group (SAFUG), composed of leading airlines and airframe manufacturers, supports the development of global sustainability standards and has endorsed RSB's comprehensive sustainability principles through its pledge[2].

RSB also counts several airlines and airplane manufacturers among its members including Airbus, Boeing, JetBlue, South African Airways and Swiss International Airlines.

RSB ensures a comprehensive approach to sustainability by providing a framework to identify and mitigate key sustainability risks. It includes the following key components:

- Screening system to identify sustainability issues that need to be addressed.
- A range of guidance to assess and effectively manage issues identified by the screening, including soil, water, food security.
  - If operating in a region of food insecurity, RSB has an approach which helps operators to assess and develop plans to ensure food production is increased in the local area.
  - For operations in a region of poverty, RSB offers a framework to support development in line with the expectations of civil society groups.
- Stakeholder consultation helps achieve consensus /acceptance by local communities and substantially reduces the risk of conflict with producers and communities. The certification process also includes third party consultation during the audit which can help build trust with local communities.
- RSB's Environmental and Social Management Plan shows how to integrate all mitigation measures into a single comprehensive management system.

"Membership of the RSB not only serves as recognition of SAA's African biofuels programme, but provides us with a further networking platform to engage with NGOs and leaders in the biomaterials field." **- Nico Bezuidenhout SAA's Acting CEO**

The Role of Sustainable Biofuels In Achieving ICAO's Climate Goals

Sustainable biofuels have an important role to play in addressing the climate change impacts of flying – but how do they interact with the other tools in ICAO's "basket of measures"? The most high-profile climate change measure in aviation right now is ICAO's market-based measure, for decision at this year's Assembly, to initially stabilise net CO_2 emissions at 2020 levels. It is expected that aircraft operators will have to offset growth in emissions above 2020 levels, but how do emissions reductions from sustainable biofuels fit in among the ICAO measures? It is currently an open – and important – question.

One option would be to "zero-rate" emissions from all biofuels. This option would be straightforward to implement and would probably incentivise the use of biofuels in the short term. However, "zero-rating" would ignore the real lifecycle emissions as well as social and wider environmental impacts of the biofuels. Another option would be to account for lifecycle and land use emissions, and introduce criteria to ensure that positive and negative sustainable development impacts are taken into account.

The RSB has developed several tools to simplify these tasks – including a sophisticated and user-friendly online Greenhouse Gas Calculator, and most recently, a module to help producers demonstrate that their biofuels pose a low risk of indirect land use change (ILUC). ILUC can cause damage to natural environments, undermine food security, and can even cancel out the emissions benefits of biofuels. It has heavily damaged the reputation of the road biofuels sector, but the aviation industry has a unique opportunity to learn from the past mistakes of other sectors and position itself as a leader on sustainability. RSB stands ready to work with ICAO and the aviation industry to facilitate the development of robust GHG methodologies and sustainability criteria.

Making An Impact

The aviation sector supports and endorses RSB as the most credible global standard for ensuring the sustainable production of biofuels and biomaterials. Etihad Airways, Virgin Atlantic, Boeing, United Airlines, NRDC (Natural Resources Defense Council), and WWF (World Wide Fund for Nature) have noted RSB's positive impact for sustainable aviation.

Certifications in the aviation sector include Sunchem Holdings, SkyNRG, and biojet fuel made with RSB certified camelina oil from Camelina Company España (CCE), which is now available for all airlines at Oslo airport. CCE has over 150 farmers in Spain demonstrating that large groups of farmers can be certified successfully and efficiently according to the RSB Standard.

RSB's impact, however, goes beyond certifications. RSB has been involved in several initiatives recently such as smallholder projects, addressing indirect land use change (iLUC) issues, and involvement with UN Sustainable Energy for All Initiative (SE4All), summarized below.

Smallholder Impact

As smallholder farmers in vulnerable communities and developing countries, which lack adequate environmental and social safeguards, seek to increase and intensify biomass production so as to participate in the global bioeconomy, they are at risk of inadvertently causing land and water degradation, loss of biodiversity, and food insecurity. If aviation projects are developed in areas currently dominated by smallholder farming communities, then care must be taken to ensure economically equitable treatment of smallholder farmers.

In general, smallholder producers are challenged with low institutional capacity, limited access to technology for higher yields, limited market access, and insufficient external support. These constraints make it more difficult for them to both achieve access to new markets, and to reach compliance with the RSB Standard and receive certification.

With the support of the Boeing Corporate Citizenship Program and the Swiss government, RSB's Smallholder Program seeks to improve the livelihoods of smallholder farmers by linking them to markets and promoting sustainable practices based on the RSB Smallholder Standard[3].

An example of the aviation industry coming together to support smallholders is 'Project Solaris'4. RSB's first smallholder project in South Africa was certified for the Solaris seed tobacco produced for biojet fuel. This collaboration with SkyNRG, South African Airways (SAA) and Sunchem is helping improve market access for local communities in the Limpopo region of South Africa while providing the aviation industry with a sustainable biojet fuel supply chain.

Indirect Land Use Issues

In 2015, RSB became the first sustainability certification standard to create "Low iLUC Risk Biomass Criteria and Compliance

Figure 1. Project Solaris Field, Photo Credit: RSB.

Indicators"[5] also known as the "iLUC Standard". This Standard helps producers demonstrate that biomass was produced with low indirect land use change (iLUC) and therefore minimal impact on food production or biodiversity. This is especially important for aviation companies that source biofuels from regions that have historically had land use change issues. The approach is in line with the Global Policy Statement of SAFUG on ILUC[6].

UN Sustainable Energy for All Initiative (SE4All)

RSB and the UN Food and Agricultural Organisation (FAO) are chairing the Sustainable Bioenergy Group (SBG) of SE4ALL (see article page 166). This coalition aims to speed up the development and deployment of sustainable bioenergy in order to contribute to meeting the SE4ALL goals of doubling the global use of renewable energy and ensuring universal energy access by 2030. Supported by Novozymes and the Inter-American Development Bank (IDB), SBG members include Bloomberg New Energy Finance, KLM, and the United Nations Foundation.

"RSB sees SE4All as a key framework to promote sustainable bioenergy at scale and believes that it will lead to the advancement of sustainable production on the ground supporting rural development, workers' rights, biodiversity protection, and reduction of greenhouse gas emissions, in line with international best practice outlined in the RSB standards," said RSB Chair Barbara Bramble.

Figure 2. KLM in flight, Photo Credit: KLM.

Conclusion

RSB's active engagement with aviation industry leaders has led to a growth in certification and membership. This demonstrates the aviation industry's interest in reducing its global footprint, not just for CO_2 emissions, but also for other environmental and human aspects – from livelihoods of smallholders, to conservation and biodiversity.

Now there are more resources and support available to the aviation industry than ever before. Through new advisory services, RSB can help aviation companies more efficiently implement the systems necessary to achieve certification in a way that aligns with their existing business practices. Investors can also receive RSB guidance for assessing and mitigating risks before making decisions in bio-based aviation projects. These are important steps to continue moving forward towards sustainable aviation.

RSB's continuing commitment to linking smallholder farmers to aviation markets and the aviation industry's uptake of advanced biojet fuels, and support of the RSB standard, bode well for the development of truly sustainable biofuels.

References

1. http://www.icao.int/Newsroom/Presentation%20Slides/Uniting%20Aviation%20on%20Climate%20Change.pdf
2. http://www.safug.org/safug-pledge
3. http://rsb.org/pdfs/RSB-STD-03-001%20RSB%20P&Cs%20for%20Smallholder%20Groups.pdf
4. http://www.projectsolaris.co.za/
5. http://www.safug.org/assets/docs/iluc-global-proposition.pdf
6. http://www.rsb.org/pdfs/standards/RSB-STD-04-001-er0.3RSBLowiLUCCriteriaIndicators.pdf