



Hydro One Demand Response Initiatives

PLMA Spring 2007 Conference

Masoud Almassi
(416) 345-5174

April 17, 2007

Customer Focused Demand Response Programs

Demand Response:



- ❑ *An effective way to reduce peak load in the short term*

- ❑ *Also an opportunity to engage customers and raise awareness about energy efficiency*

- ❑ *Two Recent Examples:*
 - **Smartstat** -- *Residential*

 - **Double Return** -- *Commercial & Industrial*

Smartstat --- Residential Load Control Program

Key Features

End-use targets: Central AC & water heater
Target Enrolment (1st phase): 10,000 participants by June 2007
Reduce summer peak demand 13 MW
Program cost: **\$400/kW**

Technology

Central Air Conditioning Programmable Thermostats
Electric Water Heater LC Switch



Control Strategy

Control Season: June 15 to September 15
Control Events: 5-15 events / season
AC Control Duration: 4 hours (2:00-6:00 pm)
WH Control Duration: 3 hours maximum (3:00-6:00)

Implementation Team

Project Management /Installation Goodcents International Inc
LC Equipment /Server Cannon Technology Inc.
Marketing Summer Hill Group (2006)



Thermostat vs. Switch:

- Customer Benefits:
 - year round energy savings
 - remote access to thermostat
- Customer Interaction / Awareness
- Installation Speed

- *Load Control Capacity = Supply Reserve*
- *Customer owns kW! buy-in is key*
- *Not just installing load control equipment*
“We are delivering a program”

Double Return Program

Program Objectives:



- Reduce commercial and industrial customers' summer and winter peak demand by 5-10%*
- Target up to 18 MW peak reduction*
- Increase awareness, provide technical assistance, and build a foundation for future energy efficiency programs*



Double Return Program

Key Features:



- ❑ *A voluntary demand response program uniquely designed for business markets*
 - ✓ *Simple design*
 - ✓ *Focus on peak demand (kW) reduction*
 - ✓ *\$ Incentive that makes a difference*
 - ✓ *Customer engagement*

Double Return Program

Program Offering:

- ❑ *Eligible customers include commercial and industrial distribution-connected customers with interval meters (750 accounts)*
- ❑ *Participants need to reduce peak load by 5 – 10% relative to the previous year*
- ❑ *Incentives apply to both Winter and Summer peaks*
 - Winter (Dec. 06 - Feb. 07)
 - Summer (June 07 - Aug. 07)
- ❑ *Incentives equal **double** the amount saved in delivery charges*



Eligible Customers are automatically enrolled

Double Return Program

How does it work?

Example

Average Monthly Peak:

Average Monthly Consumption:

TARGET

10% Load Reduction

(through reduced lighting, HVAC, and non-critical equipment usage or through on-site generation)

Total Incentives

For 200 kW
Peak Reduction

$$4800 \times 6 = \$28,800$$

2 MW

1250 MWh

200 kW



Savings (200kw/2MW)

10%

| Program Impact (all figures are approximate and signify maximum potential for savings) | | | |
|--|--|----|--------|
| Customer Savings/month | | | |
| Reduced Delivery Charges /month (200kW) | | \$ | 2,400 |
| Energy (kWh) Reduction/month (up to 125MWh) | | \$ | 6,000 |
| Double Return Incentive/month (delivery charges) | | \$ | 4,800 |
| Total Monthly Savings | | \$ | 13,200 |

We will give the customer \$2 for every dollar saved in delivery charges

Double Return Program

How to reduce peak load?

Compressed Air
Waste reduction



Reduced Lighting

HVAC
Temperature re-set



Non-critical Equipment

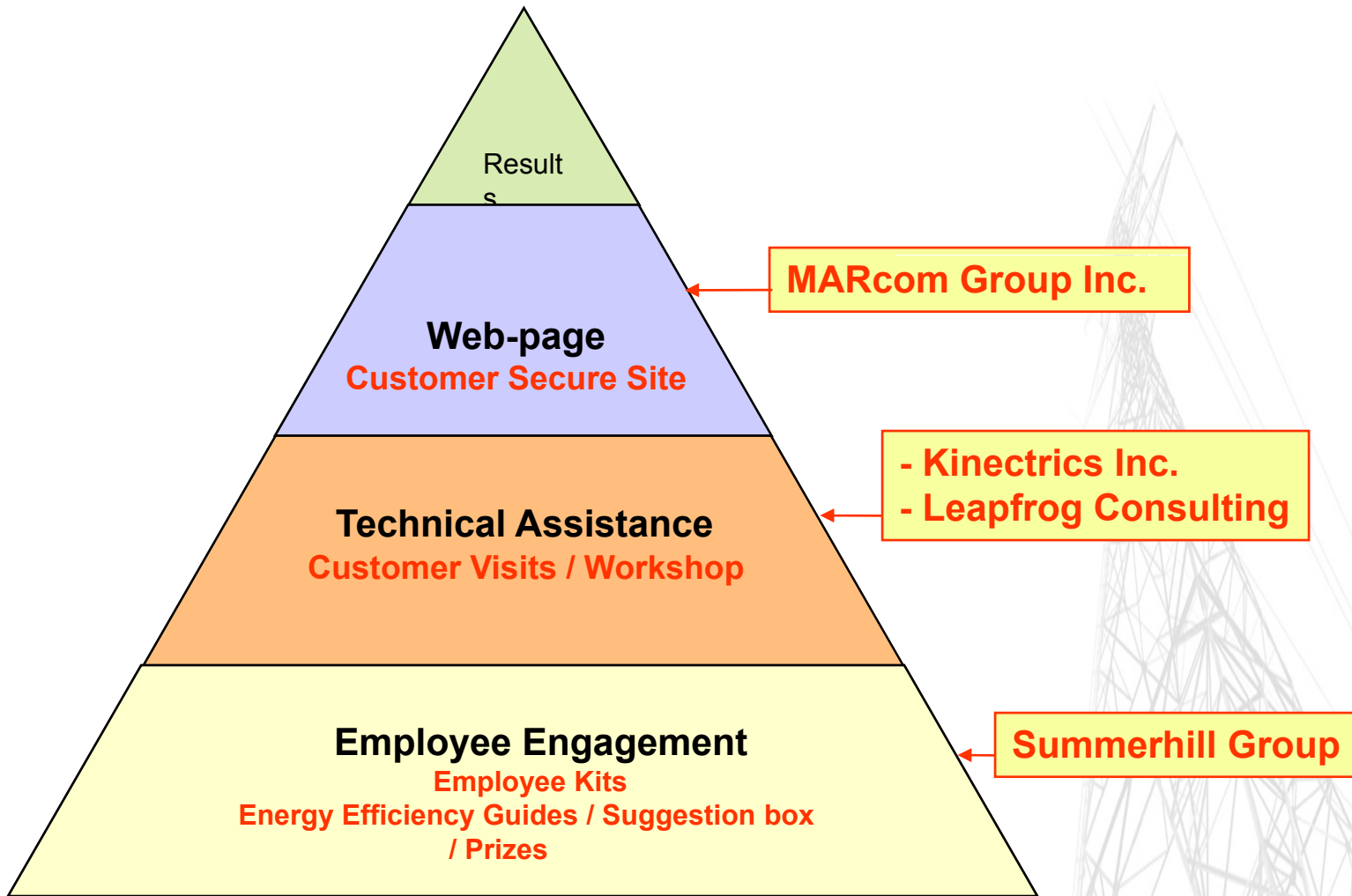


On-site generation



Double Return Program

Customer Assistance and Employee Engagement



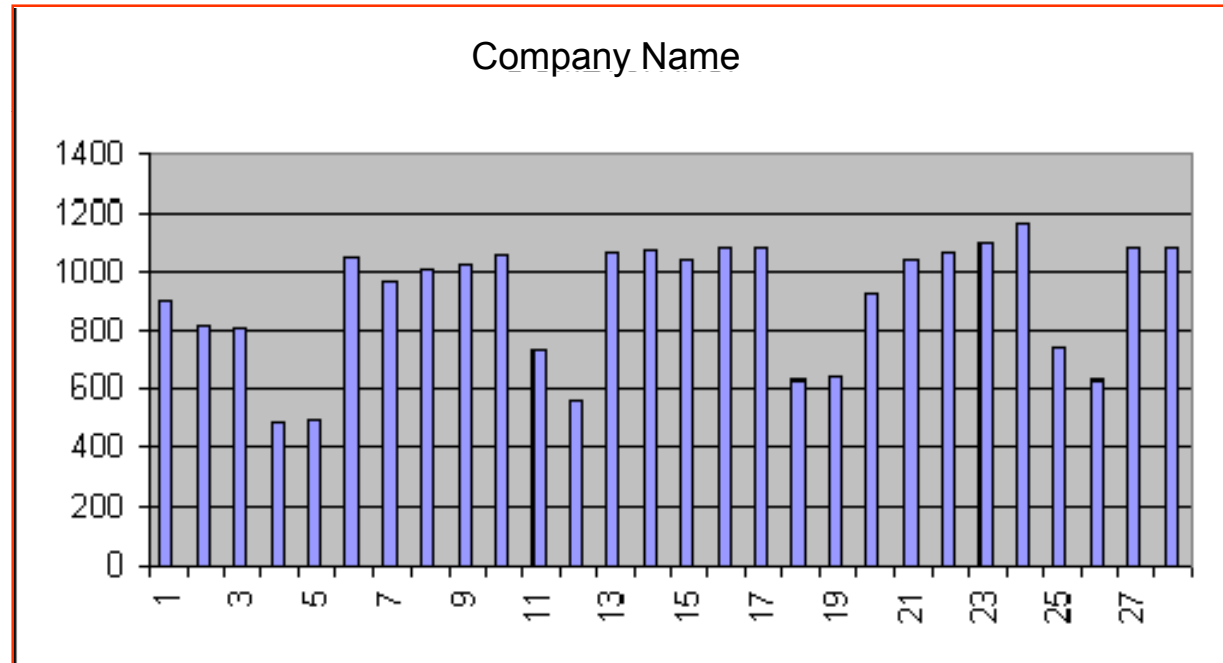


Double Return Program



To assist you in understanding your historical peak usage:

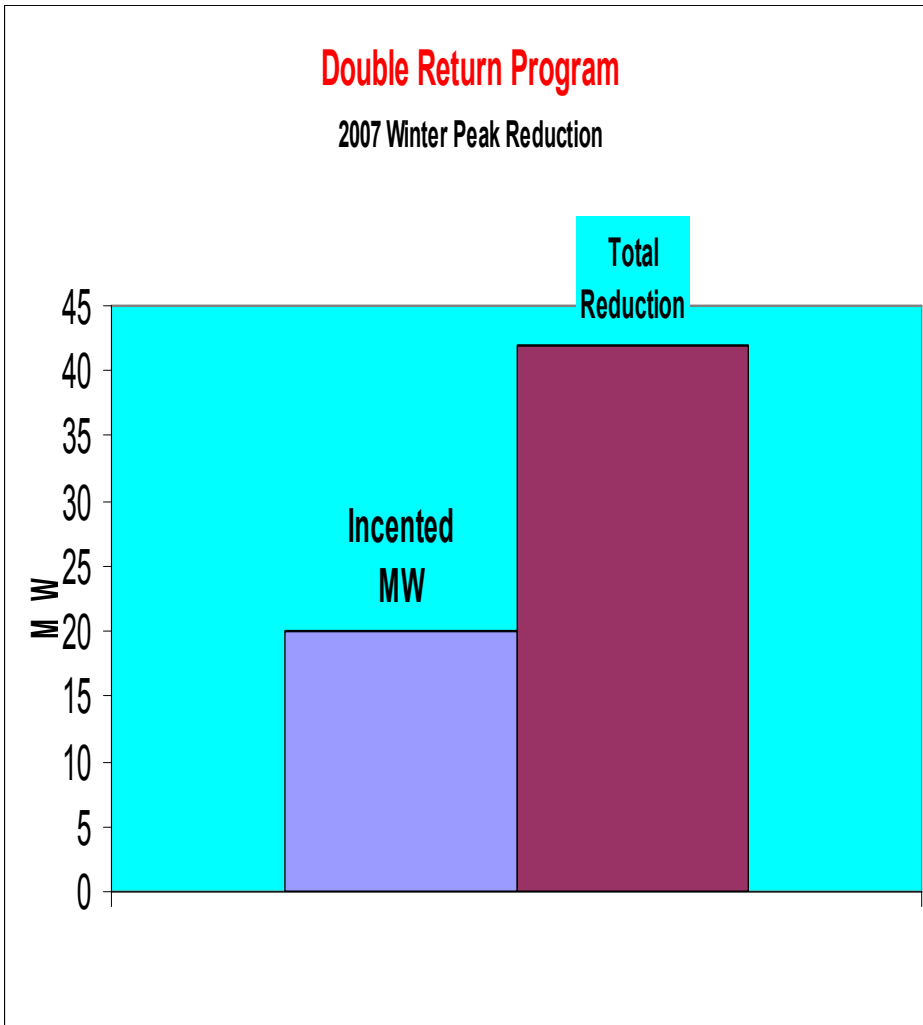
HIGHEST 'DAILY' PEAK LAST YEAR > July 24/06 at 1,163 kW



Call **1-877-345-6942** to book your energy efficiency consultation session

Double Return Program

Program Results (first season): 42 MW Peak Reduction



Total Program Costs including incentives:
\$200/kW



Thank You

