Fall 2011 California Lighting Retail Store Shelf Survey Report

Prepared for the California Public Utilities Commission Energy Division

Prepared by DNV KEMA Energy & Sustainability

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1. Executive Summary

1.1 Report Overview

Lighting retail store shelf surveys involve visits to retail stores to collect information about the lamps stocked in those stores. Field researchers gather detailed information regarding a variety of lamp types including packaging configurations, lamp style, manufacturer, wattage, price, and so on, to support evaluations of programs that utilize retail channels to promote the sale of energy-efficient lighting products.

As part of the Fall 2011 California Lighting Retail Store Shelf Surveys, field researchers visited 194 retail stores between September and November of 2011. The data collected through these efforts will support process, market, and impact evaluations of the California investor-owned utilities' (IOU) 2010-2012 Basic and Advanced Upstream Lighting Programs. As such, the Fall 2011 California Lighting Retail Store Shelf Survey study was designed to address multiple objectives:

- Assess the general availability, diversity, and pricing of both basic and advanced lamps currently available to consumers in California retail stores (as well as relative availability, diversity and pricing of basic versus advanced lamps; (see Section 1.2 below for definitions of advanced and non-advanced lamps);
- Obtain updated data to compare against baseline advanced lamp stocking data collected in 2009;
- Obtain early insights into the effects of Assembly Bill 1109 (the California Lighting Efficiency and Toxics Reduction Act) and the Energy Independence and Security Act of 2007 (EISA), including the relative presence or absence of lamps that are compliant with the standards set forth in the legislation as well as the relative presence or absence of non-compliant incandescent lamps remaining on retail store shelves;
- Assess the overall proportion of total energy-efficient lamp types versus other lamp types, and assess the proportion of energy-efficient lamps comprised by IOU-discounted lamps versus non-discounted products;
- Assess the proportion of total IOU-discounted lamps comprised by basic versus advanced lamp types;

- Collect data to support estimation of incremental costs between program-discounted lamps and comparable full-priced lamps; and
- Obtain updated market data on retail store stocking practices and pricing for light-emitting diode (LED) lamps.

The detailed data collected as part of the shelf surveys enables further examination of each of the above elements by retail channel, lamp type, and IOU service territory to reveal further details regarding the availability, diversity, and pricing of basic and advanced lamps available to California consumers.

1.2 Methods

This report primarily draws on shelf survey data collected during September through November (Fall) 2011 as part of CPUC evaluation, measurement and verification (EM&V) Work Order 13 - Lighting Programs Process Evaluation and Market Characterization. For the purpose of presenting changes in lighting availability, diversity, and pricing patterns over time, this report also includes data that were collected as part of the 2006-2008 Upstream Lighting Program (ULP) Evaluation.[1]

1.2.1 Overview

As part of the Fall 2011 California shelf survey effort, field researchers conducted 194 complete inventories (shelf surveys) in eight retail channels (discount, drug, grocery, hardware, home improvement, mass merchandise, membership club, and lighting & electronics). The Fall 2011 shelf survey database contains nearly 26,000 records. Each record includes key information regarding each store visited (such as the retail channel, store name, IOU service territory, and store address) as well as information specific to each package of lamps in the store, including model number, lamp type, base type, lamp shape, manufacturer, wattage, and number of lamps in each package. Additionally, field staff recorded the number of packages, whether or not the lamps are 3-way or dimmable, full price, discounted price and discount provider (if relevant), rated life, color temperature, lamp coating, lumens, wattages, and whether each model was 3-way, dimmable, and/or Energy Star labeled for each package of lamps.

[1] KEMA, Inc.; PA Consulting Group; Jai J. Mitchell Analytics; The Cadmus Group; ITRON, Inc., 2010. Final Evaluation Report: Upstream Lighting Program. Prepared for the California Public Utilities Commission Energy Division. Study ID: CPU0015.01. February 8, 2010.

1.2.2 Sampling Approach

Because there exists no comprehensive listing of all retail stores in California that sell replacement lamps, DNV KEMA relied upon the best available data to compile a sample frame (including IOU tracking databases and limited primary research). The sampling approach for the Fall 2011 shelf surveys involved four key principles:

(1) **Ensure enough sample points per channel to enable channel-to-channel comparisons.** The Fall 2011 shelf surveys include a balanced distribution of sample points across retail channels within each IOU service territory to enable comparison of results between channels. Target sample sizes by IOU territory included 75 stores each for PG&E and SCE, and 50 stores for SDG&E.

(2) **Ensure that both chain stores and independent stores are targeted within each retail channel.** Sample sizes were set to represent the proportion of IOU-discounted lamps shipped to chain stores versus independent stores across all IOUs.

(3) **Target stores that are participating in the IOUs' upstream lighting programs as well as those that are not participating.** We set targets for the Fall 2011 shelf survey sample to include 150 "participating stores" (75 percent of the targeted 200) and 50 nonparticipants (25 percent). The one exception is the membership club channel for which, in California during 2010-2011, there were no nonparticipating stores.

(4) **Balance the need for geographic representativeness with budget and timing constraints.** DNV KEMA staff created regional "clusters" within the sample frame and targeted a range of geographic regions when choosing sample points based on the proportion of IOU-discounted lamps shipped to each region. While other practical considerations constrained our ability to select stores in a given region—such as which retail stores were available in each region within each retail channel, and the travel distance between stores—the ultimate selection of sample points attempted to reflect reasonable geographic distribution within each IOU service territory.

Due to challenges in obtaining data from the lighting & electronics channel, this channel was dropped from the study. The report presents results for 184 retail stores in which shelf surveys were conducted in Fall 2011. These include 27 stores each within the discount, drug, grocery,

and hardware channels, 26 each in the home improvement and membership club channels, and 24 in the mass merchandise channel.

1.3 Summary of Findings

Below we present key findings from the Fall 2011 shelf surveys in terms of lamp availability, diversity, and pricing.

1.4 Availability and Diversity

The availability and diversity of lamps are key metrics for describing lamps stocking practices and differences in stocking practices among retail channels.

1.4.1 Percent of Stores Carrying Lamps by Lamp Type

The percentage of stores carrying lamps by lamp type is an indicator of lamp availability in the market. Key findings include:

- Incandescent lamps and basic CFLs were present across all retail channels in our Fall 2011 sample.[2] Field researchers observed basic CFLs in all of the membership clubs in our sample but observed incandescent lamps only in one-fifth of membership clubs.
- LED lamps (mostly reflectors and A-lamps) were present in more than half of the stores we visited overall, and more than 90 percent of home improvement stores and membership clubs carried LEDs in Fall 2011.
- There was very little difference in advanced lamp and non-advanced lamp penetration between 2008-2009 and Fall 2011 (advanced lamps were present in more than four-fifths of all stores in both periods and non-advanced lamps were in nearly every store in both periods). Among the subset of big box store comparisons between 2009 and Fall 2011, there was also little difference between 2009 and Fall 2011 (penetration for advanced lamps and non-advanced lamps was nearly 100 percent in both periods).

[2] With the exception of Sections 3.1.3 (EISA-Compliant and Non-Compliant Incandescent Lamps) and 3.2 (Pricing), we do not break out incandescent lamps by different styles and base types in data tables. As such, it is important to point out that data presented in tables comparing basic CFLs and incandescents are not always ideally aligned to allow for like-to-like comparisons between lamp categories. The same is true for High Intensity Discharge (HID) lamps, which, like incandescent lamps, are not broken out by lamp style and base type.

- The most notable difference is the increased penetration of LEDs from 2008-2009 compared to Fall 2011 (more than a third of stores carried LEDs in 2008-2009 and more than half carried LEDs in Fall 2011). With the exception of mass merchandise and discount stores, every channel showed an increase in LED penetration in Fall 2011 compared to 2008-2009. The subset of big box store comparisons between 2009 and Fall 2011 showed a similar increase in LED penetration.

1.4.2 Percent of Total Lamps and Total Packages

The percentage of total lamps and total lamp packages observed in retail stores is an indicator of the relative availability of these product types. Key findings include:

- Field researchers observed that non-advanced lamps comprised a greater proportion of total lamps in the non non-big box stores (discount, drug, grocery, and small hardware) than in big box stores, representing at least 9 out of 10 lamps in the non-big box stores we visited in Fall 2011.
- The stocking of advanced and non-advanced lamps in large home improvement stores more closely mirrored the proportions in non-big box stores than in the other big box channels, with nearly 90 percent of the lamps in these stores comprised by non advanced lamps (primarily incandescent/halogens). In mass merchandise stores, advanced lamps represented more than a third of all lamps observed and in membership clubs, nearly half of all lamps (primarily advanced CFLs in both cases).
- In terms of the proportion of all lamps stocked within each channel, membership clubs stocked by far the highest proportion of LEDs compared to other channels (LEDs represented more than 10% of all lamps within membership clubs compared to 0-2% of all lamps within other channels).

1.4.3 Average Number of Lamp Models per Store

The average number of lamp models per store within specific lamp types indicates the relative availability of these product types within the stores as well as the diversity of product offerings for specific lamp types. Key findings include:

- The retail stores included in our Fall 2011 sample averaged more than three times as many non-advanced lamp models per store as advanced lamp models. Field researchers observed the highest advanced and non-advanced lamp model diversity in

home improvement stores (averaging nearly 100 and well over 200 models per store, respectively). Researchers observed the lowest average number of advanced lamp models in discount stores and the lowest diversity of non-advanced lamp models in membership clubs (1 and 3 models per store, respectively).

- Among advanced lamps, advanced CFLs had the greatest diversity of models available across all store types.
- LED lamps averaged approximately 7 models per store across all stores in our sample, with the greatest diversity in home improvement (which averaged over 30 LED models per store) and the lowest in drug and grocery stores (both with an average of less than one model per store in our sample).

1.4.4 EISA-Compliant and Non-Compliant Incandescent Lamps

The study examined the relative presence or absence of general purpose A-lamps in the high brightness (1490−2600 lumens) and medium high brightness (1050−1489 lumens) lamp categories. The code change in California due to AB-1109, as it appeared in Title 20 Equipment Codes, was based on the same compliance requirements as first presented in the EISA legislation, but each code change is scheduled one year earlier in California. The results of this study provide an indication of the availability and diversity of product offerings within the EISA-compliant and non-compliant categories as AB 1109 phased out high brightness lamps general purpose A-lamps starting in January 2011(several months before the Fall 2011 shelf surveys were implemented) and medium high brightness general purpose A-lamps in January 2012 (shortly after the shelf surveys were implemented). Key findings include:

- Only a little more than a third of all high brightness general purpose A-lamps (1490−2600 lumens) were EISA-compliant across all stores in our sample in Fall 2011. The phase-out of high brightness general purpose A-lamps began on January 1, Fall 2011 in California per AB 1109 legislation.
- Approximately one-tenth of all medium high brightness (1050−1489 lumens) general purpose A-lamps were EISA-compliant across all stores in our sample in Fall 2011. The phase-out of high brightness general purpose A-lamps began on January 1, 2012 in California per AB 1109 legislation (i.e., after the conclusion of this field research).

- On average, across all channels, there are almost twice as many non-compliant high brightness lamps and more than eight times as many non-compliant medium high brightness lamps per store as EISA-compliant lamps in those respective categories.
- Membership stores in our Fall 2011 sample stocked the highest average number of EISA-compliant high brightness A-lamps (nearly 80 per store) and had the highest proportion of EISA-compliant high brightness A-lamps (100 percent).
- Discount stores represented the only channel from our Fall 2011 sample that did not stock EISA-compliant high brightness bulbs.
- Non-compliant high brightness A-lamps represented nearly 95 percent of high brightness A-lamps in our 2009 sample compared to a little more than half of high brightness A-lamps in our Fall 2011 sample (across big box channels).

1.4.5 IOU-Discounted Lamps

As an indicator of the IOUs' upstream lighting programs' influence on the lighting market, the study assessed the relative availability of lamps for which the IOUs provided incentives and those with no IOU incentives. Key findings include:

- IOU-discounted lamps represented 14 percent of all of the lamps observed across all 184 retail stores in our Fall 2011 shelf survey sample and a little less than a third of all energy-efficient lamps observed across all stores in the sample.
- In discount stores, IOU-discounted lamps represented the greatest proportion of energy-efficient lamps observed across all store types in our Fall 2011 sample (nearly 90 percent of energy-efficient lamps and 43 percent of all lamps observed). IOU-discounted lamps represented the smallest proportion of both energy-efficient lamps and all observed lamps across all stores in our sample at mass merchandise stores (approximately 1% of all observed lamps in this channel).
- Across all channels, nearly a third of all IOU-discounted lamps observed in Fall 2011 were advanced and more than two-thirds were non-advanced lamps. Researchers observed the greatest proportion of IOU-discounted advanced lamps in the drug store channel (slightly more than 40% of IOU-discounted lamps observed were advanced), and grocery stores had the lowest proportion of advanced IOU-discounted lamps at less than 5 percent of the IOU-discounted lamps stocked in those stores in Fall 2011.

1.5 Lamp Pricing

We provided details on lamp pricing for lamps found during the Fall 2011 shelf surveys, including average overall price per lamp as well as average prices for lamps both with and without IOU discounts. Furthermore, we discussed time-series comparisons of average prices in big box stores for Fall 2011.

1.5.1 Average Price

Examining average lamp price reveals the relative affordability of lamps of each technology type (CFL, incandescent, LED, etc.) and lamp style (A-lamp, reflector, and so on). Key findings include:

- In Fall 2011, average prices for advanced and non-advanced lamps were lowest overall in the discount stores in our sample and highest overall in the hardware stores in our sample.
- LED lamps averaged roughly $4.50 to $35.00 more per lamp than CFLs for the common MSB lamp styles, with the greatest price gap for reflector/flood styles and the smallest for candelabra/torpedo styles in Fall 2011.
- Within the three big box channels (large home improvement, mass merchandise, and membership clubs) included in our samples in 2009 and Fall 2011, advanced lamp prices increased by more than a dollar per lamp in this timeframe – likely a result of the greater variety and quantity of LED lamps in these channels in Fall 2011. Average prices for non-advanced lamps remained stable between 2009 and 2011 in these channels.

1.5.2 Average Price for IOU-Discounted Versus Non-IOU-Discounted Lamps

Examining average lamp price between IOU-discounted and non-discounted lamps provides information regarding the effects of the IOUs' upstream lighting programs in California's retail market for replacement lamps. Key findings include:

- Among the 184 stores in our sample, average prices for non-IOU-discounted lamp types were higher than IOU-discounted lamp types within each retail channel except for mass merchandise (this is likely due to the limited number of advanced IOU-discounted lamps found in mass merchandise stores).

- IOU discounts provided the greatest savings in drug stores among all of the stores in our Fall 2011 sample, averaging $10.33 less per lamp for IOU-discounted advanced lamps and $4.62 less per lamp for IOU-discounted basic spiral CFLs.
- IOU-discounted basic spiral CFLs (≤30 Watts) cost an average of $1.32 less per lamp than non-IOU-discounted basic spirals across all of the stores in our Fall 2011 sample, while IOU-discounted specialty lamps (including a-lamp, reflector/flood, and globe CFLs) averaged two to three dollars less per lamp than non-IOU-discounted lamps.
- Average IOU-discounted CFL prices were lower than average incandescent lamp prices for a-lamps, reflector/flood lamps, and globe lamps across all store types in our Fall 2011sample. The greatest difference was for reflector/flood lamps ($3.20).

1. Introduction

1.1 Study Overview

Lighting retail store shelf surveys involve visits to retail stores to collect information about the lamps stocked in those stores. Field researchers gather detailed information regarding a variety of lamp types including packaging configurations, lamp style, manufacturer, wattage, price, and so on, to support evaluations of programs that utilize retail channels to promote the sale of energy-efficient lighting products.

As part of the Fall 2011 California Lighting Retail Store Shelf Surveys, field researchers visited 194 retail stores between September and November of 2011. The data collected through these efforts will support process, market, and impact evaluations of the California investor-owned utilities' (IOU) 2010-2012 Basic and Advanced Upstream Lighting Programs. As such, the Fall 2011 California Lighting Retail Store Shelf Survey study was designed to address multiple objectives:

- Assess the general availability, diversity, and pricing of both basic and advanced lamps currently available to consumers in California retail stores (as well as relative availability, diversity and pricing of basic versus advanced lamps);
- Obtain updated data to compare against baseline advanced lamp stocking data collected in 2009;[3]
- Obtain early insights into the effects of Assembly Bill 1109 (the California Lighting Efficiency and Toxics Reduction Act) and the Energy Independence and Security Act of 2007 (EISA), including the relative presence or absence of lamps that are compliant with the standards set forth in the legislation as well as the relative presence or absence of non-compliant incandescent lamps remaining on retail store shelves;

[3] KEMA, Inc. and Itron, Inc., 2011. Advanced Lighting Baseline Study: Phases 1 and 2. Prepared for Pacific Gas & Electric, Southern California Edison, and San Diego Gas & Electric. Study ID: SCE0309. August 1, 2011.

- Assess the overall proportion of total energy-efficient lamp types versus other lamp types, and assess the proportion of energy-efficient lamps comprised by IOU-discounted lamps versus non-discounted products;
- Assess the proportion of total IOU-discounted lamps comprised by basic versus advanced lamp types;
- Collect data to support estimation of incremental costs between program-discounted lamps and comparable full-priced lamps; and
- Obtain updated market data on retail store stocking practices and pricing for light-emitting diode (LED) lamps.

The detailed data collected as part of the shelf surveys enables further examination of each of the above elements by retail channel, lamp type, and IOU service territory to reveal further details regarding the availability, diversity, and pricing of basic and advanced lamps available to California consumers.

The 2011 shelf surveys also provide important inputs into two other studies currently being conducted by DNV KEMA Energy & Sustainability for the California Public Utilities Commission (CPUC) Energy Division (ED):

- A high-level/preliminary characterization of California's LED market; and
- A study to assess the early effects of EISA and California AB 1109 on the California lighting market, including the availability of EISA-compliant and non-compliant lamps.

These studies are expected to be completed early during the second quarter of 2012.

1.2 Definitions

This section provides the definition of "advanced lighting" used in the report as well as definitions of lamp categories and lamp types mentioned throughout the report.

1.2.1 Advanced Lighting

In its description of the Advanced Consumer Lighting Program, the CPUC stated, "this program targets lighting products other than standard, screw-in compact fluorescent lamps (CFLs) of less

than 30 watts, including dimmable, three-way, and specialty CFLs, so-called "super" CFLs, light emitting diodes (LEDs), halogen, and other lighting products."[4]

For the purpose of guiding prior lighting research (the 2011 Advanced Lighting Baseline Study[5]), in April 2010 we asked California's investor-owned utilities (IOUs) to provide a list of lamps that they would include in the category of residential "advanced lighting." The list agreed upon by the IOUs included:

- Bare spiral CFLs greater than 30 watts;
- A-shaped CFLs;
- Globe CFLs;
- Candelabra CFLs;
- Reflector CFLs;
- Dimmable CFLs (bare and covered);
- 3-way CFLs;
- GU-24 base CFLs;
- Halogens that are compliant with new legislation (must meet California Assembly Bill [AB] 1109 standards reflected in California's Title 20 Equipment Code);
- Advanced incandescent lamps; and
- LED lamps.

For the purposes of this report, we refer to the above lamp types as "advanced lamps." We refer to all other residential lamp types as "non-advanced" lamps. We further subdivide these into lamp categories (as described in Section 1.2.2 below) and use them consistently throughout this report regardless of the data source.

[4] California Public Utilities Commission, 2011. Decision 09-09-047: Decision Approving 2010 To 2012 Energy Efficiency Portfolios and Budgets. Issued September 24, 2009.

[5] KEMA, Inc. and Itron, Inc., 2011. Advanced Lighting Baseline Study: Phases 1 and 2. Prepared for Pacific Gas & Electric, Southern California Edison, and San Diego Gas & Electric. Study ID: SCE0309. August 1, 2011.

1.2.2 Lamp Categories

Many of the tables in this report present data on advanced and non-advanced lamps. Medium screw-base (MSB) lamps include numerous discrete MSB lamp classifications (such as “high-wattage CFLs” and “reflector/flood” CFLs”) and as such, a unique lamp cannot be placed into more than one lamp category; for instance, a lamp cannot be classified in both “high-wattage CFLs” and “reflector/flood” categories, but must be in either one category or the other. These discrete lamp classifications are collapsed into nine major lamp groups:

(1) High-wattage MSB CFLs, which are non-dimmable, single-wattage CFLs of all styles (spiral, reflector, etc.) that are greater than 30 watts;

(2) Specialty MSB CFLs: Dimmable, which include all dimmable CFLs;

(3) Specialty MSB CFLs: 3-way, which include all 3-way CFLs (i.e., CFLs with 3 wattage levels, such as 13/23/32 watt lamps),

(4) Other advanced MSB CFLs, which include non-dimmable, single wattage CFLs that are less than or equal to 30 watts that are not basic spiral CFLs (e.g., single-wattage non-dimmable reflector CFLs that are less than or equal to 30 watts);

(5) Non-MSB CFLs, which include candelabra base CFLs, candelabra base CFLs with an MSB adaptor, large base CFLs, GU-base CFLs, and pin-base CFLs;

(6) LEDs, which include light-emitting diode (LED) lamps (all base types and lamp styles);

(7) Cold Cathodes, which represented a very small part of the total lamp inventory;

(8) Hybrid CFL LEDs, which are lamps that can be switched between a CFL general lighting function and an LED nightlight function; and

(9) Non-Advanced Lamp Types, which includes three subcategories:

   a) *Basic CFLs*, which includes non-dimmable, single wattage bare spiral CFLs that are less than or equal to 30 watts;

   b) *Incandescent/halogen lamps*, which includes all incandescent and halogen lamp styles; and

   c) Other lamp types, which primarily includes high intensity discharge (HID) lamps.

Lamps in the first eight groups above are all considered “advanced lamps” (per the CPUC definition described above), while the ninth group (“non-advanced lamp types”) includes all non-advanced lamps. This distinction is important, as it supports differentiation between lamps

included in the IOUs' Advanced Lamp subprogram (which is largely comprised of advanced CFLs during the 2010-2011 period) and the IOUs' Basic Lamp subprogram (which is comprised of Basic CFLs during the 2010-2011 period).

Another key distinction used in this report is that of "energy-efficient" versus "non -efficient" lamps (see Section 3.1.4.2.1 below). For the purpose of this report, categories one through eight above are considered energy-efficient lamps (all CFLs, LEDs, cold cathode, and hybrid CFL/LED lamps). We also include lamps in category 9a (basic CFLs) as energy-efficient lamps. Non-efficient lamps include lamps in category 9b above (incandescent/halogen lamps, whether or not they are compliant with the standards set forth in AB1109 and/or EISA) and category 9c (HID lamps).

1.2.3 Retail Channel Definitions

Below we provide definitions for the retail channels used in tables and discussions throughout this report.

(1) Discount – Retail stores that sell a wide variety of products at a deep discount. Many items typically sell for $1 or less. These stores do not feature food/groceries as their primary product. Examples include: 99 Cents Only Stores, Dollar Tree, and Big Lots.

(2) Drug – Retail stores that feature prescription and over-the-counter drugs as well as a wide variety of other products. Examples include: CVS, Rite Aid, and Walgreens.

(3) Grocery – Retail stores that feature food/groceries as their primary product. There is a significant degree of heterogeneity in this channel. Large grocery chains tend to carry a wider variety of lighting products than independent and discount grocery stores. Whereas larger grocery chains typically sell both IOU discounted and non-discounted lamps, independent and discount grocery stores tend to sell only IOU discounted lamps. For the purpose of this report, large grocery stores and independent/discount grocery stores are not broken out into separate channels. Examples of large chain grocery stores include: Albertsons, Ralphs, and Safeway/Vons. Examples of independent grocery stores include Draegers Market, Laurel Street Grocery, and Spencer's Fresh Markets. Examples of discount grocery stores include Grocery Outlet and Smart and Final.

(4) Hardware – Retail stores that feature hardware as their primary product. Hardware stores are typically independently owned (including hardware stores with national

affiliations such as Ace and True Value). Also included in this category are independently owned lumber stores that feature a small variety of light lamps. Examples include: Ace Hardware, True Value Hardware, Chino Lumber and Hardware, and Foothill Hardware.

(5) Large Home Improvement – Large retail stores that feature home improvement merchandise as their primary product. These stores are typically large national or regional chains. Corporate buyers usually make lighting purchasing decisions for these stores. Examples include: Home Depot, Lowe's, Orchard Supply Hardware, and HD Supply.

(6) Lighting and Electronics – Retail stores that feature either lighting or electronics as their primary product. These stores include chains and independently owned businesses. Examples include: Lamps Plus, Wyse Lighting, and Fry's Electronics.

(7) Mass Merchandise – Large retail stores that offer a very wide range of products, including clothing, appliances, electronics, and furniture. Almost all mass merchandise stores are large national or regional chains. Examples include: Wal-Mart, Target, IKEA, and Kmart.

(8) Membership Club – Large retail stores that offer a wide array of products, including food, clothing, electronics, and furniture. Many items sold at membership club stores are sold in bulk and at discounted prices. These stores require customers to purchase annual/semi-annual memberships in order to buy merchandise. All membership club stores in the California lighting market are large national or regional chains. Examples include Costco and Sam's Club.

2. Methods

This report primarily draws on shelf survey data collected during September through November (Fall) 2011 as part of CPUC evaluation, measurement and verification (EM&V) Work Order 13 - Lighting Programs Process Evaluation and Market Characterization. For the purpose of presenting changes in lighting availability, diversity, and pricing patterns over time, this report also includes data that were collected as part of the 2006-2008 Upstream Lighting Program (ULP) Evaluation.[6] Below we provide brief descriptions of these databases and describe the methods used to analyze these data in support of this Fall 2011 California Lighting Retail Store Shelf Survey Report.

2.1 Retail Store Shelf Survey Databases

This section presents data from the Fall 2011 and Spring 2009 California retail store shelf surveys.

2.1.1 Database Overview

2.1.1.1 Fall 2011 Database Overview

As part of the Fall 2011 California shelf survey effort, field researchers conducted 194 complete inventories (shelf surveys) of lighting products on California retail store shelves between August and November of 2011.[7] Researchers conducted these surveys in a variety of retail stores and collected detailed information on product characteristics and prices for both advanced and non-advanced lamps.

The Fall 2011 comprehensive shelf survey database has lamp inventories for 194 stores and contains nearly 26,000 records. Each record includes key information regarding each store visited (such as the retail channel, store name, IOU service territory, and store address) as well as information specific to each package of lamps in the store, including model number, lamp

[6] KEMA, Inc.; PA Consulting Group; Jai J. Mitchell Analytics; The Cadmus Group; ITRON, Inc., 2010. Final Evaluation Report: Upstream Lighting Program. Prepared for the California Public Utilities Commission Energy Division. Study ID: CPU0015.01. February 8, 2010.

[7] For this report, we include 184 stores. A major California lighting store chain refused to allow researchers into their stores to conduct shelf surveys, so we have elected to exclude the 10 lighting and electronics stores from our report (as we do not believe these stores are representative of the lighting and electronics channel in California). See Section 2.1.3 below for further details.

type, base type, lamp shape, manufacturer, wattage, and number of lamps in each package. Additionally, field staff recorded the number of packages, whether or not the lamps are 3-way or dimmable, full price, discounted price and discount provider (if relevant), rated life, color temperature, lamp coating, lumens, wattages, and whether each model was 3-way, dimmable, and/or Energy Star labeled for each package of lamps. Field staff recorded these data across eight retail channels as shown in Table 2-1 below.

Table 2-1
Number of Completed Store Visits by Channel, 2011

Channel	Number of Stores Surveyed
Discount	27
Drug	27
Grocery	27
Hardware	27
Home Improvement	26
Mass Merchandise	24
Membership Club	26
Lighting & Electronics	10
Total Stores	**194**

2.1.1.2 Spring 2009 Database Overview

In support of the 2006-2008 California ULP process and impact evaluations, field researchers conducted 48 complete inventories of lamps on California store shelves in April and May of 2009. The Spring 2009 California comprehensive shelf survey database has lamp inventories for 48 stores and contains over 5,800 records.

As with the Fall 2011 shelf survey database, the Spring 2009 shelf survey database includes key information for each record, including channel, store name, IOU territory, address, city, and zip code in which the lamps were found as well as the model number, lamp type, base type, lamp shape, manufacturer, wattage, and number of lamps in each package. Field staff conducting shelf surveys in Spring 2009 also recorded the number of packages, whether or not the lamps are 3-way or dimmable, and the price for each package of lamps.

Field staff recorded these data across eight retail channels for these comprehensive shelf surveys. However, to make meaningful comparisons between Spring 2009 and Fall 2011, we have only included stores from home improvement, mass merchandise, and membership club channels when presenting time-series data for both years; heterogeneity within the discount,

drug, grocery, and hardware is too great to make meaningful comparisons for these channels with the small samples sizes in the Spring 2009 shelf surveys for these channels. Within these three channels, we have included only the chains surveyed in both Spring 2009 and Fall 2011. Thus, data presented for Fall 2011 in comparison tables include only a subset of the total home improvement, mass merchandise, and membership stores surveyed in Fall 2011.[8]

Table 2-2
Number of Stores for Time-Series Comparisons by Channel, 2009 & 2011

Channel	Year		
	2009	2011	Total
Home Improvement	14	21	35
Mass Merchandise	11	20	31
Membership Club	9	26	35
Total Stores	**34**	**67**	**101**

2.1.2 Fall 2011 Shelf Survey Sample Design

This section provides an overview of the Fall 2011 shelf survey sample design.

2.1.2.1 Fall 2011 Shelf Survey Sample Frame Construction

The Fall 2011 shelf survey sample frame was developed to represent the retail market for lighting in the IOU service territories. We started with the retail store lists we had from the 2006-2008 ULP tracking databases, added in non-participating stores we knew to be still selling lighting post-2008 based on shelf survey research completed in 2009 as well as online research, and then layered in new data from the 2010-1011 ULP tracking databases to identify previously participating retailers who were no longer active during the 2010-2011 ULP program years.

To ensure that the sample frame had the potential to include all locations of retail stores, and not just those locations included in the ULP tracking databases, DNV KEMA staff used Google Maps and conducted Internet research for specific retail channels to identify nonparticipating store fronts within each retail channel and IOU territory. Researchers gathered key identifying

[8] In order to show a more robust time-series comparison, we have included two additional store penetration tables that include 326 stores from shelf surveys conducted in 2008-2009. Due to database limitations, we are only able to produce expanded time-series comparison tables for store penetration. See Section 3.1.1 for further details.

information such as store name, address, city, zip code and telephone number from the Google search engine.

In addition, DNV KEMA researchers made phone calls to stores in the nonparticipant list to confirm that these stores were selling light lamps in Fall 2011. Stores that did not sell light lamps were excluded from the sample frame.

The resulting list of participating and non-participating stores was used as a proxy to represent the retail market for lighting in Fall 2011. For the purposes of this study, "participating stores" (participants) describe those stores that received IOU-discounted CFL shipments during 2010 and/or 2011. Stores to which lamps were shipped in 2006, 2007 or 2008 but not during 2010 or 2011 are considered "nonparticipating stores" (nonparticipants). Also included in this category of "nonparticipating stores" are those retail chains and independent stores that never participated in the 2006-2008 or 2010-2012 ULP program years.

2.1.2.2 Sampling Approach

DNV KEMA's sampling approach for the Fall 2011 shelf surveys involved four key principles:

(2) **Ensure enough sample points per channel to enable channel-to-channel comparisons.** Shelf surveys conducted in 2009 utilized a sampling approach in which the number of stores visited per channel was roughly proportional to the share of overall lamp shipments for each channel. This resulted in a small number of sample points for some channels (such as drug and discount) and a large number of sample points for others (such as membership clubs and large home improvement stores), making it difficult to compare results across channels. As such, the approach for the Fall 2011 shelf surveys included a more balanced distribution of sample points across retail channels within each IOU service territory. The distribution of stores is roughly equal across channels with the exception of Lighting and Electronics where we targeted half the number of stores that we targeted in the other channels.[9] By targeting a balanced distribution of stores, we ensured enough sample points to enable comparison across channels. Table 2-3 shows the target sample sizes for stores by IOU and overall for the

[9] Data from the 2010 CFL Market Effects study suggests that Lighting and Electronics stores represent a much smaller proportion of the lighting market vis-à-vis other channels. There are also only two or three large chains within this channel in California.

Fall 2011 shelf survey effort. As shown, targets included 75 stores each for PG&E and SCE, and 50 stores for SDG&E.

Table 2-3
Target Sample Sizes for Shelf Survey Store Visits by Channel and IOU, 2011

Channel	IOU Service Territory			Total
	PG&E	SCE	SDG&E	
Discount	10	10	7	27
Drug	10	10	7	27
Grocery	10	10	7	27
Hardware	10	10	7	27
Home Improvement	10	10	6	26
Lighting & Electronics	5	5	3	13
Mass Merchandise	10	10	7	27
Membership Club	10	10	6	26
Total Stores	**75**	**75**	**50**	**200**

(5) **Ensure that both chain stores and independent stores are targeted within each retail channel.** Data developed as part of the 2006-2008 ULP impact evaluation was used to classify stores as chain or independent, as complete information for the 2010-2011 program years was not yet available. Sample sizes were set to represent the proportion of IOU-discounted lamps shipped to chain stores versus independent stores across all IOUs.

(6) **Target stores that are participating in the IOUs' upstream lighting programs as well as those that are not participating.** Prior research suggests that the majority of CFLs sold through retail channels in California are discounted by the IOU programs. As such, we set targets for the Fall 2011 shelf survey sample to include 150 "participating stores" (75 percent of the targeted 200) and 50 nonparticipants (25 percent). The one exception is the membership club channel for which, in California during 2010-2011, there are no nonparticipating stores.

(7) **Balance the need for geographic representativeness with budget and timing constraints.** As done for the Spring 2009 shelf surveys, DNV KEMA staff created regional "clusters" within the sample frame and targeted a range of geographic regions when choosing sample points based on the proportion of IOU-discounted lamps shipped to each region. While other practical considerations constrained our ability to select

stores in a given region—such as which retail stores were available in each region within each retail channel, and the travel distance between stores—the ultimate selection of sample points attempted to reflect reasonable geographic distribution within each IOU service territory.

Based on these principles, DNV KEMA staff developed the Fall 2011 shelf survey sample targets shown in Table 2-4.

Table 2-4
Targeted Distribution of Completed Store Visits by Chain/Independent, Participating/Non-Participating, Retail Channel, and IOU, 2011

Channel	Part / Non	PG&E			SCE			SDG&E			Total		
		Chain	Indep	Total	Chain	Indep	Total	Chain	Indep	Total	Chain	Indep	Total
Discount	Part	7	1	8	7	1	8	5	1	6	19	3	22
	NP	0	2	2	0	2	2	0	1	1	0	5	5
Discount Subtotal	**Total**	7	3	**10**	7	3	**10**	5	2	**7**	19	8	**27**
Drug	Part	8	0	8	8	0	8	6	0	6	22	0	22
	NP	1	1	2	1	1	2	1	0	1	3	2	5
Drug Subtotal	**Total**	9	1	**10**	9	1	**10**	7	0	**7**	25	2	**27**
Grocery	Part	2	3	5	2	3	5	2	2	4	6	8	14
	NP	2	3	5	2	3	5	1	2	3	5	8	13
Grocery Subtotal	**Total**	4	6	**10**	4	6	**10**	3	4	**7**	11	16	**27**
Hardware	Part	3	3	6	3	3	6	2	3	5	8	9	17
	NP	0	4	4	0	4	4	1	1	2	1	9	10
Hardware Subtotal	**Total**	3	7	**10**	3	7	**10**	3	4	**7**	9	18	**27**
Home Improvement	Part	8	0	8	8	0	8	5	0	5	21	0	21
	NP	2	0	2	2	0	2	1	0	1	5	0	5
Home Impr Subtotal	**Total**	10	0	**10**	10	0	**10**	6	0	**6**	26	0	26
Ltg & Electronics	Part	3	0	3	3	0	3	1	1	2	7	1	8
	NP	0	2	2	0	2	2	0	1	1	0	5	5
Ltg & Elec Subtotal	**Total**	3	2	**5**	3	2	**5**	1	2	**3**	7	6	**13**
Mass Merchandise	Part	7	0	7	7	0	7	6	0	6	20	0	20
	NP	3	0	3	3	0	3	1	0	1	7	0	7
Mass Merch Subtotal	**Total**	10	0	**10**	10	0	**10**	7	0	**7**	27	0	**27**
Membership Club	Part	10	0	10	10	0	10	6	0	6	26	0	26
	NP	0	0	0	0	0	0	0	0	0	0	0	0
Membership Subtotal	**Total**	10	0	**10**	10	0	**10**	6	0	**6**	26	0	**26**
Total Part Stores	Part	48	7	55	48	7	55	33	7	40	129	21	150
Total NP Stores	NP	8	12	20	8	12	20	5	5	10	21	29	50
All Stores	**Total**	**56**	**19**	**75**	**56**	**19**	**75**	**38**	**12**	**50**	**150**	**50**	**200**

Table 2-5 below shows the actual distribution of stores by channel and IOU broken out by chain and independent stores as well as participating and non-participating stores. As the table shows, there are differences between the actual distribution of stores and the targeted distribution. Most notably, field researchers were not able to survey the full 200 stores because a major lighting and electronics chain refused to allow researchers into their stores (see Section 2.1.3 below for further details). This resulted in the loss of 6 stores from our sample (see Table 2-1 above). Given the importance of this chain within the lighting and electronics channel, we made the decision to exclude all lighting and electronics stores in this report, because they are not representative of the channel. Furthermore, after we completed field research, we concluded that we needed to reclassify a chain representing three stores from mass merchandise to lighting and electronics. In all, we have excluded 10 completed lighting and electronics shelf surveys and were not able to complete shelf surveys in the 6 lighting and electronics stores from the chain mentioned above (thus, there are a total of 184 stores included for analysis in this report).

In spite of the loss of the lighting and electronics channel and other problems encountered in the field (see Section 2.1.3 below for more details), our actual distribution of stores remained relatively close to our targeted distribution of stores. For example, we targeted a distribution of stores in which chains would represent 75 percent of all stores in our sample, and our actual distribution of chain stores is just under 78 percent (and 22 percent are independent stores). With respect to the actual distribution of 2010-2011 ULP program participant and non-participant stores, 63 percent of stores were participants and 37 percent were non-participants (compared to a targeted distribution of 75% participating stores and 25% non-participating stores). In addition to issues encountered out in the field, DNV KEMA did not have complete tracking data with IOU program shipments prior to beginning field research in August 2011. Thus, we had to rely largely on the ULP program participant lists from the 2006-2008 program period in order to make reasonable predictions for which stores were 2010-2011 ULP program participants.

Table 2-5
Actual Distribution of Completed Store Visits by Chain/Independent, Participating/Non-Participating Stores, Channel, and IOU, 2011

Chain	Part / Non	PG&E			SCE			SDG&E			Total		
		Chain	Indep	Total	Chain	Indep	Total	Chain	Indep	Total	Chain	Indep	Total
Discount	Part	8	1	9	8	1	9	4	1	5	20	3	23
	NP	0	1	1	0	1	1	0	2	2	0	4	4
Discount Subtotal	**Total**	8	2	**10**	8	2	**10**	4	3	**7**	20	7	**27**
Drug	Part	6	0	6	4	0	4	1	0	1	11	0	11
	NP	4	0	4	3	3	6	6	0	6	13	3	16
Drug Subtotal	**Total**	10	0	**10**	7	3	**10**	7	0	**7**	24	3	**27**
Grocery	Part	1	3	4	2	3	5	2	0	2	5	6	11
	NP	2	4	6	3	2	5	3	2	5	8	8	16
Grocery Subtotal	**Total**	3	7	**10**	5	5	**10**	5	2	**7**	13	14	**27**
Hardware	Part	1	2	3	3	4	7	2	1	3	6	7	13
	NP	2	5	7	1	3	4	1	2	3	4	10	14
Hardware Subtotal	**Total**	3	7	**10**	4	7	**11**	3	3	**6**	10	17	**27**
Home Improvement	Part	8	0	8	9	0	9	4	0	4	21	0	21
	NP	2	0	2	0	0	0	3	0	3	5	0	5
Home Impr Subtotal	**Total**	10	0	**10**	9	0	**9**	7	0	**7**	26	0	26
Mass Merchandise	Part	5	0	5	5	0	5	1	0	1	11	0	11
	NP	5	0	5	3	0	3	5	0	5	13	0	13
Mass Merch Subtotal	**Total**	10	0	**10**	8	0	**8**	6	0	**6**	24	0	24
Membership Club	Part	10	0	10	10	0	10	6	0	6	26	0	26
	NP	0	0	0	0	0	0	0	0	0	0	0	0
Membership Subtotal	**Total**	10	0	**10**	10	0	**10**	6	0	**6**	26	0	**26**
Total Part Stores	Part	39	6	45	41	8	49	20	2	22	100	16	116
Total NP Stores	NP	15	10	25	10	9	19	18	6	24	43	25	68
All Stores	**Total**	**54**	**16**	**70**	**51**	**17**	**68**	**38**	**8**	**46**	**143**	**41**	**184**

2.1.3 Fieldwork Overview

In this section, we briefly review the field research training conducted for this study, the field research, and research protocols for problems encountered in the field.

The DNV KEMA field research manager conducted a full-day shelf survey training session in late August 2011 with a team of six field researchers. The training focused primarily on identifying key lamp characteristics, including product types (e.g., CFLs, LEDs, incandescent/halogens, etc.), lamp shapes (e.g., A-lamps, spiral/twister lamps, globes, etc.), base types (e.g., medium screw base [MSB], candelabra base, GU-type base, etc.), and

wattage. The field research manager developed a detailed training guide and list of field research protocols prior to the training session. Additionally, the field research manager took field researchers to a home improvement store to conduct partial shelf surveys as part of the training process.

Each field researcher conducted shelf surveys with an assigned list of stores clustered geographically. In many cases, field researchers spoke with a store manager prior to conducting shelf surveys and provided the store managers with a letter from an Energy Division project manager explaining the purpose of the study. Field researchers would then go to the lighting aisle(s) and complete the shelf survey for a given store. Researchers recorded the information on a paper shelf survey form.[10]

The field research manager developed a list of targeted stores in advance of beginning field research, and as mentioned above, assigned geographically clustered groups of stores to each field researcher. Field researchers were able to complete shelf surveys in their assigned stores in the majority of cases. However, occasionally there were impediments to conducting shelf surveys, such as store closures, a store running out of light bulbs, or a store manager refusing to allow a researcher to conduct a shelf survey. If a field researcher was unable to conduct a survey in an assigned store, he or she would call the field research manager to find a replacement store. The protocol for finding replacement stores was to identify another store in the same retail channel in the same geographic area with the same chain/independent and IOU program participation/non-participation status as a replacement store. In most cases, the staff manager identified a replacement store. However, on a few occasions, practical constraints, such as available stores in a given region, caused the staff manager to choose a replacement store that was not exactly equivalent (i.e., the chain/independent or program participation status for the replacement store might have been different than the store in the original sample).

As mentioned above, a major lighting and electronics chain refused to allow our field researchers to conduct shelf surveys in their stores. DNV KEMA staff members as well as utility representatives made repeated efforts to reach out to the corporate management team for this chain via email and phone (including a conference call with the CFO and lighting buyer for this chain). In spite of promising to deliver lamp inventory data to DNV KEMA during a conference call, the CFO for this chain never responded to repeated requests to deliver these data. Given

[10] Additional phases of shelf surveys research are planned for 2012 in California and will utilize tablet computers to record shelf survey data, increasing both the speed and accuracy of data collection and eliminating the need for a separate data entry step.

the significance of this chain in the lighting and electronics channel, we made the decision to drop all lighting and electronics stores in the results presented in this report (to avoid skewing the data toward independent versus chain stores in this channel).

2.1.4 Database Cleaning and Analysis Methodology

Before DNV KEMA staff could analyze data from the Fall 2011 shelf surveys, the following steps were necessary:

(1) **Enter Data.** DNV KEMA staff entered data collected on paper shelf survey data collection forms into an electronic database. Once an adequate number of data were entered (roughly 5,000 records), a DNV KEMA staff member helped automate the data entry process by creating a list of commonly occurring model numbers and relevant lamp specifications for those model numbers. The electronic shelf survey database referenced this list of model numbers so that once a staff member entered a model number, key lamp specifications would auto-populate into the database. The data entry staff would then visually verify that the specifications were the same as those written on the paper form and correct any inconsistencies.

(2) **Clean the Data.** DNV KEMA analysts reviewed the shelf survey database a number of times to identify obvious outliers and irregularities for key lamp specifications such as product type, base type, lamp style, and wattage. These irregularities were the flagged and corrected. In some cases, analysts researched lamp models on the Internet to verify specific lamp specifications. To ensure that the data were clean and consistent, analysts ran key variables in the dataset through standardization procedures. The variables included brand, model number, product type, base type, lamp type and a handful of other lamp characteristics variables. The procedures ensured that the variables were consistent and that there were no outliers in the database. A DNV KEMA analyst then created a grouping algorithm that was used to identify miscategorized features within groups of lamps with the same brand and model numbers. For lamps that had more than five observations of a specific brand and model number, the characteristics of the lamps were compared, and if there were discrepancies in any particular characteristic, the data was passed to a cleaning algorithm. This algorithm corrected characteristics where more than two-thirds of the observations within the brand and model number group were in agreement with each other, and that characteristic was subsequently applied to the miscategorized values. Overall, this algorithm affected less than 1 percent of the data.

(3) **Identify Lamps in the Advanced/Non-Advanced and Efficient/Non-Efficient Categories.** An additional step in our analysis was to identify which lamps in our database are advanced lamps and which are not advanced lamps (see definition of advanced lamps in Section 1.2 above). DNV KEMA staff examined information in the database including lamp type, base type, lamp shape, wattage, dimmability, and 3-way capabilities and categorized each database record as “advanced” or “non-advanced. Based on lamp technology (e.g., LED, CFL, incandescent/halogen), DNV KEMA staff also assigned each data base record as “efficient” or “non-efficient.”

2.1.5 Pricing Analysis Methodology

Average prices presented in this report are not sales-weighted because lamp sales data by channel are not available for the Fall 2011 time period. However, average prices presented in this report are lamp-weighted (i.e., weighted by the number of lamps in stock for a given lamp category), as described below. Analysts calculated average prices for each lamp type category by taking the following steps:

- First, we calculated the price per lamp for each row of data in the shelf survey database by dividing final package price by the number of lamps per package;
- Next, we calculated the total number of lamps for each record in the shelf survey database by multiplying the number of packages by the number of lamps per pack;
- Then, we calculated the total lamp price in each record in the shelf survey database by multiplying the price per lamp by the total number of lamps; and
- Finally, we calculated the average price per lamp for each lamp category type by dividing the sum of all total lamp prices for a given lamp category by the sum of the total number of lamps represented in each lamp category.

3. Results

This section presents results from analyses of the Fall 2011 shelf survey database. Where possible, we present comparisons to the Spring 2009 shelf survey database for a subset of retail chains where possible. Each subsection begins with an overview and includes a top-line summary of key findings as well as detailed findings. Appendix B provides additional detailed data from the Fall 2011 and Spring 2009 shelf surveys, and Appendix C provides detailed data by IOU service territory.[11]

3.1 Availability and Diversity

Below we present availability and diversity in terms of the percent of stores in our sample carrying lamps by lamp type (lamp penetration), percentage of total lamps and packages observed in the stores, and the average number of lamp model per store. We also compare availability of advanced and non-advanced lamps as well as availability of efficient and non-efficient lamps.

3.1.1 Percent of Stores Carrying Lamps by Lamp Type

The percentage of stores carrying a particular lamp type (penetration) provides one measure of the products' availability. This section provides details on the stocking patterns of both advanced and non-advanced lamps across the stores in which researchers conducted shelf inventories.

3.1.1.1 Summary of Findings

- Incandescent lamps and basic CFLs were present across all retail channels among the stores we surveyed in 2011.[12] All of the drug stores in our sample carried basic CFLs

[11] We present results throughout the body of this report by channel (with some results by IOU in Appendix C). For each table, we provide an "overall" column, which aggregates data across all channels or all IOUs. The reader should interpret these "overall" results with some caution since much of the data presented in the report are not weighted (and the distribution of stores by channel in the "overall" results may not mimic the distribution of stores by channel in the market).

[12] With the exception of Sections 3.1.3 (EISA-Compliant and Non-Compliant Incandescent Lamps) and 3.2 (Pricing), we do not break out incandescent lamps by different styles and base types in data tables. As such, it is important to point out that data presented in tables comparing basic CFLs and

while only 85 percent carried incandescent lamps in 2011. Only a fifth of membership clubs carried incandescent lamps in 2011, while 100 percent carried basic CFLs.

- LED lamps (mostly reflectors and A-lamps) were present in more than half of the stores we visited overall, and more than 90 percent of home improvement stores and membership clubs carried LEDs in 2011.

3.1.1.2 Detailed Findings

Figure 3-1 below shows penetration of advanced and non-advanced lamps by retail channel. The number of stores carrying advanced lamps was high across all retail channels with 87 percent of the 184 stores surveyed carrying at least one type of advanced lamp. The channels in which we observed lower levels of advanced lamp penetration include discount stores (with advanced lamps present in 56% of stores) and grocery stores (with advanced lamps present in 67%). We observed at least one type of non-advanced lamp (such as incandescent lamps and basic CFLs) in every store visited as part of the shelf inventory study with the exception of grocery stores, in which 1 store (4% of grocery stores) did not carry any non-advanced lamps (but did carry advanced lamps).[13]

incandescents are not always ideally aligned to allow for like-to-like comparisons between lamp categories. The same is true for High Intensity Discharge (HID) lamps, which, like incandescent lamps, are not broken out by lamp style and base type.

[13] Recall that all of the stores in the Fall 2011 Shelf Survey sample had lamps in stock at the time of our field research visits.

Figure 3-1
Penetration of Advanced and Non-Advanced Lamps by Channel, 2011

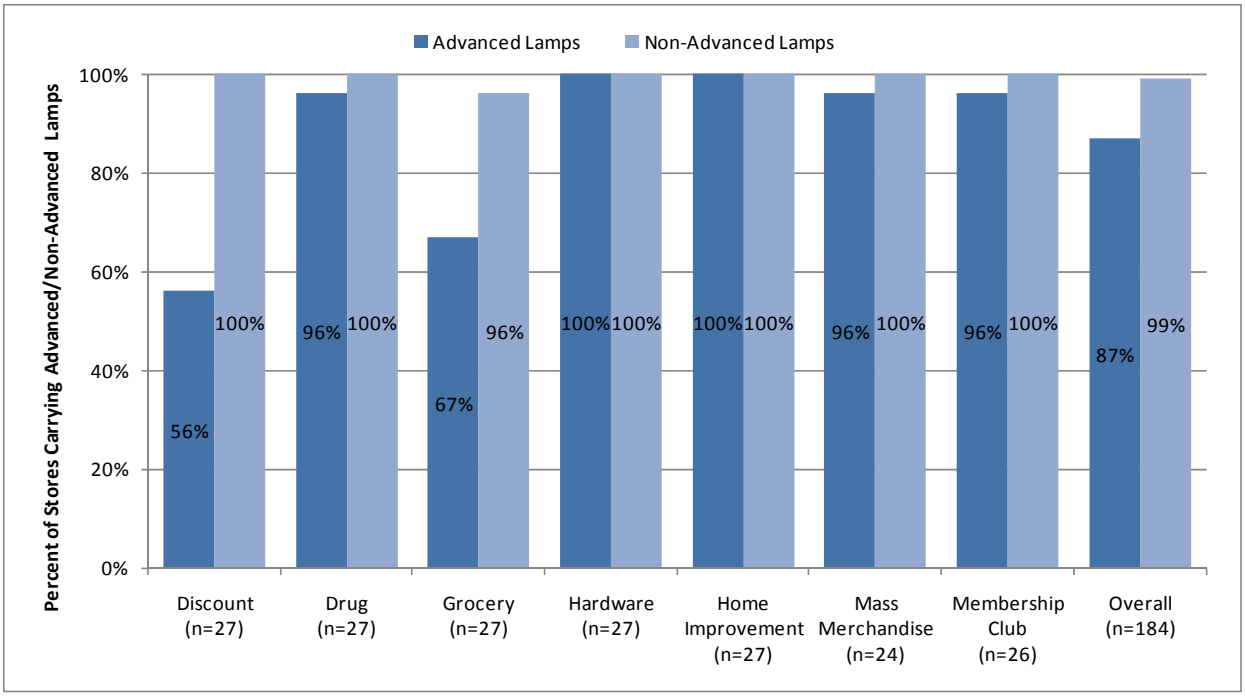


Table 3-1 below shows the percentage of stores carrying lamps by lamp type and channel. In this table, the percentages in each cell represent the number of stores in which a particular lamp type was found (by channel) divided by the total number of stores within each retail channel. Table 3-2 further disaggregates lamp types into detailed types (e.g., MSB reflector CFL, MSB A-Lamp CFL).[14] Table B-1 in Appendix B includes the number of stores carrying a given lamp type (these data are shown as percentages in Table 3-2) and Appendix C (Table C-1and Table C-2) provides additional detail on the number and percentage of stores carrying each detailed lamp by lamp type and IOU service territory.

Based on the data shown in Table 3-1 and Table 3-2 , key findings with regard to lamp penetration in our 2011 sample include:

[14] Appendix B includes numerous data tables with additional information on specific product types (e.g., CFL, LED, incandescent/halogen), lamp type (e.g., advanced lamp, non-advanced lamp) and detailed lamp types (e.g., MSB globe CFL, MSB LED A-Lamp). With the exception of Table 3-2, all of the tables that include this level of detail are included in Appendix B in the interest of report readability. Appendix B also includes tables that provide the number of observations (stores, lamp packages, lamps) to support data in other report tables and figures. Appendix C includes tables that provide further breakdown of the data by IOU service territory.

- Basic CFLs were the most commonly carried lamp type, found in 169 of the retail stores in our sample (92%).
- Researchers found incandescent lamps in a smaller proportion of stores (84 percent of stores) than basic CFLs, largely due to the relative absence of incandescent lamps in membership stores (only 19% of membership stores in the sample stocked incandescent lamps in Fall 2011). At least four-fifths of the stores carried incandescent lamps within each of the other retail channels.
- LEDs were present in more than half of all home improvement (92%), mass merchandise (63%), and hardware (56%) stores surveyed. Field researchers observed MSB A-lamp LEDs and MSB reflector/flood LEDs in 34 percent of all stores surveyed. MSB A-lamp LEDs were found in 85 percent of all home improvement stores surveyed and MSB reflector/flood LEDs were found in 88 percent of all home improvement stores surveyed.
- Among advanced lamp types, reflector/floods and A-lamp CFLs were the most common (reflector/floods found in 72% of all stores in our sample and A-lamps found in 68% of stores in our sample) followed by globes, which were found in 65 percent of the stores in our 2011 sample.
- Large home improvement, hardware, and mass merchandise stores carried the greatest variety of advanced lamps in 2011. In fact, all 20 advanced lamp categories that we have identified as part of this study were represented in at least one of the home improvement stores we visited, and 15 advanced lamp categories were represented in at least half of the large home improvement stores we visited in 2011.
- Membership stores did not carry as many advanced lamp types as large home improvement, mass merchandise, and hardware stores. As mentioned above they were also unique for having a low percentage of incandescent/halogen lamps (found in only 19% of membership stores). However, all 26 of the membership stores we surveyed carried basic spiral CFLs and 92 percent carried globe CFLs. Furthermore, 96 percent of membership stores in our sample carried LEDs—the largest percentage across all channels.
- Like membership stores, the grocery stores in our sample tended to have less product diversity compared with large home improvement, mass merchandise, and hardware stores. Discount stores stocked the smallest variety of advanced lamps. Only reflector/flood MSB CFLs and A-lamp MSB CFLs were found in more than 3 of the discount stores in our sample, and even these 2 categories of advanced lamps were

represented in less than a third of all discount stores surveyed in 2011. However, 74 percent of discount stores surveyed carried basic spiral CFLs.

Table 3-1
Penetration of Advanced and Non-Advanced Lamps by Channel and Lamp Type, 2011

Lamp Type	Channel							
	Discount	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall
ADVANCED	**56%**	**96%**	**67%**	**100%**	**100%**	**96%**	**96%**	**87%**
Advanced CFLs	56%	96%	67%	100%	100%	96%	96%	87%
LEDs	0%	44%	15%	56%	92%	63%	96%	52%
Hybrid CFL/LEDs	0%	0%	0%	0%	35%	4%	0%	5%
Cold Cathodes	0%	0%	0%	0%	35%	0%	0%	5%
NON-ADVANCED	**100%**	**100%**	**96%**	**100%**	**100%**	**100%**	**100%**	**99%**
Basic CFLs (≤30 Watts)	74%	100%	78%	96%	100%	96%	100%	92%
Incandescent/Halogens	96%	85%	93%	100%	100%	96%	19%	84%
HID Lamps	0%	0%	0%	70%	92%	25%	0%	27%
Number of Stores	**27**	**27**	**27**	**27**	**26**	**24**	**26**	**184**

Table 3-2
Penetration of Advanced and Non-Advanced Lamps by Channel and Detailed Lamp Type, 2011

Lamp Type	Channel							
	Discount	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall
ADVANCED								
High-wattage and specialty MSB CFLs								
High-wattage MSB CFLs (>30 Watts)	7%	22%	11%	70%	100%	54%	46%	44%
Specialty MSB CFLs: dimmable	0%	78%	37%	67%	96%	75%	77%	61%
Specialty MSB CFLs: 3-way	4%	70%	15%	81%	92%	75%	12%	49%
Other advanced MSB CFLs (≤30 Watts)								
Reflector/flood	22%	93%	33%	96%	100%	71%	88%	72%
A-lamp	30%	93%	44%	78%	100%	92%	46%	68%
Globe	15%	74%	22%	74%	96%	83%	92%	65%
Candelabra (MSB)	0%	74%	7%	56%	50%	54%	0%	34%
Tube	0%	0%	4%	41%	27%	17%	0%	13%
Bug Light	0%	48%	22%	67%	85%	63%	0%	40%
Circline	0%	0%	0%	15%	4%	0%	0%	3%
Other advanced non-MSB CFLs								
Candelabra base CFLs	7%	74%	0%	52%	96%	67%	0%	42%
GU base CFLs	4%	0%	7%	63%	96%	63%	0%	33%
Pin base CFLs	0%	0%	0%	93%	100%	67%	0%	36%
Large base CFLs	0%	0%	0%	52%	23%	21%	0%	14%
Candelabra base CFLs with MSB adaptor	4%	4%	19%	22%	69%	4%	23%	21%
Other advanced non-CFLs								
Reflector/flood MSB LEDs	0%	0%	0%	48%	88%	8%	96%	34%
A-lamp MSB LEDs	0%	0%	15%	22%	85%	25%	92%	34%
Other LEDs*	0%	44%	15%	44%	88%	63%	85%	48%
Hybrid CFL/LEDs	0%	0%	0%	0%	35%	4%	0%	5%
Cold Cathodes	0%	0%	0%	0%	35%	0%	0%	5%
NON-ADVANCED								
Basic CFLs (≤30 Watts)	74%	100%	78%	96%	100%	96%	100%	92%
Incandescent/Halogens	96%	85%	93%	100%	100%	96%	19%	84%
High Intensity Discharge Lamps	0%	0%	0%	70%	92%	25%	0%	27%
Number of Stores	**27**	**27**	**27**	**27**	**26**	**24**	**26**	**184**

* Includes MSB globe and MSB candelabra LEDs as well as non-MSB LEDs.

Table 3-3 below compares lamp penetration the California 326 stores in which DNV KEMA staff conducted shelf surveys during 2008-2009 and the 184 stores in which we conducted shelf surveys during Fall 2011.[15]

Findings suggest that there was little difference in advanced lamp penetration between 2008-2009 and Fall 2011 (86% vs. 87%, respectively) or for non-advanced lamps (100% vs. 99%, respectively). In fact, the percentage of stores carrying a given lamp type (e.g., advanced CFLs and basic CFLs) was largely the same by channel between 2008-09 and Fall 2011. The most noteworthy difference is the increased penetration of LEDs from 2008-2009 compared to Fall 2011 (from 40% of stores in 2008-2009 to 52% in Fall 2011). With the exception of mass merchandise and discount stores, every channel showed an increase in LED penetration in Fall 2011 compared to 2008-2009. For more a more detailed lamp type comparison of 2008-2009 and Fall 2011 store penetration see Table B-3 in Appendix B.

[15] Note that the 2008-2009 shelf surveys did not include detailed lamp inventories for non-MSB CFLs (such as GU-base CFLs and candelabra base CFLs), nor did they include detailed inventories for LEDs and cold cathode lamps. Because of the limitations of these earlier databases, we are only able to show store penetration of advanced and non-advanced lamps for this sample of 326 shelf surveys conducted in 2008-2009 (i.e., we are not able to show time-series comparisons showing changes in pricing or percentage of lamps by channel in later sections of this report).

Table 3-3
Penetration of Advanced and Non-Advanced Lamps by Channel, 2008-2009 & 2011

Lamp Type	Channel															
	Discount		Drug		Grocery		Hardware		Home Improv.		Mass Merch.		Memb. Club		Overall	
	'08-'09	'11	'08-'09	'11	'08-'09	'11	'08-'09	'11	'08-'09	'11	'08-'09	'11	'08-'09	'11	'08-'09	'11
ADVANCED	**70%**	**56%**	**96%**	**96%**	**72%**	**67%**	**96%**	**100%**	**100%**	**100%**	**100%**	**96%**	**100%**	**96%**	**86%**	**87%**
Advanced CFLs	48%	56%	96%	96%	67%	67%	96%	100%	100%	100%	100%	96%	100%	96%	81%	87%
LEDs	23%	0%	12%	44%	12%	15%	33%	56%	76%	92%	71%	63%	78%	96%	40%	52%
Cold Cathodes	0%	0%	0%	0%	0%	0%	0%	0%	12%	35%	2%	0%	0%	0%	2%	5%
NON-ADVANCED	**100%**	**100%**	**100%**	**100%**	**100%**	**96%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**99%**
Basic CFLs (≤30 Watts)	93%	74%	100%	100%	98%	78%	100%	96%	100%	100%	100%	96%	100%	100%	98%	92%
Incandescent/Halogens	89%	96%	96%	85%	84%	93%	100%	100%	100%	100%	100%	96%	9%	19%	87%	84%
Number of Stores	**61**	**27**	**26**	**27**	**89**	**27**	**27**	**27**	**51**	**26**	**49**	**24**	**23**	**26**	**326**	**184**

3.1.2 Percent of Total Lamps and Total Packages

3.1.2.1 Summary of Findings

- Field researchers observed that non-advanced lamps comprised a greater proportion of total lamps in the non-big box stores (discount, drug, grocery, and small hardware) than in big box stores, representing at least 9 out of 10 lamps in the non-big box stores we visited in 2011.
- The stocking of advanced and non-advanced lamps in large home improvement stores more closely mirrored the proportions in non-big box stores than in the other big box channels, with nearly 90 percent of the lamps in these stores comprised by non-advanced lamps (primarily incandescent/halogens). In mass merchandise stores, advanced lamps represented more than a third of all lamps observed and in membership clubs, nearly half of all lamps (primarily advanced CFLs in both cases).
- In terms of the proportion of all lamps stocked within each channel, membership clubs stocked, by far, the highest proportion of LEDs compared to other channels (LEDs represented more than 10% of all lamps within membership clubs compared to 0-2% of all lamps within other channels).

3.1.2.2 Detailed Findings

Figure 3-2 below shows the percentage of all lamps and lamp packages stocked within each retail channel for advanced and non-advanced lamps by channel among the stores we visited during Fall 2011.[16] (See Table B-6 in Appendix B for details on the number of advanced and non-advanced lamps by channel and lamp type.) This can be considered a measure of the diversity of product types available in stores. Across all retail channels, advanced lamps represent 22 percent of all lamps observed in the stores we visited and 27 percent of all packages observed. Membership club stores carry the greatest percentage of advanced lamps and packages. In fact, advanced lamp packages represent more than half of all packages observed at membership stores (57%) and 45 percent of all lamps observed. Mass merchandise stores had the second highest percentage of advanced lamps and packages

[16] Keep in mind that the percentage of lamps and packages observed for a given lamp category can be far different than the percentage of stores carrying that particular lamp type. For example, although LEDs were observed in 52 percent of the stores in our 2011 sample (see Table 3-1 above), LEDs represent only 4 percent of all lamps observed in our 2011 sample (see Table 3-4 below).

observed within any channel in our sample (36% and 43%). Researchers observed the lowest percentage of advanced lamps and packages in the grocery stores in our sample (4% and 6%, respectively) and the second lowest in discount stores, where advanced lamps comprised 9 percent of lamps and 11 percent of packages.

Figure 3-2
Percent of Total Advanced and Non-Advanced Lamps and Packages by Channel, 2011

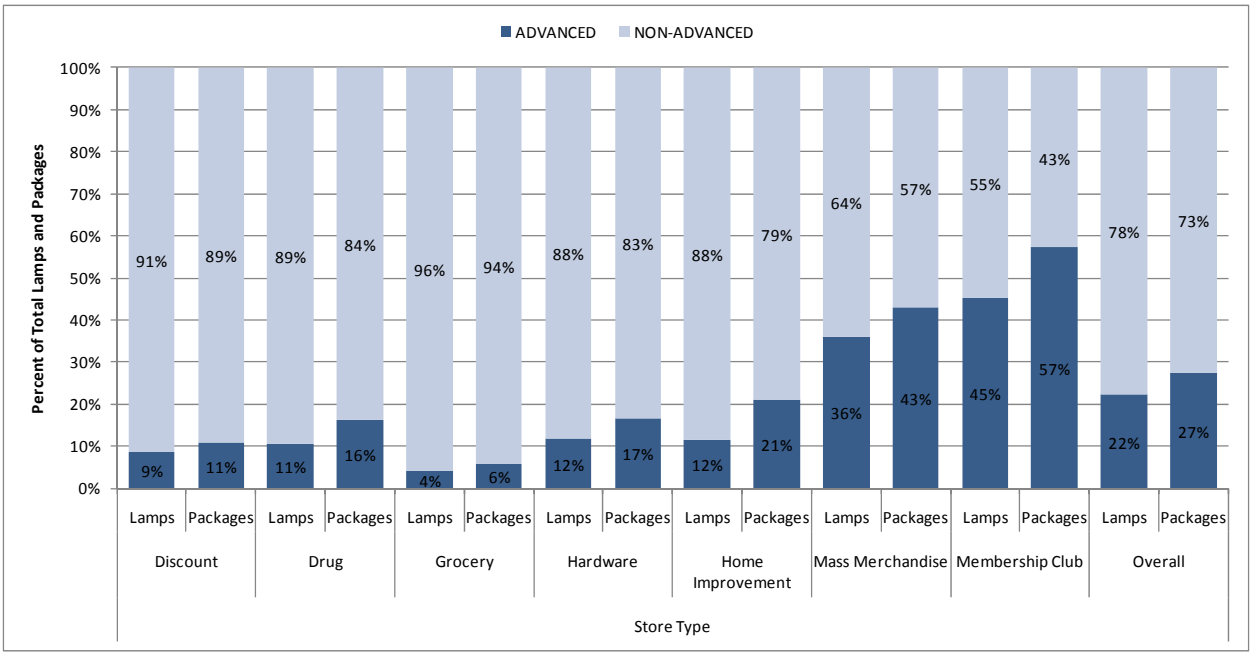


Table 3-4 and Table 3-5 below provide additional detail on the percentage of lamps and packages.[17] For further details on the percentage and number lamp packages by channel, refer to Table B-5 and Table B-7 in Appendix B. Appendix C provides additional detail regarding the percentage (Table C-3) and number (Table C-4) of lamps by lamp type and IOU service territory, as well as by detailed lamp type (percentages in Table C-5, number of lamps in Table C-6). Appendix Table C-7 through Table C-10 provide the same details for lamp packages by IOU service territory.

[17] As shown in Table 3-4 and Table 3-5 below, the percent of lamps and packages for a given lamp category can change significantly. For example LEDs represent 11 percent of all lamps observed in membership club stores, but 24 percent of all packages observed within that channel. This suggests that LEDs come in smaller packages than other lamps categories (such as advanced and basic CFLs).

As shown in Table 3-4, key findings regarding the proportion of total lamps observed by lamp type include:

- Incandescent/halogens comprised a majority of all lamps observed across all of the stores we visited in 2011 (51%). Seventy-five percent of all lamps observed in hardware stores are incandescent/halogens and 73 percent of all lamps observed in drug stores were incandescent/halogens, representing the largest percentages across all retail channels. Incandescent/halogens comprised a majority of all lamps observed in every retail channel with the exception of membership club in which incandescent/halogens represented only 4 percent of all lamps observed in the stores we visited during Fall 2011.
- Basic CFLs represented 27 percent of all lamps across all retail channels. The majority of lamps observed in the membership club stores we visited in Fall 2011 were basic CFLs (51% of total lamps in this retail channel). In discount stores, 40 percent of all lamps observed were basic CFLs. In hardware and mass merchandise stores, basic CFLs represented only 13 percent of the total lamp inventory for the stores we visited in 2011.
- Advanced CFLs represent 19 percent of all lamps observed in 2011 among the retail stores in our sample. Reflector/flood CFLs represented 4 percent of all lamps observed, the highest percentage among all advanced lamp types (see Table B-4 and in Appendix B).
- Among LEDs, A-lamp LEDs were the most abundantly observed LED lamp type, representing 2 percent of all lamps observed (again, see Appendix B).

Table 3-4
Percent of Total Advanced and Non-Advanced Lamps Observed by Channel, 2011

Lamp Type	Channel							
	Discount	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall
ADVANCED	**9%**	**11%**	**4%**	**12%**	**12%**	**36%**	**45%**	**22%**
Advanced CFLs	9%	10%	3%	11%	9%	35%	34%	19%
LEDs	–	<0.5%	1%	1%	2%	1%	11%	4%
Hybrid CFL/LEDs	–	–	–	–	<0.5%	<0.5%	–	<0.5%
Cold Cathodes	–	–	–	–	<0.5%	–	–	<0.5%
NON-ADVANCED	**91%**	**89%**	**96%**	**88%**	**88%**	**64%**	**55%**	**78%**

Basic CFLs (≤30 Watts)	40%	17%	36%	13%	21%	13%	51%	27%
Incandescent/Halogens	51%	73%	60%	75%	67%	51%	4%	51%
HID Lamps	–	–	–	1%	1%	<0.5%	–	<0.5%
Number of Lamps	**31,112**	**16,118**	**20,008**	**76,283**	**277,507**	**99,362**	**146,777**	**667,167**

Table 3-5
Percent of Total Advanced and Non-Advanced Packages Observed by Channel, 2011

	Channel							
Lamp Type	Discount	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall
ADVANCED	**11%**	**16%**	**6%**	**17%**	**21%**	**43%**	**57%**	**27%**
Advanced CFLs	11%	16%	5%	15%	16%	41%	33%	21%
LEDs	–	<0.5%	1%	1%	5%	2%	24%	6%
Hybrid CFL/LEDs	–	–	–	–	<0.5%	<0.5%	–	<0.5%
Cold Cathodes	–	–	–	–	<0.5%	–	–	<0.5%
NON-ADVANCED	**89%**	**84%**	**94%**	**83%**	**79%**	**57%**	**43%**	**73%**
Basic CFLs (≤30 Watts)	51%	19%	51%	12%	19%	12%	41%	23%
Incandescent/Halogens	38%	65%	43%	70%	58%	45%	2%	49%
HID Packages	–	–	–	1%	2%	<0.5%	–	1%
Number of Packages	**17,298**	**8,628**	**12,464**	**49,370**	**116,902**	**45,670**	**40,767**	**291,099**

3.1.2.3 Average Number of Lamp Models per Store

During the Fall 2011 shelf surveys, researchers recorded the model number for each package of lamps observed in our sample of stores. As part of the analysis process described in Section 2 above, DNV KEMA staff identified unique model numbers included in the data. By comparing the average number of advanced and non-advanced lamp models across retail channels, we get a sense of the diversity of products offered within those channels—which, in turn, helps us understand the range of choices available to the consumer.

3.1.2.4 Summary of Findings

- The retail stores included in our 2011 sample averaged more than three times as many non-advanced lamp models per store as advanced lamp models (93 and 28 models, respectively). Field researchers observed the highest advanced and non-advanced lamp model diversity in home improvement stores (averaging 97 and 234 models per store, respectively). Researchers observed the lowest average number of advanced lamp

models in discount stores and the lowest diversity of non-advanced lamp models in membership clubs (1 and 3 models per store, respectively).

- Among advanced lamps, advanced CFLs had the greatest diversity of models available across all store types.
- LED lamps averaged just under 7 models per store across all stores in our sample, with the greatest diversity in home improvement (which averaged 32 LED models per store) and the lowest in drug and grocery stores (both with an average of less than one model per store in our sample).

3.1.2.5 Detailed Findings

In this section we provide an overview of model number diversity by advanced and non-advanced lamp type and channel for Fall 2011 shelf surveys. Table 3-6 below presents data on the average number of models observed by our field staff within each store by channel. For details on total number of model numbers by channel as well as average number of models by detailed lamp type, please see Table B-8, Table B-9, and Table B-10 in Appendix B.

Key findings with respect to average number of advanced models observed in our 2011 sample include:

- There were, on average, 28 advanced lamp model numbers per store across all of the stores in our sample. Field researchers observed the highest advanced lamp model number diversity in home improvement stores, with nearly 100 advanced lamp models per store, on average. Discount stores had the lowest advanced lamp model number diversity with only 1 advanced lamp per store on average.
- Among advanced lamps, advanced CFLs had the greatest model number diversity compared with other advanced lamp types, with an average of nearly 22 advanced CFL model numbers per store across all of the stores in our sample. Again, home improvement stores showed the highest model number diversity with respect to advanced CFLs with nearly 65 advanced CFLs models, on average, per store. Discount stores averaged only 1 advanced CFL model per store.
- LEDs averaged nearly 7 model numbers per store across all stores in our sample. Home improvement stores had the greatest diversity of LED model numbers with 32 model numbers per store. Among the channels that carried LEDs (all channels except discount), drug stores had the lowest LED model number diversity per store (0.4 LED models per store) followed by grocery stores at 0.8 LED models per store.

Key findings with respect to the average number of non-advanced models observed in our 2011 sample include:

- There were more than 93 non-advanced lamp model numbers per store, on average, across all stores in our sample. Home improvement stores had the highest non-advanced lamp model number diversity with over 234 non-advanced lamp models per store, on average. Membership stores had the lowest non-advanced lamp model number diversity with 3 non-advanced lamp model numbers per store, on average.
- Among incandescent/halogen lamps, home improvement stores had the highest model number diversity with an average of more than 190 incandescent/halogen models per store. Hardware stores were a close second in terms of model number diversity with an average of slightly more than 160 incandescent/halogen models per store. Membership stores had the lowest average at 0.3 incandescent/halogen models per store.
- There were, on average, nearly 14 basic CFL models per store across all stores in our sample. Home improvement stores had the highest basic CFL model number diversity at more than 33 basic CFL models per store. Mass merchandise stores were a distant second in terms of basic CFL model number diversity with an average of nearly 22 basic CFL models per store. Discount stores had the lowest basic CFL model number average per store at 2.3 models per store.

Table 3-6
Average Number of Advanced and Non-Advanced Lamp Models Per Store by Channel, 2011

Lamp Type	Store Type							
	Discount	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall
ADVANCED	**1.2**	**13.7**	**4.5**	**42.5**	**97.2**	**33.0**	**9.2**	**28.4**
Advanced CFLs	1.2	13.2	3.7	37.4	64.5	29.0	5.0	21.8
LEDs	–	0.4	0.8	5.1	32.0	4.0	4.2	6.6
Hybrid CFL/LEDs	–	–	–	–	0.4	0.0	–	0.1
Cold Cathodes	–	–	–	–	0.4	–	–	0.1
NON-ADVANCED	**12.1**	**71.4**	**30.7**	**181.4**	**234.4**	**124.3**	**3.0**	**93.1**
Basic CFLs (≤30 Watts)	2.3	14.0	6.0	16.8	33.2	21.5	2.7	13.6
Incandescent/Halogens	9.8	57.4	24.7	160.6	190.7	102.5	0.3	77.4
HID Lamps	–	–	–	4.0	10.5	0.3	–	2.1
Number of Stores	**27**	**27**	**27**	**27**	**26**	**24**	**26**	**184**

3.1.3 EISA-Compliant and Non-Compliant Incandescent Lamps

The purpose of this section is to provide an overview on the availability lamps that are compliant and non-compliant with the California Lighting Efficiency and Toxics Reduction Act (Assembly Bill 1109) the Energy Independence and Security Act of 2007 (EISA).

The Energy Independence and Security Act (EISA), passed by the U.S. Congress in 2007, requires that general purpose incandescent lamps meet new efficacy standards.[18] The new standards establish minimum efficiency requirements that traditional general purpose incandescent lamps[19] cannot meet, effectively pushing the most inefficient lamps out of the

[18] H.R. 6--110th Congress: Energy Independence and Security Act of 2007. (2007). Online at GovTrack.us (database of federal legislation). Retrieved May 1, 2012 from http://www.govtrack.us/congress/bills/110/hr6.

[19] Ibid, pp. 82-86. For the purposes of this report, we adopted the EISA definition of general service incandescent lamps (referred to as general purpose): "'general service incandescent lamp' means a standard incandescent or halogen type lamp that – 1) is intended for general service applications; 2)

market. As shown in Table 3-7, EISA standards are phasing in gradually; on January 1, 2012, the law prohibited the manufacture and importation of general purpose incandescent lamps above 72 watts with light output ranging from 1490 to 2600 lumens (referred to as "high brightness" throughout this section) into the U.S., beginning the phase-out of many traditional 100 watt incandescent lamps.

Table 3-7
Summary of EISA Efficiency Standards[20]

EISA Effective Dates	Incandescent Lamp Wattage (W)	Typical Incandescent Light Output (lm)	Typical Incandescent Efficacy (lm/W)	EISA Replacement Wattage (W)	EISA Light Output Ranges (lm)	EISA Minimum Efficacy Ranges (lm/W)
1/1/2012	100 W	1690 lm	17 lm/W	72 W	1490-2600 lm	21-36 lm/W
1/1/2013	75 W	1170 lm	16 lm/W	53 W	1050-1489 lm	20-28 lm/W
1/1/2014	60 W	840 lm	14 lm/W	43 W	750-1049 lm	17-24 lm/W
1/1/2014	40 W	490 lm	12 lm/W	29 W	310-749 lm	11-26 lm/W

California Assembly Bill 1109 (AB 1109), the California Lighting Efficiency and Toxics Reductions Act, was also passed in 2007 and required the California Energy Commission (CEC) to develop and implement a strategy that would reduce California's energy consumption related to general purpose indoor lighting by 50 percent by 2018. California adopted the same efficiency standards as EISA; however, the effective dates for AB 1109 are one year earlier than EISA for each class of lamps.[21] Thus, the phase-out of high brightness incandescent lamps (light output between 1490 and 2600 lumens with a maximum of wattage of 72) in California occurred on January 1, 2011 while in the rest of the country, the phase-out for the same lamp class began one year later (on January 1, 2012).

has a medium screw base; has a lumen range of not less than 310 lumens and not more than 2,600 lumens; and 4) is capable of being operated at a voltage range at least partially within 110 and 130 volts. EISA also includes separate efficiency standards for reflector and modified spectrum lamps as well as a list of lamp types that are excluded from regulation. Our analysis was focused on general purpose lamps only, excluding reflector, modified spectrum, and other EISA exemptions.

[20] United States Environmental Protection Agency (EPA), 2011. Next Generation Lighting Programs: Opportunities to Advance Efficient Lighting for a Cleaner Environment. (EPA with assistance from ECOS and ICF). 2011.

[21] Huffman, Jared. California Can Shine Across the Nation by Enacting Performance Based Lighting Efficiency Legislation. Written for CaliforniaProgressReport.com. March 13, 2007.

In spite of these regulations, it is important to understand that retailers are still allowed to sell traditional incandescent lamps (including general purpose incandescent lamps in the 1490-2600 lumen range) if they have these lamps in stock. For example, the phase-out of high brightness incandescent lamps did not lead to the immediate disappearance of these lamps from the retail lighting market on January 1, 2011, in California. As such, DNV KEMA field researchers still found high brightness incandescent lamps above 72 watts when conducting shelf surveys in Fall 2011.

For the purpose of this report, we will refer to general purpose incandescent A-lamps that complied with EISA and AB 1109 efficiency standards (as of 2011) or would comply with future EISA and AB 1109 regulations as "EISA-compliant" A-lamps and those that do not comply with the regulations as "non-compliant." We categorize the lumen bins presented in Table 3-7 above as follows:

- **High Brightness:** This incandescent/halogen lamp category refers to EISA-compliant and non-compliant MSB A-lamps with light output between 1490 and 2600 lumens, equivalent to the light output of many traditional 100 watt incandescent lamps. EISA-compliant lamps in this category have a maximum wattage of 72 watts. Non-compliant lamps in this category exceed 72 watts, the maximum wattage allowed by EISA (i.e. traditional 100 watt lamps would be non-compliant). The phase-out for these lamps in California began on January 1, 2011 (and nationally, on January 1, 2012).
- **Medium High Brightness**: This incandescent/halogen lamp category refers to EISA-compliant and non-compliant MSB A-lamps with light output between 1050 and 1489 lumens, equivalent to the light output of many traditional 75 watt incandescent lamps. EISA-compliant lamps in this category have a maximum wattage of 53 watts. Non-compliant lamps in this category exceed 53 watts, the maximum wattage allowed by EISA (i.e. traditional 75 watt lamps would be non-compliant). The phase-out for these lamps in California began on January 1, 2012 (and nationally, on January 1, 2013).
- **Medium Low Brightness**: This incandescent/halogen lamp category refers to EISA-compliant and non-compliant MSB A-lamps with light output between 750 and 1049 lumens, equivalent to the light output of many traditional 60 watt incandescent lamps. EISA-compliant lamps in this category have a maximum wattage of 43 watts. Non-compliant lamps in this category exceed 43 watts, the maximum wattage allowed by EISA (i.e. traditional 60 watt lamps would be non-compliant). The phase-out for these lamps in California began on January 1, 2013 (and nationally, on January 1, 2014).

- **Low Brightness**: This incandescent/halogen lamp category refers to EISA-compliant and non-compliant MSB A-lamps with light output between 310 and 749 lumens, equivalent to the light output of many traditional 40 watt incandescent lamps. EISA-compliant lamps in this category have a maximum wattage of 29 watts. Non-compliant lamps in this category exceed 29 watts, the maximum wattage allowed by EISA (i.e. traditional 40 watt lamps would be non-compliant). The phase-out for these lamps in California began on January 1, 2013 (and nationally, on January 1, 2014).

3.1.3.1 Summary of Findings

Key findings in this section include:

- Thirty-six percent of all high brightness A-lamps (1490—2600 lumens) were EISA-compliant across all stores in our sample in Fall 2011. This means that 64 percent of the incandescent A-lamps observed in the stores in our sample did not yet comply with the AB 1109 requirements that went into effect in January, 2011. (Note that as stated above, retailers are allowed to “sell through” their existing stock of non-compliant lamps.)
- Eleven percent of all medium high brightness A-lamps (1050—1489 lumens) were EISA-compliant across all stores in our sample in 2011. This means that 11 percent of the lamps observed in this lamp category were compliant with the second phase of AB 1109 that went into effect in January, 2012.
- On average, across all channels, there were almost twice as many non-compliant high brightness lamps per store and more than eight times as many non-compliant medium high brightness lamps per store in our Fall 2011 sample as EISA-compliant lamps in those respective categories.
- Field staff observed the highest average number of EISA-compliant high brightness A-lamps per store in membership clubs (79). This same channel had the highest proportion of EISA-compliant high brightness A-lamps across retail channels (100 percent) among the stores in which we conducted shelf surveys during Fall 2011.
- Discount stores represented the only channel in our sample in which no EISA-compliant high brightness lamps were observed during the Fall 2011 shelf surveys.
- Among big box stores (large home improvement, mass merchandise, and wholesale clubs), EISA-compliant high brightness A-lamps represented 6 percent of high

brightness A-lamps in our 2009 sample compared to 44 percent in our 2011 sample, suggesting an increased presence of EISA-compliant lamps in this category over time.

3.1.3.2 Detailed Findings

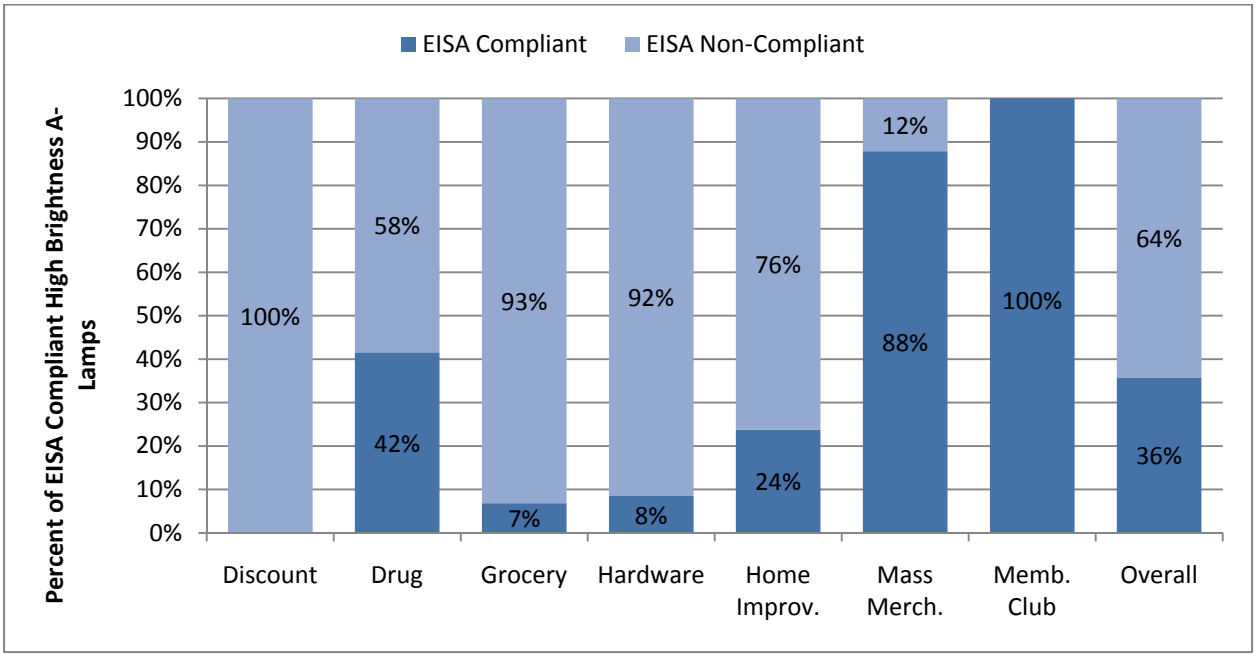
This section provides details on the availability of EISA-compliant and non-compliant high brightness (1490—2600 lumens) and medium high brightness (1050—1489 lumens) MSB incandescent/halogen A-lamps (phased out in California starting in January 2011 for high brightness and January 2012, for medium high brightness lamps). For details on EISA-compliant and non-compliant medium low brightness A-lamps (750—1049 lumens) and low brightness A-lamps (310—749 lumens), see Table B-11 and Table B-12 in Appendix B.

3.1.3.2.1 High Brightness Incandescent/Halogen MSB A-Lamps (1490—2600 lumens)

Figure 3-3 shows the proportion of EISA-compliant and non-compliant high brightness incandescent/halogen A-lamps observed during the Fall 2011 shelf surveys by channel. Recall that this class of lamps was phased out in California starting on January 2, 2011 (and a year later in the rest of the U.S.).

Across all stores in our sample, EISA-compliant high brightness A-lamps represented 36 percent of all high brightness A-lamps observed. In discount stores, researchers did not observe any EISA-compliant high brightness A-lamps (thus, 100 percent of the high brightness A-lamps observed were non-compliant). Conversely, researchers did not observe any non-compliant high brightness A-lamps in membership club stores (thus, 100 percent of the high brightness A-lamps observed were EISA-compliant).

Figure 3-3
Proportion of EISA-Compliant and Non-Compliant High Brightness A-Lamps (1490—2600 lumens) by Channel, 2011*



* See Table B-11 in Appendix B for the number of lamps for all EISA-compliant and non-compliant A-Lamps by retail channel.

Table 3-8 shows the average number of EISA-compliant and non-compliant high brightness A-lamps (1490—2600 lumens) observed during the Fall 2011 shelf surveys per store by channel. In other words, each cell represents the total number of A-lamps for a given lamp category and channel divided by the number of stores in that channel. Key findings include:

- Across all stores in our Fall 2011 sample there were 27 EISA compliant high brightness A-lamps stocked per store, on average. In contrast, there were 49 non-compliant high brightness A-lamps stocked per store, on average (see Table B-11 in Appendix B for details on the total number of traditional and EISA-compliant A-lamps stocked by channel).
- Comparing between channels, membership stores carried the greatest average number of EISA-compliant high brightness A-lamps (79 lamps per store) among the stores we visited in Fall 2011, and as mentioned above, did not carry any non-compliant high brightness lamps. While home improvement stores also carried a large number of EISA-

compliant high brightness A-lamps (71 lamps per store), they also stocked the largest number of non-compliant lamps on average (227 per store) of any channel observed.

Table 3-8
Average Number of EISA-Compliant and Non-Compliant High Brightness A-Lamps (1490—2600 lumens) per Store by Channel, 2011

MSB General Service Incandescent/Halogen A-Lamps	Store Type							
	Discount	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall
High Brightness (1490-2600 lumens)								
EISA Compliant	0	3	2	7	71	34	79	27
EISA Non-Compliant	2	4	27	78	227	5	0	49
Total High Brightness A-Lamps	**2**	**8**	**29**	**86**	**298**	**38**	**79**	**76**
Number of Stores	**27**	**27**	**27**	**27**	**26**	**24**	**26**	**184**

Figure 3-4 shows a comparison for 2009 and 2011 of the proportion of EISA-compliant and non-compliant high brightness A-lamps (1490—2600 lumens) observed within each of the three big box channels – home improvement, mass merchandise, and membership clubs. The table includes the four home improvement chains in which DNV KEMA staff conducted shelf surveys in both 2009 and 2011, the four mass merchandise chains in which we conducted shelf surveys in both years, and the two membership club chains in which we conducted shelf surveys in both years.[22] For details on the total number of EISA-compliant and non-compliant A-lamps per store in 2009 and 2011 see Table B-13 in Appendix B.

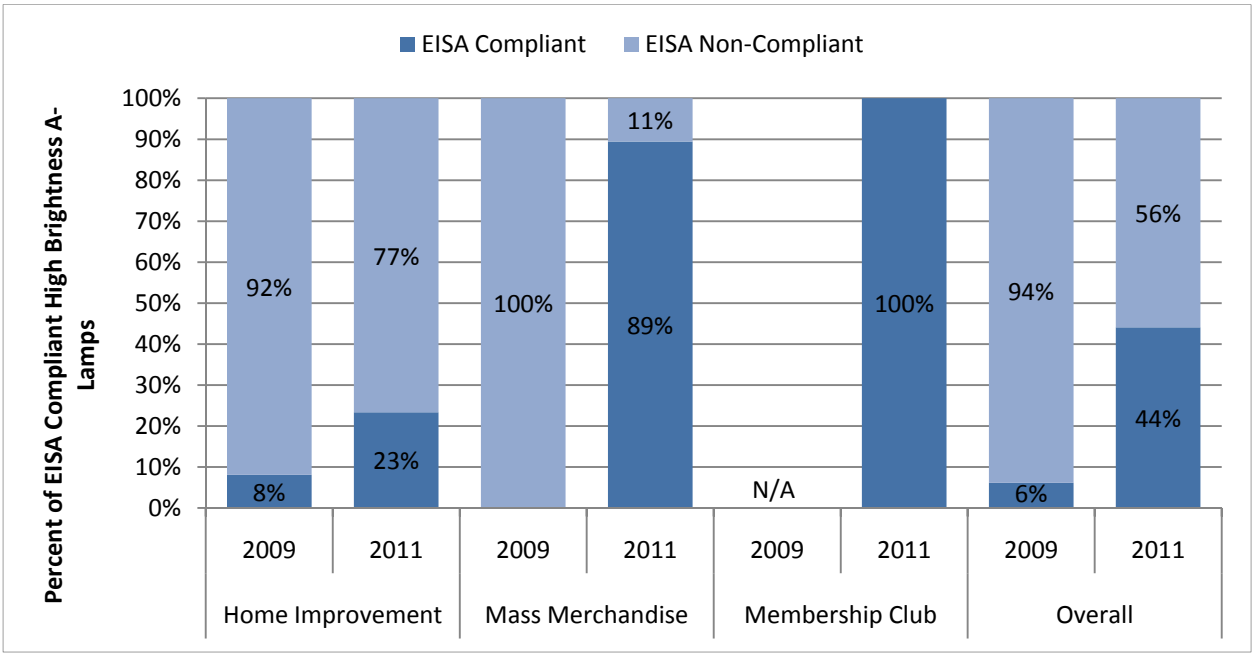
Key findings include:

- Across all stores in our sample, EISA-compliant high brightness A-lamps represented 44 percent of high brightness A-lamps in 2011 compared to only 6 percent in 2009. This suggests that AB 1109 and EISA regulations have had a noticeable impact on the stocking patterns of high brightness A-lamps in California stores.

[22] Comparisons between years for the other store types could not be supported by the small sample sizes for these store types within the 2009 data.

- While stocking patterns in big box stores have changed significantly from 2009 to 2011, non-compliant high brightness lamps still represent the majority of lamps in this category.
- Membership stores did not stock any high brightness A-lamps in 2009 and only stocked EISA-compliant high brightness A-lamps 2011.

Figure 3-4
Proportion of EISA-Compliant and Non-Compliant High Brightness A-Lamps (1490—2600 lumens) by Big Box Channel, 2009 & 2011



* See Table B-13 in Appendix B for the number of stores within each retail channel for 2009 and 2011.

Table 3-9 shows a comparison of the average number of EISA-compliant and non-compliant high brightness A-lamps (1490—2600 lumens) carried per store by channel for 2009 and 2011. For details on the average number of EISA-compliant and non-compliant A-lamps per store in 2009 and 2011 see Table B-14 in Appendix B. Key findings include:

- Across all stores in our sample in the three comparison channels there were 69 EISA-compliant high brightness A-lamps stocked per store, on average, in 2011 compared to 11 EISA-compliant high brightness A-lamps in 2009. Again, this suggests that AB 1109 and EISA regulations have had a noticeable impact.

- Home improvement stores carried the highest average number of EISA-compliant high brightness A-lamps per store for both 2009 (28) and 2011 (84).

Table 3-9
Average Number of EISA-Compliant and Non-Compliant High Brightness A-Lamps (1490—2600 lumens) per Store by Big Box Channel, 2009 & 2011

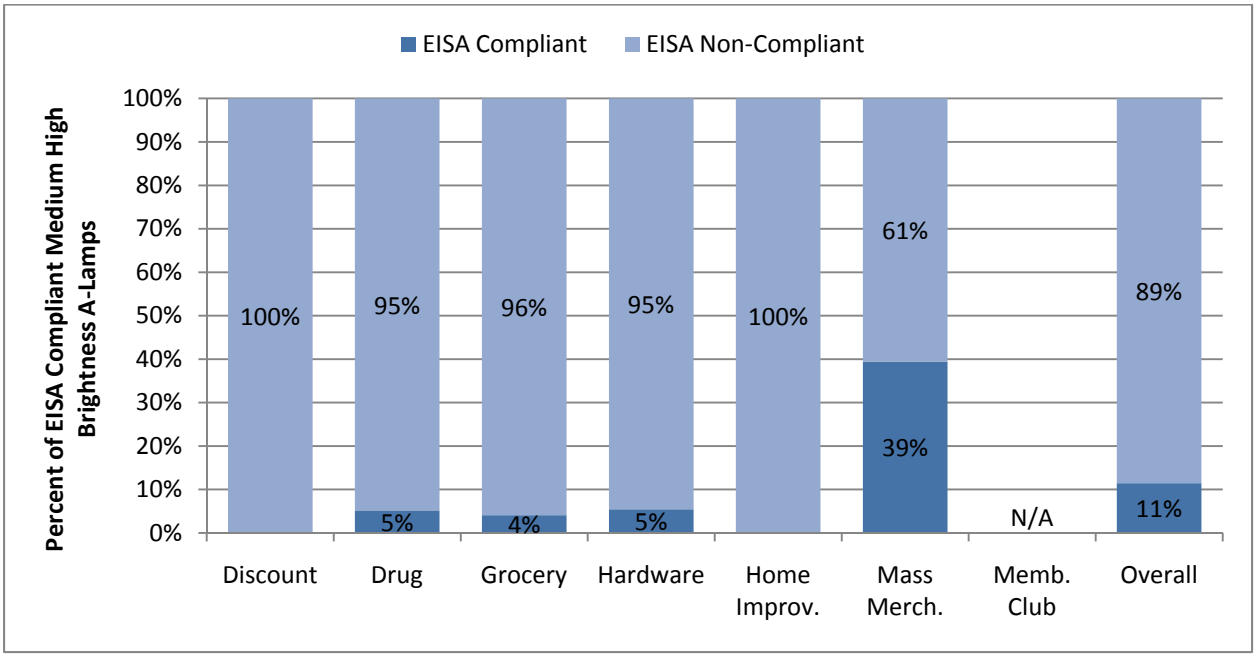
MSB General Service Incandescent/Halogen A-Lamps	Store Type							
	Home Improvement		Mass Merchandise		Membership Club		Overall	
	2009	2011	2009	2011	2009	2011	2009	2011
High Brightness (1490-2600 lumens)								
EISA Compliant	28	84	0	41	0	79	11	69
EISA Non-Compliant	317	275	139	5	0	0	175	88
Total High Brightness A-Lamps	**345**	**358**	**139**	**45**	**0**	**79**	**187**	**157**
Number of Stores	**14**	**21**	**11**	**20**	**9**	**26**	**34**	**67**

3.1.3.2.2 Medium High Brightness Incandescent/Halogen MSB A-Lamps (1050—1489 lumens)

Figure 3-5 shows the proportion of EISA-compliant and non-compliant medium high brightness incandescent/halogen A-lamps (1050—1489 lumens) stocked by channel. Recall that the phase-out for this lamp category began in California on January 1, 2012 and will begin a year later in the rest of the U.S.

Overall, EISA-compliant A-lamps represented 11 percent of all medium high brightness A-lamps observed during the Fall 2011 shelf surveys. Field researchers observed the greatest proportion EISA-compliant medium high brightness A-lamps in mass merchandise stores, at 39 percent of all medium high brightness A-lamps observed. Excluding mass merchandise stores, EISA-compliant medium high brightness A-lamps observed in other retail channels represented no more than 5 percent of lamps in the category, and two channels, home improvement and discount stores, did not have any EISA-compliant lamps in the medium high brightness category. Field researchers did not observe any EISA-compliant or non-compliant medium high brightness A-lamps in membership stores.

Figure 3-5
Proportion of EISA-Compliant and Non-Compliant Medium High Brightness A-Lamps (1050—1489 lumens) by Channel, 2011*



* See Table B-11 in Appendix B for the number of lamps and packages for all EISA-compliant and traditional A-Lamps by retail channel.

Table 3-10 shows the average number of EISA-compliant and non-compliant medium high brightness A-lamps (1050—1489 lumens) observed per store by field researchers during the Fall 2011 shelf surveys within each retail channel. Key findings include:

- Across all stores in our sample there were 5 EISA-compliant medium high brightness A-lamps stocked per store, on average, compared to 42 non-compliant medium high brightness A-lamps.
- Mass merchandise stores carried the highest number of EISA-compliant medium high brightness A-lamps (32 lamps per store, on average). In contrast, home improvement and hardware stores stocked the highest number of non-compliant medium high brightness lamps, 87 and 89 lamps per store, respectively.

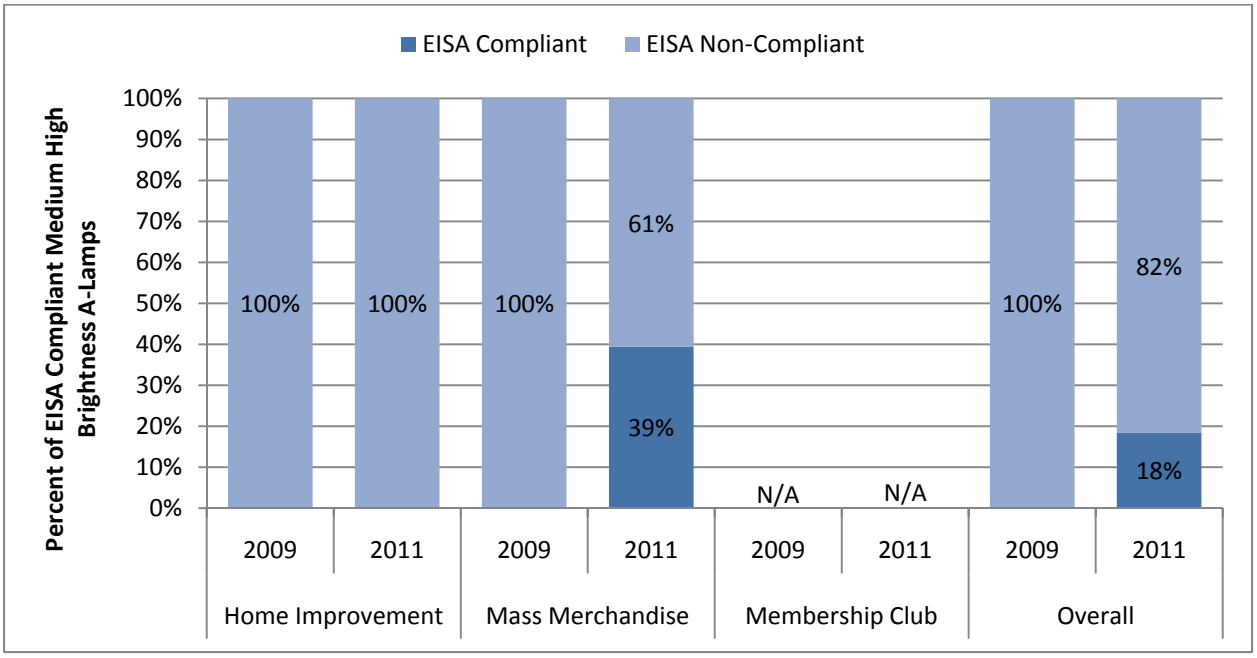
Table 3-10
Average Number of EISA-Compliant and Non-Compliant Medium High Brightness A-Lamps (1050—1489 lumens) per Store by Channel, 2011

MSB General Service Incandescent/Halogen A-Lamps	Store Type							
	Discount	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall
Medium High Brightness (1050-1489 lumens)								
EISA Compliant	0	2	1	5	0	32	0	5
EISA Non-Compliant	1	38	31	89	87	49	0	42
Total Medium High Brightness A-Lamps	**1**	**40**	**33**	**94**	**87**	**81**	**0**	**47**
Number of Stores	**27**	**27**	**27**	**27**	**26**	**24**	**26**	**184**

Figure 3-6 shows a comparison for 2009 and 2011 of the proportion of EISA-compliant and non-compliant medium high brightness A-lamps stocked by channel. Key findings for EISA-compliant and non-compliant medium high brightness A-lamps include:

- Across all stores in our sample, EISA-compliant medium high brightness A-lamps represented 18 percent of medium high brightness A-lamps in 2011 compared to 0 percent in 2009.
- Mass merchandise stores increased their stocking of EISA-compliant medium high brightness lamps from 0 percent in 2009, to 39 percent of medium high brightness lamps in 2011. No change in stocking patterns of medium high brightness lamps were observed in home improvement stores between 2009 and 2011 (all medium high brightness A-lamps were non-compliant in both years).
- Membership stores did not stock medium high brightness A-lamps in 2009 or 2011.

Figure 3-6
Proportion of EISA-Compliant and Non-Compliant Medium High Brightness A-Lamps (1050—1489 lumens) by Big Box Channel, 2009 & 2011



* See Table B-13 in Appendix B for the number of stores within each retail channel for 2009 and 2011.

Table 3-11 shows a comparison of the average number of EISA-compliant and non-compliant medium high brightness A-lamps (1050—1489 lumens) observed per store by channel for 2009 and 2011. Key findings include:

- Across all stores in our sample in the three comparison channels there were 11 EISA-compliant medium high brightness A-lamps stocked per store, on average, in 2011 compared to zero EISA-compliant A-lamps in 2009.
- Mass merchandise stores were the only channel where EISA-compliant medium high brightness A-lamps were observed.

Table 3-11
Average Number of EISA-Compliant and Non-Compliant Medium High Brightness A-Lamps (1050—1489 lumens) per Store by Big Box Channel, 2009 & 2011

MSB General Service Incandescent/Halogen A-Lamps	Store Type							
	Home Improvement		Mass Merchandise		Membership Club		Overall	
	2009	2011	2009	2011	2009	2011	2009	2011
Medium High Brightness (1050-1490 lumens)								
EISA Compliant	0	0	0	38	0	0	0	11
EISA Non-Compliant	288	105	55	59	0	0	136	50
Total Medium High Brightness A-Lamps	**288**	**105**	**55**	**97**	**0**	**0**	**136**	**62**
Number of Stores	**14**	**21**	**11**	**20**	**9**	**26**	**34**	**67**

3.1.4 IOU-Discounted Lamps

As described in Section 2 above, DNV KEMA analysts observed lamp packaging and store signage to identify lamps as IOU-discounted or non-IOU-discounted during the Fall 2011 shelf surveys. Researchers also characterized each observed lamp model in each store into an "energy-efficient" or "non-efficient" lamp category and an "advanced" or "non-advanced" category. Recall that:

- The "energy-efficient" lamp category includes all CFLs, LED lamps, hybrid CFL/LED lamps, and cold cathode lamps, and the "non-efficient" category includes all incandescent/halogen lamps and high-intensity discharge (HID) lamps.
- The "non-advanced" lamp category includes basic MSB CFLs (single-wattage non-dimmable bare spiral CFLs less than or equal to 30 watts), incandescent/halogen lamps, and HID lamps. The "advanced" lamp category includes high-wattage and specialty MSB CFLs of all wattages, CFLs greater than 30 watts, CFLs with non-MSB bases, LED lamps, hybrid CFL/LED lamps, and cold cathode lamps.

These data enable one to assess the overall proportion of total energy-efficient lamp types observed during the Fall 2011 shelf surveys versus other lamp types. They also enable one to assess the proportion of energy-efficient lamps and advanced lamps comprised by IOU-discounted lamps versus non-IOU-discounted lamps. Finally, among IOU-discounted lamps, the data enable estimation of the proportion that are advanced versus non-advanced.

3.1.4.1 Summary of Findings

- IOU-discounted lamps represented 14 percent of all of the lamps observed across all 184 retail stores in our 2011 shelf survey sample and 29 percent of all energy-efficient lamps observed across all stores.
- In discount stores, IOU-discounted lamps represented the greatest proportion of energy-efficient lamps observed across all store types in our 2011 sample (nearly 90 percent of energy-efficient lamps and 43 percent of all lamps observed). IOU-discounted lamps represented the smallest proportion of both energy-efficient lamps and all observed lamps across all stores in our sample at mass merchandise stores (approximately 1% of all observed lamps in this channel).
- Across all channels, 31 percent of all IOU-discounted lamps observed in 2011 were advanced and 69 percent were non-advanced lamps. Among IOU-discounted lamps, researchers observed the greatest proportion of advanced lamps within the drug store channel (41% of IOU-discounted lamps observed were advanced) and the lowest in grocery stores (in which 4 percent of the IOU-discounted lamps were advanced).

3.1.4.2 Detailed Findings

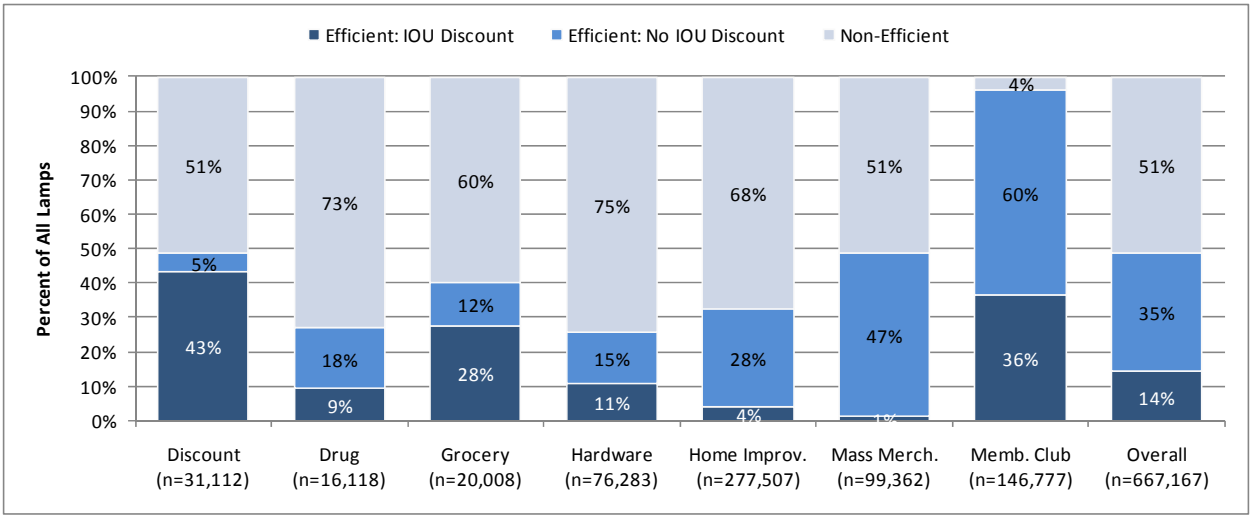
3.1.4.2.1 Energy-Efficient and Non-Efficient Lamps

Figure 3-7 below shows the percentage of all lamps observed during the Fall 2011 shelf surveys that were energy-efficient versus non-efficient, and among energy-efficient lamps, the percentage that were IOU-discounted versus non-IOU-discounted. Table B-15 through Table B-18 in Appendix B provide additional details on energy-efficient and non-efficient *lamps*, and Table B-19 through Table B-22 have information on energy-efficient and non-efficient *packages*. Appendix C provides details on energy-efficient and non-efficient lamps (Table C-11) and packages (Table C-12) by IOU service territory.

Across all channels, efficient lamps represent 49 percent of all 667,167 lamps observed in 2011 (51% were non-efficient). IOU-discounted lamps (all of which are efficient) account for 14 percent of all lamps across all stores in our sample and non-discounted lamps represent 86 percent of all lamps observed. Membership stores stocked the highest percentage of efficient lamps at 96 percent of the 146,777 lamps observed in those stores in 2011. Drug stores had the lowest proportion of energy-efficient lamps at 27 percent of the 16,118 lamps stocked in those stores. With respect to discounted lamps, discount stores, not surprisingly, had the highest proportion of IOU-discounted lamps at 43 percent of the 31,112 lamps observed in those stores

in 2011. Mass merchandise stores had the lowest proportion of IOU-discounted lamps; only 1 percent of the 99,362 lamps in those stores were IOU-discounted lamps in 2011, followed by home improvement stores (with 4% of lamps discounted by IOUs) and drug stores (9%).

Figure 3-7
Percent of Total Lamps That Are Energy-Efficient (IOU-Discounted and Non-IOU-Discounted) and Non-Efficient by Channel, 2011



3.1.4.2.2 Advanced and Non-Advanced Lamps

The figure above showed the percentage of all lamps observed during the Fall 2011 shelf surveys that were energy-efficient versus non-efficient, and among energy-efficient lamps, the percentage that were IOU-discounted versus non-IOU-discounted. Figure 3-8 below focuses only on the IOU-discounted lamps and shows the percentage observed in each channel that were advanced versus non-advanced in 2011.[23]

Across all channels, advanced lamps represent 31 percent of all 95,446 IOU-discounted lamps observed in 2011 (as compared to 69% of IOU-discounted lamps that were non-advanced). Drug stores stocked the highest percentage of advanced IOU-discounted lamps at 41 percent of the 1,498 IOU-discounted lamps observed in those stores in 2011. Membership stores had the second highest percentage of advanced IOU-discounted lamps at 38 percent of the 53,414 IOU-discounted lamps observed in those stores. Grocery stores had the lowest proportion of

[23] Recall that all IOU-discounted lamps are efficient lamps. Also, all IOU-discounted non-advanced lamps are basic CFLs.

advanced IOU-discounted lamps at 4 percent of the 5,547 IOU-discounted lamps stocked in those stores in 2011.

Figure 3-8
Percent of IOU-Discounted Lamps That Are Advanced and Non-Advanced by Channel, 2011

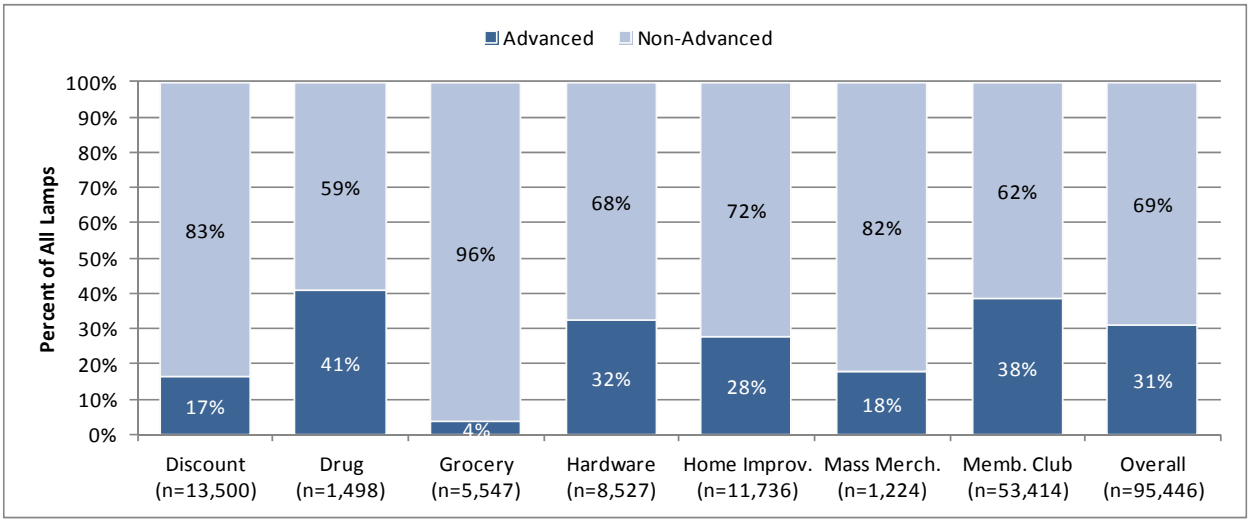


Table B-23 and Table B-26 in Appendix B provide additional details on IOU-discounted advanced and non-advanced lamps and packages by channel.

3.2 Pricing

The sections below provide details on lamp pricing for lamps found during the 2011 shelf surveys, including average overall price per lamp as well as average prices for lamps both with and without IOU discounts.

3.2.1 Average Price

During the Fall 2011 shelf surveys, field researchers gathered pricing information for each lamp model observed in the stores. Based on the methodology described in Section 2 above, DNV KEMA staff calculated the average price per lamp for all observed lamps.

3.2.1.1 Summary of Findings

- In 2011, average prices for advanced and non-advanced lamps were lowest overall in the discount stores in our sample and highest overall in the hardware stores in our sample.
- LED lamps averaged roughly $4.50 to $35.00 more per lamp than CFLs for the common MSB lamp styles, with the greatest price gap for reflector/flood styles and the smallest for candelabra/torpedo styles in 2011.
- Within the three big box channels (large home improvement, mass merchandise, and membership clubs) included in our samples in 2009 and 2011, advanced lamp prices increased by more than a dollar per lamp in this timeframe – likely a result of the greater variety and quantity of LED lamps in these channels in 2011. Average prices for non-advanced lamps remained stable between 2009 and 2001 in these channels.

3.2.1.2 Detailed Findings

In Table 3-12 below we provide details on average price per lamp for advanced and non-advanced lamps by channel. Recall that average prices presented in this section are lamp-weighted, not sales-weighted (see Section 2 above for further details on average price calculation methodology). For further details on average price by detailed lamp type see Table B-27 in Appendix B. For price *ranges* for a given lamp category, see Table B-30 and Table B-31 in Appendix B. Appendix C (Table C-13 and Table C-14 provide additional detail on average price per lamp by IOU territory.

Key findings regarding average price (Table 3-12) include:

- Advanced lamps were, on average, $5.78 per lamp compared to $2.11 per lamp for non-advanced across all 184 stores surveyed in 2011.
- The average price per lamp for advanced lamps was highest in home improvement stores ($9.97 per lamp) and lowest in discount stores ($1.09 per lamp) in our sample. For non-advanced lamps, the average price per lamp was highest in drug stores ($2.70 per lamp) and lowest in discount stores ($0.62 per lamp). The high home improvement store pricing can be attributed to the broad range and volume of advanced lamp styles available in this channel.

- Among advanced lamp types, LEDs had the highest price per lamp across all stores in our sample ($15.67 per lamp) and advanced CFLs had the lowest price per lamp ($3.82 per lamp) compared to other advanced lamp types.
- Among non-advanced lamp types, CFLs average $1.80 per lamp across all stores in our sample. Incandescent/halogens averaged $2.15 per lamp for incandescent/halogens across all stores in our sample. We should note that the incandescent/halogen average price per lamp shown in Table 3-12 represents all incandescent/halogens (i.e., all base types and styles). If we compare basic CFLs with MSB A-lamp incandescent/halogens (excluding 3-way lamps; see Table 3-13 below), the average price drops to $1.16 per lamp for MSB A-lamp incandescent/halogens (in other words, MSB A-lamp incandescent/halogens were 64 cents per lamp cheaper across all stores in our sample when compared to basic CFLs).

Table 3-12
Average Price per Lamp by Lamp Type and Channel, 2011*

Lamp Type	Channel							
	Discount	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall
ADVANCED	**$1.09**	**$7.49**	**$6.74**	**$7.38**	**$9.97**	**$3.60**	**$4.87**	**$5.78**
Advanced CFLs	$1.09	$7.43	$6.50	$6.55	$5.86	$3.45	$2.60	$3.82
LEDs	–	$11.61	$8.01	$17.95	$26.28	$8.42	$11.91	$15.67
Hybrid CFL/LEDs	–	–	–	–	$7.33	$7.57	–	$7.34
Cold Cathodes	–	–	–	–	$6.26	–	–	$6.26
NON-ADVANCED	**$0.62**	**$2.70**	**$1.64**	**$3.10**	**$2.27**	**$2.04**	**$1.40**	**$2.11**
Basic CFLs (≤30 Watts)	$0.83	$3.86	$1.37	$2.38	$2.16	$2.88	$1.40	$1.80
Incandescent/Halogens	$0.45	$2.44	$1.80	$3.05	$2.13	$1.84	$1.41	$2.15
HID Lamps	–	–	–	$19.88	$21.39	$10.97	–	$20.92
Number of Lamps	**31,112**	**16,118**	**20,008**	**76,283**	**277,507**	**99,362**	**146,777**	**667,167**

* See Table 3-15 for IOU-discounted and non-discounted average prices for advanced CFLs and basic CFLs. Note that average pricing distinctions broken out by IOU-discounted and non-discounted average prices are meaningful only for CFLs, since the number of IOU discounted LEDs was extremely limited during the Fall 2011 data collection effort.

Table 3-13 below provides average price data for CFLs, LEDs, and incandescent/halogen lamps among the stores we visited in 2011. Key findings include:

- Across all stores in our sample, LED MSB A-lamps have the highest average per lamp at $10.53 followed by CFL MSB A-lamps ($3.08 per lamp) and incandescent/halogen MSB A-lamps ($1.16 per lamp).
- In the MSB reflector/flood category, LEDs have the highest average lamp price ($38.28 per lamp) across all stores in our sample, followed by incandescent/halogen MSB reflector/floods ($5.06), and CFL MSB reflector/floods have the lowest average at $3.51 per lamp.
- For candelabra/torpedo shaped MSB lamps, LEDs have the highest average price ($11.87 per lamp), followed by CFL MSB candelabra/torpedo lamps ($5.88 per lamp); incandescent/halogens have the lowest average for this category ($1.45 per lamp).

Table 3-13
Average Price per Lamp by Lamp Type and Product Type (All Stores), 2011

Lamp Type	Product Type		
	CFL	LED	Incandescent / Halogen
MSB Lamps			
Basic Spiral CFLs (≤30 Watts)	$1.80	–	–
A-lamp	$3.08	$10.53	$1.16
Reflector/Flood	$3.51	$38.28	$5.06
Globe	$2.73	$22.12	$2.12
Candelabra & Torpedo Shape (MSB)	$5.88	$11.87	$1.45
Other MSB Lamps*	$1.83	$35.22	$2.83
Specialty MSB Lamps			
Specialty MSB CFLs: Dimmable	$5.62	–	–
Specialty MSB: 3-way	$7.33	–	$2.95
Other Non-MSB Lamps			
Candelabra Base	$5.18	$4.95	$1.29
GU Base	$6.39	$22.18	$3.87
Pin Base	$6.98	$18.24	$4.32
Candelabra Base with MSB Adaptor	$2.65	$6.12	$5.99
Other Base Lamps†	$17.44	$12.54	$5.33
Total Lamps	**300,634**	**24,807**	**339,030**

* Other MSB Lamps include tube shape, bug lights, night lights, and circline lamps.
† Other Base Lamps include large base and wedge base lamps.

For details on average price data for CFLs, LEDs, and incandescent/halogen lamps for IOU discounted and non-discounted lamps, see Table B-28 and Table B-29 in Appendix B.

In Table 3-14 below, we provide details on average price per lamp for advanced and non-advanced lamps by channel for 2009 and 2011 for home improvement, mass merchandise, and membership club stores. Findings for average lamp prices in 2009 and 2011 include:

- Advanced lamps across the three comparison channels were, on average, more than a dollar per lamp higher in 2011 as compared to 2009 ($4.61 per lamp in 2009 and $5.75 per lamp in 2011). This is likely due to the exponential growth of general purpose LEDs and higher diversity of LED styles available in the residential market from 2009 to 2011.
- The average price overall for non-advanced lamps remained stable between 2009 ($2.00 per lamp) and 2011 ($2.03 per lamp).
- The average price for advanced CFLs across all stores in our sample dropped by roughly 70 cents per lamp ($4.27 per lamp in 2009 and $3.58 per lamp in 2011).
- The average price of LEDs across all stores in our sample rose from $9.36 per lamp in 2009 to $15.66 per lamp. This is likely due to the greater diversity of LED products available in these three retail channels in 2011 compared to 2009 (see Table B-2 in Appendix B for further details).
- The average price for basic CFLs across all stores in our sample dropped slightly from $1.97 per lamp in 2009 to $1.81 per lamp in 2011.
- The average price of incandescent/halogen lamps remained roughly the same overall between 2009 ($2.01 per lamp) and 2011 ($2.03 per lamp).

Table 3-14
Average Price per Lamp by Lamp Type and Big Box Channel, 2009 & 2011

Lamp Type	Channel							
	Home Improvement		Mass Merchandise		Membership Club		Overall	
	2009	2011	2009	2011	2009	2011	2009	2011
ADVANCED	**$6.55**	**$10.69**	**$4.10**	**$3.60**	**$3.95**	**$4.87**	**$4.61**	**$5.75**
Advanced CFLs	$5.89	$6.10	$4.05	$3.45	$3.10	$2.60	$4.27	$3.58
LEDs	$24.29	$27.12	$8.95	$8.42	$7.20	$11.91	$9.36	$15.66
Cold Cathodes	$6.65	$6.26	–	–	–	–	$6.65	$6.26
NON-ADVANCED	**$2.21**	**$2.24**	**$1.75**	**$2.04**	**$1.42**	**$1.40**	**$2.00**	**$2.03**
Basic CFLs (≤30 Watts)	$2.64	$2.13	$2.16	$2.90	$1.43	$1.40	$1.97	$1.81
Incandescent/Halogens	$2.13	$2.10	$1.61	$1.84	$1.16	$1.41	$2.01	$2.03
Number of Lamps	**147,084**	**255,074**	**74,032**	**98,789**	**46,137**	**146,777**	**267,253**	**500,640**

For details on average 2009 and 2011 big box price data for advanced and non-advanced lamps broken out by IOU discounted and non-discounted average prices, see Table B-34 and Table B-35 in Appendix B.

3.2.2 Average Price for IOU-Discounted Versus Non-IOU-Discounted Lamps

Fall 2011shelf survey researchers gathered information regarding whether each lamp model in the stores was discounted or not, and if discounted, whether an IOU provided the discounted. Researchers also recorded details on lamp price both before and after any relevant discounts. These data enable us to explore pricing differences for IOU-discounted versus IOU-non-discounted lamps within retail channels and across all seven of the retail channels included in our 2011 sample.

3.2.2.1 Summary of Findings

- Among the 184 stores in our sample, average prices for non-IOU-discounted lamp types were higher than IOU-discounted lamp types within each retail channel with only one exception -- advanced CFLs in mass merchandise stores. This anomaly may be a result of the relatively small number of IOU-discounted advanced lamps observed in mass

merchandise stores (approximately 200 lamps versus many thousands of lamps in other big box retail channels).

- IOU discounts provided the greatest savings in drug stores among all of the stores in our 2011 sample, averaging $10.33 less per lamp for IOU-discounted advanced lamps and $4.62 less per lamp for IOU-discounted basic spiral CFLs.
- IOU-discounted basic spiral CFLs (≤30 Watts) cost an average of $1.32 less per lamp than non-IOU-discounted basic spirals across all of the stores in our 2011 sample (see Table 3-15 below), while IOU-discounted specialty lamps (including a-lamp, reflector/flood, and globe CFLs) averaged two to three dollars less per lamp than non-IOU-discounted lamps.
- Average IOU-discounted CFL prices were lower than average incandescent lamp prices for a-lamps, reflector/flood lamps, and globe lamps across all store types in our 2011 sample. The greatest difference was for reflector/flood lamps ($3.20).

3.2.2.2 Detailed Findings

Table 3-15 below presents average prices per lamp for IOU-discounted and non-IOU-discounted advanced and non-advanced CFLs among the stores we visited in 2011, and provides more detailed information on IOU-discounted and non-IOU-discounted lamp prices by lamp type. Table B-32 and Table B-33 in Appendix B provide further detail on the average prices for IOU-discounted and non-discounted lamps by detailed lamp type, and Table B-16 and Table B-18 in Appendix B provide details on the number of lamps by detailed lamp type and retail channel. Table C-13 and Table C-14 in Appendix C provide additional detail by IOU service territory.

Regarding average IOU-discounted and non-discounted lamp prices in 2011,[24] findings include:

- IOU-discounted advanced CFLs saved consumers, on average, $2.38 per lamp when compared to non-IOU advanced CFLs across all stores in our sample.
- IOU-discounted basic CFLs saved consumers, on average, $1.32 per lamp when compared to non-IOU basic CFLs across all stores in our sample.

[24] The reader should keep in mind that the difference in average IOU-discounted and non-discounted lamp prices for a given lamp category is not necessarily the same as the IOU incentive that was provided for that lamp category.

- IOU-discounted advanced CFLs provided consumers with the largest savings in drug stores at $10.33 per lamp. IOU-discounted advanced CFLs were, on average, 42 cents higher per lamp in mass merchandise stores when compared to non-IOU-discounted advanced CFLs. This anomaly may be a result of the relatively small number of IOU-discounted advanced lamps observed in mass merchandise stores (see Table B-16 in Appendix B).
- IOU discounted advanced CFLs tend to be more expensive in big box stores (e.g., see home improvement stores with an average advanced CFL price of $1.94 per lamp) than non-big box stores (e.g., see grocery stores with an average advanced CFL price of $0.39 per lamp). This disparity is likely a result of the relatively small number of IOU-discounted advanced lamps observed in most non-big box channels, like grocery stores (again, see Table B-16 in Appendix B). Furthermore, in addition to the greater volume of IOU program lamps in most big box stores, like home improvement stores, there is a much greater variety of IOU discounted advanced CFLs in home improvement stores compared to grocery stores.
- With respect to non-advanced lamps, IOU-discounted basic CFLs were, on average, $4.62 cheaper in drug stores than non-IOU-discounted basic CFLs, which is the highest difference for any channel in the non-advanced lamp category. Membership stores had the lowest difference between IOU-discounted and non-IOU-discounted basic CFLs; non-IOU-discounted basic CFLs cost, on average, 30 cents per lamp more than IOU-discounted CFLs in membership stores. The greatest savings were again in drug stores, where IOU-discounted basic CFLs averaged $4.62 less than the non-IOU-discounted basic spiral CFLs (≤30 Watts).

Table 3-15
Average Price per Lamp for IOU-Discounted and Non-IOU-Discounted Lamps by Lamp Type and Channel, 2011*

Lamp Type	Retail Channel							
	Discount	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall
Advanced CFLs								
IOU-Discounted	$0.77	$0.98	$0.39	$2.44	$1.94	$3.87	$2.12	$2.01
Non-IOU-Discounted	$2.62	$11.31	$8.95	$8.60	$6.39	$3.45	$2.93	$4.39
Basic CFLs (≤30 Watts)								
IOU-Discounted	$0.72	$0.78	$0.50	$0.70	$0.69	$2.10	$1.23	$0.97
Non-IOU-Discounted	$1.91	$5.40	$3.82	$4.73	$2.41	$2.93	$1.53	$2.29

* We have excluded IOU-discounted LEDs in this table due to the extremely small sample sizes for those lamps. See Table B-16 and Table B-18 in Appendix B for number of IOU-Discounted and Non-IOU-Discounted LEDs by lamp type.

Table 3-16 provides additional data on average CFL prices for basic spirals (≤30 watts), A-lamps, reflectors, and globe lamps with and without IOU discounts by retail channel in our 2011 sample. The table also includes pricing for comparable incandescent and LED lamps to illustrate pricing differences among these lamp types. As shown, differences in IOU-discounted versus non-IOU-discounted CFL prices ranged from roughly $1.30 to $3.00 across all stores in our sample, with the largest gap for reflector/flood lamps and the smallest for basic spirals. IOU-discounted CFL prices were lower than incandescent lamp prices for a-lamps, reflector/flood lamps, and globe lamps across all store types with the greatest difference for reflector/flood lamps: IOU-discounted CFL flood/reflector lamps cost $3.20 *less* per lamp, on average, than incandescent reflector/flood lamps across all of the stores in our 2011 sample.

Table 3-16
Average Price per Lamp for IOU-Discounted and Non-IOU-Discounted Lamps by Detailed MSB Lamp Type and Channel, 2011*

Detailed MSB Lamp Type	Retail Channel							
	Discount	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall
Basic Spiral CFLs (≤30 Watts)								
IOU-Discounted	$0.72	$0.78	$0.50	$0.70	$0.69	$2.10	$1.23	$0.97
Non-IOU-Discounted	$1.91	$5.40	$3.82	$4.73	$2.41	$2.93	$1.53	$2.29
A-Lamp								
IOU-Discounted CFL	$0.74	$0.67	$0.35	$1.35	$2.98	$4.68	.	$1.05
Non-IOU-Discounted CFL	$3.53	$9.42	$8.00	$8.68	$5.16	$3.83	$2.13	$3.60
Incandescent	$0.31	$1.70	$1.23	$1.63	$1.08	$1.17	$1.33	$1.16
LED	.	.	$14.49	$19.95	$20.11	$13.80	$8.90	$10.53
Reflector/Flood								
IOU-Discounted CFL	$0.72	$1.27	$0.45	$2.59	$2.12	$2.46	$1.77	$1.83
Non-IOU-Discounted CFL	$3.29	$10.88	$8.59	$8.89	$5.82	$7.03	$3.43	$4.82
Incandescent	$0.98	$9.39	$7.20	$7.75	$4.53	$5.24	$1.67	$5.06
LED	.	.	.	$25.70	$39.79	$36.68	$37.97	$38.28
Globe								
IOU-Discounted CFL	$1.22	.	.	.	$4.29	$2.96	$1.17	$1.23
Non-IOU-Discounted CFL	$1.33	$9.33	$8.12	$7.99	$5.52	$4.63	$2.32	$3.24
Incandescent	$0.88	$3.48	$2.96	$3.45	$1.90	$1.87	.	$2.12
LED	.	.	.	$22.15	$21.18	$10.54	$28.92	$22.12

* We have excluded IOU-discounted LEDs in this table due to the extremely small sample sizes for those lamps. See Table B-16 and Table B-18 in Appendix B for number of IOU-Discounted and Non-IOU-Discounted LEDs by lamp type.

4. Summary of Findings

In this section, we review key findings on the availability and diversity of lamps as well as lamp pricing.

4.1 Availability and Diversity

The availability and diversity of lamps are key metrics for describing lamp stocking practices and differences in stocking practices between stores. We provided a discussion of stores carrying lamps by lamp type (lamp penetration), percentage of total lamps and packages observed in the stores, and the average number of lamp model per store. We also compared availability of advanced and non-advanced lamps as well as availability of efficient and non-efficient lamps. Key findings follow below.

4.1.1 Percent of Stores Carrying Lamps by Lamp Type

The percentage of stores carrying lamps by lamp type is an indicator of lamp availability in the market. Key findings include:

- Incandescent lamps and basic CFLs were present across all retail channels among the stores in which we conducted shelf surveys in Fall 2011. Only a fifth of membership clubs carried incandescent lamps during Fall 2011, while 100 percent carried basic CFLs.
- LED lamps (mostly reflectors and A-lamps) were present in more than half of the stores we visited overall, and more than 90 percent of home improvement stores and membership clubs carried LEDs in Fall 2011.
- There was very little difference in advanced lamp and non-advanced lamp penetration between 2008-2009 and Fall 2011 (advanced lamps were present in more than four-fifths of all stores in both periods and non-advanced lamps were in nearly every store in both periods). Among the subset of big box store comparisons between 2009 and Fall 2011, there was also little difference between 2009 and Fall 2011 (penetration for advanced lamps and non-advanced lamps was nearly 100 percent in both periods).
- The most notable difference is the increased penetration of LEDs from 2008-2009 compared to Fall 2011 (more than a third of stores carried LEDs in 2008-2009 and more

than half carried LEDs in Fall 2011). With the exception of mass merchandise and discount stores, every channel showed an increase in LED penetration in Fall 2011 compared to 2008-2009. The subset of big box store comparisons between 2009 and Fall 2011 showed a similar

4.1.2 Percent of Total Lamps and Total Packages

The percentage of total lamps and total lamp packages observed in retail stores is an indicator of the relative availability of these product types. Key findings include:

- Field researchers observed that non-advanced lamps comprised a greater proportion of total lamps in the non-big box stores (discount, drug, grocery, and small hardware) than in big box stores, representing at least 9 out of 10 lamps in the non-big box stores we visited in Fall 2011.
- The stocking of advanced and non-advanced lamps in large home improvement stores more closely mirrored the proportions in non-big box stores than in the other big box channels, with nearly 90 percent of the lamps in these stores comprised by non advanced lamps (primarily incandescent/halogens). In mass merchandise stores, advanced lamps represented more than a third of all lamps observed and in membership clubs, nearly half of all lamps (primarily advanced CFLs in both cases).
- In terms of the proportion of all lamps stocked within each channel, membership clubs stocked by far the highest proportion of LEDs compared to other channels (LEDs represented more than 10% of all lamps within membership clubs compared to 0-2% of all lamps within other channels).

4.1.3 Average Number of Lamp Models per Store

The average number of lamp models per store within specific lamp types indicates the relative availability of these product types within the stores as well as the diversity of product offerings for specific lamp types. Key findings include:

- The retail stores included in our Fall 2011 sample averaged more than three times as many non-advanced lamp models per store as advanced lamp models. Field researchers observed the highest advanced and non-advanced lamp model diversity in home improvement stores (averaging nearly 100 and well over 200 models per store, respectively). Researchers observed the lowest average number of advanced lamp

models in discount stores and the lowest diversity of non-advanced lamp models in membership clubs (1 and 3 models per store, respectively).

- Among advanced lamps, advanced CFLs had the greatest diversity of models available across all store types.
- LED lamps averaged approximately 7 models per store across all stores in our sample, with the greatest diversity in home improvement (which averaged over 30 LED models per store) and the lowest in drug and grocery stores (both with an average of less than one model per store in our sample).

4.1.4 EISA-Compliant and Non-Compliant Incandescent Lamps

The study examined the relative presence or absence of general purpose A-lamps in the high brightness (1490−2600 lumens) and medium high brightness (1050−1489 lumens) lamp categories. These results provide an indication of the availability and diversity of product offerings within the EISA-compliant and non-compliant categories as AB 1109 phased out high brightness lamps general purpose A-lamps starting in January 2011(several months before the Fall 2011 shelf surveys were implemented) and medium high brightness general purpose A-lamps in January 2012 (shortly after the shelf surveys were implemented). Key findings include:

- Only a little more than a third of all high brightness general purpose A-lamps (1490−2600 lumens) were EISA-compliant across all stores in our sample in Fall 2011. The phase-out of high brightness general purpose A-lamps began on January 1, Fall 2011 in California per AB 1109 legislation.
- Approximately one-tenth of all medium high brightness (1050−1489 lumens) general purpose A-lamps were EISA-compliant across all stores in our sample in Fall 2011. The phase-out of high brightness general purpose A-lamps began on January 1, 2012 in California per AB 1109 legislation (i.e., after the conclusion of this field research).
- On average, across all channels, there are almost twice as many non-compliant high brightness lamps and more than eight times as many non-compliant medium high brightness lamps per store as EISA-compliant lamps in those respective categories.
- Membership stores in our Fall 2011 sample stocked the highest average number of EISA-compliant high brightness A-lamps (nearly 80 per store) and had the highest proportion of EISA-compliant high brightness A-lamps (100 percent).

- Discount stores represented the only channel from our Fall 2011 sample that did not stock EISA-compliant high brightness bulbs.
- Non-compliant high brightness A-lamps represented nearly 95 percent of high brightness A-lamps in our 2009 sample compared to a little more than half of high brightness A-lamps in our Fall 2011 sample (across big box channels).

4.1.5 IOU-Discounted Lamps

As an indicator of the IOUs' upstream lighting programs' influence on the lighting market, the study assessed the relative availability lamps for which the IOUs provided incentives and those with no IOU incentives. Key findings include:

- IOU-discounted lamps represented 14 percent of all of the lamps observed across all 184 retail stores in our Fall 2011 shelf survey sample and a little less than a third of all energy-efficient lamps observed across all stores in the sample.
- In discount stores, IOU-discounted lamps represented the greatest proportion of energy-efficient lamps observed across all store types in our Fall 2011 sample (nearly 90 percent of energy-efficient lamps and 43 percent of all lamps observed). IOU-discounted lamps represented the smallest proportion of both energy-efficient lamps and all observed lamps across all stores in our sample at mass merchandise stores (approximately 1% of all observed lamps in this channel).
- Across all channels, nearly a third of all IOU-discounted lamps observed in Fall 2011 were advanced and more than two-thirds were non-advanced lamps. Researchers observed the greatest proportion of IOU-discounted advanced lamps in the drug store channel (slightly more than 40% of IOU-discounted lamps observed were advanced), and grocery stores had the lowest proportion of advanced IOU-discounted lamps at less than 5 percent of the IOU-discounted lamps stocked in those stores in Fall 2011.

4.2 Lamp Pricing

We provided details on lamp pricing for lamps found during the Fall 2011 shelf surveys, including average overall price per lamp as well as average prices for lamps both with and without IOU discounts. Furthermore, we discussed time-series comparisons of average prices in big box stores for Fall 2011.

4.2.1 Average Price

Examining average lamp price reveals the relative affordability of lamps of each technology type (CFL, incandescent, LED, etc.) and lamp style (A-lamp, reflector, and so on). Key findings include:

- In Fall 2011, average prices for advanced and non-advanced lamps were lowest overall in the discount stores in our sample and highest overall in the hardware stores in our sample.
- LED lamps averaged roughly $4.50 to $35.00 more per lamp than CFLs for the common MSB lamp styles, with the greatest price gap for reflector/flood styles and the smallest for candelabra/torpedo styles in Fall 2011.
- Within the three big box channels (large home improvement, mass merchandise, and membership clubs) included in our samples in 2009 and Fall 2011, advanced lamp prices increased by more than a dollar per lamp in this timeframe – likely a result of the greater variety and quantity of LED lamps in these channels in Fall 2011. Average prices for non-advanced lamps remained stable between 2009 and 2001 in these channels.

4.2.2 Average Price for IOU-Discounted Versus Non-IOU-Discounted Lamps

Examining average lamp price between IOU-discounted and non-discounted lamps provides information regarding the effects of the IOUs' upstream lighting programs in California's retail market for replacement lamps. Key findings include:

- Among the 184 stores in our sample, average prices for non-IOU-discounted lamp types were higher than IOU-discounted lamp types within each retail channel except for mass merchandise (this is likely due to the limited number of advanced IOU-discounted lamps found in mass merchandise stores).
- IOU discounts provided the greatest savings in drug stores among all of the stores in our Fall 2011 sample, averaging $10.33 less per lamp for IOU-discounted advanced lamps and $4.62 less per lamp for IOU-discounted basic spiral CFLs.
- IOU-discounted basic spiral CFLs (≤30 Watts) cost an average of $1.32 less per lamp than non-IOU-discounted basic spirals across all of the stores in our Fall 2011 sample,

while IOU-discounted specialty lamps (including a-lamp, reflector/flood, and globe CFLs) averaged two to three dollars less per lamp than non-IOU-discounted lamps.

- Average IOU-discounted CFL prices were lower than average incandescent lamp prices for a-lamps, reflector/flood lamps, and globe lamps across all store types in our Fall 2011sample. The greatest difference was for reflector/flood lamps ($3.20).

A. Fall 2011 Shelf Survey Instrument

This appendix provides the data collection instrument that DNV KEMA field researchers used to collect the Fall 2011 California Lighting Retail Store Shelf Survey data.

CA LIGHTING RETAIL STORE SHELF SURVEY
August-October 2011

Field researcher name:	
Store name:	Date:
Store address:	Store city:
Store type:	Store zip code:
IOU (utility) name:	
Begin Time:	End Time:

1. **Does this store have any signage on energy efficient incandescent light bulbs? Examples include education materials or descriptions of Energy Independence and Security Act (EISA) and/or California AB 1109 regulations on lighting.**
   Yes ☐ No ☐

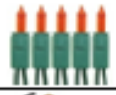
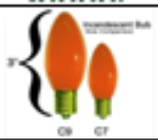
   [IF YES] What type of signage is present? [MARK ALL THAT APPLY]
   1 Sign on shelf/wall
   2 Sign hung from ceiling
   3 Brochures
   4 Floor sticker/cling
   5 Other – Describe:_____

   [IF YES] Please record the key messages of the energy efficient incandescent signage. Record messages verbatim for signage with short descriptions. Summarize and condense key messages for signage with longer descriptions.

   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____

BULB CODES (PRODUCT TYPE, BASE TYPE, AND STYLE CODES)

Product Type Codes		Base Type Codes	
Product Type	**Code**	**Base Type Codes**	**Code**
CFL	CF	Medium Screw	M
Incandescent/Halogen	I	Pin	P
LED	L	GU-Type	G
Cold Cathode	CC	Candelabra/Intermediate	C
Mercury Vapor, (Ceramic) Metal Halide, High Pressure Sodium	HID	Large Screw Base	L
Other	OT	Candelabra with Medium Screw Adaptor	C/M
		Mini Wedge (for mini-holiday lights)	W
		Other	OT

Bulb Style Codes*					
Bulb Style	**Code**	**Image**	**Bulb Style**	**Code**	**Image**
Spiral/Twister	TW		Spotlight/Reflector/ Flood	See below	See spotlight/reflector/flood codes in table below.
Globe (e.g., for bathroom vanity fixtures)	GL		Circline	CI	
A-lamp (shaped like standard incandescent)	AL		Tube Style	TU	
Torpedo/Bullet	TO		Night Light	NL	
Mini Holiday Light (T1¾) on a String	HL/S		Mini Holiday Light (T1¾) Replacement Bulbs	HL/R	
C9 Holiday Light on String or Replacement	C9H/S C9H/R		C7 Holiday Light on String or Replacement	C7H/S C7H/R	
Bug Light	BU		Other/Unknown	OT	Record style code, if indicated on package.

*See LED Style Code Table below for further details and information on LED bulb styles.

Spotlight/Reflector/Flood Bulb Style Codes					
Bulb Style	**Code**	**Image**	**Bulb Style**	**Code**	**Image**
BR25	B25		PAR16	P16	
BR30	B30		PAR20	P20	
BR40	B40		PAR30	P30	
R20	R20		PAR38	P38	
R30	R30		MR16	M16	
R40	R40		Unknown Spotlight/Reflector/Flood	SP	

LED Style Codes			
Bulb Style	**Code**	**Bulb Style**	**Code**
A15, A19, A21, A23	AL	G16½, G25, G40, P25, PS35	GL
B10½, B13, BA9, BA9½, F10, F15, F20	TO	T 4½, T5, T6, T8, T10	TU
S8, S11, S14	S	C7	NL
C9 (Holiday Light)	C9H	C7 (Holiday Light)	C7H
T1 ¾ (Holiday Light)	HL	Rice (Holiday Light)	HL
BR25, BR30, BR40, R20, R30, R40, PAR15, PAR20, PAR30S, PAR30L, PAR38	See spot-light codes table above	Other/Unknown LED Bulb Style (record style code on package, if known)	OT

ADD ADDITIONAL BULB INVENTORY PAGES AS NECESSARY

IF ONLY ONE PRICE SHOWN: Try to determine whether it's a discounted price/sale price or if it's a full-priced bulb. If sale price, record value in "Discounted price." If full price, record value in "Original Price."

Bulb Inventory

Inventory all CFLs, incandescents, halogens, LED, and cold cathode bulbs.
Use as many pages as necessary.
For 3-way, dimmable, rough service incandescent, lighting facts, and ENERGY STAR columns: X if applicable.

Manufacturer/Brand	Product Type (CFL, Incand, LED, Cold Cathode) [See Bulb Codes table above]	Base Type (Medium Screw, Pin, GU-type, Candelabra) [See Bulb Codes table above]	Bulb Style [See Bulb Codes table above]	Model Number	Quantity in Pack	# of Packages	Full/Original Price (If discounted, record price before discount. If not discounted, record product price here)	Discounted Price (If on sale/discounted)	Discount Provider (If discounted) [R=Retailer; I=IOU; O=Other; DK = don't know]	Program Year (If labeled as IOU discounted) [2011, 2010, 2009]	Rated Life (hours)	Color Temperature (Kelvin - K)	Color Name [Soft White=SW; Warm White=WW; Cool White=CW; Bright White=BW; Daylight=D; Enhanced Spectrum=ES; Colored=CB; Other=OT]	Lamp Coating [Frosted=F; Clear=C]	Lumens	Wattage	3-way?	Dimmable?	Energy Star?	Rough service incandescent?	DOE "Lighting Facts" label present? (LEDs only)
																	☐	☐	☐	☐	☐
																	☐	☐	☐	☐	☐
																	☐	☐	☐	☐	☐
																	☐	☐	☐	☐	☐
																	☐	☐	☐	☐	☐
																	☐	☐	☐	☐	☐
																	☐	☐	☐	☐	☐
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																	☐	☐	☐	☐	☐
																	☐	☐	☐	☐	☐
																	☐	☐	☐	☐	☐
																	☐	☐	☐	☐	☐

Shelf Survey Store name/City/Date: ____ Page #________

B. Appendix B – Additional Detailed Shelf Survey Tables

This Appendix complements the discussion in Section 3 above with tables that provide further details on a wide variety of specific lamp types.

Table B-1
Number of Stores Carrying Advanced and Non-Advanced Lamps by Channel and Detailed Lamp Type, 2011

Lamp Type	Channel							
	Discount	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall
ADVANCED								
High-wattage and specialty MSB CFLs								
High-wattage MSB CFLs (>30 Watts)	2	6	3	19	26	13	12	81
Specialty MSB CFLs: dimmable	0	21	10	18	25	18	20	112
Specialty MSB CFLs: 3-way	1	19	4	22	24	18	3	90
Other advanced MSB CFLs (≤30 Watts)								
Reflector/flood	6	25	9	26	26	17	23	132
A-lamp	8	25	12	21	26	22	12	125
Globe	4	20	6	20	25	20	24	120
Candelabra (MSB)	0	20	2	15	13	13	0	63
Tube	0	0	1	11	7	4	0	24
Bug Light	0	13	6	18	22	15	0	74
Circline	0	0	0	4	1	0	0	6
Other advanced non-MSB CFLs								
Candelabra base CFLs	2	20	0	14	25	16	0	77
GU base CFLs	1	0	2	17	25	15	0	61
Pin base CFLs	0	0	0	25	26	16	0	66
Large base CFLs	0	0	0	14	6	5	0	26
Candelabra base CFLs with MSB adaptor	1	1	5	6	18	1	6	39
Other advanced non-CFLs								
Reflector/flood MSB LEDs	0	0	0	13	23	2	25	63
A-lamp MSB LEDs	0	0	4	6	22	6	24	63
Other LEDs	0	12	4	12	23	15	22	88
Hybrid CFL/LEDs	0	0	0	0	9	1	0	9
Cold Cathodes	0	0	0	0	9	0	0	9
NON-ADVANCED								
Basic CFLs (≤30 Watts)	20	27	21	26	26	23	26	169
Incandescent/Halogens	26	23	25	27	26	23	5	155
High Intensity Discharge Lamps	0	0	0	19	24	6	0	50
Number of Stores	**27**	**27**	**27**	**27**	**26**	**24**	**26**	**184**

Table B-2
Penetration of Advanced and Non-Advanced Lamps by Big Box Channel and Detailed Lamp Type, 2009 & 2011

Lamp Type	Channel							
	Home Improvement		Mass Merchandise		Membership Club		Overall	
	2009	2011	2009	2011	2009	2011	2009	2011
ADVANCED								
High-wattage and specialty MSB CFLs								
High-wattage MSB CFLs (>30 Watts)	79%	100%	64%	65%	22%	46%	59%	69%
Specialty MSB CFLs: dimmable	100%	100%	73%	85%	89%	77%	88%	87%
Specialty MSB CFLs: 3-way	93%	90%	73%	85%	44%	12%	74%	58%
Other advanced MSB CFLs (≤30 Watts)								
Reflector/flood	100%	100%	73%	85%	100%	88%	91%	91%
A-lamp	93%	100%	100%	100%	56%	46%	85%	79%
Globe	93%	100%	100%	100%	67%	92%	88%	97%
Candelabra (MSB)	14%	43%	73%	65%	0%	0%	29%	33%
Tube	14%	24%	27%	20%	0%	0%	15%	13%
Bug Light	71%	86%	45%	75%	0%	0%	44%	49%
Circline	29%	0%	0%	0%	11%	0%	15%	0%
Other advanced non-MSB CFLs								
Candelabra base CFLs	93%	100%	64%	80%	56%	0%	74%	55%
GU base CFLs	100%	100%	9%	75%	11%	0%	47%	54%
Pin base CFLs	93%	100%	55%	75%	44%	0%	68%	54%
Large base CFLs	0%	5%	0%	25%	0%	0%	0%	9%
Candelabra base CFLs with MSB adaptor	0%	67%	0%	5%	0%	23%	0%	31%
Other advanced non-CFLs								
Reflector/flood MSB LEDs	36%	90%	45%	10%	100%	96%	56%	69%
A-lamp MSB LEDs	0%	86%	0%	30%	0%	92%	0%	72%
Other LEDs	57%	86%	36%	75%	100%	85%	62%	82%
Hybrid CFL/LEDs	0%	43%	0%	5%	0%	0%	0%	15%
Cold Cathodes	21%	43%	0%	0%	0%	0%	9%	13%
NON-ADVANCED								
Basic CFLs (≤30 Watts)	100%	100%	73%	100%	100%	100%	91%	100%
Incandescent/Halogens	100%	100%	100%	100%	11%	19%	76%	69%
Number of Stores	**14**	**21**	**11**	**20**	**9**	**26**	**34**	**67**

Table B-3
Penetration of Advanced and Non-Advanced Lamps by Channel and Detailed Lamp Type, 2008-09 & 2011

Lamp Type	Store Type															
	Discount		Drug		Grocery		Hardware		Home Improv.		Mass Merch.		Memb. Club		Overall	
	'08-'09	'11	'08-'09	'11	'08-'09	'11	'08-'09	'11	'08-'09	'11	'08-'09	'11	'08-'09	'11	'08-'09	'11
ADVANCED																
High-wattage and specialty MSB CFLs																
High-wattage MSB CFLs (>30 Watts)	0%	7%	27%	22%	1%	11%	56%	70%	71%	100%	57%	54%	9%	46%	27%	44%
Specialty MSB CFLs: dimmable	3%	0%	58%	78%	28%	37%	67%	67%	80%	96%	92%	75%	70%	77%	50%	61%
Specialty MSB CFLs: 3-way	2%	4%	62%	70%	19%	15%	81%	81%	92%	92%	84%	75%	70%	12%	49%	49%
Other advanced MSB CFLs (≤30 Watts)																
Reflector/flood	30%	22%	88%	93%	60%	33%	89%	96%	100%	100%	94%	71%	100%	88%	73%	72%
A-lamp	11%	30%	85%	93%	53%	44%	70%	78%	98%	100%	98%	92%	78%	46%	65%	68%
Globe	20%	15%	69%	74%	30%	22%	70%	74%	98%	96%	98%	83%	78%	92%	59%	65%
Candelabra (MSB)	3%	0%	58%	74%	30%	7%	63%	56%	76%	50%	86%	54%	78%	0%	49%	34%
Tube	3%	0%	0%	0%	1%	4%	41%	41%	31%	27%	29%	17%	39%	0%	16%	13%
Bug Light	2%	0%	58%	48%	19%	22%	44%	67%	78%	85%	80%	63%	0%	0%	38%	40%
Circline	0%	0%	0%	0%	0%	0%	22%	15%	27%	4%	8%	0%	4%	0%	8%	3%
Other advanced non-MSB CFLs																
Candelabra base CFLs	2%	7%	46%	74%	15%	0%	63%	52%	94%	96%	88%	67%	74%	0%	46%	42%
GU base CFLs	20%	4%	0%	0%	1%	7%	37%	63%	86%	96%	20%	63%	9%	0%	24%	33%
Pin base CFLs	3%	0%	0%	0%	0%	0%	70%	93%	75%	100%	35%	67%	70%	0%	28%	36%
Other advanced non-CFLs																
LEDs (all base types)	23%	0%	12%	44%	12%	15%	33%	56%	76%	92%	71%	63%	78%	96%	40%	52%
Cold Cathodes	0%	0%	0%	0%	0%	0%	0%	0%	12%	35%	2%	0%	0%	0%	2%	5%
NON-ADVANCED																
Basic CFLs (≤30 Watts)	93%	74%	100%	100%	98%	78%	100%	96%	100%	100%	100%	96%	100%	100%	98%	92%
Incandescent/Halogens	89%	96%	96%	85%	84%	93%	100%	100%	100%	100%	100%	96%	9%	19%	87%	84%
Number of Stores	**61**	**27**	**26**	**27**	**89**	**27**	**27**	**27**	**51**	**26**	**49**	**24**	**23**	**26**	**326**	**184**

Table B-4
Percent of Total Advanced and Non-Advanced Lamps by Channel and Detailed Lamp Type, 2011

Lamp Type	Channel							
	Discount	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall
ADVANCED								
High-wattage and specialty MSB CFLs								
High-wattage MSB CFLs (>30 Watts)	<0.5%	<0.5%	<0.5%	<0.5%	<0.5%	<0.5%	3%	1%
Specialty MSB CFLs: dimmable	–	1%	<0.5%	<0.5%	1%	<0.5%	5%	2%
Specialty MSB CFLs: 3-way	<0.5%	<0.5%	<0.5%	1%	<0.5%	<0.5%	<0.5%	<0.5%
Other advanced MSB CFLs (≤30 Watts)								
Reflector/flood	2%	4%	1%	2%	2%	1%	12%	4%
A-lamp	6%	3%	1%	2%	1%	4%	4%	2%
Globe	1%	1%	<0.5%	<0.5%	1%	2%	8%	2%
Candelabra (MSB)	–	1%	<0.5%	<0.5%	<0.5%	<0.5%	–	<0.5%
Tube	–	–	<0.5%	<0.5%	<0.5%	15%	–	2%
Bug Light	–	<0.5%	<0.5%	<0.5%	<0.5%	<0.5%	–	<0.5%
Circline	–	–	–	<0.5%	<0.5%	–	–	<0.5%
Other advanced non-MSB CFLs								
Candelabra base CFLs	<0.5%	1%	–	<0.5%	1%	11%	–	2%
GU base CFLs	<0.5%	–	<0.5%	<0.5%	<0.5%	<0.5%	–	<0.5%
Pin base CFLs	–	–	–	4%	2%	<0.5%	–	1%
Large base CFLs	–	–	–	<0.5%	<0.5%	<0.5%	–	<0.5%
Candelabra base CFLs with MSB adaptor	<0.5%	<0.5%	<0.5%	<0.5%	<0.5%	<0.5%	1%	<0.5%
Other advanced non-CFLs								
Reflector/flood MSB LEDs	–	–	–	<0.5%	1%	<0.5%	1%	1%
A-lamp MSB LEDs	–	–	<0.5%	<0.5%	1%	<0.5%	6%	2%
Other LEDs	–	<0.5%	<0.5%	1%	1%	1%	4%	1%
Hybrid CFL/LEDs	–	–	–	–	<0.5%	<0.5%	–	<0.5%
Cold Cathodes	–	–	–	–	<0.5%	–	–	<0.5%
NON-ADVANCED								
Basic CFLs (≤30 Watts)	40%	17%	36%	13%	21%	13%	51%	27%
Incandescent/Halogens	51%	73%	60%	75%	67%	51%	4%	51%
High Intensity Discharge Lamps	–	–	–	1%	1%	<0.5%	–	<0.5%
Number of Lamps	**31,112**	**16,118**	**20,008**	**76,283**	**277,507**	**99,362**	**146,777**	**667,167**

Table B-5
Percent of Total Advanced and Non-Advanced Packages by Channel and Detailed Lamp Type, 2011

Lamp Type	Channel							
	Discount	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall
ADVANCED								
High-wattage and specialty MSB CFLs								
High-wattage MSB CFLs (>30 Watts)	<0.5%	<0.5%	<0.5%	<0.5%	<0.5%	<0.5%	4%	1%
Specialty MSB CFLs: dimmable	–	2%	1%	1%	2%	1%	6%	2%
Specialty MSB CFLs: 3-way	<0.5%	1%	<0.5%	2%	1%	1%	<0.5%	1%
Other advanced MSB CFLs (≤30 Watts)								
Reflector/flood	2%	5%	1%	3%	3%	2%	11%	4%
A-lamp	8%	5%	2%	2%	1%	5%	4%	3%
Globe	1%	1%	<0.5%	<0.5%	1%	3%	7%	2%
Candelabra (MSB)	–	1%	<0.5%	<0.5%	<0.5%	<0.5%	–	<0.5%
Tube	–	–	<0.5%	<0.5%	<0.5%	11%	–	2%
Bug Light	–	<0.5%	<0.5%	<0.5%	<0.5%	<0.5%	–	<0.5%
Circline	–	–	–	<0.5%	<0.5%	–	–	<0.5%
Other advanced non-MSB CFLs								
Candelabra base CFLs	<0.5%	1%	–	<0.5%	1%	17%	–	3%
GU base CFLs	<0.5%	–	<0.5%	1%	1%	1%	–	<0.5%
Pin base CFLs	–	–	–	6%	4%	1%	–	3%
Large base CFLs	–	–	–	<0.5%	<0.5%	<0.5%	–	<0.5%
Candelabra base CFLs with MSB adaptor	<0.5%	<0.5%	<0.5%	<0.5%	<0.5%	<0.5%	1%	<0.5%
Other advanced non-CFLs								
Reflector/flood MSB LEDs	–	–	–	<0.5%	2%	<0.5%	5%	2%
A-lamp MSB LEDs	–	–	<0.5%	<0.5%	1%	<0.5%	14%	3%
Other LEDs	–	<0.5%	<0.5%	1%	2%	2%	4%	2%
Hybrid CFL/LEDs	–	–	–	–	<0.5%	<0.5%	–	<0.5%
Cold Cathodes	–	–	–	–	<0.5%	–	–	<0.5%
NON-ADVANCED								
Basic CFLs (≤30 Watts)	51%	19%	51%	12%	19%	12%	41%	23%
Incandescent/Halogens	38%	65%	43%	70%	58%	45%	2%	49%
High Intensity Discharge Lamps	–	–	–	1%	2%	<0.5%	–	1%
Number of Packages	**17,298**	**8,628**	**12,464**	**49370**	**116,902**	**45,670**	**40,767**	**291,099**

Table B-6: Number of Total Advanced and Non-Advanced Lamps by Channel and Detailed Lamp Type, 2011

Lamp Type	Channel							
	Discount	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall
ADVANCED								
High-wattage and specialty MSB CFLs								
High-wattage MSB CFLs (>30 Watts)	13	11	14	188	442	82	4,881	5,631
Specialty MSB CFLs: dimmable	–	158	70	348	3,686	373	7,764	12,399
Specialty MSB CFLs: 3-way	5	51	59	842	592	254	246	2,049
Other advanced MSB CFLs (≤30 Watts)								
Reflector/flood	489	627	192	1,880	6,312	953	18,275	28,728
A-lamp	1,841	521	220	1,246	2,521	4,231	5,532	16,112
Globe	320	90	39	212	1,565	1,936	11,883	16,045
Candelabra (MSB)	–	94	17	113	302	277	–	803
Tube	–	–	5	61	142	14,412	–	14,620
Bug Light	–	33	27	85	230	128	–	503
Circline	–	–	–	16	4	–	–	20
Other advanced non-MSB CFLs								
Candelabra base CFLs	29	81	–	144	3,167	11,341	–	14,762
GU base CFLs	1	–	7	319	724	341	–	1,392
Pin base CFLs	–	–	–	2,728	4,921	476	–	8,125
Large base CFLs	–	–	–	66	67	19	–	152
Candelabra base CFLs with MSB adaptor	4	2	35	36	538	10	1,548	2,173
Other advanced non-CFLs								
Reflector/flood MSB LEDs	–	–	–	223	2,375	45	2,101	4,744
A-lamp MSB LEDs	–	–	40	45	1,462	69	9,186	10,802
Other LEDs	–	27	90	378	2,634	945	5,187	9,261
Hybrid CFL/LEDs	–	–	–	–	166	3	–	169
Cold Cathodes	–	–	–	–	158	–	–	158
NON-ADVANCED								
Basic CFLs (≤30 Watts)	12,398	2,662	7,223	9,868	57,897	12,480	74,592	177,120
Incandescent/Halogens	16,012	11,761	11,970	56,902	185,838	50,965	5,582	339,030
High Intensity Discharge Lamps	–	–	–	583	1,764	22	–	2,369
Number of Lamps	**31,112**	**16,118**	**20,008**	**76,283**	**277,507**	**99,362**	**146,777**	**667,167**

Table B-7: Number of Total Advanced and Non-Advanced Packages by Channel and Detailed Lamp Type, 2011

Lamp Type	Channel							
	Discount	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall
ADVANCED								
High-wattage and specialty MSB CFLs								
High-wattage MSB CFLs (>30 Watts)	13	11	14	188	442	82	1,627	2,377
Specialty MSB CFLs: dimmable	–	156	70	348	2,559	373	2,588	6,094
Specialty MSB CFLs: 3-way	5	51	59	833	592	254	82	1,876
Other advanced MSB CFLs (≤30 Watts)								
Reflector/flood	322	474	162	1,648	4,079	726	4,589	12,000
A-lamp	1,318	399	210	905	1,425	2,182	1,425	7,864
Globe	180	90	39	177	864	1,391	3,004	5,745
Candelabra (MSB)	–	94	17	108	215	131	–	565
Tube	–	–	5	61	137	4,808	–	5,011
Bug Light	–	33	27	85	230	128	–	503
Circline	–	–	–	16	4	–	–	20
Other advanced non-MSB CFLs								
Candelabra base CFLs	29	81	–	131	1,682	7,866	–	9,789
GU base CFLs	1	–	7	319	715	341	–	1,383
Pin base CFLs	–	–	–	2,721	4,834	455	–	8,010
Large base CFLs	–	–	–	66	67	19	–	152
Candelabra base CFLs with MSB adaptor	4	2	27	36	314	5	258	646
Other advanced non-CFLs								
Reflector/flood MSB LEDs	–	–	–	223	2,381	45	2,101	4,750
A-lamp MSB LEDs	–	–	40	45	1,462	69	5,832	7,448
Other LEDs	–	27	60	361	2,370	747	1,825	5,390
Hybrid CFL/LEDs	–	–	–	–	166	3	–	169
Cold Cathodes	–	–	–	–	79	–	–	79
NON-ADVANCED								
Basic CFLs (≤30 Watts)	8,837	1,623	6,383	6,025	22,273	5,322	16,767	67,230
Incandescent/Halogens	6,589	5,587	5,344	34,491	68,248	20,701	669	141,629
High Intensity Discharge Lamps	–	–	–	583	1,764	22	–	2,369
Number of Packages	**17,298**	**8,628**	**12,464**	**49,370**	**116,902**	**45,670**	**40,767**	**291,099**

Table B-8
Total Number of Advanced and Non-Advanced Lamp Models by Channel, 2011

Lamp Type	Channel							
	Discount	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall
ADVANCED	**27**	**85**	**61**	**684**	**1,026**	**265**	**58**	**2,206**
Advanced CFLs	27	83	53	572	663	214	33	1,645
LEDs	–	2	8	112	359	50	25	556
Hybrid CFL/LEDs	–	–	–	–	2	1	–	3
Cold Cathodes	–	–	–	–	2	–	–	2
NON-ADVANCED	**175**	**438**	**426**	**2,164**	**2,281**	**801**	**20**	**6,305**
Basic CFLs (≤30 Watts)	47	85	90	207	374	161	16	980
Incandescent/Halogens	128	353	336	1,877	1,825	638	4	5,161
High Intensity Discharge Lamps	–	–	–	80	82	2	–	164
Number of Stores	**27**	**27**	**27**	**27**	**26**	**24**	**26**	**184**

Table B-9
Average Number of Advanced and Non-Advanced Lamp Models by Channel and Detailed Lamp Type, 2011

Lamp Type	Store Type							
	Discount	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall
ADVANCED								
High-wattage and specialty MSB CFLs								
High-wattage MSB CFLs (>30 Watts)	0.1	0.2	0.1	1.5	2.2	0.7	0.5	0.7
Specialty MSB CFLs: dimmable	–	2.2	0.6	3.1	7.5	2.9	0.8	2.4
Specialty MSB CFLs: 3-way	0.0	0.7	0.2	1.3	2.0	1.5	0.1	0.8
Other advanced MSB CFLs (≤30 Watts)								
Reflector/flood	0.3	3.4	1.1	4.9	13.5	5.7	2.1	4.4
A-lamp	0.4	2.9	0.7	3.0	4.5	5.9	0.5	2.5
Globe	0.2	1.3	0.3	1.6	3.7	3.7	0.9	1.6
Candelabra (MSB)	–	1.1	0.2	1.0	0.8	0.9	–	0.6
Tube	–	–	0.0	0.7	0.4	0.2	–	0.2
Bug Light	–	0.5	0.2	1.0	1.1	1.0	–	0.5
Circline	–	–	–	0.2	0.0	–	–	0.0
Other advanced non-MSB CFLs								
Candelabra base CFLs	0.1	0.9	–	1.1	5.7	3.1	–	1.5
GU base CFLs	0.0	–	0.1	1.7	3.1	0.6	–	0.8
Pin base CFLs	–	–	–	15.3	18.5	2.6	–	5.2
Large base CFLs	–	–	–	0.7	0.4	0.2	–	0.2
Candelabra base CFLs with MSB adaptor	0.0	0.0	0.3	0.4	1.4	0.0	0.2	0.3
Other advanced non-CFLs								
Reflector/flood MSB LEDs	–	–	–	2.0	13.5	0.5	1.6	2.5
A-lamp MSB LEDs	–	–	0.4	0.5	6.1	0.7	1.7	1.3
Other LEDs	–	0.4	0.4	2.5	12.5	2.8	0.9	2.7
Hybrid CFL/LEDs	–	–	–	–	0.4	0.0	–	0.1
Cold Cathodes	–	–	–	–	0.4	–	–	0.1
NON-ADVANCED								
Basic CFLs (≤30 Watts)	2.3	14.0	6.0	16.8	33.2	21.5	2.7	13.6
Incandescent/Halogens	9.8	57.4	24.7	160.6	190.7	102.5	0.3	77.4
High Intensity Discharge Lamps	–	–	–	4.0	10.5	0.3	–	2.1
Number of Stores	**27**	**27**	**27**	**27**	**26**	**24**	**26**	**184**

Table B-10
Total Number of Advanced and Non-Advanced Lamp Models by Channel and Detailed Lamp Type, 2011

Lamp Type	Channel							
	Discount	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall
ADVANCED								
High-wattage and specialty MSB CFLs								
High-wattage MSB CFLs (>30 Watts)	2	2	2	22	24	6	2	60
Specialty MSB CFLs: dimmable	–	12	7	31	73	24	3	150
Specialty MSB CFLs: 3-way	1	5	4	18	24	11	1	64
Other advanced MSB CFLs (≤30 Watts)								
Reflector/flood	8	25	17	70	161	41	16	338
A-lamp	8	20	10	38	48	55	2	181
Globe	4	7	3	23	39	17	5	98
Candelabra (MSB)	–	6	3	14	12	6	–	41
Tube	–	–	1	17	10	3	–	31
Bug Light	–	2	2	11	8	4	–	27
Circline	–	–	–	3	1	–	–	4
Other advanced non-MSB CFLs								
Candelabra base CFLs	2	3	–	12	57	24	–	98
GU base CFLs	1	–	1	31	21	3	–	57
Pin base CFLs	–	–	–	265	163	18	–	446
Large base CFLs	–	–	–	9	4	1	–	14
Candelabra base CFLs with MSB adaptor	1	1	3	8	18	1	4	36
Other advanced non-CFLs								
Reflector/flood MSB LEDs	–	–	–	42	162	10	11	225
A-lamp MSB LEDs	–	–	4	13	67	8	10	102
Other LEDs	–	2	4	57	130	32	4	229
Hybrid CFL/LEDs	–	–	–	–	2	1	–	3
Cold Cathodes	–	–	–	–	2	–	–	2
NON-ADVANCED								
Basic CFLs (≤30 Watts)	47	85	90	207	374	161	16	980
Incandescent/Halogens	128	353	336	1,877	1,825	638	4	5,161
High Intensity Discharge Lamps	–	–	–	80	82	2	–	164
Number of Stores	**27**	**27**	**27**	**27**	**26**	**24**	**26**	**184**

Table B-11
Number of EISA-Compliant and Non-Compliant A-Lamps by Brightness and Channel, 2011

MSB General Service Incandescent/Halogen A-Lamps	Store Type							
	Discount	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall
High Brightness (1490-2600 lumens)								
EISA Compliant	–	86	54	196	1,837	811	2,056	5,040
EISA Non-Compliant	52	121	736	2,114	5,900	112	–	9,035
Total High Brightness A-Lamps	**52**	**207**	**790**	**2,310**	**7,737**	**923**	**2,056**	**14,075**
Medium High Brightness (1050-1489 lumens)								
EISA Compliant	–	56	36	138	–	765	–	995
EISA Non-Compliant	18	1,021	844	2,391	2,252	1,175	–	7,701
Total Medium High Brightness A-Lamps	**18**	**1,077**	**880**	**2,529**	**2,252**	**1,940**	**–**	**8,696**
Medium Low Brightness (750-1049 lumens)								
EISA Compliant	–	52	60	212	4,690	779	2,296	8,089
EISA Non-Compliant	3,542	980	1,883	3,250	17,543	3,591	–	30,789
Total Medium Low Brightness A-Lamps	**3,542**	**1,032**	**1,943**	**3,462**	**22,233**	**4,370**	**2,296**	**38,878**
Low Brightness (310-749 lumens)								
EISA Compliant	–	–	44	160	916	511	–	1,631
EISA Non-Compliant	5,916	784	1,331	4,801	17,881	4,038	–	34,751
Total Low Brightness Compliant A-Lamps	**5,916**	**784**	**1,375**	**4,961**	**18,797**	**4,549**	**–**	**36,382**

Table B-12
Average Number of EISA-Compliant and Non-Compliant A-Lamps by Brightness and Channel, 2011

MSB General Service Incandescent/Halogen A-Lamps	Store Type							
	Discount	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall
High Brightness (1490-2600 lumens)								
EISA Compliant	0	3	2	7	71	34	79	27
EISA Non-Compliant	2	4	27	78	227	5	0	49
Total High Brightness A-Lamps	**2**	**8**	**29**	**86**	**298**	**38**	**79**	**76**
Medium High Brightness (1050-1489 lumens)								
EISA Compliant	0	2	1	5	0	32	0	5
EISA Non-Compliant	1	38	31	89	87	49	0	42
Total Medium High Brightness A-Lamps	**1**	**40**	**33**	**94**	**87**	**81**	**0**	**47**
Medium Low Brightness (750-1049 lumens)								
EISA Compliant	0	2	2	8	180	32	88	44
EISA Non-Compliant	131	36	70	120	675	150	0	167
Total Medium Low Brightness A-Lamps	**131**	**38**	**72**	**128**	**855**	**182**	**88**	**211**
Low Brightness (310-749 lumens)								
EISA Compliant	0	0	2	6	35	21	0	9
EISA Non-Compliant	219	29	49	178	688	168	0	189
Total Low Brightness Compliant A-Lamps	**219**	**29**	**51**	**184**	**723**	**190**	**0**	**198**
Number of Stores	**27**	**27**	**27**	**27**	**26**	**24**	**26**	**184**

Table B-13
Number of EISA-Compliant and Non-Compliant A-Lamps by Brightness and Channel, 2009 & 2011

MSB General Service Incandescent/Halogen A-Lamps	Store Type							
	Home Improvement		Mass Merchandise		Membership Club		Overall	
	2009	2011	2009	2011	2009	2011	2009	2011
High Brightness (1490-2600 lumens)								
EISA Compliant	390	1,757	–	811	–	2,056	390	4,624
EISA Non-Compliant	4,435	5,767	1,528	96	–	–	5,963	5,863
Total High Brightness A-Lamps	**4,825**	**7,524**	**1,528**	**907**	**–**	**2,056**	**6,353**	**10,487**
Medium High Brightness (1050-1489 lumens)								
EISA Compliant	–	–	–	765	–	–	–	765
EISA Non-Compliant	4,034	2,197	600	1,175	–	–	4,634	3,372
Total Medium High Brightness A-Lamps	**4,034**	**2,197**	**600**	**1,940**	**–**	**–**	**4,634**	**4,137**
Medium Low Brightness (750-1049 lumens)								
EISA Compliant	474	4,592	–	779	–	2,296	474	7,667
EISA Non-Compliant	10,594	15,267	2,140	3,523	–	–	12,734	18,790
Total Medium Low Brightness A-Lamps	**11,068**	**19,859**	**2,140**	**4,302**	**–**	**2,296**	**13,208**	**26,457**
Low Brightness (310-749 lumens)								
EISA Compliant	–	786	–	511	–	–	–	1,297
EISA Non-Compliant	9,746	16,399	1,871	4,000	–	–	11,617	20,399
Total Low Brightness Compliant A-Lamps	**9,746**	**17,185**	**1,871**	**4,511**	**–**	**–**	**11,617**	**21,696**

Table B-14
Average Number of EISA-Compliant and Non-Compliant A-Lamps by Brightness and Channel, 2009 & 2011

MSB General Service Incandescent/Halogen A-Lamps	Store Type							
	Home Improvement		Mass Merchandise		Membership Club		Overall	
	2009	2011	2009	2011	2009	2011	2009	2011
High Brightness (1490-2600 lumens)								
EISA Compliant	28	84	0	41	0	79	11	69
EISA Non-Compliant	317	275	139	5	0	0	175	88
Total High Brightness A-Lamps	**345**	**358**	**139**	**45**	**0**	**79**	**187**	**157**
Medium High Brightness (1050-1489 lumens)								
EISA Compliant	0	0	0	38	0	0	0	11
EISA Non-Compliant	288	105	55	59	0	0	136	50
Total Medium High Brightness A-Lamps	**288**	**105**	**55**	**97**	**0**	**0**	**136**	**62**
Medium Low Brightness (750-1049 lumens)								
EISA Compliant	34	219	0	39	0	88	14	114
EISA Non-Compliant	757	727	195	176	0	0	375	280
Total Medium Low Brightness A-Lamps	**791**	**946**	**195**	**215**	**0**	**88**	**388**	**395**
Low Brightness (310-749 lumens)								
EISA Compliant	0	37	0	26	0	0	0	19
EISA Non-Compliant	696	781	170	200	0	0	342	304
Total Low Brightness Compliant A-Lamps	**696**	**818**	**170**	**226**	**0**	**0**	**342**	**324**
Number of Stores	**14**	**21**	**11**	**20**	**9**	**26**	**34**	**67**

Table B-15
Percent of Efficient and Non-Efficient Lamps by Channel, 2011 IOU-Discounted Lamps

Lamp Type	Channel							
	Discount	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall
EFFICIENT	**89%**	**34%**	**69%**	**45%**	**13%**	**3%**	**38%**	**29%**
Advanced CFLs	83%	37%	29%	33%	12%	1%	41%	24%
LEDs	–	0%	0%	0%	4%	0%	0%	1%
Hybrid CFL/LEDs	–	–	–	–	0%	0%	–	0%
Cold Cathodes	–	–	–	–	0%	–	–	0%
Basic CFLs (≤30 Watts)	91%	33%	74%	58%	15%	8%	44%	37%
NON-EFFICIENT	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**
Incandescent/Halogens	0%	0%	0%	0%	0%	0%	0%	0%
High Intensity Discharge Lamps	–	–	–	0%	0%	0%	–	0%
Number of IOU-Discounted Lamps	**13,500**	**1,498**	**5,547**	**8,527**	**11,736**	**1,224**	**53,414**	**95,446**
Total Number of Lamps	**31,112**	**16,118**	**20,008**	**76,283**	**277,507**	**99,362**	**146,777**	**667,167**

Table B-16
Number of Efficient and Non-Efficient Lamps by Channel, 2011 IOU-Discounted Lamps

Lamp Type	Channel							
	Discount	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall
EFFICIENT	**13,500**	**1,498**	**5,547**	**8,527**	**11,736**	**1,224**	**53,414**	**95,446**
Advanced CFLs	2,236	614	196	2,759	3,028	220	20,478	29,531
LEDs	–	–	–	–	253	–	36	289
Hybrid CFL/LEDs	–	–	–	–	–	–	–	–
Cold Cathodes	–	–	–	–	–	–	–	–
Basic CFLs (≤30 Watts)	11,264	884	5,351	5,768	8,455	1,004	32,900	65,626
NON-EFFICIENT	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**
Incandescent/Halogens	–	–	–	–	–	–	–	–
High Intensity Discharge Lamps	–	–	–	–	–	–	–	–
Number of IOU-Discounted Lamps	**13,500**	**1,498**	**5,547**	**8,527**	**11,736**	**1,224**	**53,414**	**95,446**
Total Number of Lamps	**31,112**	**16,118**	**20,008**	**76,283**	**277,507**	**99,362**	**146,777**	**667,167**

Table B-17
Percent of Efficient and Non-Efficient Lamps by Channel, 2011 Non-IOU-Discounted Lamps

Lamp Type	Channel							
	Discount	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall
EFFICIENT	**11%**	**66%**	**31%**	**55%**	**87%**	**97%**	**62%**	**71%**
Advanced CFLs	17%	63%	71%	67%	88%	99%	59%	76%
LEDs	–	100%	100%	100%	96%	100%	100%	99%
Hybrid CFL/LEDs	–	–	–	–	100%	100%	–	100%
Cold Cathodes	–	–	–	–	100%	–	–	100%
Basic CFLs (≤30 Watts)	9%	67%	26%	42%	85%	92%	56%	63%
NON-EFFICIENT	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Incandescent/Halogens	100%	100%	100%	100%	100%	100%	100%	100%
High Intensity Discharge Lamps	–	–	–	100%	100%	100%	–	100%
Number of Non-IOU Dsc. Lamps	**17,612**	**14,620**	**14,461**	**67,756**	**265,771**	**98,138**	**93,363**	**571,721**
Total Number of Lamps	**31,112**	**16,118**	**20,008**	**76,283**	**277,507**	**99,362**	**146,777**	**667,167**

Table B-18
Number of Efficient and Non-Efficient Lamps by Channel, 2011 Non-IOU-Discounted Lamps

Lamp Type	Channel							
	Discount	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall
EFFICIENT	**1,600**	**2,859**	**2,491**	**10,271**	**78,169**	**47,151**	**87,781**	**230,322**
Advanced CFLs	466	1,054	489	5,525	22,185	34,613	29,651	93,983
LEDs	–	27	130	646	6,218	1,059	16,438	24,518
Hybrid CFL/LEDs	–	–	–	–	166	3	–	169
Cold Cathodes	–	–	–	–	158	–	–	158
Basic CFLs (≤30 Watts)	1,134	1,778	1,872	4,100	49,442	11,476	41,692	111,494
NON-EFFICIENT	**16,012**	**11,761**	**11,970**	**57,485**	**187,602**	**50,987**	**5,582**	**341,399**
Incandescent/Halogens	16,012	11,761	11,970	56,902	185,838	50,965	5,582	339,030
High Intensity Discharge Lamps	–	–	–	583	1,764	22	–	2,369
Number of Non-IOU Dsc. Lamps	**17,612**	**14,620**	**14,461**	**67,756**	**265,771**	**98,138**	**93,363**	**571,721**
Total Number of Lamps	**31,112**	**16,118**	**20,008**	**76,283**	**277,507**	**99,362**	**146,777**	**667,167**

Table B-19
Percent of Efficient and Non-Efficient Lamp Packages by Channel, 2011 IOU-Discounted Packages

Lamp Type	Channel							
	Discount	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall
EFFICIENT	**91%**	**26%**	**76%**	**40%**	**18%**	**2%**	**33%**	**30%**
Advanced CFLs	85%	25%	26%	30%	11%	1%	42%	20%
LEDs	–	0%	0%	0%	4%	0%	0%	2%
Hybrid CFL/LEDs	–	–	–	–	0%	0%	–	0%
Cold Cathodes	–	–	–	–	0%	–	–	0%
Basic CFLs (≤30 Watts)	92%	28%	82%	56%	28%	6%	45%	47%
NON-EFFICIENT	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**
Incandescent/Halogens	0%	0%	0%	0%	0%	0%	0%	0%
High Intensity Discharge Lamps	–	–	–	0%	0%	0%	–	0%
Number of IOU-Discounted Packages	**9,727**	**797**	**5,379**	**5,695**	**8,500**	**505**	**13,324**	**43,927**
Total Number of Packages	**17,298**	**8,628**	**12,464**	**49,370**	**116,902**	**45,670**	**40,767**	**291,099**

Table B-20
Number of Efficient and Non-Efficient Lamp Packages by Channel, 2011 IOU-Discounted Packages

Lamp Type	Channel							
	Discount	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall
EFFICIENT	**9,727**	**797**	**5,379**	**5,695**	**8,500**	**505**	**13,324**	**43,927**
Advanced CFLs	1,587	341	166	2,306	2,071	166	5,708	12,345
LEDs	–	–	–	–	253	–	36	289
Hybrid CFL/LEDs	–	–	–	–	–	–	–	–
Cold Cathodes	–	–	–	–	–	–	–	–
Basic CFLs (≤30 Watts)	8,140	456	5,213	3,389	6,176	339	7,580	31,293
NON-EFFICIENT	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**
Incandescent/Halogens	–	–	–	–	–	–	–	–
High Intensity Discharge Lamps	–	–	–	–	–	–	–	–
Number of IOU-Discounted Packages	**9,727**	**797**	**5,379**	**5,695**	**8,500**	**505**	**13,324**	**43,927**
Total Number of Packages	**17,298**	**8,628**	**12,464**	**49,370**	**116,902**	**45,670**	**40,767**	**291,099**

Table B-21
Percent of Efficient and Non-Efficient Lamp Packages by Channel, 2011 Non-IOU-Discounted Packages

Lamp Type	Channel							
	Discount	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall
EFFICIENT	**9%**	**74%**	**24%**	**60%**	**82%**	**98%**	**67%**	**70%**
Advanced CFLs	15%	75%	74%	70%	89%	99%	58%	80%
LEDs	–	100%	100%	100%	96%	100%	100%	98%
Hybrid CFL/LEDs	–	–	–	–	100%	100%	–	100%
Cold Cathodes	–	–	–	–	100%	–	–	100%
Basic CFLs (≤30 Watts)	8%	72%	18%	44%	72%	94%	55%	53%
NON-EFFICIENT	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Incandescent/Halogens	100%	100%	100%	100%	100%	100%	100%	100%
High Intensity Discharge Lamps	–	–	–	100%	100%	100%	–	100%
Number of Non-IOU Dsc. Packages	**7,571**	**7,831**	**7,085**	**43,675**	**108,402**	**45,165**	**27,443**	**247,172**
Total Number of Packages	**17,298**	**8,628**	**12,464**	**49,370**	**116,902**	**45,670**	**40,767**	**291,099**

Table B-22
Number of Efficient and Non-Efficient Lamp Packages by Channel, 2011 Non-IOU-Discounted Packages

Lamp Type	Channel							
	Discount	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall
EFFICIENT	**982**	**2,244**	**1,741**	**8,601**	**38,390**	**24,442**	**26,774**	**103,174**
Advanced CFLs	285	1,050	471	5,336	16,088	18,595	7,865	49,690
LEDs	–	27	100	629	5,960	861	9,722	17,299
Hybrid CFL/LEDs	–	–	–	–	166	3	–	169
Cold Cathodes	–	–	–	–	79	–	–	79
Basic CFLs (≤30 Watts)	697	1,167	1,170	2,636	16,097	4,983	9,187	35,937
NON-EFFICIENT	**6,589**	**5,587**	**5,344**	**35,074**	**70,012**	**20,723**	**669**	**143,998**
Incandescent/Halogens	6,589	5,587	5,344	34,491	68,248	20,701	669	141,629
High Intensity Discharge Lamps	–	–	–	583	1,764	22	–	2,369
Number of Non-IOU Dsc. Packages	**7,571**	**7,831**	**7,085**	**43,675**	**108,402**	**45,165**	**27,443**	**247,172**
Total Number of Packages	**17,298**	**8,628**	**12,464**	**49,370**	**116,902**	**45,670**	**40,767**	**291,099**

Table B-23
Percent of Advanced and Non-Advanced IOU-Discounted Lamps by Channel, 2011

Lamp Type	Channel							
	Discount	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall
Advanced	**17%**	**41%**	**4%**	**32%**	**28%**	**18%**	**38%**	**31%**
Advanced CFLs	17%	41%	4%	32%	26%	18%	38%	31%
LEDs	–	–	–	–	2%	–	<0.5%	<0.5%
Non-Advanced (Basic CFLs)	**83%**	**59%**	**96%**	**68%**	**72%**	**82%**	**62%**	**69%**
Number of IOU-Discounted Lamps	**13,500**	**1,498**	**5,547**	**8,527**	**11,736**	**1,224**	**53,414**	**95,446**

Table B-24 Number of Advanced and Non-Advanced IOU-Discounted Lamps by Channel, 2011

Lamp Type	Channel							
	Discount	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall
Advanced	**2,236**	**614**	**196**	**2,759**	**3,281**	**220**	**20,514**	**29,820**
Advanced CFLs	2,236	614	196	2,759	3,028	220	20,478	29,531
LEDs	–	–	–	–	253	–	36	289
Non-Advanced (Basic CFLs)	**11,264**	**884**	**5,351**	**5,768**	**8,455**	**1,004**	**32,900**	**65,626**
Number of IOU-Discounted Lamps	**13,500**	**1,498**	**5,547**	**8,527**	**11,736**	**1,224**	**53,414**	**95,446**

Table B-25
Percent of Advanced and Non-Advanced IOU-Discounted Lamp Packages by Channel, 2011

Lamp Type	Channel							
	Discount	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall
Advanced	**16%**	**43%**	**3%**	**40%**	**27%**	**33%**	**43%**	**29%**
Advanced CFLs	16%	43%	3%	40%	24%	33%	43%	28%
LEDs	–	–	–	–	3%	–	<0.5%	1%
Non-Advanced (Basic CFLs)	**84%**	**57%**	**97%**	**60%**	**73%**	**67%**	**57%**	**71%**
Number of IOU-Discounted Packages	**9,727**	**797**	**5,379**	**5,695**	**8,500**	**505**	**13,324**	**43,927**

Table B-26
Number of Advanced and Non-Advanced IOU-Discounted Lamp Packages by Channel, 2011

Lamp Type	Channel							
	Discount	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall
Advanced	**1,587**	**341**	**166**	**2,306**	**2,324**	**166**	**5,744**	**12,634**
Advanced CFLs	1,587	341	166	2,306	2,071	166	5,708	12,345
LEDs	–	–	–	–	253	–	36	289
Non-Advanced (Basic CFLs)	**8,140**	**456**	**5,213**	**3,389**	**6,176**	**339**	**7,580**	**31,293**
Number of IOU-Discounted Packages	**9,727**	**797**	**5,379**	**5,695**	**8,500**	**505**	**13,324**	**43,927**

Table B-27
Average Price per Lamp by Lamp Type and Channel, 2011 Detailed Lamp Types

Lamp Type	Channel							
	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall	Overall
ADVANCED								
High-wattage and specialty MSB CFLs								
High-wattage MSB CFLs (>30 Watts)	$1.64	$10.79	$10.42	$14.07	$10.87	$11.54	$1.82	$3.10
Specialty MSB CFLs: dimmable	–	$17.70	$12.12	$14.51	$5.87	$11.03	$4.54	$5.62
Specialty MSB CFLs: 3-way	$8.00	$12.64	$9.99	$5.19	$8.51	$10.67	$6.56	$7.33
Other advanced MSB CFLs (≤30 Watts)								
Reflector/flood	$1.76	$5.69	$5.50	$5.06	$5.22	$6.80	$2.56	$3.51
A-lamp	$0.83	$4.48	$3.72	$3.38	$5.00	$3.84	$2.13	$3.08
Globe	$1.27	$9.33	$8.12	$7.99	$5.48	$4.59	$1.95	$2.73
Candelabra (MSB)	–	$9.71	$9.58	$8.40	$5.06	$4.21	–	$5.88
Tube	–	–	$7.59	$8.12	$7.63	$1.04	–	$1.13
Bug Light	–	$9.74	$7.80	$8.62	$5.66	$9.00	–	$7.39
Circline	–	–	–	$12.96	$8.99	–	–	$12.17
Other advanced non-MSB CFLs								
Candelabra base CFLs	$1.95	$9.73	–	$7.18	$4.88	$5.21	–	$5.18
GU base CFLs	–	–	$5.99	$6.28	$7.21	$4.75	–	$6.39
Pin base CFLs	–	–	–	$7.22	$6.99	$5.55	–	$6.98
Large base CFLs	–	–	–	$20.18	$14.61	$17.97	–	$17.44
Candelabra base CFLs with MSB adaptor	$5.00	$1.24	$6.35	$9.17	$3.88	$6.50	$1.96	$2.65
Other advanced non-CFLs								
Reflector/flood MSB LEDs	–	–	–	$25.70	$39.79	$36.68	$37.97	$38.28
A-lamp MSB LEDs	–	–	$14.49	$19.95	$20.11	$13.80	$8.90	$10.53
Other LEDs	–	$11.61	$5.13	$13.13	$17.52	$6.71	$6.43	$9.91
Hybrid CFL/LEDs	–	–	–	–	$7.33	$7.57	–	$7.34
Cold Cathodes	–	–	–	–	$6.26	–	–	$6.26
NON-ADVANCED								
Basic CFLs (≤30 Watts)	$0.83	$3.86	$1.37	$2.38	$2.16	$2.88	$1.40	$1.80
Incandescent/Halogens	$0.45	$2.44	$1.80	$3.05	$2.13	$1.84	$1.41	$2.15
High Intensity Discharge Lamps	–	–	–	$19.88	$21.39	$10.97	–	$20.92
Number of Lamps	**31,112**	**16,118**	**20,008**	**76,283**	**277,507**	**99,362**	**146,777**	**667,167**

Table B-28
Average IOU Discounted Price per Lamp by Lamp Type and Product Type (All Stores), 2011

Lamp Type	Overall		
	CFL	LED	Incandescent / Halogen
MSB Lamps			
Basic Twister CFLs (≤30 Watts)	$0.97	–	–
A-lamp	$1.05	$17.86	–
Reflector/Flood	$1.83	$35.08	–
Globe	$1.23	–	–
Candelabra & Torpedo Shape (MSB)	–	–	–
Other MSB Lamps*	$1.77	–	–
Specialty MSB Lamps			
Specialty MSB CFLs: Dimmable	$3.20	–	–
Specialty MSB: 3-way	$3.42	–	–
Other Non-MSB Lamps			
Candelabra Base	$4.49	–	–
GU Base	–	$36.56	–
Pin Base	–	–	–
Candelabra Base with MSB Adaptor	–	–	–
Other Base Lamps^	–	–	–
Total Lamps	**95,157**	**289**	**–**

Table B-29
Average Non-IOU Discounted Price per Lamp by Lamp Type and Product Type (All Stores), 2011

Lamp Type	Overall		
	CFL	LED	Incandescent/ Halogen
MSB Lamps			
Basic Twister CFLs (≤30 Watts)	$2.29	–	–
A-lamp	$3.60	$10.52	$1.16
Reflector/Flood	$4.82	$38.44	$5.06
Globe	$3.24	$22.12	$2.12
Candelabra & Torpedo Shape (MSB)	$5.88	$11.87	$1.45
Other MSB Lamps*	$1.83	$35.22	$2.83
Specialty MSB Lamps			
Specialty MSB CFLs: Dimmable	$8.31	–	–
Specialty MSB: 3-way	$10.08	–	$2.95
Other Non-MSB Lamps			
Candelabra Base	$5.18	$4.95	$1.29
GU Base	$6.39	$21.69	$3.87
Pin Base	$6.98	$18.24	$4.32
Candelabra Base with MSB Adaptor	$2.65	$6.12	$5.99
Other Base Lamps^	$17.44	$12.54	$5.33
Total Lamps	**205,477**	**24,518**	**339,030**

Table B-30
Price per Lamp Ranges by Lamp Type and Channel, 2011

Lamp Type	Channel															
	Discount		Drug		Grocery		Hardware		Home Improvement		Mass Merchandise		Membership Club		Overall	
	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High
ADVANCED	**$0.50**	**$8.00**	**$0.25**	**$20.69**	**$0.25**	**$19.99**	**$0.50**	**$55.49**	**$0.52**	**$69.98**	**$1.00**	**$60.68**	**$0.75**	**$46.96**	**$0.25**	**$69.98**
Advanced CFLs	$0.50	$8.00	$0.25	$20.69	$0.25	$19.99	$0.50	$34.99	$0.52	$26.99	$1.00	$19.99	$0.75	$6.56	$0.25	$34.99
LEDs	–	–	$9.99	$15.99	$2.00	$19.99	$1.49	$55.49	$1.50	$69.98	$1.44	$60.68	$1.86	$46.96	$1.44	$69.98
Hybrid CFL/LEDs	–	–	–	–	–	–	–	–	$5.97	$9.98	$7.57	$7.57	–	–	$5.97	$9.98
Cold Cathodes	–	–	–	–	–	–	–	–	$4.99	$6.74	–	–	–	–	$4.99	$6.74
NON-ADVANCED	**$0.16**	**$3.98**	**$0.25**	**$20.69**	**$0.20**	**$12.99**	**$0.19**	**$49.99**	**$0.04**	**$39.99**	**$0.20**	**$19.99**	**$0.50**	**$3.33**	**$0.04**	**$49.99**
Basic CFLs	$0.49	$3.98	$0.25	$20.69	$0.25	$12.99	$0.19	$19.99	$0.38	$12.99	$0.91	$19.99	$0.50	$2.31	$0.19	$20.69
Incandescent/Halogens	$0.16	$1.99	$0.38	$19.99	$0.20	$11.99	$0.32	$39.90	$0.04	$28.50	$0.20	$19.98	$1.21	$3.33	$0.04	$39.90
HID Lamps	–	–	–	–	–	–	$2.99	$49.99	$2.97	$39.99	$10.97	$11.00	–	–	$2.97	$49.99
Number of Lamps	**31,112**		**16,118**		**20,008**		**76,283**		**277,507**		**99,362**		**146,777**		**667,167**	

Table B-31
Price per Lamp Ranges by Lamp Type, Detailed Lamp Type and Channel, 2011

Lamp Type	Channel															
	Discount		Drug		Grocery		Hardware		Home Improv.		Mass Merch.		Memb. Club		Overall	
	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High
ADVANCED																
High-wattage and specialty MSB CFLs																
High-wattage MSB CFLs	$0.99	$1.69	$9.49	$12.99	$9.99	$10.99	$5.99	$29.99	$3.00	$16.97	$7.00	$13.99	$1.50	$2.00	$0.99	$29.99
Specialty MSB CFLs: dimmable	–	–	$8.00	$20.69	$8.49	$19.99	$5.99	$22.99	$0.75	$26.99	$2.99	$19.99	$3.43	$5.93	$0.75	$26.99
Specialty MSB CFLs: 3-way	$8.00	$8.00	$4.99	$14.99	$9.99	$9.99	$1.50	$29.99	$1.99	$14.99	$6.27	$14.88	$6.56	$6.56	$1.50	$29.99
Other advanced MSB CFLs (≤30 Watts)																
Reflector/flood	$0.50	$8.00	$0.25	$13.99	$0.25	$10.99	$0.50	$19.99	$0.52	$18.98	$1.92	$14.71	$0.75	$4.62	$0.25	$19.99
A-lamp	$0.50	$3.98	$0.25	$13.49	$0.33	$10.89	$0.50	$14.99	$1.00	$11.99	$2.32	$10.88	$1.74	$3.16	$0.25	$14.99
Globe	$0.50	$1.99	$6.79	$10.99	$6.99	$9.99	$4.66	$19.29	$2.49	$11.47	$2.32	$9.79	$1.00	$3.15	$0.50	$19.29
Candelabra (MSB)	–	–	$6.79	$11.99	$8.99	$9.99	$4.79	$11.49	$2.00	$9.59	$3.32	$9.44	–	–	$2.00	$11.99
Tube	–	–	–	–	$7.59	$7.59	$2.99	$26.99	$2.00	$9.99	$1.00	$3.88	–	–	$1.00	$26.99
Bug Light	–	–	$8.49	$11.99	$5.99	$9.99	$4.99	$16.89	$0.97	$8.99	$3.63	$13.88	–	–	$0.97	$16.89
Circline	–	–	–	–	–	–	$8.49	$22.99	$8.99	$8.99	–	–	–	–	$8.49	$22.99
Other advanced non-MSB CFLs																
Candelabra base CFLs	$0.99	$1.98	$6.29	$11.99	–	–	$4.39	$9.99	$2.63	$11.97	$1.95	$8.98	–	–	$0.99	$11.99
GU base CFLs	–	–	–	–	$5.99	$5.99	$1.99	$16.99	$1.97	$10.18	$3.99	$11.79	–	–	$1.97	$16.99
Pin base CFLs	–	–	–	–	–	–	$0.50	$24.99	$1.00	$25.26	$1.74	$15.97	–	–	$0.50	$25.26
Large base CFLs	–	–	–	–	–	–	$12.99	$34.99	$11.99	$21.99	$17.97	$17.97	–	–	$11.99	$34.99
Can. base CFLs w/ MSB adptr.	$5.00	$5.00	$1.24	$1.24	$3.83	$10.99	$5.99	$13.99	$0.53	$9.99	$6.50	$6.50	$1.16	$2.88	$0.53	$13.99
Other advanced non-CFLs																
Reflector/flood MSB LEDs	–	–	–	–	–	–	$2.99	$55.49	$6.98	$69.98	$22.43	$60.68	$29.99	$46.96	$2.99	$69.98
A-lamp MSB LEDs	–	–	–	–	$9.99	$19.99	$9.99	$36.99	$4.97	$39.98	$6.97	$39.88	$1.86	$19.96	$1.86	$39.98
Other LEDs	–	–	$9.99	$15.99	$2.00	$9.99	$1.49	$29.99	$1.50	$49.97	$1.44	$29.88	$5.66	$29.96	$1.44	$49.97
Hybrid CFL/LEDs	–	–	–	–	–	–	–	–	$5.97	$9.98	$7.57	$7.57	–	–	$5.97	$9.98
Cold Cathodes	–	–	–	–	–	–	–	–	$4.99	$6.74	–	–	–	–	$4.99	$6.74
NON-ADVANCED																
Basic CFLs	$0.49	$3.98	$0.25	$20.69	$0.25	$12.99	$0.19	$19.99	$0.38	$12.99	$0.91	$19.99	$0.50	$2.31	$0.19	$20.69
Incandescent/Halogens	$0.16	$1.99	$0.38	$19.99	$0.20	$11.99	$0.32	$39.90	$0.04	$28.50	$0.20	$19.98	$1.21	$3.33	$0.04	$39.90
HID Lamps	–	–	–	–	–	–	$2.99	$49.99	$2.97	$39.99	$10.97	$11.00	–	–	$2.97	$49.99
Number of Lamps	**31,112**		**16,118**		**20,008**		**76,283**		**277,507**		**99,362**		**146,777**		**667,167**	

Table B-32: Average Price per Lamp for IOU-Discounted Lamps by Channel and Detailed Lamp Type, 2011

Lamp Type	Retail Channel							
	Discount	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall
ADVANCED								
High-wattage and specialty MSB CFLs								
High-wattage MSB CFLs (>30 Watts)	$0.99	–	–	–	$9.34	–	$1.70	$1.77
Specialty MSB CFLs: dimmable	–	–	–	–	$1.46	$4.53	$3.74	$3.20
Specialty MSB CFLs: 3-way	–	–	–	$3.60	$2.04	$6.27	–	$3.42
Other advanced MSB CFLs (≤30 Watts)								
Reflector/flood	$0.72	$1.27	$0.45	$2.59	$2.12	$2.46	$1.77	$1.83
A-lamp	$0.74	$0.67	$0.35	$1.35	$2.98	$4.68	–	$1.05
Globe	$1.22	–	–	–	$4.29	$2.96	$1.17	$1.23
Candelabra (MSB)	–	–	–	–	–	–	–	–
Tube	–	–	–	–	–	–	–	–
Bug Light	–	–	–	–	–	–	–	–
Circline	–	–	–	–	–	–	–	–
Other advanced non-MSB CFLs								
Candelabra base CFLs	–	–	–	–	$4.49	–	–	$4.49
GU base CFLs	–	–	–	–	–	–	–	–
Pin base CFLs	–	–	–	–	–	–	–	–
Large base CFLs	–	–	–	–	–	–	–	–
Candelabra base CFLs with MSB adaptor	–	–	–	–	–	–	–	–
Other advanced non-CFLs								
Reflector/flood MSB LEDs	–	–	–	–	$36.04	–	$29.99	$35.08
A-lamp MSB LEDs	–	–	–	–	$17.86	–	–	$17.86
Other LEDs	–	–	–	–	$36.56	–	–	$36.56
NON-ADVANCED								
Basic CFLs (≤30 Watts)	$0.72	$0.78	$0.50	$0.70	$0.69	$2.10	$1.23	$0.97
Number of Lamps	**13,500**	**1,498**	**5,547**	**8,527**	**11,736**	**1,224**	**53,414**	**95,446**

Table B-33
Average Price per Lamp for Non-IOU-Discounted Lamps by Channel and Detailed Lamp Type, 2011

Lamp Type	Retail Channel							
	Discount	Drug	Grocery	Hardware	Home Improv.	Mass Merch.	Memb. Club	Overall
ADVANCED								
High-wattage and specialty MSB CFLs								
High-wattage MSB CFLs (>30 Watts)	$1.69	$10.79	$10.42	$14.07	$10.94	$11.54	$1.91	$3.97
Specialty MSB CFLs: dimmable	–	$17.70	$12.12	$14.51	$9.21	$12.70	$5.87	$8.31
Specialty MSB CFLs: 3-way	$8.00	$12.64	$9.99	$14.08	$10.15	$10.93	$6.56	$10.08
Other advanced MSB CFLs (≤30 Watts)								
Reflector/flood	$3.29	$10.88	$8.59	$8.89	$5.82	$7.03	$3.43	$4.82
A-lamp	$3.53	$9.42	$8.00	$8.68	$5.16	$3.83	$2.13	$3.60
Globe	$1.33	$9.33	$8.12	$7.99	$5.52	$4.63	$2.32	$3.24
Candelabra (MSB)	–	$9.71	$9.58	$8.40	$5.06	$4.21	–	$5.88
Tube	–	–	$7.59	$8.12	$7.63	$1.04	–	$1.13
Bug Light	–	$9.74	$7.80	$8.62	$5.66	$9.00	–	$7.39
Circline	–	–	–	$12.96	$8.99	–	–	$12.17
Other advanced non-MSB CFLs								
Candelabra base CFLs	$1.95	$9.73	–	$7.18	$4.88	$5.21	–	$5.18
GU base CFLs	–	–	$5.99	$6.28	$7.21	$4.75	–	$6.39
Pin base CFLs	–	–	–	$7.22	$6.99	$5.55	–	$6.98
Large base CFLs	–	–	–	$20.18	$14.61	$17.97	–	$17.44
Candelabra base CFLs with MSB adaptor	$5.00	$1.24	$6.35	$9.17	$3.88	$6.50	$1.96	$2.65
Other advanced non-CFLs								
Reflector/flood MSB LEDs	–	–	–	$25.70	$40.11	$36.68	$38.11	$38.44
A-lamp MSB LEDs	–	–	$14.49	$19.95	$20.14	$13.80	$8.90	$10.52
Other LEDs	–	$11.61	$5.13	$13.13	$17.19	$6.71	$6.43	$9.78
NON-ADVANCED								
Basic CFLs (≤30 Watts)	$1.91	$5.40	$3.82	$4.73	$2.41	$2.93	$1.53	$2.29
Number of Lamps	**1,600**	**2,859**	**2,491**	**10,271**	**77,845**	**47,148**	**87,781**	**229,995**

Table B-34
Average IOU Discounted Price per Lamp by Lamp Type and Big Box Channel, 2009 & 2011

Lamp Type	Store Type							
	Home Improvement		Mass Merchandise		Membership Club		Overall	
	2009	2011	2009	2011	2009	2011	2009	2011
ADVANCED								
High-wattage and specialty MSB CFLs								
High-wattage MSB CFLs (>30 Watts)	–	$9.69	–	–	$9.99	$1.70	$9.99	$1.77
Specialty MSB CFLs: dimmable	$3.95	$7.76	–	$10.30	$3.63	$3.74	$3.75	$3.81
Specialty MSB CFLs: 3-way	–	–	–	$6.27	–	–	–	$6.27
Other advanced MSB CFLs (≤30 Watts)								
Reflector/flood	–	$2.08	–	$2.46	$2.19	$1.77	$2.19	$1.80
A-lamp	$1.49	$3.58	–	$4.68	–	–	$1.49	$3.88
Globe	$1.49	$4.29	–	$2.96	$0.85	$1.17	$1.00	$1.23
Candelabra (MSB)	–	–	$1.40	–	–	–	$1.40	–
Tube	–	–	–	–	–	–	–	–
Bug Light	–	–	–	–	–	–	–	–
Circline	–	–	–	–	–	–	–	–
Other advanced non-MSB CFLs								
Candelabra base CFLs	–	$4.49	–	–	–	–	–	$4.49
GU base CFLs	–	–	–	–	–	–	–	–
Pin base CFLs	–	–	–	–	–	–	–	–
Large base CFLs	–	–	–	–	–	–	–	–
Candelabra base CFLs with MSB adaptor	–	–	–	–	–	–	–	–
Other advanced non-CFLs								
Reflector/flood MSB LEDs	–	$36.42	–	–	–	$29.99	–	$35.34
A-lamp MSB LEDs	–	$17.86	–	–	–	–	–	$17.86
Other LEDs	–	$36.56	–	–	–	–	–	$36.56
Hybrid CFL/LEDs	–	–	–	–	–	–	–	–
Cold Cathodes	–	–	–	–	–	–	–	–
NON-ADVANCED								
Basic CFLs (≤30 Watts)	$2.52	$0.62	$0.92	$2.20	$1.10	$1.23	$1.12	$1.14
Incandescent/Halogens	–	–	–	–	–	–	–	–
High Intensity Discharge Lamps	–	–	–	–	–	–	–	–
Number of Lamps	**2,254**	**8,469**	**2,499**	**1,105**	**21,074**	**53,414**	**25,827**	**62,988**

Table B-35
Average Non-IOU Discounted Price per Lamp by Lamp Type and Big Box Channel, 2009 & 2011

Lamp Type	Store Type							
	Home Improvement		Mass Merchandise		Membership Club		Overall	
	2009	2011	2009	2011	2009	2011	2009	2011
ADVANCED								
High-wattage and specialty MSB CFLs								
High-wattage MSB CFLs (>30 Watts)	$11.01	$11.27	$4.65	$11.54	–	$1.91	$8.86	$3.19
Specialty MSB CFLs: dimmable	$9.27	$9.05	$11.53	$12.70	$6.92	$5.87	$8.43	$7.47
Specialty MSB CFLs: 3-way	$9.53	$10.24	$9.94	$10.96	$6.56	$6.56	$8.47	$9.41
Other advanced MSB CFLs (≤30 Watts)								
Reflector/flood	$5.98	$5.67	$6.16	$7.03	$2.61	$3.43	$4.43	$4.41
A-lamp	$4.61	$5.08	$3.79	$3.83	$3.13	$2.13	$3.84	$3.27
Globe	$5.28	$5.48	$4.84	$4.63	$2.83	$2.32	$4.47	$3.10
Candelabra (MSB)	$7.89	$5.48	$4.97	$4.21	–	–	$5.33	$4.78
Tube	$8.61	$7.48	$2.34	$1.04	–	–	$2.36	$1.08
Bug Light	$6.37	$5.28	$7.65	$9.00	–	–	$6.73	$6.73
Circline	–	–	–	–	–	–	–	–
Other advanced non-MSB CFLs								
Candelabra base CFLs	$5.68	$4.87	$4.90	$5.21	$2.51	–	$4.86	$5.14
GU base CFLs	$8.59	$7.36	$8.88	$4.75	$19.74	–	$9.00	$6.45
Pin base CFLs	$5.62	$7.14	$3.58	$5.53	$4.81	–	$5.48	$6.97
Large base CFLs	–	$12.83	–	$17.97	–	–	–	$16.85
Candelabra base CFLs with MSB adaptor	–	$3.62	–	$6.50	–	$1.96	–	$2.36
Other advanced non-CFLs								
Reflector/flood MSB LEDs	$52.77	$40.98	$39.06	$36.68	$12.76	$38.11	$19.95	$39.50
A-lamp MSB LEDs	–	$20.18	–	$13.80	–	$8.90	–	$10.41
Other LEDs	$6.18	$18.18	$2.74	$6.71	$4.77	$6.43	$4.74	$9.71
Hybrid CFL/LEDs	$9.98	$7.33	–	$7.57	–	–	$9.98	$7.34
Cold Cathodes	$6.65	$6.26	–	–	–	–	$6.65	$6.26
NON-ADVANCED								
Basic CFLs (≤30 Watts)	$2.64	$2.35	$2.46	$2.94	$1.76	$1.53	$2.31	$2.08
Incandescent/Halogens	$2.13	$2.10	$1.61	$1.84	$1.16	$1.41	$2.01	$2.03
High Intensity Discharge Lamps	–	$21.67	$6.99	$10.97	–	–	$6.99	$21.54
Number of Lamps	**33,448**	**73,739**	**40,047**	**46,828**	**24,829**	**87,781**	**98,324**	**208,348**

C. Appendix C – Shelf Survey Tables by IOU Territory

This section provides data for key discussion points covered in Section 3 above with tables broken down by IOU territory.

Table C-1
Percent of Stores Carrying Advanced and Non-Advanced Lamps by IOU, 2011

Lamp Type	IOU Territory			
	PG&E	SCE	SDG&E	Overall
ADVANCED	**93%**	**82%**	**85%**	**87%**
Advanced CFLs	93%	82%	85%	87%
LEDs	51%	49%	57%	52%
Hybrid CFL/LEDs	7%	4%	4%	5%
Cold Cathodes	9%	3%	2%	5%
NON-ADVANCED	**100%**	**100%**	**98%**	**99%**
Basic CFLs (≤30 Watts)	93%	90%	93%	92%
Incandescent/Halogens	84%	84%	85%	84%
High Intensity Discharge Lamps	30%	24%	26%	27%
Number of Stores	**70**	**68**	**46**	**184**

Table C-2
Percent of Stores Carrying Advanced and Non-Advanced Lamps by IOU and Detailed Lamp Type, 2011

Lamp Type	IOU Territory			
	PG&E	SCE	SDG&E	Overall
ADVANCED				
High-wattage and specialty MSB CFLs				
High-wattage MSB CFLs (>30 Watts)	41%	43%	50%	44%
Specialty MSB CFLs: dimmable	61%	54%	70%	61%
Specialty MSB CFLs: 3-way	47%	49%	54%	49%
Other advanced MSB CFLs (≤30 Watts)				
Reflector/flood	74%	71%	70%	72%
A-lamp	71%	65%	70%	68%
Globe	66%	59%	72%	65%
Candelabra (MSB)	33%	29%	43%	34%
Tube	17%	10%	9%	13%
Bug Light	39%	38%	46%	40%
Circline	1%	4%	2%	3%
Other advanced non-MSB CFLs				
Candelabra base CFLs	44%	37%	46%	42%
GU base CFLs	34%	32%	30%	33%
Pin base CFLs	39%	32%	39%	36%
Large base CFLs	13%	15%	13%	14%
Candelabra base CFLs with MSB adaptor	27%	19%	13%	21%
Other advanced non-CFLs				
Reflector/flood MSB LEDs	37%	32%	33%	34%
A-lamp MSB LEDs	37%	31%	33%	34%
Other LEDs	49%	43%	54%	48%
Hybrid CFL/LEDs	7%	4%	4%	5%
Cold Cathodes	9%	3%	2%	5%
NON-ADVANCED				
Basic CFLs (≤30 Watts)	93%	90%	93%	92%
Incandescent/Halogens	84%	84%	85%	84%
High Intensity Discharge Lamps	30%	24%	26%	27%
Number of Stores	**70**	**68**	**46**	**184**

Table C-3
Percent of Total Advanced and Non-Advanced Lamps by IOU, 2011

Lamp Type	IOU Territory			
	PG&E	SCE	SDG&E	Overall
ADVANCED	**20%**	**24%**	**23%**	**22%**
Advanced CFLs	16%	21%	19%	18%
LEDs	4%	3%	4%	4%
Hybrid CFL/LEDs	0%	0%	0%	0%
Cold Cathodes	0%	0%	0%	0%
NON-ADVANCED	**80%**	**76%**	**77%**	**78%**
Basic CFLs (≤30 Watts)	25%	30%	26%	27%
Incandescent/Halogens	55%	46%	50%	51%
High Intensity Discharge Lamps	0%	0%	0%	0%
Number of Lamps	**262,745**	**215,518**	**188,904**	**667,167**

Table C-4
Number of Total Advanced and Non-Advanced Lamps by IOU, 2011

Lamp Type	IOU Territory			
	PG&E	SCE	SDG&E	Overall
ADVANCED	**53,421**	**51,103**	**44,124**	**148,648**
Advanced CFLs	43,006	44,223	36,285	123,514
LEDs	10,214	6,794	7,799	24,807
Hybrid CFL/LEDs	83	62	24	169
Cold Cathodes	118	24	16	158
NON-ADVANCED	**209,324**	**164,415**	**144,780**	**518,519**
Basic CFLs (≤30 Watts)	64,544	63,654	48,922	177,120
Incandescent/Halogens	143,762	99,909	95,359	339,030
High Intensity Discharge Lamps	1,018	852	499	2,369
Number of Lamps	**262,745**	**215,518**	**188,904**	**667,167**

Table C-5
Percent of Total Advanced and Non-Advanced Lamps by IOU and Detailed Lamp Type, 2011

Lamp Type	IOU Territory			
	PG&E	SCE	SDG&E	Overall
ADVANCED				
High-wattage and specialty MSB CFLs				
High-wattage MSB CFLs (>30 Watts)	0%	1%	2%	1%
Specialty MSB CFLs: dimmable	2%	2%	2%	2%
Specialty MSB CFLs: 3-way	0%	1%	0%	0%
Other advanced MSB CFLs (≤30 Watts)				
Reflector/flood	5%	5%	3%	4%
A-lamp	2%	3%	2%	2%
Globe	2%	3%	2%	2%
Candelabra (MSB)	0%	0%	0%	0%
Tube	3%	2%	1%	2%
Bug Light	0%	0%	0%	0%
Circline	0%	0%	0%	0%
Other advanced non-MSB CFLs				
Candelabra base CFLs	1%	2%	5%	2%
GU base CFLs	0%	0%	0%	0%
Pin base CFLs	1%	1%	1%	1%
Large base CFLs	0%	0%	0%	0%
Candelabra base CFLs with MSB adaptor	0%	0%	0%	0%
Other advanced non-CFLs				
Reflector/flood MSB LEDs	1%	1%	1%	1%
A-lamp MSB LEDs	2%	2%	2%	2%
Other LEDs	2%	1%	2%	1%
Hybrid CFL/LEDs	0%	0%	0%	0%
Cold Cathodes	0%	0%	0%	0%
NON-ADVANCED				
Basic CFLs (≤30 Watts)	25%	30%	26%	27%
Incandescent/Halogens	55%	46%	50%	51%
High Intensity Discharge Lamps	0%	0%	0%	0%
Number of Lamps	**262,745**	**215,518**	**188,904**	**667,167**

Table C-6
Number of Total Advanced and Non-Advanced Lamps by IOU and Detailed Lamp Type, 2011

Lamp Type	IOU Territory			
	PG&E	SCE	SDG&E	Overall
ADVANCED				
High-wattage and specialty MSB CFLs				
High-wattage MSB CFLs (>30 Watts)	352	2,055	3,224	5,631
Specialty MSB CFLs: dimmable	4,021	3,715	4,663	12,399
Specialty MSB CFLs: 3-way	466	1,328	255	2,049
Other advanced MSB CFLs (≤30 Watts)				
Reflector/flood	12,265	10,813	5,650	28,728
A-lamp	5,172	6,715	4,225	16,112
Globe	5,043	6,880	4,122	16,045
Candelabra (MSB)	287	197	319	803
Tube	7,782	5,125	1,713	14,620
Bug Light	183	200	120	503
Circline	1	16	3	20
Other advanced non-MSB CFLs				
Candelabra base CFLs	2,324	3,802	8,636	14,762
GU base CFLs	546	599	247	1,392
Pin base CFLs	3,784	2,096	2,245	8,125
Large base CFLs	28	61	63	152
Candelabra base CFLs with MSB adaptor	752	621	800	2,173
Other advanced non-CFLs				
Reflector/flood MSB LEDs	1,922	1,472	1,350	4,744
A-lamp MSB LEDs	3,975	3,513	3,314	10,802
Other LEDs	4,317	1,809	3,135	9,261
Hybrid CFL/LEDs	83	62	24	169
Cold Cathodes	118	24	16	158
NON-ADVANCED				
Basic CFLs (≤30 Watts)	64,544	63,654	48,922	177,120
Incandescent/Halogens	143,762	99,909	95,359	339,030
High Intensity Discharge Lamps	1,018	852	499	2,369
Number of Lamps	**262,745**	**215,518**	**188,904**	**667,167**

Table C-7
Percent of Total Advanced and Non-Advanced Lamp Packages by IOU, 2011

Lamp Type	IOU Territory			
	PG&E	SCE	SDG&E	Overall
ADVANCED	**25%**	**28%**	**30%**	**27%**
Advanced CFLs	19%	22%	23%	21%
LEDs	6%	5%	6%	6%
Hybrid CFL/LEDs	0%	0%	0%	0%
Cold Cathodes	0%	0%	0%	0%
NON-ADVANCED	**75%**	**72%**	**70%**	**73%**
Basic CFLs (≤30 Watts)	21%	27%	22%	23%
Incandescent/Halogens	53%	44%	48%	49%
High Intensity Discharge Lamps	1%	1%	1%	1%
Number of Packages	**113,339**	**93,719**	**84,041**	**291,099**

Table C-8
Number of Total Advanced and Non-Advanced Lamp Packages by IOU, 2011

Lamp Type	IOU Territory			
	PG&E	SCE	SDG&E	Overall
ADVANCED	**28,826**	**26,167**	**24,878**	**79,871**
Advanced CFLs	21,632	20,996	19,407	62,035
LEDs	7,052	5,097	5,439	18,488
Hybrid CFL/LEDs	83	62	24	169
Cold Cathodes	59	12	8	79
NON-ADVANCED	**84,513**	**67,552**	**59,163**	**211,228**
Basic CFLs (≤30 Watts)	23,757	25,101	18,372	67,230
Incandescent/Halogens	59,738	41,599	40,292	141,629
High Intensity Discharge Lamps	1,018	852	499	2,369
Number of Packages	**113,339**	**93,719**	**84,041**	**291,099**

Table C-9
Percent of Total Advanced and Non-Advanced Lamp Packages by IOU and Detailed Lamp Type, 2011

Lamp Type	IOU Territory			
	PG&E	SCE	SDG&E	Overall
ADVANCED				
High-wattage and specialty MSB CFLs				
High-wattage MSB CFLs (>30 Watts)	0%	1%	1%	1%
Specialty MSB CFLs: dimmable	2%	2%	3%	2%
Specialty MSB CFLs: 3-way	0%	1%	0%	1%
Other advanced MSB CFLs (≤30 Watts)				
Reflector/flood	4%	5%	3%	4%
A-lamp	3%	3%	2%	3%
Globe	2%	3%	2%	2%
Candelabra (MSB)	0%	0%	0%	0%
Tube	2%	2%	1%	2%
Bug Light	0%	0%	0%	0%
Circline	0%	0%	0%	0%
Other advanced non-MSB CFLs				
Candelabra base CFLs	1%	2%	7%	3%
GU base CFLs	0%	1%	0%	0%
Pin base CFLs	3%	2%	3%	3%
Large base CFLs	0%	0%	0%	0%
Candelabra base CFLs with MSB adaptor	0%	0%	0%	0%
Other advanced non-CFLs				
Reflector/flood MSB LEDs	2%	2%	2%	2%
A-lamp MSB LEDs	2%	3%	3%	3%
Other LEDs	2%	1%	2%	2%
Hybrid CFL/LEDs	0%	0%	0%	0%
Cold Cathodes	0%	0%	0%	0%
NON-ADVANCED				
Basic CFLs (≤30 Watts)	21%	27%	22%	23%
Incandescent/Halogens	53%	44%	48%	49%
High Intensity Discharge Lamps	1%	1%	1%	1%
Number of Packages	**113,339**	**93,719**	**84,041**	**291,099**

Table C-10
Number of Total Advanced and Non-Advanced Lamp Packages by IOU and Detailed Lamp Type, 2011

Lamp Type	IOU Territory			
	PG&E	SCE	SDG&E	Overall
ADVANCED				
High-wattage and specialty MSB CFLs				
High-wattage MSB CFLs (>30 Watts)	352	823	1,202	2,377
Specialty MSB CFLs: dimmable	1,950	1,736	2,408	6,094
Specialty MSB CFLs: 3-way	390	1,231	255	1,876
Other advanced MSB CFLs (≤30 Watts)				
Reflector/flood	4,786	5,037	2,177	12,000
A-lamp	3,197	2,776	1,891	7,864
Globe	1,844	2,354	1,547	5,745
Candelabra (MSB)	206	124	235	565
Tube	2,659	1,745	607	5,011
Bug Light	183	200	120	503
Circline	1	16	3	20
Other advanced non-MSB CFLs				
Candelabra base CFLs	1,460	2,049	6,280	9,789
GU base CFLs	541	595	247	1,383
Pin base CFLs	3,784	2,056	2,170	8,010
Large base CFLs	28	61	63	152
Candelabra base CFLs with MSB adaptor	251	193	202	646
Other advanced non-CFLs				
Reflector/flood MSB LEDs	1,922	1,478	1,350	4,750
A-lamp MSB LEDs	2,565	2,429	2,454	7,448
Other LEDs	2,565	1,190	1,635	5,390
Hybrid CFL/LEDs	83	62	24	169
Cold Cathodes	59	12	8	79
NON-ADVANCED				
Basic CFLs (≤30 Watts)	23,757	25,101	18,372	67,230
Incandescent/Halogens	59,738	41,599	40,292	141,629
High Intensity Discharge Lamps	1,018	852	499	2,369
Number of Packages	**113,339**	**93,719**	**84,041**	**291,099**

Table C-11
Percent of Efficient and Non-Efficient Lamps with and without IOU Discount by IOU, 2011

Lamp Type	IOU Territory							
	PG&E		SCE		SDG&E		Overall	
	IOU Discount	No IOU Discount	IOU Discount	No IOU Discount	IOU Discount	No IOU Discount	IOU Discount	No IOU Discount
EFFICIENT	**33%**	**67%**	**38%**	**62%**	**14%**	**86%**	**29%**	**71%**
Advanced CFLs	38%	62%	23%	77%	8%	92%	24%	76%
LEDs	3%	97%	0%	100%	0%	100%	1%	99%
Hybrid CFL/LEDs	0%	100%	0%	100%	0%	100%	0%	100%
Cold Cathodes	0%	100%	0%	100%	0%	100%	0%	100%
Basic CFLs (≤30 Watts)	35%	65%	52%	48%	21%	79%	37%	63%
NON-EFFICIENT	**0%**	**100%**	**0%**	**100%**	**0%**	**100%**	**0%**	**100%**
Incandescent/Halogens	0%	100%	0%	100%	0%	100%	0%	100%
HID	0%	100%	0%	100%	0%	100%	0%	100%
Number of IOU-Discounted Lamps	**39,070**	**223,675**	**43,042**	**172,476**	**13,334**	**175,570**	**95,446**	**571,721**
Total Number of Lamps	**262,745**		**215,518**		**188,904**		**667,167**	

Table C-12
Percent of Efficient and Non-Efficient Lamp Packages with and without IOU Discount by IOU, 2011

Lamp Type	IOU Territory							
	PG&E		SCE		SDG&E		Overall	
	IOU Discount	No IOU Discount	IOU Discount	No IOU Discount	IOU Discount	No IOU Discount	IOU Discount	No IOU Discount
EFFICIENT	**31%**	**69%**	**39%**	**61%**	**18%**	**82%**	**30%**	**70%**
Advanced CFLs	27%	73%	24%	76%	8%	92%	20%	80%
LEDs	4%	96%	0%	100%	0%	100%	2%	98%
Hybrid CFL/LEDs	0%	100%	0%	100%	0%	100%	0%	100%
Cold Cathodes	0%	100%	0%	100%	0%	100%	0%	100%
Basic CFLs (≤30 Watts)	43%	57%	59%	41%	35%	65%	47%	53%
NON-EFFICIENT	**0%**	**100%**	**0%**	**100%**	**0%**	**100%**	**0%**	**100%**
Incandescent/Halogens	0%	100%	0%	100%	0%	100%	0%	100%
HID	0%	100%	0%	100%	0%	100%	0%	100%
Number of Lamps	**16,273**	**97,066**	**19,810**	**73,909**	**7,844**	**76,197**	**43,927**	**247,172**
Total Number of Lamps	**113,339**		**93,719**		**84,041**		**291,099**	

Table C-13
Average Price per Lamp by Lamp Type and IOU, 2011

Lamp Type	IOU Territory			
	PG&E	SCE	SDG&E	Overall
ADVANCED	**$5.75**	**$5.25**	**$6.43**	**$5.78**
Advanced CFLs	$3.60	$3.48	$4.51	$3.82
LEDs	$15.00	$17.03	$15.35	$15.67
Hybrid CFL/LEDs	$7.91	$6.68	$7.05	$7.34
Cold Cathodes	$6.15	$6.49	$6.74	$6.26
NON-ADVANCED	**$2.17**	**$1.98**	**$2.17**	**$2.11**
Basic CFLs (≤30 Watts)	$1.92	$1.61	$1.88	$1.80
Incandescent/Halogens	$2.16	$2.06	$2.22	$2.15
High Intensity Discharge Lamps	$20.92	$20.64	$21.40	$20.92
Number of Lamps	**262,745**	**215,518**	**188,904**	**667,167**

Table C-14
Average Price per Lamp by Lamp Type and IOU and Detailed Lamp Type, 2011

Lamp Type	IOU Territory			
	PG&E	SCE	SDG&E	Overall
ADVANCED				
High-wattage and specialty MSB CFLs				
High-wattage MSB CFLs (>30 Watts)	$12.52	$2.41	$2.53	$3.10
Specialty MSB CFLs: dimmable	$5.86	$5.55	$5.46	$5.62
Specialty MSB CFLs: 3-way	$10.51	$5.45	$11.28	$7.33
Other advanced MSB CFLs (≤30 Watts)				
Reflector/flood	$3.11	$3.44	$4.54	$3.51
A-lamp	$3.08	$2.93	$3.31	$3.08
Globe	$2.26	$2.74	$3.31	$2.73
Candelabra (MSB)	$6.45	$5.50	$5.59	$5.88
Tube	$1.10	$1.05	$1.52	$1.13
Bug Light	$7.36	$6.82	$8.38	$7.39
Circline	$22.99	$9.65	$21.99	$12.17
Other advanced non-MSB CFLs				
Candelabra base CFLs	$5.40	$4.17	$5.56	$5.18
GU base CFLs	$7.13	$5.55	$6.78	$6.39
Pin base CFLs	$6.67	$7.04	$7.46	$6.98
Large base CFLs	$19.14	$18.89	$15.31	$17.44
Candelabra base CFLs with MSB adaptor	$3.32	$3.58	$1.30	$2.65
Other advanced non-CFLs				
Reflector/flood MSB LEDs	$36.42	$38.66	$40.50	$38.28
A-lamp MSB LEDs	$9.95	$10.54	$11.19	$10.53
Other LEDs	$9.96	$11.58	$8.93	$9.91
Hybrid CFL/LEDs	$7.91	$6.68	$7.05	$7.34
Cold Cathodes	$6.15	$6.49	$6.74	$6.26
NON-ADVANCED				
Basic CFLs (≤30 Watts)	$1.92	$1.61	$1.88	$1.80
Incandescent/Halogens	$2.16	$2.06	$2.22	$2.15
High Intensity Discharge Lamps	$20.92	$20.64	$21.40	$20.92
Number of Lamps	**262,745**	**215,518**	**188,904**	**667,167**