THE SELECT COMMITTEE ON
ENERGY INDEPENDENCE AND GLOBAL WARMING

Dear Mr. Zimmerman:
Following your appearance in front of the Select Committee on Energy Independence and Global Warming, members of the committee submitted additional questions for your attention. I have attached the document with those questions to this email. Please respond at your earliest convenience, or within 3 weeks. Responses may be submitted in electronic form, at aliya.brodsky@mail.house.gov. Please call with any questions or concerns.

Thank you,
Ali Brodsky

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1. What steps can Congress take to reduce the time to deploy smart grid technologies? Congress has already done much to speed the deployment of a smarter grid, particularly in the Energy Independence and Security Act of 2007 and the American Recovery and Reinvestment Act of 2009. However, as the notion of a smart grid begins to gather momentum, it will be important to allow an open architecture with a common communication interface to allow room for creative applications to rapidly flourish. We do as a part of managing our own business, have energy data and control systems that we would be happy to demonstrate in a practical business application.

2. How much will the whole development of a smart grid cost? How should these costs be allocated? The overall costs of smart grid development are beyond my area of expertise. However, I can say that technology development along with widespread utilization and deployment will help keep costs lower than they otherwise would be.

3. Do you support the inclusion of nuclear energy as a source of low-carbon electricity? This is a question better left to policy makers. Walmart supports the development and use of low-carbon renewable energy.
4. How does the problem of intermittency in renewable energy add to the challenge of a smart grid? Obviously intermittency presents an obstacle that must be overcome in order to achieve more widespread deployment of renewables like solar and wind. However, we believe that aggressive demand response policies, coupled with advances in battery storage capabilities and more sophisticated grid operations can help solve this issue.

5. The hearing pointed out the need for regulatory policies that reward electric utilities for their investment in smart grid technology and energy efficiency. Can you suggest ways that Congress can help make this happen? Making the grid more resilient and efficient is in the long-term interest of all consumers. For energy efficiency, it is critical that all (including utilities but not limited to utilities) have a strong financial incentive to invest in energy efficiency. Outdated regulatory structures that only reward utilities for generating and selling more energy do need to be changed to provide a fair return to utilities for these types of investments. It is equally important, however, that cost recovery by utilities is proportionate to customer benefit and that the utilities not be given an unfair advantage in the energy efficiency marketplace that would have the effect of stifling investment by non-utility players.

6. What changes need to be made to the regulatory system for electric utilities that will provide them with incentives to invest in the energy efficiency of their customers? Are there ways to establish a market for other companies either working with the utilities or on their own, to make money by reducing the electricity use of consumers and business?

   Again, utilities do need to have a financial incentive to invest in and encourage energy savings and state regulatory bodies need to change compensation

structures to incentivize utilities to do more than build more generation and sell more energy. Creating a strong market for energy efficiency investments is the most important thing Congress can do. Utilities should be full participants but must not be given an unfair competitive advantage. If through a carbon offset market or otherwise there was a "bounty" on inefficiency that any party could claim if they made the investments to reduce energy use, then utilities and other parties would have a business incentive to find and harvest inefficiency. With a bounty, those with the least cost approach to harvesting these inefficiencies should emerge on a level playing field. This would keep the cost of carbon as low as possible and mitigate the energy price increases. But it is critical that the playing field is level.

7. What can we do to provide regulatory incentives for businesses and customers to act to reduce their own use of electricity and adopt smart grid technologies? Much has been done in the competitive markets that exist in the United States to address these issues but more can be done. Education about efficiency and costs savings can go a long way towards empowering consumers to make smart decisions about use and conservation.

8. What can we do to encourage electric utilities to conserve energy by operating more efficiently? If utilities are required to hold emissions allowances that reflect their baseline performance, then the system should encourage the utilities to make improvements in their own generation efficiency or in their other operations so that they then have unneeded allowances that they can sell. Also, utilities should be held financially accountable for building their own power generation in situations where independent power producers are able to build cheaper and more efficiently.

9. Moving to a smart grid will be very expensive and take time, what are the first steps we should take in developing a smart grid? We should first learn from the steps that have been taken already by companies like Walmart to use information technology to monitor and improve energy performance. We don't claim to have

the answers as to how policy should be written to enable the smart grid, but demonstrations using government subsidies is a sound first step.

10. Your testimony focuses primarily on energy efficiency initiatives that Wal-Mart is pursuing. Can you explain how a smart grid would influence these projects? Currently we embrace these projects in the absence of a truly smart grid because they make sense from an efficiency, environmental and financial standpoint. A properly designed smart grid can only make these projects more widespread and thus more cost effective, not only for Walmart, but for all electricity consumers.

11. What is your break-even time for a variety of your energy efficiency projects, such as the rooftop heating and air-conditioning units and the LED freezer lights? It varies depending on the initiative, however, for the most part we see retrofit projects achieving simple paybacks of 3 years or less. For new installations, paybacks are typically range from 5 to 6 years or less.

12. How have your economies of scale enabled the complex energy monitoring system? Do you think such a complicated system is feasible for firms that aren't as large as Wal-Mart? Does your energy monitoring capability easily translate to smaller firms? Although our system is sophisticated, it is far from complex. In fact there are new technologies available today that are much more advanced than those that we currently employ. With regard to scale, other than the ability to negotiate lower costs, it has very little to do with the actual viability of the system. I believe that even an organization with only 10 locations could benefit from being able to monitor and control those locations from one central point.

13. Have the current economic conditions affected your ability to secure financing for these capital projects? How do you prioritize energy efficiency projects compared to other capital projects, such as continuing to invest in your supply networks? As a general rule, we invest our capital in those initiatives which have the highest return. Given the paybacks mentioned in a previous answer, there has been no

slow down in our pursuit of these initiatives. In fact, there is a more intense focus to find similar initiatives, given the proven returns. These projects are basically self-financed.

14. In your testimony, you note Wal-Mart's goal of being supplied by 100% renewable energy. How much of your existing energy is generated by renewable sources? What steps must be achieved in order to meet this goal? How does Wal-Mart plan to overcome the intermittency issues? Our goal to be supplied by 100% renewable energy is obviously ambitious and clearly aspirational. And although we've made great progress, our work in this area is really just beginning. However, we're off to a great start: We have agreements for solar power to supply well over 20 stores in California and Hawaii, a commitment we recently doubled; last year we announced a wind energy agreement in Texas that will supply nearly 360 stores with 15% of the electricity they need on an annual basis; and we're experimenting with diesel-hybrid technology to help increase the efficiency of our trucking fleet.

15. Did you seek Federal assistance to implement the efficiency upgrades in your store? Not to my knowledge. Does Wal-Mart believe these changes and upgrades have been cost effective? Absolutely, that is why we continue to implement over 1,000 such projects in the U.S. alone this year, and thousands more around the world.

16. Is it necessary to spend taxpayer's money to encourage technologies that are already market viable? It really depends on the technology and the size of the company looking to adapt a given technology. What may be viable for Walmart, may not be viable for another company. It also depends on the desire of policy makers to see certain efficiency performance metrics achieved. Just because a technology may be "market viable" does not mean that it will be widely adopted and this is where public policy can play a helpful role.

17. What impediments exist that prevent other companies from following Wal-Mart's lead in efficiency upgrades? The most common issue that I hear from my peers in the industry is the issue of increased first cost. All of these initiatives cost more on the front end. Fortunately, Walmart analyzes their decisions on an internal rate of return model rather than a first cost model. Companies need to further explore the options available to them and really analyze the phenomenal paybacks associated with these initiatives. For those who do not have the capital readily available, there are companies who specialize in doing these retrofits and sharing in the savings as a part of their fee.