

Economic Solutions through Solar Innovations

The Cheatham County School District (CCSD) will construct a 50kW solar array with a Tesla Powerwall backup. The technology demonstration will allow the school district to save in annual energy costs, extend the operation of critical facility functions with battery storage and provide Career and Technical Education (CTE) for students to excel in post-secondary careers.

BUDGET

\$270K

\$188K
TVA Connected
Communities

\$82K
Proposed
Match

Background



Solar Possibilities

Renewable energy jobs offer substantial learning and career opportunity for today's students.

THE OPPORTUNITY

Alignment With Strategy

Demonstrating solar technology will benefit the students, add resiliency for the community as well as save energy and emissions for the school.

CCSD DATA

Ranked bottom

5%

for expenditures
per pupil in TN

120K

students served
over 20 years

10:1

CCSD teacher interest in
incorporating solar into
lesson planning

Scope



Operational Savings

will be created through the solar array and battery operations.



Career Pathways

will be introduced using the solar installation as a teaching tool.



Community Benefits

will included a pipeline of talent, greater resiliency and decreased carbon emissions.

THE GOAL

Function and Learning

The energy generated and stored will save in energy costs, enable days of critical functions in the event of a power outage, and reduce school emissions. Alignment with CTE/STEM curriculum will prepare students for post-secondary job opportunities and introduce solar science to college-bound seniors.

QUANTITY

48hrs

backup battery

\$3.5K

saved in annual
energy costs

1.2K

tons CO₂ avoided
over its lifetime

40

students enrolled in
solar CTE for Fall '22



Performance

Key Performance Indicators

- Financial savings
- Duration of uptime supplied battery back-up during power outages
- CTE credentials earned
- Number of graduates who complete a program of study with a solar component

The Value

CCSD

- 20 years of energy savings
- Battery back-up during power outages

CCSD Students

- Opportunities to learn about installation, maintenance and benefits of solar power

Key Partners

Cheatham County School District

Cheatham County Economic and Community Development Board

Sycamore High School

Wilmot, Inc.

Tennessee Valley Authority



Process

for Career and Technical Education (CTE) over the course of 12 months.

Conduct a career assessment and introductory solar lesson for 7th and 8th graders.

Conduct an interest survey of 7th through 10th graders about participation in a solar program at the high school level.

Identify curricular components in existing CCSD CTE programs of study.

Begin highlighting and implementing embedded solar modules in high school CTE programs of study and middle school science.

Prepare and submit a proposal to the Tennessee Department of Education for a Special CTE program of study with a Solar Energy focus.

Begin the process of establishing new CTE Solar program of study, recruiting students, and scheduling classes.

