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Delta Airlines – A Carbon Neutrality Pact to 2050 and Beyond A Public Policy White Paper

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Abstract

As part of a new global climate initiative, the United States very one Atlanta based Delta Airlines has recently announced to the world they will be embarking on an initiative to provide a never-before-seen technique of air travel; Completely carbon-neutral air transport and net-zero carbon emissions across all operational sectors of their fleet by 2050. Delta Airlines has now become the first official United States-based airline to promise net-zero carbon flying to the entire public within the next few decades, and the airline is set on being the catalyst in generating positive change for the United States aviation industry and its impact on the environment, domestically and beyond.

In pursuit of this major climate policy, Delta Airlines has showcased its goal to provide carbon-neutral flying as a revolutionary change that has been much needed for many decades. As the airline has decided to set its fiscal and corporate efforts into addressing many of the world's increasingly unregulated climate emissions, Delta believes that this step in pursuing clean flying is just one way the airline can help to do its part in helping to reduce the transportation sectors global carbon footprint. Moving with speed and efficiency, Delta airlines has since implemented a cohesive and theoretically sound policy objective in pursuing net-zero carbon emissions in all finite areas of operations for their set deadline of 2050. The airline's blueprint and infrastructural overhaul are deeply highlighted in many policies analysis papers released by their corporate headquarters, as the allocation of investment, the altering of operational changes, and all worldwide airport operations and employees alike will be affected by this new airline climate policy.

Keywords

Delta, Airlines, Energy, Policy, Fuel, Future, Streamlined, Aviation, Sustainable

Delta Airlines – A Carbon Neutrality Pact to 2050 and Beyond a Public Policy White Paper – *Drew P. Lemon, Gettysburg College*

I

Introduction

As part of a new global climate initiative, Delta Airlines has recently announced to the world they will be embarking on an initiative to provide a never-before-seen technique of air travel. This included completely carbon-neutral air transport and a transition towards net-zero carbon emissions across all operational sectors of their fleet by 2050. Delta Airlines has now become the first official United States-based airline to promise net-zero carbon flying to the entire public within the next few decades, and the airline is set on being the catalyst in generating positive change for the United States aviation industry and its impact on the environment, domestically and beyond.

In pursuit of this major climate policy, Delta airlines has showcased its goal to provide carbon-neutral flying as a revolutionary change that has been much needed for many decades. As the airline has decided to set its fiscal and corporate efforts into addressing many of the world's increasingly unregulated climate emissions, Delta believes that this step in pursuing clean flying is just one way the airline can help to do its part in helping to reduce the transportation sectors global carbon footprint. Moving with speed and efficiency, Delta airlines has since implemented a cohesive and theoretically sound policy objective in pursuing net-zero carbon emissions in all finite areas of operations for their set deadline of 2050. The airline's blueprint and infrastructural overhaul are deeply highlighted in many policies analysis papers released by their corporate headquarters, as the allocation of investment, the altering of operational changes, and all worldwide airport operations and employees alike will be affected by this new airline climate policy.

As Delta moves to implement net-zero carbon practices in all functionalities by 2050, the airline certainly has a long road ahead, as many logistical challenges pertaining to employment and operational changes, coupled with millions upon millions of dollars of investment have been deemed essential for this operational visionary to become a reality. Delta airlines believe that with the right mindset and drive from employees across all levels of the company, along with the appropriate, timely, and strategic investment of funds with corporate partners, that the airline will become a sweeping leader in making sustainable air travel the future of the aviation industry.

This white paper will concisely analyze all aspects of Delta's carbon neutrality mission while analyzing all necessary tools that are essential in making the airline's policy goal a feasible reality by the publicly promised deadline of 2050. Prior to any analysis sections of Delta's carbon neutrality policy, the *preliminary* section of this paper will focus heavily on what catalysts spurred Delta's policy to pursue its climate initiative, while also discussing the evolution of its climate ambitions that have occurred to make the policy what it is today. In the analysis portion of Delta's exceptionally large climate policy summit for change, this paper will concisely explore the 1) Strengths, 2) Weaknesses, 3) Opportunities and 4) Threats (a formal SWOT analysis) that Delta will face as the airline moves forward in the coming months and years in pursuing their climate policy.

As further contained within the specific SWOT analysis sections of this white paper, this policy exploration will take a key interest in exploring the relevant *1) stakeholders* involved in the policy that is essential for Delta to operationalize carbon neutrality. Similarly, the subsections of this SWOT analysis will also contain pertinent evaluations and analyses pertaining to the airlines *2) implementation* of the policy, as well as their *3) required outputs, outcomes, and impacts* on all areas of public and private sectors of society and the environment. These sections of analysis will also include a policy recommendations section moving forward, critiquing how the policy can be

improved while observing potential shortcomings that may arise as the airline move to implement carbon neutrality across all areas of its fleet.

In all, this policy white paper seeks to provide the structural framework for Delta's net-zero carbon neutrality policy for its 2050 goals, while also providing all relevant insights into its workings and implications once enacted into all sectors of the airline's operations. Delta's mission to reduce the negative externalities of any carbon emissions while flying is changing the eras definition of the modern jet age while showing that the airline's massive undertakings to save the climate and its health are nothing short of revolutionary.

II

Delta's Carbon Neutrality – A Policy Background

As Delta airlines move to push goals of achieving sustainable flying, the company's decision to become a carbon-neutral operator by 2050 has only come to fruition and knowledge of the general public within recent months. However, Delta and other major US-based airlines alike have been carefully examining the possibility of how and when to implement new forms of clean energy flying for the past several years. Since the beginning of various climate activist movements in the early 1970s, many progressive Americans began to show our nation and the world all of the negative impacts that human activities, like transportation and manufacturing, have on the environment through global carbon and fossil fuel emissions. However, it wasn't until the past decade that many climate scientists began to closely monitor the rising of global air temperatures, and pinpoint one of the largest contributors of increased global heat and emissions to the air-transportation sector.

As a result of these scientific developments, the international airline industry has recently become determined in pushing ambitious climate goals in aiding to reduce the overall level of Carbon Dioxide (CO2) emissions released during mass times of worldwide air travel. Climate

activists and sustainable energy advocates across the world are sounding the alarm on all sectors of the aviation industry and other forms of mass transportation and energy production, like gas automobile cars, and fossil fuel burning, citing that these inefficiently continued behaviors are the reasoning for increased pollutant levels, the irradiation of the many of the world's ecosystems and the overall depletion of air quality across many corners of the world with excessive heating. As one of the largest used and non-excludible industries to society, airlines like Delta and others across the world have heard and seen the warnings from climate scientists and experts concerning the negative externalities of their jet operations and have now decided to act on what they believe is essential to saving the sustainable future of our planet.

The main catalyst that initiated Delta's ambition to push for cleaner air travel in the wake of new climate science came during the height of the COVID-19 virus. As the pandemic swept across the world, its peak times of infection caused many international governments to pursue national lockdowns that forced airlines to halt operations on an international scale. With the Center for Disease Control (CDC) suggesting no-international air travel during the height of the pandemic in 2020, coupled with nations prohibiting infected states across the globe from allowing passengers to travel in and out of their own countries, Delta was forced to halt over 70% of its international and domestic operations with a 64% cut in operating revenue during the pandemic (CBS News, 2021). As a result of passenger demand loss for travel over lockdowns and people's fears of possible COVID-19 contraction by flying, Delta saw a loss of $12 Billion (CBS News, 2021) forcing the airline to place over 550 of its current operating fleet in storage, as there simply wasn't enough travel demand to operate these aircraft (Delta Airlines, 2021).

However, Delta cleverly used the 2020 pandemic and its time of lost passenger demand to re-invent the environmental efficiency of the company and its fleet. Delta chose to operationalize an opportunity for change during its massive cut in passenger air travel during the pandemic, as the

airline believed that implementing carbon offset and neutrality programs with little operations would streamline the efficient aircraft transition to green travel the airline has been planning for years. Delta cited in a press release that the airline was audacious in its commitment to carbon neutrality from March 2020 onward, as this era of changing passenger demand has "allowed the ideas of carbon neutrality to come to fruition with swift impact through immediate actions, coupled with long-term investments to combat climate change." (Delta Airlines News Hub, 2021).

Concerning this, Delta used the pandemic and its paralyzing of passenger travel in the airline industry to invoke their carbon neutrality mission for 2050 in the short run by retiring older airplanes that were less fuel-efficient and more expensive to maintain. Delta's retirement of these older planes reduced fuel efficiencies and maintenance costs of older planes that could be used as capital to invest in new green travel initiatives. Delta cited that their parking of more than 700 older aircraft during the pandemic "helped reduce fuel expenses and output by over 40% and by reducing costs to $1.9 billion compared to the same period a year ago. Delta also saw its maintenance expenses down by as much as 90 percent during 2020, according to Delta's 10-Q filing (CBS News, 2021). The airline also cited in a press release that they used the short-run implications of loss travel demand enabled the airline to embark on its intention to "achieve carbon neutrality by directly reducing emissions through the fleet and operational efficiencies and retirements and addressing remaining emissions through carbon removal and offset project investments." (Delta Airlines News Hub, 2021).

Figure I – The Parking of Delta's Older, Costly, and less Fuel-Efficient Airplanes during Pandemic

[1]

Image I

Delta's practice of gradually removing less fuel-efficient airplanes to initiative their move to carbon neutrality operations during the pandemic can be seen above. In the picture, Delta removes a small portion of its total 700 retired planes out of service during COVID-19 and lost passenger demand at one of its hub Airport's unused runways in Salt Lake City, UT. In this image on the left, a series of Boeing 757-200 model planes can be seen parked, with a collection of McDonald Douglas MD-88 and MD-90 rear engine planes in the back right of this image. These planes were said to be some of the most expensive and fuel-inefficient planes in the fleet. All McDonald Douglas planes in this image and many of the 757-200 series model planes and their fleet-maintained airframes over 35 years old and have since been retired to cut down on costs and fuel inefficiencies (Narishkin et al., 2021).

Delta's practice of removing inefficient airplanes from their fleet during COVID-19 enabled the airline to realize how much they were spending to maintain older inefficient planes rather than investing these costs as capital in new carbon neutrality operation projects. Thus, the retirement of

[1] Delta Airlines Aging Fleet in Salt Lake City, UT
https://www.businessinsider.com/delta-addressing-its-aging-plane-problem-due-to-the-pandemic-2020-10

older and inefficient planes began to occur, and the funds were invested to enhance their fleet with new efficient travel and move toward their carbon neutrality goal for 2050.

While the COVID-19 virus had many long-enduring and trying implications associated with lost airline funds and passenger profit losses, the pandemic and its externalities were, in many ways, a benefit to the airline industry, all of society, and certainly the environment. The pandemic put Delta's operations on pause and enabled the airline to step back and see the ineffectiveness of their operations while showing the airline that streamlined costs and operational improvements would help Delta immensely in achieving their carbon neutrality pact. Without the pandemic as the catalyst for change, Delta airlines may not have been able to set out on their ambitious climate agenda and improve inefficient operations as recently as the airline has done. It's evident that the pandemic was a catalyst for change from many standpoints, as it built Delta's pursuit of carbon neutrality while placing the environment at a much higher priority across the world. The pandemic made Delta and all other US airlines commit to carbon neutrality in some form or another within the next coming decades.

III

"SWOT" Analysis

Delta's Carbon Neutrality – *Policy Strengths*

A - Reductions in CO2 Emissions and Consumption of Fossil Fuels

As Delta Airlines introduced its policy to the aviation industry and the traveling public in October earlier this year, it was very clear that there will first exist many strengths pertaining to Delta's commitment to pursue carbon neutrality. These strengths that will arise as this policy is implemented will mainly be shown in several policy outcomes and impacts that generate positive externalities for the public in the next coming years, should Delta implement carbon neutrality by 2050. Similarly, several of Delta's stakeholders and corporate partners are an asset to the airline's

new policy, as they will be key players in integrating and pursuing this climate initiative, in the long run, are a critical strength and asset that underlies the fabric of the company's new environmental, policy.

The first notable strength that arises from this policy's implementation is its ability to reduce consumption and emissions by substantial amounts not only across the airline industry but the travel industry itself. This strength of the policy was analyzed in Delta's carbon neutrality analysis in brief 3, which analyzed potential energy outcomes and impacts. See Delta's Policy Brief 3. Within the publication of brief 3, the most observable and quantifiable outcome strengths that will arise from Delta's new carbon-neutral policy will be 1) a massive reduction in consumption of fossil-based fuels and 2) a reduction in CO2 emissions.

As Delta begins to move away from the usage of fossil-based non-renewable fuels, the airline has already seen major improvements in output in the short run with the enactment of its carbon neutrality agenda. In 2020, the company retired more than 200 older aircraft that were not capable of operating on biofuels, but only fossil fuel jet-petroleum. Newer aircraft that will be implemented as a result of this policy has been calculated to be roughly 25 percent more fuel-efficient per seat mile with a decrease in fossil fuel consumption. Due to those fleet decisions and reduced passenger loads amid COVID-19, Delta's fleet was nearly six percent more fuel-efficient per available seat mile in 2020 than in 2019, saving 117 million gallons of fuel over the year. That is equal to the emissions from the annual electricity consumption of almost 200,000 households, or roughly all households in the city of Atlanta (Delta Airlines News Hub, 2021).

Similarly, Delta can also expect greater strengths in its new proposed policy with reduced fuel usage in the medium and long run. This output reduction in long-term fuel consumption will arise from more of Delta's partnerships with sustainable fuel engineers and investors. While the new fuel technologies set of offset fossil fuels are expensive today, Delta believes that the outputs

of reduced petroleum will have great future potential while being the first step towards zero-impact aviation (Delta Airlines News Hub, 2021). Delta's largest output reduction in fossil fuel usage is expected to arise from Sustainable Aviation Fuel, or SAF, which is an alternative to fossil fuels and is projected to reduce Delta's emissions by up to 80 percent during its full lifecycle by 2030. Examples of SAF include biofuels and synthetic fuels (Delta Airlines News Hub, 2021).

In relation to this, this policy has enabled Delta to set its medium-term goal as to replace 10 percent of its jet fuel refined from fossil fuel with SAF by the end of 2030. The company has agreed to purchase a future supply of 70 million gallons of sustainable aviation fuel per year. That includes 10 million beginning in 2024 from Gevo and 60 million beginning in 2025 from Northwest Advanced Bio-Fuels, representing a projected 1.7 percent of Delta's total annual fuel consumption, adjusted for 2019 flying levels (Delta Airlines News Hub, 2021). These investments, once fully implemented by 2030, are expected to produce an output of over 35-40% reduction in fossil fuel-based petroleum consumption (Delta Airlines News Hub, 2021). These reductions in fossil fuel emissions are a clear strength of this new policy.

Delta Airlines is also expected to showcase for of their policy strengths pertaining to major outputs, as the airline is set to reduce CO2 emissions in the short and medium run as the airline transitions to biofuels. In a recent study done by 8 billion trees, a climate strategist group, Delta's current output in biofuels is expected to reduce CO2 emissions by 16% in 2030 compared to 2005. A pictured graphic is included below to illustrate these changes in carbon emissions over the time of Delta's pursuit of carbon neutrality.

Predicted Outputs in CO2 Reduction by 2030 – Delta Net Carbon

[2]

Image III

While Delta's predicted output reduction of CO2 emissions by 16% is impressive to other US Airlines, Delta will need to look abroad to see what other Airlines from nations across the world are doing to achieve more viable carbon capture or carbon offset programs. New technologies exist across the world and have been implemented by other airlines that would further reduce emissions that have not yet been explored here in the United States. Delta could also attempt to reduce emissions by more than 16% with new carbon offset strategies from the international scale. Delta should consider consulting with corporate strategists from other leading CO2 emission-reducing airlines outside of the US, like British Airways and Austria's airline Qantas.

B- Leading

Environmental Change with Lasting Impacts

In examining the strengths concerning the impacts of Delta's carbon neutrality agenda on the US public and private sectors, it's apparent that environmental sustainability and environmental leadership are at the forefront of a successful net carbon emissions campaign. If Delta can achieve

[2] Delta Airlines Journey to Carbon Sustainability, https://www.delta.com/us/en/about-delta/sustainability

its climate promises by the end of 2050 like it had promised this previous year, the airline would be showcasing its policy strengths as it will become a leader in clean emissions and the aviation industry, setting the precedent for the future of air travel.

Most evidently, Delta's carbon neutrality pact would impact the environment, providing an overall healthier planet and air traveling environment. In addition to exploring investments in SAF and research and development for new technologies, Delta plans to further extend its impact on helping to create a better eco-friendly air travel industry. The airline had committed to spending more than $30 million to address 13 million metric tons of carbon dioxide emissions from March 1 to Dec. 31, 2020, through a carbon offset portfolio (Delta Airlines News Hub, 2021). That is equal to the carbon sequestered by 17 million acres of U.S. forests in one year, enough to cover the state of West Virginia (Delta Airlines News Hub, 2021). As carbon offset is verified, quantifiable emissions reduction as a result of an investment in a project would be designed to avoid, reduce or remove carbon dioxide from the atmosphere. If Delta continues to divulge investments into projects of this size and magnitude, in the long run, this airline itself would singlehandedly avoid the releasing of an average of 5 million metric tons of carbon to the atmosphere per year (Delta Airlines News Hub, 2021).

Concerning this, Delta's creation of a total carbon-neutral airline would showcase environmental leadership at a never before achieved level, impressing and impacting society in being the first-ever airline in the history of the aviation industry to pursue environmental leadership at the forefront of corporate operations. However, Delta and its policy initiatives have already generated impacts on the public as an environmental leader has already thus far been recognized as an achievement by many industry professionals. From being the first and only U.S. airline to "voluntarily cap greenhouse gas emissions at 2012 levels to last year's commitment to be the first carbon-neutral airline globally, Delta has a longstanding commitment to sustainable air travel

(Delta Airlines News Hub, 2021). Delta was the No. 1 airline named among America's Most Sustainable Companies by Barron's in 2020, the only U.S. airline included in the 2021 S&P Global Sustainability Yearbook while receiving the Vision for America Award by Keep America Beautiful and Captain Planet Foundation's Superhero Corporate Award. Delta has also earned a spot on the FTSE4Good Index for six consecutive years and the Dow Jones Sustainability North America Index for ten consecutive years (Delta Airlines News Hub, 2021).

While Delta's sustainability impacts on the environment and the industries in the US economy are paramount, the airline should be cautious about how their policy will impact their workers in different fuel sectors of the company. It's clear that changes to sustainable biofuels, and eventually electric plane operations, will change the workforce of Delta in some way. It is recommended that Delta pursue a professional corporate employment analysis to better understand how their change to carbon neutrality will affect the patterns of job opportunities and employment of their labor force working in the current fuel operations of the airline.

C- Airbus as a Stakeholder

The last and most noticeable strength according to Delta's carbon neutrality policy comes from the Occitanic, France-based Airbus Aerospace Engineering Group. Airbus has long withstood a positive reputation among the airline industry as a reliable and financially sound company for which to invest in new airplanes among airlines worldwide. In recent months, Delta has been working closely alongside Airbus as it pertains to engineering new planes to run off sustainable fuels, and it's clear that Airbus and its advanced technology in aerospace development and clean energy flying makes its partnership with Delta a major asset, as the airline moves through its pursuit of implementing sustainable fuels.

According to Delta, Airbus now supplies more than 44% of the airline's current fleet composition, with 361 aircraft of different sizes in service across the world. As many of Delta's

Airbus aircraft are aging in technology and performance (with some more than 20 years old), Airbus is now looking for ways to re-enhance the performance of newly designed aircraft to produce a more efficient, conscientious, and streamlined level of air transportation. As Airbus is developing and testing new technologies to implement across aircraft designs, the organization's superb leadership and financial standing, coupled with innovative advanced science in the aerospace forecast a promising level of growth for Delta's carbon neutrality goals.

In recent months, Airbus has been spearheading the lead on alternative jet power usage and development as the company has just inaugurated a facility in Filton, UK, for testing categorized propulsion jet systems and fuels for European air travel (Hepher, 2021). In this facility, airbus has performed tests and studies on current levels of airplane CO2 emissions over each new jet generation, and thus became the first plane maker to categorize and publish "Scope 3 Emissions" when designing new aircraft. Scope 3 emissions are pollutants from activities of a firm not controlled by the reporting organization, but that the organization indirectly impacts its value chain (EPA Center for Corporate Climate Leadership, 2020). These pollutants can range from waste generated in company operations, employee commuting, and other operational fuel and energy-related activities and are not required to be disclosed by a firm (EPA Center for Corporate Climate Leadership, 2020). However, Airbus is one of a few companies that is finally reporting levels of scope 3 emissions to lessen their environmental footprint when testing alternative renewable jet technologies. It is conclusive that Airbus's extra commitment to providing corporate transparency in their emission testing practices would aid in Delta's adoption of new, sustainable Airbus planes.

Concerning this, Airbus is now implementing two new forms of alternative jet power that have not yet been utilized by any other firm in the industry. The company has now publicized 1) hydrogen as the preferred energy source for future airplanes, pledging to introduce the first fully hydrogen-powered commercial plane in 2035, and 2) Hybrid-electric alternatives to power larger

aircraft that cannot yet be powered solely by hydrogen (Hepher, 2021). Airbus is pledging to have both large and small size completely hydrogen-powered airplanes in the long run but cannot achieve these measures without utilizing an existing short-run hybrid-electric propulsion technology (Hepher, 2021). When a spokesperson for Airbus was asked how these new hybrid technologies will help United and Delta Airlines reach carbon neutrality, Airbus claimed "only a combination of new technologies, including hydrogen, will enable us to achieve zero emissions for our airline's deadlines (Hepher, 2021)."

With this, Airbus may even possess such advanced technology to be able to implement hydrogen-powered planes in the near future. In the image below is an example of three types of planes developed by Airbus as part of the company's ZERO (E) or ZERO Emissions hybrid fuel program. The prototypes of these planes were released by airbus with the chart below, as these are the models of smaller-medium size hydrogen-powered plane prototypes Airbus is currently pursuing (The Airbus Group, 2021).

Image III – Hydrogen-Powered Prototypes of Airbus Planes

[3]

Image III

[3] The Airbus Aviation Group Commitment to Hydrogen Powered Planes, https://www.airbus.com/en/innovation/zero-emission-journey/hydrogen/zeroe

At Airbus, the company has the ambition to develop the world's first zero-emission commercial aircraft by 2035 (The Airbus Group, 2021). Hydrogen propulsion will help airlines to deliver on their ambitions of reduced emissions to Delts. Airbuses ZERO-E concept aircraft enables the company to explore a variety of configurations and hydrogen technologies that will shape the development of our future zero-emission aircraft for their partner airlines (The Airbus Group, 2021).

Engineering experts at Airbus claim that their strategy to produce zero-emission airplanes will only be achieved if they can first get hydrogen to power relatively small planes to start, and then galvanize green investments for full hydrogen technologies (Hepher, 2021). However, this strategy poses an issue as full hydrogen power jet planes will be required at a massive volume for many airlines that will take years to develop, coupled with completely new infrastructure to manage hydrogen model planes. Other airbus engineers have proposed exploring "open rotor engines" with visible blades using a mixture of traditional turbines and electric propulsions for future replacements of Delta's fleet and other airlines alike (Hepher, 2021). Delta currently has 240 Airbus a320 equipment, with many quickly reaching their airframe age limits. These newly proposed ideas of hybrid-electric propulsions from the innovative Airbus could soon be future replacements to Delta's older Airbus planes, like the a320.

It is conclusive that Airbus as a stakeholder is a significant stakeholder strength for Delta, as the company pursues continuous dedication to ensuring airlines like Delta can meet their carbon neutrality goals with sustainable equipment. Airbuses' proposal to lay the groundwork for their future concept of zero-emission aircraft travel with hybrid-electric propulsion technologies can be justifiable. Airbus has decided that a combination of existing technologies must be used in the short run to inevitably meet its goal of completing hydrogen-powered aircraft in the long run. It is important to note that the Seattle, WA based airplane manufacture Boeing also comprises much of

Delta's fleet. While this airplane engineer isn't as technologically advanced as Airbus, the company still offers useful technologies that serve as strengths for Delta pursuing its policy. See Delta Policy Brief 2 Boeing as a stakeholder.

Above all, Airbus has a strong financial future with much support from its airlines and investors. Financial experts claim that airbus continuously has far better performance than that its counterparts regarding performance and sales. Likewise, Airbus continuously has airlines placing substantially higher frequencies and quantities of aircraft orders than its counterparts, which often only deliver a fraction of the number of planes to airlines as Airbus (Hepher, 2021). These reoccurring patterns of high airplane orders show an elevated level of airline trust in airbus manufacturing and technologies, showing that airbus production would be desirable for Delta's new fleet of sustainable aircraft.

IV

"SWOT" Analysis

Delta's Carbon Neutrality – Policy Weaknesses

While Delta Airlines does possess much strength pertaining to different aspects of the implementation of its carbon neutrality policy, the airline's new proposition does also seem to maintain several weaknesses that may hinder the company from offering its zero-emissions travel by 2050. Several logistical concerns regarding Delta's policy, such as its 1*) massive, pandemic hit fiscal investments* into fuel and airplanes, coupled with *2) the inability to build sustainable fuel accessibility infrastructure for reliable operations* will be debilities in the medium and long run for Delta's climate policy being achieved within the next few foreseeable decades.

$1 Billion Investment to Clean Flying

Delta's first notable weakness in achieving clean flying comes from its commitment to invest a total of $1 billion within the next 10-year interval to directly improve partnerships, build

new technology and implement operational changes to all areas of their fleet. These investments plan to be implemented throughout the company within the immediate future in building a global business going forward that mitigates all emissions, as Delta will allocate $1 Billion of output funds to achieve the desired emissions goal in the categories of sustainable fuel development and new aerospace technologies. (Delta Airlines, 2020).

In relation to this, Delta claims that these allocated funds will go towards building increased output investment strategies in driving innovation, advancing clean air travel technologies, accelerating the reduction of carbon emissions and waste, and establishing new projects to mitigate the balance of emissions (Delta Airlines, 2020). These large sum financial investments are set to be the foundational catalyst for change throughout the corporation that will stimulate the airline's ambitious commitment to a viable green future, however, many financial analysts are skeptical as to Delta's purpose and capability in investing this much money after the airline took such massive financial losses after the COVID-19 pandemic. The problem with this section of the policy aligns not with *where* the capital is being invested, but simply *how much* of it given recent fiscal losses.

A $1 billion investment into a new project after the airline has just faced massive financial losses reduced by the pandemic generates a major weakness in this policy. The problem with this large investment has recently come to light after Delta’s shareholders were directly affected by the 2020 pandemic significant cut in passenger demand across all of Delta’s travel markets, taking the airline to a fiscal loss of over $12 billion in 2020 (US News – AP, 2021). Additionally, Delta’s revenue plunged to $3.97 billion from $11.44 billion during the quarter of the year when the pandemic was just beginning to affect U.S. travel. The figure was $30 million more than expected in the FactSet survey. Service between the U.S. and both Asia and Europe was particularly hard hit, down nearly 90% (US News – AP, 2021). Due to these losses, financial experts are forecasting

that Delta's $1 billion investment into its carbon pact may not be the best idea for now, as this deficit is the largest annual loss in the history of the airline, capping it as the worst year ever (US News – AP, 2021).

Concerning this deficit, experts cite that Delta "will face difficult months ahead but is eyeing a recovery in 2021 as recovery will take time and Covid vaccines are administered around the country, the airline must remain careful at balancing its losses and watching its cash burns" (CBS News, 2021). These experts are forecasting that Delta's large fiscal investment into its sustainable fuel project may hurt partners and investors, as the airline is still hoping to soon return to predictable levels of returned revenue growth (Baccardax, 2021). It's recommended that Delta re-evaluate the magnitude and extent of its capital investment, as investing smaller amounts over time may set to offset profit losses from last year, turn greater revenues in 2022 quarters, and maintain shareholder satisfaction.

B - Building Reliable Infrastructure for Sustainable Fuel Accessibility

As Delta continues to partner with some of its largest aircraft production companies to develop clean jet fuels, the airline may have proven that clean fuels are possible, but the airline will face challenges in receiving regular supply stocks of these new biofuels in the future from petroleum suppliers. This potential setback possesses a major weakness for Delta's implementation and operationalization of its clean travel initiative in providing relatively supply, availability, costs, permit retention, storage, and employee operation for their new biofuels. The weakness from this section of the policy arises as Delta has not yet *publicly* assessed the relative consistency, availability, or cost of these clean fuels, the permits required to store such fuels, the operation, construction, location of fuel storage facilities, or the appropriate employee training of operations with new biofuels to achieve further carbon offsets (Bogaisky, 2020). For these reasons, it's clear

that the use of advanced biofuels is a likely short-term solution for the airline and poses a weakness for the airline's implementation of sustainable biofuels (Dichter et al, 2020).

Delta's access to sustainable fuel components is scattered, and the airline will have trouble obtaining substances that are mixed with the fuel to make it "sustainable." For example, the technical feasibility of fuels made from vegetable or waste oils is proven, and some airlines like Delta use the fuel in daily operations (Dichter et al, 2020). However, it's clear that getting the "appropriate feedstock and supply chain in place to access the bio-materials contain within these clean fuels is difficult, as building production facilities and fuel refineries are costly to airlines" (Dichter et al, 2020). Similarly, access to these bio-goods is often scarce, as airlines will scramble to consistently receive recycled sources to mix with their fuels (Dichter et al, 2020).

Concerning additional bio-fuel material scarcities, this concept can also be seen with cooking oil, which will be a popular ingredient for future biofuels in airplanes, which has fragmented availability and is expensive to collect. Other vegetable oils used in biofuels have high costs of production, collection, transportation, and conversion to fuel in fuel facilities (Dichter et al, 2020). Following this, many biofuels run on Feedstock resources, which also involve other environmental risks, such as deforestation and the creation of monocultures with other negative externalities during the process of feedstock extraction (Dichter et al, 2020). These indicators show that Delta may have supply chain logistical issues in obtaining biofuels and their components, as well as lacking knowledge on appropriate procession and utilization of such fuels within the logistic of their company.

While its clear Delta was able to develop new forms of biofuels that enable their airplanes with Boeing to combustion clean energy while airborne, it's evident Delta has not yet considered the accessibility and routine feasibility of obtaining and storing large scale new biofuel components to implement in their operations fleetwide, which is a major component of

implementation with this policy. Given these implementation concerns, Delta must pursue corporate consulting in preparing a) feasibility studies and 2) grant applications of receiving fuels (Les Enterprises, 2020), which is the airline's conjoined obstacle to retaining the fuels for their airplanes. Without consulting, Delta will be unable to effectively manage their new biofuels which will be dangerous to daily operations with passengers, aircraft, and employees.

In relation to this, consultants of energy resources follow the renewable diesel market and have experience with the current state of supply, demand, and pricing. Consultants of this specific industry know many of the key players in the sector and are willing to perform a peer review of the design, prepare cost opinions, and assist with Delta's permit applications to receiving and storing the biofuels at airline faculties (Les Enterprises, 2020). Additionally, consultants can provide insight into the construction of biofuel storage and treatment facilities. During construction, the renewable diesel expert can also assist with specific construction oversight of the renewable diesel facility and provide commissioning reports, and training to employees on aircraft operations with newly developed biofuels. (Les Enterprises, 2020). To ensure proper implementation and ensure biofuel accessibility and operational use do not become a policy weakness, Delta must utilize private energy resource consulting groups to further investigate the growing logistical neglect of maintaining and operating biofuels in the airline's fleet. Consideration of these potential issues moving toward new efficient air travel measures is essential for Delta to ensure proper company practices in the operation of complex combustibles.

V

"SWOT" Analysis

Delta's Carbon Neutrality – Policy Opportunities

As Delta moves to implement its carbon neutrality goals by 2050, the airline will have many opportunities to engage, develop and implement new technologies and practices to be used in the future of the airline that has never before been used in the practice of the aviation industry. Delta's new policy commitment will force the airline to galvanize on tech technologies, like new planes, biofuels, and recycle-based sustainability efforts that will help the airline reduce all levels of emissions. These new investments in technology to build a sustainable airline will provide opportunities for improvement across the entire aviation industry.

A- The Opportunity for Clean Biofuel Development

The first step in pledging to be carbon neutral has required Delta to originate new, clean, and alternative jet fuel that will enable the airline of a 1,030+ fleet to operate by clean, carbon-free standards. The reason that developing a new clean fuel substance is preliminary to *all other measures* is that aircraft manufactures, such as Airbus and Boeing, will have to engineer new combustion engines for their new airplanes or make existing changes to current aircraft engines to accommodate and operate off newly designed, clean biofuels. In other words, Delta has the opportunity to develop clean biofuels to enable aviation engineers to design new planes that utilize clean fuel. This reasoning will require Delta to pursue new opportunities in alternative biofuel developments.

Today, Delta and its partnership with Boeing for developing sustainable aviation fuel have proven that new biofuels can be developed and used on aircraft designs, an opportunity that has never been seen before. Since 2008, Boeing has developed 5 new sustainable jet fuels that Delta began using in 2016, as the airline began to have preliminary, unofficial ideas about pursuing

carbon-reduced travel in the future (Boeing Aviation, 2021). These 5 fuels are 1) FT-SPK (Fischer-Tropsch Synthetic Paraffinic Kerosene), which Converts syngas into jet fuel and was approved by ASTM (D7566) and UK MOD DefStan (91-91), which Can be blended up to 50 percent with fossil jet fuel. 2) HEFA (Hydro processed Fatty Acid Esters and Free Fatty Acid), which is a pathway that was approved in 2011 to be blended at a 50 percent rate with jet fuel (Fregnamiet et al, 2021).

However, some of Delta's competitor airlines have begun to explore alternative options, such as turning to investments in "garbage-fuel reusability," as many airline executives see a future of sustainable biofuels that come right from the United States own landfills. Many view this creation of biofuels from an old land waste plant as a more efficient means of generating biofuels compared to chemical or synthetic mixing.

Image 1 – Rubbish to Biofuel Processing Plant, Fulcrum BioEnergy - *Sierra, CA*

[4]*Image I*

In the image above, trash is moving up a conveyor belt at Fulcrum Bioenergy's Sierra, CA plant in the company's garbage-to-fuels facility, ready to be processed into jet fuel to be used by participating airlines internationally, such as Cathay Pacific Airways and Japan Airlines (Boerner, 2021). Fulcrum plans to start producing biofuel in the last quarter of this year at this plant just east

[4] Biofuel Processing Plant in Sierra, CA, https://www.fulcrum-bioenergy.com/sierra-biofuels

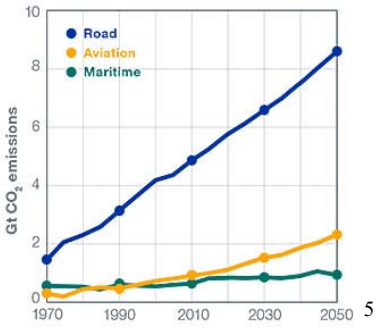
of Reno, and the company has plans for eight more plants across the nation to meet growing demands by more international airlines (Boerner, 2021). Although Biofuels made from existing rubbish at US landfills are not currently being used by domestic US airlines, Delta, United, and Jetblue have expressed future interest in exploring the use of trash-based biofuel usage by the end of 2023 (Boerner 2021).

Interestingly, Delta's competitor airline, United, spoke on behalf of the airline's Senior Manager of Environmental Strategies and Sustainability Aaron Robinson, who claimed "you could power all of United using just 20% of US landfill waste" (Boerner, 2021). Presumably, Delta being an airline of almost identical size as United would be able to achieve the same objective. These opportunities for trash-based biofuel developments would not have been made possible without airline pledges to pursue carbon-neutral flying.

However, climate scientists and other experts have shown that if Delta and other airlines had not taken advantage of the opportunity to develop new and improved biofuels, emission numbers would remain sky-high for many years to come. In the data table and corresponding chart below, the projected CO2 emissions output by each transportation industry and their pollutants emitted can be seen respectively, without the use of clean biofuels. As seen in the charts, aviation’s total emissions can be seen as “centered” to the other polluting industries, compared to low outputting maritime emissions, and expected high road emissions. Below, Boeing graphically models the levels of CO2 emissions that would be released by the continuation of regular, non-bio-developed jet and transportation fuel by 2050 if these new fuels proposed above are not immediately implemented across transportation sectors. (Fregnamiet et al, 2021).

Table 1A and 1B – Projected CO2 Emissions Share by Models Unit, 2050

Year	Road	Aviation	Maritime	Road Total	Aviation Total	Maritime Total
2000	4.10	0.70	0.50	77.4%	13.2%	9.4%
2005	4.30	0.80	0.60	75.4%	14.0%	10.5%
2010	4.80	0.90	0.60	76.2%	14.3%	9.5%
2015	5.20	1.00	0.80	74.3%	14.3%	11.4%
2020	5.70	1.10	0.80	75.0%	14.5%	10.5%
2025	6.10	1.30	0.80	74.4%	15.9%	9.8%
2030	6.50	1.50	0.80	73.9%	17.0%	9.1%
2035	7.00	1.60	0.80	74.5%	17.0%	8.5%
2040	7.45	1.85	0.90	73.0%	18.1%	8.8%
2045	8.00	2.00	1.00	72.7%	18.2%	9.1%
2050	8.60	2.30	0.90	72.9%	19.5%	7.6%



[5]

Figure I

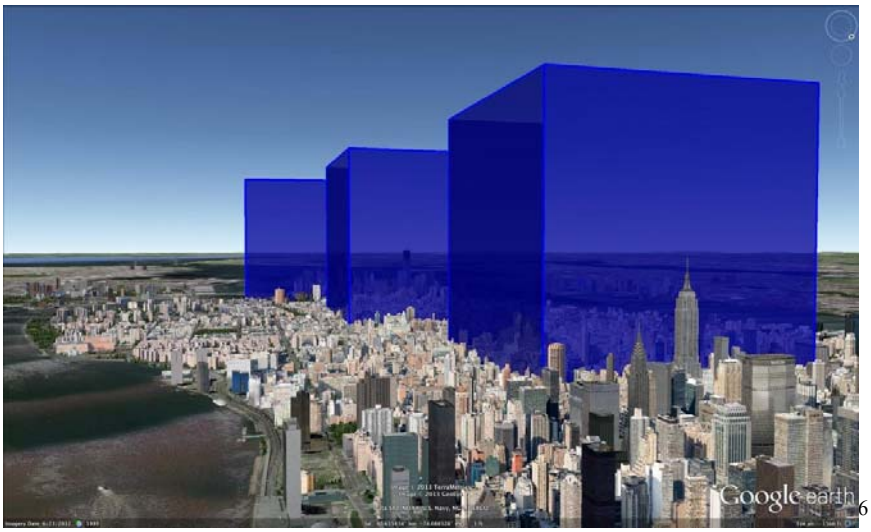
As illustrated in the chart above, Boeing predicts that if airlines such as Delta do not utilize the opportunity to develop sustainable, alternative fuels, their overall CO2 emissions by 2050 would reach 2.30 Gigatonnes (GT), which would be about 19.5% of the total produced CO2 in the world. For context, the current level of airline CO2 emissions per year during *regular* travel patterns before the pandemic are 0.80 Gigatonnes, about 12% of the world's current CO2 emissions (Air Transportation Action Group, 2021).

The units of measurement for the numbers presented in the left column of the chart are to be measured in "Gigatonnes," a unit of measurement used by environmentalists to express large quantities of emissions over certain geographic regions (Delta Airlines, 2021). Specifically, a Gigaton can be described in terms of A tonne (t), which is the mass of 1000 kilograms (kg) – which for water, occupies 1 cubic meter (a cube of 1m x 1m x 1m). However, a Gigatonne (GT) is 1 billion tonnes, which is 1 trillion kilograms – for water, this occupies 1 cubic kilometer (1km x 1km x 1km) (Nicholson, 2020). To put context behind the magnitude and size of a Gigatonne, environmentalists use the model below to visually represent how much emissions of CO2 are

[5] Aviation Emissions Predicted by the Boeing Aviation Group, https://www.boeing.com/features/2020/12/boeing-reaches-net-zero-carbon-emissions-from-manufacturing-and-worksites.page

released in three Gigatonnes of measurement concerning the size of current-day New York City (Nicholson, 2020).

Image 2 – Conceptual Gigatonne Pollution Measurement Size, *New York City, USA*



[6]

Image II

In the image above, the size of three Gigatonnes in relation to the size of modern-day New York City provides real-life visuals for the magnitude of emissions released by air travel alone. As Delta progresses the implementation of their carbon neutrality goals, Boeing warned that if the airline doesn't utilize its opportunity to develop sustainable fuels and set a goal to implement them into their new fleet, the size and quantity of these pollution "boxes" seen above will double across the world by almost a billion by 2050 (Nicholson, 2020).

B- The Opportunity to Design Clean, Fuel-Efficient Airplanes

With this, Delta's new sustainability policy has enabled the airline the opportunity to partner with airplane engineers to develop new, ecofriendly airplanes that have never been used before in the aviation market. These new airplanes have the capabilities to revolutionize the air

[6] Gigatonnes emmission sizes relative to New York City USA, https://lindseynicholson.org/2017/02/whats-a-gigatonne/

travel industry, providing new and efficient flying that is better for our skies. Without Delta's commitment to carbon neutrality, these new plans would have not been able to come to fruition.

Including all the financial outputs provided by Delta throughout the 10-year interval to achieve the overarching goal of clean flying, the airline focuses most of the funding, roughly over 50% of the $1 billion figure (Delta Airlines, 2020) in collaboration efforts and new projects with aircraft designers and engineers in building and outputting a more efficient fleet that is more fuel-conscious and economically viable. In designing new planes to replace older models, Delta claims to be focusing on building the current fleet to have “the longest, most sustainable life possible to make the most of the planet’s resources” (Delta Airlines, 2020). Similarly, over the past year, Delta has invested to retire more than 200 aircraft and replace them with new planes that are 25 percent more fuel-efficient than the older models being replaced (Air BP Biojet, 2019).

Pictured below is an example of one of Delta’s newly delivered aircraft that was designed as a result of the airline's investment into clean air travel, and its partnership with aircraft engineers. The Airbus A220, a newly engineered model and refreshed design of an older Airbus model of similar size can be seen at the inaugural ceremony in Mirabel, Quebec, where Delta became the first North American operator of the new fuel-efficient and modern A220 back in late 2018 at the start of clean flying investments (Delta Airlines News Hub, 2018).

Inaugural Delivery of Newly Designed Airbus A220 to Delta

[7]

Image I

Delta's A220 is the latest example of output and investment in a fleet modernization program that aims to replace 20 percent of older, less-efficient aircraft by 2020. Powered by Pratt & Whitney's latest geared turbofan PW1500G engine, the A220 takes advantage of advanced technology and composite materials designed to deliver an expected *20 percent* improvement in fuel efficiency over older, similar-sized aircraft when it enters service with Delta (Delta Airlines News Hub, 2018). The airline claims that the A220 will bring an elevated customer experience to top business routes with features that customers will look forward to every time they fly while being friendly to the skies as well (Delta Airlines News Hub, 2018). Delta is confident operationalizing mass funds into this airplane and the acquiring of other fuel-efficient models like it will continue the airline's effort to transform the travel experience for their customers and the environment.

According to Delta's mission to carbon reduction and removal, the airline is also heavily pursuing opportunities in reducing emissions through investments in carbon offsets. Carbon offsets broadly refer to a reduction in CO2 emissions or an increase in CO2 storage, that is issued to

[7] Inaugural Delivery of Delta Airlines new Airbus A220, Atlanta GA
https://thepointsguy.com/news/delta-a220-inaugural-begins-flight-service/

compensate for emissions elseward (Carbon Offsets INC., 2020). Delta believes that Carbon offsets reduce the amount of CO2 in the atmosphere, which in turn lower greenhouse gas levels – the primary culprit for global warming and climate change. To ensure that the airline is fully carbon neutral since the commitment was announced, Delta is addressing 13 million metric tons of its carbon dioxide emissions from March 1 to Dec. 31, 2020, through investments in verified offset practices (Delta Airlines, 2020) that would not have been made possible without policies towards carbon neutrality.

Delta appears to have a strong commitment to generating sustainable fuel is clear with its large fiscal output in new aviation technology and development to reduce carbon emissions in the current short and medium, However, Delta will need to develop a larger fiscal blueprint for other funds that will be invested to the developing new plane technologies *after* the current allotment of the decade long $1 billion allocations to account for new airplane developments in the long run. Delta must generate several decades-long worth of financial planning to secure investment strategies for the newer generations of jet-age developments after the 10-year mark, to tailor their carbon neutral strategy with new and developing aerospace technology past a decade.

C- The Opportunity to Pursue New and Innovative Recycling Efforts

Delta is also continuing to explore opportunities in allotting funds to improve other areas of their company operations that create a better impact on their travel emissions and the environment as a whole. Currently, Delta is outputting investments in “single-use plastics," in which the airline uses compostable stirrers onboard and removed wrappers from cutlery and amenity kits, eliminating 30K lbs. of waste annually in the US Landfills. Delta is continuing to evaluate changes to more single-use plastics through lifecycle output analysis to better reduce their plastic consumption (Delta Airlines, 2020).

Concerning this, Delta is also making the most of recyclable materials to improve its emissions footprint in other areas of operations. Since its carbon neutrality pact, the airline has invested in corporate-wide recycling campaigns, in which the air has recycled more than 3 million pounds of aluminum onboard and, with the rebates, have funded the construction of 12 homes through Habitat for Humanity (Delta Airlines, 2020). Likewise, Delta is also outputting other sectors of the $1 Billion in clothing and febrific recyclable facilities to re-use employee uniform material and old aircraft interior fabrics to reduce their make of wastes in the environment. In 2020, 50,000 pounds of uniform apparel were sent for waste-to-energy recovery, avoiding the landfill (Delta Airlines, 2020).

In 2018, Delta also embarked on one of the largest single company textile diversion programs in U.S. history (Delta Airlines, 2020). To accomplish this, the airline donated clothing articles to those in need and invested in upcycled fabrics practices and retired seat leather recycling's into a special product line, and down-cycled remaining materials into products like home insulation and pet bed stuffing. These recycling innovations were made possible by Delta's funding towards its carbon neutrality and environmental sustainability mission projects.

In the image below is an example of one of the products that were manufactured as a result of Delta's outputs to clean recycling initiatives. In a 2019 campaign to enhance the airline's environmental footprint, Delta embarked on a mission to recycle retired uniforms from their current employees and transform these used goods into travel bags and passport covers. The airline was highly successful in its initiative, and these recycled goods are now the sole make-up of all of their new releases in employee travel bags and suitcases (Delta Airlines, 2020).

Delta's New Employee Bags – Made from Investments in 100% Recyclable Material

 [8]

Image II

The travel bag shown above is one product that is the result that came out of Delta's opportune time is revolutionizing the airline's commitment to sustaining eco-friendly operations. While these investments into renewable employee products are noble and effective, Delta should consider allocating more of the $1 billion funds into improving their "Zero-Waste Sky Clubs" and the landfill pollution that is generated from these airport lounges across the world. Delta is currently planning to allocate slightly more funds within the next 5 years to explore the usage of eco-friendly packaging for to-go foods in sky lounges worldwide, but more money is needed faster. Delta has currently found that in all Delta Sky Clubs located in Hub cities such as Minneapolis St. Paul, Seattle, and San Francisco and Detroit clubs are zero-waste, as in 90% landfill diversion as a result of their partial outputs in advancing recycling. These clubs recycle, compost, and provide eco-friendly food service items (Delta Airlines, 2020). Delta should consider advancing the outputs in timing and funding to exploring these landfill diversions in other major hubs Sky Clubs in cities such as Atlanta and Salt Lake City, that have a greater environmental footprint due to larger passenger operations.

[8] Delta Airlines new sustainable Crew Equipment, https://www.delta.com/us/en/about-delta/sustainability

VI

"SWOT" Analysis

Delta's Carbon Neutrality – Policy Threats

A- The Federal Aviation Administration

The final section of analysis for Delta's carbon neutrality pact examines the potential threats or possible hindrances that may prohibit Delta from enacting its carbon neutrality policy. These potential threats for a delayed or possible refusal of policy implementation stem solely from the Federal Aviation Administration (FAA) and their regulations that enable certain forms of new air travel based on code and existing technology. As Delta moves to implement new forms of biofuel technologies and airplanes into their fleet, it's evident that the FAA will be one of the only sole threats to building an efficient, airline wide carbon-neutral airline by 2050 as the regulation limits for altering existing air operations and air travel are very stringent. This section seeks to examine the FAA as a potential threat to Delta's carbon neutrality policy.

In the United States, that means that Delta and other similar airlines will have to receive permission to test and fly an electric airplane from the FAA and their corresponding regulators (Narishkin et al., 2021). This means that Delta will have to ensure the organization that every inch of the new aircraft is safe for passenger transport, as many extensive and rigorous tests are required on behalf of the FAA. In examining the FAA as a stakeholder, it's clear that the regulatory stringency is very high, and this stakeholder is a threat to the airline's policy implementation. The FAA's requirements for reliability, redundancy, and consistency are much more elevated for air travel than any other sector of transpiration, particularly because passenger air transport contains a high-risk threshold (Narishkin et al., 2021). As a new style airplane is being tested, the FAA realizes that the operators and passengers simply cannot "stop" while airborne if something goes wrong, leading them to ensure every possible component of the new machine is functioning

correctly. Delta will be required to submit extensive reports, tests, simulations, and testimonials from experts on all platforms of the new sustainable aircraft production to the FAA to secure even a test flight approval.

To pass certifiable air travel certifications, Delta will be required to have its fleet undergo the following tests to ensure the safety of new airplane designs and passenger safety for all new environmentally friendly airplane models. The certification processes pursued by the FAA in the following conducted tests are well established and have consistently assured safe flight for new aircraft design.

- A review of any proposed designs and the methods that will be used to show that these designs and the overall airplane comply with FAA regulations.
- Ground tests and flight tests to demonstrate that the airplane operates safely.
- An evaluation of the airplane's required maintenance and operational suitability for the introduction of the airplane into service; and
- Collaboration with other civil aviation authorities on their approval of the aircraft for import (The Federal Aviation Administration, 2021).

Pursuant to the FAA's regulatory compliance of new aircraft models, Delta and its aircraft manufactures may have a chance to face challenges and setbacks in receiving the FAA’s final approval for new airplane models. Interestingly, the FAA recently amended its rules in 2016 to allow for “electric propulsion systems in airplanes built for up to 19 passengers to be flown” (Narishkin et al., 2021). However, a problem with the regulatory component of the FAA arises during these small passenger flights and the aircraft for which they are flown. Even if an airline receives various certifications and amendments, it takes years to complete and compile tests on new model aircraft compared to older, existing aircraft.

Consequently, airlines now retrofit old planes with new technology to receive a quicker certification from the FAA, jeopardizing passenger safety and aircraft reliability. Experts claim that airlines are essentially "taking out the entire old, gas-guzzling, emission-creating engine and its fuel system, and replacing that space and weight with an electric propulsion system (Narishkin et al., 2021). to avoid older model airplane modifications to optimize passenger safety, Delta should simply invest in the lease of new plane models. In relation to the airline's setbacks from the FAA, it's clear that Delta would want to consider *additional funding* within its carbon neutrality project to ensure advocacy from clean energy scientists and lobbying groups to help persuade Congress to work with different levels of the FAA's regulators and policymakers to ensure that new aircraft regulations are safely and properly met to help with airline implement its green policy.

VII

Conclusion

As Delta Airlines moves forward with the implementation of its companywide carbon neutrality policy, it's clear that the airline's *strengths and opportunities* will far outweigh the *weaknesses and threats* examined in this SWOT analysis of this policy whitepaper. Delta has remained a committed aviation leader in being the first airline to embark on a journey to better the world through their own climate initiatives will engage stakeholders and corporate partners to increase awareness and follow in their goals to provide suitability. It's clear Delta is both a 21st-century corporate world innovator and leader at stiving to better society and our planet. Delta and its employees deserve immense credit from the public as a trailblazer, figurehead, and powerhouse for promoting clean energy. Delta's culture believes that travelers shouldn't have to choose between seeing the world…and saving it.

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