

Case Study: Independent School Districts in Texas



Irving Independent School District



Photo courtesy of DFW Solar Tours

Quick Facts

Location

Irving, TX

School Participating

Lady Bird Johnson
Middle School

PV Capacity

600 kW

PV Output

885,000 kWh per year

Installation Date

August 2011

Equipment

300 kW of Solyndra panels
300 kW of Kyocera panels

Solar PV Cost

\$2,976,972

Net Zero Facility Cost

\$25,000,000 in bond funds
\$4,000,000 in district funds

Summary

Irving Independent School District (ISD) is a public school district located just outside of Dallas in Irving, TX. Irving has over 40 campuses and serves most of the City of Irving, and small portions of Grand Prairie and Dallas. Irving ISD is home to Lady Bird Johnson Middle School, the nation's largest net-zero middle school and the first net zero school in the State of Texas. At 150,200 square feet, the LEED Gold facility uses wind and solar power to produce as much energy as it consumes from the electric grid over a one year period. This facility incorporates energy reducing systems with goals to reduce energy consumption by over 50% from the traditional school model. The school is designed as a teaching tool for all of Irving ISD to be integrated into the science curriculum.

Solar Energy and Education

Students are encouraged to learn through practical, hands on experience. The whole facility is an extension of the classroom, creating a 3-dimensional learning environment. From the energy monitoring, students can see, in real time, how much energy a classroom is consuming and learn how small changes can have a big impact on energy use. The facility has several features present for teaching purposes, including: touch screens; a

41% of Lady Bird Johnson Middle School's energy reduction comes from solar PV

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Solar Energy and Education continued

holistic energy monitoring live display; an interactive learning museum displays in the main corridor; solar array observation deck; omni learning lab; and observation windows into the inverter room. The facility's efficient materials and cutting-edge renewable energy technology help incorporate issues such as geothermal science, rainwater collection, solar panel usage, and wind turbine efficiency into curriculum which helps students learn responsibility for energy conservation.

For more information about the net-zero Lady Bird Johnson Middle School, please visit: <http://www.irvingisd.net/domain/1482>.

Financing Net Zero

When Irving ISD began seeking funding for the net zero project, they turned to bond funds and district funds. A key to their success was stressing the long term environmental, educational, and economic benefits. The district incorporated energy efficient measures into the building design and construction phase during development. This lessened the energy use and helped reduce the upfront costs. Significant annual utility savings from the onsite energy production directly impacts the maintenance and operations budget. The long term benefit of lower utility cost due to efficient and sustainable features will, in turn, create lower maintenance and operations costs of the building.

The North Central Texas Council of Governments recommends to have an energy audit done by the State Energy Conservation Office to establish where solar might fit into overall energy efficiency improvements and energy saving potential. For more information on the SECO Technical Assistance Program, please visit: <http://seco.cpa.state.tx.us/energy-reporting/gov-assist.php/>

The North Central Texas Council of Governments is working under contract with the State Energy Conservation Office (SECO) to expand best management practices for solar photovoltaic systems throughout the State of Texas. For more information about solar in Texas, please visit: www.GoSolarTexas.org.



Photo courtesy of DFW Solar Tours

Additional Green Features

468 geothermal wells operating in a closed loop system that reduces HVAC energy use by 30 percent

Solar shading provided by canopy on two sides of the building

Sensors that adjust light levels in classrooms and corridors based on available daylight and turn lights off when the room is unoccupied

Pulper used in the cafeteria creating compostable waste which reduces the amount of garbage sent to local landfills by over 50%

LED lighting, xeriscape landscaping, rainwater collection, and grey water harvesting for efficient landscaping and lighting



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