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Innovative Educational Programming, Renewables Research and Lifting Up Residents

[BOILERPLATE] CDE Lightband and TVA were founded on a mission to serve — through reliable and affordable energy, a safe and protected environment and thriving economic development.

CDE Lightband provides electricity to more than 76,000 households and businesses in the City of Clarksville, Tennessee. They cover 100 square miles within the municipal boundaries, which includes 2,885 miles of overhead and underground primary power lines.

TVA STEM Grants and Educational Partnerships

Many Clarksville educators bring Science Technology Engineering and Math (STEM) enrichment to their schools as a result of winning TVA STEM grants. “To be able to sustain growth, we need to cultivate our upcoming generations. STEM encourages curiosity, knowledge and development of young minds in real world settings. We are proud to support our schools’ STEM programs for the future of tomorrow,” Brian Taylor, general manager of CDE Lightband said.

In 2001, CDE Lightband, TVA and Bicentennial Volunteers Inc. awarded Kenwood Middle School a \$5,000 STEM grant for equipment, replacement parts and curriculum used to teach students how to program drones and robotics with computer coding. Chad Ward, computer literacy teacher said, “We’re using drones to introduce block coding and written code. Students learn problem solving as they go through the engineering design process. They’re constantly re-evaluating their code to improve how their drones fly.” Ward also said learning computer programming and coding skills can prepare students to succeed in higher education and professions in technology.

One student shared how he enjoyed overcoming the challenge. “When I first started to code the drone it was hard for me. It was aggravating at first, but then I started to like it. I didn’t know how to do it, so I had to keep on trying—then I succeeded.” Another student said, “The best part is trying to figure out the movement. It’s really fun to figure out the angle that you need to move (the drone).”

Across town, students at Richview Middle School are also becoming code wizards through a technology class offering as well as a robotics club. Several teachers won TVA STEM grants in 2022 along with funds from Clarksville-Montgomery County Education Foundation and Google Data center to purchase 11 SPIKE™ Prime kits to operate robots using Scratch programming. The equipment will be used to support career readiness learning.

“This is the same type of code they would use in the future,” sixth grade science teacher Anne Stritzel said, adding, “It’s allowing students to understand across platforms. The skills they learn here are ever-evolving. So even if something changes, they have the foundation And the (new) interface supports problem-solving better. It helps them learn fundamentals faster than before within the engineering design process.”

This huge funding opportunity will allow more students to learn robotics after school as well as in the classroom. Christina Ploeckelman, seventh grade science teacher and Robotics Club advisor said, “A three-person team can use each robot. It is very much group-oriented and student-driven. In the curriculum, we provide how to start. Then the students figure out what to change, how to modify, and develop a design.”

Educational Partnerships

As a participant in the Partner in Education (PIE) program, CDE Lightband is a partner with Kenwood High and CMCSS STEM schools. PIE is operated by Clarksville-Montgomery County School System, Clarksville-Montgomery County Education Foundation and Clarksville Area Chamber of Commerce. They provide partner schools with career day discussions, donation drives, teacher externships and electric demonstrations with a focus on STEM.

“We are committed to helping teachers make concrete connections to standards taught in the classroom and helping students explore potential career paths. Educating the public about electrical operations and safety is crucial to what we do, which is why our partnerships with Clarksville-Montgomery County schools is so important,” Lindsey Pease, CDE Lightband community affairs coordinator said.

Since 2012, CDE Lightband has hosted a Teacher Extern Program with K-12 STEM teachers. “Externships are a unique and sustainable way to help students and teachers alike gain a deeper understanding of STEM concepts and apply that understanding in both the classroom and real world experiences,” Pease said. Externships with CDE Lightband have given educators the tools to lead student projects as intense as creating a substation with a 3D printer and as simple easy as using math to read meters.

Power Partners Website and Awards

CDE Lightband is active in the education of customers, too. In fact, in 2020 they earned the title of EnergyRight Innovator of the Year for creating Power Partners, a program that includes a website with information about energy usage in Clarksville as well as tips for reducing electric bills. Customers who sign up to be a Power Partner will receive periodic texts from energy advisors where they can learn how to improve their own home energy efficiency as well as find out about the latest developments in electric vehicle planning, renewables and other green energy topics.

Energy Services manager John Jackson said, “We wanted to create a one-stop shop for energy efficiency resources and information about TVA programs, renewables and EVs. We’re pretty proud that over 650 people have signed up already.”

TVA EnergyRight also recognized CDE Lightband as a Top Performer for fiscal years 2020 and 2021. “CDE Lightband provides the staffing, promotion and resources to ensure that customers are aware of and can participate in energy efficiency measures to save on electric bills,” Cindy Herron, vice president of TVA EnergyRight said.

When social distancing became a necessity, CDE Lightband showed dedication and agility as their energy advisors continued to conduct Home Energy Evaluations. They simply shifted audits to the virtual realm, using a mobile device to guide the customers through the process.

They were also active participants in the New Homes program, which provides incentives to builders to implement electricity as a house’s primary energy source. “Our Energy Services department remains a leader in energy research, development of new programs and education of customers. I’m really excited for the direction CDE Lightband is going and happy to see these efforts being recognized,” Taylor said.

Excellence in Public Power Communications Awards

The American Public Power Association honored CDE Lightband's Business Development team's marketing efforts with three Excellence in Public Power Communications awards, one each in the categories print/digital, video, and web/social media. "While we are accustomed to being known for our reliability in electric and broadband services, it's also wonderful to be recognized for the strides we take to use informational data and transforming it to showcase our talent in an industry that is learning to adapt to new platforms to communicate with our customers," Taylor said.

COVID-19 Community Care Fund and Matching Donations

In 2020, the TVA Community Care Fund matched up to \$25,000 raised by CDE Lightband employees, Google and Clarksville community members for the United Way of Greater Clarksville Region. In total, the efforts raised \$54,948, which helped customers financially affected by the pandemic pay their electric bills.

In a second round of funding, in 2021 CDE Lightband matched TVA's COVID-19 Community Care Fund donations to provide \$30,000 to the Salvation Army and \$30,000 to The Imagination Library of Montgomery County.

"The Salvation Army of Clarksville is so blessed to have such a generous community relationship with CDE Lightband. This generosity will ensure the continuation of assistance for many lives affected by hardships caused by the COVID pandemic. We are so grateful," says Captain Jonathan Whitaker, commanding officer with The Salvation Army.

"With these matching funds, we will be able to share the love of reading and improve early childhood reading readiness by sending out books to our 8,500 enrollees for three months. The Imagination Library of Montgomery County will also be able to continue to enroll new children and increase our reach throughout the city and county," Karen Morrow, co-chair of The Imagination Library of Montgomery County said. In 2022, CDE Lightband matched TVA's COVID-19 Community Care Fund donations to provide \$10,000 to Clarksville Crime Stoppers for anonymous information that leads to the arrest of persons responsible for cold case homicides. Also, CDE Lightband partnered with Clarksville Parks and Recreation to establish a park in North Clarksville, adding recreational and social opportunities to the neighborhood.

"Our commitment to give back to the community remains a priority especially during these times. Partnering with TVA has helped us supported these organizations in achieving their mission as they help ease the unprecedented burdens on those we serve," Taylor said.

Smart Energy Provider Designations

APPA also named CDE Lightband a Smart Energy Provider (SEP) in 2021, an honor that lasts for two years. "Utilities that earn the SEP designations are going the extra mile beyond providing electricity for their communities. This designation celebrates utilities that are committed to serving their customers with leading smart energy programs and energy services. These communities should be proud that their utilities are focused on providing excellent service while planning for the future," Matt Hein, energy services manager of Cedar Falls Utilities in Cedar Falls, Iowa and chair of the Energy Innovation Committee said.

Taylor said, "This SEP designation represents our dedication to offering programs that help our customers save money, reduce our collective environmental impact and support our community's responsible energy use."

Reliability

BOILERPLATE: CDE Lightband partners with TVA to provide safe, reliable, clean power to service area customers. TVA supplies community energy to 153 local power companies and about 60 large industrial customers and federal facilities at the lowest feasible cost. For more than 20 years, TVA's transmission system has achieved a reliability rate of 99.999 percent.

More than half of the electricity generated by TVA is derived from carbon-free resources. TVA's diverse energy portfolio includes coal, gas, nuclear and hydroelectric plants as well as renewables.

CDE Lightband holds a three-year Reliable Public Power Provider (RP3) diamond level distinction, as designated by the American Public Power Association (APPA) in 2020. APPA said they "recognize public power companies that demonstrate proficiency in four key disciplines: reliability, safety, workforce development and system improvement. Criteria include sound business practices and a utility-wide commitment to safe and reliable delivery of electricity."

"This was our second one. We are pretty active with APPA, with our 6 kw solar array here at CDE Lightband that we use for research and development. We do so much in the field with renewables and smart energy so we applied a year ago and were awarded in October. We're proud of that one," Jackson said.

Renewables

BOILERPLATE: Investing in renewable energy sources — like solar and wind — helps keep our power clean and affordable. CDE Lightband partners with TVA to offer various ways for our neighbors and businesses to join us in supporting renewable resource energy projects in the Tennessee Valley and promote a greener energy future.

John Jackson, Energy Services manager and Power Partner advisor said, "A few years ago we noticed we were getting a very heavy interest in renewables in our service area, which is around 80% residential. We wanted to see how solar would affect our revenue, find out how that energy was generated and whether it would coincide with our peak purchase times. That's why we applied for the Demonstration of Energy & Efficiency Developments (DEED) grant from APPA."

Jared Combs, business intelligence analyst conducted the research. He said, "To be fair to customers, we need to find out how much our customers with solar arrays affect our revenues."

They won the DEED grant, which contributed \$10,000 to the project. CDE Lightband and TVA contributed the additional \$15,000 needed to build the 6 kW solar array and collect, analyze and report the data.

"The project was not only good for CDE Lightband, but provided the exponential benefit of being able to share the results with other utilities," Combs said.

"We used the grant to generate energy, to see if solar penetration would really have an effect on our system. We found that solar arrays and renewable generation in general are nothing to be scared about," Jackson said

Residential

BOILERPLATE CDE Lightband partners with TVA to help customers make smart home energy decisions and save money on the power bill through [TVA EnergyRight®](#). Together, they provide resources such as DIY home energy-saving solutions to reputable local contractor recommendations.

Robert Denson, energy services specialist at CDE Lightband and manager of the Home Uplift program said, “Home Uplift is a lasting energy solution for families with limited means. CDE Lightband and TVA work together to perform weatherization and energy efficiency improvements at no cost to the customer. And the customers approved for this program aren’t necessarily looking for a handout, but more of a hand up.”

One woman who benefited from the program said, “I heard through the Community Action Agency about (Home Uplift). I applied for it. I didn’t have any smoke alarms, my insulation was bad, my house was drafty and I had six air conditioners in my windows. They came out and replaced my HVAC and heat pump. I needed that. They replaced all my smoke alarms in every room. They did the insulation and it’s not drafty (anymore).” She said she and her family members have allergies, asthma and COPD. “We have to stay in when the pollen is real bad. This has helped tremendously. Everything works good in my house now,” and added, “My electric bill is going down.”

“Home Uplift can cut a utility bill by 25 percent and cut down on maintenance fees. Homes that are well-heated and insulated help reduce colds and sickness. A healthy, comfortable home will help you miss (fewer) days of work and school. This program also benefits seniors to help them age in place in their homes safely and comfortably,” Denson said.

The Home Uplift beneficiary said, “I hope you all continue this program because there’s a whole lot of people who need this. It’s a blessing. And if it hadn’t been for y’all and TVA we wouldn’t have had this. I’m so thankful and appreciative to all y’all,” and added, “We couldn’t ask for better people coming out and doing the work. They were all so professional. They were very polite. They’re hard working and they got the job done.”

“This isn’t just about helping people make home energy upgrades. It’s about creating the changes that can improve overall quality of life. This is an investment in our community as a whole,” Denson said.”