

July 18, 2011

Commissioner Karen Douglas
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

Subject: 2010 Rulemaking Proceeding Phase II on Appliance Efficiency Regulations
(Docket # 09-AAER-2)

Dear Commissioner Douglas:

Thank you for taking the time to meet with us on July 13th. We appreciated the opportunity to provide input on the important topic of energy efficiency as it relates to our products using Battery Charging Systems. In support of the shared goals of Motorola Solutions, Inc. (MSI) and the California Energy Commission related to saving energy and protecting the interests of consumers, we are providing some additional comment on our concerns with the current draft of the regulation, and offer a compromise solution which we feel best achieves these goals.

Given our current understanding of the content of the draft regulation, we have two remaining issues which we believe can be addressed with a single solution, a five year implementation period for small non-consumer products.

1) The current draft requirements are too restrictive of chargers for the high-performance Nickel-based batteries used in our products

MSI has provided a significant amount of data to CEC Staff to demonstrate that the current proposed energy efficiency requirements are virtually unattainable using current technologies to charge most of the Nickel-based batteries used by our products. Due to the lower efficiency of Nickel chemistry batteries and the advanced features our batteries contain, the wall-plug-to-battery-contact energy efficiency would need to be close to 90% (impossible today) for these high-performance Nickel battery chargers to comply with the regulation, compared to about 70% for Lithium battery chargers (this is achievable). Nonetheless, customers have continued to use our Nickel-based batteries due to their better cold temperature performance and, in some cases, longer service lifespan. While it is true the proposed requirements can be met by consumer-type chargers that charge simpler Nickel-based batteries, the sophisticated features embedded in our high-end batteries, such as active safety circuitry, sealed battery packs, and sensing circuitry for fuel gauging, contribute to a further decrease in their energy efficiency. As a result and given the proposed energy efficiency requirements, MSI will be required to invent and develop new approaches to circuit configurations that will allow these chargers to meet higher performance standards. MSI has a long and prestigious history of technical innovation, and we believe we can develop such an approach, implement the change and re-certify all of our Nickel based chargers given sufficient time. We believe five years would allow us to accomplish this.

2) The current test method is not appropriate for non-consumer products

The CEC test method proposed in the draft regulation has many shortcomings when used to test non-consumer products, which tend to be highly-sophisticated devices with complex features and multiple functions beyond simple charging. MSI has commented on this previously (see letters dated November 4, 2010, May 27, 2011). We believe the approach of developing a table of allowable power for non-charging features, given the 24 or more features we have identified, is an unworkable method. Instead, we believe the current test method should be revised to limit the scope to non-consumer products, and allow for testing that does not include energy use by non-charging functions in the calculations for energy efficiency of the charging function. We have suggested such changes be made to the test method (see MSI letter dated May 27, 2011) but understand that the current timeline for publishing the regulation does



not allow for this. However, these suggestions could provide a starting point to convene a group of stakeholders and develop such a test method under the auspices of a reputable standards development organization. A revised test method could be included in future revisions of the regulation.

In lieu of a modified test method, given sufficient time, MSI can design and re-certify new hardware and software to minimize energy consumption and when necessary allow for disabling non-charging functions during charger circuitry testing. Again, five years would allow us to accomplish this for all of our current chargers without market disruption.

MSI believes that extending the effective date of the proposed requirements to five years from the date of publication is completely justified, given the opportunity it allows to leverage product improvements as outlined above. In addition, as noted in our letter of May 27, 2011, the products covered in this category represent an extremely small segment of the whole potential energy savings (<0.5%), so any delay in implementing requirements would have a very small impact on the overall goal of energy savings in California. We respectfully request that our non-consumer products be allowed five years from date of publication to comply with the regulation.

Motorola Solutions, Inc. has a strong legacy of continually improving the environmental performance of our product portfolio and we take pride in our accomplishments. Where opportunities exist to improve the energy efficiency of these products in a sustainable way, we are eager to leverage them for competitive advantage and to benefit the environment.

Sincerely,

A handwritten signature in black ink that reads 'Don G. Bartell'.

Don Bartell
Motorola Solutions, Inc.
Senior Director, Corporate Sustainability