Report on Data Collection and Estimated Future Unit Sales of Five Lamp Types

Building Technologies Program
Office of Energy Efficiency and Renewable Energy
U.S. Department of Energy

December 18, 2008

TABLE OF CONTENTS

LIST OF TABLES

I. Introduction

The Energy Independence and Security Act of 2007 (EISA 2007) (Pub. L. 110-140) was enacted on December 19, 2007. Among the requirements of subtitle B of title III of EISA 2007 were provisions directing the U.S. Department of Energy (DOE) to collect, analyze and monitor unit sales of five lamp types (*i.e.*, rough service lamps, vibration service lamps, 3-way incandescent lamps, 2,601–3,300 lumen general service incandescent lamps, and shatter resistant lamps). Specifically, section 321(a)(3)(B) of EISA 2007 amends section 325(l) of the Energy Policy and Conservation Act (EPCA) by adding paragraph (4)(B) which generally directs DOE in consultation with the National Electrical Manufacturers Association (NEMA) to (1) collect unit sales data for each of the five lamp types and (2) construct a spreadsheet model for each of the five lamp types based on coincident economic indicators that closely match the historical annual growth rates of each lamp type to provide a neutral benchmark estimate of future unit sales. (42 U.S.C. 6295(l)(4)(B)) Section 321(a)(3)(B) of EISA 2007 also amends section 325(l) of EPCA by adding paragraph (4)(C). This paragraph, in part, generally directs DOE, to collect unit sales data for calendar years 2010 through 2025 in consultation with NEMA for each of the five lamp types. DOE must then compare the actual lamp sales in that year with the benchmark estimate to determine if the unit sales projection has been exceeded. (42 U.S.C. 6295(l)(4)(C)) In section III of this report, DOE presents the data collected in consultation with NEMA, the model DOE constructed for each lamp type, and the benchmark unit sales estimate for 2010 through 2025.

EISA 2007 also amends section 325(l) of EPCA by adding paragraphs (4)(D) through (4)(H) which state that if DOE finds that the unit sales for a given lamp in any year between 2010 and 2025 exceed the benchmark estimate of unit sales by at least 100 percent (*i.e.*, more than double the anticipated sales), then DOE must take regulatory action. (42 U.S.C. 6295(l)(4)(D) – (H)) For 2,601–3,300 lumen general service incandescent lamps, DOE must adopt a prescribed regulatory standard and for the other four types of lamp, the statute requires DOE to initiate an accelerated rulemaking. If the Secretary fails to complete the accelerated rulemakings within one year of the end of the previous calendar year, the statute provides a "backstop requirement" for each lamp type. Section IV of this report discusses the regulatory procedure that DOE would follow if the actual unit sales for a lamp type in any one year exceed the benchmark unit sales estimate by at least 100 percent.

This report, the accompanying Notice of Data Availability (NODA), and spreadsheet models that generate the benchmark unit sales estimate for each of the five lamp types as fulfilling the requirements of EPCA section 325(l)(4)(B). In this analysis, DOE uses (and intends to continue to use) manufacturer shipments as a surrogate for unit sales. This assumption presumes that retailer inventories remain constant from year to year. DOE believes this is a reasonable assumption because the markets for these five lamp types have existed for many years, enabling manufacturers and retailers to establish appropriate inventory levels that reflect market demand. Furthermore, in the long-run, unit sales could not increase in any one year without manufacturer shipments increasing either that year or the following one. In either case, increasing unit sales must eventually result in increasing manufacturer shipments

II. Definitions and Forecast Methodology

A. Definitions

1. Rough Service Lamps

Section 321(a)(1)(B) of EISA 2007 amended section 321(30) of EPCA by adding the definition of a rough service lamp. The statutory definition reads as follows: "The term 'rough service lamp' means a lamp that -- (i) has a minimum of 5 supports with filament configurations that are C-7A, C-11, C-17, and C-22 as listed in Figure 6-12 of the 9th edition of the IESNA Lighting handbook, or similar configurations where lead wires are not counted as supports; and (ii) is designated and marketed specifically for 'rough service' applications, with - (I) the designation appearing on the lamp packaging; and (II) ,marketing materials that identify the lamp as being for rough service." (42 U.S.C. 6291(30)(X))

Rough service lamps must have a minimum of five filament support wires (not counting the two connecting leads at the beginning and end of the filament), and must be designated and marketed for "rough service" applications. These lamps are typically used in applications where an incandescent lamp is subject to mechanical shock or vibration while it is operating. Standard incandescent lamps have only two support wires (which also serve as conductors), one at each end of the filament coil. When operating (*i.e.*, when the tungsten filament is glowing so hot that it emits light), the filament is brittle, and rough service applications could cause it to break prematurely. To address this problem, lamp manufacturers developed lamp designs that incorporate additional support wires along the length of the filament to ensure that it has support not just at each end, but at several other points. The additional support protects the filament during operation and enables longer operating life for incandescent lamps in rough service

applications. Typical applications for these lamps might include commercial hallways and stairwells, gyms, storage areas, and security areas.

2. Vibration Service Lamps

Section 321(a)(1)(B) of EISA 2007 amended section 321(30) of EPCA by adding the definition of a vibration service lamp. The statutory definition reads as follows: "The term vibration service lamp means a lamp that -- (i) Has filament configurations that are C-5, C-7A, or C-9, as listed in Figure 6-12 of the 9th Edition of the IESNA Lighting Handbook or similar configurations; (ii) has a maximum wattage of 60 watts; (iii) is sold at retail in packages of 2 lamps or less; and (iv) is designated and marketed specifically for vibration service or vibration-resistant applications, with -- (I) The designation appearing on the lamp packaging; and (II) marketing materials that identify the lamp as being vibration service only." (42 U.S.C. 6291(30)(AA))

The statute mentions three examples of filament configurations for vibration service lamps in Figure 6-12 of the IESNA Lighting Handbook, one of which (*i.e.*, C-7A) is also listed in the definition of rough service lamps. The definition of vibration service lamps requires that they have a maximum wattage of 60 watts and be sold at a retail level in packages of two lamps or less. Similar to rough service lamps, vibration service lamps also must be designated and marketed for vibration service or vibration-resistant applications. As the name suggests, these lamps are generally used in applications where an incandescent lamp is subject to a continuous low level of vibration, such as in a ceiling fan light kit. Standard incandescent lamps without additional filament support wires may not have a full rated life because the filament wire is brittle and subject to breakage at operating temperature.

3. Three-Way Incandescent Lamps

Section 321(a)(1)(B) of EISA 2007 amended section 321(30) of EPCA by adding the definition of a 3-way incandescent lamp. The statutory definition reads as follows: "The term 3-way incandescent lamp includes an incandescent lamp that -- (i) employs 2 filaments, operated separately and in combination, to provide 3 light levels; and (ii) is designated on the lamp packaging and marketing materials as being a 3-way incandescent lamp." (42 U.S.C. 6291(30)(Y))

Three-way lamps are commonly found in wattages such as 50, 100, and 150 watts or 30, 70, and 100 watts. These lamps use two filaments (*e.g.*, a 30-watt and a 70-watt filament) and can be operated separately to produce 305 lumens or 995 lumens, respectively, or together to produce 1,300 lumens. When used in 3-way sockets, these lamps allow users to control the light level. Three-way incandescent lamps are typically used in residential multi-purpose areas, where consumers may adjust the light level to be appropriate for the task they are performing.

4. 2,601–3,300 Lumen General Service Incandescent Lamps

The statute does not provide a definition of 2,601–3,300 Lumen General Service Incandescent Lamps, however DOE is interpreting this term to be a general service incandescent lamp[1] that emits between 2,601 and 3,300 lumens. In this lumen range, the wattages of,general service incandescent lamp covered are between 140 and 170 watts. Within that range, the only commonly made lamp that meets other general service incandescent lamp criteria is rated at 150

[1] General service incandescent lamp is defined as a standard incandescent or halogen type lamp that — (I) is intended for general service applications; (II) has a medium screw base; (III) has a lumen range of not less than 310 lumens and not more than 2,600 lumens; and (IV) is capable of being operated at a voltage range at least partially within 110 and 130 volts. (42 U.S.C. 6291(30)(D))

watts. Should other rated wattages enter the market that fall within this lumen range, they will be immediately recognizable because as required by the Energy Policy Act of 1992, all general service incandescent lamps must be labeled with lamp lumen output.[2]

5. Shatter-Resistant Lamps

Section 321(a)(1)(B) of EISA 2007 amended section 321(30) of EPCA by adding the definition of a shatter-resistant lamp, shatter-proof lamp, and shatter-protected lamp. The statutory definition reads as follows: "The terms 'shatter-resistant lamp,' 'shatter-proof lamp,' and 'shatter-protected lamp' mean a lamp that -- (i) has a coating or equivalent technology that is compliant with NSF/ANSI 51 and is designed to contain the glass if the glass envelope of the lamp is broken; and (ii) is designated and marketed for the intended application, with (I) the designation on the lamp packaging; and (II) marketing materials that identify the lamp as being shatter-resistant, shatter-proof, or shatter-protected." (42 U.S.C. 6291(30)(Z)) Although the definition provides three names commonly used to refer to these lamps, DOE simply calls them "shatter-resistant lamps."

Shatter-resistant lamps incorporate a special coating designed to prevent glass shards from being strewn if a lamp's glass envelope breaks. Shatter-resistant lamps incorporate a coating compliant with industry standard NSF/ANSI 51[3], and are labeled and marketed as shatter-resistant, shatter-proof, or shatter-protected. The coatings protect the lamp from breakage due to heat and thermal shock that may occur from water, sleet, snow, soldering, or welding.

[2] The Federal Trade Commission issued the lamp labeling requirements in 1994 (see 16 CFR 305.15(a), (b) and (c)). 59 FR 25176 (May 13, 1994). The package must display the lamp's light output (in lumens), energy use (in watts), and lamp life (in hours).

[3] This standard is published by the National Sanitation Foundation and the American National Standards Institute. Titled "Food Equipment Materials," NSF/ANSI 51 applies specifically to materials and coatings used in the manufacturing of equipment and objects destined for contact with foodstuffs.

B. Forecast Methodology

The statute in part requires DOE to "construct a model for each type of lamp based on coincident economic indicators that closely match the historical annual growth rate of the type of lamp to provide a neutral comparison benchmark to model future unit sales after calendar year 2006." (42 U.S.C. 6295(l)(4)(B)(ii)) DOE interprets this requirement to mean that the model should be projecting future unit sales based on historical shipments, and that DOE should be aware of any coincident economic indicators or influences that may affect sales.

DOE reviewed each of the five sets of shipment data that were collected in consultation with NEMA and applied two curve fits to generate unit sales estimates after calendar year 2006. One curve fit applies a linear regression to the historical data and extends that line into the future. The other curve fit applies an exponential growth function to the shipment data and projects unit sales into the future. For this calculation, linear regression treats the year as a dependent variable and shipments as the independent variable. The curve fit is modeled by minimizing the differences among the data points and the best curve-fit linear line using the least squares function.[4] The exponential curve fit is also a regression function and uses the same least squares function to find the best fit. However, this technique fits the data to an exponential curve rather than a linear line. For some data sets, an exponential curve provides a better characterization of the historical data, and therefore a better projection of the future data.

For 3-way incandescent lamps, 2,601-3,300 lumen general service incandescent lamps, and

[4] The least squares function is a tool that DOE uses to minimize the sum of the squared residual differences between the actual historical data points and the modeled value (*i.e.*, the linear curve fit). In minimizing this value, the resulting curve fit will represent the best fit possible to the data provided.

shatter resistant lamps, DOE found that the linear and exponential curve fits produced nearly the same estimates of unit sales (*i.e.*, the difference between the two forecasted values was less than 1 or 2 percent). However, for rough service and vibration service lamps, the linear curve fit projects lamp unit sales will decline to zero for both lamp types by 2018. In contrast, the exponential curve fit projected a more gradual decline in unit sales, such that lamps will still be sold beyond 2018. DOE discusses this finding in more detail in section III, where it examines each of the five lamp type models and the benchmark unit sales estimates.

III. Unit Sales Forecast Estimates

A. Rough Service Lamps

In consultation with NEMA, DOE collected shipment data for rough service lamps from 1990 through 2006. As stated previously, DOE uses shipment data as a surrogate for unit sales data in this analysis. The rough service lamp shipment data reflect a peak in 1990 at approximately 18 million units with a general trend downward to approximately 8 million units in 2006. DOE applied two curve fits to the historical data, resulting in two different projections between 2010 and 2025. The linear regression forecast projected a constant slope steady decline in which unit sales of rough service lamps are estimated to end in 2018. The exponential curve fit also projects a decline in unit sales, but the forecast has a more asymptotic[5] shape as it reduces unit sales between 2010 and 2025. After considering the results of these two projections and the likelihood of a continuing need for rough service lamps in certain specialty applications, DOE chose to base its future unit sales model on the exponential curve fit. The exponential curve fit projects that rough service lamp unit sales will decrease from approximately 7.6 million units in 2006 to approximately 3 million units in 2025, a reduction of 60 percent. DOE expects the unit sales of rough service lamps to continue to decline from 2010 through 2025, as they did between 1990 and 2006. DOE is not aware of any evidence or changes in market demand that would support a projection of all unit sales of rough service lamps (and thereby, all sockets currently using these lamps) ending abruptly in 2018. Rather, DOE expects these applications will still exist in 2018 and beyond, albeit in progressively smaller quantities.

Table III.1 presents the shipment data collected in consultation with NEMA and the

[5] In the benchmark unit sales estimate, the asymptotic curve trends toward zero between 2010 and 2025 but does not intersect with zero.

benchmark unit sales estimate DOE prepared from those data for rough service lamps. The results presented in the column labeled "benchmark unit sales estimate" represent the unit sales projection for rough service lamps. The first year of unit sales reported for these lamps is 2010 because that year is the first one DOE is required to compare against actual unit sales. (42 U.S.C. 6295(l)(4)(C)) The years 2007, 2008 and 2009 are not benchmark years under EPCA section 325(l)(4)(C)(i) and therefore are omitted from this table. However, shipment estimates for those years are available in DOE's spreadsheet model for this lamp type.

Table III.1 Rough Service Lamp Shipments and Benchmark Unit Sales Estimate

Calendar Year	**NEMA Shipment Data Provided** *thousands*	**Calendar Year**	**Benchmark Unit Sales Estimate** *thousands*
1990	18,251	2010	6,395
1991	15,920	2011	6,080
1992	15,860	2012	5,780
1993	15,289	2013	5,495
1994	16,296	2014	5,224
1995	15,400	2015	4,967
1996	12,090	2016	4,722
1997	10,995	2017	4,489
1998	9,315	2018	4,268
1999	9,869	2019	4,057
2000	11,034	2020	3,857
2001	13,522	2021	3,667
2002	9,379	2022	3,486
2003	9,019	2023	3,314
2004	8,818	2024	3,151
2005	8,211	2025	2,995
2006	7,661		

B. Vibration Service Lamps

In consultation with NEMA, DOE collected shipment data for vibration service lamps from 1990 through 2006. As stated previously, DOE uses shipment data as a surrogate for unit sales

data in this analysis. The vibration service lamp shipment data reflect a peak in 1990 at approximately 9 million units with a general trend downward to approximately 4 million units in 2006. DOE applied two curve fits to the historical data, resulting in two different projections between 2010 and 2025. The linear regression forecast projected a constant slope steady decline in which unit sales of vibration service lamps are estimated to end in 2018. The exponential curve fit also projects a decline in sales, but the forecast has a more asymptotic shape as it reduces unit sales between 2010 and 2025. After considering the results of these two projections and the likelihood of a continuing need for vibration service lamps in certain specialty applications such as ceiling fan light kits, DOE chose to base its future unit sales model on the exponential curve fit. The exponential curve fit projects that vibration service lamp unit sales will decrease from approximately 4 million units in 2006 to approximately 1.5 million units in 2025—a reduction of approximately 60 percent. DOE expects the unit sales of vibration service lamps to decline between 2010 and 2025, as they did between 1990 and 2006. DOE is not aware of any evidence or changes in market demand that would support a projection of all unit sales of rough service lamps (and thereby, all sockets currently using these lamps) ending abruptly in 2018. Rather, DOE expects these applications will still exist in 2018 and beyond, albeit in progressively smaller quantities.

Table III.2 presents the shipment data collected in consultation with NEMA and the benchmark unit sales estimate DOE prepared from those data for vibration service lamps. The results presented in the column labeled “benchmark unit sales estimate” represent the unit sales projection for vibration service lamps. The first year of unit sales reported for these lamps is 2010 because that year is the first one DOE is required to compare against actual unit sales. (42

U.S.C. 6295(l)(4)(C)) The years 2007, 2008 and 2009 are not benchmark years under EPCA section 325(l)(4)(C)(i) and therefore are omitted from this table. However, shipment estimates for those years are available in DOE's spreadsheet model for this lamp type.

Table III.2 Vibration Service Lamp Shipments and Unit Sales Estimate

Calendar Year	**NEMA Shipment Data Provided** *thousands*	**Calendar Year**	**Benchmark Unit Sales Estimate** *thousands*
1990	9,533	2010	3,341
1991	8,315	2011	3,176
1992	8,283	2012	3,019
1993	7,986	2013	2,871
1994	8,512	2014	2,729
1995	8,044	2015	2,594
1996	6,314	2016	2,467
1997	5,743	2017	2,345
1998	4,865	2018	2,229
1999	5,154	2019	2,119
2000	5,763	2020	2,015
2001	7,063	2021	1,916
2002	4,899	2022	1,821
2003	4,711	2023	1,731
2004	4,606	2024	1,646
2005	4,289	2025	1,565
2006	4,002		

C. Three-Way Incandescent Lamps

In consultation with NEMA, DOE collected shipment data for 3-way incandescent lamps from 1990 through 2006. As stated previously, DOE uses the shipment data as a surrogate for unit sales data in this analysis. The 3-way incandescent lamp shipment data reflect a peak in 1997 at approximately 67 million units followed by a general trend downward to approximately 43 million units in 2006. DOE applied two curve fits to the historical data, resulting in similar projections between 2010 and 2025. Both projections indicate that unit sales will trend

downward, at a gradual rate approaching 44 million units in 2025. The greatest difference between the linear regression curve fit and the exponential curve fit occurs in 2025, when the exponential curve fit projects approximately 0.5 million more unit sales. In that year, the difference in unit sales between the two forecasts is less than 2 percent. Therefore, DOE would be satisfied that either spreadsheet model would generate a reasonable benchmark unit sales estimate, but is selecting the exponential curve fit for consistency with the selection made for rough service and vibration service lamps.

Table III.3 presents the shipment data collected in consultation with NEMA and the benchmark unit sales estimate DOE prepared from those data for 3-way incandescent lamps. The results presented in the column labeled "benchmark unit sales estimate" represent the unit sales projection for 3-way incandescent lamps. The first year of unit sales reported for these lamps is 2010 because that year is the first one DOE is required to compare against actual unit sales. (42 U.S.C. 6295(l)(4)(C)) The years 2007, 2008 and 2009 are not benchmark years under EPCA section 325(l)(4)(C)(i) and therefore are omitted from this table. However, shipment estimates for those years are available in DOE's spreadsheet model for this lamp type.

Table III.3 Three-Way Incandescent Lamp Shipments and Benchmark Unit Sales Estimate

Calendar Year	NEMA Shipment Data Provided *thousands*	Calendar Year	Benchmark Unit Sales Estimate *thousands*
1990	61,952	2010	51,177
1991	59,858	2011	50,652
1992	60,566	2012	50,131
1993	58,396	2013	49,617
1994	55,867	2014	49,107
1995	58,570	2015	48,603
1996	58,924	2016	48,104
1997	67,047	2017	47,610
1998	60,374	2018	47,121
1999	61,294	2019	46,637
2000	58,034	2020	46,158
2001	58,893	2021	45,684
2002	59,234	2022	45,215
2003	56,870	2023	44,750
2004	57,610	2024	44,291
2005	52,221	2025	43,836
2006	42,825		

D. 2,601–3,300 Lumen General Service Incandescent Lamps

In consultation with NEMA, DOE collected shipment data for 2,601–3,300 Lumen General Service Incandescent Lamps from 1990 through 2006. As stated previously, DOE uses the shipment data as a surrogate for unit sales data in this analysis. The 2,601—3,300 Lumen General Service Incandescent Lamp data reflect a peak in 1997 at approximately 39 million units with lower unit sales occurring on either side of that peak. Unit sales ranged from approximately 30 to 33 million between 1990 and 1995 and from 28 to 34 million between 2001 and 2006. DOE applied the two curve fits to the historical data, resulting in nearly identical shipment projections between 2010 and 2025. Both projections indicate that unit sales will trend slightly upward from approximately 34 million in 2010 to approximately 35 million in 2025. The difference between the linear regression and exponential curve fit is never greater than one-half

of 1 percent for any year. Therefore, DOE would be satisfied that either spreadsheet model would generate a reasonable benchmark unit sales estimate, but is selecting the exponential curve fit for consistency with the selection made for rough service, vibration service and 3-way incandescent lamps.

Table III.4 presents the shipment data collected in consultation with NEMA and the benchmark unit sales estimate DOE prepared from those data for 2,601–3,300 lumen general service incandescent lamps. The results presented in the column labeled "benchmark unit sales estimate" represent the unit sales projection for 2,601—3,300 lumen general service incandescent lamps. The first year of unit sales reported for these lamps is 2010 because that year is the first one DOE is required to compare against actual unit sales. (42 U.S.C. 6295(l)(4)(C)) The years 2007, 2008 and 2009 are not benchmark years under EPCA section 325(l)(4)(C)(i) and therefore are omitted from this table. However, shipment estimates for those years are available in DOE's spreadsheet model for this lamp type.

Table III.4 2,601–3,300 Lumen General Service Incandescent Lamps Shipments and Benchmark Unit Sales Estimate

Calendar Year	NEMA Shipment Data Provided *thousands*	Calendar Year	Benchmark Unit Sales Estimate *thousands*
1990	31,383	2010	33,848
1991	30,639	2011	33,913
1992	30,612	2012	33,979
1993	31,493	2013	34,044
1994	29,706	2014	34,110
1995	32,371	2015	34,175
1996	35,306	2016	34,241
1997	39,090	2017	34,307
1998	35,743	2018	34,373
1999	36,602	2019	34,439
2000	37,179	2020	34,506
2001	34,576	2021	34,572
2002	33,632	2022	34,639
2003	33,980	2023	34,705
2004	32,374	2024	34,772
2005	31,065	2025	34,839
2006	28,541		

E. Shatter-Resistant Lamps

In consultation with NEMA, DOE collected shipment data for shatter-resistant lamps from 1990 through 2006. As stated previously, DOE uses the shipment data as a surrogate for unit sales data in this analysis. The shatter-resistant lamp data reflect a peak in 1997 at approximately 2 million units with lower unit sales occurring on either side of that peak. Unit sales ranged from approximately 1.4 to 1.5 million between 1990 and 1995 and from approximately 1.4 to 1.7 million between 2001 and 2006. DOE applied two curve fits to the historical data, resulting in nearly identical shipment projections between 2010 and 2025. Both projections indicate that unit sales will trend slightly upward from approximately 1.6 million units in 2010 to approximately 1.7 million units in 2025. The difference between the linear regression and exponential curve fit is never greater than one-half of 1 percent for any year. Therefore, DOE would be satisfied that

either spreadsheet model would generate a reasonable benchmark unit sales estimate, but is selecting the exponential curve fit for consistency with the other four lamp types discussed previously.

Table III.5 presents the shipment data collected in consultation with NEMA and the benchmark unit sales estimate DOE prepared from those data for shatter-resistant lamps. The results presented in the column labeled “benchmark unit sales estimate” represent the unit sales projection for shatter-resistant lamps. The first year of unit sales reported for these lamps is 2010 because that year is the first one DOE is required to compare against actual unit sales. (42 U.S.C. 6295(l)(4)(C)) The years 2007, 2008 and 2009 are not benchmark years under EPCA section 325(l)(4)(C)(i) and therefore are omitted from this table. However, shipment estimates for those years are available in DOE’s spreadsheet model for this lamp type.

Table III.5 Shatter-Resistant Lamp Shipments and Benchmark Unit Sales Estimate

Calendar Year	**NEMA Shipment Data Provided** *thousands*	**Calendar Year**	**Benchmark Unit Sales Estimate** *thousands*
1990	1,515	2010	1,655
1991	1,481	2011	1,659
1992	1,481	2012	1,663
1993	1,526	2013	1,667
1994	1,439	2014	1,671
1995	1,570	2015	1,675
1996	1,714	2016	1,679
1997	1,901	2017	1,684
1998	1,739	2018	1,688
1999	1,780	2019	1,692
2000	1,809	2020	1,696
2001	1,682	2021	1,700
2002	1,637	2022	1,705
2003	1,655	2023	1,709
2004	1,577	2024	1,713
2005	1,513	2025	1,717
2006	1,390		

IV. Proceedings If the Index Is Exceeded

Section 321(a)(3)(B) of EISA 2007 in part amends paragraph 325(l)(4) of EPCA by adding paragraphs (D) through (H), which direct DOE to take regulatory action if the actual annual unit sales of any of the five lamp types exceed the predicted shipments by at least 100 percent (*i.e.*, more than double the benchmark unit sales estimate). (42 U.S.C. 6295(l)(4)(D)-(H)) Each year, NEMA will provide DOE with shipment data for the five lamp types from the previous calendar year. DOE will compare these actual shipments with the benchmark model estimates for each lamp type and calculate whether the index has been exceeded. If the index has been exceeded by at least 100 percent, then DOE must take appropriate regulatory action as outlined in section 325(l)(4)(D) through (H) of EPCA. DOE publishes here the statutory requirements to inform stakeholders of the actions DOE will take if the shipment index is exceeded by at least 100 percent.

A. Rough Service Lamps

If the benchmark unit sales estimate for rough service lamps is exceeded by at least 100 percent for the previous calendar year, DOE must (1) issue within 90 days of the end of the previous calendar year a finding that the index has been exceeded, and (2) conduct an accelerated energy conservation standards rulemaking for rough service lamps to be completed no later than 1 year after the end of the previous calendar year. If the Secretary fails to complete this accelerated rulemaking in the allotted time, the statute provides a “backstop requirement” that becomes the regulatory standard for rough service lamps. This backstop requirement would establish standards beginning 1 year after the date of issuance of the finding that the index had been exceeded, and would require rough service lamps to (1) have a shatter-proof coating or

equivalent technology that complies with NSF/ANSI 51 and is designed to contain the glass if the glass envelope of the lamp is broken and to provide effective containment over the life of the lamp, (2) have a maximum 40-watt limitation, and (3) be sold at retail only in a package containing one lamp.

B. Vibration Service Lamps

If the benchmark unit sales estimate for vibration service lamps is exceeded by at least 100 percent for the previous calendar year, DOE must (1) issue within 90 days of the end of the previous calendar year a finding that the index has been exceeded, and (2) conduct an accelerated energy conservation standards rulemaking for vibration service lamps to be completed no later than 1 year after the end of the previous calendar year. If the Secretary fails to complete the accelerated rulemaking in the allotted time, the statute provides a backstop requirement that becomes the regulatory standard for vibration service lamps. This backstop requirement would establish standards beginning 1 year after the date of issuance of the finding that the index had been exceeded, and would require vibration service lamps to (1) have a maximum 40-watt limitation, and (2) be sold at retail only in a package containing 1 lamp.

C. Three-Way Incandescent Lamps

If the benchmark unit sales estimate for 3-way incandescent lamps is exceeded by at least 100 percent for the previous calendar year, DOE must (1) issue within 90 days of the end of the previous calendar year a finding that the index has been exceeded, and (2) conduct an accelerated energy conservation standards rulemaking for 3-way incandescent lamps to be completed no later than 1 year after the end of the previous calendar year. If the Secretary fails to complete the accelerated rulemaking in the allotted time, the statute provides a backstop requirement that

becomes the regulatory standard for 3-way incandescent lamps. This backstop requirement would establish standards beginning 1 year after the date of issuance of the finding that the index had been exceeded, and would require that (1) each filament in a 3-way incandescent lamp meet the new maximum wattage requirements for the respective lumen range established under section 325(i)(1)(A) of EPCA (42 U.S.C. 6295(i)(1)(A)), and (2) 3-way lamps be sold at retail only in a package containing 1 lamp.

D. 2,601–3,300 Lumen General Service Incandescent Lamps

If the benchmark unit sales estimate for 2,601—3,300 lumen general service incandescent lamps is exceeded by at least 100 percent for the previous calendar year (or, in the case of a modified spectrum, in the lumen range of 1,951 through 2,475 lumens), DOE will impose the following energy conservation standards: (1) a maximum 95-watt limitation on general service incandescent lamps in the range of 2,601 through 3,300 lumens, and (2) a requirement that those lamps be sold at retail only in a package containing 1 lamp.

E. Shatter-Resistant Lamps

If the benchmark unit sales estimate for shatter-resistant lamps is exceeded by at least 100 percent for the previous calendar year, DOE must (1) issue within 90 days of the end of the previous calendar year a finding that the index has been exceeded, and (2) conduct an accelerated energy conservation standards rulemaking for shatter-resistant lamps to be completed no later than 1 year after the end of the previous calendar year. If the Secretary fails to complete the accelerated rulemaking in the allotted time, the statute provides a backstop requirement that becomes the regulatory standard for shatter-resistant lamps. This backstop requirement would establish standards beginning 1 year after the date of issuance of the finding that the index had

been exceeded, and would require that (1) a maximum wattage limitation of 40 watts on shatter-resistant lamps, and (2) a requirement that those lamps be sold at retail only in a package containing 1 lamp.

F. Potential Termination of Data Collection

If DOE issues a final rule establishing energy conservation standards for any of the five types of lamps for which data collection is required prior to January 1, 2025, the requirement to collect and model data for that type of lamp shall terminate unless, as part of the rulemaking, the Secretary determines that continued tracking is necessary. If, however, the Secretary imposes a backstop requirement as a result of a failure to complete an accelerated rulemaking in accordance with the statute, the requirement to collect and model data for the applicable type of lamp shall continue for 2 years after the effective date of the backstop requirement. (42 U.S.C. 6295(l)(4)(I)(i)-(ii))

G. Review Under the Information Quality Bulletin for Peer Review

This report is being disseminated by the Department of Energy. As such, the document was prepared in compliance with Section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Public Law 106-554) and information quality guidelines issued by the Department of Energy. This report does not constitute “influential” information, as that term is defined in DOE's information quality guidelines or the Office of Management and Budget's Information Quality Bulletin for Peer Review (Bulletin).