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March 15, 2011

Mr. Harinder Singh
Mr. Michael Leao
Dockets Office, MS-4
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814-5512

DOCKET	
09-AAER-2	
DATE	MAR 15 2011
RECD.	MAR 15 2011

Re: Docket No. 09-AAER-02; 2010 Rulemaking Proceeding Phase II on Appliance Efficiency Regulations

Dear Mr. Singh and Mr. Leao:

On behalf of the Association of Home Appliance Manufacturers (AHAM), I would like to provide our comments on the California Energy Commission's (CEC) Proposed Efficiency Standards for Battery Chargers and Lighting Controls, Draft Staff Report, Staff Analysis of Battery Charger Standards, (Draft Staff Report), Docket No. 09-AAER-02; 2010 Rulemaking Proceeding Phase II on Appliance Efficiency Regulations (March 2011).

The Association of Home Appliance Manufacturers (AHAM) represents manufacturers of major, portable and floor care home appliances, and suppliers to the industry. AHAM's membership includes over 150 companies throughout the world. In the U.S., AHAM members employ tens of thousands of people and produce more than 95% of the household appliances shipped for sale. The factory shipment value of these products is more than \$30 billion annually. The home appliance industry, through its products and innovation, is essential to U.S. consumer lifestyle, health, safety and convenience. Through its technology, employees and productivity, the industry contributes significantly to U.S. jobs and economic security. Home appliances also are a success story in terms of energy efficiency and environmental protection. New appliances often represent the most effective choice a consumer can make to reduce home energy use and costs.

AHAM has been active in working with the CEC on both the test procedures for External Power Supplies (EPS) and Battery Charger Systems (BCS).¹ AHAM efforts were aimed at improving the test procedure to make it more representative of the way the product is used by consumers, and to represent an accurate measurement of the energy savings potential.

¹ As we have in the past, BCS are not EPS. External Power Supplies may be designed and sold as an end product by their component manufacturers. But battery chargers are designed uniquely to each application. It is not possible to completely redesign all models of battery chargers for a wide variety of consumer products and have all these products tested by outside third-party energy and safety testing organizations in the amount of time suggested by the Draft Staff Report.

I. CEC Should Not Pursue the Battery Charger Regulation for Products That Will Soon be Covered by U.S. Department of Energy Regulations.

A. The CEC Rulemaking Will Soon Be Largely Preempted by DOE.

We reiterate that the U.S. Department of Energy (DOE) is engaged in a rulemaking on the very same products that are within the scope of CEC's proposed energy efficiency standards for battery chargers. Under the terms of the Energy Independence and Security Act (EISA) of 2007, DOE must complete a rulemaking on Battery Chargers by July 2011—just a few short months away. DOE is well in line with that timetable—it has held scoping workshops, modified the test procedure, and held a Determination workshop on October 13, 2010. In addition, DOE has released over 794 pages of technical support and appendices to support its rulemaking. We expect that the final DOE test procedure will soon be issued.

As we have previously stated, CEC should only consider a rulemaking on battery charges for those classes of products not being regulated by DOE. Per statutory mandate, DOE's regulation for battery chargers will be complete in July 2011. Neither CEC nor Ecos Consulting has presented accurate information to show that there would be additional (or any) benefits in CEC issuing its own rulemaking on battery chargers so close in time to final DOE standards, especially across the wide variety of consumer battery charger products used by many personal, kitchen, and floor care appliances. We are mindful of the need to save energy in California and other states. But the most effective way to accomplish that goal in this case is through a thorough DOE rulemaking which will impact the entire country, and not through two parallel rulemakings at the state and federal level on essentially the same timeline for the same products. CEC staff has even recognized that it will need to re-evaluate the impacts to manufacturing redesign from federal versus Californian standards once DOE releases its notice of proposed rulemaking. (See Draft Staff Report, at page 10). **Dedicating limited monetary and other resources, especially as we struggle to improve the economy, to a regulation that will soon be superseded by DOE is not a prudent use of CEC's (or anyone's) resources.** CEC should not, therefore, continue with this rulemaking process for battery chargers that are the subject of the DOE rulemaking.

B. The Proposed Effective Date Is Unreasonable and Unattainable.

The Codes and Standards Enhancement Initiative report (CASE report), which is dated October 2010, states that “the recommended compliance year for small standards is 2012, allowing manufacturers approximately two years to source components and adjust designs. Electronic product design cycles typically run anywhere from one to two years . . . , allowing ample time for small standard criteria to be built into product specifications.” (CASE report at 47, paragraph 8.1).

This statement in the CASE report demonstrates two critical points. First, CEC's proposed effective date of as early as July 2012 is unreasonable and unattainable. The CASE report, the very report upon which CEC relies to justify the battery charger rulemaking, recommended two years for compliance—the date of 2012 in the report was based on a report dated 2010. Thus,

based on a report on which CEC is placing considerable weight, the earliest the battery charger standard, if CEC proceeds with it, should be effective is 2013.

Second, given that it is now 2011, and the proposed rule has yet to be issued, this further illustrates that CEC should not proceed with a standard that, based on its own report, would not go into effect until about the same time as the DOE standard which will cover the very same products.

If CEC proceeds with the proposed standards for battery chargers, it should re-consider the timeline based on the above comments, and the following elements. As we stated in our November 2010, comments, we believe a timeline would include the following elements, at a minimum:

Organizational Impact Study (Parts, Costs and Vendor Analysis)	1 month
Engineering Concept Review (Includes engineering of new technology, and contact with potential suppliers)	4 months
Prototyping and Engineering Build (Includes evaluation of new battery technology)	3 months
Design and Drawings	1-2 months
Testing First Prototypes	1 month
Modify Design	2-3 months
Second Engineering Build and Test	2 months
Development of Molds and Fixtures	Concurrent 6 months
Pilot Lot Build	2 months
De-bug and Quality Assessment	2 months
Performance Testing of Pilot Lot units	6 months
Procurement of Parts	Concurrent 4 months
Safety Agency approvals (Includes safety and energy testing of all existing models as well as new)	4-6 months
Packaging and Shipping Evaluation	Concurrent 3 months
Final Review and production Planning	1 month
Production	***

Accordingly, if CEC proceeds with a battery charger energy efficiency standard, AHAM suggests it should go into effect 30 months from the final date the regulation is enacted.

C. CEC Should Ensure the Proposed Regulations Do Not Duplicate Its Other Regulations.

Currently CEC regulates the wall-adaptors of battery chargers as external power supplies. No indication has been given as to whether this would continue after the promulgation of CEC the proposed regulations on battery chargers. AHAM has always maintained that the wall-adaptor of a battery charger is a special device. The wall-adaptor of a battery charger is but one integral item within the complete structure of the battery charger. Wall-adaptors for battery chargers are unique items that are designed specifically for their application and not purchased “off the shelf.”

If CEC pursues a regulation for battery chargers, it should also adjust the definition of a State Regulated External Power Supply so that it does not include the wall-adaptor portion of a battery charger. It is critical that there not be different but overlapping regulations covering the same device. AHAM spoke to the CEC on this when the EPS regulations were first developed. There seemed to be an acceptance of the AHAM position at that time and we would ask CEC to carry this through.

II. The Battery Charger Proceeding Lacks Openness, Transparency, and Is Fundamentally Unfair.

A. The Proceeding Lacks Openness and Transparency.

We believe there has been a lack of transparency and openness surrounding the CASE report. Industry members asked a number of questions of Ecos Consulting during the October 26, 2010, conference call and received no answers. AHAM followed up by providing those questions in writing on November 1, 2010. And we again requested answers to these questions in our response to the Battery Charger Proceeding Data Request (January 31, 2011) (Data Request). As of the date of these comments, we still have received **no response** (let alone answers) to those questions. The responses to those questions are a critical step in the transparency and openness of the rulemaking process, especially because the questions seek to understand the underlying data. It is untenable that CEC expects industry to now provide comments on a proposal that is based almost entirely on the CASE report when industry does not (and indeed cannot) understand the data that underlie that study. A crucial part of an open and transparent process is the sharing of underlying data, assumptions, and justifications, in full detail, with the potentially regulated parties. Until that is done, industry cannot be expected to meaningfully respond. Accordingly, we **yet again** request answers to the questions we submitted by letter of November 1, 2010. Those questions are attached at Attachment A. We urge CEC to ensure that all of these questions are answered and that all of the data behind the CASE report is made available.

B. The Proceeding Lacks Fairness.

Throughout this rulemaking process, CEC has failed, by providing too tight of timelines and by not giving timely access to key documents and proposals, to provide stakeholders with a meaningful opportunity to comment. Furthermore, CEC has not shown that it has taken the comments or data stakeholders have submitted into consideration. The following examples illustrate these points:

1. October 11 Workshop: As we stated in our comments dated November 4, 2010, it seemed to us that some of the consultants and utilities did not want to share the CASE report with industry prior to the October 11, 2010, workshop. That is no excuse to hold a workshop to discuss a report, and not provide it in advance to stakeholders. Furthermore, it was evident that Ecos and PG&E had released the information to the Air Resources Board and other California entities, but refused to release the information to the industry affected by this rulemaking. It is unfair for only some participants to have advance access to the document to be discussed at the meeting. Purposefully withholding technical studies prior to a workshop, or even simply not providing the document with sufficient time for stakeholder review, is not an example of an open, transparent process and does not provide the Commission with access to all views based on the same information.
2. October 26 Web Meeting: In addition, the CEC staff attempted to have an internet web meeting on October 26, 2010. This “webex” meeting was not posted on the CEC web site or noticed for wider participation. We are pleased that a large number of companies from a few other industries were present, but there were still many industries and companies affected by this possible regulation that were not present. Also, as mentioned above, the industry members asked many questions of Ecos Consulting during that conference call about the CASE report. We received answers such as, “I don’t know” or “I did not bring my technical team” or “I will get back to you.” This does not appear to meet the CEC requirement for openness and transparency of meetings, nor is it fair for CEC to ignore reasonable questions and requests posed by potentially regulated parties.
3. Data Request: In its January 31, 2011, Data Request, CEC requested data by Friday, February 18. It also stated that “Energy Commission staff plans to release a Staff Report containing proposed battery chargers standards by mid-February of 2011.” How could CEC request data due by February 18, 2011, and then actually use it when it stated intent to publish a report with proposed battery charger standards by “mid-February,” and in fact published that report on February 22—immediately following a three day weekend? CEC should have allowed sufficient time to do a meaningful review of the data it received in response to the Data Request. Such a review should have included meetings with stakeholders to discuss the data, and addressed the issues AHAM raised in its response to the Data Request, for example. AHAM requested that CEC not prejudge the rulemaking and issue its planned Staff Report or hold its Staff Workshop until it has thoroughly reviewed the data received. Instead, CEC scheduled the workshop, published the report, proposed standards, and stated that it would at some point analyze the data submitted, and “if appropriate, make changes to the proposed regulations.”
4. March Workshop: AHAM requested that the March 3, 2011, workshop be delayed in order to give CEC time to properly collect and review data received in response to its January 31 Data Request. Instead, CEC scheduled the workshop, providing only minimal notice—notice of the workshop was posted on February 18 at the close of

business, Pacific Time. That meant that stakeholders on the east coast did not get notice of the workshop until Friday at about 8 p.m. The notice did not even include the documents to be discussed at the workshop. Only some of those were posted at close of business, Pacific Time, on February 23, meaning that yet again, stakeholders on the east coast did not get access to the documents until after 8 p.m. on February 23. CEC then posted a revised version of the report the next day. The result is that stakeholders have only six business days to review the staff report and proposed standards prior to the workshop (based on the February 23 release date). When that is combined with the required travel, the review period is even less. In addition, the first schematic of the switch the Draft Staff Report proposes manufacturers could use for nickel chemistry products to comply with the proposed regulations and the estimated costs of using that switch were not provided until the workshop itself, and were not posted for public access until the following week. These combined actions did not allow sufficient time for stakeholders to be able to provide meaningful comments at the workshop. Furthermore, these written comments are due on March 15, which does not even give stakeholders 30 days to review and respond to the Draft Staff Report.

Based on CEC's failure to give potentially regulated parties a meaningful opportunity to respond to its various proposals and reports, it appears to AHAM that CEC has prejudged in an arbitrary and capricious manner the outcome of the battery charger rulemaking. The result so far is inaccurate, biased data supporting an unjustified, unattainable, and soon to be preempted proposed standard.

III. CEC Wrongly Asserts That the Proposal Is Economically Justified.

A. The Cost Analysis Is Flawed.

The Draft Staff Report states that, if “the manufacturer does not totally redesign the products, the cost to comply is more than offset by the energy savings over the life of the product.” (See Draft Staff Report at 12). But, as discussed below, for several products, the proposed standards levels are only attainable by using Lithium Ion chemistry batteries, which will require redesign by appliance manufacturers. Based on a variety of reasons discussed in Part IV below, switching from nickel-based battery chemistries to Lithium Ion battery chemistries adds significant cost to products in the appliance industry.

We have a number of questions about the data on which the Draft Staff Report relies. What source did CEC use for its conclusions? Where did the data originate and how was it collected? Were a variety of appliances with multiple charge levels and voltages evaluated? Without this information, it is impossible for us to provide effective feedback. DOE's Technical Support Document in Docket No. EERE-2008-BT-STD-0005 (TSD) does contain cost information that was carefully collected—much of it came from manufacturers and it was reported in a transparent way. Based on comments from all stakeholders, DOE may be revising its cost and payback assumptions, and so we urge CEC to refrain from further action until DOE releases its notice of proposed rulemaking and accompanying technical support document. CEC should rely on DOE's data, which has gone through an open and transparent collection and review process.

B. The Cost of Solutions for Compliance Is Understated.

The Draft Staff Report states that the “proposed battery chargers regulations are based on the premise that after the battery has been recharged the battery charger should shut off the flow of electricity. . . . There are battery charger systems currently on the market, across most product categories and price levels, that have already addressed the problem by including relatively inexpensive charge sensors and switches in their product designs. This capability can be implemented with inexpensive off the shelf technology that will not require major redesign of products regulated under the proposed standard.” (See Draft Staff Report at 12-13).

This somewhat confusing assertion, provided without further description or qualification in the Draft Staff Report, was clarified somewhat during the March 3, 2011, workshop: what staff were describing was “charge termination” which is implemented currently in some chargers to switch from the bulk charging (during active mode) to maintenance mode. In the case of many chargers, this does not result in zero power being drawn as the cell chemistry requires ongoing maintenance to offset the effects of self discharge and because the circuitry itself requires power to operate.

The example provided during the Ecos presentation to justify both the feasibility of this approach and its cost effectiveness accomplished just the opposite:

1. The “switch” solution was itself unable to achieve the proposed standard level, as was previously asserted by CEC staff, and required the additional benefit of a new power supply.
2. The solution was unfeasible, using a technique abandoned decades ago by manufacturers as being unreliable as it resulted in wide swings in product performance. This method may work on a single sample under laboratory conditions, but is not suitable as an engineered solution for a mass manufactured product. For example, the schematic uses a 12.74 K-ohm resistor, an extremely high precision (0.1% tolerance) part in a mass-produced consumer product.
3. The solution is also unfeasible as the current supplied to the battery during maintenance mode is insufficient to offset the self discharge of these cells across the range of temperatures that the product will encounter in charging. The product’s battery connected to this charger will not remain charged and will not meet the performance requirements of the original.
4. Because the solution did not replicate the performance or the features of what it was intended to replace, it offered an unfair test of cost effectiveness.
5. The cost depicted was the “BOM” cost of the PCB only, and did not take into account the increased manufacturing cost or the additional costs of the practical implementation in the charger, e.g., the cost of implementing the charge LED.

6. The BOM cost analysis itself was faulty because it did not account for the cost difference of more expensive PCB materials, it used the same cost difference for the 14.4 V level V power supply as in the earlier 1.2 V example, and it uses a 0.1% tolerance resistor in the schematic but that price is not reflected in the BOM cost.
7. A level V power supply was offered as a solution, but there is no reason to believe that these power supplies are compliant with the proposed CEC power factor requirement, nor what the cost of a compliant power supply would be. At the workshop it was asserted that the cost of compliance took into account all four metrics, but it is clear in this example that power factor was not considered.
8. The price impact at retail as a result of material changes on the PCB are not correctly reflected by the mark-up factor that Ecos selected. Multiple tiers encountered in the supply chain from BOM change in the charger to the retail price of the end-product results in a compounding effect not correctly reflected in Ecos's choice of mark-up.
9. Ecos's calculation of the energy benefit should be limited to that achieved through the proposed standard alone. Since CEC has elected to not use a comprehensive measure of energy savings and instead insisted on four independent limits, savings in already compliant metrics cannot be credited against the cost of compliance to fulfill a non-compliant metric. CEC should not be able to use this as part of its justification if manufacturers cannot employ comprehensive energy savings to meet the standard.
10. Ecos did not detail their energy savings calculation of 14 KWh/year, but it appears grossly overstated, perhaps as a result of not applying the usage duty cycles that were utilized in the Draft Staff Report and are required by law (this is further discussed below).

Addressing the unequal performance, the unfeasible design solution, the incorrect material cost, the improper assessment of retail mark-up, and the actual energy saving, we expect that the consumer's payback years will be past the point when a CEC regulation based upon this report would be preempted by a better crafted federal rule.

C. The Proposed Standards Will Likely Result in Significant Market Disruption.

Furthermore, a rulemaking by the CEC on battery chargers will be incredibly disruptive to the marketplace. Manufacturers could have to shift precious resources to designing an entire series of battery charger products to meet a CEC set of standards only to potentially redesign these same products months later to meet DOE standards. As our consumer products industry is just beginning to recover from one of the most serious recessions in memory, this unnecessary change in government mandates could make it very difficult for especially Small and Medium Sized Enterprises (SME) to meet these requirements and still be able to provide products. This could result in several companies reducing their product line, thereby potentially affecting competition. Such an unnecessary rulemaking does nothing to provide for the health of an industry or to increase innovation.

IV. CEC Wrongly Asserts That the Proposal Is Technically Feasible and Will Not Require Design Changes.

Per the Warren-Alquist Act, Section 25402, it is CEC's duty to:

(c)(1) Prescribe, by regulation, standards for minimum levels of operating efficiency, based on a reasonable use pattern, and may prescribe other cost-effective measures, including incentive programs, fleet averaging, energy and water consumption labeling not preempted by federal labeling law, and consumer education programs, to promote the use of energy and water efficient appliances whose use, as determined by the commission, requires a significant amount of energy or water on a statewide basis. The minimum levels of operating efficiency shall be based on **feasible and attainable efficiencies or feasible improved efficiencies that will reduce the energy or water consumption growth rates.** The standards shall become effective no sooner than one year after the date of adoption or revision. No new appliance manufactured on or after the effective date of the standards may be sold or offered for sale in the state, unless it is certified by the manufacturer thereof to be in compliance with the standards. The standards shall be drawn so that they do not result in any added total costs for consumers over the designed life of the appliances concerned.

Neither the Draft Staff Report nor the underlying CASE report makes a strong enough case to justify the proposed energy efficiency standards for battery chargers in California. There has been no credible showing that CEC's proposed standards are feasible for most battery charger categories or classes.

As was shown in testimony at the October 2010, Staff Workshop, neither Ecos Consulting nor the utilities considered the inability of many of the suggested technologies to operate at small charging voltages and wattages. In fact, some small chargers might need to add energy in order to drive some of the suggested integrated circuits (IC Chips). Thus, such a regulation would encourage companies to waste electrical energy.

A. Only Lithium Ion Chemistry Batteries Can Meet the Proposed Standards.

For many products, the proposed standards levels are likely only attainable by battery operated products with Lithium Ion chemistry batteries which would essentially require a Level V efficiency. The CEC is pre-empted by federal standard from requiring anything above Level IV efficiency. If these are the only battery chargers that will be acceptable for many end products, this would cause a major shift in our industry from nickel-based battery chemistries, which have shown tremendous value and quality to consumers of the last 25 years, to a relatively new chemistry which has a significantly different cost and performance structure. The CASE report underlying the proposed standards did not assume the cost of this shift of battery chemistry in their cost or payback analysis, despite the fact that all their analysis assumes that it must happen.

The shift to Lithium battery chemistries for many products also must factor in two important changes. In the near future, the UL standards (UL 2575) will mandate additional testing of the battery packs that go into the products. This will mean that there will be additional testing and

certification time to the schedule. In addition, we are expecting the Final Rule from the U.S. Department of Transportation on the shipment specifications for products with Lithium Ion batteries. The cost of these additional shipping requirements must be analyzed and included in any realistic cost or payback analysis.

Furthermore, both the CASE report and presentations during the March 3, 2011, workshop depict the effect of the proposed standards levels upon the population of charging systems with the following observations:

1. No nickel based systems were compliant with the proposed 24 hour efficiency level above about 10 Wh;
2. No nickel based systems were complaint with the proposed Maintenance Power level above about 20 Wh;
3. No nickel based systems were complaint with the proposed No-Battery Power level above about 20 Wh; and
4. There is no evidence presented to indicate if any charging systems that meet the efficiency levels also meet the proposed levels for power factor.

There are many medium-sized appliances that have batteries that exceed 10 Wh, and for these, CEC has not demonstrated the feasibility through its survey of the population of existing designs. In addition, CEC has not been successful in illustrating the feasibility of achieving these levels in this population of charging systems through its claims of various design options (see Part III.B above). CEC design examples that fundamentally alter the performance or features of consumer products are not viable alternatives and not feasible solutions.

The proposed energy efficiency levels for active mode, maintenance power, no battery power, and power factor would eliminate 95 percent of the battery chargers on the market today. In addition, the proposed efficiency levels would actually eliminate many of the battery chargers in categories that were not studied. Thus, if it decides to continue with a rulemaking on energy efficiency standards for battery chargers, CEC should conduct legitimate and rigorous technical feasibility and consumer payback analysis.

B. Proprietary Technology May Be Required to Meet the Proposed Standards.

We believe, based on our review of the CASE report, and contrary to the Draft Staff Report's unsupported statements that the proposed standards are technology neutral, that the proposed standards could result in the de facto requirement to incorporate proprietary technology, especially in the inductively charged and smaller (less than 100W) battery chargers. This is a serious concern—companies either would be barred from manufacturing or would need to license technology to comply with the standard, subject to royalties and other terms of a provider. It has long been a CEC policy that California regulations should not be set that favor or require particular proprietary technology. Any other approach would be anticompetitive and add considerable burden to the regulated parties, which here include many smaller companies. It

does not appear that the CASE report for these inductively charged and smaller battery chargers have taken this into account. The CEC needs to study this issue.

AHAM urges CEC to study this issue to determine if any potential energy standards and classes of products would require proprietary technology in order to meet the suggested requirements.

V. If CEC Moves Forward, the Standard Should Be Based on a Single Requirement.

The proposal suggests separate standards for active mode, maintenance power, no battery power, and power factor. AHAM opposes that approach. Instead, if CEC proceeds with a battery charger energy efficiency standard, it should base that standard on a combined metric, and that metric should not include power factor. Based on the DOE TSD and proposed test procedure, that is the approach we understand DOE will take. Such an approach will give manufacturers more flexibility in deciding how best to meet the standard given their specific products, which will lead to increased innovation. And it will not decrease the energy savings for California because the total energy use per year is what is important. Accordingly, we strongly recommend that CEC adopt a standard that combines the energy used in active mode, maintenance power, and no battery power, and does not include power factor. This integrated approach is consistent with many other appliance standards, and is the approach widely supported by stakeholders from various points of view.

VI. The “Data” Underlying the Draft Staff Report Are Seriously Flawed.

First, we again comment that the CASE report seems to be based on data that are not publicly available, whereas DOE, in its TSD, has produced all the raw and analyzed data. The Ecos data used as a basis for the CASE report should either be produced in whole and made publicly available or it should be stricken from the record.

It is unfortunate that Ecos Consulting and PG&E decided to release the CASE report after the DOE released a significantly more detailed TSD. DOE has studied all of the same elements for residential battery chargers as Ecos Consulting (and much more). As was stated at the October 11, 2010, CEC Staff Workshop, and in our November 4, 2010, comments on the CASE report, Ecos—

- *did not consider* all the possible types of battery chargers;
- *did not consider* the economic analysis;
- *did not consider* the full cost increase methodologies;
- *did not consider* Life Cycle Cost Analysis;
- *did not consider* manufacturer’s impact;
- *did not test* current products in the marketplace; and
- *did not even review* the candidate standards levels that were suggested by DOE.

The testing data submitted by Ecos on all its charts are from battery chargers taken in the market from 5 years ago, far before the Tier 1 and Tier 2 CEC EPS regulations and, therefore, are totally inappropriate for consideration.

We were disappointed in the technical assessment conducted by Ecos Consulting for the California Utilities and had hoped that the Commission would disregard it in favor of DOE's much more thorough TSD. The CASE report is a totally insufficient basis for a rulemaking on standards for battery chargers.

A. The Energy Savings Estimates Do Not Take
Into Account Infrequently Charged Products.

The Draft Staff Report overstates the energy savings from most of the categories of consumer battery chargers, especially those of inductive chargers and small residential battery chargers for motor operated appliances. For example, Ecos in the CASE report failed completely to consider the large numbers of people with personal care products who do not leave chargers plugged in constantly. On Page 15 of the CASE report, Ecos estimates that personal care products are unplugged nine percent of the time. Ecos even estimates that power tools are left unplugged 37 percent of the time. The Ecos data is at best highly misleading, but more likely not representative of the current usage. This data seems to have come from the Ecos Plug Load Analysis which is taken over a 7-day period and is flawed because *many personal care products are not charged during a week*. That study grossly overestimates the time in use by the basic construct of the study. After a far more extensive analysis, DOE estimates that many of these products are unplugged 23 hours a day. Thus, the data used by Ecos Consulting for analysis of infrequently charged products should be removed and new analysis undertaken based on DOE's data on usage, charge times, and infrequent charging.

DOE's TSD, Appendix 7a, shows numerous products charged less than 1 hour a day. Indeed, we mention that shavers, beard/mustache trimmers, hair clippers and rechargeable toothbrushes are shown to be charging from 0.14 to 0.26 times per day. We submit that the percentage of time for other personal care products, such as beard and mustache trimmers, hair clippers, etc. is likely significantly less than the figures shown. Furthermore, the consideration of "infrequently charged" products was acknowledged in hearings before CEC by statements from then Commissioner Art Rosenfeld and has been mentioned by AHAM and its members for over five years. For example, AHAM commented on "infrequently charged" products in our comments addressed to CEC Chair Jacqueline Pfannenstiel on January 30, 2008. Still, Ecos refuses to acknowledge the presence of this fact of use and continues to estimate that all chargers are left plugged in all the time.

We, therefore, believe the "infrequently charged" products should be treated differently than other products with battery chargers. The primary characteristic of these products is the fact that they are infrequently charged. In order to adequately measure the energy savings potential over the UEC, year, or lifespan of the product, CEC needs to separate these infrequently charged products into a unique class. In this way, the energy measurements will be representative of the way that the products are used. If CEC continues with the rulemaking on battery chargers, CEC staff should further evaluate the issue of products that are infrequently charged and adjust the energy savings and applicable standards levels accordingly.

B. The Proposal Does Not Properly Categorize Products for Regulation.

The proposed energy efficiency standards are grouped in three categories—this is insufficient. To suggest that the battery chargers for a small personal care appliance battery charger using 3-5 Watts (example: small hair trimmer, electric shaver or small cordless vacuum) should be in the same product class as an 80-125 Watt battery charger for a laptop computer is a serious technical error. Although DOE's TSD does not present a perfect set of product classes, as we have commented in that proceeding, it at least shows that DOE has attempted to address the differences in products by establishing nine product classes.

The technical assessment in the CASE report assumes that all chargers will become “fast chargers” when such a feature is not necessary nor would this provide the value to the consumer for most consumer products applications. The assumption seems to be that “somehow, somewhere, someone will invent a product” is not a technical assessment. The Commission standards, should CEC continue with its proposed standards, should be set based on what is available in each product class today, and not based on what Ecos Consulting thinks will be available in the future.

C. The Proposal Should Consider Usage Patterns.

We strongly disagree with the CASE report determination carried over into the Draft Staff Report that the issue of usage patterns is too complicated and should not be used to set energy standards. The CEC has stated in its Draft Staff Report that “staff have concluded that the duty cycles, closely tied to consumer behavior, are likely to evolve with time and that standards based on specific duty cycles are not appropriate.” (Draft Staff Report, at page 9). DOE has been able to recommend that usage patterns can be used to set energy standards on Battery Chargers. We believe it is important to develop energy profiles and standards levels that are representative of the way that the product is actually used. There is considerable information in the DOE TSD on usage patterns, and we continue to encourage CEC to use this information, especially the Unit Energy Consumption (UEC) calculations and usage patterns in Appendix 7a, which has data on 67 External Power Supplies and 57 Battery Chargers.

Ecos claims that it cannot obtain information on the usage patterns of EPS and Battery Chargers. However, Appendix 7a of the DOE TSD has all of this information. The Warren-Alquist Act, Section 25402 (c) (1) states that the regulations shall be “based on a reasonable use pattern.” To aggregate dozens of types of products into one category and average all information on usage is to negate the directive of the Act. The Ecos proposal would not take into account the different use patterns of battery chargers.

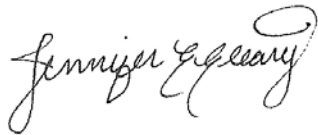
AHAM continues to support using usage patterns for determination of the energy use of each product. We believe, however, that there is still work to be done to understand the percentage of time in each of the Active/Maintenance, No Battery, and Unplugged states. It may be necessary to update some of the usage patterns shown in the DOE Appendix. In addition, the time estimations for the time in the “unplugged” state need to be adjusted. We note that it appears that CEC based its estimates of the percentage of time a product is unplugged on a study done in 2006, which in many cases appears to have metered only one unit. That is not a

sufficient sample size from which to draw conclusions.² We would be pleased to work with the staff of the Commission in order to obtain the necessary information.

Furthermore, CEC should adopt and use a system of usage patterns in order to properly justify the estimated energy savings in the Draft Staff Report. Energy savings estimates inherently must consider consumer usage, and so it seems strange to assert that there is no data to support usage patterns and for CEC Staff to then use such data in their energy savings justifications.

AHAM appreciates the opportunity to comment on the Draft Staff Report, Docket No. 09-AAER-02; 2010 Rulemaking Proceeding Phase II on Appliance Efficiency Regulations (March 2011), and would be glad to further discuss these matters with CEC.

Respectfully Submitted,

A handwritten signature in black ink, reading "Jennifer Cleary". The signature is written in a cursive, flowing style.

Jennifer Cleary
Director, Regulatory Affairs

² See Draft Staff Report, at 7, response to comment 10, citing http://www.efficientproducts.org/reports/plugload/Plug_Loads_CA_Field_Research_Report_Ecos_2006.pdf.

ATTACHMENT A



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November 1, 2010

Mr. Michael Leao
Mr. Harinder Singh
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814-5512

Dear Mr. Leao & Mr. Singh:

Thank you for arranging the Webex Seminar on October 26, 2010. It is very important for industry to have an opportunity to ask questions and receive answers regarding the CASE report. We were very disappointed that Ecos Consulting, PGE and other IOUs in California were unable to answer many of our questions. In order to continue the tradition of the California Energy Commission to provide transparency and openness in rulemakings, we are asking many of these questions again and requesting the data behind this.

We do appreciate the fact that you have offered to obtain answers to our questions. We are submitting these questions early so that we might be able to receive the answers before we are required to submit our comments.

The following are the questions that were raised on October 26, 2010 for which we did not receive answers:

1. Ecos consulting used a financial mark-up methodology to go from a raw component part cost to the change in the Manufacturer's Selling Price (MSP). For the increases used by Ecos, we would like to know what the increases are and how they are developed at each stage. For example, there are likely cost increases from the component part supplier to the Printed Wiring Board manufacturer, and from the PWB manufacturer to the wall-adaptor or battery charger manufacturer, and from the battery charger manufacturer to the OEM appliance manufacturer and from the OEM appliance manufacturer to the MSP. The U.S. Department of Energy has included a complete break-down of their methodology on pricing increases and we are interested in seeing how this compares to the one used by Ecos.

2. Do the first costs on Table 18 include markup? If so, please explain the data used.
3. Does the markup include non-recurring engineering and manufacturing (NREM) expenses, such as energy testing, research and development costs, assembly line fixtures and testing equipment, safety certification, increase in size of battery charger housings to accommodate components, changes to production molds, changes to assembly lines and other capital improvements? If so, how much of the total markup was used for NREM? Did this estimate also include possible increases in packaging size to accommodate different sized battery chargers?
4. Ecos assumed that the differences between units that met the new proposed standards and those that did not were based on a difference in design changes. There are many different categories of battery chargers and battery rechargeable appliances. We would like to have more explanation of how Ecos “built-up” designs to show that such design options are applicable to all categories of products.
5. Ecos appears to have made assumptions about the quantities of components which will be purchased. As some quantities of shipments of certain classes of products are low and some are high, we would like to know what quantities were assumed for each class in order to move from the component part cost to the MSP.
6. Did Ecos assume that all battery chargers could use this technology change or were there different technology changes for different classes of products?
7. For small voltage products (for example 1.2 to 1.5 V), did Ecos assume that the voltage to run some IC chips are not available at very low voltages? Did Ecos include measurements and recommendations on small voltage products? Did Ecos assume that the energy to the system would need more voltage to drive the IC chips than is needed to charge the battery? Did they test to verify that the technologies that now meet the proposed regulation would work for low voltage products? If they did verify these would work, is there still an energy savings? If so please provide the data.
8. The usage patterns in the Ecos study appear to be based on an older study of consumer products usage. How many products from full sized vacuum cleaners, stick vacuums, hand held vacuums, shavers, hair clippers, trimmers, toothbrushes, can openers, cordless mixers were included in the summary used to develop the usage pattern assumptions?
9. Ecos noted that they assumed all battery chargers had charge control (page 6, top of page). Would Ecos please explain how they define charge control and were they able to measure or determine the function of charge control in the battery chargers they studied? If yes, could they share with us the procedure and process used to define charge control?
10. Recommendation 8.1 contains a suggestion that the regulation take place in 2012 which is two years from date of enacting. Would Ecos please share the timeline they have assumed for various parts of this two-year time period?

11. Does the timeline include time for obtaining testing in a CEC approved laboratory for energy measurements, including queue time? Also, does the total time include time for testing by a Nationally Recognized Testing Laboratory (NRTL) including queue time? How much time is estimated for each? For those devices that are Federally regulated as medical devices, does the timeline include time for FDA approval, including queue time? Did they verify that the technology to meet the proposed regulation is acceptable as it is to meet all the strict safety and EMC requirements for medical devices? If so please provide the report that confirms this.
12. Ecos said that the average savings shown includes the assumption of the power factor limit. Would Ecos please provide a breakdown of the average savings to show what amount and percentage of the total amount is due to power factor limit, especially for the units under 100W?
13. Table 6 includes information on the percentage of time that a product is unplugged. Would Ecos provide to us the information on which this estimate is made, especially for personal care appliances? Is this assumed on all the market or a percentage? If a portion, how was this percentage arrived at?
14. For the scatter-plots shown in Figures 5, 6, and 7, would Ecos please re-run these tables for battery chargers that have State Regulated EPS (under California definition) that comply with the regulations currently in effect.
15. For the data in figure 5 only the Lithium products meet the proposed regulation. Was it assumed that all cell chemistries could use the same technology to meet the proposed regulation? If so were the costs increases to the product also based on this technology? Were any prototype products built with other cell chemistries to verify your assumptions? If this is the case, did Ecos factor in the new regulations for the UL safety standards on lithium ion batteries and the U.S. Department of Transportation regulations on shipments of lithium batteries?

Thank you for your help in obtaining the necessary information.

Sincerely,

A handwritten signature in black ink, appearing to read "Wayne Morris". The signature is fluid and cursive, with the first name "Wayne" and last name "Morris" clearly distinguishable.

Wayne Morris
Vice President, Division Services