

**Questions and Answers**  
**IFB-13-402**  
**Appliance Market Survey**  
**October 28, 2013**

1. Can you please explain CEC's rationale for the methodology chosen? Given that this is fundamentally a research project, is there flexibility to adjust the methodology in order to add as much value as possible and/or reduce cost while providing the same information to the CEC? [The information gathered from the marketplace for this contract is used as an enforcement tool to bring responsible parties into compliance with Title 20 certification, marking, and design requirements. This contract will not be responsible for assessing the energy efficiency of an appliance. Any alternative methodology must fulfill the requirements specified in scope of work. The scope of work cannot be adjusted.](#)
2. What is the key question you are trying to answer with this project? With regards to Task 2, what is the purpose of finding product availability if the goal is to determine compliance levels against CEC standards? [The key question we are trying to answer with this contract is: what specific brands and models of regulated appliances are being offered for sale in the California marketplace, and of those appliances, do they meet the Title 20 certification requirements?](#)
3. In order to incorporate additional knowledge gained from the CEC's responses to questions, is it possible to extend the final deadline for bids two to three weeks after answers are posted? We ask this question because we are troubled by the idea of submitting a hard copy of our bid proposal by 3:00pm on October 22<sup>nd</sup> if answers are posted only the day before. [The deadline has been extended to November 4<sup>th</sup>, see Addendum #1.](#)
4. Can you share any previous reports prepared for this activity performed by former contractors? [Yes, they are attached to the webpage for this IFB.](#)
5. Is there an option to generate a fixed cost bid for this project (instead of one based on time and materials)? [This is an hourly rate plus cost reimbursement contract and must follow the bid procedures set forth in the application manual.](#)
6. It appears from the instructions that the bid is based entirely on cost. Is there any consideration of contractor expertise or qualification given in the evaluation of proposals? [The award is made to the bidder offering the lowest price. To qualify to submit a bid, the bidder is required to certify that they can provide the services requested and meet the stated minimum requirements identified in the IFB.](#)
7. When engaging subcontractors, does the CEC allow alternative (non-labor based) payment forms, such as payment per data delivered? [Since the contract budget anticipates an hourly rate plus cost reimbursement structure, the only way to reimburse a subcontractor is to pay for hourly rates plus costs.](#)

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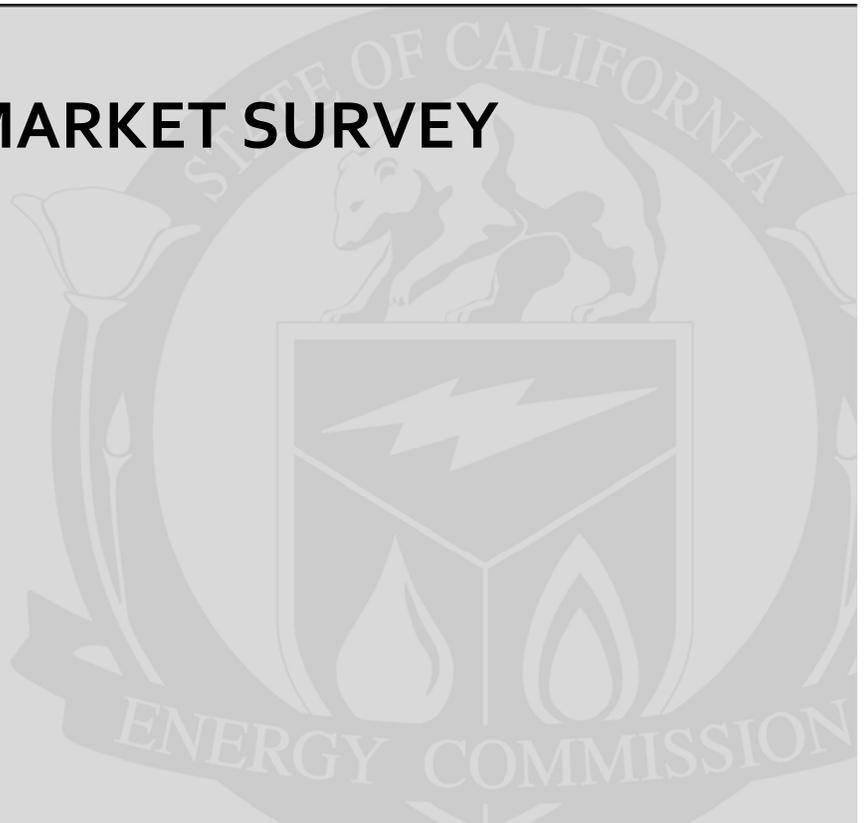
8. The most recent Appliance Market Survey report appears to be unavailable. Is it available, and if not, when is it expected to be released? [The previous two market survey final reports are attached.](#)
9. We would like to request that the due date for bids be extended, given that the answers to questions are to be provided on October 21<sup>st</sup> and bids are due by 3PM on October 22<sup>nd</sup>. [The deadline has been extended to November 4<sup>th</sup>, see Addendum #1.](#)
10. This IFB makes no request for bidder's qualifications, or for the identification and/or biographies of personnel selected for this project. Is this information of interest to reviewers in the selection of a bid? Is there a penalty for the inclusion of information not specifically requested, such as qualifications, or a representative work sample? [The award is made to the bidder offering the lowest price. To qualify to submit a bid, the bidder is required to certify that they can provide the services requested and meet the stated minimum requirements. Only those requirements listed in the solicitation must be submitted. There is no penalty for submitting qualifications or a representative work sample, but these items will not be reviewed or considered by the Energy Commission.](#)
11. Do reviewers wish to see a proposed methodology for the selection of Catalogues and Internet sites to be surveyed (Task 2), or for the selection of Retail/Wholesale Stores (Task 3)? [The solicitation is specific about the selection criteria. Since the methodology has no bearing on the bid selection it is not necessary to submit; however, it may be discussed and reviewed with the selected contractor after the contract has been awarded and signed.](#)
12. Is there a page limit for bid proposals? [No, there is no maximum page limit for bid proposals.](#)
13. In the past, how much time has been required for the average in-store survey of the list of appliances? [The in-store survey process is described in the scope of work and consists of several steps: site selection, data collection, and quality control review. The CEC has no time requirement for Task 3.](#)
14. Is there a particular schedule for the conduct of in-store surveys? (For example, would it be acceptable for in-store surveys to be completed within a single month? Or are they to be conducted with specific timing?)[There is no specific language in the scope of work requiring the work to be done over a certain period of time. But it is assumed that the work will be ongoing throughout the contract period and the interim data set deliverables will reflect a proportionate amount of work completed.](#)
15. Is it desirable that surveyors be available who speak languages other than English? [No.](#)

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16. Is it possible for surveyors to be provided with a letter from the California Energy Commission identifying that they are supported in their task of data collection? [Yes](#).
  
17. Would it be acceptable for a contractor to substitute a different approach for compiling compliance data (if it is demonstrated to be more efficient and accurate) in place of some of the requested data collection activities specified in the IFB? [The data collection activities are specifically stated in the scope of work and cannot be deviated from. Any alternative approach would not fit within the work scope. All Bidders must be able to perform the work as stated in the work scope, including the methodology described.](#)

# CONSULTANT REPORT

## APPLIANCE MARKET SURVEY



Prepared for: California Energy Commission

Prepared by: Benningfield Group, Inc.

APRIL 2011

CEC-400-2011-003

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**DISCLAIMER**

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## **ACKNOWLEDGEMENTS**

The authors of this report would like to acknowledge the hard work and dedication of the Robert Brown & Associates (DVBE) team in the collection of information and materials during this look into the California appliance market.

The authors are particularly grateful to the California Energy Commission staff for its guidance and leadership throughout the duration of this contract.



## **ABSTRACT**

This is a report of the findings of work done under the Contract Agreement No. 400-09-004 between the California Energy Commission and Benningfield Group, Inc. It summarizes the results of the surveys that assess the extent of compliance with the Appliance Efficiency Regulations. The information for this report was collected for two priority lists, one for appliances that have not yet been surveyed and another for appliances that were surveyed in previous contracts. The appliances surveyed were found at retail/wholesale stores, Internet sites, and in catalogs. This report delineates the degree to which products were or were not in compliance with the regulations.

Please use the following citation for this report:

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## EXECUTIVE SUMMARY

The report summarizes work that was completed on the Contract Agreement No. 400-09-004 between the California Energy Commission and Benningfield Group, Inc. The work was completed in the following five tasks:

- Task 1: Kick-off Meeting
- Task 2: Progress Reports
- Task 3: Retail/Wholesale Store Surveys
- Task 4: Catalog and Internet Surveys
- Task 5: Final Summary Report of All Surveys

The survey team performed catalog, field, and Internet surveys to obtain data on the frequency of compliance with certifying products and also the frequency of compliance with applicable requirements. Surveyors collected data to determine whether a particular model met California regulations and whether that model was listed in the California Energy Commission Appliance Database. Data for each appliance category, model and information source (catalog, Internet, or store) was documented in a Web-based database created for this project.

In the past, California Energy Commission staff waited until the surveys were complete before taking any action on the findings. For this project, the California Energy Commission staff was able to access the database during the project and created several letters to manufacturers, which helped to improve compliance.

Findings show that while many products are in compliance, there are others with a high degree of noncompliance. Appliances ranged from 100 percent noncompliant to 100 percent compliant. The most compliant appliances were the computer room glycol cooled air conditions, and heat pump pool heaters. On the other end of the spectrum, the least compliant appliances are under-cabinet luminaires and infrared heaters (patio heaters and non-patio heaters).

The surveyors visited 21 stores, conducted 104 catalog and Internet surveys, and collected data on 2,240 models total.

Overall, the team surveyed 2,240 models and found 1,150 of them to be noncompliant, yielding an overall result of 51.34 percent noncompliant.

**Figure 1: Best to Worst Appliance Compliance Table**

<b>Appliance Categories</b>	<b>% Noncompliant</b>
Computer Room Glycol-Cooled Air Conditioners	0.00%
Heat Pump Pool Heaters	0.00%
Portable Electric Spas	11.93%
Showerheads	16.33%
Residential Exhaust Fans	20.41%
Water Dispensers	21.21%
Computer Room Air-Cooled Air Conditioners	26.32%
Computer Room Water-Cooled Air Conditioners	27.45%
Ice Makers	31.43%
DVD Player & DVD Recorders	35.00%
Whole House Fans	36.17%
Commercial Convection Ovens	37.10%
Televisions	38.19%
Commercial Refrigerators/Freezers/Refrigerator-Freezers	41.57%
Combination Space/Water Heating Appliances	41.67%
Commercial Hot Food Holding Cabinets	51.09%
Torchieres	51.58%
Commercial Range Tops	55.62%
Portable (Spot) Air Conditioners	60.29%
Compact Audio Products	68.00%
Tub Spout Diverters	75.00%
Evaporative Coolers	76.92%
Ceiling Fans (excluding low-profile ceiling fans)	80.30%
Refrigerators w/o Doors (for Beverages)	82.35%
Refrigerated Canned/Bottled Beverage Vending Machines	85.00%
Residential Wine Chillers	86.49%
Infrared Heaters (Patio Heaters & non-Patio Heaters)	89.66%
Under-Cabinet Luminaires	100.00%
Appliance Categories in which models were not found	
There were no evaporatively cooled computer room air conditioners found	

**Source: BenningfieldGroup, Inc., survey data**

# Procedures/Scope of Work Overview

## Scope of Work

Benningfield Group, Inc., was given two priority lists of appliances on which to conduct surveys, both created by the California Energy Commission. The first list was made up of appliances that had not been previously surveyed, and the second list contained appliances that had been covered in previous surveys. The survey portion of the project was executed by:

- Performing online and catalog surveys of the listed appliances on:
  - Manufacturer websites
  - Distributor websites
  - Retail websites
  - Auction websites
  - Catalogs
- Performing retail/wholesale surveys

The purpose of these surveys was to assess the extent of compliance with the Energy Commission's Appliance Efficiency Regulations. For an appliance to be considered compliant, it must meet two criteria:

- It must meet design or efficiency standards (if applicable) as stated in the regulations for that particular appliance.
- It must be listed in the Energy Commission's Appliance Database ([www.appliances.energy.ca.gov](http://www.appliances.energy.ca.gov))

Appliances that are shown to be noncompliant by these criteria may actually meet Title 20 standards. However, they are not fully compliant until they are listed in the Energy Commission's database. The data from this survey project is being used to encourage manufacturers to list their compliant products and to encourage manufacturers to comply with Title 20 requirements, if they fall short. In some cases, it could not be determined whether an appliance met applicable standards because the key data was not documented in the manufacturer's literature for the model surveyed.

The results of the surveys will provide the Energy Commission with both:

- The regulated appliance where the most noncompliance occurs.
- The market participants who are most noncompliant.

Appliance Categories Priority List #1 included:

- Combination Space/Water Heating Appliances
- Commercial Refrigerators/Freezers/Refrigerator-Freezers
- Compact Audio Products
- Computer Room Air-Cooled Air Conditioners
- Computer Room Evaporatively Cooled Air Conditioners
- Computer Room Glycol Cooled Air Conditioners
- Computer Room Water Cooled Air Conditioners
- DVD Players and DVD Recorders
- Evaporative Coolers
- Heat Pump Pool Heaters
- Ice Makers
- Infrared Heaters (Patio Heaters and non Patio Heaters)
- Portable (Spot) Air Conditioners
- Residential Wine Chillers
- Showerheads
- Televisions
- Tub Spout Diverters
- Water Dispensers
- Whole House Fans

Appliance Categories Priority Lists #2 included:

- Ceiling Fans (excluding low-profile ceiling fans)
- Commercial Convection Ovens
- Commercial Hot Food Holding Cabinets
- Commercial Range Tops
- Portable Electric Spas
- Refrigerated Canned/Bottled Beverage Vending Machines
- Refrigerators w/o Doors (for beverages)
- Residential Exhaust Fans
- Torchieres
- Under-Cabinet Luminaires

## **Methodology and Findings**

### **Retail/Wholesale Store Surveys**

#### **Retail/Wholesale Store Site Selection**

When selecting the retail/wholesale store survey sites, the survey team conducted an Internet search to see which sites in different areas would offer the best coverage for the appliances to be surveyed. Some appliance specialty sites were also selected using the Internet to collect data on the appliances that may have not been covered with the first round of site selections. The sites were spread through Northern, Central, and Southern California for appliance sampling variety.

#### **Retail/Wholesale Store Problems**

One problem that came up when conducting the store surveys was the unwillingness of some managers and companies to allow the survey because of fear that something would be found that would result in official penalties. In these cases, replacement stores were identified and surveyed. In other cases, attempts were made to increase the comfort level of the store managers. (See recommendations section.)

#### **Retail/Wholesale Store Successes**

Even though a few stores were unwilling to cooperate, most retail and wholesale stores were cooperative, and surveyors were able to obtain the data needed. The authors were often able to reference the database directly on site via the Internet, which improved the effectiveness of the site surveys. Some sites also yielded data for multiple appliance categories.

## Priority List #1

### *Combination Space/Water Heating Appliances*

The surveying party was not able to find combination space/water heating appliances at any of the sites that were visited. This may be due to the high level of knowledge needed to install this appliance, essentially rendering the items cost-ineffective to stock at a retail/wholesale store.

### *Commercial Refrigerators/Freezers/Refrigerator-Freezers*

This appliance was more readily available than other surveyed appliances when conducting retail/wholesale store surveys. With the surveying of three sites, data was collected for 63 appliances.

**Figure 2: Commercial Refrigerators/Freezers/Refrigerator-Freezers Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	63	37	58.73%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Compact Audio Products*

With the four retail/wholesale store surveys that were conducted, data was collected for a sampling of 27 models.

**Figure 3: Compact Audio Products Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	27	16	59.26%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Computer Room Air-Cooled Air Conditioners*

For this appliance, data was gathered for 14 models from one retail/wholesale store survey.

**Figure 4: Computer Room Air-Cooled Air Conditioners Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	14	14	100%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Computer Room Evaporatively Cooled Air Conditioners*

This appliance was not found. Of all the retail/wholesale store surveys that were conducted, none had computer room evaporatively cooled air conditioners. This is an obsolete category. Technology has advanced past this type of system, and they are no longer commercially available for sale.

### *Computer Room Glycol-Cooled Air Conditioners*

This appliance was also not available when conducting the retail/wholesale store surveys. This product is still available but only through Internet sites.

### *Computer Room Water-Cooled Air Conditioners*

This appliance was commonly found when conducting the retail/wholesale store surveys. Surveying one site yielded 14 models for data collection. None of the appliances surveyed were in compliance with the regulations.

**Figure 5: Computer Room Water-Cooled Air Conditioners Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	14	14	100%

Source: BenningfieldGroup, Inc. appliance market survey data

### *DVD Player and DVD Recorders*

For this appliance, 20 models were surveyed from five different retail/wholesale stores.

**Figure 6: DVD Player & DVD Recorders Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	20	10	50%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Evaporative Coolers*

When conducting the store surveys, this product was found at five of the sites. From those sites, survey data for 33 models was collected. None of the appliances were in compliance with the Regulations.

**Figure 7: Evaporative Coolers Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	33	33	100%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Heat Pump Pool Heaters*

For this appliance, the surveyor found four models at one survey site, and the product showed a high level of compliance with the regulations. Due to its special purpose it was not as commonly found as most of the other appliances being surveyed.

**Figure 8: Heat Pump Pool Heaters Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	4	0	0%

Source: BenningfieldGroup, Inc. appliance market survey data

*Ice Makers*

For this appliance, surveyors surveyed 16 models from three different retail/wholesale stores.

**Figure 9: Ice Makers Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	16	1	6.25%

Source: BenningfieldGroup, Inc. appliance market survey data

*Infrared Heaters (Patio Heaters and Non-Patio Heaters)*

The surveyor was able to collect data for multiple models of this appliance from a small number of sites. There were 163 models surveyed from two retail/wholesale stores. With this large number of models, surveyors also noticed that there was a high degree of noncompliance.

**Figure 10: Infrared Heaters (Patio Heaters & Non-Patio Heaters) Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	163	160	98.16%

Source: BenningfieldGroup, Inc. appliance market survey data

*Portable (Spot) Air Conditioners*

Out of three sites that were surveyed for this appliance, the surveyor was able to collect data for 35 models.

**Figure 11: Portable (Spot) Air Conditioners Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	35	22	62.86%

Source: BenningfieldGroup, Inc. appliance market survey data

*Residential Wine Chillers*

In three surveyed sites, the surveyor was able to collect data for nine models. Results indicated a high noncompliant percentage.

**Figure 12: Residential Wine Chillers Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	9	8	88.89%

Source: BenningfieldGroup, Inc. appliance market survey data

*Showerheads*

This appliance was widely available at sites due to the fact that it is a common appliance, easy to use, and easy to install. It was found at six of the sites that were surveyed, and of those sites 98 models were found.

**Figure 13: Showerheads Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	98	13	13.27%

Source: BenningfieldGroup, Inc. appliance market survey data

*Televisions*

Three sites and 85 models were surveyed for this appliance.

**Figure 14: Televisions Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	85	49	57.65%

Source: BenningfieldGroup, Inc. appliance market survey data

*Tub Spout Diverters*

This appliance was found at four sites, and 41 models were surveyed.

**Figure 15: Tub Spout Diverters Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	41	22	53.66%

Source: BenningfieldGroup, Inc. appliance market survey data

*Water Dispensers*

This item was difficult to locate, with four models found in two surveyed sites. The surveyor did find a high level of compliance, however.

**Figure 16: Water Dispensers Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	4	0	0%

Source: BenningfieldGroup, Inc. appliance market survey data

*Whole House Fans*

Out of three sites, 17 models were surveyed.

**Figure 17: Whole House Fans Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	17	13	76.47%

Source: BenningfieldGroup, Inc. appliance market survey data

**Priority List #2**

*Ceiling Fans (excluding low-profile ceiling fans)*

There were 36 models surveyed from six sites for this appliance. This appliance presented a high noncompliant percentage.

**Figure 18: Ceiling Fans (excluding low-profile ceiling fans) Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	36	35	97.22%

Source: BenningfieldGroup, Inc. appliance market survey data

*Commercial Convection Ovens*

From one site, six models were surveyed.

**Figure 19: Commercial Convection Ovens Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	6	4	66.67%

Source: BenningfieldGroup, Inc. appliance market survey data

*Commercial Hot Food Holding Cabinets*

The three models that were surveyed all came from one selected site, and the compliance level was poor.

**Figure 20: Commercial Hot Food Holding Cabinets Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	3	3	100%

Source: BenningfieldGroup, Inc. appliance market survey data

*Commercial Range Tops*

The 13 models that were surveyed were found at two sites. This item was highly noncompliant. Below is a table showing the survey efforts and compliance findings.

**Figure 21: Commercial Range Tops Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	13	13	100%

Source: BenningfieldGroup, Inc. appliance market survey data

*Portable Electric Spas*

From two sites, 19 models were surveyed, and all were in compliance.

**Figure 22: Portable Electric Spas Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	19	0	0%

Source: BenningfieldGroup, Inc. appliance market survey data

*Refrigerated Canned/Bottled Beverage Vending Machines*

This appliance was difficult to find in stores. Due to the limited demand and high cost of the appliance, it was not available on the retail/wholesale store showrooms. Only one was found at one survey site.

**Figure 23: Refrigerated Canned/Bottled Beverage Vending Machines Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	1	0	0%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Refrigerators w/o Doors (for beverages)*

This item was similar to the vending machines in that it was not widely available, due to low demand and a high price tag.

**Figure 24: Refrigerators w/o Doors (for beverages) Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	1	1	100%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Residential Exhaust Fans*

From two sites, 17 models were surveyed.

**Figure 25: Residential Exhaust Fans Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	17	4	23.53%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Torchieres*

This item was found at multiple sites, which allowed a larger sample of the product to be surveyed than most other appliances that were surveyed in the study. There were 53 models surveyed from five stores.

**Figure 26: Torchieres Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	53	20	37.74%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Under-Cabinet Luminaires*

Although this category exists in the Energy Commission's Appliance Efficiency Database, no models are currently listed there. The surveyor was able to survey 52 models at five sites, providing an excellent sampling of what is available on the market.

**Figure 27: Under-Cabinet Luminaires Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	52	52	100%

Source: BenningfieldGroup, Inc. appliance market survey data

## Catalog and Internet Surveys

### Catalog and Internet Selection

Two distinct methods were used when selecting the websites for the surveys:

- Web searches were used to locate the appliances on manufacturer, distributor, retailer, and auction websites.
- The Energy Commission's Appliance Efficiency Database was used to select manufacturer websites that included the appliances to be surveyed.

### Catalog and Internet Problems

Some challenges did surface during the work on the website and catalog surveys. The surveys show that because of the increase of Web sales and marketing sites, more and more customers, as well as retailers, are using the Web for sourcing products. This can be seen when looking at the tables of the survey findings. Companies are opting to use a Web-based catalog as opposed to a printed version, due to the printing costs and ecological considerations.

One issue that arose with the website surveys was that it took a substantially longer time to review the online catalogs and websites than to tally information from a printed catalog form or from a store visit. Frequently the surveyor would have to search through an entire website to retrieve the required product information. Specifications for appliances were difficult to find, and, in some cases, were not even available for the consumer. Most websites were also not very forthcoming with information indicating whether a certain appliance was meant for sale in California.

One other anomaly that was found when working on the Internet surveys was the redundancy of data found on distributor and retail websites. Resources could be better used in future appliance market surveys by combining these two categories. Both distributor and retail are outlets that ultimately provide the consumer with the product, so surveying both of these parts of the supply chain results in capturing identical data. Another justification for combining the two categories is that distributors do not always maintain a public Internet presence and have been difficult to find online.

The surveyors also encountered some problems when visiting auction sites. One of the problems was not being able to find all the required data to check the compliance for each appliance found on the site. The amount of information that is listed for each appliance is decided by the sellers and frequently did not contain data needed to verify that a model met the regulations. Appliances that may not be eligible to be sold in California may be offered for sale through auction sites. This may provide the opportunity for a California resident to buy a product that is not compliant with the regulations or listed in the database.

## Catalog and Internet Successes

For the surveyor to overcome the challenge of not being able to find specific websites to survey, different approaches had to be taken. This was especially the case with distributor sites because they don't have a large Web presence and so cannot be found via traditional search engines. To increase the number of distributor and manufacturer sites surveyed, the survey team located and visited industry-sponsored formal and informal message boards. The entries on the boards in many cases named key distributors who could then be surveyed.

### Priority List #1

#### *Combination Space/Water Heating Appliances*

The 12 websites surveyed included three manufacturer sites.

**Figure 28: Combination Space/Water Heating Appliances Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	12	5	41.67%
Distributor Internet	0	0	
Retail Internet	0	0	
Auction Internet	0	0	
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

#### *Commercial Refrigerators/Freezers/Refrigerator-Freezers*

Websites surveyed included three manufacturer sites, two distributor sites, two retail websites, one auction website, and one catalog. The total number of models surveyed was 103.

**Figure 29: Commercial Refrigerators/Freezers/Refrigerator-Freezers Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	12	6	50%
Distributor Internet	35	10	28.57%
Retail Internet	24	7	29.17%
Auction Internet	4	2	50%
Catalog	28	7	25%

Source: BenningfieldGroup, Inc. appliance market survey data

#### *Compact Audio Products*

Websites surveyed included three manufacturer sites, two distributor sites, two distributor sites, two retail sites, and one auction website. The total number of models surveyed was 48.

**Figure 30: Compact Audio Products Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	31	18	58.06%
Distributor Internet	8	8	100%
Retail Internet	5	5	100%
Auction Internet	4	4	100%
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

*Computer Room Air-Cooled Air Conditioners*

Websites surveyed included four manufacturer sites and three distributor sites. The total number of models surveyed was 43.

**Figure 31: Computer Room Air-Cooled Air Conditioners Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	21	1	4.76%
Distributor Internet	22	0	0%
Retail Internet	0	0	
Auction Internet	0	0	
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

*Computer Room Evaporatively-Cooled Air Conditioners*

This appliance was not found from any online resources. This is an obsolete category because the technology has advanced past this type of system and they are no longer commercially available for sale.

*Computer Room Glycol-Cooled Air Conditioners*

Websites surveyed included two manufacturer sites, two distributor sites, and one retail Internet site. The total number of models surveyed was 17.

**Figure 32: Computer Room Glycol-Cooled Air Conditioners Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	7	0	0%
Distributor Internet	7	0	0%
Retail Internet	3	0	0%
Auction Internet	0	0	
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

### *Computer Room Water-Cooled Air Conditioners*

Websites surveyed included three manufacturer sites, three distributor sites, and one retail site. The total number of models surveyed was 37.

**Figure 33: Computer Room Water-Cooled Air Conditioners Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	17	0	0%
Distributor Internet	17	0	0%
Retail Internet	3	0	0%
Auction Internet	0	0	
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

### *DVD Players and DVD Recorders*

Websites surveyed included three manufacturer sites, two distributor sites, two retail sites, and two auction sites. The total number of models surveyed was 40.

**Figure 34: DVD Player & DVD Recorders Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	19	4	21.05%
Distributor Internet	6	0	0%
Retail Internet	5	2	40%
Auction Internet	10	5	50%
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

### *Evaporative Coolers*

Websites surveyed included three manufacturer sites, two retail sites, one auction site, and one catalog. The total number of models surveyed was 32.

**Figure 35: Evaporative Coolers Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	9	3	33.33%
Distributor Internet	0	0	
Retail Internet	10	5	50%
Auction Internet	4	2	50%
Catalog	9	7	77.78%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Heat Pump Pool Heaters*

Websites surveyed included four manufacturer sites, two retail sites, and one auction site. The total number of models surveyed was 41.

**Figure 36: Heat Pump Pool Heaters Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	17	0	0%
Distributor Internet	0	0	
Retail Internet	15	0	0%
Auction Internet	9	0	0%
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

### *Ice Makers*

Websites surveyed included three manufacturer sites, three retail sites, one auction site, and two catalogs. The total number of models surveyed was 54.

**Figure 37: Ice Makers Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	18	4	22.22%
Distributor Internet	0	0	
Retail Internet	8	8	100%
Auction Internet	8	4	50%
Catalog	20	5	25%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Infrared Heaters (Patio Heaters and Non-Patio Heaters)*

Websites surveyed included three manufacturer sites, three retail sites, and one auction site. The total number of models surveyed was 40.

**Figure 38: Infrared Heaters (Patio Heaters and Non-Patio Heaters) Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	22	4	18.18%
Distributor Internet	0	0	
Retail Internet	8	8	100%
Auction Internet	10	10	100%
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

### *Portable (Spot) Air Conditioners*

Websites surveyed included three manufacturer sites, one retail site, and one auction site. The total number of models surveyed was 33.

**Figure 39: Portable (Spot) Air Conditioners Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	20	10	50%
Distributor Internet	0	0	
Retail Internet	6	6	100%
Auction Internet	7	3	42.86%
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

### *Residential Wine Chillers*

Websites surveyed included three manufacturer sites, four retail sites, and one auction site. The total number of models surveyed was 65.

**Figure 40: Residential Wine Chillers Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	21	14	66.67%
Distributor Internet	0	0	
Retail Internet	23	21	91.30%
Auction Internet	21	21	100%
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

### *Showerheads*

Websites surveyed included three manufacturer sites, four retail Internet sites, and one auction site. The total number of models surveyed was 49.

**Figure 41: Showerheads Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	19	0	0%
Distributor Internet	0	0	
Retail Internet	23	11	47.83%
Auction Internet	7	0	0%
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

*Televisions*

Websites surveyed included three manufacturer sites, two distributor sites, two retail sites, and two auction sites. The total number of models surveyed was 59.

**Figure 42: Televisions Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	27	0	0%
Distributor Internet	6	0	0%
Retail Internet	11	3	27.27%
Auction Internet	15	3	20%
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

*Tub Spout Diverters*

Websites surveyed included three manufacturer sites, four retail sites, and one auction site. The total number of models surveyed was 59.

**Figure 43: Tub Spout Diverters Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	23	21	91.30%
Distributor Internet	0	0	
Retail Internet	23	20	86.96%
Auction Internet	13	12	92.31%
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

*Water Dispensers*

Websites surveyed included one manufacturer site, four retail sites, and one auction site. The total number of models surveyed was 29.

**Figure 44: Water Dispensers Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	5	3	60%
Distributor Internet	0	0	
Retail Internet	13	4	30.77%
Auction Internet	11	0	0%
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

*Whole House Fans*

Websites surveyed included three manufacturer sites, three retail sites, and one auction site. The total number of models surveyed was 30.

**Figure 45: Whole House Fans Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	16	2	12.50%
Distributor Internet	0	0	
Retail Internet	9	2	22.22%
Auction Internet	5	0	0%
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

**Priority List #2**

*Ceiling Fans (excluding low-profile ceiling fans)*

Websites surveyed included three retail sites and one auction site. The total number of models surveyed was 30.

**Figure 46: Ceiling Fans (excluding low-profile ceiling fans) Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	0	0	
Distributor Internet	0	0	
Retail Internet	11	7	63.64%
Auction Internet	19	11	57.89%
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

*Commercial Convection Ovens*

Websites surveyed included three manufacturer sites, two distributor sites, two retail Internet sites, one auction site, and two catalogs. The total number of models surveyed was 56.

**Figure 47: Commercial Convection Ovens Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	16	8	50%
Distributor Internet	7	0	0%
Retail Internet	16	0	0%
Auction Internet	1	1	100%
Catalog	16	10	62.50%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Commercial Range Tops*

Websites surveyed included four manufacturer sites, three distributor sites, two retail sites, one auction site, and two catalogs. The total number of models surveyed was 156.

**Figure 48: Commercial Range Tops Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	76	41	53.95%
Distributor Internet	40	20	50%
Retail Internet	20	0	0%
Auction Internet	6	6	100%
Catalog	14	14	100%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Portable Electric Spas*

Websites surveyed included three manufacturer sites, one distributor site, two retail sites, and three catalogs. The total number of models surveyed was 90.

**Figure 49: Portable Electric Spas Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	22	7	31.82%
Distributor Internet	6	6	100%
Retail Internet	14	0	0%
Auction Internet	21	0	0%
Catalog	27	0	0%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Refrigerated Canned/Bottled Beverage Vending Machines*

Websites surveyed included three manufacturer sites, two distributor sites, two retail sites, and one auction site. The total number of models surveyed was 39.

**Figure 50: Refrigerated Canned/Bottled Beverage Vending Machines Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	14	12	85.71%
Distributor Internet	15	13	86.67%
Retail Internet	6	6	100%
Auction Internet	4	3	75%
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

*Refrigerators w/o Doors (for beverages)*

Websites surveyed included four manufacturer sites, one distributor site, two retail sites, one auction site, and two catalogs. The total number of models surveyed was 50.

**Figure 51: Refrigerators w/o Doors (for beverages) Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	19	16	84.21%
Distributor Internet	4	4	100%
Retail Internet	14	10	71.43%
Auction Internet	7	6	85.71%
Catalog	6	5	83.33%

Source: BenningfieldGroup, Inc. appliance market survey data

*Residential Exhaust Fans*

Websites surveyed included three retail sites and one auction site. The total number of models surveyed was 32.

**Figure 52: Residential Exhaust Fans Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	0	0	
Distributor Internet	0	0	
Retail Internet	13	3	23.08%
Auction Internet	19	3	15.79%
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

*Torchieres*

Websites surveyed included three retail sites and one auction site. The total number of models surveyed was 42.

**Figure 53: Torchieres Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	0	0	
Distributor Internet	0	0	
Retail Internet	15	4	26.67%
Auction Internet	27	25	92.59%
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

*Under-Cabinet Luminaires*

Websites surveyed included two retail sites and one auction site. The total number of models surveyed was 20.

**Figure 54: Under-Cabinet Luminaires Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	0	0	
Distributor Internet	0	0	
Retail Internet	7	7	100%
Auction Internet	13	13	100%
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

# Project Evaluation

## Appliance Tracking

A specialized tracking system was created to store and work with the large amount of information that was collected from the surveys for this project. The system allows the user to create a survey database with information from the source sites and then attach models found in the retail/wholesale store, Internet site, or catalog. The figure shows the tracking system with some of the surveys that were created.

Figure 55: Tracking System's Survey List Page

#		Survey Type	Business Name	Phone	Visit Date	Contact
1	<a href="#">Edit   Details</a>	Manufacturer Internet	Data Aire	800-347-2473	1/28/2010	
2	<a href="#">Edit   Details</a>	Manufacturer Internet	Follett Corporation	(610) 252-7301	1/28/2010	
3	<a href="#">Edit   Details</a>	Manufacturer Internet	Scotsman Ice	(800) 726-8762	1/29/2010	n/a
4	<a href="#">Edit   Details</a>	Manufacturer Internet	ATS Stulz	1-301-620-2033	2/4/2010	ats.stulz.com
5	<a href="#">Edit   Details</a>	Manufacturer Internet	Sony	1-888-476-6972	3/9/2010	http://www.sony.com/faq.shtml
6	<a href="#">Edit   Details</a>	Manufacturer Internet	Sanyo	1-619-661-1134	3/11/2010	http://us.sanyo.com/Televisions
7	<a href="#">Edit   Details</a>	Distributor Internet	Funai	1-201-727-4560	3/23/2010	http://www.funai.us/index.html
8	<a href="#">Edit   Details</a>	Manufacturer Internet	Philips	1-888-744-5477	3/23/2010	http://www.usa.philips.com/
9	<a href="#">Edit   Details</a>	Manufacturer Internet	Panasonic	1-800-2117262	3/24/2010	www.panasonic.com/
10	<a href="#">Edit   Details</a>	Manufacturer Internet	JVC	1-800-252-5722	3/26/2010	www.jvc.com/
11	<a href="#">Edit   Details</a>	Manufacturer Internet	Coby	1-800-727-3592	4/6/2010	www.cobyusa.com/
12	<a href="#">Edit   Details</a>	Manufacturer Internet	AirScape Inc.	1-866-448-4187	4/7/2010	www.airscapfans.com/
13	<a href="#">Edit   Details</a>	Manufacturer Internet	Marley Engineered Products	1-800-642-4328	4/8/2010	http://qmarkmeh.com/en/
14	<a href="#">Edit   Details</a>	Manufacturer Internet	Triangle Engineering	(501) 982-7558	4/19/2010	www.trianglefans.com/
15	<a href="#">Edit   Details</a>	Manufacturer Internet	Chatham Brass Co., Inc	1-800-526-7553	4/19/2010	www.chathambrass.com/
16	<a href="#">Edit   Details</a>	Manufacturer Internet	KWC	1-678-334-2121	4/19/2010	www.kwcamerica.com/

Source: BenningfieldGroup, Inc. appliance market survey tracking system

The surveyor would select a model from a site and input the information collected into the tracking system. The item would then be added to the corresponding survey(s), allowing the end user to know from which type of survey site the item was collected. The system also allows

the user to select a certain appliance and look at the number and types of models that were surveyed, as shown in the figure below. This feature helped the project manager keep track of the number of items for each appliance and also assist in the quality checks of items entered.

**Figure 56: Tracking System's Showerheads Items Page**

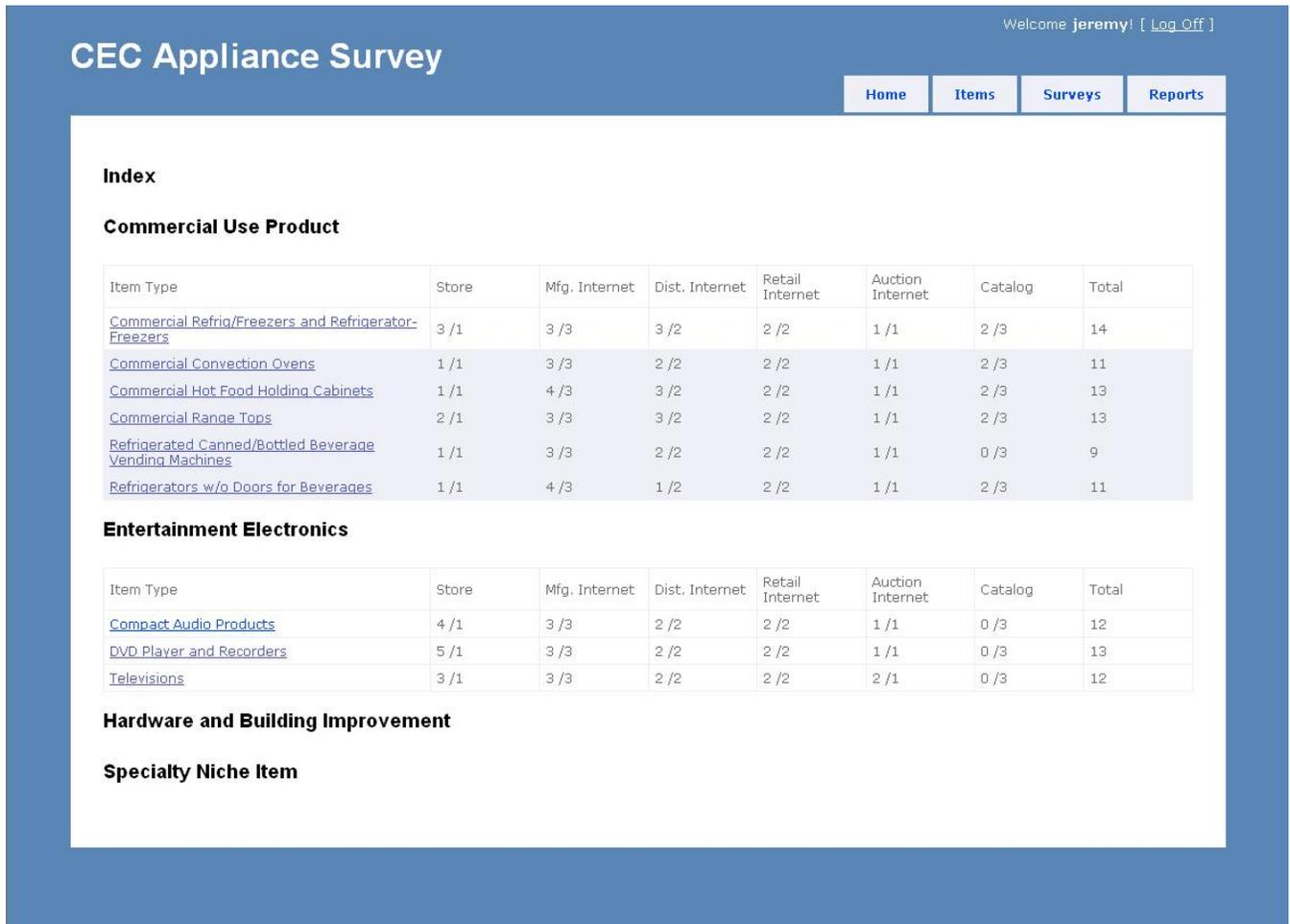
The screenshot shows a web application interface for a 'CEC Appliance Survey'. At the top right, it says 'Welcome jeremy! [ Log Off ]'. Below the header, there are navigation tabs for 'Home', 'Items', 'Surveys', and 'Reports'. The main content area is titled 'Appliance Index (Page 1)' and contains a table of showerhead items. Each row in the table includes links for 'Edit' and 'Details'.

	Item Type	Manufacturer	Brand	Model Number	Capacity	Energy Use	Compliant	InDB
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	Chatham Brass	Chatham Brass	102S	NA	2.0 gpm	Yes	Yes
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	Chatham Brass	Chatham Brass	263S	NA	2.5 gpm	Yes	Yes
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	Chatham Brass	Chatham Brass	443S	NA	2.5 gpm	Yes	Yes
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	Chatham Brass	Chatham Brass	3ISA	NA	2.5 gpm	Yes	Yes
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	Chatham Brass	Chatham Brass	C2	NA	2.5 gpm	Yes	Yes
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	Chatham Brass	Chatham Brass	303A	NA	2.5 gpm	Yes	Yes
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	Chatham Brass	Chatham Brass	L3CCPB	NA	2.5 gpm	Yes	Yes
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	KWC	KWC	Z.534.543	NA	2.5 gpm	Yes	No
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	KWC	KWC	Z.534.545	NA	2.5 gpm	Yes	No
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	KWC	KWC	Z.534.686	NA	2.5 gpm	Yes	No
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	KWC	KWC	K.26.VB.03.700	NA	2.5 gpm	Yes	No
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	KWC	KWC	26.254.083.000	NA	2.5 gpm	Yes	No
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	Moen, Inc.	Velocity	6320	NA	2.5 gpm	Yes	Yes
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	Moen, Inc.	Vitalize	21007BN	NA	2.5 gpm	Yes	Yes
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	Moen, Inc.	Envi	3233CBC	NA	1.75 gpm	Yes	No
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	Moen, Inc.	Inspire	21717BN	NA	2.5 gpm	Yes	Yes
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	Moen, Inc.	Moen	6399	NA	2.5 gpm	Yes	Yes
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	Moen, Inc.	Moen	6300EPBC	NA	1.75 gpm	Yes	Yes
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	Moen, Inc.	Moen	104239ORB	NA	2.5 gpm	Yes	Yes
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	american standard	Cadet	1675	none listed		No	No
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	american standard	symphone	4501	0		Yes	No
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	american standard	williamsburg	1045	na		No	No
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	Home Depot	Glacier Bay	476615	na		No	No
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	kohler	forte	r10275-4-cp	na		No	No
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	kohler	archer	R11077-4-BN	na		No	No

Source: BenningfieldGroup, Inc. appliance market survey tracking system

Another feature of the tracking system is the capability to track the numbers of different types of surveys taken for each of the appliances. This allowed the project manager to keep abreast of the data as it was entered and monitor the progress toward survey goals. The figure below shows the home page of the tracking system and the corresponding surveys for each appliance.

Figure 57: Tracking System's Appliance Survey Status Page



Source: BenningfieldGroup, Inc. appliance market survey tracking system

The tracking system was invaluable when it came to the reporting of the collected information. It allows for reports to be created so that the user can collect the data and organize it for viewing in several different report formats. The tables for each of the appliance categories in the compliance findings section of the report were created using the tracking system report functionality.

Another advantage of this tracking system is that the Energy Commission personnel were able to monitor the progress of the project. They were also able to view and begin processing data as it was collected, rather than waiting until the contract was complete to compile the data.

## Appliance Compliance

For each appliance, an entry in the figure below was generated illustrating the percentage of models surveyed within that appliance category that were noncompliant. For the purposes of this project, an appliance model was noncompliant if it was not listed in the California Energy Commission Database, even though it may or may not have met the applicable Title 20

efficiency standards. The surveyors were unable to locate any evaporatively cooled air conditioners. The summary table below shows all the appliances that were surveyed and their percentages of noncompliance. The appliance categories in the Figure 58 are listed in order from most compliant to least compliant.

**Figure 58: Best to Worst Appliance Compliance Table**

<b>Appliance Categories</b>	<b>% Non-Compliant</b>
Computer Room Glycol-Cooled Air Conditioners	0.00%
Heat Pump Pool Heaters	0.00%
Portable Electric Spas	11.93%
Showerheads	16.33%
Residential Exhaust Fans	20.41%
Water Dispensers	21.21%
Computer Room Air-Cooled Air Conditioners	26.32%
Computer Room Water-Cooled Air Conditioners	27.45%
Ice Makers	31.43%
DVD Player & DVD Recorders	35.00%
Whole House Fans	36.17%
Commercial Convection Ovens	37.10%
Televisions	38.19%
Commercial Refrigerators/Freezers/Refrigerator-Freezers	41.57%
Combination Space/Water Heating Appliances	41.67%
Commercial Hot Food Holding Cabinets	51.09%
Torchieres	51.58%
Commercial Range Tops	55.62%
Portable (Spot) Air Conditioners	60.29%
Compact Audio Products	68.00%
Tub Spout Diverters	75.00%
Evaporative Coolers	76.92%
Ceiling Fans (excluding low-profile ceiling fans)	80.30%
Refrigerators w/o Doors (for Beverages)	82.35%
Refrigerated Canned/Bottled Beverage Vending Machines	85.00%
Residential Wine Chillers	86.49%
Infrared Heaters (Patio Heaters & non Patio Heaters)	89.66%
Under-Cabinet Luminaires	100.00%
No models were found for computer Room Evaporatively Cooled Air Conditioners	

Source: BenningfieldGroup, Inc. appliance market survey data

## **Recommendations**

### **Retail/Wholesale Store Surveys**

There are two things that could be done to address the unwillingness of managers and companies to allow the survey because they fear that something would be found that would result in official penalties. First of all, it might help to have a letter from the California Energy Commission on hand when setting up or commencing retail/wholesale store surveys. The letter could state the purpose of the surveys and reassure managers that no official penalties will come as a result of the surveys. This letter could be handed out when showing up to sites or sent out to managers who may want this type of verification before they have a surveyor visit the site. Another solution, which was offered by a site involved in this survey, is to allow the store manager to follow the surveyor and take notes for the company regarding all of the items surveyed. This would allow managers to feel more in control of the situation, thus making them feel more comfortable with the process.

Another issue identified was that when surveyors contacted the retail/wholesale stores to set up the survey time and date, the store managers would often try to direct them to the corporate office for approval. This would cause a delay of the survey while surveyors attempted to get the necessary approval. This is another situation where a letter from the California Energy Commission might prove to be useful. It is recommended that the surveyor contact the regional manager of a site to set up a day and time for the survey when the store manager wants to direct the surveyor to call the corporate office. This, more often than not, should result in less of a delay when trying to acquire the necessary permission(s) for the survey.

The final issue that came up was that some retail/wholesale stores would often attempt to put off the start of the survey. In this case, the recommendation is to be persistent with communication or simply find a different site with similar appliances to survey.

### **Internet and Catalog Surveys**

Internet surveys in this study took longer to complete than retail/wholesale store surveys. This is due to the fact that no two Internet sites are the same, so the surveyor had to spend time trying to figure out where to find the information that was needed to do the survey. It is recommended that the budget and time allotted for this task be increased.

It is also recommended that the surveyor be required to pay close attention to and note whether each website offers the appliances being surveyed for sale to consumers in California. Most websites in this study were not very forthcoming with this information. The California Energy Commission may want to decide how important this is for the next round of surveys and work with the contractor to create an objective measure that would yield consistent interpretation.

It is also recommended that the surveyor be required to define why the model was noncompliant. Was it due to lack of information on the model's label, information proving that the model did not meet an applicable Title 20 efficiency standard, or that the model was not

listed in the database? This would also require that an objective measure be defined, and the surveyors be trained in its interpretation, so that a consistent interpretation could be delivered.

Due to the increase of Web-based sales and marketing, companies are opting to use a Web-based catalog rather than a printed version. The California Energy Commission may want to reevaluate whether it is preferable to invest a lot of effort toward finding the printed catalogs, which seem to be becoming obsolete, or simply have the Internet surveys executed in more depth. Since the same products can usually be found on the Internet, it may be a better use of resources to minimize the use of printed catalogs to obtain data for surveys. Collecting the paper catalogs is time-consuming because the surveyors have to refer to the Internet site and call the stores to locate the catalogs. If it is determined that printed catalogs will still be used, surveyors should keep their eyes open for them while they are out in the field.

Surveyors found a redundancy of data on distributor and retail websites, so it may be a better use of resources to combine the classification, or to require one or the other to fulfill the requirement. When looking for distributor websites, surveyors noticed that distributor websites were often difficult to find because distributors do not always maintain a public Internet presence. If the distributor and retail websites were combined, the surveyor would spend less time searching for distributor websites to survey the appliances that are on the surveyors list provided by the California Energy Commission.

# **APPENDIX**

## **Models Misidentified as to Appliance Type**

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***Contract Number: 400-09-004***

**DISCLAIMER**

This report was prepared as the result of work sponsored by the California Energy Commission. It does not necessarily represent the views of the Energy Commission, its employees or the State of California. The Energy Commission, the State of California, its employees, contractors and subcontractors make no warrant, express or implied, and assume no legal liability for the information in this report; nor does any party represent that the uses of this information will not infringe upon privately owned rights. This report has not been approved or disapproved by the California Energy Commission nor has the California Energy Commission passed upon the accuracy or adequacy of the information in this report.

As the survey team performed its data collection, Energy Commission appliance standards enforcement staff had access to the survey data in the survey team's tracking system, and immediately contacted in writing those manufacturers of appliance models identified as noncompliant (i.e., being sold or offered for sale in California, but not listed in the Energy Commission's database). Some manufacturers informed staff in their responses that the appliance types of the models identified by the surveyors had been misidentified. Appliance standards enforcement staff later confirmed a total of 184 misidentified models. The misidentifications often happened due to the complexity of, or nuances in, the Title 20 definitions of certain regulated appliances; or due to their similarity in appearance to other, non-regulated products. Since the errors were caught by Energy Commission staff well after the collection of data was complete, the information was not captured in the body of the consultant report. When taking these 184 models into account, the actual total of noncompliant models surveyed is 966, bringing the actual rate of noncompliance to 43 percent.

The following is a summary of the number of models, by appliance type, that were later confirmed by Energy Commission appliance standards enforcement staff to be misidentified by the survey team during the collection of survey data.

*Combination Space Water Heaters - 3 models*

One model was a boiler, and two were tankless water heaters.

*Computer Room Air Cooled Air Conditioners - 3 models*

Three models did not meet the Title 20 definition of computer room air cooled air conditioner.

*Evaporative Coolers - 3 models*

Three models were portable evaporative coolers (an appliance type specifically excluded from Title 20).

*Hot Food Holding Cabinets - 1 model*

One model was a commercial food service drawer warmer (an appliance type specifically excluded from Title 20).

*Infrared Heaters – 103 models*

These models were infrared electric resistance heaters (an appliance type not regulated by Title 20) and not infrared gas space heaters.

*Torchieres - 17 models*

One model did not meet the Title 20 definition of torchiere; and sixteen were portable luminaires as defined by Title 20.

*Under-Cabinet Luminaires – 53 models*

Fifty-three models did not meet the Title 20 definition of under-cabinet luminaire, as they were not designed to be used with modular office furniture.

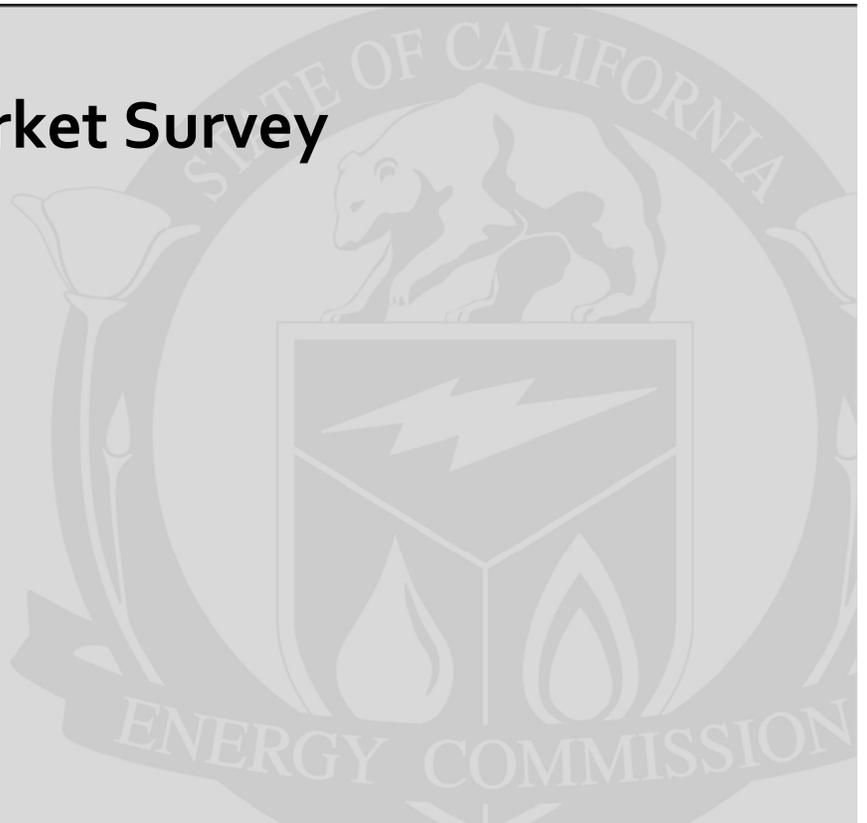
*Whole House Fans – 1 model*

One model did not meet the Title 20 definition of whole house fan.



# CONSULTANT REPORT

## Appliance Market Survey



Prepared for: California Energy Commission

Prepared by: Benningfield Group, Inc.

MARCH 2013

CEC-400-2013-012

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## **ACKNOWLEDGEMENTS**

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We are particularly grateful to the Energy Commission staff for their guidance and leadership throughout the duration of this contract.

## ABSTRACT

This is a report of the findings of work done under the Contract Agreement No. 400-11-001 between the California Energy Commission and Benningfield Group, Inc. It summarizes the results of the surveys that assess the extent of compliance with the Appliance Efficiency Regulations. The information for this report was collected for a list of appliances provided by the California Energy Commission along with additional survey items identified during the execution of the contract. The appliances surveyed were found at retail/wholesale stores, internet sites and in catalogs. This report delineates the degree to which products were or were not in compliance with the Regulations.

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# Executive Summary

This report summarizes the work that was completed on Contract Agreement No. 400-11-001 between the California Energy Commission (Energy Commission) and Benningfield Group, Inc. The work was completed in the following five tasks:

- Task 1: Agreement Management
- Task 2: Catalog and Internet Surveys
- Task 3: Retail/Wholesale Store Surveys
- Task 4: Additional Surveys As Needed
- Task 5: Final Summary Report of All Surveys

Catalog, field and internet surveys were performed to obtain data on the regulated appliances that are being offered for sale in the state of California. Surveyors collected data and cross-referenced it with the Energy Commission Appliance Database (Database) to assess the frequency of compliance with Title 20 Appliance Efficiency certification requirements. If a particular model was listed in the Database it was considered to be compliant, and if it was not listed it was non-compliant.

Data for each appliance category, appliance model and information source (catalog, internet or store) was documented in a web-based database created for this project. In the past, Energy Commission staff waited until the surveys were complete before taking any action on the findings. For this project, the Energy Commission staff were able to access the survey database during the project, and take appropriate action immediately in an effort to improve compliance with Title 20 Appliance Efficiency certification requirements. Findings show that while many products are in the Database, there are also a high percentage of items not in the Database. The percentage of appliances that were not found in the Database, see Table 1, ranged from 16-100 percent, depending on the appliance category. The appliances with the highest rate of certification compliance were DVD Players & DVD Recorders. On the other end of the spectrum, the appliances with the lowest rate of certification compliance were Metal Halide Luminaires, Computer Room Air-Cooled Air Conditioners and Infrared Heaters (Patio Heaters & non-Patio Heaters).

The surveyors surveyed 57 stores, conducted 128 catalog and internet surveys and collected data on a total of 3,065 appliance models. Of the 3,065 items surveyed, 1,753 (57 percent) of them were not in the Database.

**Table 1: Rates of Non-Compliance, by Appliance Type**

<b>Appliance Categories</b>	<b>% Not In Database</b>
DVD Players & DVD Recorders	15.66%
Whole House Fans	22.22%
Televisions	22.80%
Evaporative Coolers	26.26%
Residential Exhaust Fans	26.26%
Commercial Ice Makers (Automatic Commercial Ice Makers)	33.17%
Portable (Spot) Air Conditioners	37.80%
Residential Wine Chillers	38.33%
Commercial Pre-Rinse Spray Valves	39.47%
Ceiling Fans (Excluding Low-Profile Ceiling Fans)	40.24%
Compact Audio Products	40.83%
Commercial Range Tops	41.14%
Commercial Hot Food Holding Cabinets	47.06%
Residential Pool Pumps	55.44%
Commercial Convection Ovens	62.63%
Tub Spout Diverters	64.94%
Portable Luminaires	69.70%
Water Dispensers	74.03%
Showerheads	74.42%
Ceiling Fan Light Kits	76.44%
Refrigerators w/o Doors (For Beverages)	82.64%
Computer Room Water-Cooled Air Conditioners	88.24%
Refrigerated Canned/Bottled Beverage Vending Machines	96.72%
Computer Room Air-Cooled Air Conditioners	100.00%
Infrared Gas Space Heaters (Patio Heaters & Non-Patio Heaters)	100.00%
Metal Halide Luminaires	100.00%

# Procedures/Scope of Work Overview

## Scope of Work

The Energy Commission developed an appliance priority list that served as the basis for compliance verification activities under this contract. That list contained 26 appliance types. Survey activities included:

- Online and catalog surveys of:
  - Manufacturer websites
  - Distributor websites
  - Retail websites
  - Auction websites
  - Catalogs
- Retail and wholesale surveys of big box, wholesale, distributor small retail and specialty stores.

Compliant products meet both criteria below:

1. It met design or efficiency standards (if applicable) as stated in the Regulations for that particular appliance
2. It was listed in the Energy Commission's Appliance Database (Database) ([www.appliances.energy.ca.gov](http://www.appliances.energy.ca.gov)).

However, surveyors were only asked to determine if an appliance met criteria #2, and because of this it is important to note that appliances shown by this survey project to be non-compliant using this criteria may actually meet the performance requirements necessary to be eligible to be sold or offered for sale in California. However, eligibility cannot be assessed without efficiency testing or validation being performed. Therefore, research into compliance with standards and eligibility was placed outside the scope of this contract. Nevertheless, the data from this project is useful as it can be used as leverage to encourage manufacturers to test and list their compliant products, and to take the necessary steps to comply with Title 20 requirements if they fall short.

The results of the surveys provided the Energy Commission with information on:

- The regulated appliance types with the lowest certification compliance rates.
- The market participants representing products with the lowest certification compliance rates.

The Energy Commission supplied the following appliance category target list for the contractor to survey:

- Ceiling Fan Light Kits
- Ceiling Fans (Excluding Low-Profile Ceiling Fans)
- Commercial Convection Ovens
- Commercial Hot Food Holding Cabinets
- Commercial Ice Makers (Automatic Commercial Ice Makers)
- Commercial Range Tops
- Compact Audio Products
- Commercial Pre-Rinse Spray Valves
- Computer Room Air-Cooled Air Conditioners
- Computer Room Water-Cooled Air Conditioners
- DVD Player & DVD Recorders
- Evaporative Coolers
- Infrared Gas Space Heaters (Patio Heaters & Non-Patio Heaters)
- Metal Halide Luminaires
- Portable (Spot) Air Conditioners
- Portable Luminaires
- Refrigerated Canned/Bottled Beverage Vending Machines
- Refrigerators w/o Doors (For Beverages)
- Residential Exhaust Fans

- Residential Pool Pumps
- Residential Wine Chillers
- Showerheads
- Televisions
- Tub Spout Diverters
- Water Dispensers
- Whole House Fans

## **Methodology and Findings**

### **Retail/Wholesale Store Surveys**

#### **Retail/Wholesale Store Site Selection**

When selecting the retail/wholesale store survey sites, an internet search was conducted to see which sites in the Northern, Central and Southern regions of California would most accurately represent the range of appliances being offered for sale in the state. During the selection process, special care was taken to locate sites likely to sell products where little or no data was yet obtained. While the surveyors were in the field, additional local sites were identified, approved and surveyed. These sites represented smaller “niche” stores with little or no internet presence. The goal with site selection was to get an even representation of sites selling appliances in the targeted categories throughout Northern, Central and Southern California. This was done to help prevent regional bias in data collection, and ensured that stores of various sizes were included.

#### **Retail/Wholesale Store Challenges**

Managers refused survey participation at some locations. This refusal is likely based on fear that something would be discovered that would result in official penalties. In these cases, replacement stores were identified and surveyed. The recommendations section outlines possible approaches to remedy this problem.

#### **Retail/Wholesale Store Successes**

Even though a few stores were unwilling, most retail and wholesale stores were cooperative and surveyors were able to obtain the data needed. At some of the larger sites, the surveyors would survey the store as customers. This reduced the likelihood that they would be turned away. Most sites also yielded data for multiple appliance categories.

#### **Findings for Individual Items on the Survey List**

##### *Ceiling Fan Light Kits*

Nine retail/wholesale store surveys were conducted; data was collected for a sampling of 97 items.

**Table 2: Ceiling Fan Light Kits Retail/Wholesale Store Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Store	97	82	84.54%

*Ceiling Fans (Excluding Low-Profile Ceiling Fans)*

This appliance was more readily available than other surveyed appliances when conducting retail/wholesale store surveys. Among the 12 sites, data was collected for 120 appliances.

**Table 3: Ceiling Fans (Excluding Low-Profile Ceiling Fans) Retail/Wholesale Store Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Store	120	47	39.17%

*Commercial Convection Ovens*

Seven retail/wholesale store surveys were conducted; data was collected for a sampling of 45 items.

**Table 4: Commercial Convection Ovens Retail/Wholesale Store Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Store	45	27	60%

*Commercial Hot Food Holding Cabinets*

For this appliance, data was gathered for 18 items from six retail/wholesale store surveys.

**Table 5: Commercial Hot Food Holding Cabinets Retail/Wholesale Store Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Store	18	6	33.33%

*Commercial Ice Makers (Automatic Commercial Ice Makers)*

This appliance was found at eight retail/wholesale sites and data was collected for 51 appliances.

**Table 6: Commercial Ice Makers (Automatic Commercial Ice Makers) Retail/Wholesale Store Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Store	51	20	39.22%

*Commercial Range Tops*

Eleven retail/wholesale store surveys were conducted; 56 instances of this item were found.

**Table 7: Commercial Range Top Retail/Wholesale Store Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Store	56	22	39.29%

### *Compact Audio Products*

This appliance was frequently found when conducting the retail/wholesale store surveys. Surveying eight sites yielded 71 items for data collection.

**Table 8: Compact Audio Products Retail/Wholesale Store Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Store	71	25	35.21%

### *Commercial Pre-Rinse Spray Valves*

For this appliance, 13 items were surveyed from eight different retail/wholesale stores.

**Table 9: Commercial Pre-Rinse Spray Valves Retail/Wholesale Store Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Store	13	8	61.54%

### *Computer Room Air-Cooled Air Conditioners*

This appliance was not found in any of the retail/wholesale stores surveyed.

### *Computer Room Water-Cooled Air Conditioners*

This appliance was also not found in any of the retail/wholesale stores that were surveyed.

### *DVD Players & DVD Recorders*

For this appliance, surveyors were able to survey 101 items from nine different retail/wholesale stores.

**Table 10: DVD Player & DVD Recorders Retail/Wholesale Store Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Store	101	13	12.87%

### *Evaporative Coolers*

There were five items surveyed from one retail/wholesale store. None of the items were found in the Database.

**Table 11: Evaporative Coolers Retail/Wholesale Store Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Store	5	5	100%

### *Infrared Gas Space Heaters (Patio Heaters & Non-Patio Heaters)*

Out of three sites that were surveyed for this appliance, the surveyor was able to collect data for nine models. None of the items could be located in the Database.

**Table 12: Infrared Gas Space Heaters (Patio Heaters & Non-Patio Heaters) Retail/Wholesale Store Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Store	9	9	100%

### *Metal Halide Luminaires*

In five surveyed sites, the surveyor was able to collect data for 13 items.

**Table 13: Metal Halide Luminaires Retail/Wholesale Store Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Store	13	13	100%

### *Portable (Spot) Air Conditioners*

This item was found at seven of the sites that were surveyed. At those sites, 48 items were found.

**Table 14: Portable (Spot) Air conditioners Retail/Wholesale Store Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Store	48	9	18.75%

### *Portable Luminaires*

This appliance was found at 12 sites, and from those sites, 132 items were found.

**Table 15: Portable Luminaires Retail/Wholesale Store Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Store	132	63	47.73%

### *Refrigerated Canned/Bottled Beverage Vending Machines*

The surveyors were unable to collect data for this appliance at any of the sites surveyed. These machines are typically not distributed via traditional retail/wholesale storefronts. The specialty locations we attempted to visit were not staffed during regular business hours or refused the survey.

### *Refrigerators w/o Doors (For Beverages)*

This appliance was found at four sites and six items were surveyed.

**Table 16: Refrigerators w/o Doors Retail/Wholesale Store Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Store	6	5	83.33%

### *Residential Exhaust Fan*

With the ten retail/wholesale store surveys that were conducted, data was collected for a sampling of 128 items.

**Table 17: Residential Exhaust Fan Retail/Wholesale Store Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Store	128	28	21.88%

### *Residential Pool Pumps*

This item was found at four sites, and from those sites, 83 items were surveyed.

**Table 18: Residential Pool Pumps Retail/Wholesale Store Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Store	83	34	40.96%

*Residential Wine Chillers*

Out of nine sites, 32 items were surveyed.

**Table 19: Residential Wine Chillers Retail/Wholesale Store Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Store	32	10	31.25%

*Showerheads*

There were 422 items surveyed from 24 sites for this appliance. This appliance was located with the greatest frequency of any appliance type.

**Table 20: Showerheads Retail/Wholesale Store Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Store	422	309	73.22%

*Televisions*

From nine sites, 118 items were surveyed.

**Table 21: Televisions Retail/Wholesale Store Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Store	118	20	16.95%

*Tub Spout Diverters*

The 89 items that were surveyed came from 13 selected sites.

**Table 22: Tub Spout Diverters Retail/Wholesale Store Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Store	89	65	73.03%

*Water Dispensers*

The 19 items that were surveyed were found at nine sites.

**Table 23: Water Dispensers Retail/Wholesale Store Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Store	19	10	52.63%

*Whole House Fans*

From four sites, eight items were surveyed, and all were found in the Database.

**Table 24: Whole House Fans Retail/Wholesale Store Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Store	8	0	0%

**Summary of Retail/Wholesale Store Findings**

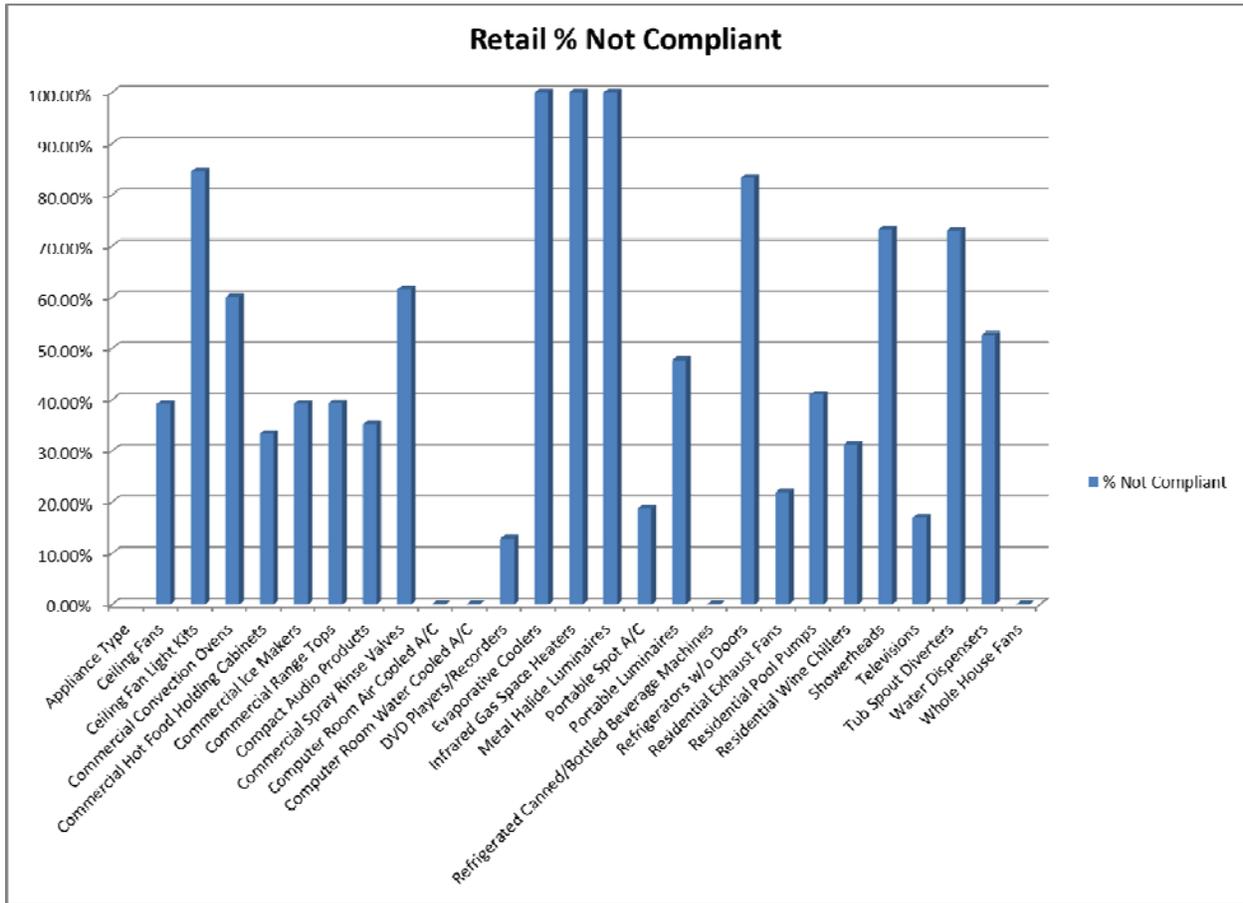
The table and figures below are a summary of the findings for the retail/wholesale store surveys. A few appliances not typically sold through normal retail or distributor storefronts were not found when store surveys were conducted.

**Table 25: Summary of Retail/Wholesale Store Findings**

Appliance Categories	% Not In Database
Whole House Fans	0.00%
DVD Players & DVD Recorders	12.87%
Televisions	16.95%
Portable (Spot) Air Conditioners	18.75%
Residential Exhaust Fans	21.88%
Residential Wine Chillers	31.25%
Commercial Hot Food Holding Cabinets	33.33%
Compact Audio Products	35.21%
Ceiling Fans (Excluding Low-Profile Ceiling Fans)	39.17%
Commercial Ice Makers (Automatic Commercial Ice Makers)	39.22%
Commercial Range Tops	39.29%
Residential Pool Pumps	40.96%
Portable Luminaires	47.73%
Water Dispensers	52.63%
Commercial Convection Ovens	60.00%
Commercial Pre-Rinse Spray Valves	61.54%
Tub Spout Diverters	73.03%
Showerheads	73.22%
Refrigerators w/o Doors (For Beverages)	83.33%
Ceiling Fan Light Kits	84.54%
Evaporative Coolers	100.00%
Infrared Gas Space Heaters (Patio Heaters & Non-Patio Heaters)	100.00%
Metal Halide Luminaires	100.00%
Computer Room Water-Cooled Air Conditioners	None Found
Refrigerated Canned/Bottled Beverage Vending Machines	None Found
Computer Room Air-Cooled Air Conditioners	None Found



Figure 2: Retail Items % Not Compliant Bar Graph



## Catalog and Internet Surveys

### **Catalog and Internet Selection**

Two methods were used when selecting the websites for the surveys:

- Web searches were used to locate the appliances on manufacturer, distributor, retailer and auction websites.
- The Energy Commission's Appliance Efficiency Database was referenced to identify manufacturers to survey.

### **Catalog and Internet Challenges**

There were some challenges that surfaced during the work on the website and catalog surveys. Due to the increase of web sales and web-based retail sites, more and more customers are utilizing the web to purchase products. Because of this, companies are opting to use a web-based catalog as paper catalogs were difficult to locate or obtain. In addition, some companies use their own numbering systems for identifying products in catalogs instead of the manufacturer's model number. This required some surveyors to cross-reference the company's website to locate the model number of a product.

Online catalogs and internet sites typically took longer to review than did paper catalogs. This is largely because the surveyor had to learn how to navigate through multiple pages on the website to obtain the needed data. Specifications for appliances were difficult to find or were not available to the consumer. Most websites did not directly indicate whether a certain appliance was intended for sale in California through the use of the caveat "not for sale in California."

Surveyors also encountered redundancy of data on distributor, manufacturer and retail websites. In most cases, the distributor websites had a link to the manufacturer's website. In other cases, both distributor and retail outlets offered the product, so surveying both parties in the supply chain resulted in capturing identical data. Resources could be better utilized in future appliance market surveys by eliminating the data collection requirement from the distributor sites.

The surveyors also encountered some problems collecting detailed data from auction sites. Individual sellers make decisions based on what information is listed for a given product, and frequently it did not contain data required by the contract. These sites typically do not indicate restrictions based on state requirements. These sites therefore provide the means for a California resident to buy a product that is not compliant with the regulations or listed in the Database.

### **Catalog and Internet Successes**

The team had some success increasing the number of distributor sites surveyed by first going to manufacturer websites to locate links to individual distributors.

### **Findings for Individual Items on the Survey List**

#### *Ceiling Fan Light Kits*

Websites surveyed included four manufacturer sites, two distributor sites, five retail websites and one auction website. The total number of items surveyed was 94.

**Table 26: Ceiling Fan Light Kits Internet and Catalog Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Manufacturer Internet	41	34	82.93%
Distributor Internet	11	11	100%
Retail Internet	32	10	31.25%
Auction Internet	10	9	90%
Catalog	0	0	

*Ceiling Fans (Excluding Low-Profile Ceiling Fans)*

Websites surveyed included four manufacturer sites, three distributor sites, seven retail websites, one auction website and one catalog. The total number of models surveyed was 131.

**Table 27: Ceiling Fans (Excluding Low-Profile Ceiling Fans) Internet and Catalog Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Manufacturer Internet	50	10	20%
Distributor Internet	16	11	68.75%
Retail Internet	48	17	35.42%
Auction Internet	10	9	90%
Catalog	7	7	100%

*Commercial Convection Ovens*

Websites surveyed included three manufacturer sites, three distributor sites, three retail sites, one auction website and two catalogs. The total number of models surveyed was 145.

**Table 28: Commercial Convection Ovens Internet and Catalog Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Manufacturer Internet	46	33	71.74%
Distributor Internet	39	27	69.23%
Retail Internet	33	18	54.55%
Auction Internet	10	7	70%
Catalog	17	7	41.18%

*Commercial Hot Food Holding Cabinets*

Websites surveyed included three manufacturer sites, five distributor sites, three retail sites, one auction website and two catalogs. The total number of model surveyed was 101.

**Table 29: Commercial Hot Food Holding Cabinets Internet and Catalog Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Manufacturer Internet	32	28	87.50%
Distributor Internet	32	11	34.38%
Retail Internet	22	7	31.82%
Auction Internet	1	1	100%
Catalog	14	3	21.43%

### *Commercial Ice Makers (Automatic Commercial Ice Makers)*

Websites surveyed included three manufacturer sites, four distributor sites, two retail websites, one auction website and two catalogs. The total number of models surveyed was 154.

**Table 30: Commercial Ice Makers (Automatic Commercial Ice Maker) Internet and Catalog Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Manufacturer Internet	49	5	10.20%
Distributor Internet	49	21	42.86%
Retail Internet	27	9	33.33%
Auction Internet	6	4	66.67%
Catalog	23	9	39.13%

### *Commercial Range Tops*

Websites surveyed included three manufacturer sites, four distributor sites, two retail internet sites, one auction website and two catalogs. The total number of models surveyed was 119.

**Table 31: Commercial Range Tops Internet and Catalog Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Manufacturer Internet	40	22	55%
Distributor Internet	37	15	40.54%
Retail Internet	18	6	33.33%
Auction Internet	5	2	40%
Catalog	19	5	26.32%

### *Compact Audio Products*

Websites surveyed included three manufacturer sites, two retail sites, one auction website and one catalog. The total number of models surveyed was 49.

**Table 32: Compact Audio Products Internet and Catalog Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Manufacturer Internet	19	12	63.16%
Distributor Internet	0	0	
Retail Internet	16	7	43.75%
Auction Internet	10	4	40%
Catalog	4	1	25%

### *Commercial Pre-Rinse Spray Valves*

Websites surveyed included four manufacturer sites, two distributor sites, two retail sites, one auction site and two catalogs. The total number of models surveyed was 63.

**Table 33: Commercial Pre-Rinse Spray Valves Internet and Catalog Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Manufacturer Internet	32	13	40.63%
Distributor Internet	7	4	57.14%
Retail Internet	12	1	8.33%
Auction Internet	8	2	25%
Catalog	4	2	50%

*Computer Room Air-Cooled Air Conditioners*

Websites surveyed included one manufacturer site and one retail site. The total number of models surveyed was seven.

**Table 34: Computer Room Air-Cooled Air Conditioners Internet and Catalog Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Manufacturer Internet	6	6	100%
Distributor Internet	1	1	100%
Retail Internet	0	0	
Auction Internet	0	0	
Catalog	0	0	

*Computer Room Water-Cooled Air Conditioners*

Websites surveyed included one manufacturer site and two retail sites. The total number of models surveyed was 17.

**Table 35: Computer Room Water-Cooled Air Conditioners Internet and Catalog Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Manufacturer Internet	10	8	80%
Distributor Internet	7	7	100%
Retail Internet	0	0	
Auction Internet	0	0	
Catalog	0	0	

*DVD Players & DVD Recorders*

Websites surveyed included three manufacturer sites, one distributor site, two retail sites, one auction site and one catalog. The total number of models surveyed was 65.

**Table 36: DVD Players & DVD Recorders Internet and Catalog Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Manufacturer Internet	16	0	0%
Distributor Internet	11	4	36.36%
Retail Internet	22	5	22.73%
Auction Internet	10	1	10%
Catalog	6	3	50%

### *Evaporative Coolers*

Websites surveyed included three manufacturer sites, three distributor sites, three retail sites and one auction site. The total number of models surveyed was 94.

**Table 37: Evaporative Coolers Internet and Catalog Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Manufacturer Internet	54	18	33.33%
Distributor Internet	26	1	3.85%
Retail Internet	4	2	50%
Auction Internet	10	0	0%
Catalog	0	0	

### *Infrared Gas Space Heaters (Patio Heaters & Non-Patio Heaters)*

Websites surveyed included four manufacturer sites, three retail sites, one auction site and one catalog. The total number of models surveyed was 37.

**Table 38: Infrared Gas Space Heaters (Patio Heaters & Non-Patio Heaters) Internet and Catalog Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Manufacturer Internet	19	19	100%
Distributor Internet	0	0	
Retail Internet	15	15	100%
Auction Internet	1	1	100%
Catalog	2	2	100%

### *Metal Halide Luminaires*

Websites surveyed included three manufacturer sites, one distributor site, two retail sites and one auction site. The total number of models surveyed was 73.

**Table 39: Metal Halide Luminaires Internet and Catalog Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Manufacturer Internet	53	53	100%
Distributor Internet	3	3	100%
Retail Internet	12	12	100%
Auction Internet	5	5	100%
Catalog	0	0	

### *Portable (Spot) Air Conditioners*

Websites surveyed included five manufacturer sites, two distributor sites, three retail internet sites, one auction site and one catalog. The total number of models surveyed was 79.

**Table 40: Portable (Spot) Air Conditioners Internet and Catalog Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Manufacturer Internet	32	7	21.88%
Distributor Internet	10	8	80%
Retail Internet	22	9	40.91%
Auction Internet	5	5	100%
Catalog	10	10	100%

*Portable Luminaires*

Websites surveyed included 12 manufacturer sites, one distributor site, three retail sites, one auction site and two catalogs. The total number of models surveyed was 132.

**Table 41: Portable Luminaires Internet and Catalog Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Manufacturer Internet	55	55	100%
Distributor Internet	4	4	100%
Retail Internet	32	27	84.38%
Auction Internet	7	1	14.29%
Catalog	34	34	100%

*Refrigerated Canned/Bottled Beverage Vending Machines*

Websites surveyed included four manufacturer sites, two distributor sites, two retail sites and one auction site. The total number of models surveyed was 61.

**Table 42: Refrigerated Canned/Bottle Beverage Vending Machines Internet and Catalog Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Manufacturer Internet	35	34	97.14%
Distributor Internet	12	11	91.67%
Retail Internet	10	10	100%
Auction Internet	4	4	100%
Catalog	0	0	

*Refrigerators w/o Doors (For Beverages)*

Websites surveyed included four manufacturer sites, two distributor sites, two retail sites, one auction site and two catalogs. The total number of models surveyed was 115.

**Table 43: Refrigerators w/o Doors (For Beverages) Internet and Catalog Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Manufacturer Internet	51	50	98.04%
Distributor Internet	15	9	60%
Retail Internet	23	18	78.26%
Auction Internet	5	3	60%
Catalog	21	15	71.43%

### *Residential Exhaust Fans*

Websites surveyed included five manufacturer sites, two distributor sites, two retail sites and one auction site. The total number of models surveyed was 70.

**Table 44: Residential Exhaust Fans Internet and Catalog Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Manufacturer Internet	30	18	60%
Distributor Internet	20	3	15%
Retail Internet	16	3	18.75%
Auction Internet	4	0	0%
Catalog	0	0	

### *Residential Pool Pumps*

Websites surveyed included three manufacturer sites, two distributor sites, two retail sites, one auction site and one catalog. The total number of models surveyed was 110.

**Table 45: Residential Pool Pumps Internet and Catalog Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Manufacturer Internet	61	41	67.21%
Distributor Internet	35	18	51.43%
Retail Internet	4	4	100%
Auction Internet	9	9	100%
Catalog	1	1	100%

### *Residential Wine Chillers*

Websites surveyed included five manufacturer sites, two distributor sites, three retail internet sites, one auction site and one catalog. The total number of models surveyed was 88.

**Table 46: Residential Wine Chillers Internet and Catalog Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Manufacturer Internet	49	16	32.65%
Distributor Internet	5	4	80%
Retail Internet	17	4	23.53%
Auction Internet	8	4	50%
Catalog	9	8	88.89%

### *Showerheads*

Websites surveyed included five manufacturer sites, three distributor sites, two retail sites and one auction site. The total number of models surveyed was 98.

**Table 47: Showerheads Internet and Catalog Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Manufacturer Internet	57	50	87.72%
Distributor Internet	22	19	86.36%
Retail Internet	10	8	80%
Auction Internet	9	1	11.11%
Catalog	0	0	

*Televisions*

Websites surveyed included five manufacturer sites, three distributor sites, five retail sites, one auction site and one catalog. The total number of models surveyed was 132.

**Table 48: Televisions Internet and Catalog Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Manufacturer Internet	50	17	34%
Distributor Internet	22	4	18.18%
Retail Internet	34	11	32.35%
Auction Internet	9	3	33.33%
Catalog	17	2	11.76%

*Tub Spout Diverters*

Websites surveyed included three manufacturer sites, two distributor sites, two retail sites and one auction site. The total number of models surveyed was 65.

**Table 49: Tub Spout Diverters Internet and Catalog Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Manufacturer Internet	26	16	61.54%
Distributor Internet	11	1	9.09%
Retail Internet	21	13	61.90%
Auction Internet	7	5	71.43%
Catalog	0	0	

*Water Dispensers*

Websites surveyed included five manufacturer sites, two distributor sites, three retail sites and one auction site. The total number of models surveyed was 58.

**Table 50: Water Dispensers Internet and Catalog Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Manufacturer Internet	35	35	100%
Distributor Internet	9	4	44.44%
Retail Internet	8	3	37.50%
Auction Internet	6	5	83.33%
Catalog	0	0	

### Whole House Fans

Websites surveyed included four manufacturer sites, three retail sites, one auction site and one catalog. The total number of models surveyed was 55.

**Table 51: Whole House Fans Internet and Catalog Findings**

Survey Type	Total Items	Not in Database	% Not in Database
Manufacturer Internet	29	8	27.59%
Distributor Internet	0	0	
Retail Internet	22	3	13.64%
Auction Internet	3	2	66.67%
Catalog	1	1	100%

### Summary of Internet and Catalog Findings

The table and figures below are a summary of the findings for the internet and catalog surveys.

**Table 52: Summary of Internet and Catalog Findings**

Appliance Categories	% Not In Database
DVD Players & DVD Recorders	20.00%
Evaporative Coolers	22.34%
Whole House Fans	25.45%
Televisions	28.03%
Commercial Ice Makers (Automatic Commercial Ice Makers)	31.17%
Residential Exhaust Fans	34.29%
Commercial Pre-Rinse Spray Valves	34.92%
Residential Wine Chillers	40.91%
Ceiling Fans (Excluding Low-Profile Ceiling Fans)	41.22%
Commercial Range Tops	42.00%
Compact Audio Products	48.98%
Portable (Spot) Air Conditioners	49.37%
Commercial Hot Food Holding Cabinets	49.50%
Tub Spout Diverters	53.85%
Commercial Convection Ovens	63.45%
Residential Pool Pumps	66.36%
Ceiling Fan Light Kits	68.09%
Showerheads	79.59%
Water Dispensers	81.03%
Refrigerators w/o Doors (For Beverages)	82.61%
Computer Room Water-Cooled Air Conditioners	88.24%
Portable Luminaires	91.67%
Refrigerated Canned/Bottled Beverage Vending Machines	96.72%
Computer Room Air-Cooled Air Conditioners	100.00%
Infrared Gas Space Heaters (Patio Heaters & Non-Patio Heaters)	100.00%
Metal Halide Luminaires	100.00%

Figure 3: Total Internet/Catalog Items Surveyed Pie Chart

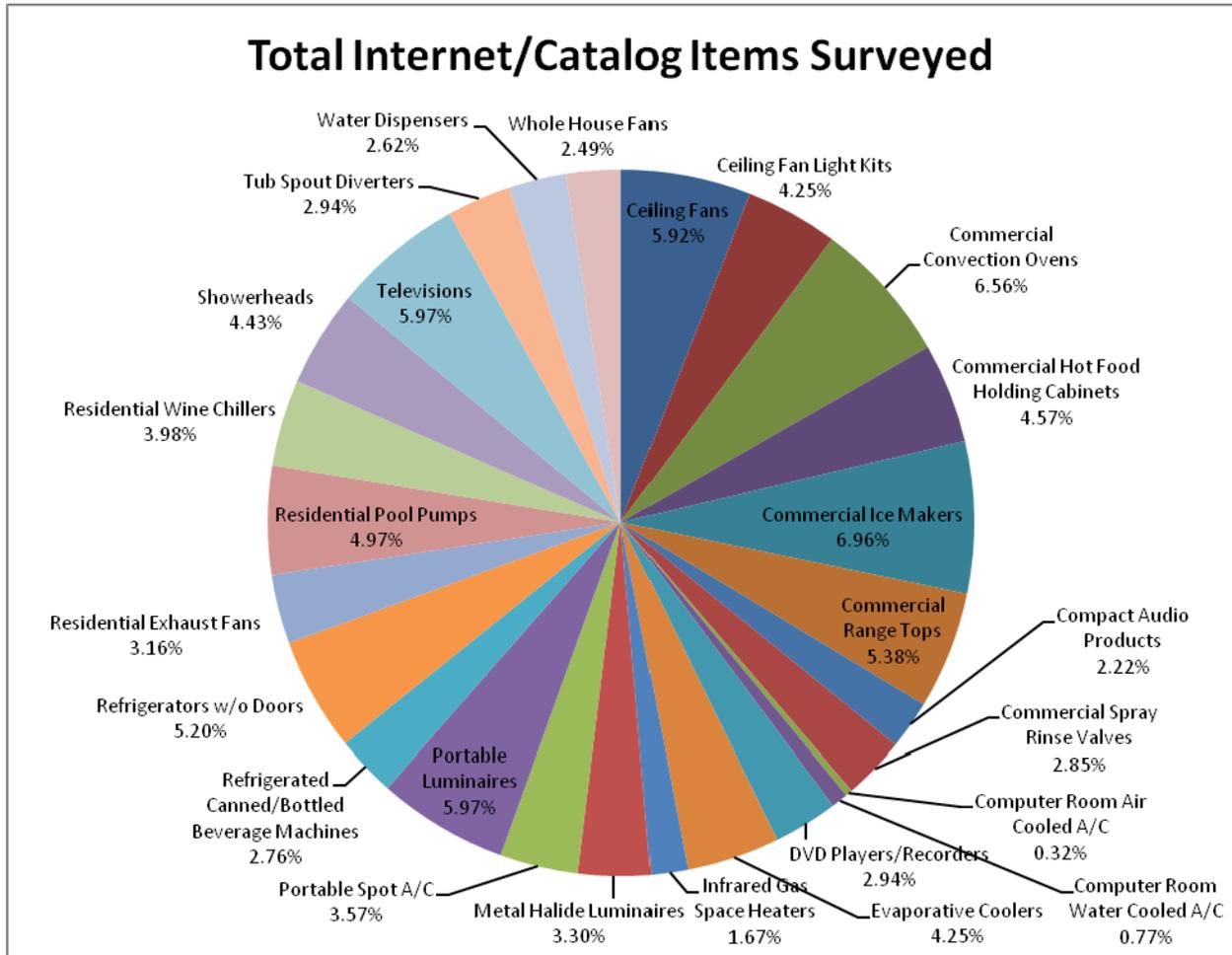
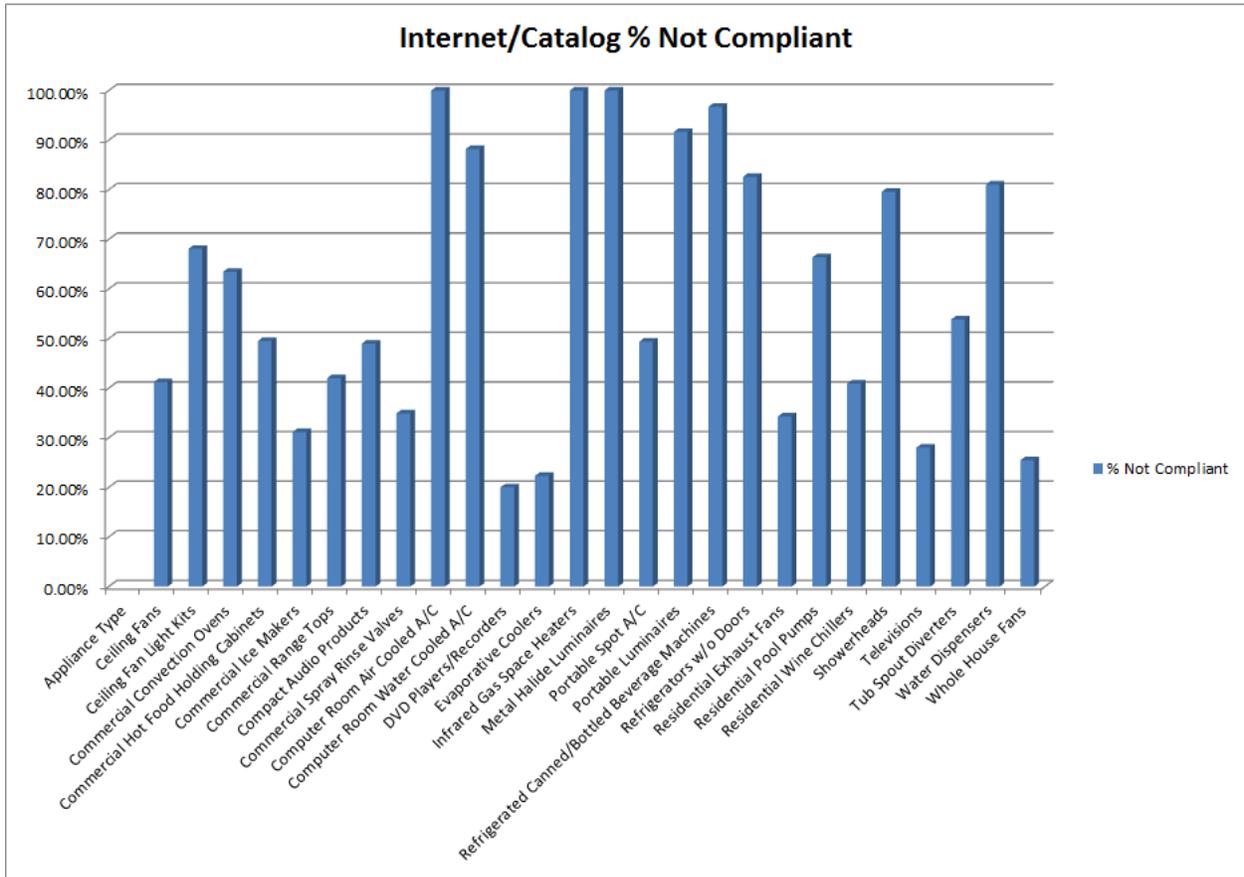


Figure 4: Internet/Catalog % Not Compliant Bar Graph



# Project Evaluation

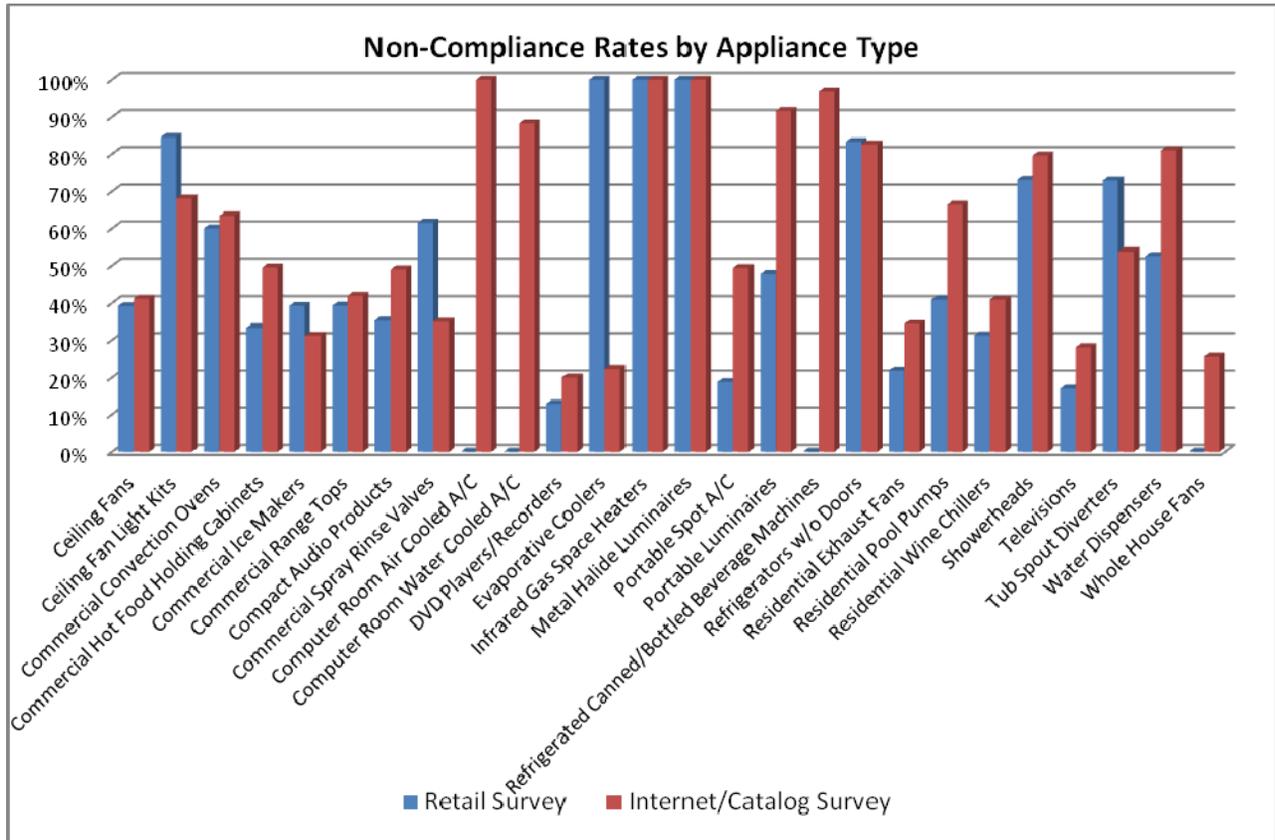
## Appliance Compliance Summary

For the purposes of this project, an appliance model was considered non-compliant if it was found to be offered for sale in the state of California and not listed in the Energy Commission’s Appliance Database. The table below (Figure 53) is a summary of all the data collected from the various types of surveys and the percentage of non-compliance per appliance type. The appliance categories are listed in order from most compliant to least compliant.

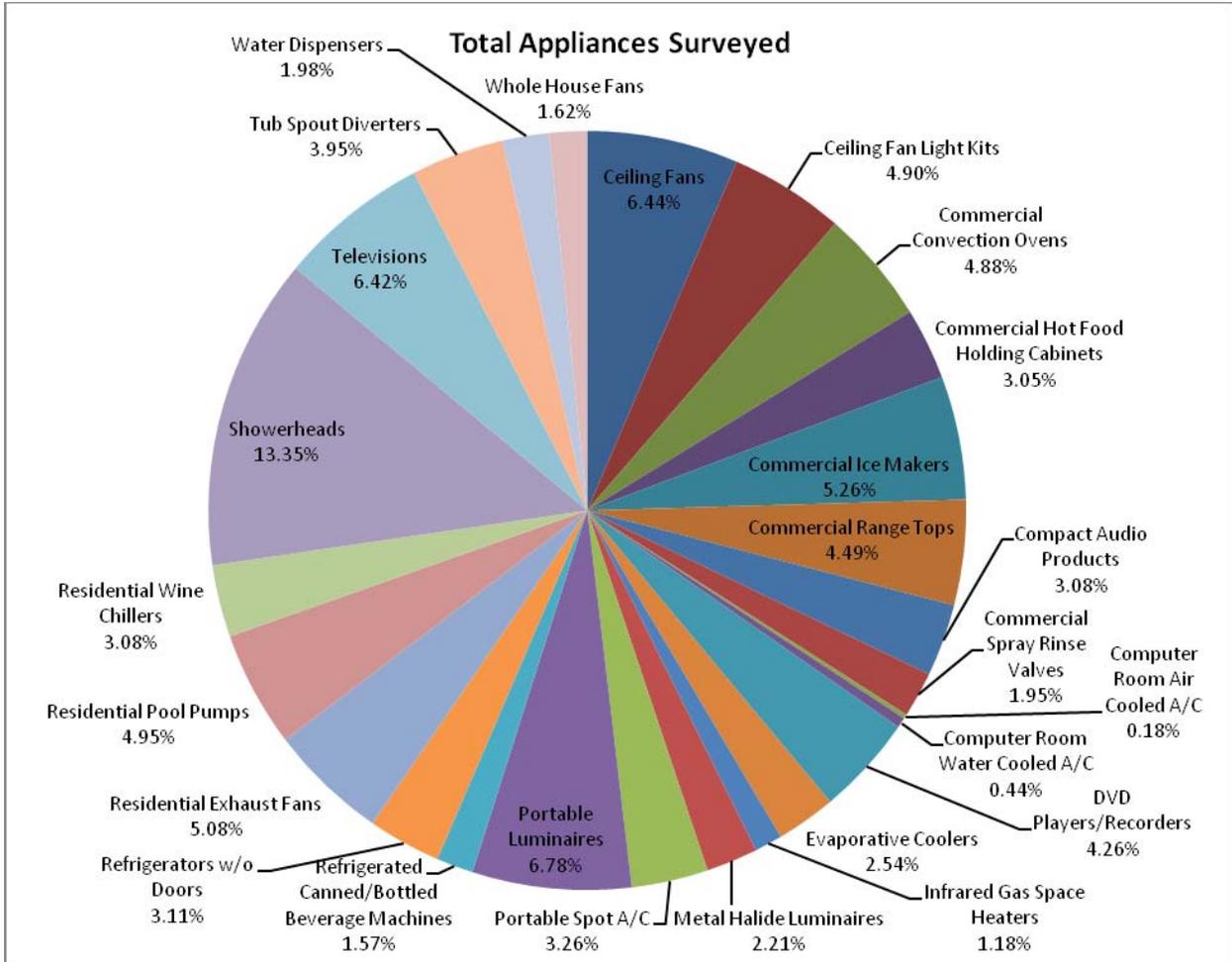
**Table 53: Rates of Non-Compliance, by Appliance Type**

<b>Appliance Categories</b>	<b>% Non-Compliant</b>
DVD Players & DVD Recorders	15.66%
Whole House Fans	22.22%
Televisions	22.80%
Evaporative Coolers	26.26%
Residential Exhaust Fans	26.26%
Commercial Ice Makers (Automatic Commercial Ice Makers)	33.17%
Portable (Spot) Air Conditioners	37.80%
Residential Wine Chillers	38.33%
Commercial Pre-Rinse Spray Valves	39.47%
Ceiling Fans (Excluding Low-Profile Ceiling Fans)	40.24%
Compact Audio Products	40.83%
Commercial Range Tops	41.14%
Commercial Hot Food Holding Cabinets	47.06%
Residential Pool Pumps	55.44%
Commercial Convection Ovens	62.63%
Tub Spout Diverters	64.94%
Portable Luminaires	69.70%
Water Dispensers	74.03%
Showerheads	74.42%
Ceiling Fan Light Kits	76.44%
Refrigerators w/o Doors (For Beverages)	82.64%
Computer Room Water-Cooled Air Conditioners	88.24%
Refrigerated Canned/Bottled Beverage Vending Machines	96.72%
Computer Room Air-Cooled Air Conditioners	100.00%
Infrared Gas Space Heaters (Patio Heaters & Non-Patio Heaters)	100.00%
Metal Halide Luminaires	100.00%

Figure 5: Retail vs. Internet/Catalog - % Not Compliant Bar Graph



**Figure 6: Total Retail/Internet/Catalog Items Surveyed Pie Chart**



## Appliance Tracking

### Appliance Tracking System

A specialized tracking system was created to collect and store data that was gathered from the surveys and to track progress toward goals identified in the statement of work. The system allows real time look at what progress has been made by showing running counts of survey sites and appliances surveyed. The system requires users to have a username and password to access the system. The system consists of four main sections:

- Home Tab: Allows the surveyors and contract manager to look at progress toward the contract goals.
- Items Tab: Where appliances are entered into the tracking system.
- Surveys Tab: Where surveyed sites are entered into the tracking system.
- Reports Tab: Where project managers and contract managers can run individual reports that will give them a detailed look at data and project elements.

The site helps the team enter data utilizing the following steps:

- Gather data: Surveyors obtain the required data for the appliance type they are researching from websites, catalogs or stores.
- Create survey: This information becomes an appliance 'item' that is attached to a particular survey. Surveyors can create a new survey or modify one they have already created.
- Locate existing items and add to survey: Frequently appliances have already been defined via a prior survey so the surveyors first look to see if this item is available in the database. If so, they attach the item and add notes if needed.
- Enter new items and add to survey: For the first instance of a particular appliance, the surveyor completes the 'create new' function on the appliance index page and characterizes the appliance.

Data in the database undergoes a quality assurance process before it is sent to the Commission. The following steps are utilized for the QC process:

- A custom database report is created that shows 'items not in CEC database' that have not yet been QC'd.
- The QC analyst looks up the items to confirm not they are not in database.
- The QC analyst also looks up the items through an internet search engine such as Google to confirm that that particular model number is good (that it actually exists) and is not just a typo or misprint.
- If the analyst finds that the model number is legitimate and the item is in the database, he or she makes the change and checks the QC field.
- If item is verified to be 'not in the CEC database' the item is left as is and the QC field is checked.

## Screen Shots from the Tracking System

Figure 7: Tracking System's Appliance Survey Status Page

Welcome **jeremy!** [ [Log Off](#) ]

# CEC Appliance Survey

Home
Items
Surveys
Reports

### Index

#### Commercial Use Product

Item Type	Store	Mfg. Internet	Dist. Internet	Retail Internet	Auction Internet	Catalog	Total
<a href="#">Commercial Convection Ovens</a>	7 /1	3 /3	3 /2	3 /2	1 /1	2 /3	19
<a href="#">Commercial Hot Food Holding Cabinets</a>	6 /1	3 /3	5 /2	3 /2	1 /1	2 /3	20
<a href="#">Commercial Range Tops</a>	11 /1	3 /3	4 /2	2 /2	1 /1	2 /3	23
<a href="#">Refrigerated Canned/Bottled Beverage Vending Machines</a>	0 /1	4 /3	2 /2	2 /2	1 /1	0 /3	9
<a href="#">Refrigerators w/o Doors for Beverages</a>	4 /1	4 /3	2 /2	2 /2	1 /1	2 /3	15
<a href="#">Automatic Commercial Ice Makers</a>	8 /1	3 /3	4 /2	2 /2	1 /1	2 /3	20
<a href="#">Commercial Pre-Rinse Sprav Valves</a>	8 /1	4 /3	2 /2	2 /2	1 /1	2 /3	19

#### Entertainment Electronics

Item Type	Store	Mfg. Internet	Dist. Internet	Retail Internet	Auction Internet	Catalog	Total
<a href="#">Compact Audio Products</a>	8 /1	3 /3	0 /2	2 /2	1 /1	1 /3	15
<a href="#">DVD Player and Recorders</a>	9 /1	3 /3	1 /2	2 /2	1 /1	1 /3	17
<a href="#">Televisions</a>	9 /1	5 /3	3 /2	5 /2	1 /1	1 /3	24

#### Hardware and Building Improvement

#### Specialty Niche Item

Item Type	Store	Mfg. Internet	Dist. Internet	Retail Internet	Auction Internet	Catalog	Total
<a href="#">Computer Room Air-Cooled Air Conditioners</a>	0 /1	1 /3	1 /2	0 /2	0 /1	0 /3	2
<a href="#">Computer Room Water Cooled Air Conditioners</a>	0 /1	1 /3	2 /2	0 /2	0 /1	0 /3	3

Figure 8: Tracking System's Showerheads Items Page

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## CEC Appliance Survey

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### Appliance Index

Show **10** entries Search:

	Item Type	Manufacturer	Brand	Model Number	Capacity	Energy Use	InDB	Entered By
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	GROHE	GROHE	28375	N/R	2.0 gpm	No	rdjames1383
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	GROHE	GROHE	28737000	N/R	2.0 gpm	No	rdjames1383
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	GROHE	GROHE	28342000	N/R	1.5 gpm	No	rdjames1383
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	Aquabross	Aquabross	2508	N/R	2.5 gpm	No	rdjames1383
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	Aquabross	Aquabross	809	N/R	2.5 gpm	No	rdjames1383
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	Aquabross	Aquabross	2412	N/R	2.5 gpm	No	rdjames1383
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	Aquabross	Aquabross	803	N/R	2.5 gpm	No	rdjames1383
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	TOTO	Aimes	TS626	N/R	2.5 gpm	No	rdjames1383
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	TOTO	Aquia	TS416A	N/R	2.5 gpm	No	rdjames1383
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	TOTO	Soiree	TS960A	N/R	2.0 gpm	No	rdjames1383

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Figure 9: Tracking System's Survey List Page

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## CEC Appliance Survey

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### Survey Index

Show **10** entries Search:

#		Survey Type	Business Name	Phone	Visit Date	Contact
1	<a href="#">Edit</a>   <a href="#">Details</a>	Retail Internet	Target	1-800-440-0680	5/16/2012	<a href="http://www.target.com/">http://www.target.com/</a>
2	<a href="#">Edit</a>   <a href="#">Details</a>	Manufacturer Internet	Sony	201-930-1000	5/17/2012	<a href="http://www.sony.com/index.php">http://www.sony.com/index.php</a>
3	<a href="#">Edit</a>   <a href="#">Details</a>	Store	Fry's Electronics	916-517-1500	7/24/2012	none
4	<a href="#">Edit</a>   <a href="#">Details</a>	Retail Internet	Ace Mart Restaurant Supply	1-888-898-8079	6/13/2012	<a href="http://www.acemart.com">http://www.acemart.com</a>
5	<a href="#">Edit</a>   <a href="#">Details</a>	Retail Internet	RC Willey	801-461-3900	6/14/2012	<a href="http://www.rcwilley.com/">http://www.rcwilley.com/</a>
6	<a href="#">Edit</a>   <a href="#">Details</a>	Store	Target	(858) 679-8202	6/16/2012	N/A
7	<a href="#">Edit</a>   <a href="#">Details</a>	Store	Faucet World	760-436-0088	6/16/2012	N/A
8	<a href="#">Edit</a>   <a href="#">Details</a>	Store	HOME DEPOT	(760) 432-9600	6/16/2012	N/A
9	<a href="#">Edit</a>   <a href="#">Details</a>	Store	Kmart	209-826-8866	6/25/2012	No contact
10	<a href="#">Edit</a>   <a href="#">Details</a>	Store	Carter Hardware	(310) 657-1940	6/14/2012	Did not get a name.

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Figure 10: Tracking System's Items Page

Welcome **jeremy!** [ [Log Off](#) ]

## CEC Appliance Survey

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### Appliance Index

Show **10** entries Search:

	Item Type	Manufacturer	Brand	Model Number	Capacity	Energy Use	InDB	Entered By
<a href="#">Edit</a>   <a href="#">Details</a>	Ceiling Fans (not low profile)	Hunter	Hunter	28528	N/R	N/R	Yes	jeremy
<a href="#">Edit</a>   <a href="#">Details</a>	Ceiling Fans (not low profile)	Hunter	Hunter	21434	N/R	N/R	Yes	jeremy
<a href="#">Edit</a>   <a href="#">Details</a>	Compact Audio Products	Sony	Sony	ICF-CDK50	N/R	N/A	No	jeremy
<a href="#">Edit</a>   <a href="#">Details</a>	Ceiling Fans (not low profile)	Hunter	Hunter	23781	N/R	N/R	Yes	jeremy
<a href="#">Edit</a>   <a href="#">Details</a>	Ceiling Fans (not low profile)	Click-In Ceiling Fan	Click-In Ceiling fan	Missing	N/R - N/R - N/R - N/R	N/R - N/R - N/R - N/R	No	jeremy
<a href="#">Edit</a>   <a href="#">Details</a>	Commercial Convection Ovens	Hobart	Hobart	HOBHCC501	44,000 BTUs output	NR	No	Dania
<a href="#">Edit</a>   <a href="#">Details</a>	Commercial Convection Ovens	Waring	Waring	WC0500	1700 watts output	NR	No	Dania
<a href="#">Edit</a>   <a href="#">Details</a>	Commercial Convection Ovens	Moffat	Moffat	E31D4-208	NA	NR	No	Dania
<a href="#">Edit</a>   <a href="#">Details</a>	Compact Audio Products	Crosley Radio	Cathedral	CR32CD	N/R	N/A	No	jeremy
<a href="#">Edit</a>   <a href="#">Details</a>	Televisions	Coby Electronics, Corp.	Coby	TFTV1925	N/R	N/A	No	jeremy

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**Figure 11: Tracking System's Item Page Search Box**

The screenshot shows the 'CEC Appliance Survey' web application interface. At the top right, it says 'Welcome jeremy! [ Log Off ]'. Below the title, there are navigation buttons for 'Home', 'Items', 'Surveys', and 'Reports'. The main content area is titled 'Appliance Index' and features a search box with 'sony' entered. Below the search box is a table with columns: Item Type, Manufacturer, Brand, Model Number, Capacity, Energy Use, InDB, and Entered By. The table lists 10 items, all from Sony, including Compact Audio Products, Televisions, and DVD Player and Recorders. At the bottom of the table, it indicates 'Showing 1 to 10 of 53 entries (filtered from 3,065 total entries)' and includes pagination controls for 'First', 'Previous', '1', '2', '3', '4', '5', 'Next', and 'Last'. A 'Create New' link is also visible below the table.

Item Type	Manufacturer	Brand	Model Number	Capacity	Energy Use	InDB	Entered By
Compact Audio Products	Sony	Sony	ICF-CDK50	N/R	N/A	No	jeremy
Televisions	Sony	Sony	KDL-40BX450	N/R	N/A	Yes	jeremy
DVD Player and Recorders	Sony	Sony	DVP-SR210P	N/R - N/R - N/R	Standby 0.5W - N/A - N/A	Yes	rdjames1383
DVD Player and Recorders	Sony	Sony	DVP-SR510H	N/R - N/R	N/A - N/A	Yes	rdjames1383
Compact Audio Products	Sony	Sony	ICF-C707	N/R	N/A	No	eaguayo
Compact Audio Products	Sony	Serie X	RDP-X200IP	N/R	N/A	Yes	rdjames1383
DVD Player and Recorders	Sony	Sony	BDP-S185	N/R	N/A	Yes	jeremy
DVD Player and Recorders	Sony	Sony	BDP-S390	N/R	N/A	Yes	jeremy
DVD Player and Recorders	Sony	Sony	BDP-S590	N/R	N/A	Yes	jeremy
Compact Audio Products	Sony	Sony	ICF-CD3IPSL	N/R	N/A	Yes	eaguayo

## Reports Section

There are a few key reports that are run to help monitor and track project progress and accuracy.

- **Status report:** The status report is used by the project manager to view appliance and survey counts for the project and for each individual surveyor.
- **List of items not attached to a survey:** This report is run periodically to 'clean up' any unassigned items that surveyors may have created.
- **Summary of items by type:** This report provides the overall percentages of compliant and noncompliant items.
- **List of items not in database:** This report is provided so the Commission can have real time access to the data as we are collecting it. This provides them an indication of the relative rates of compliance.

Figure 12: Tracking System's Reports Page (Status Report)

Welcome **jeremy!** [ [Log Off](#) ]

## CEC Appliance Survey

Home Items Surveys Reports

### Index

#### Status Report

Show **25** entries Search:

Entered By	Store Surveys	Items on Store Surveys	Internet Surveys	Items on Internet Surveys
alex.chernyak	3	30	0	0
alyse	0	0	27	279
atbenning	1	94	0	0
brian	19	709	0	0
bsilva	1	35	0	0
dania	0	0	19	329
eaguayo	0	0	18	347
jeremy	10	490	17	356
matt.fung	1	46	0	0
michelle	0	0	9	131
mjdownes	3	58	0	0
rdjames1383	12	146	0	0
robin	7	76	12	370
sherie	0	0	26	400
Totals	57	1684	128	2212

Showing 1 to 15 of 15 entries [First](#) [Previous](#) 1 [Next](#) [Last](#)

Start Date  End Date

- [Status Report](#)
- [List of Items not in database](#)
- [List of Items not on Surveys](#)
- [Summary By Item Type \(Excel\)](#)
- [List of Items with Notes \(Excel\)](#)
- [List of 2012 Items with Model Numbers \(Excel\)](#)
- [2012 Appliance Survey Data \(Excel\)](#)

**Figure 13: Tracking System's Reports Page (Items Not in the Database)**

The screenshot shows the 'CEC Appliance Survey' interface. At the top right, it says 'Welcome jeremy! [ Log Off ]'. Below the title are navigation buttons for 'Home', 'Items', 'Surveys', and 'Reports'. The main content area is titled 'Index' and contains a section for 'Not In Database'. This section features a table with columns for Item Name, Category, Manufacturer, Brand, Model Number, Date Entered, and Entered By. The table lists ten items, all from ACE Hardware Corporation, including various showerheads and a faucet. Below the table, there are date filters for 'Start Date' (01-01-2012) and 'End Date' (03-31-2013), and a list of links for reports such as 'Status Report', 'List of Items not in database', and '2012 Appliance Survey Data (Excel)'.

Item Name	Category	Manufacturer	Brand	Model Number	Date Entered	Entered By
AA Faucet AA-910	Commercial Pre-Rinse Spray Valves	AA Faucet	AA Faucet	AA-910	1/22/2013	jeremy
ACE 40076	Showerheads	ACE Hardware Corporation	ACE	40076	1/7/2013	jeremy
ACE 40078	Showerheads	ACE Hardware Corporation	ACE	40078	1/4/2013	jeremy
ACE 40079	Showerheads	ACE Hardware Corporation	ACE	40079	1/4/2013	jeremy
ACE 4265328	Showerheads	ACE Hardware Corporation	ACE	4265328	1/9/2013	jeremy
ACE 45054	Showerheads	ACE Hardware Corporation	ACE	45054	1/8/2013	jeremy
ACE 45055	Showerheads	ACE Hardware Corporation	ACE	45055	1/8/2013	jeremy
ACE 49539	Showerheads	ACE Hardware Corporation	ACE	49539	1/8/2013	jeremy
ACE 520 A3320CP	Showerheads	ACE Hardware Corporation	ACE	520 A3320CP	1/21/2013	jeremy
ACE 520 A5139WT	Showerheads	ACE Hardware Corporation	ACE	520 A5139WT	1/21/2013	jeremy

## Recommendations

### Retail/Wholesale Store Surveys

The field survey occasionally ran into access issues that prevented surveyors from collecting data. Survey teams were refused access to stores on seven occasions. A few process changes may offer some improvement. First, an introduction letter on Commission letterhead could be provided to the surveyors, who could in turn share the letter with storeowners or managers. This would lend more credibility to the request and would provide a direct line for those managers who had questions about the surveys. Second, for the larger stores, the Commission could mail a letter directly to the corporate office seeking access to a list of locations. The survey teams frequently encountered delays and refusals based on the local stores' requirement to seek approval from a corporate office before granting access for surveys. Third, the Commission could consider pre-selecting all or some of the field sites and then work with sites directly to obtain permission for the survey team to visit. These process changes would remove the

spontaneity from the site visits; however, they increase the likelihood that each site visit will be productive. While continuing to survey some larger stores as a member of the public is a viable option, for some of the specialty stores this approach is not possible and the only option is to obtain pre-approval for a visit.

With the advent of smart phone technology and applications such as the QR/Barcode reader, on-site data collection is becoming more expedient for many products. This scan technology can be leveraged in the future to provide for a greater quantity of data collection since a portion of it could be collected in a more streamlined fashion.

### **Internet and Catalog Surveys**

Internet surveys in this study took longer to complete than retail/wholesale store surveys. This is because web retail sites can differ greatly in their layout as well as the information that is available, so the surveyor had to spend time identifying where to find the information that was required for the survey. It is recommended that the budget and time allotted for this task be increased.

Due to the increase of web-based sales and marketing, companies are opting to use a web-based catalog rather than a printed version. The Energy Commission may want to re-evaluate whether it is preferable to invest time and effort toward finding printed catalogs, which seem to be in the process of becoming obsolete, or to allow for screening via online catalogs. Collecting the paper catalogs is time consuming because the surveyors have to refer to the company's website and call the stores in order to locate the catalogs. In addition, the data that needs to be collected often does not make it into the catalog. In addition, there are cases where the identification number for an appliance in the catalog does not match the manufacturer's model number. Further efforts are needed to cross-reference the catalog numbers on the company's website, so that the appliance can be properly identified and looked up in the Database.

Surveyors found a redundancy of data on distributor, manufacturer and retail websites. It may be a better utilization of resources to eliminate the distributor requirement. Distributor websites were often difficult to find because distributors do not always maintain a public internet presence. When they were located, many of them would not have the items on their sites but would offer a link to the manufacturer's website.

### **Conclusion**

This project provided much needed 'eyes and ears' in the field to provide the raw data that the Energy Commission utilizes to improve compliance. For compliance improvement to be comprehensive and effective, a large amount of evidence needs to be collected on an ongoing basis. The next phase of this project will likely represent an evolution towards adding other types of evidence, such as photographs, to provide the Commission with more of the data they need to take effective action.