



**San Diego Gas & Electric
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1996 & 1997 Industrial Energy Efficiency Incentives

Sixth Year Retention Evaluation

March 2003



Study ID Nos. 997 & 1021

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**1996 & 1997 INDUSTRIAL ENERGY EFFICIENCY INCENTIVES:
SIXTH YEAR RETENTION EVALUATION
STUDY ID NOS. 997 & 1021**

Program Description

SDG&E's PY96 and PY97 Industrial Energy Efficiency Incentives (IEEI) Program was designed to help customers reduce energy costs and increase energy efficiency at their facilities while providing positive resource value to society.

A customer who participated in SDG&E's Industrial Energy Efficiency Incentives Program received a rebate upon completed installation of the equipment. Information regarding customer name, address, phone number, installed measures, measure costs, energy savings and participation date were kept in SDG&E's program tracking system. The retention sample for this study was drawn from this database.

Sampling and Data Collection

The M&E Protocols require that retention studies evaluate the top 10 measures or 50% of the estimated resource value, whichever number of measures is less, excluding miscellaneous measures. For PY96, five measures constitute 50.7% of resource value. For PY97, six measures constitute 54.3% of resource value. These 11 measures were evaluated for retention.

The M&E Protocols require that PY96 and PY97 program years be combined for retention studies to increase sample sizes for retention measures. Unfortunately, due to the unique process measures associated with industrial customers, there is no overlap between PY96 and PY97 measures to be studied.

Five customers installed the 5 retention measures to be studied from PY96. Seven customers installed the 6 retention measures from PY97. SDG&E's sample design was to conduct a census of all IEEI PY96 and PY97 retention customers with on-site audits.

SDG&E contracted with Xenergy, Inc. to conduct the on-site audits of participating customers to verify the number of measures that were still in place and operable – the definition of effective useful life (EUL) per the M&E Protocols. A copy of the on-site data collection form is provided at the end of this study.

Measures/"Like" Measures

In order to apply any changes in EUL to measures not studied, M&E Protocols require that the utility identify any "like" measures within the program. For SDG&E's PY96 and PY97 IEEI Program, the "like" measures are all in the process enduse. M&E Protocols Table 6 in this report identifies those measures that are determined to be "like" measures (those measures that were not studied but have similar characteristics to measures that were evaluated in this retention study).

Econometric Framework

Since all 11 measures to be evaluated were found to be in place and operable each time they were verified, there are no "failures" in the database. Therefore, an attempt to model EUL is not useful.

Results

Since all 11 measures to be evaluated were found to be in place and operable each time they were verified, SDG&E will retain the *ex ante* EUL for each measure.

M&E PROTOCOLS TABLE 6

RESULTS USED TO SUPPORT

PY96 & PY97 FOURTH EARNINGS CLAIM

FOR

INDUSTRIAL ENERGY EFFICIENCY INCENTIVES PROGRAM

SIXTH YEAR RETENTION EVALUATION

MARCH 2003

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TABLE 6 for RETENTION STUDIES

PROGRAM: IndEEI

YEAR(S): PY96 & PY97

	1. Enduse	1. Measure	2. ex-ante EUL	2. ex-ante EUL Source	3. ex-post EUL from Study	4. ex-post EUL for 3rd & 4th claim	5. Standard Error	6. Upper & lower bounds @ 80% Conf Int		7. P Value	8. Realization Rate	9. "Like" Measures to be Adjusted
PY96	PROCESS	In Line shear Mixers	20	***	N/A	20	N/A	N/A	N/A	N/A	1.00	1
PY96	PROCESS	Air Compressor Systems	20	***	N/A	20	N/A	N/A	N/A	N/A	1.00	2
PY96	PROCESS	Efficient Heat Exchanger, Pumps w/Drives	20	***	N/A	20	N/A	N/A	N/A	N/A	1.00	3
PY96	PROCESS	Compressed Air System	20	***	N/A	20	N/A	N/A	N/A	N/A	1.00	4
PY96	PROCESS	Compressed Air System W/Controls, Valves & Storage	20	***	N/A	20	N/A	N/A	N/A	N/A	1.00	5
PY97	PROCESS	Compressed Air System w/Controls & Storage	20	***	N/A	20	N/A	N/A	N/A	N/A	1.00	6
PY97	PROCESS	IPA Column #3 w/Heat Recovery	20	***	N/A	20	N/A	N/A	N/A	N/A	1.00	7
PY97	PROCESS	Efficient Air Compressor & Controls	20	***	N/A	20	N/A	N/A	N/A	N/A	1.00	8
PY97	PROCESS	Air Compressors System Controls & Storage	20	***	N/A	20	N/A	N/A	N/A	N/A	1.00	9
PY97	PROCESS	Duct Burners & HRSG Rerating	20	***	N/A	20	N/A	N/A	N/A	N/A	1.00	10
PY97	PROCESS	Catalytic Thermal Oxidizer w/Heat Exchanger	15	***	N/A	15	N/A	N/A	N/A	N/A	1.00	11

# above	9. "Like" Measures to be Adjusted	
6	Compressed Air Sys w/ controls & storage	PY97
6	Compressed Air System w/Storage & Controls	PY97
6	Compressed Air System w/Controls	PY97

*M&E Protocols Appendix "F"

**Advice Letter filing 926-E-A/934-G-A: March 23, 1995

*** Custom Job, Engineering Judgement

Note: NA indicates that no failures were observed

M&E PROTOCOLS TABLE 7

DATA QUALITY AND PROCESSING

DOCUMENTATION

FOR

INDUSTRIAL ENERGY EFFICIENCY INCENTIVES PROGRAM

SIXTH YEAR RETENTION EVALUATION

MARCH 2003

STUDY ID NOS. 997 & 1021

M&E PROTOCOLS TABLE 7

DATA QUALITY AND PROCESSING DOCUMENTATION

For Industrial Energy Efficiency Incentives Program

Sixth Year Retention Evaluation

March 2003

Study ID Nos. 997 & 1021

B. RETENTION STUDIES

1. OVERVIEW INFORMATION

- a. **Study Title and Study ID:** 1996 & 1997 Industrial Energy Efficiency Incentives Program – Sixth Year Retention Evaluation, March 2003, Study ID Nos. 997 & 1021.
- b. **Program, Program Year(s), and Program Description (Design):** Industrial Energy Efficiency Incentives Program for the 1996 and 1997 program years. The Program was designed to help customers reduce energy costs and increase energy efficiency at their facilities while at the same time providing positive resource value to society.
- c. **End Uses and Measures Covered:** Process end use. The measures are identified in Table 6.
- d. **Methods and Models Used:** See the section of the report entitled Econometric Framework for a complete description of the final model specifications.

e. Analysis sample size:

Program Year	Measure	# of Customers in Program	# of Installations in Program	# of Measures Installed in Program	# of Measures in Sample Frame	Date of Retention Studies
PY96	In Line shear Mixers	1	3	3	3	Nov - 1999 July - 2000 Aug - 2001 Aug - 2002
PY96	Air Compressor Systems	1	2	2	2	Nov - 1999 July - 2000 Aug - 2001 Apr - 2002
PY96	Efficient Heat Exchanger, Pumps w/Drives	1	6	6	6	Nov - 1999 July - 2000 Aug - 2001 Aug - 2002
PY96	Compressed Air System	1	1	1	1	Nov - 1999 July - 2000 Aug - 2001 Aug - 2002
PY96	Compressed Air Sys W/Controls, Valves & Storage	1	7	7	7	Nov - 1999 July - 2000 July - 2001 June - 2002
PY97	Compressed Air System w/Controls & Storage	2	2	2	2	Aug-Sep 1999 May-June 2000 July - 2001 June - 2002
PY97	IPA Column #3 w/Heat Recovery	1	1	1	1	Nov - 1999 July - 2000 Aug - 2001 Aug - 2002
PY97	Efficient Air Compressor & Controls	1	1	1	1	Nov - 1999 July - 2000 Aug - 2001 Aug - 2002
PY97	Air Compressors System Controls & Storage	1	7	7	7	Sep - 1999 July - 2000 July - 2001 June - 2002
PY97	Duct Burners & HRSG Rerating	1	3	3	3	Nov - 1999 July - 2000 Aug - 2001 Aug - 2002
PY97	Catalytic Thermal Oxidizer w/Heat Exchanger	1	1	1	1	Oct - 1999 May - 2000 July - 2001 June - 2002

2. DATABASE MANAGEMENT

a. **Data sources: the data came from the following sources:**

- Customer name, address, phone number, installed measures, and participation date from the program tracking database
- Measures were determined to be in place and operable by the on-site data collection described in the section of the report entitled Sampling and Data Collection.

The data were merged together to form the dataset for the econometric analysis leading to the estimated Effective Useful Life

- ### b. **Data Attrition:** There was no data attrition. A census of all participants was achieved.
- ### c. **Data Quality Checks:** The data sets for the analysis were merged in SAS by the appropriate key variables. Counts of the data sets before and after the merges were verified to ensure accurate merging.
- ### d. **All data collected** for this analysis were utilized.

3. SAMPLING

- ### a. **Sampling procedures and protocols:** The sample was a census— all participants with the measures in question were contacted.
- ### b. **Survey information:** A copy of the Survey is attached at the end of the report. The survey completed response rate was 100% for both PY96 & PY97.
- ### c. **Statistical Descriptions:** N/A

4. DATA SCREENING AND ANALYSIS

- ### a. **Outliers and Missing Data Points:** N/A
- ### b. **Background Variables:** N/A
- ### c. **Screened Data:** N/A
- ### d. **Model statistics:** N/A
- ### e. **Specification:**
- 1) **Heterogeneity:** N/A
 - 2) **Omitted Factors:** N/A

- f. **Error in Measuring Variables:** N/A
- g. **Influential Data Points:** N/A
- h. **Missing Data:** N/A
- i. **Precision:** N/A

MEASURE RETENTION SURVEY

FOR

INDUSTRIAL ENERGY EFFICIENCY INCENTIVES PROGRAM

SIXTH YEAR RETENTION EVALUATION

MARCH 2003

STUDY ID NO. 997 & 1021

SDG&E Industrial Survey for PY96 & PY97

Aug-Nov. 1999

May-July 2000

July-Aug 2001

Apr-Aug 2002

**SDG&E PY96 & PY97 Industrial EEI Program
Measure Retention Survey**

Site nbr: Site sec: PART: Site Contact (DB): _____
 Contact Ph: _____
 Site nm: _____
 Rank: Address: Alternate contact name: _____
 Site Cty: Alternate contact phone: _____
 Bldg sz: Bldg lgt: Surveyor: _____
 ENDUSE: Survey Date: _____

Contract	MSR #	NEW DESC	kWh Sav.	kW Red.	Th. Sav.	MSR LOC	Ins. Qty	Run Hrs	Ver. Schedule (incl.date of change in schedule)

SDG&E PY96 & PY97 Industrial EEI Program
Measure Retention Survey

Site_nbr: Site_sec: PART:
Site_nm:
Rank: Address:
Site_Cty:
Bldg_sz: Bldg_lgt:

Site Contact (DB): _____
Contact Ph: _____
Alternate contact name: _____
Alternate contact phone: _____
Surveyor: _____
Suvey Date: _____

ENDUSE:

SURVEY DISPOSITION

Audit Completed?: []Yes []No (check one)

Reason for not completed: []

- 1 = Unable to reach/contact.
- 2 = Changed mind about participation in study.
- 3 = Premise closed/not operating.
- 4 = Site/contact info incorrect and could not find alternate contact.
- 5 = Requested to call back, could not complete call.
- 6 = Rescheduled upon arrival at site.
- 7 = Other: Describe:

DISCREPANCIES

Reason for discrepance in counts (check one and describe if necessary)

- []=Removed, not replaced (include date of removal).
- []=Never installed
- []=Exceeds tracking system counts (describe reasons for additional eqmt, eg, retrofits part of SDG&E Program in 1995).
- []=Removed, replace with more efficient equipment
- []=other, describe situation fully

Description/Comments:

SDG&E PY96 & PY97 Industrial EEI Program
Measure Retention Survey

Site_nbr: Site_sec: PART:
Site_nm:
Rank: Address:
Site_Cty:
Bldg_sz: Bldg_lgt:

Site Contact (DB): _____
Contact Ph: _____
Alternate contact name: _____
Alternate contact phone: _____
Surveyor: _____
Suvey Date: _____

Facility Tenancy/Ownership:

Have Tenant and Owner remained the same? Yes No (check one)
If NO, what best describes the situation (select one, describe below)

1. New tenant-same owner.
2. Same tenant-New owner
3. New tenant-New owner
4. Premise closed.

Description/Comments:

Building/Facility Configuration:

Check one box that represents the facility layout (check all that apply, describe below):

- Same as time of installation.
- Same tenant, had tenant improvements
- Same tenant, increased floorspace
- Same tenant, decreased floorspace
- New tenant, no tenant improvements
- New tenant, and had tenant improvements
- New tenant, increased floorspace
- New tenant, decreased floorspace, ie, there is empty floorspace.

Description/Comments: