

## Zero-Carbon Electric Central Utility Plant (ECUP)

CMAA Sustainability Project Spotlight submitted by: Julie Ludeman, DFW, Deputy Director, Controls and Analytics

### Project Team

- » **OWNER:** [DFW International Airport](#)
- » **AE:** Gensler
- » **BUILDER:** Suffolk/3i Construction

### Project Statistics

- » **USE:** Heating and Cooling of DFW Terminals
- » **SIZE:** 44,500 sq. ft.
- » **CONSTRUCTION VALUE:** \$259 Million
- » **CERTIFICATION(S):** LEED Gold Certification

### What is the most exciting sustainable feature of your project?

DFW is the first and largest Carbon Neutral Airport in the Americas and the New ECUP will play a key role in DFW's plans to achieve Net Zero Carbon by 2030. Currently, natural gas used in the existing Central Utility Plant for terminal heating represents the largest segment of DFW's carbon footprint. The new ECUP will transition DFW to 100% zero-emission



renewable electricity for heating and significantly reduce ozone precursor emissions, carbon, emissions, water use, and natural gas consumption.

### What was the biggest challenge your team faced and how did you overcome it?

The biggest challenge has been replacing an existing, active steam utility system providing heat and hot water to all Terminals on the airport campus with a new Heating Hot Water utility system while maintaining service to all Terminals and not interrupting airport operations. The new hot water piping is being installed in the same location as the existing steam piping due to space constraints in the 2.5 mile long tunnel


system. This will be done by utilizing temporary natural gas fed boilers at either end of the main spine tunnel running north and south and replacing the piping in phases.

### What was the most interesting sustainable feature that didn't make it into the final project?

Two features that didn't make the final project design were on-site photovoltaics and heating water thermal storage.

### What impacts will this project have on the environment and community?

This project is nearing completion in May 2026 and is targeting LEED Gold certification - some of the most exciting features focus contributions for DFW to:

- » **85.8% reduction in nitrogen oxide (NOx)** emissions per year
- » **15.3M kg reduction in carbon dioxide (CO2)** emissions per year
- » **Accommodate future terminal expansion** up to 28 gates/500,000 sq. ft. and achieve N + 1 resiliency
- » **Reduce carbon emissions** in alignment with DFW's Net Zero Carbon by 2030 target
- » **Reduce criteria pollutant emissions** in alignment with regional air quality goals
- » **Create good paying construction jobs** and support continued growth of permanent union and non-union jobs with higher than average wages and benefits
- » **Support Justice40 initiatives** by reducing environmental impacts to Historically Disadvantaged Communities surrounding the airport and supporting regional job growth
- » And much more. 



ECUP Rendering



Aerial View of Construction - February 22, 2024



Aerial View of Construction - February 22, 2024

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## About the Project

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CMAA has created the Sustainability Project Spotlight as a regular focus given to member projects nationwide that are building the way to a better future.

[The Electric Central Utility Plant \(ECUP\) at Dallas-Fort Worth Airport \(DFW\)](#) is a bold and forward-thinking project is central to the first and largest Carbon Neutral Airports in the Americas! Central to the scope of this project is electrification of the central utilities that were predominately natural gas and steam all while keeping the world's third busiest airport fully up and running.

*The CMAA Sustainability Subcommittee is actively seeking to spotlight your projects! Please email us at [communications@cmaanet.org](mailto:communications@cmaanet.org) with a project name and person to contact.*

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