

CASE STUDY

Schools



By working with DTE Energy, school districts from around the state have been able to control their energy costs and shift more money into their classrooms. Kentwood Public Schools' Bowen Elementary (pictured above) is one of many examples.

In Michigan, education officials constantly deal with a perfect storm of financial challenges: declining student populations, rising costs and fixed overheads.

As a result, any areas in which schools can find cost savings mean more money for the classroom — and the DTE Energy Efficiency Program for Business has proven to be an effective partner in finding those savings.

Since 2009, the program has offered cash rebates to Michigan businesses, governments and schools for the installation of energy-efficient equipment and technologies — and during that time more than 270 public, private and parochial schools and school districts have received more than \$4.7 million in DTE incentives.

At the same time, these facilities have saved nearly 50 GWh in

electricity and 366,000 Mcf in natural gas each year* — and they will continue saving money for years to come.

To become more energy efficient and control their energy costs, school officials worked closely with DTE energy advisors to identify areas of operations that could be upgraded, improved or replaced.

These areas ranged from lighting upgrades to HVAC system and control improvements to new food service equipment and new pool heaters.

From Ada to Ypsilanti, Michigan schools have made the DTE Energy Efficiency Program for Business part of their annual budget planning.

Inside, we'll take a closer look at how some schools used the program's incentives to help offset their improvement costs.

*Based on first-year estimated savings

More than 270 Michigan schools have used DTE's program to save energy and cut costs

Schools spend \$8 billion a year on energy; more than spent on classroom textbooks

Across Michigan, school administrators face an on-going challenge: deliver a quality education to their students while balancing the demands of rising costs and uncertain revenues.

With payroll often accounting for at least 70% of a public school district's operating budget, there are few other places in which administrators can control costs without impacting the classroom.

Yet energy costs fall into that category: Nationwide, schools spend more than \$8 billion a year on energy — which is more than the annual cost of books and supplies.

And second only to personnel costs.

Fortunately, energy is one of a school district's more manageable expenses, with space heating, cooling and lighting accounting for nearly 70% of energy use in a typical school building (see pie charts on energy use in a typical school building).

And the increased introduction of technology in the classroom also has added to the mix when it comes to increased energy use.

Of the more than 270 Michigan schools that have taken advantage of DTE's energy efficiency cash incentive program since 2009, several stand out as good examples of how to use the program to maximize energy savings and reduce out-of-pocket costs.

Kentwood Public Schools, a DTE gas customer located southeast of Grand Rapids, district officials have been using the incentive program to help offset their capital investment costs — and save energy — since 2010.

The first project was a \$415,000 replacement of outdated school boilers with more efficient models, for which the district received \$25,000 in incentives.

A similar 2014 project involved the installation of more than \$200,000 worth of boiler and HVAC controls. For that project, Kentwood received nearly \$25,000 in incentives.

Not every project has been quite so ambitious in the district, however: One project involved the tune-ups of two school boilers — resulting in a \$500 incentive check.

Since 2010, the district has received nearly \$114,000 in cash incentives for 47 individual projects. For the two large boiler projects, DTE incentives offset nearly 8% of the district's investment in equipment upgrades and services.

Long term, the projects will save the district nearly 20,000 Mcf in energy savings each year (based on first-year savings) — or between a 22% and 25% reduction in energy costs, according to Todd Bell, the district's executive director of finance and operations.

So what impact did DTE's incentives have on his district's 10-year plan to update all 22 building boilers and controls?

"The incentives played a large role in the decision to make the projects a reality," he said.

"As these incentives were available," he said, "not only did they provide funding for the projects, but the projects provided reduced energy costs for years to come."

In this way, he said, the upgrades are able to lower operating costs and "keep district resources in the classroom — where they belong."

In fact, the impact of these upgrades can be felt in the classroom: "Our staff definitely notices the difference," Bell said. "There are less 'cold spots' in the buildings."

The benefits of making such non-educational upgrades weren't always easy to explain to the public, however: "It took a great deal of education of our community — but we had a supportive Board of Education that values educating our students, as well as being fiscally and environmentally responsible."

"With a combination of energy savings and rebates offered," Bell said, "it became clear these projects were worthy of a capital investment."

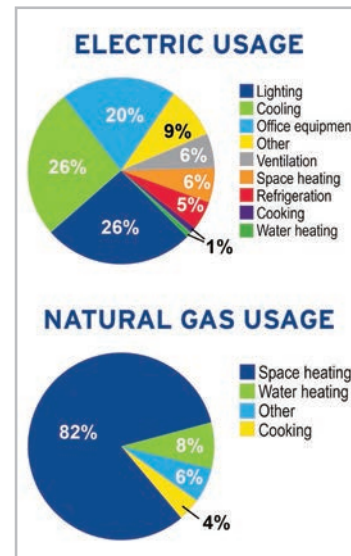
While Kentwood is a natural gas-only DTE customer, **Livonia Public Schools** is the opposite: an electric-only customer that has received almost an identical amount of incentive funding for its projects.

Since 2009 — the program's first year — Livonia has submitted 47 projects for review, receiving more than \$122,000 in incentives.

In nearly every instance, projects involved upgrading older lighting fixtures and adding various lighting controls and occupancy sensors in every building in the district.

KENTWOOD SCHOOLS		
PROJECT	SAVINGS*	INCENTIVES
Boiler replacement	3,704 Mcf	\$25,000
Boiler / HVAC controls	5,263 Mcf	\$25,000
Total	8,967	\$50,000

**estimated first-year savings*



Typical energy usage in a K-12 school.

LIVONIA SCHOOLS		
PROJECT	SAVINGS*	INCENTIVES
High-Bay fixtures/sensors	105,575 kWh	\$8,300†
Lighting/sensors	191,895 kWh	\$10,500
Total	297,470 kWh	\$18,800

*† limited by 2009 program caps; *estimated first-year savings*

Wayne-Westland's lighting projects have been for safety, too

Since 2009, the Wayne-Westland School District has received nearly \$10,500 in incentives from DTE's program — including more than \$2,000 in 2015 alone.

Nearly all of its projects have been relatively minor when compared to some other participating schools, but their focus has been in one area above all others: exterior lighting.

A total of 10 projects were submitted by the district before summer break in 2015, and each one involved replacing out-dated and energy-hungry HID lighting

in school parking lots with either CFLs or LEDs.

The cost of all 10 projects was just short of \$5,500, and the district received more than \$2,000 in program incentives — or enough to cover almost 40% of those costs.

But costs weren't the only consideration for district officials when they decided to

upgrade parking lot lighting: safety in and around the schools — for students, staff and visitors — was another important reason.

"By upgrading the lights, we're saving money," said Gene Montayne, energy supervisor for the district.

"But these new LEDs and CFLs also give us better, brighter and more focused lighting in our parking lots.

"Making everyone feel a little bit safer at our schools," he said, adding that the district will continue looking for ways to save energy — and money in the years to come.

WAYNE-WESTLAND SCHOOLS		
PROJECTS (10)	SAVINGS*	INCENTIVES
LEDs/CFLs replacing HIDs	72,736 kWh	\$2,160

**estimated first-year savings*

These lighting upgrades, for the most part, involved replacing HIDs and low-efficiency fluorescent lamps with induction lighting and high-performance fluorescents.

The district's first project, submitted in 2009, involved replacing the high school's gymnasium lights — 400W HIDs — with 32W fluorescent high bay fixtures, and adding occupancy sensors.

Because of program caps in place at that time, the \$425,000 project ultimately received slightly more than \$8,300 in incentives.

The energy savings from the upgrades, however, are more than 105,000 kWh per year (based on first-year estimated savings), which means the district will reap the cost benefits from the upgrades for years to come.

A more recent large project also involved lighting upgrades at one of its middle schools; a \$109,000 project that included more than 2,500 light fixture replacements, nearly 150 occupancy sensors and the conversion of nearly 70 exit signs to LED.



Livonia Public Schools' projects have included more than 2,500 light fixture replacements at Frost Middle School.

For this project, Livonia received nearly \$10,500 in incentives, offsetting almost 10% of its project costs — and will enjoy energy savings of more than 190,000 kWh per year going forward (based on first-year estimated savings).

While Kentwood and Livonia worked with projects that were either gas or electric, many districts were eligible to submit both types of projects — often combined on the same application — such as the **Taylor School District**.

Although nearly all of Taylor's projects involved lighting upgrades, the district did take advantage of the program's pool cover incentives — a natural gas measure — to receive \$800 of the more than \$22,000 in total incentives on more than \$690,000 worth of building upgrades.

Those upgrades resulted in first-year estimated savings of nearly 309,000 kWh and nearly 300 Mcf.

For Kentwood's Bell and other school officials, taking advantage of the DTE program not only helped district bottom lines, but also benefitted an otherwise overlooked aspect of public education.

"These projects are excellent opportunities for support services to show fiscal and environmental responsibility," he said.

As a result, Bell said, "I discuss incentives all the time through MSBO (Michigan School Business Officials) and statewide facility management committees."

TAYLOR SCHOOLS		
PROJECT	SAVINGS*	INCENTIVES
Lighting upgrades	308,667 kWh	\$21,550
Pool cover	191,895 kWh	\$800

**estimated first-year savings*

About our Program

The DTE **Energy Efficiency Program for Business** offers a comprehensive set of incentives for both electric and natural gas users designed to help you invest in energy efficient technologies.

Here are three ways to save:



PRESCRIPTIVE

Are you replacing light fixtures with newer energy-efficient models?

Upgrading your refrigeration and food service equipment?

Check out the **Prescriptive Incentives** section of our Catalog and Application.

Prescriptive Incentives cover a wide variety of energy-efficient improvements, including: lighting, controls, HVAC, refrigeration and more. Incentives are based on quantity, size and efficiency of the equipment.

- Prescriptive incentives are available for many common energy efficiency measures.
- Incentives are based on predetermined energy savings.
- Prescriptive incentives typically average 20% to 50% of the incremental cost of the equipment or services provided.

CUSTOM

Can't find your project in the Prescriptive Incentive section?

Then consider applying for **Custom Incentives**, which are for projects that involve less common or more complex technologies than our list of prescriptive equipment.

Custom Incentives are based on the first year of energy savings (kWh and/or Mcf).

- Custom incentives are offered for capital investment projects that are NOT eligible for a Prescriptive incentive.
- Incentives are determined on a case-by-case basis and are paid per unit energy saved.
- Custom incentives are capped at 50% of project costs.

NEW CONSTRUCTION

Are you building a new facility, changing the usage of space or adding load? Then our **New Construction and Major Renovation Incentives** are available to assist you:

- **Systems Approach** incentives are predetermined to optimize the energy efficiency of individual systems.
- **LEED Whole Building Approach** incentives are based on energy savings validated by LEED.
- **LEED Design Review Assistance** incentive is designed to encourage LEED certification.

- New Construction/Major Renovation incentives are available for new facilities, the renovation of existing facilities or a change of use project, such as converting a warehouse into an office complex.
- Incentives also are available for adding load.

Contact Us

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**Funds will be awarded on a first-come, first-served basis; program based on availability of funding and may end at any time; certain other conditions apply*