Cost Savings AND Significant Greenhouse Gas Emission Reductions

In addition to providing significant energy cost savings, the recent energy efficiency improvement steps taken by Young's Restaurant, with the help of the Retail Merchants Association's Energy Efficiency Program, are also projected to result in significant reductions in greenhouse gas emissions.

Electricity – Efficiency Steps

- Prior to the project, Young's annual electricity use was roughly 108,000 kWh per year. This amount of electricity usage results in an estimated 84,240 pounds of CO_2 emissions per year (based on an estimated .78 lbs CO_2/kWh electricity in NH;[1] national average estimated at 1.28 lbs/kWh[2]).

- The electricity-efficiency steps implemented by Young's are projected to reduce their annual electricity usage by approximately 20%, or 21,600 kWh per year.

- Reducing annual electricity usage by 21,600 kWh per year **reduces CO_2 emissions by roughly 16,850 pounds per year**, just from the efficiency steps taken.

Electricity – Conversion to Wind Power

- Wind power produces just .014 pounds of CO_2 emissions per kWh,[2] compared to the .78 lbs/kWh estimated by the EPA for NH,[1] and the 1.28 lbs/kWh estimated for the U.S. electricity grid average by GaBi LCA databases.[2]

- **Young's choice to purchase wind-generated electricity is projected to reduce the CO_2 emissions of its electricity usage by an additional approximately 66,180 pounds of CO_2.**

- The combination of electricity-efficiency steps and conversion to wind power results in a projected decrease in Young's annual electricity-related CO_2 emissions of 99% compared to pre-project usage.

Heating & Cooking Fuel

- Prior to the project, Young's annual propane usage for heating and cooking was roughly 7,100 gallons per year. This amount of annual propane usage results in 90,195 pounds of CO_2 emissions per year.[3]

- Just **by converting to cleaner-burning, more efficient natural gas, Young's is projected to reduce their fuel-related CO_2 emissions by 12%** for the same amount of heat production.[4]

- The **energy efficiency steps taken by Young's in this project are projected to reduce the fuel-related emissions by an additional 18%, for a total of a 30% reduction in fuel-related CO_2 emissions** compared to prior to the project.

- This 30% reduction equates to **eliminating roughly 26,950 pounds of CO_2 emissions annually**.

See the reverse side for a summary of the combined CO_2 emissions reductions and equivalents.

Combined Greenhouse Gas Reduction

- **This energy efficiency project is projected to result in the following combined reduction in CO_2 emissions:**

  - **Electricity efficiency:** **Reduction of roughly 16,850 pounds CO_2/year**
  - **Wind power conversion:** **Reduction of roughly 66,180 pounds CO_2/year**
  - **Fuel conversion & efficiency:** **Reduction of roughly 26,950 pounds CO_2/year**
  - **Total combined reduction:** **Reduction of roughly 109,980 pounds CO_2/year**

- Eliminating 109,980 pounds of CO_2 emissions per year is equivalent to doing any one of the following:[5]
  - Taking 9.8 cars off of the road for a year.
  - Not burning 5,593 gallons of gasoline.
  - Not using 116 barrels of oil.
  - Taking 6.2 average U.S. homes off the grid for a year.
  - Planting 1,279 trees and growing them for 10 years.
  - The amount of carbon sequestered by 10.6 acres of mature pine or fir forest.
  - Recycling 17.4 tons of waste instead of sending it to the landfill.

- And these CO2 reductions are in addition to those that Young's attains through its recycling and composting program, its emphasis on the purchase of local food products (reduced transportation miles), its use of recycled and compostable paper products, take-out containers, and utensils, and more!

[1] EPA estimate.
[2] PE International estimated average, used in GaBi Professional 4 Life Cycle Assessment software.
[3] Based on U.S. Dept. of Energy, Energy Information Administration, and PSNH estimates of 12.7 lbs CO_2/gallon of propane.
[4] Based on 92,000 BTU/gallon propane, 100,000 BTU/therm natural gas, and U.S. Dept. of Energy, Energy Information Administration, and PSNH estimate of 12.1 lbs CO_2/therm natural gas.
[5] Based on EPA Greenhouse Gas Equivalencies Calculator; http://www.epa.gov/cleanenergy/energy-resources/calculator.html#results