

## WEBINAR

### Introductions:

#### **Gary Fernstrom: PG&E Appliance Standards**

PG&E= large, investor-owned utility in California. Asked by CEC to pursue codes & standards; incentives to provide financial incentive to move standards into code. If products are too small or impractical for rebates, then PG&E moves to codes and standards. This meeting is an attempt to influence EPA and DOE to develop test standards for battery chargers and advocate for some sort of efficiency code or regulation. This is a collaborative effort following up on CEC's PIER program and several others in and outside the U.S. that are similar to PIER.

#### **Haresh Kamath: Technical Context**

EPRI has been working with Ecos and others for a few years to develop understanding of battery chargers and batteries in the context of BCs and efficiency. EPRI's participation is based on years of experience with batteries and BCs, research in document now available on [www.efficientproducts.org](http://www.efficientproducts.org). Test procedure to cover three modes: active/charge returning energy into battery; maintenance mode, where BC is merely maintaining full state of charge; no battery mode (battery removed). Test procedure attempts to address all three areas of battery charging. How much power is being drawn in each one of those phases? Many BCs draw the same amount of power regardless of which mode they are in, e.g. NiCad BC drawing the same amount of power regardless of mode. NiMH handheld radio battery w/ 3.9 rated Whs capacity; li-Ion cell phone battery draws much less electricity for a total of 8 Whs compared to 63 Whs for the NiMH radio charger.

How much energy is being put in to the battery, vs. how much is being drawn out during discharge of the battery? Part of that is caused by the charging system. Battery with small capacity—10Whs, as compared to 73Whs in the charging cycle.

Energy loss in all three components—Power supply, charge control circuitry, and battery.

Each component has losses. There are substantial advantages by addressing all three components.

TECHNICAL APPROACHES TO IMPROVE EFFICIENCY (see slide);

#### **CHRIS CALWELL: TEST PROCEDURE DEVELOPMENT/HISTORY**

Validation process required to ensure that PSs tested worldwide using test procedures would obtain the same results.

Timeline has had some interruptions

Test procedure scope:  
Up to 2000 W of single-phase input power (see slides).

**QUESTIONS:**

**Ari Reeves:** D&R/USDOE: please display last slide

**Chuck Mullett:** pie chart of maintenance and active; since mode is maintained unintentionally, how do you define maintenance mode?

**CC:** level of detail behind the pie chart = 30-40 different products summarized in the pie chart display. There are individual products where maintenance mode is more, or less—the pie chart displays the averages. There are not a lot of data out there about these functions.

**PAUL BENDT: PROPOSED CHANGES TO TEST PROCEDURE DRAFT 2**

Assuming stakeholders have seen the draft, including the new draft which has the most recent proposed changes.

Topics (see slide):

- 1) Test Procedure sequence and duration
- 2) Chargers with other functionality
- 3) Choice of batteries for testing
- 4) Access to the battery
- 5) Other items to note:
  - Safety in the laboratory
  - Conditioning and rest periods
  - Allow for dc input power
  - Distinguish standby & no-battery modes
  - Measure PF and THD (Power Factor and Total Harmonic Distortion)

Concerns with test sequence (see slide):

Ensure complete cycle.

Battery arrives in lab with totally unknown state of charge.

Some chargers don't fully charge a battery in 24 hours, so there might not be a full cycle in 24 hours.

Reasonable test procedures

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Trickle Chargers may take more than 24 hours

e.g. car chargers; emergency egress lighting

in these instances, recharge may not return the battery to fully-charged state.

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Proposed sequence:

- \*Make sure battery is partially charged.
- \*discharge the battery
- \*conduct charge test
- \*conduct discharge test
- \*optionally recharge battery for storage.

Test procedure sequence (see slide)

**CC:** pretty certain this applies to a relatively small number of devices, but want comment:

**PB:** Measure maintenance power in the last 4 hours:

**QUESTIONS/COMMENTS:**

**DAVE KLINE** With a partial charge/discharge of partial charge is that scalable to a full-charge, full-discharge of the battery. If we only test the partial charge, are we accurately measuring the overall performance of the charging system?

**PB:** Basically not. The batteries become less efficient as the battery approaches full charge due to heating and coulombic losses. Thus, testing only the first part of the charge cycle should yield a slightly more efficient result than testing the full cycle.

**CC:** We don't want the test procedure to yield results that more optimistic than actual efficiencies across the whole charge cycle. On the other hand, we want to be sensitive to manufacturers' concerns about the expense to test... for the full period of time needed to capture a complete charge cycle. Fortunately, the number products for which this is the case should be quite small.

**Rich Habben** from Wahl Clipper: re battery conditioning. Many batteries take 3-4 cycles before they start to level off on their efficiencies. Usually, the first couple cycles, there can be a difference from true capacity. Recommend several charge/discharge cycles per manufacturer's instructions to the lab to make sure they are on full capacity.

**PB:** Agree totally, and have made provisions in the test procedure to do what is being suggested with the guidance of the manufacturer.

**PART 2: Battery charges with other functionalities:**

Other functions consume power, e.g. radio or cordless phone. Battery charger devices like UPSs have USB connections to alert computer that there has been a power failure.

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Lab does not need to provide other connections and signals  
Other connections might cause the device to consume more power.

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**CC:** In that case, wouldn’t it be true that all of the standby/parasitic load of the device would disappear from the measurement, even though some of that load would legitimately be present whenever the device is being used? Better to measure actual power consumption when the device is in its lower power consuming mode, and then provide that information to policymakers so they can decide what, if anything, they would like to do to encourage further standby power reductions.

**Nathalie Péloquin:** CSA test method has not been voted on, nor has it been publicly and will not be available on the CSA website for several months. Testing with and without the battery is true. The final draft of the test method will be made available on the CSA web site for public comments. I invite people to comment on it when available. Chris raised valid point and I will have to raise the issue. Website link where participants could register to receive notification of draft publication for public consultation:  
<http://www.csa->

[intl.org/onlinestore/keepmeinformed/pleaseidentifyyourself.asp?language=en](http://intl.org/onlinestore/keepmeinformed/pleaseidentifyyourself.asp?language=en)PB: testing method of device with battery removed might be another number generated by test procedure that would allow the people setting standards to evaluate how to incorporate that in standards. This is different from no-battery mode, because no battery mode simply tests the charge without the battery.

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**PART 3: Whose batteries to use for tests?**

If the product is not packaged with batteries, how do we know the test is done with an “appropriate” battery?

**PROPOSAL:** Use batteries made by or recommended by the charger manufacturer. If the charger manufacturer does not make batteries, ask the manufacturer to recommend batteries for use in testing.

While the choice of batteries will make some difference in the charger efficiency, it won’t make a substantial difference—the difference occurs in whether or not the charger detects that the battery is charged, and how it responds.

**WHICH SIZES OF BATTERIES?** Many chargers can test many different batteries.

Testing all possible capacities is burdensome.

**PROPOSAL:** Test with the smallest and largest capacity to show the range of charger performance, e.g. “most common” or mid-range.

See slides: “DIFFERENT BATTERIES AND PORTS” & “Minimum and Maximum Batteries”

**COMMENTS/QUESTIONS:**

**DAVE KLINE:** Why so widely varied in efficiency of different sizes?

**PB:** Yes—the current supplied is the same for any battery size—the current fed to the battery did not depend on the size of the battery. So the size of the battery affected how quickly they charged, and how long the charger stayed in maintenance mode. The charger displayed was not detecting whether or not the battery was fully-charged, so in this example it appeared that the batteries that charged more quickly.

**CC:** chargers have to be sized for maximum capacity.

**DK:** Do you believe there could be management to even out the differences.

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**PB:** Yes—the biggest thing would be to put in some way to detect when the battery is fully charged, depending on chemistry to detect heat or voltage, then shut off AC input once full-charge state has been reached.

**CC:** go out on the market and find various kinds of chargers and you can see power conversion efficiency devices.

**DK:** Most of the efficiency is in the external power supply or voltage conversion circuitry, rather than comparing different chemistries.

**CC:** Not exactly right--remember you could save a lot of power by making conversion more efficient, but you could also achieve savings by shortening the time that the power is being supplied when the battery is fully charged.

**Mike Hornick:** 2xAA, 2xAAA, and 4D-cells. How many ports did it have?

**PB:** Basic requirement is test procedure is run one test with the smallest number of the smallest number, and then run the largest number of the largest batteries, and then some intermediate. The basic test is for the range.

Mike Hornick: test procedure requires lowest capacity and the maximum capacity.

**PB:** Exactly.

Michael Vladimer: No particular circuitry to determine if battery is fully-charged. Have you seen any charges that do that, and have you seen any difference?

**CC:** A number of AA products have come to market to charge very rapidly—15 minutes—have large power supplies—50-60W—then drop off quickly. It would be useful to measure whether or not the charger is reducing its consumption. As long as there is no test procedure, there is no incentive for manufacturers to include it.

**PB:** There are products that detect full charge; we don't know which one, but we're hoping to see them.

**CC:** Haven't tested all products, pending stakeholder comment on procedures:

**Michael V:** up to policy makers to decide how to interpret. Do you have any suggested interpretations?

**CC:** Could show identical products whose efficiencies vary by a factor of 10 even with the same batteries. Recommendations more likely after large quantity of products have been tested. We would be more comfortable making such recommendations after minimum-maximum measurements and averages have been determined.

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#### **PART 4: ACCESS TO BATTERY**

Some products have sealed batteries. Battery terminals are not always accessible or identified.

**PROPOSAL:** If the battery is not normally accessible by the consumer, then the manufacturer shall assist the laboratory to gain access safely by providing:

Instructions and any special tools needed to open the device;  
Connectors or test jigs for smart batteries if needed;  
Pin-out descriptions for battery terminals.

NOT recommending that these be provided to consumers, but there may be certain products that would require assistance from the manufacturers to safely access and test the batteries.

#### **COMMENTS/QUESTIONS:**

**DAVE KLINE:** How many laboratories do we have to provide these to?

**CC:** Short of the initial testing that is being done by Ecos and a few others, the choice is up to the manufacturer to decide which labs.

**DK:** California and other jurisdictions may require specified laboratories and New York or other jurisdictions might require their own labs. We are concerned about logistics.

**TT:** As we develop standards for BCs, we would be likely to set up a system where a list of certified labs—mfrs choice—would be acceptable.

**CC:** Although there have been policy maker differences in laboratories, there was universal agreement that the test procedures should be standardized.

**DK:** each regulatory agency might have its own regulations.

**Nathalie Péloquin:** Canada has specific concerns with language of standard. Per example, we would not accept to let the manufacturer provide information on how to test their product. The test procedure must complete. We want to be able to take a product from a shelf and verify compliance when we regulate certain things, we don't want to contact the manufacturer to know how we should be testing a specific product. This could be a problem for Canada—CSA has been developing a test method for the past 18 months. This never came up. Now this is raising a flag in my mind, and I'll raise this at the committee level.

**PB:** connectors, jigs, etc. could be returned to the mfg upon completion of the test.

DK: to make a uniform product launch across the country, there would need to be multiple regulatory approvals in order to sell in different jurisdictions.

CC: Can you suggest specific revision on how to do it that would work better?

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**PART 5: OTHER ITEMS TO NOTE:**

Other items to note:

- Safety Issues in the laboratory (SEE SLIDE)
  - Mfg should notify and assist the lab with known safety hazards for their particular product:
    - Discharge current limitations <0.2C
    - Cooling requirements
  - Laboratory to use good safety practices
  - Final report to include any deviations
- Battery Conditioning and rest periods
  - Stakeholder comments included
  - Manufacturer's recommendations, e.g. discharge cycles
  - Rest periods provided according to mfrs recommendations
- Allow for dc input power
- Distinguish standby & no-battery modes
  - Define both modes
  - Some products they're the same
    - If different, consumption measured in each mode—disconnect battery and leave charger turned on—measure in both modes
- Measure PF and THD (Power Factor and Total Harmonic Distortion)  
(see slide)---note in report.

**COMMENTS/QUESTIONS:**

**DK:** testing on different ac and dc input capabilities? We have several DC battery chargers for use in a car plugged in to a dc outlet, and can also be plugged in to an ac outlet. How different are they, and have you studied it?

CC: this could be measured in the lab—low-voltage should be better; but those losses are outside the scope of testing procedures if you only measure dc input. Because most of the standards organizations are dealing with power coming from electric power grid, therefore these are primarily interested in ac input. There could be other products that require dc input, but the vast majority of products to be tested and regulated would require ac input.

PB: We would be interested to test both, but most of the regulators would be likely to be interested in the ac power use.

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DK: the core of my question is that you are not defining dc output of external power supply, but are defining as an ac are there others? [other dc power sources other than 12-volt (automotive) power]

CC: telephone company (48 volt)

PB: aircraft (24 or 28 volt)

Robin Clark: As an example, the ENERGY STAR Audio/DVD spec applies to products that draw current from a building's ac power electrical outlet via a power cord or via an ac power adapter that is shipped with the product.

Gary Fernstrom, PGE: Power Factor of small devices would not have an impact on the electricity grid, but might have on the distribution within the building, which impacts energy efficiency—second order energy efficiency outcome that PG&E would be interested in.

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**OPEN DISCUSSION:**

**DAVE KLINE:** We are developing a sword which can be used very judiciously, as in a surgeon's scalpel, or can be used to chop off someone's head. That's a big concern, but more of a long range concern. These test procedures will be the basis for the regulations. JVC is concerned that we are creating a scalpel or a sword. I would hope the use and application of the procedures would be considered in the development of the procedures. We may be going at this backwards, without looking at the regulatory impact or implications of regulations (Concern from CEA).

**GF:** Our goal is to improve energy efficiency in California and the reliability of the electric grid—although the power use of these devices is small, their impact is substantial. Before we can have standards, we must have a test procedure.

**WAYNE MORRIS:** Test procedure that is being discussed is one covering an extremely wide variety of products. I applaud you all for the large activity you've taken on to engage the multiple battery chargers to house phones, cell phones, forklifts and golf carts. I appreciate what you're going through. I would suggest that in use of time to develop test procedures, it might be best to take into account that there already exists a DOE test procedure, as well as CEA. For a certain select group out of the total universe you are developing procedures for. I was hoping that you would acknowledge that there are some for whom procedures have been developed already, and use your process to develop procedures for California and other jurisdictions for others not covered by the existing regulations.

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**Nathalie Péloquin:** Scope of the existing test procedures may very well not be same as scope of the Regulation. Vic Petrolati: DOE did not include scope of coverage, and DOE has made no determination as to the scope of those test procedures.

**GF:** 1) notion that we shouldn't look at some of those products that are currently being considered by DOE would suggest that there isn't any room for improvement. As we go along, there is always an opportunity to look for improvement.  
2) PG&E had proposed several years ago, a BC initiative for California. Met with parties and were convinced that it was a complicated issue and were persuaded that more dialogue was needed. We have done that. It's now 4 years later, and we're doing that, and I think it's appropriate.

**CC:** Time later for comment from policymakers on the call.

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**NEXT STEPS** (Suzanne Foster Porter to lead discussion in place of Melanie Gillette, who was unable to be present on the call):

**CC:** slides summarize some expectations, but representatives of CEC, NRCAN, EPA, PG&E, and DOE will make their own remarks.

**SFP:** Requesting that written comments be emailed to Donna George, [dgeorge@ecosconsulting.com](mailto:dgeorge@ecosconsulting.com) by June 15, 2007.

(see slide "Summary of Next Steps")

[www.efficientproducts.org](http://www.efficientproducts.org) will always contain updates.

See table "Battery Charger Policies"

**Tim Tutt:** Pleased to have draft procedure to consider. Work going on for BCs in California, expecting case studies in the next few months that would allow the regulatory process to begin next September. Through that process, schedule public workshops to develop regulations for BCs and appliance standards to be finalized 1<sup>st</sup> or 2<sup>nd</sup> quarter of 2008. I have not seen anything different than what is summarized here in the table.

**CC:** Do you have any additional information on carbon goals etc. for new standards affecting targets for the CEC.

**TT:** new legislation affects savings, but no specific requirements yet.

**ROBIN CLARK:** (Representing Energy Star, in place of Andrew Fanara, who is not feeling well, and asked Robin to make some comments). In 2008, EPA will likely take a look at its existing battery charging systems specification and determine whether any modifications to the specification and/or test procedure are warranted. In addition to

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saving energy and reducing greenhouse gas emissions, EPA is very interested in harmonizing test procedures whenever appropriate—useful to EPA and to mfrs—in keeping abreast of what’s out there and what’s feasible.

**CC:** How many participating manufacturers and products:

**RC:** Don’t have statistics at my fingertips, but several manufacturers, mostly in power tools. Some are represented on the call today. Manufacturer and qualifying product lists are available on [www.energystar.gov](http://www.energystar.gov).

**Vic Petrolati:** DOE did finalize test procedures for BCs—but reserved a section for active mode testing and intends to evaluate the incorporation of active mode testing into the BC test procedure. The original proposed rule for the BC test procedure did include scope of coverage, and DOE received comments that the scope did not consider all the consumer products with BCs. DOE is engaged in determining the proper scope for BCs. DOE held workshop in January 2007 and is conducting a determination analysis to be completed by August 2008, to determine if there are sufficient savings to be gained by regulating BCs. If DOE determines that savings are significant, then standards are to be finalized by 2011, with an effective implementation date of 2014.

**CC:** re European Union, EUP (Energy Using Products) documents list is available

**\*\*LINK TO EU EUP DOCUMENT:**

[http://www.ecocharger.org/docs/BIOconsortium\\_EuP\\_Lot\\_7\\_Final\\_Report.pdf](http://www.ecocharger.org/docs/BIOconsortium_EuP_Lot_7_Final_Report.pdf)

**Nathalie Péloquin, NRCan:** NRCan intent to set Regulation on Battery Chargers. We have been working on a test method and it is not complete yet. Current draft does not include active mode. NRCan interested in following CEC development. NRCan intend to products test products to the CSA test methods and CEC test method including active mode to see where efficiency can be found. From there, NRCan will decide scope and at what level to regulate. Need to test to all modes, and decide. Target for pre-publication is December, 2010.

**DK:** when will presentations be posted?

**SFP:** Promise by the end of the week (June 1); goal by Thursday.

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See slides: “DIFFERENT BATTERIES AND PORTS” & “Minimum and Maximum Batteries”

**COMMENTS/QUESTIONS:**

**DAVE KLINE:** Why so widely varied in efficiency of different sizes?

**PB:** Yes—the current supplied is the same for any battery size—the current fed to the battery did not depend on the size of the battery. So the size of the battery affected how quickly they charged, and how long the charger stayed in maintenance mode. The charger displayed was not detecting whether or not the battery was fully-charged, so in this example it appeared that the batteries that charged more quickly.

**CC:** chargers have to be sized for maximum capacity.

**DK:** Do you believe there could be management to even out the differences.

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**PB:** Yes—the biggest thing would be to put in some way to detect when the battery is fully charged, depending on chemistry to detect heat or voltage, then shut off AC input once full-charge state has been reached.

**CC:** go out on the market and find various kinds of chargers and you can see power conversion efficiency devices.

**DK:** Most of the efficiency is in the external power supply or voltage conversion circuitry, rather than comparing different chemistries.

**CC:** Not exactly right--remember you could save a lot of power by making conversion more efficient, but you could also achieve savings by shortening the time that the power is being supplied when the battery is fully charged.

**Mike Hornick:** 2xAA, 2xAAA, and 4D-cells. How many ports did it have?

**PB:** Basic requirement is test procedure is run one test with the smallest number of the smallest number, and then run the largest number of the largest batteries, and then some intermediate. The basic test is for the range.

Mike Hornick: test procedure requires lowest capacity and the maximum capacity.

**PB:** Exactly.

Michael Vladimer: No particular circuitry to determine if battery is fully-charged. Have you seen any charges that do that, and have you seen any difference?

**CC:** A number of AA products have come to market to charge very rapidly—15 minutes—have large power supplies—50-60W—then drop off quickly. It would be useful to measure whether or not the charger is reducing its consumption. As long as there is no test procedure, there is no incentive for manufacturers to include it.

**PB:** There are products that detect full charge; we don't know which one, but we're hoping to see them.

**CC:** Haven't tested all products, pending stakeholder comment on procedures:

**Michael V:** up to policy makers to decide how to interpret. Do you have any suggested interpretations?

**CC:** Could show identical products whose efficiencies vary by a factor of 10 even with the same batteries. Recommendations more likely after large quantity of products have been tested. We would be more comfortable making such recommendations after minimum-maximum measurements and averages have been determined.

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#### **PART 4: ACCESS TO BATTERY**

Some products have sealed batteries. Battery terminals are not always accessible or identified.

**PROPOSAL:** If the battery is not normally accessible by the consumer, then the manufacturer shall assist the laboratory to gain access safely by providing:

Instructions and any special tools needed to open the device;  
Connectors or test jigs for smart batteries if needed;  
Pin-out descriptions for battery terminals.

NOT recommending that these be provided to consumers, but there may be certain products that would require assistance from the manufacturers to safely access and test the batteries.

#### **COMMENTS/QUESTIONS:**

**DAVE KLINE:** How many laboratories do we have to provide these to?

**CC:** Short of the initial testing that is being done by Ecos and a few others, the choice is up to the manufacturer to decide which labs.

**DK:** California and other jurisdictions may require specified laboratories and New York or other jurisdictions might require their own labs. We are concerned about logistics.

**TT:** As we develop standards for BCs, we would be likely to set up a system where a list of certified labs—mfrs choice—would be acceptable.

**CC:** Although there have been policy maker differences in laboratories, there was universal agreement that the test procedures should be standardized.

**DK:** each regulatory agency might have its own regulations.

**Nathalie Péroquin:** Canada has specific concerns with language of standard. Per example, we would not accept to let the manufacturer provide information on how to test their product. The test procedure must complete. We want to be able to take a product from a shelf and verify compliance when we regulate certain things, we don't want to contact the manufacturer to know how we should be testing a specific product. This could be a problem for Canada—CSA has been developing a test method for the past 18 months. This never came up. Now this is raising a flag in my mind, and I'll raise this at the committee level.

**PB:** connectors, jigs, etc. could be returned to the mfg upon completion of the test.

DK: to make a uniform product launch across the country, there would need to be multiple regulatory approvals in order to sell in different jurisdictions.

CC: Can you suggest specific revision on how to do it that would work better?

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**PART 5: OTHER ITEMS TO NOTE:**

Other items to note:

- Safety Issues in the laboratory (SEE SLIDE)
  - Mfg should notify and assist the lab with known safety hazards for their particular product:
    - Discharge current limitations <0.2C
    - Cooling requirements
  - Laboratory to use good safety practices
  - Final report to include any deviations
- Battery Conditioning and rest periods
  - Stakeholder comments included
  - Manufacturer's recommendations, e.g. discharge cycles
  - Rest periods provided according to mfrs recommendations
- Allow for dc input power
- Distinguish standby & no-battery modes
  - Define both modes
  - Some products they're the same
    - If different, consumption measured in each mode—disconnect battery and leave charger turned on—measure in both modes
- Measure PF and THD (Power Factor and Total Harmonic Distortion)  
(see slide)---note in report.

**COMMENTS/QUESTIONS:**

**DK:** testing on different ac and dc input capabilities? We have several DC battery chargers for use in a car plugged in to a dc outlet, and can also be plugged in to an ac outlet. How different are they, and have you studied it?

CC: this could be measured in the lab—low-voltage should be better; but those losses are outside the scope of testing procedures if you only measure dc input. Because most of the standards organizations are dealing with power coming from electric power grid, therefore these are primarily interested in ac input. There could be other products that require dc input, but the vast majority of products to be tested and regulated would require ac input.

PB: We would be interested to test both, but most of the regulators would be likely to be interested in the ac power use.

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DK: the core of my question is that you are not defining dc output of external power supply, but are defining as an ac are there others? [other dc power sources other than 12-volt (automotive) power]

CC: telephone company (48 volt)

PB: aircraft (24 or 28 volt)

Robin Clark: As an example, the ENERGY STAR Audio/DVD spec applies to products that draw current from a building's ac power electrical outlet via a power cord or via an ac power adapter that is shipped with the product.

Gary Fernstrom, PGE: Power Factor of small devices would not have an impact on the electricity grid, but might have on the distribution within the building, which impacts energy efficiency—second order energy efficiency outcome that PG&E would be interested in.

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**OPEN DISCUSSION:**

**DAVE KLINE:** We are developing a sword which can be used very judiciously, as in a surgeon's scalpel, or can be used to chop off someone's head. That's a big concern, but more of a long range concern. These test procedures will be the basis for the regulations. JVC is concerned that we are creating a scalpel or a sword. I would hope the use and application of the procedures would be considered in the development of the procedures. We may be going at this backwards, without looking at the regulatory impact or implications of regulations (Concern from CEA).

**GF:** Our goal is to improve energy efficiency in California and the reliability of the electric grid—although the power use of these devices is small, their impact is substantial. Before we can have standards, we must have a test procedure.

**WAYNE MORRIS:** Test procedure that is being discussed is one covering an extremely wide variety of products. I applaud you all for the large activity you've taken on to engage the multiple battery chargers to house phones, cell phones, forklifts and golf carts. I appreciate what you're going through. I would suggest that in use of time to develop test procedures, it might be best to take into account that there already exists a DOE test procedure, as well as CEA. For a certain select group out of the total universe you are developing procedures for. I was hoping that you would acknowledge that there are some for whom procedures have been developed already, and use your process to develop procedures for California and other jurisdictions for others not covered by the existing regulations.

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**Nathalie Péloquin:** Scope of the existing test procedures may very well not be same as scope of the Regulation. Vic Petrolati: DOE did not include scope of coverage, and DOE has made no determination as to the scope of those test procedures.

**GF:** 1) notion that we shouldn't look at some of those products that are currently being considered by DOE would suggest that there isn't any room for improvement. As we go along, there is always an opportunity to look for improvement.  
2) PG&E had proposed several years ago, a BC initiative for California. Met with parties and were convinced that it was a complicated issue and were persuaded that more dialogue was needed. We have done that. It's now 4 years later, and we're doing that, and I think it's appropriate.

**CC:** Time later for comment from policymakers on the call.

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**NEXT STEPS** (Suzanne Foster Porter to lead discussion in place of Melanie Gillette, who was unable to be present on the call):

**CC:** slides summarize some expectations, but representatives of CEC, NRCAN, EPA, PG&E, and DOE will make their own remarks.

**SFP:** Requesting that written comments be emailed to Donna George, [dgeorge@ecosconsulting.com](mailto:dgeorge@ecosconsulting.com) by June 15, 2007.

(see slide "Summary of Next Steps")

[www.efficientproducts.org](http://www.efficientproducts.org) will always contain updates.

See table "Battery Charger Policies"

**Tim Tutt:** Pleased to have draft procedure to consider. Work going on for BCs in California, expecting case studies in the next few months that would allow the regulatory process to begin next September. Through that process, schedule public workshops to develop regulations for BCs and appliance standards to be finalized 1<sup>st</sup> or 2<sup>nd</sup> quarter of 2008. I have not seen anything different than what is summarized here in the table.

**CC:** Do you have any additional information on carbon goals etc. for new standards affecting targets for the CEC.

**TT:** new legislation affects savings, but no specific requirements yet.

**ROBIN CLARK:** (Representing Energy Star, in place of Andrew Fanara, who is not feeling well, and asked Robin to make some comments). In 2008, EPA will likely take a look at its existing battery charging systems specification and determine whether any modifications to the specification and/or test procedure are warranted. In addition to

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saving energy and reducing greenhouse gas emissions, EPA is very interested in harmonizing test procedures whenever appropriate—useful to EPA and to mfrs—in keeping abreast of what’s out there and what’s feasible.

**CC:** How many participating manufacturers and products:

**RC:** Don’t have statistics at my fingertips, but several manufacturers, mostly in power tools. Some are represented on the call today. Manufacturer and qualifying product lists are available on [www.energystar.gov](http://www.energystar.gov).

**Vic Petrolati:** DOE did finalize test procedures for BCs—but reserved a section for active mode testing and intends to evaluate the incorporation of active mode testing into the BC test procedure. The original proposed rule for the BC test procedure did include scope of coverage, and DOE received comments that the scope did not consider all the consumer products with BCs. DOE is engaged in determining the proper scope for BCs. DOE held workshop in January 2007 and is conducting a determination analysis to be completed by August 2008, to determine if there are sufficient savings to be gained by regulating BCs. If DOE determines that savings are significant, then standards are to be finalized by 2011, with an effective implementation date of 2014.

**CC:** re European Union, EUP (Energy Using Products) documents list is available

**\*\*LINK TO EU EUP DOCUMENT:**

[http://www.ecocharger.org/docs/BIOconsortium\\_EuP\\_Lot\\_7\\_Final\\_Report.pdf](http://www.ecocharger.org/docs/BIOconsortium_EuP_Lot_7_Final_Report.pdf)

**Nathalie Péloquin, NRCan:** NRCan intent to set Regulation on Battery Chargers. We have been working on a test method and it is not complete yet. Current draft does not include active mode. NRCan interested in following CEC development. NRCan intend to products test products to the CSA test methods and CEC test method including active mode to see where efficiency can be found. From there, NRCan will decide scope and at what level to regulate. Need to test to all modes, and decide. Target for pre-publication is December, 2010.

**DK:** when will presentations be posted?

**SFP:** Promise by the end of the week (June 1); goal by Thursday.