Alamo Colleges District

CASE STUDY

Challenge

A forward thinking organization, Alamo Colleges District was continuously looking for ways to save energy. Even when budgets were tight, facility managers continued to identify ways to reduce energy use, putting together a list of potential energy saving projects for future implementation when funds became available.

> "We had upgraded our lighting with a more efficient system and had done some other things. But we wanted something more permanent."
>
> - **John Strybos,** Vice President, College Facilities Service, Alamo Colleges District

Solution

Alamo Colleges District's proactive approach to increasing energy savings led them into discussions with Trane, a company they had worked with for many years that fostered a relationship built on trust and delivering promises. Trane suggested thermal storage and low flow on existing buildings as a possible option for the district. After more in-depth discussions regarding the energy-saving benefits of thermal storage, and how it could be applied at the district, Trane proposed a design build, turnkey thermal energy storage (TES) solution that would answer the district's objectives, helping to maximize energy savings, while adhering to budget parameters.

Obtaining low-interest funding

When low-interest funds became available through the Texas State Energy Conservation Office to assist public institutions in financing energy saving projects, Alamo Colleges District took action to obtain a low-interest state loan to initiate the thermal energy storage upgrades. An energy study was conducted to document that the thermal storage project would provide an appropriate payback through energy savings, potential utility rebates and demand response incentives. The district was able to secure a 10-year loan based on guaranteed energy savings over the loan period. The funding agreement stipulated that the work be completed within a twelve month period.

Streamlining the procurement process

To help meet its tight deadlines, Alamo Colleges District used cooperative procurement to streamline the process, selecting Trane, a preapproved network vendor, as their project partner. With cooperative procurement, the district was able to leverage pricing to keep the project under budget and ensure they were operating in compliance with all procurement laws and regulations. Cooperative procurement contracts are competitively bid, evaluated, and awarded to vendors that have been carefully selected based on quality, proven performance, customer satisfaction and pricing. The process helped the district reduce its supplier selection risk, ensuring they would get the quality contractors and sub-contractors they sought for the project.

Alamo Colleges District

San Antonio, Texas

PROJECT HIGHLIGHTS

Design build thermal energy storage project results in significant energy savings, reduced utility rates, and $150,000 in annual demand response rebates for three college campuses; cooperative procurement helps deliver project on time and on budget.

The Alamo Colleges Northwest Vista College is one of five community colleges in the Alamo Colleges District. The colleges offer associate degrees, certificates and licensures in occupational programs, as well as arts and science courses, taught by a highly qualified faculty dedicated to creating a learning centered centered environment.

Alamo Colleges District

CASE STUDY

Lowering demand and energy costs

To match energy to needs, Trane worked with the district's engineers to determine the size and temperature requirements for a TES system to serve the Northwest Vista campus. Managing a team of subcontractors, Trane added a 0.9M gallon concrete chilled water TES tank to work with the college's three existing 800-ton Trane® CenTraVac® chillers. The reliable, energy efficient Trane chillers produce cold water at night during off-peak electrical demand hours when utility rates are lower. The water stored in the TES tanks is discharged during peak daytime hours and circulated to cool the facility, turning the school's existing 44/56F loop into a 42/57F loop. To further reduce energy use and cost, variable frequency drives were added to the condenser and evaporator pumps and all three-way valves were eliminated, allowing the pump head to be reduced.

Results

A design build TES project implemented by Trane at Alamo Colleges Northwest Vista campus is providing significant energy cost savings, and has allowed the district to aggressively target demand consumption. The TES system offers future capability to leverage lower utility rates as the municipality migrates to more penal demand charges due to growth in south Texas. Originally planning to obtain a onetime rebate to help offset construction costs, the project execution has resulted in the facility being able to shed significant kW on short notice to remove demand from the grid, making it attractive to the power company, and resulting in the district receiving an annual demand response rebate of $50,000 for each of three campuses.

> "The chillers and thermal energy storage tanks are working well. The system is easy to operate and energy efficient. It is allowing us to use cheaper energy, which is important especially in high-demand months like June and July."
>
> - **John Strybos,** Vice President, College Facilities Service, Alamo Colleges District

About Alamo Colleges Districts

A 0.9M gallon concrete chilled water TES tank works with three 800-ton Trane CenTraVac chillers serving Alamo Colleges Northwest Vista campus.

With the Alamo Colleges District utilizing cooperative procurement, Trane was able to deliver a finished product quicker than a normal plan and spec bid process, on-time and under budget. The successful project has resulted in TES being installed at two additional Alamo Colleges District colleges with plans to add TES to additional campuses over the next several years.

Trane – by Trane Technologies (NYSE: TT), a global climate innovator – creates comfortable, energy efficient indoor environments through a broad portfolio of heating, ventilating and air conditioning systems and controls, services, parts and supply. For more information, please visit *trane.com* or *tranetechnologies.com*.

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