



Evaluation Report

JFK Green Lane Program



SkyNRG
March 2014



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March 8, ready for take-off at Schiphol Airport.

JFK Green Lane Program

On March 8 2013 the round trip bio flight from Amsterdam to JFK and back marked the start of the 26-week JFK Green Lane Flight program. With this program, undertaken by KLM Royal Dutch Airlines and SkyNRG in partnership with the Schiphol Group, Delta Air Lines and the Port Authority of New York and New Jersey, the weekly KL 642 flights leaving JFK International Airport were fuelled with sustainable jet fuel, sourced and supplied by SkyNRG. The sustainable jet fuel that was used for the

weekly flights with 777-200 aircraft was 100% US based fuel, and made from Used Cooking oil and Camelina oil.

This report provides an evaluation of the program. It gives information on the background of the program and sustainable aviation, the feedstock and the production process of the sustainable jet fuel used for the program and the actual achievements and operational observations.

“I’m pleased to join hands with our home carrier, KLM, to create a steady demand for biofuels in aviation. We at Schiphol have long recognized our responsibility to minimize our environmental footprint. It is our duty as partners in the aviation industry to spur innovation and to create new solutions which make aviation more efficient and more sustainable”

Jos Nijhuis, CEO Schiphol Group

Background Sustainability in Aviation

Aviation is recognized as one of our world's most dynamic, economically crucial and socially essential industries. At the same time the industry is responsible for up to 3% of the world's manmade CO₂ emissions. The aviation industry has made reducing its environmental impact and moving away from fossil fuels a key concern. Currently, sustainable jet fuel has the most potential to provide a meaningful reduction in the carbon footprint of the industry. The aviation industry is looking to maintain growth while minimizing environmental impact. Sustainable jet fuel offers a viable solution to significantly reduce CO₂ emissions and lower the industry's dependency on fossil fuel. Yet the biggest challenge, in producing sustainable jet fuel at fossil fuel parity, is to create critical scale and commercialize advanced technologies.

Challenges that have to be addressed include meeting sustainability standards, and manufacturing and delivering sufficient quantities of fuel at a price that does not take aviation beyond the reach of consumers. In order to make sustainable jet fuels affordable, active participation of all stakeholders, including end users, is required, along with strong political will to promote incentives to scale up the use of sustainable bio jet fuel.

That is why SkyNRG and KLM Royal Dutch Airlines in partnership with the Schiphol Group, Delta Air Lines and the Port Authority of New York and New Jersey joined forces to enable the first weekly inter-continental flight program using sustainable jet fuel. Together, these parties want to help create a long term sustainable future for aviation by actively creating the market for advanced biofuels for aviation that are truly sustainable and affordable.

For all participating parties, sustainability is a key



March 8, JFK Green lane Program kick off, Schiphol Airport Amsterdam



WHAT ARE SUSTAINABLE JET FUELS?

Sustainable jet fuels are produced from sustainable feedstocks like waste streams and non-food energy crops.

These fuels offer the single largest opportunity to reduce CO₂ emissions, while ensuring long term fuel security for the avia-

tion sector. Sustainable jet fuel blends can be referred to as 'drop-in' fuels, because they have the ability to be used without any changes made to the infrastructure, such as distribution and engine fuel systems.

Sustainable jet fuels, derived from plants, trees, algae, waste and other organic matter bio-oils, offer the largest single opportunity to reduce emissions while ensuring long term fuel security for the aviation sector.

Generally, sustainable jet fuels are referred to as 'drop-in' fuels, because they have the ability to be used without major changes made to the infrastructure, such as engine fuel systems, and distribution and storage systems.



Video presentation from WWF-NL at Schiphol Airport.

priority. Therefore, the sustainable jet fuel that was used for the 26 flights between JFK and Schiphol airport had to meet very strict sustainability criteria. In order to guarantee and control the sustainability of the supply chain, KLM and SkyNRG have introduced various measures and important joint partnerships. SkyNRG has installed an independent Sustainability Board consisting of leading NGOs and scientists advising on all feedstock and technology decisions. Furthermore, in all decisions SkyNRG and KLM follow the vision on biofuels set by the World Wide Fund for Nature (WWF) in their report:

Sustainable jet fuel has the most potential to provide a meaningful reduction in the carbon footprint of the industry

Energy vision 2050, stating that bio-energy resources should primarily be used for those activities and sectors that have no alternative for liquid fuels; i.e. aviation, marine and heavy trucking.

In addition to the continuous advice of the sustainability Board, SkyNRG is a member of the Roundtable on Sustainable Biomaterials (RSB). The RSB is a worldwide, multi-stakeholder initiative that brings together farmers, corporations, NGOs, experts, governments, and inter-governmental agencies concerned with ensuring the sustainability of biofuel production and processing.



Taking off today. The first of KLM's weekly flights from New York to Amsterdam on sustainable biofuel

This series of flights using biofuels is supported by Schiphol Group, Delta Air Lines and the companies participating in the KLM BioFuel Programme.

See klmtakescare.com for more information.



The vision on biofuels set by the World Wide Fund for Nature (WWF) in the Energy vision 2050 states that:

Sustainable biofuels:

- Exhibit minimal impact on biodiversity
- Meet a sustainability standard with respect to land, water, and energy use
- Do not displace or compete with food crops
- Provide a positive socioeconomic impact

SKYNRG'S SUSTAINABILITY BOARD

SkyNRG has installed an independent Sustainability Board consisting of leading NGOs and scientists advising on all feedstock and technology decisions. These are the Dutch wing of the World Wide Fund for Nature (WWF-NL), Solidaridad, and the Copernicus Institute of the University of Utrecht.



Camiel Eurlings introducing Amsterdam Mayor, Eberhard van der Laan

Henk Kamp,
Dutch Minister of Economic Affairs

"These new steps shows that KLM is a frontrunner in making air transportation more sustainable. Initiatives like these are essential in making our economy more sustainable and create new business opportunities for Dutch companies."

Eberhard van der Laan,
Amsterdam's Mayor

"I am delighted to see that cooperation between KLM, Schiphol Group and the Port Authority of New York and New Jersey is leading to such a unique initiative. Both Amsterdam and New York are active members of the C40 Cities Climate Leadership Group so KLM's New York-to-Amsterdam flights are clear proof of our joined work to create a significant global impact on greenhouse gas emissions and climate risks."

Camiel Eurlings,
KLM managing director

"I am proud that KLM is once again demonstrating its leading role in developing sustainable biofuel. For eight years in a row, KLM, together with Air France, has been sector leader on the Dow Jones Sustainability Index. Alongside this biofuel series we are starting a study to further identify sustainability gains in fuel, weight and CO2 reduction throughout the entire flight process. We are striving to achieve the 'optimal flight' together with research institutes, suppliers, airports, and air traffic control. We are combining new and existing technology, processes, and efficiency initiatives to achieve this. Cooperation is a priority!"



Feedstock origin

Selection of feedstock

For the production of its sustainable jet fuel, SkyNRG only uses feedstocks that are sustainable (see box on pg. 6 for an explanation on what is defined as sustainable). In order to guarantee and control the sustainability of the supply chain SkyNRG has introduced various measures and important joint partnerships. By joining forces in the supply chain and by involving all relevant stakeholders, SkyNRG can understand and act upon the integrated environmental and socioeconomic consequences associated with the development of the biofuel industry. The sustainability of aviation fuels depends on many factors and has to be assessed on a case-by-case basis. To make the right decisions in feedstock selection, SkyNRG is advised by an independent sustainability Board. Feedstocks receive a positive advice from the Sustainability Board when it can be proven that the specific feedstock (and supplier) is environmentally and socially sustainable and have the potential for up-scaling in a sustainable and cost effective way.

Used Cooking oil and Camelina oil were selected as feedstocks for the JFK Green Lane Program

Used Cooking oil and Camelina oil were selected as feedstocks for the JFK Green Lane Program. Both feedstocks have been assessed and received a positive advice from the Sustainability Board.

Used Cooking Oil (UCO)

The first two batches of sustainable jet fuel that were used for the JFK Green Lane Program were made from Used Cooking Oil (UCO). UCO is a waste stream from the food processing industry and has limited high value end-uses. UCO does not compete with the food chain, offers a reduction on CO₂ emissions of up to 80% and greatly reduces other pollutants like sulphur and fine particles, compared to fossil fuel. Due to these favourable properties it qualifies as sustainable.

The UCO was 100% US based and was sourced by Dynamic Fuels, who produced the sustainable jet fuel used for the production of the first batches for the JFK Green Lane program.

Camelina oil

The third and fourth batch were made out of Camelina oil. Camelina is a flowering plant yielding oil seeds. It is part of the mustard, cabbage and rapeseed family and is native to Northern Europe and to Central Asian areas, but has been introduced to North America as well. Camelina needs little water or nitrogen to flourish, it can be grown on marginal agricultural lands and does not compete with food crops. It is used as a rotation crop for wheat, to increase the health of the soil. The Camelina oil was sourced by UOP, who produced the neat sustainable jet fuel used for the production of the other batches for the JFK Green Lane program. The Camelina oil originates from North America.

Sustainable Jet Fuel Production

Sustainable jet fuel production technology

The sustainable jet fuel production process is based on a well-known process in the oil and gas industry to remove sulphur from fossil fuels (desulphurization) and involves using hydrogen at elevated temperatures and pressures to ‘crack’ the oxygen from natural oils, turning them into pure hydrocarbons, very much the same as standard fossil jet fuel.

The first stage deoxygenates the feedstock and the second stage selectively hydrocracks and isomerizes the effluent from the first stage to meet the desired product quality characteristics. The product from the second stage is then fractionated into a sustainable jet fuel cut and sustainable heavy diesel cut.

To meet the overall sustainable jet and fossil jet fuel specifications, the sustainable jet fuel is blended with fossil jet fuel (Jet A/Jet A-1). With the blending process a homogenous mixture of the sustainable and fossil jet exists and a sustainable jet fuel blend is created. Once blended, the sustainable jet fuel blend is analyzed and certified to both ASTM D7566 and D1655.

Sustainable jet fuel for JFK

For the first flights of the JFK Green Lane Program, existing stock of sustainable jet fuel was used. For the remainder of the program new sustainable jet fuel was to be sourced. For the production of the new stock of sustainable jet fuel, a fast and cost-effective route was searched for. There are currently

only very few commercial plants online that can produce sustainable jet fuel and the plants that have the capabilities to do so are generally more focused on the production of renewable diesel. When the new batch of sustainable jet fuel was to be produced for the JFK Green Lane program, none of the facilities were able to directly produce sustainable jet fuel, which implied that the additional fractionation step into jet and diesel was to be performed elsewhere. The possibilities were investigated extensively and in the end it was decided to purchase a batch of renewable diesel and use that as feedstock to extract the sustainable jet fuel at another facility.

As with all new and innovative projects, unexpected situations may arise. In this case, we were faced with some production issues of the new sustainable jet fuel batch. After the fractionation run was finished, the jet fuel could not be certified yet and needed additional processing.

Investigating the best route for this and performing this additional processing would take quite some time. To be able to continue the weekly JFK Green Lane flights, it was therefore decided to look for a solution that would prevent getting a gap within the weekly program. The existing stock that was originally only intended to be used for the first 4 flights from JFK to Schiphol, was therefore also used for the subsequent 8 flights. In the mean time a new batch of sustainable jet fuel could be sourced from UOP.

Although this batch was relatively expensive, it was



Fueling the plane at Schiphol Airport, Amsterdam.



Partners in the KLM Corporate BioFuel Programme



Camiel Eurling and Jos Nijhuis at JFK Airport

decided to take this route as it was the only option available at that moment that would enable continuing the program without having a gap. The timeline was very tight, but with the support of all parties involved, we managed to create a new and certified sustainable jet fuel batch right in time for the remainder of the flights.

Overview per batch of sustainable jet fuel blend

In the end four different batches of sustainable jet fuel blend were used for the JFK Green Lane program. The table below gives an overview of the batches, the flights they were used for, the feedstock and the percentage of neat sustainable jet fuel in each batch.

Batch nr.	Flight	Feedstock	Bio %
SJF-B34	#1 (AMS-JFK)	UCO	36%
SJF-B38	# 2 - 13 (JFK - AMS)	UCO	20%
SJF-B41	# 14 - 22 (JFK - AMS)	Camelina	21%
SJF-B42	# 23 - 26 (JFK - AMS)	Camelina	25%

Overview sustainable jet fuel batches for the JFK Green Lane Program

Batch SJF-B34 and SJF-B38 were made of UCO-based sustainable jet fuel produced by Dynamic Fuels. Dynamic Fuels, LLC, a joint-venture of Tyson Foods, Inc., and Syntroleum Corporation, produces next-generation renewable, synthetic fuels from animal fats, greases, and vegetable oils. The renewable, synthetic fuels plant is built in Geismar, Louisiana and provides clean and environmentally-friendly fuel. The company is very much committed to ensuring environmental and social sustainability of their business and operates in compliance with the RSB standard.

Batch SJF-B41 and SJF-B42 were made of Camelina-based sustainable jet fuel produced by UOP. UOP, a Honeywell company, operates a renewable jet fuel product demonstration unit at the Centauri facilities in Pasadena, Texas.

The sustainable jet fuel for all four batches was transported to KMTex, where the blending with fossil jet A/A1 (sourced by EPIC) took place. After blending and certification these batches were ready to be used for the JFK Green Lane program.

Facts & Figures: Volumes, CO₂ emission savings and costs

Volumes and bio percentage

The 26 flights within the JFK Green Lane Program were fuelled with a total of 145,000 gallons (app. 430 Mt) of sustainable jet fuel. See the table on this page for the sustainable jet fuel volumes per flight. The additional required uplift for the flights was done with fossil jet A fuel.

CO₂ emission savings

The lifecycle CO₂ emission reduction from pure bio-derived aviation fuel varies depending on extraction and processing arrangements, as well as on the type of feedstock used. In general sustainable jet fuels made from UCO can provide a reduction in overall CO₂ lifecycle emissions up to 80% compared to fossil fuels; for sustainable jet fuels made from Camelina this is 70%. These figures include the emissions produced during the production of the fuel, such as transportation and refining. The first 13 flights were fuelled with sustainable jet fuel blend made out of UCO, the

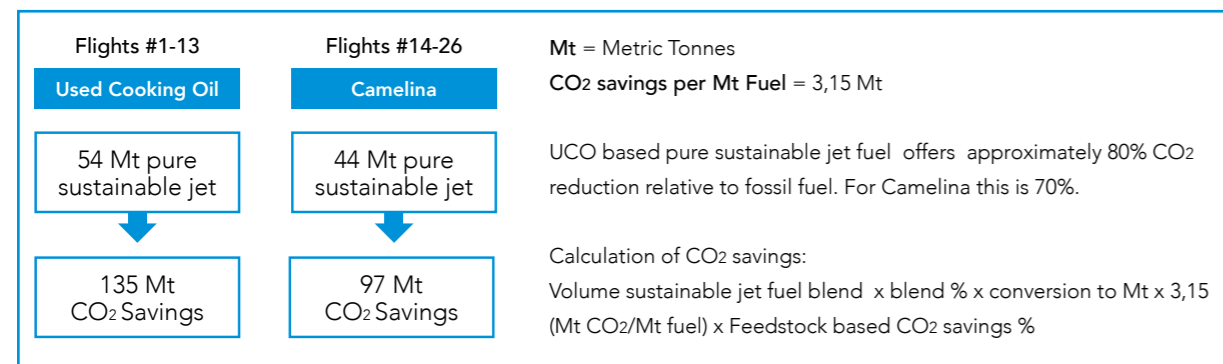
other 13 flights with sustainable jet fuel blend made out of Camelina. The CO₂ savings can be calculated based on the amount of neat sustainable jet that was in these blends. See figure at the bottom of this page for the CO₂ savings realized with the JFK Green Lane Program.

Costs

Sustainable jet fuel is still more expensive than fossil jet fuel. The production process as well as the supply chain (segregated with extensive quality control) is still more complex than with fossil jet fuel and this adds to the costs. The into plane costs for the different batches of sustainable jet fuel blends for the JFK Green Lane program were around 3 – 4 times higher than fossil jet fuel. With new technologies evolving, larger scale production and supply chain optimization (for instance pipe line supply which is currently already allowed but not applied in practice), costs are expected to come down significantly in the future.

Flight #	Date	Volume sustainable jet fuel (gallon)
1	8 Mar '13	12.628
2	8 Mar '13	12.970
3	14 Mar '13	5.161
4	21 Mar '13	5.003
5	28 Mar '13	5.120
6	4 Apr '13	5.025
7	11 Apr '13	5.010
8	18 Apr '13	5.000
9	25 Apr '13	6.000
10	2 May '13	5.016
11	9 May '13	4.874
12	16 May '13	5.006
13	23 May '13	2.728
14	30 May '13	5.017
15	6 Jun '13	5.008
16	13 Jun '13	5.109
17	20 Jun '13	5.028
18	27 Jun '13	5.190
19	4 Jul '13	5.032
20	11 Jul '13	5.065
21	18 Jul '13	5.189
22	25 Jul '13	5.192
23	1 Aug '13	5.062
24	8 Aug '13	5.040
25	15 Aug '13	5.030
26	22 Aug '13	4.149
Total		144.652

Sustainable Jet Fuel volumes per flight



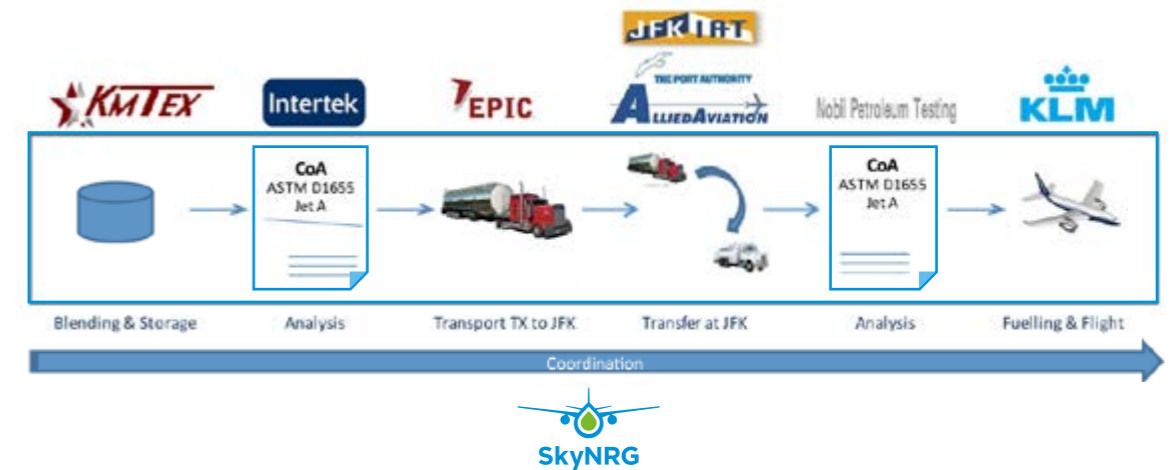
CO₂ savings JFK Green Lane Program

Operational process JFK Green Lane Program

Operational process

The sustainable jet fuel blend used for the JFK Green Lane Program was delivered to JFK Airport via a fully segregated supply chain. An extensive quality control process has been in place to guarantee the quality of the sustainable jet fuel. Blending and storage of the sustainable jet fuel took place at KMTex (Port Arthur, TX). The sustaina-

to two 10,000 gallon (app. 30 Mt) refueler trucks, using a dedicated mobile pump skid supplied by EPIC. The two refueler trucks were made available as dedicated refueler trucks to the project by the Port Authority of New York New Jersey. Before the transfers Allied Aviation performed key point analyses on the fuel. Nobil Petroleum Testing took care of the sampling and analysis at JFK airport.



Operational process and involved parties in JFK Green Lane Program

ble jet fuel blend was tested and certified according to the ASTM specification for sustainable jet fuel (ASTM D7566 – standard specification for aviation turbine fuel containing synthesized hydrocarbons) and the specification for standard aviation turbine fuel (ASTM D1655). For the transport and delivery of the sustainable jet fuel blend to JFK airport, SkyNRG worked together with partner EPIC Aviation; EPIC used two dedicated jet fuel tank trucks for this transport. Upon loading at KMTex, the fuel in the trucks was sampled and analyzed by testing company Intertek. At JFK airport the sustainable jet fuel blend was transferred by Allied Aviation

The procedures that were to be followed throughout the process were agreed upon in a Special Operating Procedure (SOP) that was written specifically for this project. All parties involved in the program contributed to setting up this procedure. Prior to the start of the program SkyNRG and EPIC provided a training to Allied Aviation personnel on the use of the pump skid and the software. The training included training documents such as the skid operation manual and detailed instructions on the software.

Operational observations

Blending & Storage

The sustainable jet fuel was blended and stored at KMTex in Port Arthur. The blending procedures that were set up for the production of the JFK batches made sure that all the parties were aware of their role and the timing of the process. Except from some delay with one of the fossil jet deliveries, no major issues were observed.

Except from two break downs, - which were solved and didn't cause any issues regarding unavailability of sustainable jet fuel at JFK-, the transport went smoothly. Prior to loading of one of the trucks, the parties observed some dirt particles in the truck. The truck was sent for cleaning before the actual loading took place. This didn't have a negative effect on the schedule.

The long distance between KMTex and JFK implied relatively high shipping costs. Because of



Allied Aviation Refueler ready to fuel the 777-200 for KLM's flight. March 8 JFK Airport

Loading & Transport

Loading dates were chosen such that the trucks could arrive at JFK airport in time to transfer the fuel for the next flights. Because of the relatively long distance between KMTex and JFK airport some extra slack was built in the schedule. Overall the transport between KMTex and JFK went quicker than expected in the first place; the trucks were originally scheduled to load on Fridays and arrive and transfer on Tuesdays, but the majority of the transfers took place on Mondays.

limited blending and storage capacity close to JFK airport, KMTex's proximity to the neat sustainable jet production locations for the new batches and because of KMTex' experience in blending sustainable jet fuel, it was decided to also blend and store the new batches at KMTex. For future projects it is recommended to localize production, blending and use near each other.

Transfer at JFK

To transfer the fuel from the tank trucks to the refuelers at JFK, a dedicated pump skid was supplied by EPIC.

The pump skid, complying with API/EI-1581 5th addition, was supplied with a calibrated meter and accompanying software to be able to administer transferred volumes and other relevant information.

Dedicated parking spots were used for both the pump skid and the refueler trucks.

During the first transfer it appeared that the skid did not perform at 100%; the engine was surging and the maximum flow rate was lower than in the skid's specifications. It has been a challenge to repair this. Although it didn't cause real issues regarding timing, the transfer could have been performed faster when the skid would have performed at 100% during the project.

Quality control process

A very extensive quality control process was in place throughout the JFK Green Lane Program. This process was much more comprehensive than what is standard in this business (also for sustainable jet fuel).

For the fuel that was used for the first flight from JFK, a full ASTM D1655 analysis (consisting of several prescribed test methods

“The in depth, rigorous planning and the open communication between the partners involved made the project a success”

Nobil Petroleum Testing

“It is always good to be on the cutting edge of technology so that we can provide service to our customers as the industry evolves”

Allied Aviation

to confirm that the fuel meets the required properties of aviation fuel) was performed on the same product three times in a row (Full D1655 shore tank analysis at KMTex, Full D1655 analysis upon loading

and full D1655 analysis before transfer). The three tests were the same and hence all showed conformity to D1655. After the first flight, this process was evaluated as it was observed that the process involved a lot of extra waiting time and costs and also asked for a lot of coordination by all involved companies.

During an interim evaluation meeting with all stakeholders, it was agreed to adjust the process such that it was optimized from a time and cost perspective while still being extensive enough (and still more extensive than standard) to guarantee fuel quality. It was decided to replace the full D1655 analysis upon loading with a key point analysis by Intertek and to perform the full D1655 analysis at JFK by Nobil after the transfer from trucks to refuelers instead of before the transfer; as such the trucks didn't have to wait for the analysis results and could start the transfer directly upon arrival.

Intertek performed the analyses at KMTex after the creation of each new batch as well as the key point analyses upon loading at KMTex. No issues were observed during this process. After each transfer

from tank truck to refueler truck, Nobil Petroleum Testing sampled the refuelers and performed a D1655 Jet fuel analysis. The turnaround times of these analyses were in general very quick and results were distributed for approval by KLM in time for the next flights.

With respect to the quality of the fuel, all analyses that were performed throughout the project showed conformity to the jet fuel specifications. For future projects, it is recommended to engage all parties as early as possible in the process to educate them on sustainable jet fuel quality and certification to prevent the quality control process from being overly onerous.

“The JFK project demonstrates a great way to produce bio jet fuel with reusable material. It is great to take part in new & cutting edge technology and processes like this”

Intertek

Communication & Procedures

When a relatively new product is introduced, it is helpful to have procedures defined and in place well before the acceptance of a product at an airport. The procedures and upfront training helped to ensure that

all parties involved were aware of project expectations.

Prior to each delivery of sustainable jet fuel at JFK airport an update email was sent around with all relevant information for

that delivery. All parties involved were very proactive in updating each other on the progress of their activities throughout the project. As such, changes in schedule or process were communicated well and didn't affect the overall timeline.



Fueling the plane at JFK airport.



KLM flight powered by biofuel, Schiphol Airport.

Conclusions

KLM and SkyNRG in partnership with the Schiphol Group, Delta Air Lines and the Port Authority of New York and New Jersey joined forces to enable the first weekly intercontinental flight program on sustainable jet fuel. In between March 8 and August 22 2013, a total of 26 KLM flights were fuelled with sustainable jet fuel; one from Schiphol airport to JFK airport and 25 from JFK airport to Schiphol airport.

With a total volume of 145,000 gallons (430 Mt) of sustainable jet fuel blend, the program realized approximately 232 Mt of CO₂ savings. The program demonstrated the feasibility of flying regu-

lar scheduled flights on sustainable jet fuel. It also demonstrated that it is possible to organize and coordinate a complex supply chain, and it demonstrated that the numerous parties involved (both public and private) cooperated effectively in this innovative program.

There is room to further optimize the supply chain for sustainable jet fuel and of course there is still a big challenge to reduce the into plane costs of sustainable jet fuel to fossil price parity, but the JFK Green Lane program is an important step for the future of sustainable aviation.

Participating companies

The JFK Green Lane Program was powered by:



SkyNRG's mission is to create sustainable fuels for those segments for which sustainable fuel is the best green solution in the foreseeable future; aviation, marine and heavy trucking. Short term, the company is using co-funding and demand aggregation to create critical scale. Long term, SkyNRG is developing local supply chains for advanced bio fuels that represent a real alternative for fossil fuels. Supported by its independent Sustainability Board, consisting of the Dutch wing of the World Wide Fund for Nature (WWF-NL), Solidaridad, and the Copernicus Institute of Utrecht University, SkyNRG uses multiple technologies and feedstocks that are best suited for particular regions in the world. SkyNRG is now the world's market leader for sustainable kerosene, supplying more than 20 carriers worldwide. Since 2011 the company is expanding into the marine and heavy trucking segment.

- Dirk Kronemeijer, CEO
- Theye Veen, CFO
- Bart Rosendaal, Refining/ Biofuel expert
- Eline Schapers, Operations & Supply Manager



KLM Royal Dutch Airlines was founded in 1919, making it the world's oldest airline still operating under its original name. In 2004, Air France and KLM merged to form AIR FRANCE KLM. The merger produced the strongest European airline group based on two powerful brands and hubs – Amsterdam Airport Schiphol and Paris Charles de Gaulle. Retaining its own identity, the group focuses on three core businesses: passenger transport, cargo and aircraft maintenance. In the Netherlands, KLM comprises the core of the KLM Group, which further includes KLM Cityhopper, transavia.com and Martinair. KLM serves all its destinations using a modern fleet and employs over 33,000 people around the world. KLM is a leader in the airline industry, offering reliable operations and customer-oriented products resulting from its policy of enthusiasm and sustainable innovation. KLM is a member of the global SkyTeam airline alliance, offering customers an extensive worldwide network. The KLM network connects the Netherlands to every important economic region in the world and, as such, serves as a powerful driver for the economy.

- Rob Bijl, General Manager Fuel
- Jurriaan de Jonge, manager Trading & Logistics Fuel department
- Michel Pozas, Vice President Corporate Strategy & Innovation
- Ignaas Caryn, Director Innovation, Corporate Venturing and Biofuels
- Thijs Komen, Head of Tactical Planning, Air Traffic Management
- Marco Schaeffers, Senior Aircraft Handling Support Manager/Quality inspector
- Bert de Koning, Engineer/Quality inspector
- Ajay Dhawan, KLM Service Manager (JFK/KG)
- Tom Fitzgerald, Manager Technical Services NA
- Eileen van den Tweel, Manager Innovation, Corporate Strategy & Innovation



Delta Airlines is a member and co-founder of the worldwide SkyTeam Alliance (which includes Air France-KLM and Alitalia), the largest transatlantic joint venture within the aviation sector. Together with its partners all over the world, Delta offers more than 13,000 daily flights from its hubs in Amsterdam, Atlanta, Cincinnati, Detroit, Memphis, Minneapolis-St Paul, New York-JFK, Paris-Charles de Gaulle, Salt Lake City and Tokyo-Narita. Delta, whose headquarters are situated in Atlanta (USA), employs a workforce of over 70,000 around the globe and has a fleet of more than 700 aircraft.

- Gail Grimmett, SVP, New York
- Athar Khan, Director, New York Sales
- Helen Howes, MD, Safety, Health & Environment
- Leslie Scott, Corporate Communications
- Lindsay McDuff, Corporate Communications

position of the Mainport Schiphol, not just as an airport with a worldwide network but also as a multi-modal hub in the Netherlands and as a driving force of the Dutch economy. Schiphol seeks cooperation at national and regional levels. In this light, Schiphol Group identified four long-term strategic themes in 2012: Top Connectivity, Excellent Visit Value, Competitive Marketplace and Sustainable Performance.

- Jonas Stekelenburg, Manager Sustainability & Innovation
- Mirjam Snoerwang, Corporate Affairs, Spokeswoman
- Jan Snoek – Corporate Affairs, Communication

JFKIAT

JFK International Air Terminal LLC (JFKIAT), the operator of Terminal 4, is the only private non-airline terminal operator at JFK. JFKIAT is a 100% subsidiary of Schiphol USA, a company within Schiphol Group.



Schiphol Group

Schiphol Group is an airport company with Amsterdam Airport Schiphol as its main airport. Schiphol's aim is to create sustainable value for their stakeholders, taking into account the different interests they have. Schiphol's actions revolve around their core values: reliability, efficiency, hospitality, inspiration and sustainability. To remain Europe's preferred airport, Schiphol Group seeks to further develop the airport as a high-quality hub. To this end, Schiphol works together closely with and aims to provide optimal facilities for their home carrier KLM. Schiphol strives to further improve the strong competitive

- Alain Maca, President & CEO
- Jim Fazio, COO
- Rutger Arisz, VP Development Implementation JFK International Air Terminal
- Janice Holden, VP Communications & PR
- John Grasser, Director Airside & Baggage
- Karen Schaeffer, Commercial Manager
- Brian Xavier, Assistant Vice President



Allied Aviation Services, Inc. including its subsidiary and affiliated companies (Allied Aviation) is the largest American domestically owned provider of fueling services to the commercial aviation industry. Allied Aviation is an independently owned and operated company whose core business is providing fueling services for the commercial aviation industry at some of the largest airports in the United States, Canada, The Caribbean, and Latin America. In Canada, the Allied Aviation family of companies includes CAFAS and Airconsol. In addition, the Allied Affiliates owns and operates pipelines, tank farms, and other business activities.

Allied Aviation currently is the designated in-to-plane service provider and/or fuel storage facility operator at 25 major airports. Allied Aviation manages the receipt, storage and operation of airport distribution systems that throughput in excess of 6 billion gallons of Jet-A fuel each year. In addition, Allied Aviation fuels approximately 1.8 million commercial flights per year.

- Gerard Biscardi, Vice President Operations Standards
- Charles Laudage , Director of Maintenance
- Bruce Korrow, JFK Station Manager
- Brian Xavier, Assistant Vice President
- Dave Doerrlamm, Tank Farm Manager
- Sean Bonnet , Assistant Tank Farm Manager



The Port Authority of New York & New Jersey conceives, builds, operates and maintains infrastructure critical to the New York/New Jersey region's trade and transportation network. These facilities include America's busiest airport system, marine terminals and ports, the PATH rail transit system, six tunnels and bridges between New York and New Jersey, the Port Authority Bus Terminal in Manhattan, and the World Trade Center.

For more than eight decades, the Port Authority has worked to improve the quality of life for the more than 17 million people who live and work in New York and New Jersey - a region that supports 8.6 million jobs with an estimated gross regional product of more than \$929 billion.

The Port Authority has a long-term strategic plan to enhance regional capacity and the quality of intercity travel; increase the number and proportion of regional commuters who travel by transit; foster a streamlined goods movement network for faster and more reliable delivery; maintain and modernize existing facilities to ensure safety, security and environmental responsibility; and engage its regional partners in the creation of plans, policies and investments that provide a significantly improved quality of transportation services for regional residents, businesses and visitors.

- Jerry Spampinato, General Manager, JFK Airport
- Jeff Pearse, Deputy General Manager, JFK Airport
- Bob Junge, Manager, JFK Airport Operations
- Dennis McCormick, Manager, JFK Maintenance
- Jim Steven, Manager, JFK Physical Plant and Redevelopment
- Erik Nakutavicius, Supervisor, JFK Maintenance
- Laura Garland, Principal Properties Representative, JFK
- David Kagan, Assistant Director, Business, Properties, and Commercial Development
- Tom Bock, General Manager, Airspace Modernization, Technical, and Operation Enhancement
- Arlyn Purcell, Supervisor, Environmental Programs

Other important stakeholders in the program:

Epic Aviation

In 1999, entrepreneur Danny Perna had a vision of opening a flight school. He started Epic Aviation with only one Cessna 152 at the New Smyrna Beach Airport (KEVB). Today, Epic operates over 33 aircraft, employs over 70 people, and is now a full-service FBO, representing Shell Oil, Cessna, Diamond and Piper Aircraft. Epic also represents the innovative Thielert Centurion Engine. Epic Aviation's mission is to deliver the highest quality service to all of our customers.

EPIC aviation is SkyNRG's partner and act as distributor for the North American market.

KMTex

In 1989, KMCO purchased 30 acres of undeveloped land from Chevron. The site, located on the Intercoastal Waterway (Texas) across from Texaco Island in Port Arthur, was targeted for commercial continuous distillation for the Fortune 100 chemical companies. The initial construction phase continued until 1992 and soon after the first commercial run was made. In 1994, KMTex began operating the site to market custom distillation services for specialty chemicals, petrochemicals, food grade chemicals, agricultural chemicals, and oleochemicals. In 1996, KMTex purchased an additional 12 acres to increase rail siding. Since then, KMTex has grown significantly and continues to expand plant and equipment capacity to meet customer demand.

Intertek

Intertek is a leading provider of quality and safety solutions serving a wide range of industries around the world. From auditing and inspection, to testing, quality assurance and certification, Intertek people are dedicated to adding value to customers' products and processes, supporting their success in the global marketplace. Intertek has the expertise, resources and global reach to support its customers through its network of more than 1,000 laboratories and offices and over 26,000 people in more than 100 countries around the world.

Nobil Petroleum Testing

Nobil Petroleum Testing, Inc. is a small, strong family business, certified by Port Authority of New York, New Jersey and The City of New York as Small Business Enterprise and Woman Owned Business Enterprise. Nobil Petroleum Testing has been the premier fuel testing laboratory serving the airports in the NY Metropolitan area for the past fourteen years. We have provided daily quality control and acceptance testing of Jet Fuel entering JFK International Airport, Newark Liberty International Airport and LaGuardia Airport with a combined annual uplift in excess of two billion gallons! In addition to this routine acceptance testing and periodic full conformity analysis Nobil has been called upon by the Port Authority of NY&NJ, NTSB, FAA, major airlines and in one case the FBI for fuel testing, sampling and inspection services, subsequent to major air disasters. The resulting samples and analysis were used as evidence during subsequent investigations.



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