

Fact Sheet on US Department of Energy's Proposed National Energy Efficiency Standards for Battery Chargers and External Power Supplies



Contact: Pierre Delforge, Sr. Engineer
Natural Resources Defense Council; pdelforge@nrdc.org; 415-875-6100

Summary: The US Department of Energy (DOE) is in the process of finalizing minimum efficiency standards for external power supplies (EPSs) and battery chargers (BCs) for consumer products sold in the U.S. Approximately **800 million such devices are sold in the US every year**, ranging from power adapters, to mobile and cordless phones, power tools and golf carts. Improved national standards for EPSs and BCs would save American consumers as much as **\$1 billion annually** and save the amount of electricity produced by **4 medium-size (500 MW) power plants** compared to the current market. Unfortunately, for most battery chargers, DOE's proposed standards are significantly weaker than California's existing standards due to the Department's flawed cost-effectiveness analysis. The weak federal standards for key categories of battery chargers would sacrifice about **40 percent** of the total potential cost effective savings (i.e. **\$400 million** in annual utility bill savings). NRDC urges DOE to correct its analysis and adopt national battery charger standards that are at least as strong as California's to maximize the economic and environmental savings of avoided electricity waste in these devices.

Big Benefits to the Environment, and to Consumers' Wallets

The products and gadgets that help make our lives productive and fun are increasingly using rechargeable batteries and their associated charging systems as well as external power supplies (or adapters). Unfortunately, many of the battery-powered devices and power adapters sold in the U.S. today still use inefficient and outdated charging systems and transformers, wasting much of the energy they use. More efficient charging systems and adapters can be produced using inexpensive off-the-shelf technology.

What Types of Products Are Covered? – The standards will cover small and large consumer products that are powered by a rechargeable battery, as well as the external power adapters that power most electronic products. Covered battery chargers include those used in mobile and cordless phones, notebook computers and MP3 players, personal care products, power tools, auto/marine/RV chargers, off-road vehicles such as golf carts and others.

Why Do We Need National Standards? – Many of today's rechargeable products use a lot more electricity than what is actually needed to recharge their batteries. Typical issues include inefficient adapters that waste up to a third of the charge energy, and chargers that continue to charge when the battery is full. On average, twice as much energy is dissipated as waste heat as is actually stored in the battery. The standards will help ensure that the charging systems used in new products sold in the U.S. charge efficiently and stop charging once the batteries are full.

Aren't Existing Standards Sufficient? – The existing national efficiency standards for external power supplies do not cover a number of applications including motor-operated and detachable battery applications. For power supplies that are already covered, the standards are out-of-date because new technology can cost-effectively achieve significantly higher efficiency levels. For battery chargers, the standards recently established by California only cover battery charger products sold in California. Strong national standards are necessary in order to capture energy and consumer cost saving opportunities in

these products nationwide and to avoid undoing the energy savings that will result from the existing California standards after preemption.

How Do DOE's Proposed Standards Compare With California's? – Unfortunately, DOE's proposed battery charger standards are significantly weaker than California's standards for most battery chargers. These include 75 percent of battery charger products sold in the US (e.g., phones, cameras, notebook computers, and power tools). Overall, DOE's proposal would result in a **loss of more than 40 percent** of energy and cost savings for battery chargers compared to California's standards. DOE's proposal would reduce US consumers' potential savings by an estimated **\$400 million annually** compared to national adoption of the California standards.

Does That Mean DOE's Proposed Standards Risk *Increasing* National Electricity Use? Yes. Because California is a big market and at least a few other states may copy the California standards, it is very likely that many manufacturers will choose to comply on a national basis rather than maintain separate product lines for different markets resulting in *de facto* national standards. DOE's standards will preempt all state standards. As a result, DOE needs to adopt standards at least as strong as California's to ensure they don't *increase* national energy use compared to doing nothing.

Why Are DOE's Proposed Battery Charger Standards Weaker than California's? – DOE vastly overestimated the costs of meeting California's standards, and as a result did not find them to be cost-effective in several product categories. DOE's inflated cost estimates are due to a mix of outright errors, such as apparent mix-ups of components, and methodology issues. DOE's tear-down methodology fails to identify the designs that can meet higher standards cost-effectively. For example, many of the units that DOE selected as "representative" do not use the most cost-effective designs to achieve the target efficiency levels, or include additional features which are unrelated to efficiency but are included in the cost of higher efficiency. In addition, DOE collected cost data more than 2 years ago and did not account for the sharp decline in the cost of efficient technology to date, nor did they incorporate further declines projected to occur before the effective date of the standards.

How Can DOE's Proposed Standards Be Improved? – DOE should revise its analysis by performing the following:

1. Correct the data and calculation errors identified in stakeholder comments;
2. Update the representative units to include the most cost-effective designs available on the market;
3. Isolate the cost of efficiency improvements from the cost of unrelated functionality and utility changes between units; and,
4. Update the cost estimates to reflect at a minimum the current cost of high efficiency technology, and even better, a reasonable projection of costs by the effective date.

What Are the Environmental Benefits? – National standards for EPSs and BCs set at the levels recommended by NRDC and other efficiency advocates would save an additional 4,000 GWh annually compared to DOE's current proposal, which is equivalent to the amount of electricity consumed annually by all the households in Detroit, the eleventh largest city in the U.S.

What Are the Economic Benefits? – The stronger standards we recommend would save American consumers an additional \$400 million annually in reduced electricity bills compared to DOE's current proposal, and approximately \$1 billion annually compared to the current market.

In Conclusion – NRDC urges DOE to review its assumptions and analyses, particularly its cost estimates and to reassess the cost effectiveness of the levels proposed by other efficiency advocates so that greater consumer, economic, and environmental benefits can be realized.