

welcome

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# **Building an Industrial Energy Awareness Program:** *A Progress Review*

**Background**

**Blueprint for Reduction**

**Status**

**Lessons Learned**

AMICUS ENERGY SOLUTIONS

# BACKGROUND

## Leading Cosmetics Mfr

***200k Sq Ft plant/warehouse/office***

200 HP steam boiler

Unitary rooftops

400 total HP of air compressors

### ***Previous conservation efforts***

#### **T-8 lighting upgrade**

Entire facility

Completed in 1995

#### **Extensive BMS system**

Schedules & controls lighting, HVAC

Formerly controlled air compressors

Formerly monitored building electrical demand

# BACKGROUND

## Leading Cosmetics Mfr

### *Product Types*

#### Oil/wax based

Lipstick  
Mascara

#### Water based

Cream  
Lotions

# BACKGROUND

## Leading Cosmetics Mfr

### ***Goal***

***Corporate has set various conservation goals  
(normalized for production)***

#### Water reduction

10% below 2002 baseline

#### Waste reduction

reduce packaging, corrugated, etc.

#### Energy reduction

5% below 2004 baseline

#### Environmental (CO2)

2% below 2005 baseline

## Four Step blueprint for reduction

Analysis

Identification

Awareness

Reduction

## Analysis

### *Regression Analysis*

*(24 months of Gas & Electric data)*

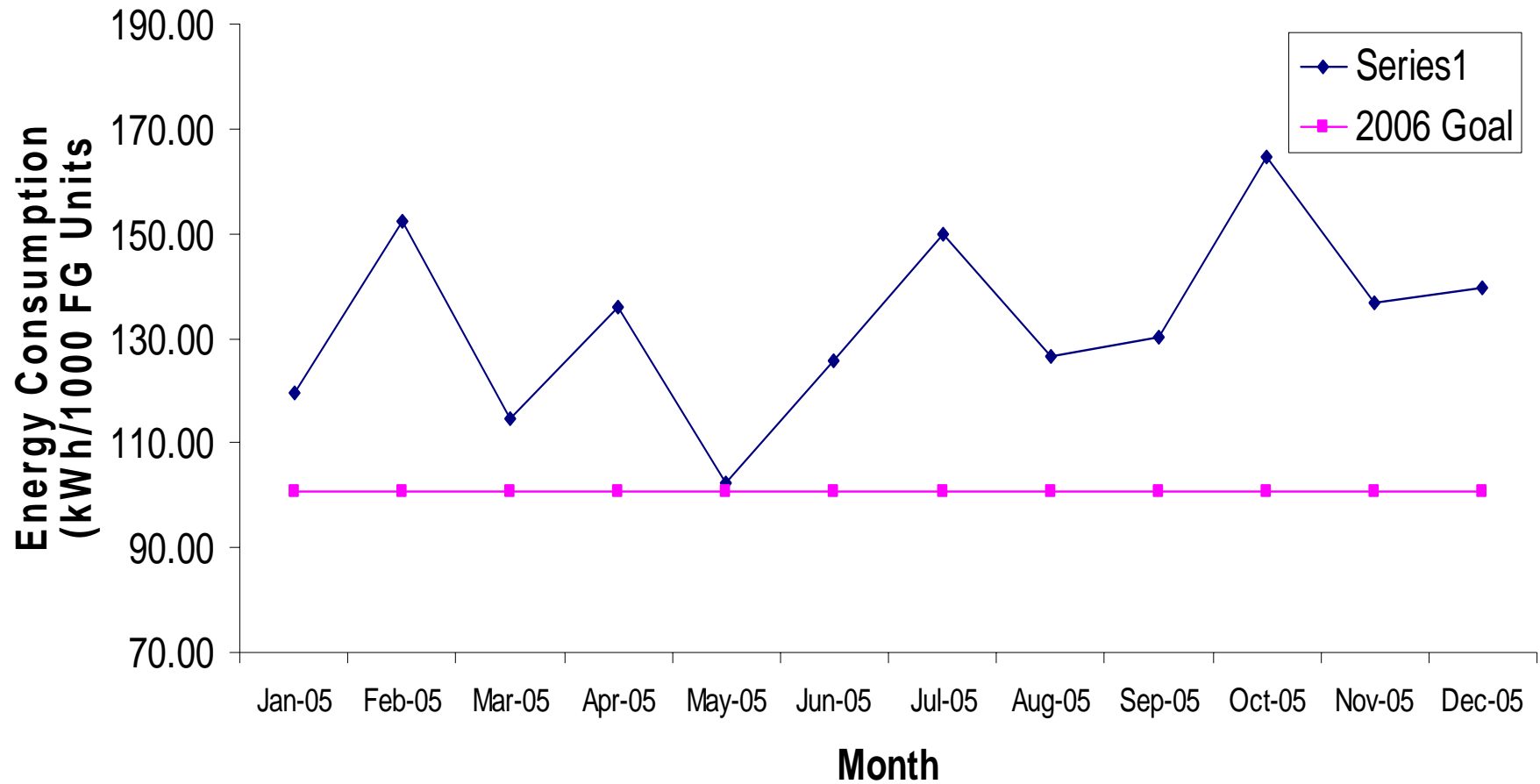
Facility Balance Points

Heating and Cooling Degree Days

Monthly Output of Each Product Type

# BLUEPRINT FOR REDUCTION

## 2005 Results for Energy Consumption 2006 Goal: 100 kWh/1000 FG



## Project Identification

**Description**

**Payback**

**Implementation Time**

**Percentage of Goal**

# BLUEPRINT FOR REDUCTION

## Employee Awareness Program

Mascot Competition

Newsletter Articles

Cafeteria Table Tents

Broadcast E-mails

Energy Tips Solicitation Process



## Implementation Plan

*Group ECM's in order of:*

Implementation Time

Payback

Implementation Cost

Percentage Goal

## Analysis

- Empirically finding the facility balance points were informative by itself
- Electric use driven by cooling degree days and wax-based unit production
- Gas use driven by Heating Degree days and cream-based unit production

## Project ID

### ***Compressed Air***

Leak Reductions & System Improvements

### ***Co-Generation***

### ***Lighting System***

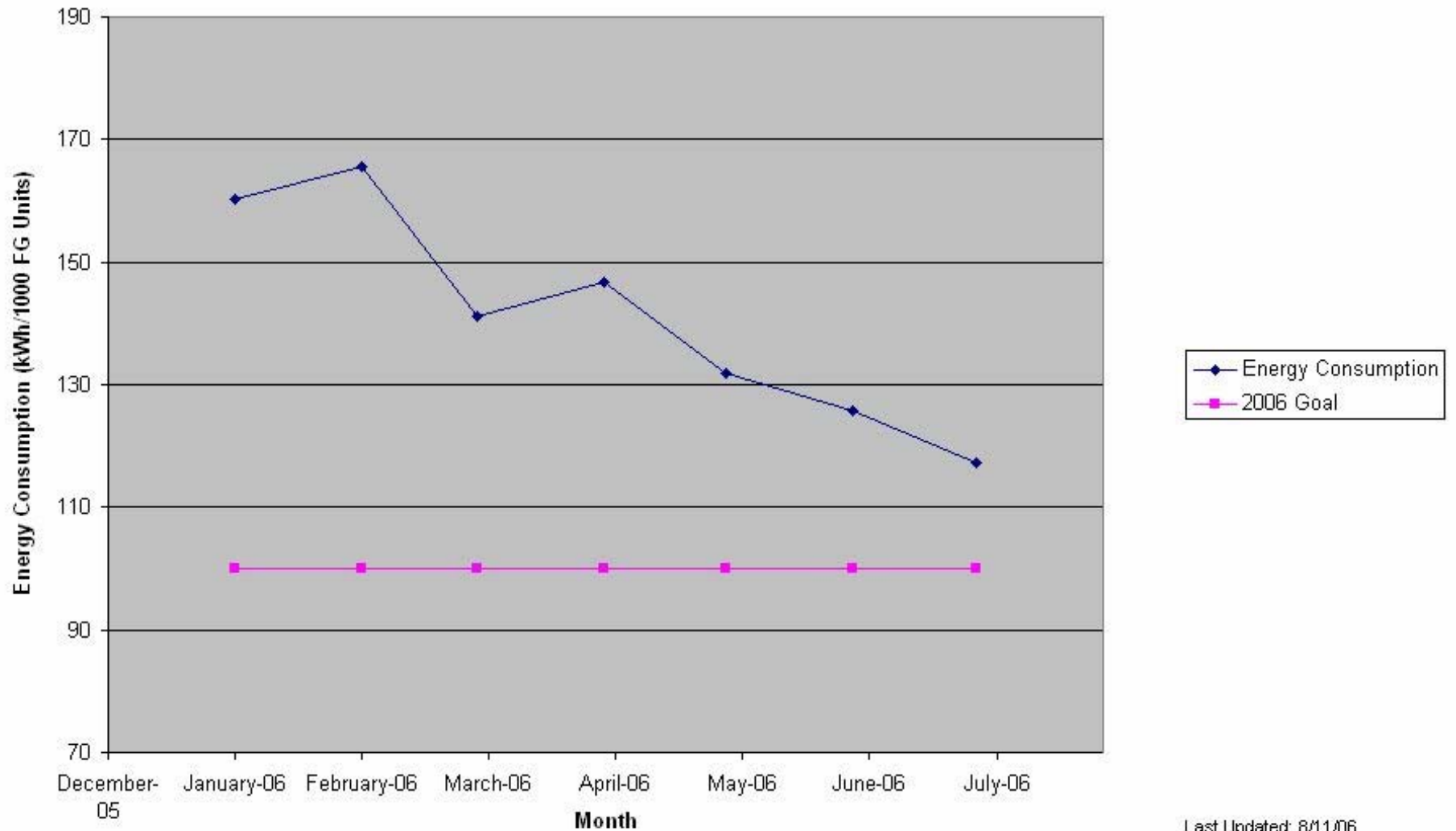
Operating Hour Reduction

Review/Expansion of Warehouse Dimming

### ***Control System Review***

# STATUS COMPLETED

Year to Date Results for Energy Consumption  
2006 Goal: 100 kWh/ 1000 FG



Last Updated: 8/11/06

## Project Implementation

### *Leak Survey/Repairs*

Compressor Upgrades

Lighting Controls

### *Employee Awareness*

Mascot Competition Completed

TIPS Program

Monthly Newsletter, Emails, Table Tents

## Analysis

### ***Understanding Energy Use***

Production Reporting Skewed Energy Numbers

Production Variation Greatly Affect Normalized Energy Usage

### ***Aids in Projecting Future Energy Costs***

### ***Bill Analysis Found Mis-Applied Bill***

Correcting Charge Recovered 25% of the Cost of This Project

## Project ID

### *Management Thinks in Project Mindset*

Moderate Progressive Facilities may not have “silver bullet” projects that can immediately get them to their target energy cost

### *Plant Expansion Goals Precludes Some Projects*

### *Guidance for Plant Expansion*

Thermal Storage for Batch Cooling

Passive Solar Heating

Daylighting

## Project ID

*Recover “Lost” Incentive Covers 100% of Project Costs*

*Provided Guidance to Staff Tasked with Energy Responsibilities*

Guidance on CA Leak Detector Selection and Conducting in-house leak survey

Thermal Imaging Analysis

## Employee Awareness

*Identify Communication Chain*

*Must Be Able to Contact EVERYONE*

*Talk to Employees in Person*

## Overall

*Uncontrollable Factors Affecting Energy Results*

Product Quality

Production Mix

Volume

# QUESTIONS

**Thanks for Sticking it out!**

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