



***Streamlined Program  
Delivery and Tracking via  
Online Database Systems***

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**FRONTIER ASSOCIATES**

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 *Frontier Associates, LLC*

- ❖ Began developing online databases to support energy efficiency programs in 2001.
- ❖ Currently manages 42 utility energy efficiency program databases, encompassing about 200,000 measure installation transactions annually.
- ❖ Online databases are suitable for:
  - ◆ Direct customer incentive programs
  - ◆ Residential and C&I standard-offer programs,
  - ◆ Market transformation programs, e.g. ENERGY STAR New Home and AC Installer Quality Installation programs
  - ◆ Renewable energy programs

# *Why Online Databases?*

- ❖ Online database systems allow utilities to streamline and reduce admin costs.
- ❖ Online databases simplify M&E, contract management, invoice processing, inspection processes, and reporting.
- ❖ Facilitate the utility/participant partnership; budgets, milestones, document control, and communications are instantly accessible and managed by all project stakeholders.

# *Sample Database Features*

- ❖ Ensuring a complete application before submittal
- ❖ Qualifying Contractors and Projects
- ❖ Entering or uploading project data
- ❖ Ensuring customer and measure eligibility
- ❖ Accumulating and Validating Detailed Installation Data
- ❖ Performing contractor or customer impact and rebate calculations
- ❖ Managing inspections
- ❖ Milestones and Reporting

# Ensuring a Complete and Accurate Application


http://www.frontierassoc.net - El Paso Electric 2006 Large Commercial & Industrial SOP - Microsoft Internet Explorer

File Edit View Favorites Tools Help Back Forward Stop Home Search Favorites

**El Paso Electric 2006 Large Commercial & Industrial SOP** 11/14/2005 12:36:29 PM

[Profile](#) | [Qualification](#) | [Users](#) | **[Projects](#)** | [Message](#) | [Downloads](#) | [Report](#) LOGOUT

• Sponsor: Frontier Testing Company  
• User : P K



Projects > Project Information > Customers

**Testing Project ABC**

Initial Application Complete

- [Project Information](#)
- [Project Description](#)
- [Site Information](#)
- [Savings Calculation](#)
- [Estimated Schedule](#)
- [Qualification Set](#) 
  - Qual 1a
- [Sponsor Contact](#) 
  - P K

Contract # none  
 Application status **IA, not submitted**  
 Submittal Date None  
 Approved Date None  
 Estimated Savings 20.26 kW 117,684 kWh  
 Estimated incentive for this project \$11,555.77  
 Approved incentive \$0.00

Message  
 [10/3/2005 1:48:09 PM - P K]  
 test

Submit Duplicate Delete

ID	Customer	Lighting		non-Lighting		New Customer
		kW Savings	kWh Savings	kW Savings	kWh Savings	
8	Joe's Cafe	14.26	65,184	6.00	52,500	<a href="#">Edit/View Customer</a> <a href="#">Edit/View Measures</a>
<b>Total</b>		<b>14.26</b>	<b>65,184</b>	<b>6.00</b>	<b>52,500</b>	

Original Requested Incentive: \$11,767.80  
**Note : Lighting Adjusted: \$11,555.77**  
 No Load Factor Cap Adjustment

If you have questions about the use of this form, please click on the following link to send an email to [John Armstrong](#), El Paso Electric's C&I Standard Offer Program support professional.

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Start http://www.frontiera... El Paso Electric 2006 C&I... Internet 12:36 PM

# Qualifying Contractors and Projects

El Paso Electric 2007 Residential Small Commercial - Windows Internet Explorer

File Edit View Favorites Tools Help

El Paso Electric 2007 Residential Small Co...

**Project Description**

**Targeted Customers**

Small commercial

Single family homes

Mobile homes

**Measure Types**

**What measures will you install under this contract? (List license numbers and licensing authority where applicable)**

Central Air Conditioning HVAC License

Central Heat Pump

Package Unit - AC

Package Unit - Heat Pump

Ground Source Heat Pump

Ceiling Insulation How many years have you been installing insulation?

Wall Insulation

Floor Insulation

Lighting Retrofit Electrician's license

Photovoltaic Energy System

Please list:

(1) number of years you have conducted duct or air infiltration tests,

(2) applicable licenses for those performing the work (including issuing agencies and license numbers),

(3) certifications earned such as certified HERS rater,

(4) any third-party training provided to the technicians performing the work.

[All project sponsors wishing to install Duct Efficiency or Infiltration measures must submit to the program administrator within 24 hours of application submittal a document stating a detailed step-by-step process of your strategies and testing procedures including the type of testing equipment you will be using.](#)

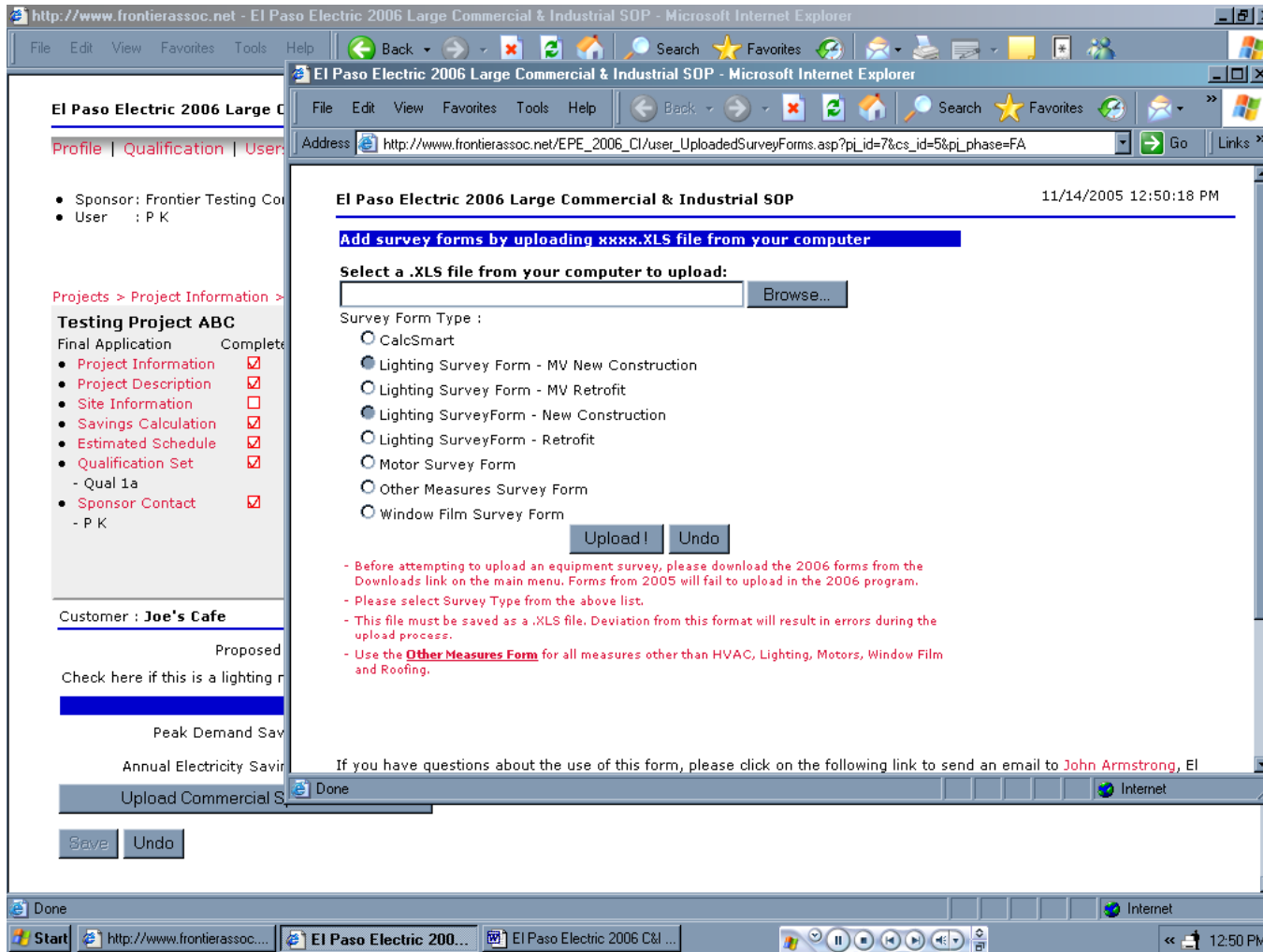
Duct Efficiency

Infiltration

Done

Start | Inbox - Outlook E... | 2007 SOP progra... | EnerTrek | EPE 07 Res-HTR w... | Application pages ... | El Paso Electric 2... | 4:22 PM

# Entering or Uploading Project Data



The screenshot displays a Microsoft Internet Explorer browser window with two overlapping windows. The background window shows a project management interface for 'El Paso Electric 2006 Large Commercial & Industrial SOP'. The foreground window is a form titled 'El Paso Electric 2006 Large Commercial & Industrial SOP' with a timestamp of '11/14/2005 12:50:18 PM'. The form includes a navigation bar with 'Profile', 'Qualification', and 'User' links. A sidebar on the left lists project information for 'Testing Project ABC', including 'Project Information', 'Project Description', 'Site Information', 'Savings Calculation', 'Estimated Schedule', 'Qualification Set', and 'Sponsor Contact', each with a checkbox. The main content area is titled 'Add survey forms by uploading xxxx.XLS file from your computer' and features a 'Select a .XLS file from your computer to upload:' section with a 'Browse...' button. Below this is a 'Survey Form Type' section with radio buttons for 'CalcSmart', 'Lighting Survey Form - MV New Construction', 'Lighting Survey Form - MV Retrofit', 'Lighting SurveyForm - New Construction', 'Lighting SurveyForm - Retrofit', 'Motor Survey Form', 'Other Measures Survey Form', and 'Window Film Survey Form'. There are 'Upload!' and 'Undo' buttons. A red text block provides instructions: '- Before attempting to upload an equipment survey, please download the 2006 forms from the Downloads link on the main menu. Forms from 2005 will fail to upload in the 2006 program.', '- Please select Survey Type from the above list.', '- This file must be saved as a .XLS file. Deviation from this format will result in errors during the upload process.', and '- Use the **Other Measures Form** for all measures other than HVAC, Lighting, Motors, Window Film and Roofing.' At the bottom, there is a link to contact John Armstrong, EI. The browser's address bar shows the URL 'http://www.frontierassoc.net/EPE\_2006\_CI/user\_UploadedSurveyForms.asp?pi\_id=7&cs\_id=5&pi\_phase=FA'. The taskbar at the bottom shows the Start button, several open browser windows, and the system clock at 12:50 PM.

# Ensuring customer and measure eligibility

El Paso Electric 2007 Residential Small Commercial - Windows Internet Explorer

Application | Reservation | **Implementation** | Invoice LOGOUT

Sponsor : Frontier Testing Company  
Project ID : 1

Implementation -> Add/Edit Customers

Required fields are displayed in **BOLD**

Group ID:  Small Commercial  Single Family  Multi-Family  Mobile Home

**Customer Information**

Service Information	
Premise Number : <input type="text"/>	Premise Number Sample
Customer First Name: <input type="text"/>	<b>Installations</b> <input type="checkbox"/> Air Conditioning <input type="checkbox"/> Heat Pump <input type="checkbox"/> Package AC <input type="checkbox"/> Package Heat Pump <input type="checkbox"/> Ground Source HP <input type="checkbox"/> Duct Efficiency <input type="checkbox"/> Infiltration <input type="checkbox"/> Ceiling Insulation <input type="checkbox"/> Floor Insulation <input type="checkbox"/> Wall Insulation <input type="checkbox"/> Lighting Retrofit <input type="checkbox"/> Appliance Measures <input type="checkbox"/> Water Heater Replacement <input type="checkbox"/> Water Heater Measures <input type="checkbox"/> Solar Water Heater <input type="checkbox"/> Photovoltaic <input type="checkbox"/> Energy Star Windows
Customer Last Name: <input type="text"/>	
Phone : <input type="text"/>	
<b>Street Address</b> <input type="text"/> <input type="text"/> APT #	
<b>City:</b> <input type="text"/>	
<b>State/Zip Code:</b> TX <input type="text"/> <input type="button" value="Lookup"/>	
<b>County:</b> None <input type="text"/>	
<b>Type of Heating:</b> Gas <input type="text"/>	
Notes : <input type="text"/>	

(1) Please fill in blue area first - address, apt. #, city, state and zip code, then click on the "Lookup" button.  
(2) If a match is found, the Premise # and County will be imported to the form.  
(3) After the address, premise # and county are in the form, fill out the rest of the form and save.

Done

Start | Inbox - Outlook E... | EnerTrek | Microsoft PowerPol... | Microsoft Excel - 2... | RSC HTR Manual 1... | El Paso Electric 2... | 11:01 AM



# 

System # 1 :: 200612658

[Enter new System](#)

## System Information

Status : System Entered-Not Ready

Zone Area in Square Feet 0	Sensible Cooling Load in BTUH 0	Latent Cooling Load in BTUH 0	System Design CFM 0
Condenser Type	AC Condenser		

## Indoor Unit

Evap. Coil or Fan Coil Manufacturer	Model #	Serial #	
Furnace Manufacturer	Model #	Serial #	
Metering Device type Fixed	Return Air Wet Bulb Temperature 0	Return Air Temperature 0	Supply Air Temperature 0
Average Supply Wet Bulb 0.0	Return Static Pressure 0.00	Supply Static Pressure 0.00	

## Outdoor Unit

Condenser Manufacturer	Model #	Serial #
ARI Efficiency Rating 0 (example : 14.10)	ARI Reference number	Capacity in BTUH 0 (example : 48000)
Outside Ambient Temperature 0 (degrees Fahrenheit )	Outside Coil Discharge Air Temperature 0 (degrees Fahrenheit )	Power of Compressor 0 volts 0 amps
Pressures Suction side 0 Liquid side 0	Temperatures: (degrees Fahrenheit) Suction Line 0 Liquid Line 0	
Size of Liquid Tubing Liquid Line inches Suction Side	Refrigerant type <input checked="" type="radio"/> R 22 <input type="radio"/> R 410A	Weigh-In <input type="radio"/> Yes <input checked="" type="radio"/> No


- The fields with light blue backgrounds are optional.
- All other fields are required to complete the application

# Contractor or Customer Impact and Rebate Calculations

<http://www.frontierassoc.net> - El Paso Electric 2006 Residential Small Commercial - Microsoft Internet Explorer

File Edit View Favorites Tools Help Back Forward Stop Refresh Home Search Favorites

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El Paso Electric
El Paso Electric  
2006 Residential and Small Commercial SOP  
Small Project
11/21/2005 5:17:49 PM

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[Application](#) | [Reservation](#) | [Implementation](#) | **[Invoice](#)** [LOGOUT](#)

**Sponsor** : Frontier Testing Company  
**Project ID** : 4

[Invoice -> Invoice Reporting -> \*\*Detail Information\*\*](#)

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**Summary of Invoice Number : Nov test**

Month	Status	# of Installations	Submitted				Adjusted			Paid	
			kW	kWh	Incentive	Date	kW	kWh	Incentive	Incentive	Date
November	Submitted	4	1.96	2,630	\$795.29	11/21/2005	0.00	0	\$0.00	\$0.00	none

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**Summary of Customer(s) and Installation(s)**

Customer ID	Name	Group ID	Install #	Installation Type	Request			Adjusted			Payment
					kW	kWh	Incentive	kW	kWh	Incentive	
14	Jims Cafe	Small Commercial	43	DU: Duct Efficiency	0.73	1,077	\$305.19	0.73	1,077	\$305.19	\$0.00
			44	IN: Infiltration	0.19	193	\$71.20	0.19	193	\$71.20	\$0.00
13	Joe Jones	Single Family	45	CI: Ceiling Insulation	1.03	1,220	\$401.70	1.03	1,220	\$401.70	\$0.00
			46	DH: Water Heater Measures	0.01	140	\$17.20	0.01	140	\$17.20	\$0.00
		2 Customer(s)	4 Installation(s)	<b>Total :</b>	1.96	2,630	\$795.29	1.96	2,630	\$795.29	\$0.00

Installations highlighted in red indicated a duplicate. Please check for any data entry errors. In some cases such as air conditioning systems, there will be multiple installations of the same measure

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**Project Sponsor Information**

**ID :** 4  
**Project :** Frontier Testing Company  
**Sponsor :** Frontier Testing Company  
**Contact :** P K  
**Street Address :** 123 Main  
 El Paso, TX, 00000  
**Phone/FAX :** 000-000-0000/  
**Email :** pkeegan@frontierassoc.com

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Done Internet

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# Managing Inspections



CenterPoint Energy  
2006 Residential and Small Commercial  
Small Project

9/25

Project-Sponsors | Reports | **Utilities**

Utilities -> **Inspection Random Sampling**

Step 1 : To select the sponsor to run the random sampling

	SP ID	Sponsor	Current Invoice (Submitted, Not Locked)			Cumulated Inspection	
			# of Installations	# of customers	# of customers selected for inspection	Inspection rate	Failure rate
Previously Selected	18	Doctor Cool and Professor Heat	2	2	2	100.00 % (2/2)	0.00 %
Previously Selected	8	University Energy Utility Services	9	9	8	30.43 % (14/46)	1.95 %
Previously Selected	17	University Energy Utility Services	17	17	8	47.06 % (8/17)	0.00 %
Previously Selected	16	University Energy Utility Services	40	26	21	66.67 % (22/33)	0.00 %

Step 2 : To select the method to run the random sampling

Option 1 : Number of customers to include (between 4 and 54):

Option 2 : Select a confidence level :

Failure rate (0-100) % :

Over Sample: (optional)  (Number)

OR  (Percentage)

Option 3 : Display the previously selected inspection group

Sponsor	Customer ID	Customer Name	Address	Installation Type
D		30		AC
D		33		AC
D	/ Services	150		DU
D	/ Services	151		DU
D	/ Services	152		DU
D	/ Services	153		DU
D	/ Services	154		DU
D	/ Services	155		DU

# *Milestones and Reporting*

Program	Projected Savings		Contracted		Reported Savings	
	kW	kWh	kW	kWh	kW	kWh
C&I SOP	5,310	19,545,000	3,392	15,319,032	2,695	13,303,376
RES SOP	6,140	18,688,000	4,040	13,211,556	5,841	15,463,683
HTR SOP	600	4,104,000	NAP	NAP	1150	3,199,515
EEIP SOP	20	96,000	NAP	NAP	20	67,314
<b>Total</b>	<b>12,070</b>	<b>42,433,000</b>	<b>7,432</b>	<b>28,530,588</b>	<b>9,706</b>	<b>32,033,888</b>

# *On-Line Database Benefits for Program Administrators*

- ❖ All program data captured in a central location, real-time access by all participants.
- ❖ Administrators can determine the appropriate level of access to program the data for all parties.
- ❖ Contractors have real-time verification of customer and measure eligibility
- ❖ Prevents duplicate measure installation
- ❖ Program administrators can access contractor work schedules.
- ❖ Links to CIS and other databases, such as ARI.
- ❖ Data from all service providers is reported in a consistent manner.
- ❖ While databases structures rely on many common tables and relations, they have considerable flexibility to customize for program differences.
- ❖ Facilitates QC and data validation.

# *Benefits for Contractors*

- ❖ All application data submitted online. Can be accessed by multiple contractor personnel.
- ❖ Utility program agreements generated online.
- ❖ Database can verify customer eligibility, fill in customer information (from account number), inform contractor which measures may (or may not be) installed.
- ❖ For more complicated projects, audit or equipment inventories may be input into spreadsheets and uploaded into the online database.
- ❖ Allows small contractors the ability to participate on a more equal basis with larger contractors and ESCOs.

# *Planning an Online Database*

- ❖ If an existing program, assemble application forms, rebate forms, sample contracts, budget documents, milestone schedules
- ❖ Identify stakeholders, roles, and relationships - develop the process plan
- ❖ Prepare your specifications
  - ◆ Square pegs go in square holes, or
  - ◆ If it don't fit, get a bigger hammer
- ❖ If it's a complex program, you can't anticipate everything. If you can't be flexible, be sure your database vendor is.

*SA* Q&A





## *Example: Attributes of Energy Star for New Home Program Management System*

- ❖ Builders apply for funds. Access granted to winning applicants.
- ❖ Once approved, builders upload basic home data, plus all HERS raters that builder wishes to use.
- ❖ Builders assign homes to raters and HVAC installers who can only access those specified homes.
- ❖ HERS raters log in to database to see which homes they have been assigned.
- ❖ Raters input HERS data after completing their analyses and inspections.



# *Energy Star for New Homes Database Application*

- ❖ HVAC model number can be input by HERS raters, builders or HVAC contractors.
- ❖ Model and serial numbers of all components required. After inputting model numbers, user can access pull-down menu of all ARI-listed matching components, or
- ❖ ARI reference numbers can be input instead of model numbers.
- ❖ Database verifies SEER and HSPF ratings against ARI database (via subscription service).
- ❖ Database searches for duplicate serial numbers. Through inter-utility cooperation, can search other utility programs for duplicate serial numbers.



# *Energy Star for New Homes Database Application*

- ❖ Deemed savings for ES New Homes in Texas are determined by a savings tool developed by ICF on behalf of the Texas utilities. This tool calculates deemed energy and capacity savings based on home data that is input by the HERS raters. Savings are calculated and recorded in the database for each home.
- ❖ As with other programs, builder compiles data on homes completed, then submits completed home data and invoice to utility via the online database.
- ❖ By final submission, the database can match premise/meter number data against CIS to ensure service area eligibility.
- ❖ Utility administrator reviews invoice and report, inspects according to the utility's protocol, and approves payment to builder.

# *Additional Online Database Benefits*

- ❖ Reduces the variance of savings estimates from project to project and program to program.
- ❖ Encourages consistency in program features from utility to utility.
- ❖ Deemed savings and on-line databases facilitate participation by local and small businesses.
- ❖ Easier to roll up utility program benefits into state-level report.
- ❖ Facilitates third-party auditing of programs.
- ❖ Facilitates incorporation of Energy Efficiency program benefits into state compilation of emissions impacts.