SAN DIEGO COUNTY REGIONAL AIRPORT AUTHORITY

2022 Greenhouse Gas Emissions Inventory

San Diego International Airport

Planning and Environmental Affairs Department
June 2023

SAN DIEGO INTERNATIONAL AIRPORT
LET'S GO.

This summary report describes the 2022 Greenhouse Gas (GHG) Emissions Inventory for San Diego International Airport, including Scopes 1, 2, and 3 type emissions. This report also includes implementation updates for GHG-related mitigation measures for the Airport Development Plan, as outlined in its Final Environmental Impact Report.

Summary

The San Diego County Regional Airport Authority (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 downtown area. 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 2022, SAN saw 41% increase in passenger traffic and airport operations from the previous year. An average of 60,301 passengers a day passed through the airport, which accommodated about 654 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 2022, SAN offered nonstop service to over 70 destinations and accommodated 22,009,921 passengers[1].

The total gross emissions represented in the SAN 2022 Greenhouse Gas (GHG) Emissions Inventory (including Scopes 1, 2, and 3) were 2,954,844 metric tons of carbon dioxide equivalent.

Organizational Boundary

The 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).

Emission 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 2022 GHG emissions inventory included all Scope 3 emissions sources such as: non-Authority owned motor vehicles, tenant-purchased electricity, aircraft fuel usage, auxiliary power units (APUs), ground support equipment (GSE), waste management (no incineration occurs on site), construction activity, and staff business travel.

[1] https://www.san.org/news/Air-Traffic-Reports?EntryId=15197

Authority-purchased electricity: In 2022, all electricity used at SAN was purchased from the region's Community Choice Energy program called San Diego Community Power (SDCP). The Authority manages energy onsite mainly through a medium voltage (12kV) energy distribution loop, a circular loop with three primary electricity meters reducing cost and electrical interruptions by having the ability to power in either direction around the loop. The Authority purchases the electricity from SDCP that is then distributed through the energy loop to the majority of buildings and structures onsite (with the exception of a few Authority-owned support buildings, which 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 12kV loop but are included in the emissions calculations]). The quantities of electricity and natural gas purchased by the Authority were calculated directly from monthly SDG&E utility bills, which also includes information on electricity purchased from SDCP. Although a majority of the energy used onsite is under the control of tenants, the emissions associated with Authority-purchased electricity and natural gas usage are considered Scope 1 and Scope 2 emission sources due to the fact that it was purchased by the Authority, is not resold to tenants, and there is no comprehensive sub-metering network to determine the actual amount of utilities consumed by tenants. Because SDCP provides 100% carbon-free, renewable grid-delivered electricity, it has an emissions factor of zero[2]. SAN has 5.5 MW of on-site photovoltaic (PV) solar and consumes all electricity generated from the solar systems on-site, which results in less electrical demand that needs to be delivered from SDG&E or SDCP.

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 Aircraft Rescue & Fire Fighting 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 Department and Ground Transportation Department. The fuel provider for the Authority's vehicle fleet provided fuel invoices, and emissions were calculated based on fuel usage. The Authority also utilizes an off-site renewable natural gas fueling station for its 30 Rental Car Center (RCC) buses, which are in this report as a Scope 1 source of emissions because they are support equipment of the RCC. The natural gas fuel usage amounts for all vehicles were collected from the Authority's SDG&E monthly utility bills, and from monthly invoices from the off-site natural gas provider, Clean Energy.

Stationary Sources: Emissions from stationary sources such as boilers, generators, as well as other sources (e.g., cooking, air handling units, etc.) are incorporated into the airport's carbon footprint. The Authority purchases natural gas from SDG&E, which is distributed throughout the airport campus. While tenants utilize a portion of natural gas for cooking, space heating, and other activities, 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 ran for each generator.

Refrigerants: Emissions from the use of refrigeration are tracked for Scope 1 and Scope 3 emissions.

[2] https://sdcommunitypower.org/about/energy-sources

Specific Facilities Included in the Boundary

Authority-owned and operated mobile combustion sources include a fleet of vehicles, equipment, and shuttles, which utilize gas (GSE, light-duty vehicles), diesel (work trucks, generators), natural gas (sweeper), renewable natural gas (Rental Car Center buses), and propane (passenger and employee shuttles, forklifts).

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

- Terminal 1 Building
- Terminal 2 East and West Buildings
- Main Administrative Office
- Facilities Management Department Main Office Building and Maintenance Shops
- Procurement Department Building
- Aircraft Rescue & Fire Fighting Station
- Central Utility Plant
- Small Office Building next to Fuel Farm
- USO Building and Parking Management Office
- Aircraft Cargo Buildings
- ASIG (Menzies) Building
- Airfield
- Roadways, parking lots and associated traffic and safety lighting
- Building Complex offsite (located at Truxtun Road)

Scope 3 inclusions to the 2022 emissions inventory include:

- Consolidated Rental Car Center (RCC)
- Receiving and Distribution Center
- FedEx Sorting Facility
- Wind Tunnel Building
- Fixed Base Operator (FBO)
- Air Traffic Control Tower
- Uplifted Aircraft Fuel (full flight)
- Engine Testing and Auxiliary Power Unit (APU) Operation
- Third-party Ground Support Equipment (GSE) Operations
- Electricity re-sold to or directly purchased by partners/tenants
- Surface access by passengers
- Airport Company Staff Business Travel
- Refrigerant use
- Construction emissions

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		
Authority-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
Landside Taxi & Shuttle Services	3	Ground Transportation Department

Description of Emissions Sources	Scope 1, 2 or 3	Internal Department or Third Party with Responsibility for Emissions Source
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
On-Site Construction	3	Airport Design and Construction Department, Planning & Environmental Affairs Department
Refrigerants	3	Airside & Terminal Operations Department, Facilities Management Department
"Influence" Emissions Sources		
Aircraft Main Engine Fuel (full flight, on half-way or one-way method) – amount of uplifted aircraft fuel	3	Airside & Terminal Operations Department, Finance 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 2022 GHG emissions inventory, including the total metric tons of carbon dioxide equivalent and the percent of the total each scope represents.

Table 2: SAN 2022 Emissions Inventory (Scopes 1, 2, and 3)

2022 Scope Break Down (metric tons CO2e)		Percent of Total Emissions
Scope 1	**2,366**	**0.08%**
Scope 2	**0**	**0.00%**
Scope 3	**2,952,478**	**99.92%**
Total Gross Emissions	**2,954,844**	**100%**

The Authority saw a slight increase in Scope 1 emissions due to more vehicles added to the fleet, an increase in natural gas used in buildings, and increase in firefighting fuel used for trainings compared to the previous year.

The Authority received 100% renewable and carbon free grid-delivered electricity for all of 2022 which reduced Scope 2 emissions to zero.

Coastal Development Permit (CDP) #6-20-0611 – Special Condition #6

The Greenhouse Gas (GHG) Emissions Reduction Plan that the Authority submitted, and the California Coastal Commission approved, describes the approach for San Diego County Regional Authority to comply with Coastal Development Permit (CDP) #6-20-0611 – Special Condition #6. The plan describes the project elements and identifies and quantifies the types and amounts of Scope 1, 2, and 3 GHG emissions that will be associated with the construction and operation of the approved project. Known or estimated values for GHG emission sources to be included in annual reporting required under the permit include aircraft, GSE, space heating and air conditioning, motor vehicles, construction equipment, etc. The plan also identifies, evaluates, and documents GHG emission reduction measures incorporated into the design, construction, and operation of the proposed project that reduce Scope 1 and 2 emissions to net zero.

The Authority set energy use intensity goals for the New T1 project that is currently in design and holds regular meetings with sustainability and design teams to review the energy model and review different portions of the design to discuss areas where we can pursue increased efficiency to meet goals. New T1 design elements for energy efficiency that are incorporated include: a heat recovery chiller, hybrid displacement ventilation for HVAC in the terminal, LED lighting, and shading and orientation to reduce solar gain in the summer and utilize solar gain in the winter.

Construction GHG Emissions

The Authority has a system in place to quantify and abate construction emissions associated with the project components within CDP #6-20-0611. For clarification, Table 3 lists the project elements included in CDP #6-20-0611 that the Authority will be tracking, and then offsetting the net construction related GHG emissions. The

Authority is using estimated construction emissions listed in Table 5-20 of EIR Alternative 4[3] that includes the project elements.

Table 3: Project Elements included in Coastal Development Permit #6-20-0611

New 30-gate Terminal 1 including demolition of existing T1
Road/circulation system including curbfronts and three-lane entry road
5-level Parking Plaza
Central Utility Plan (CUP) Upgrade
East Solid/Liquid Waste Facilities
Reconfigure Taxi/Transportation Network Company (TNC) Hold Lot

Non-road sources generally include construction equipment such as excavators, bulldozers, on-site generators, concrete batch plants, and lighting equipment. On-road vehicles (such as passenger vehicles, pickup trucks, and tractor trailers) and fugitive emissions (such as particulate matter from movement of material, volatile organic compounds [VOCs] from drying asphalt, etc.) are not considered non-road sources, and therefore, are excluded from this carbon offsetting requirement.

Operational GHG Emissions

The Authority is accounting for 100% of the GHG emissions over which it has operational control (Scopes 1 & 2). As previously noted, 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). It is worth noting that because the Authority subscribed to San Diego Community Power at its Power100 level in October 2021, which provides 100% grid-delivered renewable and carbon-free electricity to the airport, subsequent emissions inventories will reflect a zeroing out of Scope 2 emissions. The Authority will continue to offset all other residual project operational emissions in alignment with CDP #6-20-0611. In addition, the Authority voluntarily offsets (i.e. not part of CDP requirements) its other operational residual emissions, as well as Scope 3 emissions from employee business travel, in alignment with its ongoing participation in the Airport Carbon Accreditation program.

Carbon Offsetting Purchases

The Authority is offsetting emissions, as described above, using "The Good Traveler" program that utilizes projects within the Anew product portfolio. The offsetting of 2022 emissions will utilize a project from the American Carbon Registry (ACR)[4], one of the "Compliance Offset Programs" approved by the California Air Resources Board, in the following quantities:

- Calendar year 2022 construction emissions equal to 5,434 MT of CO_2e.
- Calendar year 2022 operational emissions (Scope 1, Scope 2, and Scope 3 Staff Business Travel) equal 2,425 MT of CO_2e (2,410 MT for Emissions Year 2022 and an additional 15 MT for Emissions Year 2021 that were identified after the 2021 inventory).

Table 4 below lists the SAN emissions inventory tracker for calendar year 2021 and all subsequent years. A historical summary of GHG emissions can be found in Appendix 1 of this report.

[3] https://san.org/Portals/0/Documents/Environmental/2019-Draft/RDEIR/22_SAN_ADP_2019_RDEIR_Chpt5_Alts_Sept_2019.pdf
[4] https://americancarbonregistry.org/

Table 4: SAN Emissions Inventories in 2021+

	Summary of Greenhouse Gas Emissions Inventories (2021+)														
Year	2021			2022			2023			2024			2025		
Emissions Type	OPERATIONAL (MT CO2e)			OPERATIONAL (MT CO2e)			OPERATIONAL (MT CO2e)			OPERATIONAL (MT CO2e)			OPERATIONAL (MT CO2e)		
Operational Emissions Boundary	Entire Airport	Green Build – 10 Gates[1]	NT1 – 30 Gates[2]	Entire Airport	Green Build – 10 Gates[1]	NT1 – 30 Gates[2]	Entire Airport	Green Build – 10 Gates[1]	NT1 – 30 Gates[2]	Entire Airport	Green Build – 10 Gates[1]	NT1 – 30 Gates[2]	Entire Airport	Green Build – 10 Gates[1]	NT1 – 30 Gates[2]
Scope 1	1,910	382	N/A	2,366	473	N/A									
Scope 2	4,010	802	N/A	0	0	N/A									
TOTAL: Scope 1 & 2	5,920	1,184	N/A	2,366	473	N/A									
Staff Business Travel	25	5	N/A	44	9	N/A									
TOTAL: Scope 1, Scope 2, & Staff Business Travel	5,945	1,189	N/A	2,410	482	N/A									
Scope 3	1,614,115			2,952,478											
Authority's scope of operational carbon offsetting is greater than the construction carbon offsetting requirements of CDP #6-20-0611															
Scope 3 is listed for reporting only, and is outside of the carbon offsetting requirements of CDP #6-20-0611															
Emissions Type	CONSTRUCTION (MT CO2e)			CONSTRUCTION (MT CO2e)			CONSTRUCTION (MT CO2e)			CONSTRUCTION (MT CO2e)			CONSTRUCTION (MT CO2e)		
Project Elements included in Coastal Development Permit #6-20-0611	263.3			5,434											
TOTAL: CONSTRUCTION	263.3			5,434											
CDP #6-20-0611 includes: New 30-gate Terminal 1 including demolition of existing T1; Road/circulation system including curbfronts and three-lane entry road; 5-level Parking Plaza; Central Utility Plant (CUP) Upgrade East Solid/Liquid Waste Facilities; Reconfigure Taxi/TNC Hold Lot															
TOTAL TO OFFSET: SCOPE 1, 2, & STAFF BUSINESS TRAVEL + CONSTRUCTION	**6,208.3**			**7,859[3]**											

Footnote 1: The Green Build Project (10 additional gates) represents 20% of the entire airport's total 51 gates. This project was completed in 2013.
Footnote 2: The New Terminal 1 Project (19 replacement gates and 11 additional gates) will represent 48% of the entire airport's total 62 gates.
Footnote 3: Calendar year 2022 operational emissions (Scope 1, Scope 2, and Scope 3 Staff Business Travel) equal 2,425 MT of CO2e (2,410 MT for EY 2022 and an additional 15 MT for EY 2021 that were identified after the 2021 inventory).
Footnote 4: Table 4 documents a more comprehensive accounting of greenhouse gas emissions. Appendix 1 documents the historical information for years 2014 - 2020.

Figure 1 below illustrates activities represented within 2022 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: 2022 Scopes 1 and 2, by Percentage and Activity

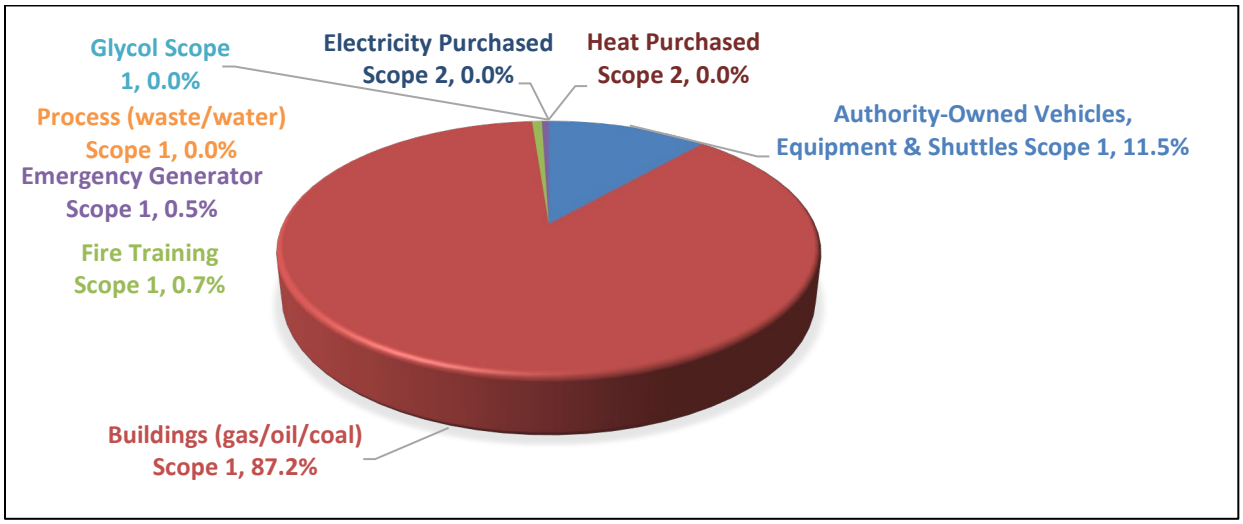


Figure 2 below illustrates the fact that the overwhelming majority of 2022 emissions were generated by Scope 3 activities (of which SAN can "influence" but not "control"). As a result, the Authority actively prioritizes engagement with the stakeholders that are contributing to SAN's Scope 3 GHG emissions.

Figure 2: 2022 Scopes 1, 2, and 3, by Percentage

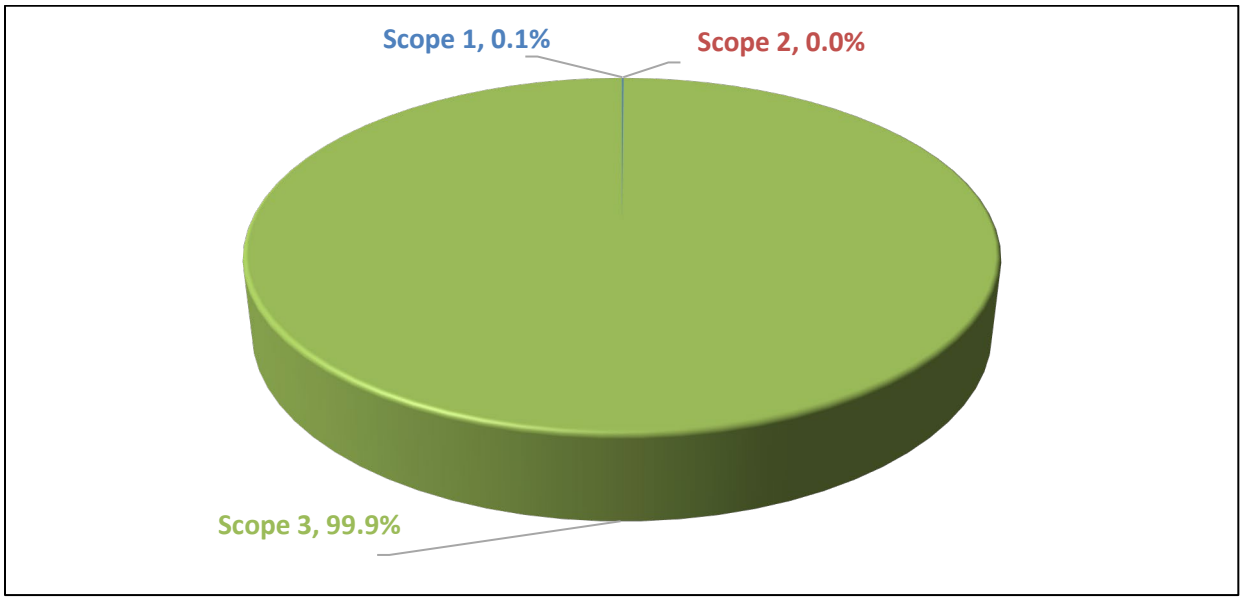
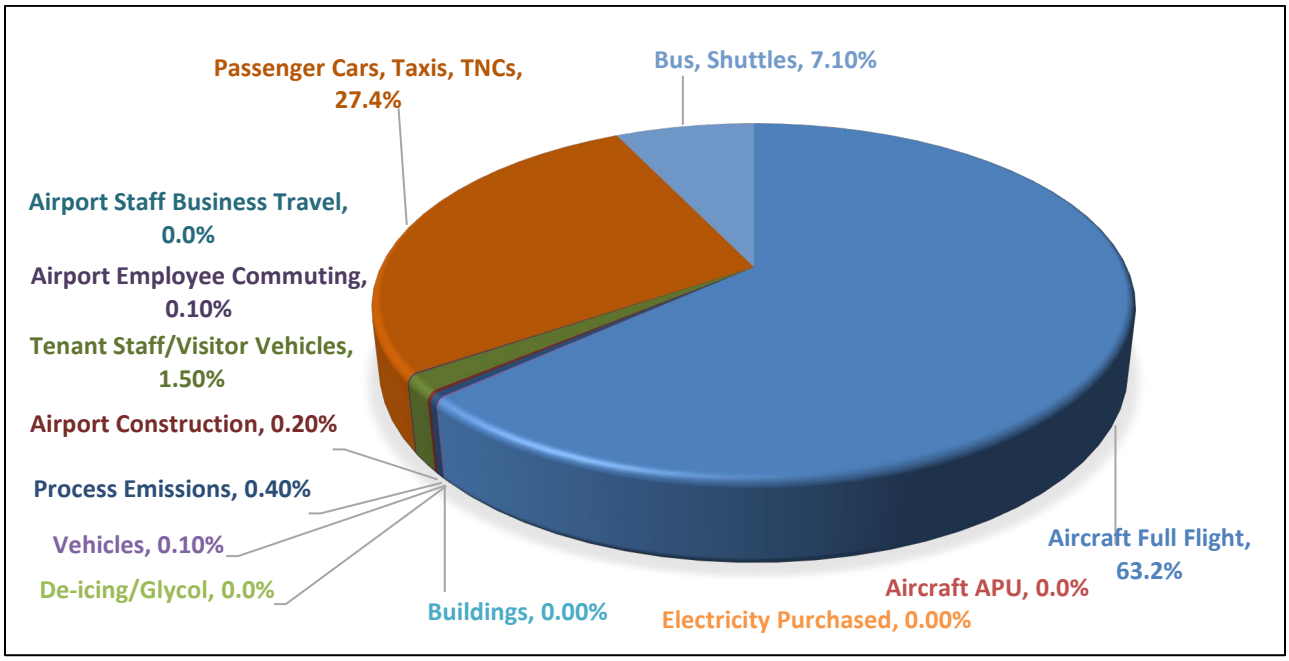


Figure 3 below illustrates the percentage breakdown of Scope 3 activities. The majority of the 2022 Scope 3 emissions came from Uplifted Aircraft Fuel, which includes full flight emissions (per inventory guidance from the Airport Carbon Accreditation program). Passenger vehicle travel in 2022, including taxis and TNCs, comprised the second largest percentage of Scope 3 emissions.

Figure 3: 2022 Scope 3, by Percentage and Activity



Carbon Reduction Policies

The Authority is committed to environmental excellence in new construction projects and in ongoing operations. The Authority's Sustainability Management Program[5] 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 Authority's Sustainability Policy[6], 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 achieving sustainable design in the development and remodeling of airport facilities, while also applying

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

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

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[7] (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, the 2022 emissions inventory represents an 87% GHG emissions reduction, compared to 2015 levels.

Governance

The Authority is governed by a nine-member Board of Directors that maintains overall responsibility for climate change matters. In 2017, the 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 (www.sustain.san.org) 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 Authority's Board of Directors.

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

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

publication of an annual Sustainability Report[8] that is only available through an online format to increase interactivity and to discourage printing.

In consideration of the fact that the vast majority (~99.9%) of GHG emissions footprint is associated with activities carried on by third parties (Scope 3 GHG emissions), the Authority understands the importance of involving key external stakeholders in the development and implementation of carbon management and reduction practices. For this reason, the 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 GHG emissions inventory:

- Airlines: All airlines operating aircraft at the airport
- Tenants: All tenants and their employees operating at the airport
- Passengers: Customers traveling to and from the airport
- Ground transportation operators: Taxis, 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

2022 Accomplishments

Below is a short list of 2022 accomplishments:

Awards

- Environmental Protection Agency: Regional Food Recovery Challenge Award
- Goodwill: Sutherland Award
- Airports Going Green: Outstanding Achievement in Pursuit of Sustainability within the Aviation Industry for SAN All-Electric Shuttle Program

SAN Remains Carbon Neutral

In 2022, San Diego International Airport maintained the highest level of certification under the Airports Council International's Airport Carbon Accreditation (ACA) program – Level 4+ 'Transition.' In addition to requiring a GHG emissions inventory based on industry best practices, the stringent requirements of this certification level include an organizational commitment and policy statement on carbon reduction goals, a long-term absolute emissions reduction target (in line with the Intergovernmental Panel on Climate Change [IPCC]), and creating a carbon management plan and a stakeholder partnership plan that describe how the Authority will guide and influence the reduction of Scope 3 emissions created by business partners (e.g., airlines, ground transportation) at SAN.

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

Renewable Energy

In June 2021, the Authority entered into a contractual agreement with San Diego Community Power, to provide 100% renewable and carbon-free grid-delivered electricity to the entire SAN airport campus. SAN also produces and consumes 5.5 megawatts of on-site photovoltaic solar electricity.

TNC Clean Vehicle Permitting

The Authority requires TNC companies (e.g., Uber, Lyft) to apply for a non-exclusive permit and agreement to use airport property to conduct ridesharing services at SAN. For the past several years, TNCs have had to meet an average fleetwide Greenhouse Gas Rating (GGR) – a scoring system that is developed by the US Environmental Protection Agency based on carbon tailpipe emissions – equivalent to a fuel efficiency of at least 45 miles per gallon. The Authority and TNCs have recently agreed to increase this required average fuel efficiency to at least 52 MPG by 2025.

The Good Traveler

In 2015, the 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[9], including San Diego International Airport, from all over the country. By the end of 2022, total cumulative carbon offset reductions attributed to The Good Traveler equaled 117,000 metric tons, which is equivalent to emissions from more than 732 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 2022, over 812,000 gallons of stormwater was captured, treated, and reused and the system surpassed 5.1 million total gallons captured and reused since the system was commissioned in 2018.

In 2020, SAN completed construction of 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 RCC and the remaining stormwater will be discharged to the bioswales surrounding the RCC.

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

Annual Ground Support Equipment Inventory

Authority staff annually complete a GSE inventory to assess airlines and other business partners' progress in converting their equipment to alternative fuel technologies. In 2022, 775 pieces of GSE were operated airside, with 40% 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 36% of all GSE categorized as electric. Moving forward, the Authority will continue to prioritize conversion of third-party owned GSE to alternative fuel.

Sustainability Management Program

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

The Strategic Energy Plan was last updated in 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.

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 4+) under the ACI Airport Carbon Accreditation program, as previously described above.

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. Throughout 2022, the Authority's Facilities Management Department continued a conversion of Authority department fleet vehicles to more fuel efficient, alternative fueled vehicles.

Authority Partners with SANDAG on Regional Transit Connectivity

The Authority continues to partner with the San Diego Association of Governments (SANDAG) and other regional agencies to identify future solutions for improved transit and road connectivity to San Diego International Airport. This partnership was formalized through a Memorandum of Understanding between the Authority, SANDAG, City of San Diego, and the Port of San Diego in 2020. During 2022, the Authority assisted SANDAG in further developing these concepts and coordinating preliminary transit alignment concepts with the Airport Development Plan improvements to assure there was sufficient right of way for transit connections to the designated transit station in between the new Terminal 1 under construction and existing Terminal 2.

Authority launches Electric Shuttle Bus between Airport and Old Town Transit Center

In November 2021, the Authority launched the San Diego Flyer, an all-electric shuttle bus service between the terminals and the Old Town Transit Center every 20 minutes which coincided with the start of the MTS Mid-Coast Trolley Extension service. The San Diego Flyer is a free shuttle service that provides airport passengers and employees with public transit connect to access SAN via bus, light rail and heavy rail transit connections at the Old Town Transit Center for destinations to the Mid-Coast, North Coastal, Mission Valley and East County transit connections. The San Diego Flyer has seen monthly increases in daily ridership since its launch.

Airport Development Plan – EIR Mitigation Monitoring and Reporting Program

The Airport Development Plan (ADP) is the latest master plan 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.
- 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 Authority administrative offices totaling up to 150,000 square feet.
- Underground utilities.

- Stormwater capture and reuse system.
- Demolition of the current Authority administrative offices (former commuter terminal) and other ancillary airport support facilities.

The 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. Table 5 provides an update on the implementation of the ADP mitigation measures that pertain to air quality and GHGs.

Table 5: 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.	In preparation for the 2024 compliance deadline, the Authority has been installing EV charging infrastructure to support new electric Ground Support Equipment and has been working with business partners to transition airside diesel equipment to renewable diesel. The 2022 GSE inventory was completed at the end of the calendar year.
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.	The Authority's remaining major account was transitioned from SDG&E to San Diego Community Power (SDCP) in October. The Authority is now receiving 100% grid-delivered renewable electricity option via SDCP's "Power100" program.
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.	In coordination with Airport Design & Construction (ADC) project managers and contractors, specifications for the required "cool roof" have been included in all design and building permit documents.

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.	In coordination with ADC project managers and contractors, the new Terminal 1 and Authority Administration Building are currently on track to achieve LEED Silver, with a stretch goal of attaining LEED Gold certifications. The T1 Parking Plaza (T1PP) is also on track for attaining ParkSmart Gold 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.	In coordination with ADC project managers and contractors, specifications for the required 10% of parking stalls for low-emitting, fuel-efficient, and carpool/vanpool vehicles have been included in all design and building permit documents.
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”.	In coordination with ADC project managers and contractors, specifications for EVSE charging ports equal to at least 5% of the T1PP public parking stalls and another 5% of stalls for EVSE-ready have been included in all design and building permit documents, as required by the CA Coastal Commission.
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).	The Ground Transportation Department has extended the SAN Clean Vehicle Incentive Program, by including discounted trip (or vehicle) fees for “clean vehicles” in the proposed 3-year (FY 2023 – 25) Commercial Ground Transportation

				Permits for Taxis, TNCs, Vehicles for Hire, and Courtesy operators.
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.	All 29 cut-away shuttles for employee and passenger parking lots are now all-electric. In addition, all 4 inter-terminal transfer shuttles (40 ft.) are all-electric.
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).	In coordination with ADC project managers and contractors, 20 long-term bicycle parking spaces (in a locked in a locked room inside the building) and 8 short-term bicycle parking spaces (1 bike rack near the main entrance) have been included in all design and building permit documents for the new Administration Building. Four showers and lockers have also been included in the building's plans.
AQ/ GHG-10	Employee Parking Cash-Out Program	Q3 2023	SDCRAA shall implement a parking cash-out program for its employees.	Employee parking cash-out program shall be established prior to issuance of certificate of occupancy for new SDCRAA administration office, estimated to be in late 2023.

Appendix 1: Historical Summary of Greenhouse Gas Emissions

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[6]	1,616,072		1,905,163		1,793,058[5]		1,763,579[5]		2,151,342[5]		2,252,811		1,007,225	

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 GHG 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 GHG 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.
Footnote 6: Scope 3 emissions updated in 2021 to reflect full flight emissions (Uplifted Aircraft Fuel), which is a new inventory requirement under the ACA program.