2020 Greenhouse Gas Emissions Inventory

San Diego International Airport

Planning and Environmental Affairs Department
June 2021

This summary report describes the 2020 greenhouse gas (GHG) emissions inventory for San Diego International Airport, including Scopes 1, 2, and 3 type emissions.

Summary

The San Diego County Regional Airport Authority (Airport Authority or Authority) was created on January 1, 2003, as an independent agency to manage the day-to-day operations of San Diego International Airport (SAN) and address the region's long-term air transportation needs.

SAN's total operation occupies 661 acres just two miles northwest of San Diego's thriving downtown. Its location on Harbor Drive is roughly bounded by Pacific Highway to the east, Liberty Station to the west, Marine Corps Recruit Depot to the north, and San Diego Bay to the south. The airport has a single primary runway, which is 9,401 feet long. The airport's passenger catchment area includes a large swath of Southern California and extends into northern Mexico.

In 2020, SAN saw a significant decrease in passenger traffic and airport operations due to the COVID-19 pandemic. An average 25,312 passengers a day passed through the airport, which accommodated about 354 daily arrivals and departures, the vast majority of which were for passenger service. Sixteen passenger carriers and three cargo carriers served the airport, which had 51 gates for jet aircraft in Terminals 1 and 2. During 2020, operations continued at the airport at a limited capacity with 10 passenger carriers continuing operations. SAN offered nonstop service to 71 destinations and accommodated 9,238,882 passengers[1].

The total gross emissions represented in the SAN 2020 greenhouse gas (GHG) inventory (including Scopes 1, 2, and 3) were 191,795 metric tons of carbon dioxide equivalent. Total Scope 1 and 2 emissions, as well as those emissions associated solely with the Authority's past Green Build project, decreased by 21% from 2019 levels.

Organizational Boundary

The Airport Authority owns and operates the San Diego International Airport and uses an operational control approach to define its organizational boundary. The Authority is accounting for 100% of the GHG emissions over which it has operational control (Scopes 1 & 2). In addition, the Authority includes in its inventory direct emissions at the airport from airlines, passengers, and others, for which it does not control and can only influence (Scope 3).

Emissions sources that the Authority maintains control over, and which are included in this emissions calculation, include: 1) Authority-owned vehicles, equipment and shuttles, and stationary sources (Scope 1), and 2) Authority-purchased electricity (Scope 2).

In addition to Scope 1 and Scope 2 emissions, the 2020 GHG emissions inventory included all Scope 3 emissions sources including: non-Authority owned motor vehicles, tenant-purchased electricity, aircraft movement, auxiliary power units (APUs), ground support equipment (GSE), waste management (no incineration occurs on site), and staff business travel.

[1] https://www.san.org/Portals/0/Documents/Air%20Traffic%20Reports/2020_Year_in_Review.pdf?ver=2021-01-27-141504-763

Authority-purchased electricity: All electricity used at SAN is purchased from the local utility, San Diego Gas & Electric (SDG&E). The Authority manages energy on-site mainly through an on-campus medium voltage (12kV) energy distribution loop with three primary electricity meters that reduce Authority cost and electrical interruptions by having the ability to power in either direction around the loop. The electricity that the Authority purchases from SDG&E is then distributed to the majority of buildings and structures on-site, with the exception of a few Authority-owned support buildings that have separate meters, and tenant spaces that are located on ground leases that purchase their own electricity from the utility (i.e., are not connected to the Authority's energy loop and are not included in the Scope 2 emissions calculations). The amount of electricity purchased by the Authority was provided directly from SDG&E in the form of utility bills. Although a majority of the energy used on-site is under the control of tenants, the emissions associated with Authority-purchased electricity usage are still considered a Scope 2 emissions source due to the fact that it was purchased by the Authority and is not resold to tenants. The emissions linked to Authority-purchased electricity were calculated using the local market-based Emissions Factor (EF) of 268 gCO2/kWh. SAN has 5.5 MW of on-site photovoltaic (PV) solar and consumes all electricity generated from the solar systems on-site, which translates to less grid delivered electricity from SDG&E.

Authority-owned vehicles: The Authority-owned fleet (including service vehicles, equipment, and shuttles for transporting [e.g., SAN Parking Shuttles, employee shuttles, inter-terminal shuttles and ARFF vehicles]) is under the operational control of the Authority and is therefore included in the emissions measurement. Information regarding vehicle counts and type were provided by the Authority's Facilities Management and Ground Transportation departments. The fuel provider for the Authority's vehicle fleet provided fuel invoices, and emissions were calculated based on fuel usage. A natural gas fueling tank is on-site and only accessible to Authority sweepers for fueling purposes. The Authority also utilizes an off-site renewable natural gas (RNG) fueling station for the 30 Rental Car Center (RCC) buses, and monthly invoices for the shuttle buses came from the off-site provider, Clean Energy. The on-site natural gas fuel usage amount for vehicles was provided by SDG&E. The propane-powered shuttles owned by the Authority are fueled using a propane storage facility on-site only accessible to these buses. In June 2020, those 30 propane shuttles were replaced by 13 electric shuttles. SAN also uses another on-site propane facility to fuel the Authority's forklifts. The propane usage for both uses was determined through vendor fueling invoices.

Stationary Sources: Emissions from stationary sources including boilers, generators, and other sources (e.g., cooking, air handling units) are incorporated into the airport's footprint. The Authority purchases natural gas via a wholesale contract from Direct Energy (natural gas data was obtained via Direct Energy invoices), and it is then distributed throughout the airport campus. While tenants utilize a portion of natural gas for cooking, space heating, and other activities, due to lack of sub-metering the emissions resulting from natural gas is attributed entirely to the purchasing party (the Authority) and considered to be Scope 1 emissions. Emergency generators at the airport are under the ownership of the Authority and included in the emissions calculations using fuel delivery invoices and hours run for each generator.

Refrigerants: Emissions from the use of refrigerants are not included in the emissions measurement since refrigerants are not a significant source at SAN at less than 1% of total emissions.

Specific Facilities Included in the Boundary

In 2020, Authority-owned and operated mobile combustion sources that are a source of Scope 1 emissions included a fleet of vehicles, equipment, and shuttles that utilize gasoline, diesel, natural gas, propane, and renewable natural gas (RNG).

The following list summarizes the Authority-owned facilities and infrastructure that are a source of Scope 2 emissions in 2020 from the generation of Authority-purchased electricity. Authority-owned facilities and infrastructure include:

- Terminal 1 Building
- Terminal 2 East and West Buildings
- SDCRAA Administrative Offices
- Two Small Non-permanent (modular) Office Buildings for Airport Design & Construction
- Facilities Management Department Main Office Buildings and Maintenance Shops
- Procurement Department Warehouse Buildings
- Aircraft Rescue & Firefighting Station
- Central Utility Plant
- Airport Fuel Farm Operations Building
- USO Building and Parking Management Office
- Aircraft Cargo Buildings
- Aircraft Fueling Operations Building (occupied by ASIG/Menzies)
- American Airlines Hangar
- Airfield
- Roadways, parking lots and associated traffic and safety lighting
- Airport Noise/Quieter Home Program administration (located offsite at Truxtun Road)
- Additional Authority-owned facilities at SAN include the airfield, parking lots, and roadways on the airport campus along with associated lighting for traffic and street safety

Scope 3 inclusions to the 2020 emissions inventory include:

- Consolidated Rental Car Center
- Receiving and Distribution Center
- FedEx Sorting Facility
- Wind Tunnel Building
- Fixed Base Operator (FBO)
- Air Traffic Control Tower
- The Landing and Take Off (LTO) cycle to a height of 3,000 feet
- Engine testing and auxiliary power unit operation (APU)
- Third party ground support equipment (GSE) operations
- Electricity re-sold to or directly purchased by partners/tenants
- Surface access by passengers
- Airport company staff and airport company staff business travel

Operational Boundary

Table 1 below lists the sources of Authority emissions, including Control, Guide, and Influence. The associated emissions of each source listed below are included in the overall emissions summary (found in Table 2), and in the breakdown of Scope 1 and Scope 2 emissions (Figure 1).

Table 1: Description of Emissions Sources, by Scope

Description of Emissions Sources	Scope 1, 2 or 3	Internal department or third party with responsibility for emissions source
"Control" Emissions Sources		
Airport Owned Vehicles, Equipment & Shuttles	1	Facilities Management Department, Ground Transportation Department
Stationary Sources – emergency power generators powered by diesel fuel	1	Facilities Management Department, Planning & Environmental Affairs Department
Refrigerants	1	Facilities Management Department
Authority Purchased Electricity	2	Facilities Management Department
Authority Staff Business Travel	3	Accounting Department
"Guide" Emissions Sources		
Ground Support Equipment & Other Tenant Vehicles	3	Ground Transportation Department, Planning & Environmental Affairs Department
Aircraft Ground Movements, Engine Run Ups, Taxiing, Auxiliary Power Units/PCA	3	Airside & Terminal Operations Department

Description of Emissions Sources	Scope 1, 2 or 3	Internal department or third party with responsibility for emissions source
Landside Taxi & Shuttle Services	3	Ground Transportation Department
Natural Gas Combustion Use by Tenants	3	Facilities Management Department
Staff/Employee Commuting	3	Ground Transportation Department
Offsite Management of Airport Waste	3	Airside & Terminal Operations Department
"Influence" Emissions Sources		
Aircraft take off, landing, approach, climb, cruise, etc.	3	Airside & Terminal Operations Department
Non-Authority Owned Vehicle Travel Off-Airport	3	Ground Transportation Department
Tenant-Purchased Electricity	3	Facilities Management Department, Planning & Environmental Affairs Department
Waste Management by Ground Leases	3	Airside & Terminal Operations Department

San Diego International Airport (SAN) Emissions Summaries

Table 2 is a summary of the SAN 2020 greenhouse gas emissions inventory, including the total metric tons of carbon dioxide equivalent and the percent of the total each scope represents.

Table 2: SAN 2020 Emissions Inventory (Scopes 1, 2, and 3)

2019 Scope Break Down (metric tons CO2e)		Percent of Total Emissions
Scope 1	**2,719**	**1.42%**
Scope 2	**1,800**	**0.94%**
Scope 3	**187,276**	**97.64%**
Total Gross Emissions	**191,795**	**100%**

Table 3 on the next page is a summary of the greenhouse gas emissions inventories since 2014. The Green Build (completed in 2013) represents 20% of the airport's total GHG emissions.

As demonstrated in Table 3, the Authority's Scope 1 emissions decreased in 2020. This can be attributed to the COVID-19 pandemic impacting operations and reducing on-site activity. Additionally, the Authority continued to reduce fleet fuel usage by transitioning to electric vehicles and enacting right-typing and right-sizing for new vehicle purchases. These factors contributed to a 38% reduction in 2020 Scope 1 emissions compared to the previous year.

In 2020, although the Authority consumed less electricity than the previous year, the local emissions factor from SDG&E (the carbon intensity of grid-delivered electricity from the utility) increased, resulting in a 41% increase in Scope 2 emissions compared to 2019. The Authority continues to subscribe to the SDG&E "Green Tariff Shared Renewables" program called EcoChoice which provides 100% renewable (solar-generated) electricity and accounts for approximately 70% of the airport's grid-delivered electricity[2]. The percentage amount is based on SDG&E's two (2) Megawatt cap per EcoChoice business subscriber.

Combined, Scope 1 and Scope 2 emissions in 2020 decreased 21% compared to 2019.

[2] https://www.sdge.com/residential/savings-center/solar-power-renewable-energy/interim-pool

Table 3: SAN Emissions Inventories 2014 – 2020

Summary of Greenhouse Gas Emissions Inventories (2014 – 2020)														
Year	**2014**		**2015**		**2016**		**2017**		**2018**		**2019**		**2020**	
	Entire Airport	Green Build[1] – 10 gates	Entire Airport	Green Build – 10 gates	Entire Airport	Green Build – 10 gates	Entire Airport[2]	Green Build – 10 gates	Entire Airport	Green Build – 10 gates	Entire Airport	Green Build – 10 gates	Entire Airport	Green Build – 10 gates
	Metric tons of CO_{2e}		Metric tons of CO_{2e}		Metric tons of CO_{2e}		Metric tons of CO_{2e}		Metric tons of CO_{2e}		Metric tons of CO_{2e}		Metric tons of CO_{2e}	
Airport Operator Scope 1	4,076	815	4,276	855	4,571	914	4,305[3]	861[3]	4,590	918	4,417	883	2,719	544
Airport Operator Scope 2	14,255	2,851	13,966	2,793	13,880	2,776	9,812[4]	1,962[4]	4,023[4]	805[4]	1,273	255	1,800	360
Total Scopes 1 and 2	18,331	3,666	18,242	3,648	18,451	3,690	14,117	2,823	8,613	1,723	5,690	1,138	4,519	904
Scope 3	278,160		283,359		324,039[5]		348,543[5]		397,359[5]		412,158		187,276	

Footnote 1: The Green Build project (10 additional gates) represents 20% of the entire airport's total 51 gates. Completed in 2013, 2014 is the first full year of the Green Build's operations.
Footnote 2: 2017 is the first full year of the consolidated Rental Car Center (RCC) shuttle bus operations (Scope 1) and building operations (Scope 3).
Footnote 3: 2017 Scope 1 emissions were re-baselined per the guidance of the Authority's greenhouse gas emissions verifier because the RCC shuttle renewable diesel and renewable natural gas fuel was assigned an incorrect emissions factor. For this emissions year inventory, the correct emissions factor was used to recalculate the emissions in Scope 1, leading to a decrease in Scope 1 emissions.
Footnote 4: 2017 and 2018 Scope 2 emissions were re-baselined per the guidance of the Authority's greenhouse gas emissions verifier: RCC electricity use was inadvertently double-counted in the Authority's Scope 2 emissions; re-baselining in 2019 led to a decrease in 2017 and 2018 Scope 2 emissions.
Footnote 5: 2016, 2017, and 2018 Scope 3 emissions were revised to better account for the number of curbside drop-offs for enplaned passengers, which now are based on a 2016 passenger survey and are estimated at 35% mode share.

Figure 1 below illustrates activities represented within 2020 Scope 1 and Scope 2 emissions, by percentage. The total percentages shown in the figure represent the description of emissions sources by scope found in Table 1.

Figure 1: 2020 Scopes 1 and 2, by Activity

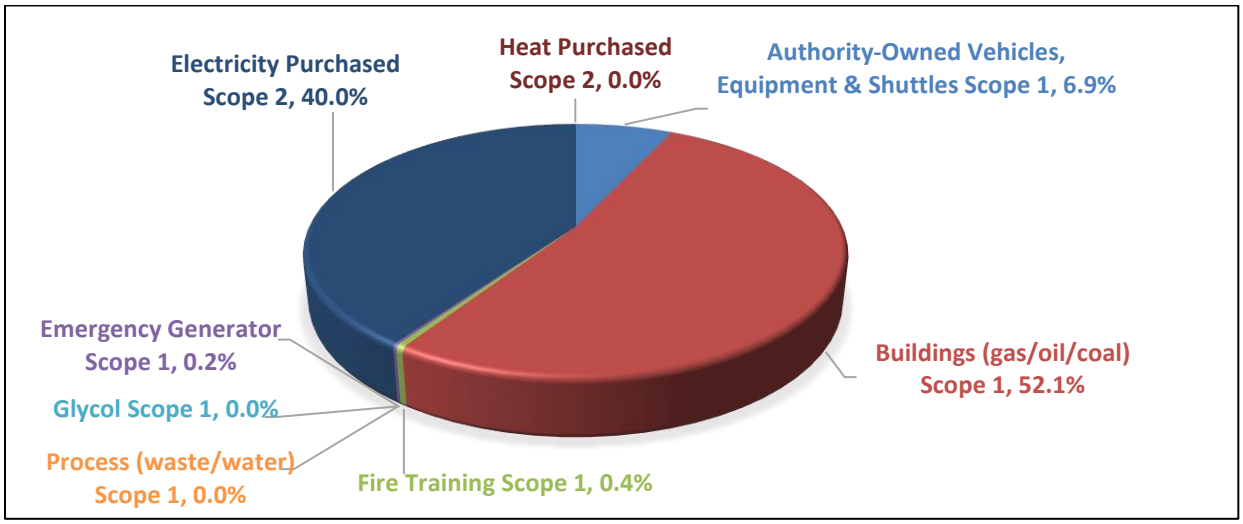


Figure 2 illustrates the fact that the overwhelming majority of 2020 emissions were generated by Scope 3 activities (of which SAN can "influence" but not "control"). As a result, the Authority actively prioritizes engagement with the stakeholders that are contributing to SAN's Scope 3 GHG emissions. Of note: although the RCC is on SAN's medium voltage electricity distribution loop, the electricity from the RCC is cataloged as "Scope 3" emissions as recommended by a third-party verifier, because the Authority does not have direct control of its operations (the RCC is operated by Conrac Solutions).

Figure 2: 2020 Scopes 1, 2, and 3, by Percentage

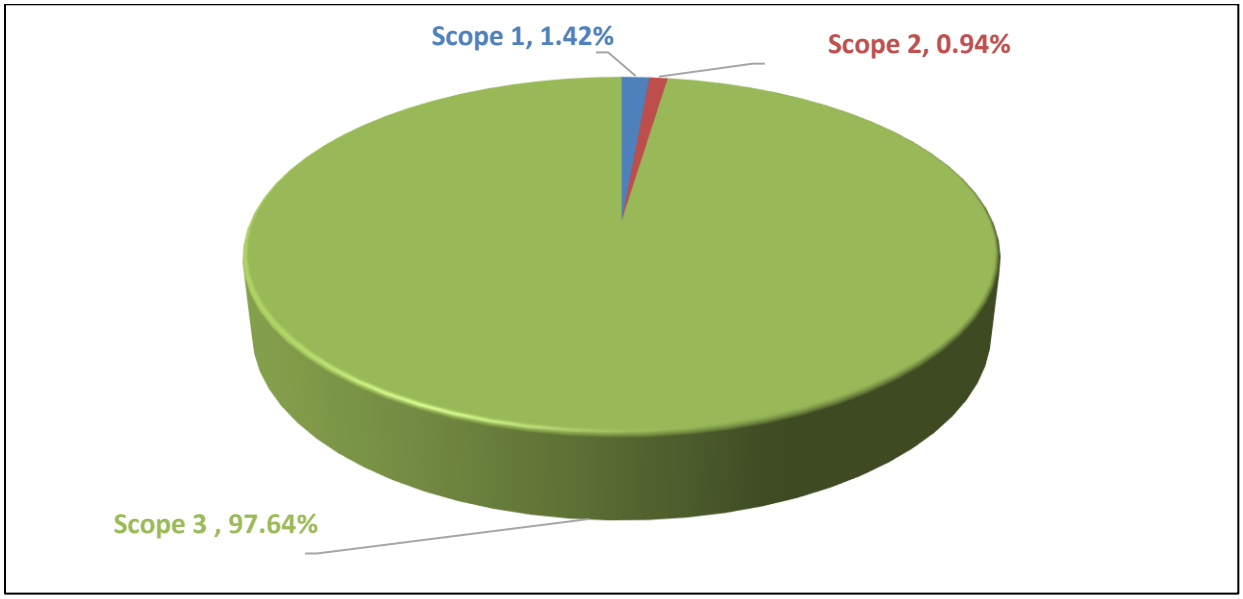
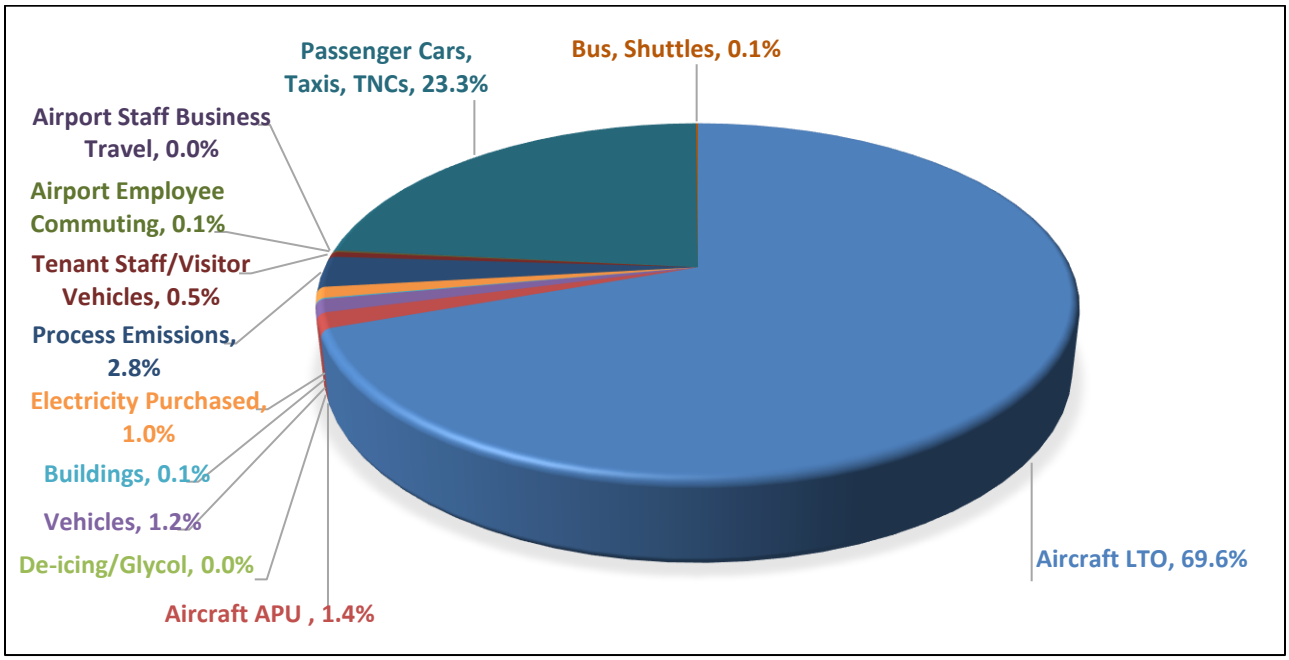


Figure 3 illustrates the percentage breakdown of Scope 3 activities. The majority of the 2020 Scope 3 emissions came from Aircraft landings and take-offs (LTO) which decreased 49% compared to the previous year due to operational changes and reduced travel during the pandemic. Passenger vehicle travel in 2020, including taxis and TNCs, comprised the second largest percentage of Scope 3 emissions and decreased by 59% compared to 2019.

Figure 3: 2020 Scope 3, by Activity



Carbon Reduction Policies

The Airport Authority is committed to environmental excellence in new construction projects and in ongoing operations. The Authority's Sustainability Management Program[3] represents an active carbon management plan at SAN and contains the following elements:

- Responsibility, resource allocation, and organizational structure
- Carbon management initiatives
- Implementation plan
- Communication, awareness, and training
- Self-assessment/auditing

The Airport Authority's Sustainability Policy[4], one of the first for a major airport in the U.S., establishes the Authority's commitment to sustainability and environmental stewardship in business practices. A portion of this policy commits the Authority to adopt the standards set forth by the United States Green Building Council (USGBC)'s Leadership in Energy and Environmental Design (LEED) as guiding criteria for

[3] All seven plans within the Sustainability Management Program can be viewed and downloaded at https://www.san.org/Airport-Projects/Environmental-Affairs

[4] http://san.org/Portals/0/Documents/Environmental/SD-Airport-Authority-Board_Sustainability-Policy_Rev-2019.pdf

achieving sustainable design in the development and remodeling of airport facilities, while also applying LEED criteria as a significant factor when reviewing tenant development projects. The Sustainability Policy was adopted by the Board in 2008 and was updated in 2019.

The Authority's Carbon Neutrality Plan[5] (one of the seven plans in the Authority's Sustainability Management Program) discusses source-specific goals and the initiatives in alignment with and in support of California and aviation industry GHG reduction goals. A primary goal of the Plan is to minimize the Authority's direct operational impact on climate change, including Scope 1, 2, and Airport staff business travel emissions reductions, to 80% below 2015 levels by 2035. Due to operational efficiencies and the Authority switching to SDG&E's green tariff called EcoChoice, the 2020 emissions inventory represents a 76% GHG emissions reduction, compared to 2015 levels.

Governance

The Airport Authority is governed by a nine-member Board of Directors that maintains overall responsibility for climate change matters. In 2017, the Airport Authority's Board of Directors and Executives developed a SAN-specific definition of sustainability as "building an enduring and resilient enterprise by effectively managing our financial, social and environmental risks, obligations and opportunities." This definition is included in San Diego International Airport's annual sustainability report and other public-facing communications.

Periodic Utility Working Group meetings are held to provide an ongoing forum to discuss and coordinate energy and water management initiatives across Authority departments. Attendees include staff from a variety of departments including Planning and Environmental Affairs, Airside & Terminal Operations, Facilities Management, Airport Design and Construction, Finance, and Information & Technology Services.

Day-to-day responsibility for carbon and energy management lies within the Authority's Planning and Environmental Affairs Department as well as the Facilities Management Department. The measurement and reduction of carbon emissions and energy consumption is managed by the Planning and Environmental Affairs Department, which is also responsible for developing the Authority's Strategic Energy Plan, Water Stewardship Plan, Clean Transportation Plan, Carbon Neutrality Plan, and other plans within a Sustainability Management Program. For instance, the Strategic Energy Plan provides a framework for rethinking how the Authority manages their energy resources, while preparing to accommodate passenger growth, development projects, and the added variability of a changing climate. The strategic plans establish key long-term goals in energy and water efficiency and conservation, on-site energy generation and storage, enhanced monitoring of key energy metrics, clean transportation opportunities, storm water management, and other mechanisms through which to engage stakeholders. Progress on implementing the plans is communicated through official presentations to the Airport Authority's Board of Directors.

[5] https://san.org/Portals/0/Documents/Environmental/2019-Draft/08292019_SD_Intl_Airport_Carbon_Neutrality_plan_lowres.pdf

The Facilities Management Department maintains responsibility over the day-to-day energy management and performance throughout airport facilities. The Planning and Environmental Affairs department calculates and publishes carbon and energy performance metrics, which are presented annually to senior management for review. Metrics are also shared with external audience via the publication of an annual Sustainability Report[6] that is only available through an online format to increase interactivity and to discourage printing.

In consideration of the fact that the vast majority (~97.64%) of GHG emissions footprint is associated to activities carried on by third parties (Scope 3 GHG emissions), the Airport Authority understands the importance of involving key external stakeholders in the development and implementation of carbon management and reduction practices. For this reason, the Airport Authority actively engages in an on-going basis with stakeholders with the aim of reducing Scope 3 GHG emissions generated at the airport by their operations. This engagement is driven by the understanding that the Authority cannot control third party operations but can guide and influence them to varying degrees.

Below are the primary contributors to the airport's greenhouse gas emissions inventory:

- Airlines: All airlines operating aircraft at the airport
- Tenants: All tenants and employees operating at the airport
- Passengers: Customers traveling to and from the airport
- Ground transportation operators: Taxis, Transportation Network Companies (TNCs), Employee and Rental Car Center (RCC) shuttles and buses, Hotel Shuttle and Limousine Operators, etc.
- Utilities: Providers of services including energy, waste, and water management

2020 Accomplishments

Below is a short list of 2020 accomplishments:

Awards

- Climate Leadership Award for Greenhouse Gas Goal Setting (March 2020)
- Climate Leadership Award for Individual Leadership – Brendan Reed (March 2020)
- ACI-NA Environmental Award for Outreach and Communication for the SAN Airport Development Plan Outreach (April 2020)
- SANDAG iCommute Gold-Tier Diamond Award (Sept. 2020)
- Industrial Environmental Association (IEA) Environmental Excellence Award for Northside Stormwater Capture Cistern (Sept. 2020)
- City of San Diego 2019 Waste Reduction and Recycling Award 'Recycler of the Year' (Nov. 2020)
- Airports Going Green Individual Leadership Award- Brendan Reed (Nov. 2020)
- San Diego Green Building Council SAN Green Concessions Sustainable Business Patron Award (Dec. 2020)

[6] http://sustain.san.org/

SAN Remains Carbon Neutral

San Diego International Airport is one of only two airports in North America[7] to successfully reach Airport Carbon Accreditation (ACA) Level 3+. The third-party verified ACA program is a framework that helps airports identify, manage, and ultimately reduce their carbon emissions while also effectively partnering with its business partners – such as airlines, concessions, and ground transportation operators – to lower their emissions at the airport. "Carbon Neutrality" (Level 3+) means the Airport Authority demonstrated that it is reducing carbon emissions under its direct control (namely, from fuel used in fleets and generators, purchased electricity, and staff business travel), engaging with airlines and other business partners to help them reduce their on-site emissions, and offsetting the remaining carbon emissions under its direct control. Achievement of Level 3+ by 2022 was outlined in the Airport Authority's 5-Year Strategic Plan, but the Authority reached the goal three years early. In addition to reducing Scope 1 and Scope 2 emissions year-over-year, the Authority purchased carbon offsets via The Good Traveler program to mitigate the remaining GHG that represent the SAN's 2020 Scope 1, 2, and Staff Business Travel.

Renewable Energy and Battery Storage

The Authority purchases renewable photovoltaic solar electricity through SDG&E's green tariff called EcoChoice, and in 2020 the portion of grid-delivered renewable energy was approximately 70%. Combined with 5.5 megawatts of on-site photovoltaic solar electricity, the total amount of renewable energy at SAN in 2020 was more than 86%. In 2020 the Authority also continued steps to install and operate a battery energy storage system at SAN. The 2-Megawatt/4 Megawatt-hour battery energy storage system will significantly help reduce the Authority's electricity demand costs and implements an important near-term priority identified in the Airport's Strategic Energy Plan. The system has an anticipated activation date of Summer 2021.

Ground Transportation Incentive Program

The airport employs an incentive program to encourage ground transportation providers at the airport to convert their fleets to alternative fuels or other clean air vehicles. The incentive program allows ground transportation operators to pay lower airport fees if they operate alternative fuel or clean air vehicles.

The incentive program is applicable to all eligible airport-permitted commercial ground transportation operators, including taxicabs, vehicles for hire, hotel shuttles, off-airport parking shuttles, rental car shuttles and transportation network companies (TNC). Limousines and charter vehicles are exempt from the requirements of the program, but it is expected that those vehicle modes will be applicable in the future. The goal of the incentive program is to convert 100% of the applicable commercial ground transportation vehicles at the airport to Alternative Fuel Vehicles (AFVs) or other clean air vehicles.

The Airport Authority's annual TNC Permit demonstrates a Scope 3 emissions reduction initiative by providing a target Greenhouse Gas Rating (GGR): vehicles with higher greenhouse gas emissions pay a higher trip fee.

[7] https://www.airportcarbonaccreditation.org/airport/participants/north-america.html

The table below shows the reduction in average grams of CO_2 per mile for TNCs.

TNC Average Grams of CO_2/Mile	
2018	259 average grams of CO_2/mile
2019	210 average grams of CO_2/mile
2020	204 average grams of CO_2/mile

Despite the GGR waiver in calendar year 2020, TNC fleets continued to demonstrate a lower average grams of carbon dioxide per mile. Additionally, two of the four major rideshare (TNC) companies had a greenhouse gas rating (GGR) of 9, which is between 205-237 grams CO2/mile for fleets.

The Good Traveler

In 2015, the Airport Authority developed and launched The Good Traveler, a carbon offsetting program designed to encourage sustainable travel by enabling individuals to offset the environmental impact of their journey in an affordable, easy and meaningful way. There are now over 20 partner airports and airlines in The Good Traveler carbon offset program[8], including San Diego International Airport, from all over the country. By the end of 2020, total cumulative carbon offset reductions attributed to The Good Traveler equaled 103,873 metric tons, which is equivalent to emissions from more than 667 million travel miles.

Stormwater Capture and Reuse System

Commissioned in late 2018, the Terminal 2 Parking Plaza was designed with SAN's first stormwater capture and reuse system. The system conveys rainwater from the facility to a series of media and UV filters, before sending the water to the Central Utility Plant for use in its cooling towers (which would otherwise use potable water purchased from the City of San Diego). In 2020, 936,715 gallons of stormwater was captured, treated, and reused and the system surpassed 3.1 million total gallons captured and reused since the system was commissioned in 2018.

In 2020, SAN completed construction on another stormwater capture and reuse system. The Northside Stormwater Capture Cistern is a 3-million-gallon cistern on the north side of the runway, which will eventually capture stormwater runoff from 80 acres total. The cistern is designed to reuse approximately 16 million gallons annually with plans to use that captured water to wash cars at the nearby Rental Car Center (RCC) and the remaining stormwater will be discharged to the bioswales surrounding the RCC.

Annual Ground Support Equipment Inventory

Authority staff annually complete a Ground Support Equipment (GSE) inventory to assess airlines and other business partners' progress in converting their equipment to alternative fuel technologies. In 2020, 839 pieces of GSE were operated airside, with 30% of them classified as "Low Carbon Emission" (i.e., electric, propane, biodiesel, renewable diesel, or compressed natural gas powered). Most of the alternatively fueled GSE are powered by electricity, with 27% of all GSE categorized as electric. Moving forward, the Authority will continue to prioritize conversion of third party owned GSE to alternative fuel.

[8] https://thegoodtraveler.org/airport-partners/

Sustainability Management Program

As part of a FAA-funded sustainability planning grant, the Airport Authority developed multiple plans to serve as guideposts for environmental achievements. In 2019 all plans were accepted by the Authority Board and they can be accessed at www.san.org/green.

The Strategic Energy Plan was last updated August 2019. The document contains a table of Phase 1 Energy Projects within the Implementation Roadmap, showing a short-term goal of energy efficiency projects. Two major energy efficiency projects with were completed in 2020: Terminal 2 lighting retrofits and Central Utility Plan chilled water optimization. The estimated financial and energy savings from those projects are illustrated below:

Total estimated annual financial savings: $285,000
Total estimated annual energy savings: 1,400,000 kWh

The Climate Resiliency Plan serves as the Authority's overall strategy towards reducing climate change risks on airport operations and infrastructure. Specifically, the plan assesses SAN's vulnerability to potentially higher sea levels, more intense rainfall, and more extreme heat, and it outlines adaptation strategies to minimize these stressors in the future. The plan was developed in close coordination with the City of San Diego and Port of San Diego, since many potential climate change impacts occur offsite and, thus, require a regional solution.

The Carbon Neutrality Plan establishes the strategies for managing GHG emissions over which the Authority has control and provides a framework for achieving "carbon neutrality" (Level 3+) under the ACI Airport Carbon Accreditation program.

The Clean Transportation Plan provides the Authority's approach for managing various ground transportation emission sources, including all vehicles and equipment accessing and operating at the airport.

Airport Authority Partners with SANDAG on Regional Transit Connectivity

Over the last two years, the Airport Authority has partnered with the San Diego Association of Governments (SANDAG) to create an Airport Connectivity Subcommittee to identify future solutions for improved transit and road connectivity to the San Diego International Airport. The Subcommittee met multiple times prior to 2020 and included senior leaders from the Port of San Diego, City of San Diego, County of San Diego, Metropolitan Transit System, North County Transit District, and Caltrans District 11. The Subcommittee's resulting report[9] identified four possible fixed-rail alignments and complementary roadway improvements. During 2021, the Authority will be assisting SANDAG with further developing these concepts and initiating their environmental review. Also in 2021, the Authority will be launching the Old Town all-electric shuttle service to coincide with the start of the MTS Mid-Coast Trolley Extension service.

[9] https://www.sandag.org/uploads/projectid/projectid_577_26642.pdf

Airport Development Plan – EIR Mitigation Monitoring and Reporting Program

The Airport Development Plan (ADP) is the next phase of master planning for San Diego International Airport and includes improvements to serve forecasted aviation demand through 2035 with more modern, efficient, and comfortable facilities.

The ADP's specific goals include the following:

- Develop passenger terminal facilities to efficiently accommodate future activity levels and maintain high levels of passenger satisfaction that reflect the local feel and uniqueness of San Diego;
- Plan for an operationally efficient airfield that meets FAA standards;
- Provide a plan that is fiscally and environmentally sustainable;
- Optimize the productive use of SDIA properties;
- Provide a plan that meets the aviation needs of the San Diego region in a socially responsible manner; and
- Improve ground access to SDIA, including coordination of transit service and facilities that interface with regional systems, and accommodate parking demand.

The primary project components of the ADP include the following:

- Demolition of existing Terminal 1 and replacement with a new Terminal 1 facility totaling 1.21 million square feet and 30 gates;
- Airfield improvements including the relocation of existing Taxiway B, construction of a new Taxiway A, reconfigured Remain Overnight (RON) aircraft parking areas, and new apron area around the Terminal 1 replacement;
- A circulation road with an at-grade arrivals curb and an elevated structure with a departures curb;
- A new on-airport inbound/entry road with a multi-use bicycle and pedestrian path that would connect to North Harbor Drive and allow westbound airport traffic to enter SDIA at the existing intersection of North Harbor Drive and Laurel Street; as well as an outbound airport circulation lane, completing the Terminal Link Road that is reserved for high-occupancy vehicles traveling to SDIA's north side;
- Construction of a close-in parking structure for Terminal 1;
- Expansion of the existing Central Utility Plan by 12,000 square feet;
- New Airport Authority administrative offices totaling up to 150,000 square feet;
- Underground utilities;
- Stormwater capture and reuse system; and
- Demolition of the current Airport Authority administrative offices (former commuter terminal) and other ancillary airport support facilities.

The Airport Authority Board certified the ADP's Final Environmental Impact Report (EIR) on January 9, 2020 and adopted a related Mitigation Monitoring and Reporting Program (MMRP) to help reduce the project's environmental impacts. The following table provides an update on the implementation of the ADP mitigation measures that pertain to air quality and greenhouse gases.

ADP EIR Mitigation Monitoring and Reporting Program (MMRP) Table – Air Quality & GHG Measures

Mitigation Measure #	Measure Name	Timeline	Measure Summary	Progress
AQ/GHG-1	Ground Support Equipment Conversion	Q3 2024	All baggage tugs, belt loaders, lifts, pushback tractors, and utility carts at SDIA that are owned and operated by airlines and their ground handling contractors to service aircraft, shall be transitioned to alternative fuels (i.e., electric natural gas, renewable diesel, biodiesel) by 2024. Additionally, by 2024, 50 percent of gasoline fueled GSE that are light duty vehicles owned and operated by SDCRAA would be replaced with hybrid electric or alternative fuel vehicles and 100 percent of diesel fueled GSE that are owned and operated by SDCRAA would be replaced with hybrid electric or alternative fuel vehicles.	Pursuing VALE funding for 39 new dual-port EV chargers at Terminal 2 to support new eGSE; Educated SAN Fuel Co. on procurement of dyed renewable diesel for airside use
AQ/GHG-2	Renewable Electricity	Q4 2024	Project-related buildings shall be powered by 100 percent renewable electricity by 2024 and continuing thereafter through on-site generation resources, grid-delivered purchases, and/or renewable energy certificates.	Began enrollment process into San Diego Community Power's 100% grid-delivered renewable electricity option, which should be completed by Fall 2021
AQ/GHG-3	Cool Roof	Q3 2023 – Admin Q1 2027 – T1	The project shall include roofing materials with a minimum 3-year aged solar reflection and thermal emittance or solar reflection index equal to or greater than the values specified in the voluntary measures under 2016 California Green Building Standards Code.	Included cool roof specifications in project design requirements, as well as began pursuing Sustainable Sites and Heat Island Reduction credits as part of LEED certification submissions

AQ/GHG-4	LEED Silver Certification	Q3 2023 – Admin Q1 2025 – Parking Q1 2027 – T1	The project shall demonstrate achievement of at least LEED Silver certification (or equivalent green rating certification) for all new major facilities, such as a new terminal, a new parking structure, or new SDCRAA administration building.	The new Terminal 1 and new Administration Building are on track to achieve at least LEED Silver certification, while the new Parking Plaza is on track to achieve at least ParkSmart Silver certification
AQ/GHG-5	Clean Vehicle Parking	Q1 2025	The project shall designate 10 percent of new parking stalls for a combination of low-emitting, fuel-efficient, and carpool/vanpool vehicles.	Included parking stall specifications in project design requirements
AQ/GHG-6	Electric Vehicle Chargers	Q1 2025	The project shall install electric vehicle charging ports at three percent of new parking stalls and another three percent would be "EVSE-ready".	Included EV charger specifications in project design requirements
AQ/GHG-7	Ground Transportation Clean Vehicle Program	Q4 2021	In conjunction with the project, SDIA's current Commercial Ground Transportation Clean Vehicle Program shall be extended past 2020 with goal that commercial operator fleets achieve an average GHG rating of 10 (0-204 gCO2/mile) by 2030 as scored by fueleconomy.gov (or an equivalent program).	Extended the SAN Clean Vehicle Incentive Program by including discounted fees for "clean vehicles" in FY22 Commercial Ground Transportation Permits
AQ/GHG-8	Electric On-Airport Shuttles	Q4 2026 – non-Rental Car Center buses Q4 2028 – Rental Car Center buses	In conjunction with the project, on-airport shuttles serving passenger and employee parking lots, and inter-terminal transfers shall be transitioned to electric vehicles (all- electric or plug-in hybrid) by 2026. The buses serving the Rental Car Center shall be transitioned to electric vehicles by 2028.	Began receiving all-electric shuttles to serve parking lots and inter-terminal transportation needs

AQ/GHG-9	Bicycle Facilities	2023: Admin. Building 2027: T1	To facilitate active transportation commuting, the project shall install shower stalls and lockers in the new Airport Administration Building and in the new terminal building based on the number of employees and guidance provided in the City of San Diego's Climate Action Plan Consistency Checklist (estimated at 7 shower stalls and 25 lockers total). In addition, covered bicycle storage shall be installed for SDCRAA and tenant employees based on non-public square footage and guidance provided in the City of San Diego's Climate Action Plan Consistency Checklist (estimated at 50 bike spaces total).	Included bicycle facility specifications in project design requirements
AQ/ GHG-10	Employee Parking Cash-Out Program	Q3 2023	SDCRAA shall implement a parking cash-out program for its employees.	Began internal coordination on the new cash-out program's design
TR-LRP-2	Airport Regional Connections	Ongoing coordination with SANDAG	Prior to 2035, the SDCRAA shall participate in regional efforts to develop a long-range transportation solution for accessing the Airport.	Coordinated with SANDAG on their initiation of the environmental review process (under CEQA) for the proposed fixed-rail transit connection to the Airport's terminal area

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