presented by:
AIR SUMATRA

Dubai, UAE



Why Every Airline Should Use Biofuel ✈

The Air Sumatra® Executive Team



Sean D. O'Brien, CEO

Sean founded and became the CEO of Air Sumatra Airlines® on December 14th, 2011. He has provided professional leadership and has proposed environmentally friendly solutions for the commercial aviation industry.

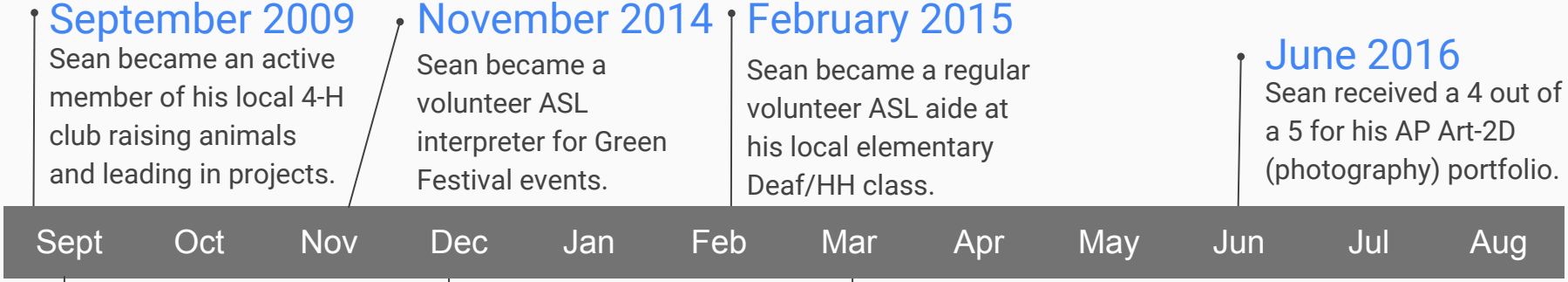
AIR SUMATRA



Vahriz Naimi, President

Vahriz became the President of Air Sumatra Airlines® on June 15th, 2014. As a committed aviation enthusiast, he strives to provide the best enthusiasm and creativity of the airline while helping out with various planning.

Short Timeline of Sean D. O'Brien

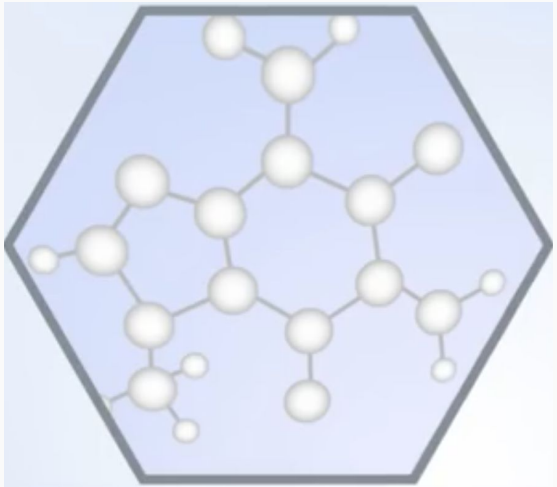


What is Aviation Biofuel and How is it Made?

Biofuel is defined as a type of fuel that is derived from living matter. **Aviation biofuel** that is used for commercial operations is most often a **70% standard jet fuel** and **30% biofuel mix**.

Biofuels come from the convenience of our own sun's energy. The solar energy that is emitted from the sun is captured through photosynthesis by the plants used as feedstocks (raw materials) for biofuel production, which are stored in the plants' cells.

- Aviation/transportation biofuel is made with fresh and living crops such as sugarcane, sugar beet, corn, maize, manure, and byproducts
  - These living crops provide vital boosting capabilities due to their natural fibers which bind and create an identical chemistry to standard jet fuel
- Biofuel also undergoes the same refining procedures as standard fuel



Aviation biofuel and **standard jet fuel** have the same identical chemistry as shown above which has been proven to be a safe design for the trillions of passengers who have flown with both variants. In the past 30 years, fuel was <u>not</u> a direct factor for any aircraft incident according to previous investigation archives from the National Transportation Safety Board (NTSB).

How Does Aviation Biofuel Help Our Fragile Environment?



Aviation biofuel as of May of 2017 comprises of 70% standard jet fuel and 30% biofuel as this is the maximum percentage the current laws will permit due to “safety regulations” and “liabilities.”

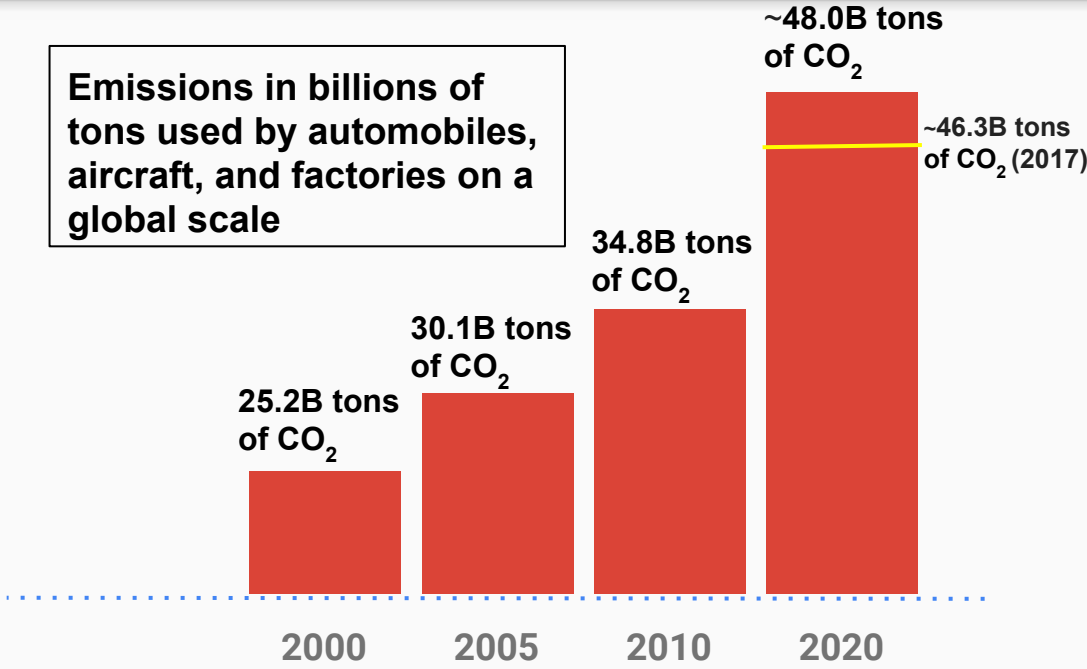
- This mixture helps our environment by using only 70% standard jet fuel as opposed to 100% standard jet fuel for each commercial flight operated using aviation biofuel. This easily eliminates CO_2 emissions by 30% for each flight. *(Imagine if every flight worldwide would operate aviation biofuel!)*
    - Having less CO_2 emissions will allow our Mother Earth and Her nature to regenerate and sustain itself for our society to breathe in the cleaner air that we most desperately need
    - IATA (International Air Transport Association) aims to have a 50% standard jet fuel and 50% biofuel mix by the year 2020 for carriers who operate commercial flights with biofuel

Why Our Mother Earth Needs Biofuel

By the year 2020, there will be a **~52.5%** increase of CO_2 emissions as opposed to the year 2000.

Let us all remember that the Earth is a living, breathing, and unique organism, just like every man and woman all across the world. If it can no longer sustain itself, how will we?

If we were to continue at this rate, imagine what the percentage of CO_2 emissions in the year 2040 will be...



Data source: 2012 BP Statistical Review of World Energy



AIR SUMATRA

7-7-7 Plan

Our plan will revolutionize biofuel used in the commercial aviation industry explaining **7 Pros**, **7 Cons**, and **7 Solutions** to make aviation biofuel the best and most suitable fuel for all airlines

7 Pros of Aviation Biofuel

1. **Cost:** Aviation biofuel has a potential to become less expensive to produce than fossil and standard jet fuels
2. **Unlimited sources:** Aviation biofuel can be produced with fresh crops, common compost waste, and even manure as opposed to fossil fuels and standard jet fuels
3. **Renewability and demand:** Fossil and standard jet fuels take significantly longer to produce and refine as opposed to aviation biofuel; industry leaders of all kinds are unable to meet the demands of global consumerism using standard fossil fuels
4. **Job security and less dependence:** Aviation biofuel can be produced locally providing support for local farmers and become less dependant on foreign resources
5. **Economic stimulation:** Aviation biofuel production plants can bring back jobs to local rural areas and can positively stimulate the agricultural industry as crops will have a higher demand
6. **Chemically flexible:** Aviation biofuel can easily mix with various aviation fossil fuels including Jet A-1 and Jet B (commercial fuels)
7. **Lower carbon emissions:** When aviation biofuel is burned, it emits significantly less carbon output which will lower air pollution

Cost (Pro 1 of 7)

1. Cost: Aviation biofuel has a potential to become less expensive to produce than fossil and standard jet fuels

Statement is true! ✓

- If **aviation biofuel** was produced at a larger quantity or quota, each gallon would be **cheaper** because it would be less expensive to produce billions of gallons during the refining procedures, operations, and equipment as opposed to using the same techniques for only one gallon. Aviation biofuel refineries use this analogy as a marketing tactic to purchase larger quantities and for consumers to repurchase the same fuel at a future date.
    - Example: If someone purchased 1 paper cup, let's say the value would be equivalent to $0.27. If that same person purchased a bulk order of 1,000 paper cups, each one would be equivalent to $0.03. As you can see, each paper cup truly doesn't hold it's value at the original $0.27 value, but companies who specialize in these industries advertise it that way. Therefore, the value to purchase 1 paper cup is significantly cheaper than anticipated.
- If fossil/standard jet fuels and aviation biofuels were produced equally to create a total of 100%, **fossil/standard jet fuels** would cost **more** due to the royalties, high-set prices, and one-sided currency exchanges that foreign countries can create to stimulate the fuel industry. Additional costs for transporting foreign fossil/standard jet fuels is expensive and ridiculous.
- Aviation biofuels can be created in local rural communities nationwide in reach to numerous metropolitan cities removing the necessity of transporting the fuels to other states with added benefits including **NO** royalties, high-set prices, or one-sided currency exchanges.

Unlimited Sources (Pro 2 of 7)

2. Unlimited sources: Aviation biofuel can be produced with fresh crops, common compost waste, and even manure as opposed to fossil fuels and standard jet fuels

Statement is true! ✓

- Aviation biofuel can be produced by **various sources** and would indeed serve as an efficient compost recycling campaign. Even though common compost waste and manure can be used to produce aviation biofuels, fresh crops are more effective due to the natural fibers that are contained. Some opponents may argue that establishing multiple aviation biofuel production plants nationwide will start a food shortage in the United States, however, opening aviation biofuel production plants will benefit the agricultural industry by opening hundreds of thousands of jobs many of which are crop farming careers.
- Fossil/standard jet fuel have only **three sources:** coal, oil, and “natural” gas. The United States is over dependent on foreign nations to supply us with these sources, which are expensive and not eco-friendly. These sources will become even more scarce as international incidents are continuing to escalate in the Middle Eastern region, which is the United States’s main supplier.

Renewability and Demand (Pro 3 of 7)

3. Renewability and demand: Fossil and standard jet fuels take significantly longer to produce and refine as opposed to aviation biofuel

Statement is true! ✓

- Aviation biofuel can be produced in a **matter of days** as the necessary local compost and manure sources are on-site at biofuel production facilities. Aviation biofuel is produced by using the exact same equipment and procedures as fossil/standard jet fuel. This means there will be no transportation necessities which will eliminate potential delays or cancellations which will streamline the production process that will greatly benefit industry leaders within the United States to meet the demands of global consumerism and will decrease all airline expenses significantly.
- Fossil/standard jet fuel are produced in a **matter of weeks** as most sources are specially hand-picked and distributed from foreign nations. Airlines and other industry leaders are taking huge and negative risks as fossil/standard jet fuel costs include transportation, time, and royalties. This is absolutely unacceptable as our domestic and international flight markets/demands are rising unexpectedly.

Job Security and Less Dependence (Pro 4 of 7)

4. Job security and less dependence: Aviation biofuel can be produced locally providing support for local farmers and become less dependant on foreign resources

Statement is true! ✓

- Aviation biofuel can easily **bring hundreds of thousands** of jobs for rural, urban, and metropolis regions within the United States increasing the necessity for farmers and careers focused in agricultural industries. Every gallon of aviation biofuel that is produced within the United States shows the dedication, support, and commitment to lower the natural unemployment rate while providing the support that our gracious farmers deserve. Creating more jobs has been proven to positively affect the economy, thus stimulating and leading in the biofuel industry.

- Fossil/standard jet fuel **lose hundreds of thousands** of jobs for every region within the United States. Various corporations and airlines outsource quality jobs to third-world nations which jeopardize safety and job security. In this century, it disturbs me that most airlines seek for additional profits while aircraft “D” checks are performed in countries such as Nicaragua and China, where AMT mechanic licensing has poor training and unregulated.

Economic Stimulation (Pro 5 of 7)

5. Economic stimulation: Aviation biofuel production plants can bring back jobs to local rural areas and can positively stimulate the agricultural industry as crops will have a higher demand

Statement is true! ✓

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Chemically Flexible (Pro 6 of 7)

6. Chemically flexible: Aviation biofuel can easily mix with various aviation fossil fuels including Jet A-1 and Jet B (commercial fuels)

Statement is true! ✓

- The design of both aviation biofuel and fossil/standard jet fuels such as Jet A-1 and Jet B **has been proven** to be a safe and reliable design created by chemists, physicists, and other scientists. According to an archive of NTSB (National Transportation Safety Board) documents and previous federal investigations of aviation incidents, aviation biofuel or Jet A-1/Jet B fuels did **not** directly result or cause any aviation incident within the last 30 years. The first test flight with aviation biofuel occurred in 2009 while the first commercial passenger operations using aviation biofuel occurred in 2011. Using the exact same scientific concepts of aviation fossil fuels for aviation biofuel clearly doesn't pose any safety risks.

Lower Carbon Emissions (Pro 7 of 7)

4. Job security and less dependence: Aviation biofuel can be produced locally providing support for local farmers and become less dependant on foreign resources

Statement is true! ✓

- Aviation biofuel can be produced in a **matter of days** as the necessary local compost and manure sources are on-site at biofuel production facilities. Aviation biofuel is produced by using the exact same equipment and procedures as fossil/standard jet fuel. This means there will be no transportation necessities which will eliminate potential delays or cancellations which will streamline the production process that will greatly benefit industry leaders within the United States to meet the demands of global consumerism and will decrease all airline expenses significantly.
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7 Cons of Aviation Biofuel

1. **Fertilizer:** More organic fertilizer from animal manure will be required to sustain the soil's natural nutrients and meet the demands for the crops, but can eventually cause algae problems in nearby lakes, rivers, and ponds
2. **Potential food shortages:** An increased production of crops that are committed to solely help produce aviation biofuel may create an imbalance of available healthy food sources
3. **Regional suitability:** Most aviation biofuel producing crops need specific weather and environmental characteristics including temperature, sunlight, and humidity
4. **Loss of habitats:** The production process can require more land to be converted into industrial settings which can disrupt active habitats
5. **Lack of publicity:** Aviation biofuel is not widely available and the majority of people are unaware about its advantages
6. **Water usage:** Producing aviation biofuel can require a large sum of natural clean water which could drain local drinking and irrigation supplies
7. **Monoculture:** This process can deprive necessary nutrients due to the lack of diversity of plants within the same area of land

Fertilizer (Con 1 of 7) + Solution

1. Fertilizer: More organic fertilizer from animal manure will be required to sustain the soil's natural nutrients and meet the demands for the crops, but can eventually cause algae problems in nearby lakes, rivers, and ponds

Statement is true! ✓

How can we remove the algae that is caused by organic fertilizer?

Natural Way

1. Maintain the heavy use of heavy organic fertilizer because the crops will need a natural way to expedite the growing and harvesting process.
2. Plant large and common trees, such as the Quercus alba (white oak), to block sunlight which helps algae grow.
3. Transfer crowded and overpopulated aquatic animal environments into the algae-infested location.
4. The natural eco-system and aquatic animal species will take it's course to remove the algae as a source of food while keeping and protecting a newly introduced habitat.

Algae removal by mechanical equipment benefit

- Process would store algae that can later be used to convert into algae biofuel

Hypostomus plecostomus (Suckermouth catfish) benefits

- High likelihood of eating algae
- High availability at most aquarium stores
- Friendly with other aquatic species
- Can withstand a minimum temperature of ~55°F

Non-Natural Way

1. Eliminating algae using chemical treatments would require the use of copper sulfate (cutrine), which is a heavy metal compound that has been proven to be harmful to people, plants, and animals.
2. Operating mechanical equipment would be a tedious upkeep and would need to be performed daily. This will also disturb established habitats and active environments for animal species, if active.

***Note**: Environmental Impact Reports (EIR's) would be conducted either way to ensure the safety and welfare of our animals and environment if this proposal is approved*

Potential Food Shortages (Con 2 of 7) + Solution

2. Potential food shortages: An increased production of crops that are committed to solely help produce aviation biofuel may create an imbalance of available healthy food sources

Statement is true! ✓

How can we reduce potential food shortages during the production of aviation biofuel?

Use Other Sustainable Sources

1. Instead of using fresh crops that are edible, we can easily streamline the process of incorporating our compost waste, including rotten crops and animal manure, into the production operations that can be accessible from local resource recovery companies.

Encourage agricultural occupations benefits

- Will assist with the current shortage of agricultural industry workers
- Will be conducted through scholarship programs, donations, and incentives
- Tax-credits and tax-deductibles will be received upon donations to 504(c)(3) agricultural organizations

Using other sustainable sources benefits

- By implementing more compost waste and animal manure into aviation biofuel productions, the United States will not be forced into using fresh crops for the production process
- The United States will become less dependent on sources and fuels that originate from foreign nations

Encourage Agricultural Occupations

1. Air Sumatra® and future partnerships with agricultural companies will be beneficial for our future crop farmers.
2. With our strategic partnerships, we will work closely with various youth agricultural organizations such as 4-H and the FFA to encourage occupations on focusing to restore our agricultural industries.

***Note**: Environmental Impact Reports (EIR's) would be conducted either way to ensure the safety and welfare of our animals and environment if this proposal is approved*

Regional Suitability (Con 3 of 7) + Solution

3. Regional suitability: Most aviation biofuel producing crops need specific weather and environmental characteristics including temperature, sunlight, and humidity

Statement is true! ✓

Where are some of the most suitable locations for growing aviation biofuel crops?

Potter Valley, CA (95469)

1. A small urban and hard-working farm community in Mendocino County, California
2. Resides within Zone 9A according to the United States Department of Agriculture (USDA)
3. 8-acres of land is currently owned by family members of Sean

***Note**: Environmental Impact Reports (EIR's) would be conducted either way to ensure the safety and welfare of our animals and environment if this proposal is approved*

Zone 9A Characteristics

- Growing season that begins in late February and lasts through December
- Winter low temperatures that range from 18°F to 24°F
- Very hot summers
- Rain between November and April, averaging 2-inches per month
- Constant sunshine during the growing season
- Capable of growing corn, sugarcane, switchgrass, and various sanctuary animals that can provide manure

Loss of Habitats (Con 4 of 7) + Solution

4. Loss of habitats: The production process can require more land to be converted into industrial settings which can disrupt active habitats

Statement is true! ✓

How can we produce larger quantities of aviation biofuel without converting natural lands?

Less Construction and Compacting Resources = More Room for Natural Habitats

Use Local and Sustainable Farm Lands

1. Using local and established farm lands that do **not** require industrial conversions or plant hormones to grow and harvest crops is beneficial for our environment and animals
   a. This will benefit local economies, increase occupancy, and will encourage more agricultural activity

Partner with Established Refineries

1. Partnering with major corporations such as ExxonMobil, Valero, and BP will:
   a. Reduce expenses and the construction of additional refineries
   b. Allow workers to keep their seniority with the support of representing work unions
   c. Use same 100% Jet A-1 workers, equipment, technology, and facilities to create biofuel
   d. Create jobs within these shared facilities

Lack of Publicity (Con 5 of 7) + Solution

5. Lack of publicity: Aviation biofuel is not widely available and the majority of people are unaware about its advantages

Statement is true! ✓

How can we spread the benefits and true message about aviation biofuel?

Civic Engagement

1. Engagement in discussions about the benefits and usage of aviation biofuel at local and national events, including sustainability events such as the Green Festival
   a. This will establish personable supporters and a fan base that will have a commitment for change and action

Government Engagement

1. Contact our local congressmen and congresswomen to implement the 7-7-7 Plan to prove it will be reliable and efficient for everyone
   a. Approval of this plan will issue a “green light” to erase the cons and problems of aviation biofuel
   b. As we continue to build on our strengths, the partnership between the Government and involved parties will allow us to build strategic connections and partnerships with other interested leaders in the House of Representatives, Congress, and the Executive branches to pursue our progress

Water Usage (Con 6 of 7) + Solution

6. Water usage: Producing aviation biofuel can require a large sum of natural clean water* which could drain local drinking and irrigation supplies

Statement is mostly true! ✓ *

As you can see, we do not technically need natural clean water to produce aviation biofuel. We can use various kinds of water, including contaminated, after treatments and conversions are applied successfully. Using these techniques will allow our local to continue having natural drinking and irrigation supplies.

How can we reduce the amount of natural clean water to produce aviation biofuel?

Purifying Contaminated Water and Other Common Techniques

1. **Desalination:** Is the process of converting saline water (generally seawater) into fresh water
2. **Boiling:** Is the oldest and most effective way to remove microbes and other diseases
3. **Bioremediation:** Is a process that uses microorganisms in order to remove and extract impurities such as **alkanes, perchlorates, and metals**



***Note**: Environmental Impact Reports (EIR's) would be conducted either way to ensure the safety and welfare of our animals and environment if this proposal is approved*

Monoculture (Con 7 of 7) + Solution

7. Monoculture: This process can deprive necessary nutrients due to the lack of diversity of plants within the same area of land

Statement is true! ✓

Monoculture is the process of cultivating a single crop in an area. In other words, it is the process of growing and harvesting the same crop in the same area.

Disadvantages of Monoculture in Plants/Crops

- Reduced diversity of plants
- Increased difficulty in nutrient recycling
- Increased pesticide use
- Habits of unsustainable practices



What is the solution for monoculture?

Don't use this process! Airplanes deserve to consume natural and organic crops just like humans. They deserve it for all of the work they have done for us!

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How We Can Implement the 7-7-7 Plan

Step 1

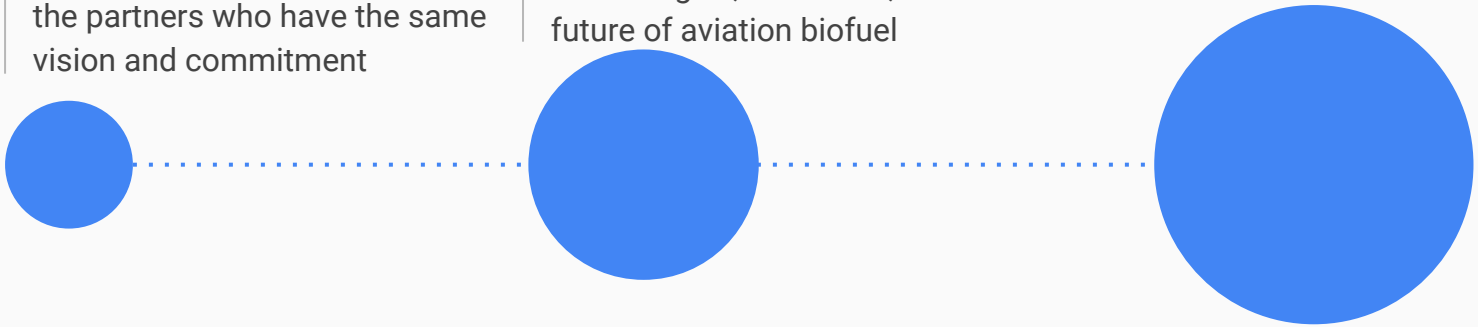
Travel to various domestic and international events to seek for the partners who have the same vision and commitment

Step 2

Work strategically with our partners to further develop the technologies, resources, and future of aviation biofuel

Step 3

Reach out to our local congressmen and congresswomen to slowly implement the plan in cities nationwide



Q & A Time!



FLY THE INDONESIAN SKIES™

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