

Truckee Tahoe Airport District

2022 Sustainability Report



Executive Summary

Truckee Tahoe Airport, a medium-sized airport owned by the Truckee Tahoe Airport District located in the Sierra Nevada Mountains, has embraced sustainability as a high priority for the airport and is working towards integrating sustainability into all aspects of its operations. The airport plans on achieving the aviation industry target of net zero emissions well ahead of schedule.

In 2022 the airport tracked Scope 1 & 2 emissions, across 22 different sites within the airport grounds. Scope 1 sources included natural gas used for heating at 5 different sites, and diesel and gasoline used to fuel airport equipment and machinery. Scope 2 emissions came from purchased electricity. In total, the airport emitted 404 metric tons of carbon dioxide equivalent (CO₂e) in 2022 across Scopes 1 & 2, with 61.5% Scope 1, and 38.5% Scope 2. The main terminal and rental car facilities were identified as the two highest emitters in 2022, comprising nearly 40% of the airport's total emissions.

In addition to tracking their Scope 1 & 2 emissions, the airport prioritized transitioning from selling Jet A to blended sustainable aviation fuel (SAF), setting a goal of reaching 100% blended SAF by the end of 2023. Though 20-30% more costly than Jet A, transitioning to blended SAF provides the airport a lucrative opportunity to reduce their emissions and continue to push the sustainability envelope forward in the aviation industry. In 2022 they made significant progress towards this goal by reaching 50% blended SAF in their fuel sales, on track to completely transition to blended SAF by the end of 2023.

While not heavily impacted by regulations, a few may be relevant for the airport in the coming years. These include SB720, an unpassed California law that would require certain airports to report their Scope 1, 2 and 3 emissions to the California Air Resource Board (CARB), the Zero-Emission Airport Shuttle Regulation requiring airport shuttle operators to transition 100% of their vehicles to zero emission vehicles by the end of 2035, and SB253, a California bill that may indirectly impact the airport through charter company tenants requesting emissions data from the airport.

The airport also owns and manages over 2,000 acres of land surrounding the airport, and supports the biodiversity and conservation of wildlife through various land management activities, including regular tree thinning and mastication of forest stands. The surrounding land also serves as habitat for a number of endangered or special status species and the airport seeks to protect and conserve these species through the maintenance and preservation of the land.

Moving forward, the Truckee Tahoe Airport plans on expanding their sustainability initiatives and decarbonization efforts, focusing on Scope 1, 2, and 3 emissions tracking, completing their transition to 100% blended SAF, fleet electrification, and minimizing the need to run aircraft engines on the ground through the purchase of ground power units (GPUs). The airport also hopes to set emission reduction targets in the future once they have an emissions baseline across Scopes 1, 2, and 3. This will unify their decarbonization efforts, identify areas for improvement, and allow them to develop a roadmap to ultimately reach net zero emissions.

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Introduction

To combat the 2% global emissions contribution from the aviation industry, as reported by the Energy Information Administration (EIA), in October 2022 the International Civil Aviation Organization (ICAO) set an industry target of net zero emissions by 2050. While Truckee Tahoe Airport supports this goal, they have demonstrated that sustainability is a top priority, pushing forward multiple initiatives in the pursuit of achieving net zero emissions far before the industry goal of 2050.

Truckee Tahoe Airport tracks Scope 1 & 2 emissions, serving as evidence of their commitment to transparency and accountability. In 2022 their primary initiative was progressing the transition to blended Sustainable Aviation Fuel (SAF), one of the most well recognized opportunities in aviation to reduce emissions. Truckee Tahoe Airport is relatively unaffected by recent state and federal environmental legislation as they currently focus on large and public companies; despite this lack of regulatory incentive, they have demonstrated aspiration to become an industry leader in sustainable practices.

Central to the airport's success in achieving sustainability goals is its collaboration with stakeholders - comprising customers, the local community, aviation partners, governmental bodies, and businesses. This collaborative effort enhances the impact of sustainability initiatives and underscores the airport's commitment to broader societal and environmental welfare.

This Sustainability Report highlights Truckee Tahoe Airport's carbon footprint and sustainable operations for 2022, covering Scope 1 & 2 emissions, biodiversity projects and land use, targets, initiatives, stakeholder engagement, future plans and relevant legislation.

Organizational Profile

The Truckee Tahoe Airport, situated amidst the Sierra Nevada Mountains in California, stands as a pivotal air transportation facility within the region. Owned by Truckee Tahoe Airport District, the medium-sized airport operates with a structure aimed at efficiently managing general aviation, commercial, and corporate air travel. Handling 32,136 operations in 2022 (28,525 powered aircraft, 3,611 gliders), this airport serves as a vital link connecting the Truckee Tahoe community to various national and regional destinations such as the Bay Area, Western States (NV to CO), and Southern CA. Classified by the National Plan of Integrated Airport Systems (NPIAS) as a General Aviation Airport, Truckee Tahoe Airport operates within the broader aviation industry, contributing significantly to regional accessibility and serving as a crucial economic asset to the local area. Its reach extends to supporting tourists, businesses, and residents by providing essential services and facilities, facilitating travel and transportation needs. The airport's dedication to safety, efficiency, and service excellence further solidifies its role as an indispensable transportation hub within the region.

Environmental Performance

Emissions

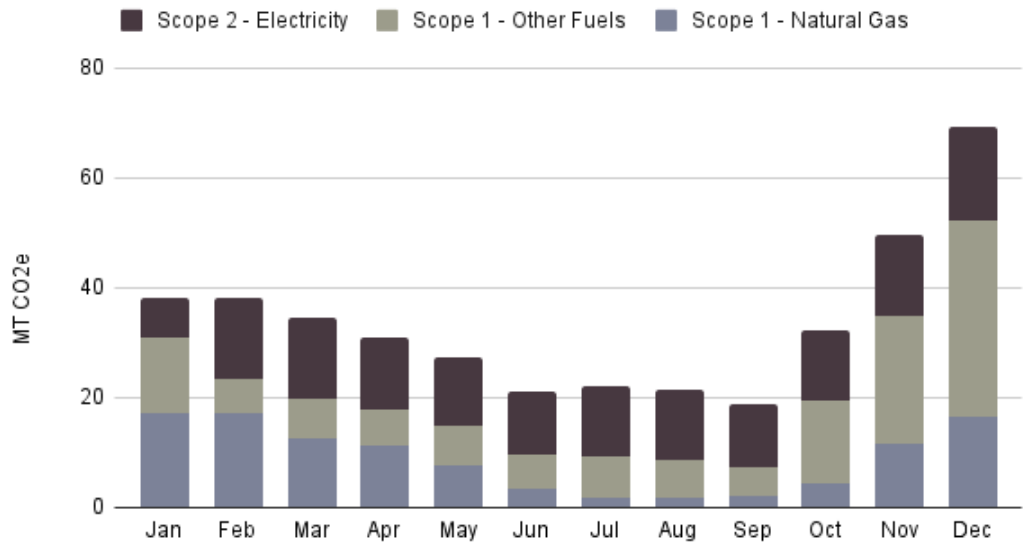
Scope 1 & 2 emissions were tracked in 2022. Scope 1 emissions are from natural gas, diesel, and gasoline, while Scope 2 emissions are from purchased electricity.

Combined Scope 1 and 2 emissions were 404.2 metric tons of CO₂e (MTCO₂e) in 2022, with a breakdown of 61.5% Scope 1 emissions and 38.5% Scope 2 emissions. Natural gas used for heating, and motor gasoline and diesel fuel used to run airport equipment were the three Scope 1 emission sources in 2022. Natural gas was used at only 5 sites for a total of 107.6 metric tons of CO₂e within Scope 1, while gasoline combustion emitted 41.9 MTCO₂e, and diesel combustion emitted 99 MTCO₂e. Electricity was the only Scope 2 emission source and was used at all 22 sites tracked in 2022. In total electricity emissions contributed 155.7 MTCO₂e in 2022.



Scope 1 emissions were primarily from natural gas and diesel, with 43 percent from natural gas usage, 40 percent from diesel, and 17 percent from gasoline. Natural gas emissions followed a common pattern of peaking in the cooler winter months when natural gas is used for heating, and dipping in the hotter summer months when heating isn't necessary. January was the month with the highest natural gas emissions at 17.3 MTCO₂e, while August was the lowest at 1.6 MTCO₂e. Electricity emissions remained fairly constant throughout the year, hovering around 13 MTCO₂e each month with the exception of January where data was limited to half of the month. December had the most electricity emissions of all months at 17.1 MTCO₂e, while September had the least, outside of January, at 11.6 MTCO₂e.

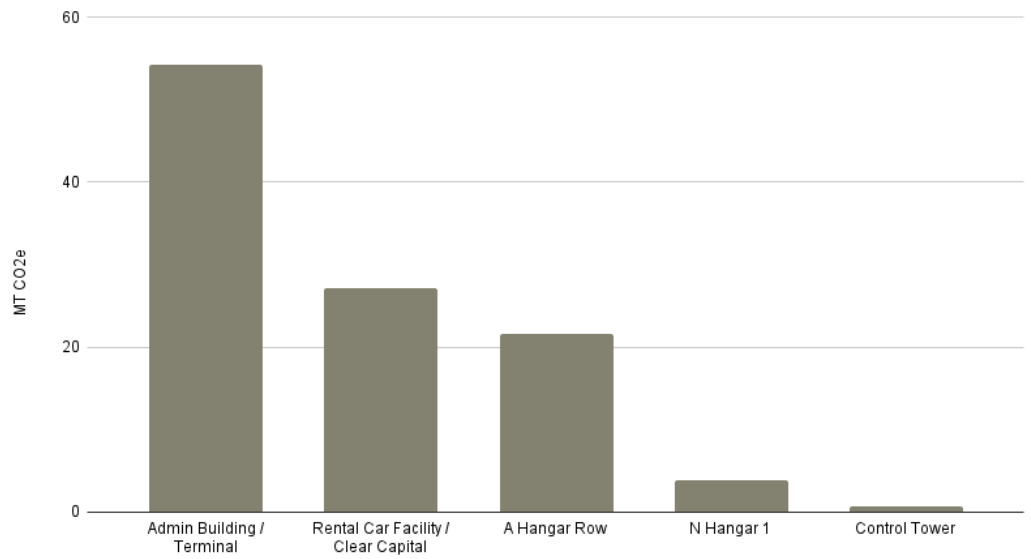
Scope 1 & 2 Emissions 2022



Scope 1

Scope 1 sources included gasoline and diesel fuel to power airport equipment, and natural gas for heating. Natural gas was only used at 5 sites in 2022, with the bulk of emissions coming from the Admin Building/Terminal and Rental Car Facility/Clear Capital, emitting 54.3 and 27.1 MTCO_{2e}, respectively. Combined, they made up over 75% of all natural gas emissions and over 20% of total Scope 1 emissions. Diesel and gasoline used to run airport equipment emitted 99 and 42 metric tons of CO_{2e}, respectively. Fuel usage was particularly high towards the end of the year in the months of October, November, and December, with over 50% of fuel emissions coming in these months.

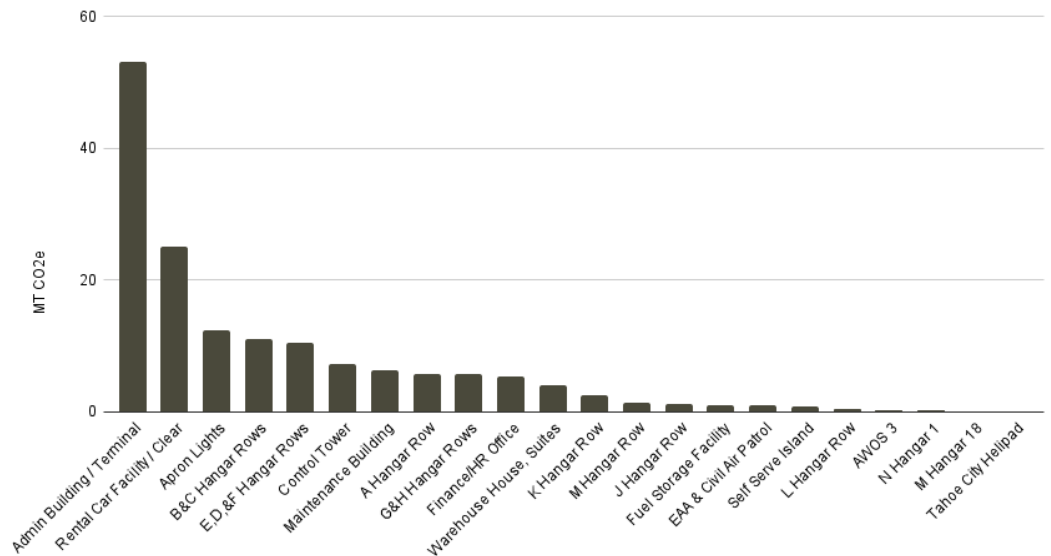
Natural Gas Emissions by Site 2022



Scope 2

Scope 2 emissions were tracked across 22 sites at the airport, with the top 5 heaviest emitters making up 75% of Scope 2 emissions, while the top two emitters, Admin Building/Terminal and Rental Car Facility/Clear Capital made up over 50% alone. The Admin Building was the highest emitter of all sites at 53 MTCO2e in 2022, over 34% of all Scope 2 emissions. The next highest was the Rental Car Facility/Clear Capital which emitted 25.1 MTCO2e in 2022, equaling just over 16% of total Scope 2 emissions.

Electricity Emissions by Site



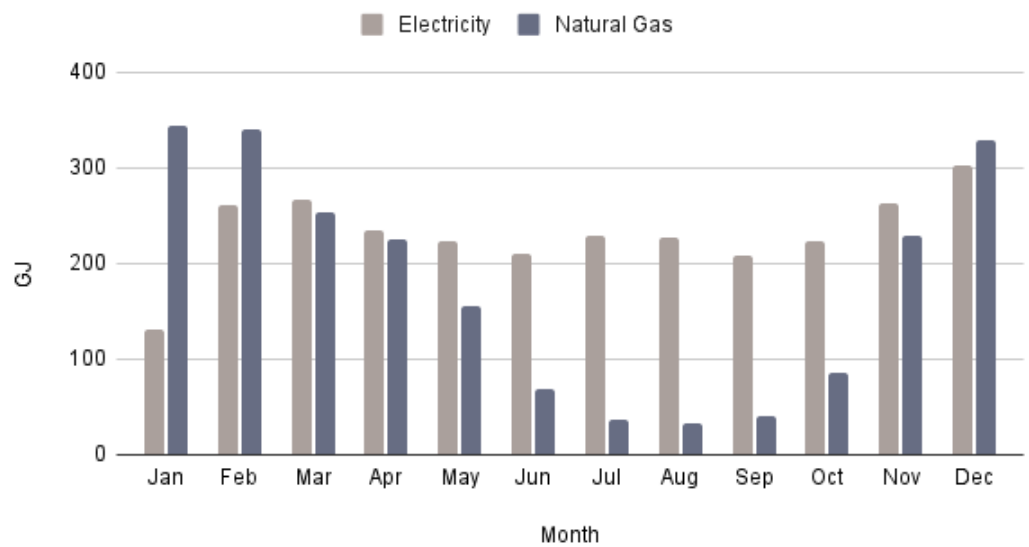
Scope 3

Scope 3 data was not available for 2022.

Energy Usage

In 2022 Truckee Tahoe Airport consumed a combined total of 6,808 GJ of natural gas, diesel, gasoline, and electricity. Electricity made up about 41% of that energy at 2,781 GJ, while natural gas contributed to 31% of the total energy consumption at 2,136 GJ. Diesel and gasoline made up a combined total of 28% of energy usage with a breakdown of 19% and 8% diesel and gasoline, or 1,310 and 581 GJ, respectively. Electricity usage remained fairly constant throughout the year hovering between 200 and 300 GJ used each month. Data for less than half of the month of January was able to be collected, thus electricity consumption appears lower than all other months. Natural gas usage peaked during the winter months of December, January, and February, with natural gas consumption each month surpassing 300 GJ. Natural gas usage significantly decreased during the summer months, particularly during July, August, and September where 40 GJ or less were consumed each month.

2022 Electricity & Natural Gas Consumption

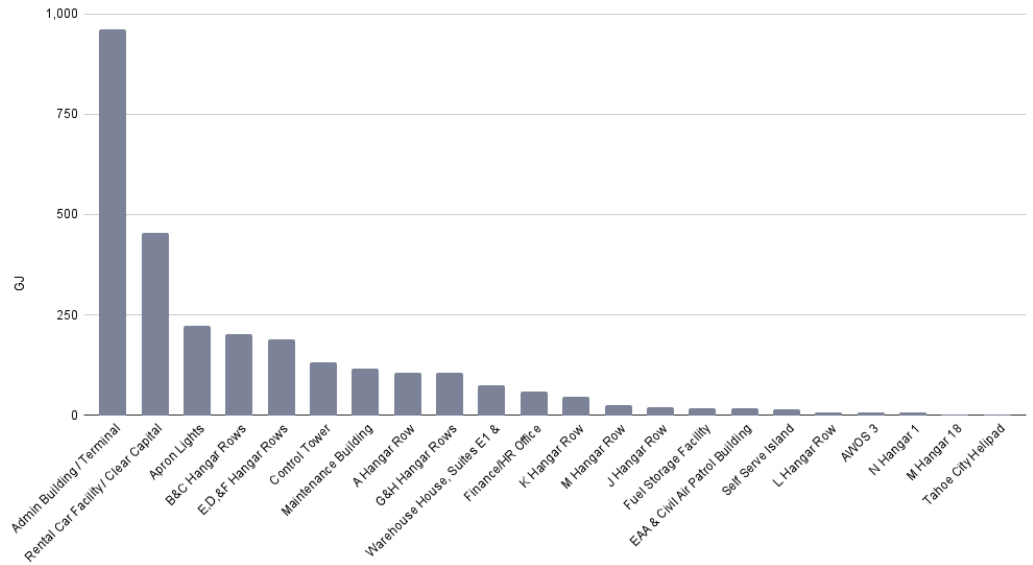


Electricity

The airport tracked 22 different sites in 2022. While all of those sites consumed electricity during 2022, the Admin Building/Terminal site consumed the most at just over 961 GJ, over 34% of all of the airport's electricity consumption. The next largest consumer of electricity was the Rental Car Facility/Clear Capital at nearly 456 GJ, which represents just over 16% of the total electricity consumption.

Site Name	Electricity Consumption (GJ)	% of Total Consumption
Admin Building / Terminal	961.1	34.6%
Rental Car Facility / Clear Capital	455.5	16.4%
Apron Lights	223.5	8.0%
B&C Hangar Rows	201.0	7.2%
E,D,&F Hangar Rows	188.8	6.8%
Control Tower	131.2	4.7%
Maintenance Building	115.5	4.2%
A Hangar Row	105.2	3.8%
G&H Hangar Rows	105.0	8.0%
B&C Hangar Rows	201.0	3.8%
Warehouse House, Suites E1 & E2, Farm Lights	73.6	2.6%
Finance/HR Office	58.2	2.1%
K Hangar Row	45.4	1.6%
M Hangar Row	24.0	0.9%
J Hangar Row	20.6	0.7%
Fuel Storage Facility	17.9	0.6%
EAA & Civil Air Patrol Building (house)	17.7	0.6%
Self Serve Island	14.4	0.5%
L Hangar Row	7.8	0.3%
AWOS 3	5.7	0.2%
N Hangar 1	5.6	0.2%
M Hangar 18	2.0	0.1%
Tahoe City Helipad	0.9	0.0%

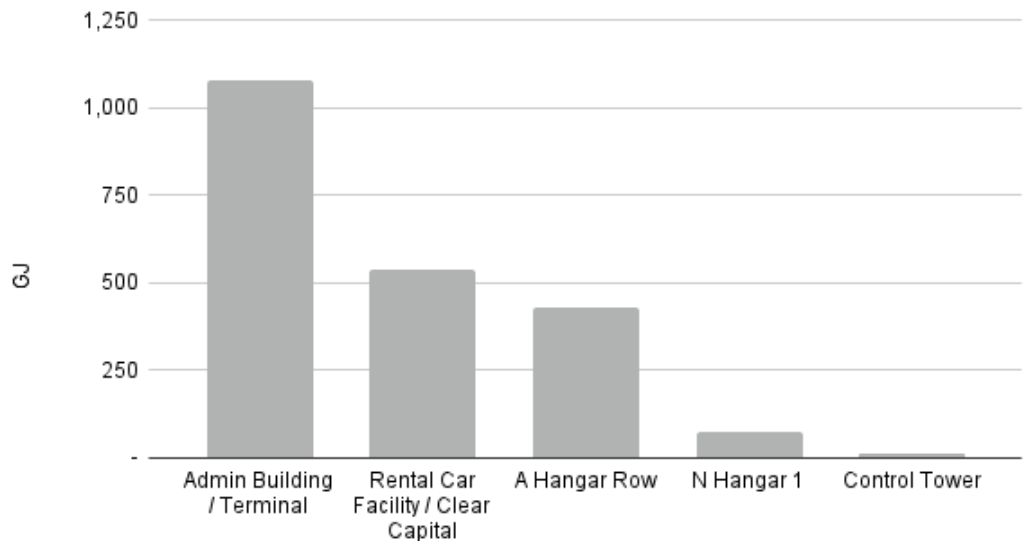
Electricity Consumption by Site



Natural Gas

In 2022 natural gas was only used at 5 sites including the Admin Building/Terminal, Rental Car Facility/Clear Capital, Control Tower, A Hanger Row, and N Hangar 1, for a total of 2,136 GJ. The majority of natural gas was used at the Admin Building/Terminal, consuming over 1,000 GJ in 2022. The next two largest consumers were the Rental Car Facility/Clear Capital and the A Hanger Row, using 538 and 429 GJ, respectively. Together, those three sites made up over 95% of the total natural gas consumption of the airport.

Natural Gas Consumption by Site



Site Name	Electricity Consumption (GJ)	% of Total Consumption
Admin Building / Terminal	1,078	50%
Rental Car Facility / Clear Capital	538	25%
A Hangar Row	429	20%
N Hangar 1	77	4%
Control Tower	14	1%

Other Fuels

The airport also used gasoline and diesel to power various types of airport equipment. In total 4,406 gallons of gasoline and 9,000 gallons of diesel were used in 2022, amounting to a total of 1,891 GJ. The majority of this consumption came during the last quarter of the year with over 50% of total gasoline and diesel consumption coming from November through December. This spike in fuel consumption came primarily from diesel, with over 66% of diesel consumption coming in the last 3 months of the year.

Biodiversity and Conservation

Truckee Tahoe Airport is located in a mountainous region just north-east of Lake Tahoe and manages over 2,000 acres of land surrounding the airport. These land areas include the airport land, Alder Hill Beacon, Jones Property, Martis Valley Estates, Ponderosa Golf Course, and Waddle Ranch. Across these properties lie a variety of land types and vegetation, including Eastside pine, Sierran mixed conifer, sagebrush, bitterbrush, wet and dry meadows, montane riparian, and montane chaparral. The airport implements a variety of different land management activities to maintain the surrounding landscape with goals of providing recreational opportunities for the local community, enhancing forest health, reducing risk of wildfire, preserving cultural resources, maintaining water quality, and preserving the natural wildlife and habitat. Some of the land management activities include tree thinning and mastication, fertilizer and pesticide management, road and trail maintenance, and upkeep of local water resources.

There are a variety of different mammals, amphibians, reptiles, birds, and fish that live on the lands that the airport manages, including 8 special status species - either listed as threatened or endangered under the California or federal Endangered Species Act or the California Department of Fish and Wildlife Species of Special Concern (SSC) list (CDFW, 2019). There are also 5 plants known to be or with the potential to be present on the airport lands listed in the California National Plant Society Inventory of Rare and Endangered Plants list. (CNPS, 2020a). The airport seeks to enhance and preserve the habitat for these species and keep invasive species at bay, with many local community plans, general plans, and ordinances containing goals to maintain and protect the local wildlife.

Targets and Metrics

In 2022, Truckee Tahoe Airport's sustainability target was that of the industry: net zero emissions by 2050. In support of this goal, Truckee Tahoe Airport opted to accelerate (initially kicked off in 2020) their blended SAF initiative: transitioning from standard Jet A to blended sustainable aviation fuel (SAF). The progression of this initiative was the primary measure of decarbonization progress for 2022.

Truckee Tahoe Airport had been slowly phasing in blended SAF fuel, but in 2022 elected to set a goal of fully transitioning by the end of 2023. Transitioning to blended SAF has been recognized as one of the most promising opportunities for the aviation industry to decarbonize, as blended SAF can reduce emissions by up to 80% as reported by the International Air Transportation Association (IATA). When analyzing the potential impact of this initiative on their emissions profile, Truckee Tahoe Airport estimated the full transition would decrease their total operational emissions by approximately 23%. They tracked the progress of this transition by Jet A vs blended SAF fuel sales, and had reached 50% blended SAF by the end of 2022.

With Truckee Tahoe Airport's prioritization of sustainability and decarbonization, they are exploring the adoption of refined sustainability targets unique to their operations. These new targets would support goals derived from the industry leading effort Truckee Tahoe Airport has already invested into decarbonization, as well as their unique emissions profile.

Stakeholder Engagement

Stakeholder engagement is a necessary component of Truckee Tahoe Airport's sustainability strategy. They recognize the importance of effective communication to gauge support, work through concerns and share decarbonization progress. The initiative of transitioning to blended SAF was a prime example of Truckee Tahoe Airport's methodology for stakeholder engagement.

Truckee Tahoe Airport anticipated the transition to blended SAF would increase fuel prices by approximately 20-30%. This substantial increase required the Airport to engage directly with all stakeholders to ensure the project would be well accepted, any issues could be addressed before the transition, and ultimately the project would adopt a community-led vision. Some hangar tenants had expressed concerns about the financial implications, which Truckee Tahoe Airport was able to work through in partnership. Larger charter companies such as NetJets and ExecutiveJets also provided feedback, in which they expressed support for the project as they would be able to promote a reduction in emissions to current and prospective customers.

Beyond the blended SAF initiative, Truckee Tahoe Airport works with stakeholders directly, through their website, and through [articles](#) highlighting initiatives and progress on their decarbonization journey.

Future Plans

Truckee Tahoe Airport has existing plans through 2024 to continue their decarbonization effort.

2023 Plans:

Scope 1, 2 & 3 Tracking: In order to build a more precise model of their emissions picture, Truckee Tahoe Airport will begin the continuous tracking of their emissions across Scopes 1, 2 & 3. This information will provide critical data on their unique emissions profile, where their most effective decarbonization opportunities lie, and once implemented, the realized impacts of each initiative on their environmental footprint. sites for a total of 107.6 metric tons of CO₂e within Scope 1, while gasoline combustion emitted 41.9 MTCO₂e, and diesel combustion emitted 99 MTCO₂e. Electricity was the only Scope 2 emission source and was used at all 22 sites tracked in 2022. In total electricity emissions contributed 155.7 MTCO₂e in 2022.

Blended SAF Transition (Scope 3): In 2023 Truckee Tahoe Airport expects to complete their transition to 100% blended SAF. This initiative was launched in 2020 and reached 50% completion at the end of 2022. Regional supply is the primary factor in the completion of this initiative.

Fleet Electrification (Scope 1): Truckee Tahoe Airport is planning to begin fleet transitioning from gas powered to electric powered vehicles in 2023.

Full-Service Fueling (Scope 3): Truckee Tahoe Airport is planning to implement full-service fueling for 100LL for all aircraft at no additional cost from self-service 100LL fueling. This will help reduce aircraft engine start time and airfield taxing of aircraft to self-service fuel.

Electric Ground Power Unit (Scope 1 & 3): The purchase of two electric Ground Power Units (eGPU) would prevent aircraft from having to run engines during pre-flight or post-flight operations that require power (aircraft startup, boarding, maintenance); the airport expects to purchase these in 2023, and implement them starting in 2024. The electric Ground Power Units will also replace existing diesel powered Ground Power Units.

2024 Plans:

Target Setting: Truckee Tahoe Airport's key initiative for 2024 is target setting. With Scopes 1, 2 & 3 being tracked, in addition to the various initiatives already implemented, the airport will be able to set data-backed targets that align with their unique sustainability roadmap.

Fleet Electrification (Scope 1): The airport expects their fleet electrification initiative kicked off in 2023 to continue through 2024.

Reporting Opportunities

Airport Carbon Accreditation Program - Recommended

The Airport Carbon Accreditation program is a global carbon management certification program developed by Airports Council International (ACI). The program is structured to support airports in measuring, managing and ultimately reaching net zero emissions. Currently, 39 airports within the United States are participating in the program; these participants range from large international airports such as Harry Reid (LAS) and Hartsfield-Jackson (ATL), to those more similar in size to Truckee Tahoe such as Tooele Valley (TVY), Hendricks County (2R2) and Plant City (PCM).

The program is broken down into 5 levels, each representing specific milestones in an airport's journey to net zero. Stages of the program include mapping, reduction, optimization/neutrality, transformation/transition and Level 5 (90% reduction in Scope 1 & 2 emissions, no Scope 3 emissions by 2050). Participating airports measure and report their carbon emissions, implement carbon reduction strategies, engage stakeholders, and offset residual emissions to achieve a carbon-neutral status. Given the current state of Truckee Tahoe Airport's decarbonization journey, they would likely be able to pass through the initial levels of the program fairly quickly. Acceptance to the program includes an application and fees based on official passenger figures. For more information visit their website [here](#).

Airport Carbon and Emissions Reporting Tool - Optional

The Airport Carbon and Emissions Reporting Tool (ACERT) is a tool provided by ACI to enable airport operators to calculate their own greenhouse gas (GHG) emissions inventory. Given Truckee Tahoe Airport's partnership with nZero to track Scope 1, 2 & 3 emissions, this tool would be of relatively low internal use, however it would support the larger goals of the program. ACI would like to use ACERT data to compile regional and global aggregate emissions, enhancing understanding of airports' contribution to total aviation industry emissions. More information on the tool & program can be found [here](#).

State & Federal Programs

Airport Improvement Program: The Airport Improvement Program (AIP), administered by the FAA, provides federal grants primarily to enhance environmental compliance and sustainability at public-use airports in the United States. As a part of the broader scope of fostering airport safety, capacity, and security, the AIP specifically allocates funds for projects like noise reduction, pollution control, and environmental mitigation. These projects extend to initiatives like upgrading airport infrastructure for better energy efficiency, implementing advanced stormwater management systems, and developing wildlife hazard management plans to protect natural ecosystems. More information on the program can be found on its [website](#).

Currently, Truckee Tahoe Airport does not qualify for many state and federal programs/funding opportunities. The most common disqualifying factors are airport size, being located in a clear air district, and that it is not located within a low-income and disadvantaged community (LiDAC). It is recommended to bi-annually search for state and federal programs (such as the one below) as criteria and eligibility may change.

Voluntary Airport Low Emissions Program: VALE helps airport sponsors meet their state-related air quality responsibilities under the Clean Air Act. Through VALE, airport sponsors can use Airport Improvement Program (AIP) funds and Passenger Facility Charges (PFCs) to finance low emission vehicles, refueling and recharging stations, gate electrification, and other airport air quality improvements. Truckee Tahoe Airport is currently disqualified by being located in an attainment area of NAAQS [here](#).

Relevant Legislation

Truckee Tahoe Airport is not heavily impacted by many regulations due to a number of factors, including:

- Non-profit government organization status
- Size
- Located in a clean air district
- Not located within a low-income and disadvantaged community (LIDAC)

However, Truckee Tahoe Airport should be aware that the scope of legislation will likely expand in the coming years. Below are some regulations that could impact Truckee Tahoe in the coming years:

SB 720: SB 720 is a currently unpassed law within the California legislature surrounding airports and carbon emissions. The current version currently requires airports in low income and disadvantaged communities (LiDAC) with over 50,000 annual takeoffs to submit a report disclosing their Scope 1, 2 and 3 emissions to the California Air Resources Board (CARB). While Truckee Tahoe Airport is not in a LiDAC area, nor does it have 50,000 takeoffs, they should be aware that the scope could broaden and would require the disclosure of Scope 1, 2 and 3 emissions.

Zero-Emission Airport Shuttle Regulation: Adopted in June 2019 by the California Air Resources Board, the Zero-Emission Airport Shuttle Regulation requires airport shuttle operators to transition to 100 percent zero-emission vehicle (ZEV) technologies. Airport shuttle operators must begin adding zero-emission shuttles to their fleets in 2027, and complete the transition to ZEVs by the end of 2035. The regulation applies to airport shuttle operators who own, operate, or lease vehicles at any of the 13 California airports regulated under this rule (LAX, SNA, SFO, SMF, SAN, SJC, BUR, PSP, OAK, SBA, ONT, LGB, FAT). This regulation signifies a kickoff to fleet electrification at airports, and while not immediately impacting Truckee Tahoe Airport (through criteria and lack of a shuttle program), it is recommended to only purchase electric vehicles moving forward (when possible).

SB 253: SB 253 is a recently passed bill in California requiring public and private companies doing business in California to disclose their Scope 1, 2 & 3 emissions. While Truckee Tahoe Airport is not directly impacted by this bill, they may be indirectly impacted through charter company tenants such as NetJets. This means they will likely be requesting Scope 3 data from Truckee Tahoe Airport when reporting is required (2027 for 2026 fiscal year).

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Thank you.

