Case Studies: Restaurant Energy Efficiency

HOSTED BY:

DTE Energy
Know Your Own Power

June 30, 2016
The Food Service Technology Center (FSTC) program is funded by California utility customers with public purpose program (PPP) funds and administered by the Pacific Gas and Electric Company under the auspices of the California Public Utilities Commission.

Promoting:

Energy Efficiency in Commercial Food Service
## Hybrid Midstream Plan: Downstream Enhancements

<table>
<thead>
<tr>
<th>GAS MEASURES</th>
<th>Unit</th>
<th>Estimated Energy Saved (CCF/yr)</th>
<th>Recommended Incentive $</th>
<th>Est. Incremental Measure Cost $</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COOKING EQUIPMENT</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENERGY STAR Steam Cookers 5 Pan</td>
<td>Cooker</td>
<td>1,900</td>
<td>$1,500</td>
<td>$3,500</td>
</tr>
<tr>
<td>ENERGY STAR Steam Cookers 6 Pan</td>
<td>Cooker</td>
<td>2,100</td>
<td>$1,800</td>
<td>$4,000</td>
</tr>
<tr>
<td>ENERGY STAR Convection Ovens</td>
<td>Oven</td>
<td>325</td>
<td>$500</td>
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<tr>
<td>Combination Ovens</td>
<td>Oven</td>
<td>800</td>
<td>$1,800</td>
<td>$6,000</td>
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<tr>
<td>Rack Oven Single</td>
<td>Oven</td>
<td>1000</td>
<td>$800</td>
<td>$4,000</td>
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<tr>
<td>Rack Oven Double</td>
<td>Oven</td>
<td>2000</td>
<td>$1,600</td>
<td>$5,000</td>
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<tr>
<td>Large Vat Fryers</td>
<td>Fryer</td>
<td>600</td>
<td>$600</td>
<td>$2,000</td>
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<tr>
<td>ENERGY STAR Fryers</td>
<td>Fryer</td>
<td>500</td>
<td>$500</td>
<td>$1,500</td>
</tr>
<tr>
<td>ENERGY STAR Griddles</td>
<td>Griddle</td>
<td>100</td>
<td>$400</td>
<td>$2,500</td>
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<tr>
<td><strong>WATER HEATERS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-Rinse Sprayers (Gas Water Heat)</td>
<td>Sprayer</td>
<td>variable</td>
<td>no change</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>CONTROLS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CKV Hood with Demand Control</td>
<td>CFM Reduced</td>
<td>variable</td>
<td>$0.50</td>
<td>N/A</td>
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</table>
**Hybrid Midstream Plan: Downstream Enhancements**

<table>
<thead>
<tr>
<th>ELECTRIC MEASURES</th>
<th>Unit</th>
<th>Estimated Energy Saved (kWh/yr)</th>
<th>Current Incentive $</th>
<th>Recommended Incentive $</th>
<th>Estimated Incremental Measure Cost $</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COOKING EQUIPMENT</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electric:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>ENERGY STAR Steam Cookers 3 Pan</td>
<td>Cooker</td>
<td>11,000</td>
<td>$450</td>
<td>$900</td>
<td>$2,000</td>
</tr>
<tr>
<td>ENERGY STAR Steam Cookers 4 Pan</td>
<td>Cooker</td>
<td>13,000</td>
<td>$600</td>
<td>$1,200</td>
<td>$2,500</td>
</tr>
<tr>
<td>ENERGY STAR Steam Cookers 5 Pan</td>
<td>Cooker</td>
<td>16,000</td>
<td>$750</td>
<td>$1,500</td>
<td>$3,000</td>
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<tr>
<td>ENERGY STAR Steam Cookers 6 Pan</td>
<td>Cooker</td>
<td>18,000</td>
<td>$900</td>
<td>$1,800</td>
<td>$3,500</td>
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<tr>
<td>ENERGY STAR Hot Holding Cabinets - Half Size</td>
<td>Cabinet</td>
<td>1100</td>
<td>$300</td>
<td>no change</td>
<td>$700</td>
</tr>
<tr>
<td>ENERGY STAR Hot Holding Cabinets - Three-quarter Size</td>
<td>Cabinet</td>
<td>1600</td>
<td>$400</td>
<td>no change</td>
<td>$1,500</td>
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<tr>
<td>ENERGY STAR Hot Holding Cabinets - Full Size</td>
<td>Cabinet</td>
<td>2200</td>
<td>$600</td>
<td>no change</td>
<td>$1,900</td>
</tr>
<tr>
<td><strong>WATER HEATERS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-Rinse Sprayers (Electric Water Heat) &lt; than 1.6 gpm</td>
<td>Sprayer</td>
<td>variable</td>
<td>$30</td>
<td>no change</td>
<td>N/A</td>
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<tr>
<td><strong>REFRIGERATION</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>ENERGY STAR Commercial Solid Door Refrigerators &lt; than 15 ft3</td>
<td>Refrigerator</td>
<td>400</td>
<td>$75</td>
<td>no change</td>
<td>$500</td>
</tr>
<tr>
<td>ENERGY STAR Commercial Solid Door Refrigerators 15 to 30 ft3</td>
<td>Refrigerator</td>
<td>700</td>
<td>$100</td>
<td>no change</td>
<td>$600</td>
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<tr>
<td>ENERGY STAR Commercial Solid Door Refrigerators 31 - 50 ft3</td>
<td>Refrigerator</td>
<td>1000</td>
<td>$150</td>
<td>no change</td>
<td>$700</td>
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<tr>
<td>ENERGY STAR Commercial Solid Door Refrigerators &gt; than 50 ft3</td>
<td>Refrigerator</td>
<td>1400</td>
<td>$200</td>
<td>no change</td>
<td>$1,400</td>
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<tr>
<td>ENERGY STAR Commercial Solid Door Freezers &lt; than 15 ft3</td>
<td>Freezer</td>
<td>600</td>
<td>$75</td>
<td>no change</td>
<td>$800</td>
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<tr>
<td>ENERGY STAR Commercial Solid Door Freezers 15 - 30 ft3</td>
<td>Freezer</td>
<td>1200</td>
<td>$100</td>
<td>no change</td>
<td>$1,000</td>
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<tr>
<td>ENERGY STAR Commercial Solid Door Freezers 31 - 50 ft3</td>
<td>Freezer</td>
<td>2100</td>
<td>$150</td>
<td>no change</td>
<td>$1,300</td>
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<tr>
<td>ENERGY STAR Commercial Solid Door Freezers &gt; than 50 ft3</td>
<td>Freezer</td>
<td>3300</td>
<td>$200</td>
<td>no change</td>
<td>$1,700</td>
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<tr>
<td>ENERGY STAR Ice Machines &lt; than 500 lbs</td>
<td>Machine</td>
<td>800</td>
<td>$150</td>
<td>no change</td>
<td>$600</td>
</tr>
<tr>
<td>ENERGY STAR Ice Machines - 500 to 1000 lbs</td>
<td>Machine</td>
<td>1300</td>
<td>$250</td>
<td>no change</td>
<td>$800</td>
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<tr>
<td>ENERGY STAR Ice Machines &gt; than 1000 lbs</td>
<td>Machine</td>
<td>1600</td>
<td>$500</td>
<td>no change</td>
<td>$1,300</td>
</tr>
</tbody>
</table>
Download Today’s Handouts:

www.fishnick.com/handouts/20160630
Today’s Learning Goals

Learn

1. How restaurants are using energy efficient appliances to save energy
2. How to find energy efficient appliances
3. How to find DTE Energy’s incentives for efficient appliances
Huge Range in Efficiency!

- Fryer: 70%
- Range: 40%
- Oven: 60%
- Steamer: 50%
- Griddle: 50%
- Broiler: 50%

Gas Appliances
Huge Range in Efficiency!

Electric Appliances

- Fryer: 90%
- Range: 80%
- Oven: 70%
- Steamer: 60%
- Griddle: 50%
- Broiler: 40%
Comal
Berkeley, CA
High Efficiency Gas Convection Oven

- 210 Therms/yr Savings

$85 Annual Energy Savings
$500 DTE Energy Incentive
High Efficiency Gas Fryer

- 600 Therms per Year Savings

$240 Annual Energy Savings
$500 DTE Energy Incentive
### Comal, Berkeley, CA

<table>
<thead>
<tr>
<th>Fryer - Measured Energy Use</th>
<th>OLD Fryer</th>
<th>NEW Pitco VF35 Fryer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily Energy Use (therms)</td>
<td>3.9</td>
<td>1.3</td>
</tr>
<tr>
<td>Annual Energy Use (therms)</td>
<td>1,422</td>
<td>821</td>
</tr>
<tr>
<td>Annual Energy Savings (therms)</td>
<td>-</td>
<td>601</td>
</tr>
</tbody>
</table>
High Efficiency Electric Connectionless Steam Cooker

- 14,100 kWh/year Electricity Savings
- 18,000 gal/year Water Savings

$1,550 Annual Energy Savings
$ 170 Annual Water Savings

$ 900 DTE Energy Incentive
High Efficiency Ice Machine

- 2,450 kWh/year Savings
- 13,140 gal/year Water Savings

$270 Energy Savings
$120 per year Water Savings

$150 DTE Energy Incentive
High Efficiency Refrigerators

- 4 Identical Refrigerators
- 3,170 kWh/year Savings

$350 Annual Energy Savings

$400 Total DTE Energy Incentive
High Efficiency Freezer

- 2,450 kWh/yr savings

$230/yr Energy Savings

$300 DTE Energy Incentive
Commercial Kitchen Demand Ventilation Control Energy Management System

- 1,220 therms savings
- 1,870 kWh savings

$690 Energy Savings

$525 DTE Energy Incentive
Low Flow Pre-Rinse Spray Valve

- 290 Therms Savings
- 40,500 gal Water Savings
- $115 Energy Savings
- $380 Water Savings
- $30 DTE Energy Incentive
## Comal Energy Efficient Equipment Cost Savings

### DTE Energy Incentives

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Incentive</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ice Machine</td>
<td></td>
<td>$150</td>
</tr>
<tr>
<td>Refrigerators (4)</td>
<td></td>
<td>$400</td>
</tr>
<tr>
<td>Freezer</td>
<td></td>
<td>$300</td>
</tr>
<tr>
<td>Convection Oven</td>
<td></td>
<td>$500</td>
</tr>
<tr>
<td>Fryer</td>
<td></td>
<td>$500</td>
</tr>
<tr>
<td>Steamer</td>
<td></td>
<td>$900</td>
</tr>
<tr>
<td>Ventilation Control</td>
<td></td>
<td>$525</td>
</tr>
<tr>
<td>Low Flow Sprayer</td>
<td></td>
<td>$30</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td></td>
<td><strong>$3,125</strong></td>
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</tbody>
</table>

### Energy & Water Savings

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Incentive</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ice Machine</td>
<td></td>
<td>$390</td>
</tr>
<tr>
<td>Refrigerators (4)</td>
<td></td>
<td>$350</td>
</tr>
<tr>
<td>Freezer</td>
<td></td>
<td>$230</td>
</tr>
<tr>
<td>Convection Oven</td>
<td></td>
<td>$85</td>
</tr>
<tr>
<td>Fryer</td>
<td></td>
<td>$240</td>
</tr>
<tr>
<td>Steamer</td>
<td></td>
<td>$1,720</td>
</tr>
<tr>
<td>Ventilation Control</td>
<td></td>
<td>$690</td>
</tr>
<tr>
<td>Low Flow Sprayer</td>
<td></td>
<td>$490</td>
</tr>
<tr>
<td><strong>Total Energy</strong></td>
<td></td>
<td><strong>$3,530</strong></td>
</tr>
<tr>
<td><strong>Total Water</strong></td>
<td></td>
<td><strong>$670</strong></td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td></td>
<td><strong>$4,200</strong></td>
</tr>
</tbody>
</table>
Electronically Commutated Fan Motors in Walk-in Freezer
LED Lighting in the Kitchen, Exhaust Hood, Bar Area & Dining Room
High Efficiency Water Heater with Recirculation Pump & Timer
Strip Curtains and Auto Door Closer on Walk-in Cooler
Reduce, Reuse, Recycle & Compost
- Dishmachine exhaust hood interlocked with dishmachine
- Ice machines use time clocks for load-shifting
- Coffee machine turned off after hours
- Dining room lights turned off for non-service daylight hours
- Hot water recirculation pump uses time clock
Vic’s All Star Kitchen
Pleasanton
High Efficiency Fryer

- 7,410 kWh Energy Savings
- 315 Therms Energy Use
- $992/year savings
- $749 Utility Rebate
High Efficiency Fryer

- 7,410 kWh Energy Savings
- 315 Therms Energy Use

$690/year savings
$500 DTE Energy Incentive
High Efficiency Convection Ovens

- 224 Therms per Year Savings

$90/year Savings
$1,000 DTE Energy Incentive
High Efficiency Griddle

- 849 Therms per Year Savings

$340/year Savings
$400 DTE Energy Incentive
### Vic’s All Star Kitchen, Pleasanton, CA

<table>
<thead>
<tr>
<th>Original Lineup</th>
<th>New Lineup</th>
<th>Calculated Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Countertop Electric Fryer</td>
<td>Floor Natural Gas Fryer</td>
<td>7,410 kWh (315 therms)</td>
</tr>
<tr>
<td>36” Manual Griddle</td>
<td>72” Thermostatic Griddle</td>
<td>849 therms</td>
</tr>
<tr>
<td>48” Manual Griddle</td>
<td>Convection Oven (top)</td>
<td>112 therms</td>
</tr>
<tr>
<td>Conventional Oven (left)</td>
<td>Convection Oven (bottom)</td>
<td>112 therms</td>
</tr>
<tr>
<td>Conventional Oven (right)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Energy Savings</td>
<td></td>
<td>757 therms 7,410 kWh</td>
</tr>
<tr>
<td>Total Operating Cost Savings</td>
<td></td>
<td>$1,120</td>
</tr>
</tbody>
</table>

*DTE Energy Utility Costs: $0.40/therm & $0.11/kWh*
Gas Peak!

- Old Equipment: 392 therms
- New Equipment: 306 therms

Install date: June 15th
Average Sunday Natural Gas Use

OLD line up

16.75 therms

$3.60 per day savings

NEW line up

12.5 therms
It started with a light bulb...

The FSTC recommended energy efficient lighting at Sideboard’s original location in the Danville Hotel.
Followed by a Design Consultation...

When Sideboard was moving to a new location, the FSTC provided a suite of energy efficiency recommendations...
FSTC Recommendations...

- Efficient Fryers
- Efficient Convection Ovens
- LED Lighting
- Lidded Broiler
Energy Efficient Convection Ovens...

$1,000 DTE
Energy Incentive
($500 per cavity)
Energy Efficient Fryers...

$1,000 DTE
Energy Incentive
($500 per fryer)
### True Burger, Oakland

<table>
<thead>
<tr>
<th>Ice Machine – Calculated Energy Use</th>
<th>Old Ice Machine</th>
<th>New Machine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate Capacity (lbs/ice/day)</td>
<td>210</td>
<td>410</td>
</tr>
<tr>
<td>Rated Energy Use (kWh/100 lb/ice)</td>
<td>10.3</td>
<td>5.73</td>
</tr>
<tr>
<td>Duty Cycle (%)</td>
<td>100</td>
<td>TBD</td>
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<tr>
<td>Annual Energy Use Savings (kWh)</td>
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<td>3,340</td>
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<tr>
<td>Demand Reduction (kW)</td>
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<td>1.0</td>
</tr>
<tr>
<td>Hours “off peak”</td>
<td>0</td>
<td>TBD</td>
</tr>
</tbody>
</table>
## Fryer Replacement Case Study

**Location: Chow, Danville**

<table>
<thead>
<tr>
<th>Hotline Location</th>
<th>Mainline Old Fryer (heavy use)</th>
<th>Mainline NEW Vulcan VK45 Fryer (heavy use)</th>
<th>Grill line Old Fryer (light use)</th>
<th>Grill line NEW Pitco VF35 Fryer (light use)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily Energy Use (therms)</td>
<td>3.6</td>
<td>1.3</td>
<td>2.8</td>
<td>1.6</td>
</tr>
<tr>
<td>Annual Energy Use (therms)</td>
<td>1,287</td>
<td>452</td>
<td>990</td>
<td>573</td>
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<tr>
<td>Annual Operating Cost Savings ($)</td>
<td><strong>$180</strong>*</td>
<td></td>
<td></td>
<td><strong>$230</strong>*</td>
</tr>
</tbody>
</table>

*Operating cost savings based on a natural gas utility rate of $0.40/therm.
Real Restaurants
Real Savings!
Buy Efficient
Get Incentives!
dteenergy.com/savenow
Thanks! be energy wise

save energy, save money, save the environment.

fishnick.com
Oscar W. Larson Company

Energy Optimization In The Food Service Environment
The Whole Facility Approach to Energy Management One Bite at a Time!!

- We have been participating in local utility rebate programs since 2009 and have collectively secured **millions** of dollars in rebate money and over **18 gigawatts** of annual energy savings for our customers.
Save Energy & Money! Make Your Site More Profitable!

Cut down on your maintenance costs as well as your utility bills by taking advantage of local utility rebate programs:

- DTE Energy
- Consumers Energy
- Efficiency United
- Energy Smart
- Lansing Board of Water & Light
- Michigan/Indiana Power

Restaurants use as much as 5x more energy per square foot than any other commercial building (Energy Star Guide for Restaurants 2012).
Benefits

**Uses Less Wattage.**
1000 watt HID fixture typically replaced by 225 watt LED fixture.
400 watt HID fixture typically replaced by 115 watt LED fixture.

**Long Life and Warranty.**
Most fixtures have a 20 yr expected life.
Warranty can be as long as 10 yrs.
Minimum of 5 yr warranty to participate in rebate program.
Maintenance savings over the life of fixture.
Refresh Your Interior Image and Cut Back on Energy with New LED Lighting

Benefits

Uses Less Wattage.
220 watt fluorescent fixture typically replaced by 35 watt LED fixture.
100 watt incandescent fixture typically replaced by 18 watt LED fixture.

Dimmable/Color Changing.
Variable or 50% Dimming.
Some have color changing capabilities.

Long Life and Warranty.
Most fixtures have a 20 yr expected life.
Warranty can be as long as 10 yrs.
Minimum of 5 yr warranty to participate in rebate program.
Illuminate Your Signs with Energy Saving LED Lighting

Benefits

Uses Less Wattage.
Wattage can be reduced by as much as Half.
Multiple options depending on signage.

Long Life and Warranty.
Most have a 18-20 yr expected life.

Warranty are typically 5 yr for retrofit options but are dependent on manufacturer.

Maintenance Savings.
What are your signs costing you?
Benefits

**Uses Less Energy**
Designed to meet the new ASHRAE Standards

**Warranted Equipment.**
Some have 20 years on heat exchangers
Most have 5 years on compressors.

**Maintenance Savings.**
Consider service contracts with quarterly PM Schedules.
Hybrid Heating/Air Conditioning Equipment
RHEEM H2AC Rooftop Unit

How It Works

1 - Cold ground water enters the system at the thermal storage tank.

2 - When there is a call for cooling by the H2AC rooftop (B), the internal pump draws water from the storage tank (A) into the water cooled condenser capturing up to 150,000 btuh of waste heat.

3 - “Free” hot water from the H2AC rooftop is sent to the thermal storage tank (A). This 115 gallon tank can be “charged” up to 120F regardless of hot water usage (peak, off peak, overnight, etc.).

4 - When there is a need for hot water at a fixture, preheated water not cold ground water flows from the storage tank (A) through the heaters (C) and is provided to the fixtures at the correct temperature.

The energy savings is a result of the heaters only boosting the water temp 20F to 45F rather than the traditional 100F temp rise.
Reduce Walk-In Cooler Energy Consumption with the Installation of EC Motors

Benefits

What is an EC Motor.
Synchronous motors that are powered by a DC electric source via an integrated inverter/switching power supply, which produces an AC electric signal to drive the motor.

Uses Less Energy
Designed to meet the new ASHRAE Standards

Fan Cycling Control.
Can be used with fan cycling controls to maximize energy savings.
Install Controls to Further Monitor and Reduce Energy Consumption

Controls
- TEV/EEV
- Room Temperature
- Evaporator Fans
- Compressor/Liquid Line Solenoid
- Defrost Heaters
- Multiple Alarms

KE2 Evaporator Efficiency

Communicates
KE2 Master View on:
- Tablet
- Smart Phone
- PC

KE2 Router

Oscar W. Larson Co.
KE2 Efficiency Controller

Benefits

- Allows you to see deficiencies.
- Monitor equipment performance.
- Track energy usage.
- Maintain your food quality
- Local and remote alarming notification capability.
Replace Your Prep Equipment With Energy Star Products

 Benefits

Uses Less Energy
Designed to meet the new ASHRAE Standards
Warranted Equipment.
Consider manufactures warranty.

Maintenance Savings.
Consider repair vs replacement.
High Efficiency Water Heating

Benefits

Uses Less Energy
Designed to meet the new ASHRAE standards.
30-40% Savings over traditional water heaters.

Many Types.
Hybrid heat pump.
Direct vent.
On demand.
Basic Energy Management System

energy management solutions for restaurants

heating/cooling

lighting/signage

walk-in refrigerators/freezers
Complete Site Monitor and or Control

- **HVAC**
  - Heating
  - Cooling
  - Destratification Fans
  - Energy Management
  - Variable Speed Drives
  - Service Contracts

- **Refrigeration**
  - Walk in Cooler/Freezers
  - Stand Alone Case Units
  - Under Counter Units
  - Ice Machines
  - Evaporator Efficiency
  - EC Evaporator Fan Motors
  - Motors

- **Food Prep**
  - Exhaust Fans
  - Hot Water
  - Fryers
  - Ovens
  - Ranges
  - Holding Cabinets

- **Electrical/Controls**
  - Exterior Lights
  - Signs
  - Interior Lighting
  - Service Contracts
Centralized Energy Management System

Targets the whole-building design:
• Reduced energy use by 20-30%
• Reduced maintenance and capital costs
• Reduced environmental impact
• Increased occupant comfort and health
• Increased employee productivity
• Local and remote alarming
• Remote access & control
• Power monitoring
  – Consumption forecasting
Wireless & Expandable

Capable & Affordable

The right system balances comfort and savings

Controlling Temperatures & Monitoring Multi-Locations

Wireless & Expandable
Bay City Restaurant

BAY C.C. TOTAL PROJECT SAVINGS

- Removed 89 HID Light Fixtures and Installed 58 LED Light Fixtures
- Replaced 9 Roof Top HVAC Units
- Replaced 10 Evaporator Fan Motors
- Retrofitted 11 Lighted Signs to LED

- Total Project Cost $284,550.00
- Utility rebates $23,996.00
- Yearly energy savings $46,481.00.
- Monthly energy savings $3,874.00
- Monthly Michigan Saves Financing Payment $2,683.00
- This project is **cash positive** by **$1,191.00 a month**.
2016
DTE Energy Efficiency Program for Business
Adam Constantino
Outreach Manager
Safety First

Exits

Restrooms

Other site features
Agenda

• Program Overview
• Commercial Kitchen Opportunities
• Special Offers
• Capuchin Soup Kitchen Energy Efficiency Makeover
Program Overview
Three types of program incentives

**Prescriptive**
- **Predetermined** measures and incentives for the installation of various energy efficient improvements.
- Incentives typically average 20% to 50% of the incremental cost.

**New Construction**
- **New facilities/major renovations** of existing facilities or change of use projects.
- Adding load.

**Major Renovation**
- **Capital investment** projects that increase energy efficiency and are **NOT** eligible for a Prescriptive Incentive may qualify as a Custom Measure.
- Custom Incentives are determined on a case-by-case basis and are paid per unit energy saved (ex: $0.07/kWh and/or $4/Mcf).
Commercial Kitchen Opportunities
About Restaurant Energy Use

The bulk of energy demand in restaurant operations comes from the kitchen: cooking and refrigeration. According to ENERGY STAR®, a typical restaurant spends $3.99 per square foot a year on energy. Here is a look at typical restaurant energy usage.*

*Usages are based on industry averages reported by U.S. Energy Information Administration.
## Savings Possibilities

### Electric Measures

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interior LED recessed lights/lamps</td>
<td>Up to 75%†</td>
</tr>
<tr>
<td>Ice machines</td>
<td>15% to 20%*</td>
</tr>
<tr>
<td>Refrigerators/freezers</td>
<td>Up to 35%*</td>
</tr>
<tr>
<td>Holding Cabinets</td>
<td>65%*</td>
</tr>
</tbody>
</table>

### Natural Gas Measures

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steam cookers</td>
<td>Up to 50%*</td>
</tr>
<tr>
<td>Convection ovens</td>
<td>30% to 40%*</td>
</tr>
<tr>
<td>Fryers</td>
<td>30%*</td>
</tr>
<tr>
<td>Griddles</td>
<td>15%*</td>
</tr>
</tbody>
</table>

† U.S. DOE    *ENERGY STAR®
## Refrigerators and Freezers

<table>
<thead>
<tr>
<th>Equipment Type</th>
<th>Size</th>
<th>Incentive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refrigerators</td>
<td>&lt; 15 cu ft</td>
<td>$75.00</td>
</tr>
<tr>
<td></td>
<td>15 – 30 cu ft</td>
<td>$100.00</td>
</tr>
<tr>
<td></td>
<td>31 – 50 cu ft</td>
<td>$150.00</td>
</tr>
<tr>
<td></td>
<td>&gt; 50 cu ft</td>
<td>$200.00</td>
</tr>
<tr>
<td>Freezers</td>
<td>&lt; 15 cu ft</td>
<td>$75.00</td>
</tr>
<tr>
<td></td>
<td>15 – 30 cu ft</td>
<td>$100.00</td>
</tr>
<tr>
<td></td>
<td>31 – 50 cu ft</td>
<td>$150.00</td>
</tr>
<tr>
<td></td>
<td>&gt; 50 cu ft</td>
<td>$200.00</td>
</tr>
</tbody>
</table>
## Gas Fryers

<table>
<thead>
<tr>
<th>Equipment Type</th>
<th>Incentive</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENERGY STAR® Fryers</td>
<td>$500.00</td>
</tr>
<tr>
<td>Large Vat Fryer</td>
<td>$600.00</td>
</tr>
<tr>
<td>ENERGY STAR® Griddles</td>
<td>$400.00</td>
</tr>
</tbody>
</table>
## Holding Cabinets

<table>
<thead>
<tr>
<th>Equipment Type</th>
<th>Size</th>
<th>Incentive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hot Holding Cabinets</td>
<td>Half Size</td>
<td>$300.00</td>
</tr>
<tr>
<td></td>
<td>Three Quarter Size</td>
<td>$400.00</td>
</tr>
<tr>
<td></td>
<td>Full Size</td>
<td>$600.00</td>
</tr>
</tbody>
</table>
# Ovens

<table>
<thead>
<tr>
<th>Equipment Type</th>
<th>Incentive</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENERGY STAR® Convection Ovens</td>
<td>$500.00</td>
</tr>
<tr>
<td>Combination Ovens</td>
<td>$1,800.00</td>
</tr>
<tr>
<td>Rack Oven Single</td>
<td>$800.00</td>
</tr>
<tr>
<td>Rack Oven Double</td>
<td>$1,600.00</td>
</tr>
</tbody>
</table>
Special Offers
Michigan-Made bonus

- **15% bonus** for certain installed equipment that is 50% manufactured and/or assembled in Michigan (excluding packaging).
  - Some Prescriptive measures are not eligible.
  - Custom projects are not eligible.
  - Look for the check box on the Application next to qualified measures.

The Michigan-Made affidavit can be downloaded at: [dtetradeally.com](http://dtetradeally.com)
Multi-Measure bonus

• **20% bonus** on multiple categories submitted on the same Application – when no single category is more than 75% of the Application.

  o Our Catalog highlights measures (MM) that appear in both electric and gas that may qualify.

This Fact Sheet can be downloaded at: dtetradeally.com
Financing from Michigan Saves

- **0% financing** on up to $50,000 for up to 36 months
- **2.99% financing** on up to $150,000 for up to 60 months
- **1.99% financing** on up to $150,000 for up to 60 months for municipalities and K-12 schools

This Worksheet can be downloaded at: [dtetradeally.com](http://dtetradeally.com)
Capuchin Soup Kitchen
Energy Efficiency Makeover
Selection of Capuchin Soup Kitchen

- Energy Audits performed at several DTE Energy customer locations by DNV GL
- DTE Energy Customer (Electric and Gas)
- Food Service equipment focus
- Hours of Operation
- Overall condition/age of equipment
- Community impact
Electric Measures Overview

• Category: Lighting
  • Interior
  • Exterior
## Electric Measures Overview

<table>
<thead>
<tr>
<th>Location</th>
<th>Qty</th>
<th>Existing Equipment</th>
<th>New Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interior</td>
<td>162</td>
<td>84w Troffer Fixtures</td>
<td>CREE ZR24-35 W LED Fixtures</td>
</tr>
<tr>
<td>Interior</td>
<td>10</td>
<td>Light Switches</td>
<td>Occupancy Sensor OSS10_INW Wall Mount</td>
</tr>
<tr>
<td>Interior</td>
<td>10</td>
<td>Fluorescent Exit Signs</td>
<td>LED Exit Sign E-XPL Series -0.8W</td>
</tr>
<tr>
<td>Exterior</td>
<td>11</td>
<td>T5 Wall Packs</td>
<td>LED XSP Series Wall Mount 42W/25W</td>
</tr>
<tr>
<td>Exterior</td>
<td>5</td>
<td>(4) Pole Mounted &amp; (1) Building Mounted 400w HID Fixtures</td>
<td>CREE LED OSQ Series 112W/168W</td>
</tr>
<tr>
<td>Interior</td>
<td>6</td>
<td>Fluorescent Refrigerated Lighting Fixtures</td>
<td>CREE LED 4’ WS4 50W-64W</td>
</tr>
<tr>
<td>Interior</td>
<td>4</td>
<td>1 x 4 Troffer Fixtures</td>
<td>CREE ZR1-44W 1’ x 4’ LED Troffer</td>
</tr>
<tr>
<td>Interior</td>
<td>12</td>
<td>Restroom Wrap Fixtures</td>
<td>UR2-48 and UR3-48 4’ 2L 44W LED</td>
</tr>
<tr>
<td>Interior</td>
<td>5</td>
<td>8’ Tandem Fluorescent Fixtures</td>
<td>UR2-48 and UR3-28 4’ 2L 44W LED</td>
</tr>
</tbody>
</table>
Capuchin Soup Kitchen

Electric Measures Overview

• Category: HVAC
  • Programmable Thermostat
Electric Measures Overview

- **Category: Food Service**
  - Tilting Skillet
  - Holding, Heated, Refrigerator Cabinets
  - Cook/Hold Oven
  - Dishwasher – Conveyor Type
  - Strip Curtains
  - Door Gaskets
  - EC Evaporator Fan Motors

- Exhaust Fan Hood Replacement
- Coffee Urn
- Cold, Hot and Serving Counters
Natural Gas Measures

- Category: HVAC
  - Programmable thermostat
  - Domestic hot water
Capuchin Soup Kitchen

Natural Gas Measures

- **Category: Food Service**
  - Convection oven
  - Combi-oven
  - Fryer
  - Stationary kettle
  - Countertop hotplate and griddle
  - Charbroiler
## Capuchin Soup Kitchen

### Savings

<table>
<thead>
<tr>
<th></th>
<th>Savings</th>
<th>Savings Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Savings – Electric kWh/year</td>
<td>41,353</td>
<td>19%</td>
</tr>
<tr>
<td>Total Savings – Mcf/year</td>
<td>314.1</td>
<td>19%</td>
</tr>
</tbody>
</table>
Demonstration Center

• Demonstration Center
  • Tours available for DTE customers interested in food service technology upgrades
  • Please contact the DTE Energy Efficiency Program for Business
In Summary

• Program Overview
• Commercial Kitchen Opportunities
• Special Offers
• Capuchin Soup Kitchen Energy Efficiency Makeover
If you have questions, please contact our office

Email: saveenergy@dteenergy.com

Phone: 866.796.0512 (press option 3)

Fax: 313.664.1950

Website: dteenergy.com/savenow

Website: dtetradeally.com

: www.linkedin.com/in/dteenergysaveenergy