# Training Course on Sustainable Aviation Fuels (SAFs) Implementation: Understanding the Production, Logistics, and Adoption of SAFs

Professional Development Training Course Outline

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| **Category** | Aviation and Airport Management | **Duration** | 10 Days |
| **Base Fee** | $3,000 USD | **Delivery Mode** | Online / On-site Hybrid |

## Course Introduction

The global aviation industry is at a pivotal juncture, driven by an urgent need to decarbonize and achieve ambitious net-zero targets. Sustainable Aviation Fuels (SAFs) represent the most promising immediate solution for significantly reducing aviation's carbon footprint. Training Course on Sustainable Aviation Fuels (SAFs) Implementation: Understanding the Production, Logistics, and Adoption of SAFs provides an in-depth exploration of the entire SAF ecosystem, from cutting-edge production technologies and intricate supply chain logistics to critical policy frameworks and market adoption strategies. Participants will gain the essential knowledge and practical skills to navigate the complexities of SAF implementation, accelerating the transition towards a cleaner, more sustainable future for air travel.

This program delves into the science, economics, and policy surrounding SAFs, equipping aviation professionals, policymakers, and investors with a holistic understanding of their transformative potential. Through a blend of theoretical insights, real-world case studies, and interactive sessions, attendees will learn to assess various SAF pathways, understand regulatory compliance, optimize supply chains, and develop robust business cases for SAF integration. The strong focus on **decarbonization**, **renewable energy**, **circular economy principles**, and **future aviation fuels** ensures participants are at the forefront of this critical industry shift, fostering innovation and driving meaningful environmental impact.

## Programme Curriculum

**Training Course on Sustainable Aviation Fuels (SAFs) Implementation: Understanding the Production, Logistics, and Adoption of SAFs**

**Introduction**

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**Course Duration**

10 days

**Course Objectives**

1. Comprehend the diverse SAF production pathways and their associated feedstock sustainability challenges.
2. Analyze the lifecycle greenhouse gas (GHG) emissions reduction potential of various SAF technologies.
3. Evaluate the techno-economic feasibility of SAF projects across different scales and regions.
4. Master the intricacies of SAF supply chain logistics, including transportation, blending, and distribution.
5. Interpret global and regional SAF mandates, policies, and regulatory frameworks (e.g., CORSIA, ReFuelEU).
6. Assess the market dynamics and economic drivers influencing SAF adoption and investment.
7. Identify key financing mechanisms and investment opportunities in the burgeoning SAF sector.
8. Develop strategies for overcoming adoption barriers, including cost, infrastructure, and scalability.
9. Understand the role of book-and-claim systems and other accounting methodologies for SAF credits.
10. Explore the intersection of SAF and circular economy principles, including waste-to-fuel technologies.
11. Examine the social and environmental impacts of SAF production, ensuring responsible development.
12. Formulate compelling SAF business cases for airlines, airports, fuel producers, and investors.
13. Contribute to the global aviation decarbonization roadmap through informed SAF implementation.

**Organizational Benefits**

- Positions the organization as a leader in sustainable aviation, attracting environmentally conscious stakeholders and customers.
- Ensures proactive compliance with evolving global SAF mandates and reduces regulatory penalties.
- Provides insights into efficient SAF procurement and logistics, potentially reducing long-term operational costs.
- Improves eligibility for sustainable finance and investment opportunities.
- Fosters collaboration with supply chain partners, policymakers, and environmental organizations.
- Equips teams with the knowledge to leverage emerging SAF technologies and gain a competitive edge.

- Attracts and retains talent by demonstrating a commitment to environmental responsibility.
- Enhances the organization's public image as a responsible and forward-thinking entity.

**Target Audience**

1. Airline Executives & Managers.
2. Airport Authorities & Operators.
3. Fuel Producers & Suppliers.
4. Policy Makers & Regulators.
5. Investors & Financial Institutions
6. Aviation Consultants & Analysts
7. Researchers & Academics
8. Engine Manufacturers & Aircraft OEMs.

**Course Outline**

**Module 1: Introduction to Sustainable Aviation Fuels (SAFs)**

- Defining SAFs: What they are and their role in aviation's decarbonization journey.
- The imperative for SAFs: Climate change, international targets (ICAO CORSIA, Net Zero 2050).
- Global SAF landscape: Current production, consumption, and future projections.
- Key benefits of SAFs: GHG emission reduction, local air quality improvements, energy security.
- Challenges and opportunities in SAF adoption: Cost, scalability, infrastructure.
- *Case Study: The evolution of SAF mandates in the EU (e.g., ReFuelEU Aviation) and their impact on airline strategies.*

**Module 2: SAF Production Pathways & Feedstocks**

- Overview of approved SAF pathways (HEFA, FT, AtJ, etc.) and emerging technologies.
- Feedstock analysis: Agricultural residues, municipal solid waste, algae, dedicated energy crops.
- Waste-to-Fuel technologies: Opportunities and challenges of utilizing waste streams.
- Power-to-Liquid (PtL) and e-fuels: Synthesizing SAF from renewable electricity and CO2.
- Sustainability criteria for feedstocks: Land use, water scarcity, biodiversity.
- *Case Study: Production of HEFA SAF from used cooking oil by Neste and its supply chain challenges.*

**Module 3: Life Cycle Assessment (LCA) of SAFs**

- Understanding LCA methodology for quantifying environmental impacts of SAFs.
- Key metrics in LCA: GHG emissions, energy consumption, water footprint.
- Comparing LCA results across different SAF pathways and conventional jet fuel.
- Importance of indirect land use change (ILUC) and its accounting in SAF sustainability.
- Data collection and reporting standards for robust LCA.
- *Case Study: A comparative LCA of an advanced cellulosic ethanol-to-jet (AtJ) SAF vs. traditional Jet A-1.*

**Module 4: SAF Logistics and Supply Chain Management**

- Infrastructure requirements for SAF production, transportation, and storage.
- Co-processing vs. drop-in fuels: Implications for existing infrastructure.
- Blending operations: Technical requirements and logistical considerations at airports.
- Supply chain optimization: Ensuring efficient and cost-effective delivery of SAF.
- Challenges in global SAF distribution: Geographic availability, transportation modes.

- *Case Study: The logistical complexities of supplying SAF to major international airport hubs and the role of pipeline infrastructure.*

**Module 5: Certification and Quality Assurance of SAFs**

- International standards for SAF certification (ASTM D7566, D1655).
- Fuel quality testing and validation processes.
- Regulatory oversight and compliance with aviation safety standards.
- Certification bodies and their role in ensuring SAF integrity.
- Traceability systems for sustainable feedstock sourcing.
- *Case Study: The rigorous certification process of a new SAF pathway by a major aircraft engine manufacturer.*

**Module 6: Global SAF Policies and Regulations**

- International Civil Aviation Organization (ICAO) initiatives: CORSIA and its SAF components.
- Regional policies: EU's ReFuelEU Aviation, US SAF Grand Challenge.
- National SAF mandates and incentives (e.g., tax credits, blending obligations).
- The role of carbon pricing and emissions trading schemes (ETS) in SAF adoption.
- Policy harmonization and international collaboration for global SAF deployment.
- *Case Study: Analyzing the impact of the Inflation Reduction Act (IRA) in the US on SAF production and investment.*

**Module 7: Economics and Financing of SAFs**

- Cost drivers of SAF production: Feedstock costs, capital expenditure (CAPEX), operational expenditure (OPEX).
- Comparison of SAF prices with conventional jet fuel.
- Offtake agreements and forward purchasing: De-risking SAF investments.
- Financing models: Public-private partnerships, green bonds, venture capital.
- Economic incentives and subsidies to bridge the cost gap.
- *Case Study: A detailed financial analysis of a proposed SAF production facility, including revenue streams and investment returns.*

**Module 8: Market Adoption and Business Cases for SAFs**

- Strategies for airlines to integrate SAF into their operations.
- Airport initiatives to facilitate SAF uptake and infrastructure development.
- Corporate travel programs and demand signals for SAF.
- Measuring and reporting SAF usage and emission reductions.
- Developing compelling business cases for SAF investment and procurement.
- *Case Study: How major airlines are incorporating SAF into their sustainability strategies and setting ambitious targets.*

**Module 9: Book & Claim Systems and SAF Accounting**

- Understanding the concept of book & claim for SAF accounting.
- Benefits and limitations of book & claim vs. physical SAF delivery.
- Blockchain and digital solutions for SAF traceability and credit transfer.
- Standardization of book & claim systems for global acceptance.
- Ensuring additionality and avoiding double-counting in SAF credits.

- *Case Study: Implementation of a book & claim platform by a leading aviation organization to track SAF usage and emissions reductions.*

**Module 10: Environmental and Social Impacts of SAF Production**

- Assessing the broader environmental impacts beyond GHG emissions (water, land, air quality).
- Social considerations: Local community engagement, food security, labor rights.
- Ensuring responsible sourcing and sustainable agricultural practices.
- Mitigation strategies for potential negative impacts.
- Stakeholder engagement and community benefit sharing.
- *Case Study: Addressing the social and environmental concerns related to palm oil as a SAF feedstock.*

**Module 11: Innovation and Future Trends in SAFs**

- Emerging SAF technologies: Novel feedstocks, advanced conversion processes.
- The potential of hydrogen and electric propulsion in the long term.
- Role of Carbon Capture, Utilization, and Storage (CCUS) in SAF production.
- Research and development priorities for scalable and cost-effective SAFs.
- The convergence of renewable energy and aviation.
- *Case Study: A look into promising early-stage SAF technologies and their potential to disrupt the market.*

**Module 12: Risk Management and Due Diligence in SAF Projects**

- Identifying and assessing technical, financial, and regulatory risks in SAF ventures.
- Environmental, Social, and Governance (ESG) due diligence for SAF investments.
- Developing mitigation strategies for identified risks.
- Contractual agreements and legal considerations in SAF supply chains.
- Ensuring robust safety protocols in SAF production and handling.
- *Case Study: Analyzing the risk factors in developing a new SAF biorefinery project from financing to operational start-up.*

**Module 13: Communication and Stakeholder Engagement for SAFs**

- Effective communication strategies for promoting SAF adoption.
- Engaging with internal and external stakeholders (employees, customers, policymakers).
- Addressing public perception and dispelling myths about SAFs.
- Collaborative initiatives and partnerships to accelerate SAF deployment.
- Reporting and transparency in SAF progress and achievements.
- *Case Study: A successful public awareness campaign by an airline to educate passengers about SAFs and their environmental benefits.*

**Module 14: Developing a SAF Implementation Roadmap**

- Strategic planning for integrating SAF into organizational operations.
- Setting realistic SAF targets and milestones.
- Resource allocation and budget planning for SAF initiatives.
- Monitoring and evaluating SAF program performance.
- Continuous improvement and adaptation of SAF strategies.
- *Case Study: Designing a 5-year SAF implementation roadmap for a regional airline, considering its fleet, network, and financial capabilities.*

**Module 15: Training Methodology and Interactive Learning**

- **Interactive Lectures:** Engaging presentations with Q&A sessions.
- **Expert Panels:** Discussions with leading industry professionals and policymakers.
- **Case Studies & Group Exercises:** Practical application of concepts through real-world scenarios.
- **Site Visit (Virtual or Physical, if applicable):** Opportunity to see SAF production or blending facilities.
- **Networking Opportunities:** Facilitated sessions for peer-to-peer learning and collaboration.

**Register as a group from 3 participants for a Discount**

**Send us an email:** info@fineskilltrainingcenter.org **or call** *+254769199797*

***Certification***

*Upon successful completion of this training, participants will be issued with a globally- recognized certificate.*

***Tailor-Made Course***

*We also offer tailor-made courses based on your needs.*

**Key Notes**

**a.** The participant must be conversant with English.

**b.** Upon completion of training the participant will be issued with an Authorized Training Certificate

**c.** Course duration is flexible and the contents can be modified to fit any number of days.

**d.** The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

**e.** One-year post-training support Consultation and Coaching provided after the course.

**f.** Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

## Upcoming Scheduled Sessions

| Start Date | End Date | Location | Price |
|---|---|---|---|
| **30 Nov 2026** | 11 Dec 2026 | Online | $2,000 |
| **30 Nov 2026** | 11 Dec 2026 | Physical | $3,000 |
| **30 Nov 2026** | 11 Dec 2026 | Physical | $6,000 |
| **30 Nov 2026** | 11 Dec 2026 | Physical | $6,000 |
| **30 Nov 2026** | 11 Dec 2026 | Physical | $12,000 |
| **30 Nov 2026** | 11 Dec 2026 | Physical | $9,000 |

| Start Date | End Date | Location | Price |
|---|---|---|---|
| **30 Nov 2026** | 11 Dec 2026 | Physical | $12,000 |
| **30 Nov 2026** | 11 Dec 2026 | Physical | $12,000 |

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