

Project of the Year Submissions

Date Received

11/30/2021

Files submitted

Score: _____

Title: **Pittsburgh International Airport Microgrid**

Company / Owner: Peoples Natural Gas Company and Allegheny County Airport Authority

Pittsburgh International Airport, Landside Terminal, 4th Floor
Mezzanine, PO Box 12370

Pittsburgh, PA 15231

Category

Commercial

Education

Energy

Environment

Industrial

Innovation

Medical

Modernization

Sustainable

Transportation

Water / Wastewater

Other:

Lead Agents

Tom Woodrow

Submitted by:

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Technical Affiliation:

Airport

Organization: Allegheny County Airport Authority (Pittsburgh International Airport)

Project: Pittsburgh International Airport Microgrid

Introduction: The 23 MW Microgrid at Pittsburgh International Airport, which includes a 20 MW natural gas fired energy plant and a 3 MW solar facility, is the first installation of its kind in the world to completely provide power to an Airport.

Project Timeline: The plant was designed, permitted, constructed, tested, and commissioned between October 2019 and June 2021.

Project Description: Five 4.3 MW natural gas fired engines provide power required to the airport while maintaining reserve capacity and the ability to export to the grid. The natural gas is sourced from 12 Marcellus natural gas wells located on airport property. During normal operation the energy plant supports the airport load, using the existing connection with the local utility as a back-up power source in the event of a plant outage or emergency. Due to plant synchronization with the grid, sourcing is seamless.

23 airport owned meters not connected to the internal electrical distribution utilize green energy via virtual net-metering from the 3 MW of solar facility, which includes over 9,000 solar panels located on airport property.

Technical Innovation: The microgrid is able to provide 100% plus of all power required at the airport while maintaining an interconnect with the grid. In the event of a region-wide power outage, where there is no grid power available, the microgrid is able to disconnect from the grid and operate in "Island Mode", where the airport is able to fully operate with no grid power or connection to the grid. This Island mode capability is also accompanied by the ability to black start, meaning the generators are able to start on their own without any outside power available.

Commercial Success: The microgrid has been providing all of the airport's power since June 2021 and will continue to do so via a 20-year Energy Service Agreement. Savings are estimated at approximately \$500,000 for the first year of operation with subsequent saving to be determined.

Benefit to Society: The microgrid allows Pittsburgh International Airport to be one of the most site-hardened airports in the world. The resilience and redundancy of the microgrid will allow the airport to stay open for business in the event of regional power outage. The microgrid enhances the overall customer experience and safety at the airport.

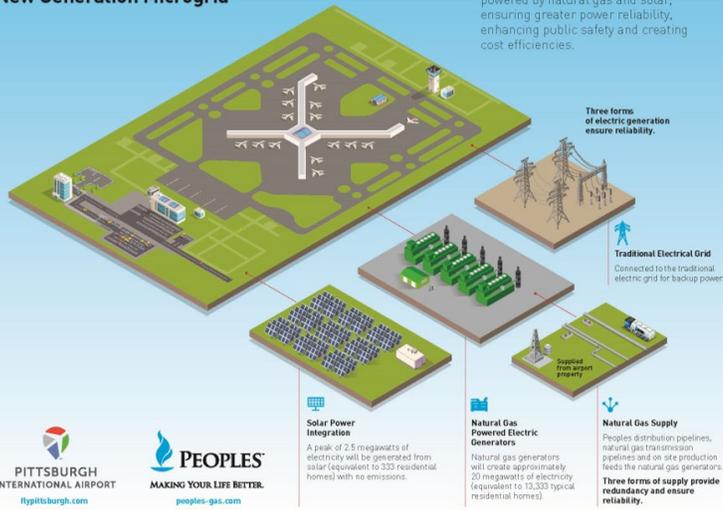
In addition, natural gas is a cleaner burning fuel than traditional coal fired power plants. The use of natural gas for the energy generation is estimated to reduce CO₂ emissions regionally by approximately 8,000,000 pounds per year.

POY Microgrid



Pittsburgh International Airport New Generation Microgrid

Pittsburgh International Airport is building a first-of-its-kind microgrid powered by natural gas and solar, ensuring greater power reliability, enhancing public safety and creating cost efficiencies.



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