

CASE STUDY / **DISTRIBUTED ENERGY RESOURCE FEASIBILITY STUDY**

CREATING ZERO NET ENERGY WITH ON-SITE ANALYSIS

To help achieve its goal of becoming the first zero net energy airport in the world, San Francisco International Airport implemented a distributed energy resource program. This included a feasibility study to identify sites and recommendations for renewable electric generation around the airport campus.



PAVING THE WAY FOR SUSTAINABLE AIRPORT CAMPUS OPERATIONS

With the addition of on-site renewable energy generation, the airport campus can utilize sources of carbon-free electric energy.

CHALLENGE

San Francisco International Airport (SFO) accommodates flights to airports throughout North America and operates as a major access point for passengers traveling to Europe and Asia. In 2019, SFO served over 57 million passengers.

SFO is striving to be the world's first zero net energy airport campus. As part of this goal, the airport is performing a distributed energy resource (DER) program, which consists of three different phases. For the first phase of the program, SFO conducted an analysis of ocular glint and glare hazard for photovoltaic panel sites.

SOLUTION

Once the first phase was complete, Burns & McDonnell was selected to perform the second phase of the program, the feasibility study, which focused on renewable electricity generation with a concentration on solar generation and storage potential throughout the airport campus at the sites that were identified in the first phase. As part of the study, the team evaluated the scope of required facilities, including electrical and structural infrastructure modifications.

Some of the steps the team took to complete the study included assessing candidate DER sites such as garages, buildings and parking lots, and providing proposed modifications needed to support battery storage; 23 DER sites were identified during the study.

The selected areas were then used to prepare a preliminary photovoltaic panel layout along with electrical generation ratings. Using these values, the team assessed the potential electrical generation of these sites and local utility rates, developed a cost-benefit analysis for DER installations, and evaluated any carbon offsets and renewable energy credits available for the implementation and operation of suggested DERs. The team also utilized critical information from System Advisor Model (SAM), HelioScope and ForgeSolar for the study.

RESULTS

With the completion of the feasibility study, the next and final phase of the project can begin. It will include the design, construction and commissioning of DER systems. SFO can utilize the results from the study to make strategic decisions and plan for future installations of the recommended DER systems.

PROJECT STATS

CLIENT

San Francisco International Airport

LOCATION

San Francisco, California

PHASE 2 COMPLETION

December 2020

23

DER SITES IDENTIFIED

15.8

MEGAWATT ELECTRIC GENERATION FROM POTENTIAL DER SITES