

Empowering Education & Energy Savings through Solar Energy at Hardin County Schools

Overview

Faced with rising energy costs, Hardin County Schools embarked on a transformative journey to upgrade their district's building infrastructure. Central to its comprehensive plan was the integration of on-site solar energy production. [Read the Full Story](#)

What Made the Inclusion of Solar Energy Possible?

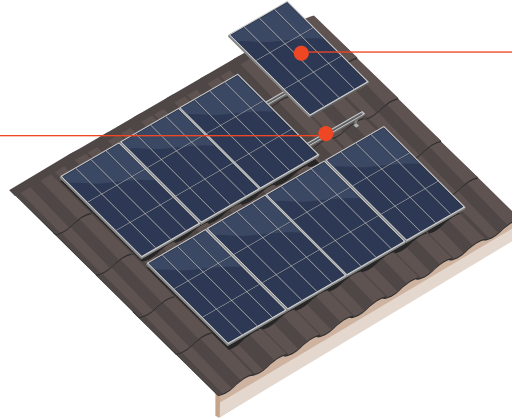
The district implemented a [performance contract](#), approved by the Hardin County Board of Education, where the cost of the improvements was designed to be recovered through anticipated energy savings. This freed funds for additional infrastructure improvements. By incorporating renewable energy solutions, the district also became eligible to pursue the Federal Investment Tax Credit (48 ITC) expanded by the Inflation Reduction Act.



Implementation

12 ROOFTOP-MOUNTED SOLAR PHOTOVOLTAIC SYSTEMS

- Preserves the district's green spaces
- Utilizes standing seam metal roofs to enable a clamp-based mounting system, avoiding roof penetration and can minimize disruption to the learning environment during installation



SOLAR PHOTOVOLTAIC MODULES

- Selected for their high quality, efficiency, and twenty-five year lifespan
- Exceeds Trane's strict qualifications and passed third-party supply traceability reporting standards
- Minimal maintenance requirements
- Features bifacial technology, achieving 21.4% maximum efficiency
- Anti-LeTID technology minimizes production loss from high temperatures and sunlight

Standard Process



Roofs analyzed & cleared for install. System components shipped.



Racking & solar modules installed.



The electrical installation crew works site by site, setting inverters, routing electrical systems, & commissioning them in coordination with the local utility provider.



Installation complete: ≈2 weeks per site.

Monitoring & Validation



A dashboard monitors building energy performance including solar energy production



Additional monitoring by Trane will ensure actual energy savings meet the terms of the performance contract



Real-time measurements compared to nameplate values to detect faults and ensure the solar PV panels were operating to specification

Results

- ✓ **Students will learn about alternative energy benefits and future job opportunities** as district leaders work with Trane to enhance STEM education using data analytics modules and solar dashboard data.
- ✓ The solar panels alone are projected to **save the district more than \$70,000 a year**, while the **entire project is projected to save \$280,000 a year**.
- ✓ The comprehensive project is expected to **reduce the district's carbon footprint by 900 metric tons of CO2e per year**.
- ✓ **Local news outlets highlighted the district's commitment** to sustainability and innovation, bolstering community engagement and the school's reputation



Our students will be able to see the benefits of alternative energy firsthand through online dashboards showing the performance of the district's geothermal HVAC, LED lights and solar panels.

Tessa Morgan
Hardin County Schools Superintendent

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