UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
AIR AND RADIATION

Milton Brown
Office of the Chief Counsel
National Telecommunications and Information Administration
1401 Constitution Avenue
Room 4713
Washington, DC 20230

September 25, 2006

Dear Mr. Brown:

On behalf of the U.S. Environmental Protection Agency's ENERGY STAR® program, I respectfully submit comments to the National Telecommunications and Information Administration's (NTIA) rulemaking for the implementation and administration of a coupon program for digital-to-analog (DTA) converter boxes, as described in the July 25, 2006 Federal Register. This memorandum addresses NTIA's request for comments on the inclusion of energy efficiency requirements for those converter boxes eligible for the $40 rebate coupon. EPA strongly supports the inclusion of an efficiency requirement in NTIA's converter box coupon program.

ENERGY STAR Background
ENERGY STAR is a government-backed program that is helping businesses and consumers protect the environment through superior energy efficiency. Products that earn the ENERGY STAR use less energy, with no sacrifice in performance, and prevent greenhouse gas emissions by meeting strict energy efficiency guidelines set by the U.S. Environmental Protection Agency and the Department of Energy. Today, nationwide consumer recognition of the ENERGY STAR mark exceeds 60%. In 2005, ENERGY STAR saved U.S. consumers over 150 billion kWh of electricity, or $12 billion in energy costs. Greenhouse gases equivalent to taking 23 million cars off the road were prevented from entering the atmosphere as a result of the ENERGY STAR program.

There are currently more than 50 different product categories that are eligible to earn the ENERGY STAR. These include products within the broad categories of consumer electronics, office equipment, appliances, heating and cooling equipment, and more. Over 1,500 manufacturing companies have joined ENERGY STAR as partners, labeling more than 35,000 product models. The program also has over 800 retail partners, with more than 21,000 storefronts.

Below, we have provided information on: the substantial economic and environmental benefits to be gained from tying the $40 coupon to energy-efficient converter boxes; the ongoing work being conducted by EPA to develop an ENERGY STAR specification for converter boxes; and, an approach whereby NTIA can work with EPA to factor energy efficiency into the final requirements for those converter boxes eligible for the $40 coupon.

Economic and Environmental Benefits of Energy-Efficient Converter Boxes
An examination of converter box expected sales, duty cycles, and potential cost and energy use with and without incentives for energy efficiency, highlights the importance of including an efficiency requirement in the NTIA coupon program

Estimated National Sales of DTAs: According to estimates from the Consumer Electronics Association (CEA), as many as 22 million converter boxes could be purchased leading up to and immediately following the transition to all-digital broadcasting. The anticipated large scale manufacture and sale of DTAs presents a unique opportunity to take steps **now** to ensure these new devices are as energy-efficient and cost-effective as possible.

Duty Cycles: Estimates show that the typical U.S. consumer watches broadcast TV for a daily average of anywhere from 4 – 6 hours. While the TV is off for the remaining 18 – 20 hours, the converter box may not necessarily be turned off. Depending on consumer behavior and product design, the converter box may be left on the entire day and only enter standby mode if the user physically turns it off by pushing a button on the front of the product or using a remote control. However, unlike a television where it is easy to recognize that the product is on or off, this distinction is not so simple with a converter box.

Estimated Energy Use of Converter Boxes: Based on the power consumption of converter boxes available in international markets, the American Council for an Energy Efficient Economy (ACEEE) has estimated that if left unchecked, on mode power consumption could be as much as 17 watts and standby mode as much as 8 watts for converter boxes introduced to the U.S. market. Assuming the boxes are left on continuously, the estimated annual power consumption of a converter box would be 149 kWh/year. This means consumers would have to spend about $15 a year to power their converter boxes, or $75 over the anticipated 5-year lifetime of the product. **With an expected 22 million converter boxes entering U.S. homes, these products would consume about 3.28 billion kWh/year and cost $330 million a year to operate.**

Power Down Capabilities: As briefly described above, many converter boxes may never enter standby mode on their own. One way to address this issue is to include an 'auto power down' feature as part of the efficiency requirements for converter boxes, and mandate that products be shipped with the feature enabled. The 'auto power down' would operate similarly to power management features in computers, and would require the converter box to enter standby mode after a certain pre-set number of hours of user inactivity (e.g., no channel changes being made). Consumers would have the option to over-ride this feature by (i) means of a warning message being displayed on the television stating that the converter box would enter standby mode in 10 minutes if no user action was taken, or (ii) turning it off temporarily if the consumer wanted to set a program to record automatically at some point in the future.

Savings Potential of Energy Efficiency Features:
Dramatic energy and monetary savings could be realized by a combination of efficiency-minded tactics. As an example, power consumption levels of 8 watts in on mode and 1 watt in standby mode and an 'auto power down' feature after 4 hours of user inactivity would yield annual savings of 2.58 billion kWh/year – or approximately $258 million. The annual carbon savings would be equal to removing more than 351,000 cars from the road. **These savings represent an almost 80% reduction in energy costs and energy used from a scenario where boxes use 17 watts in on mode, 8 watts in standby mode and do not automatically power down.**

These calculations assume the average television and converter box are on for 5 hours each day, and require 4 hours before the 'auto power down' feature pushes the converter box into standby mode, thus the product would be in on mode for 9 hours/day and in standby mode for 15 hours/day. These calculations also estimate the use of 22 million boxes in the U.S.

Development of an ENERGY STAR Specification for Converter Boxes
Given the substantial energy and monetary savings to be gained from encouraging the manufacture and sale of energy-efficient converter boxes in the U.S., EPA is developing an ENERGY STAR specification for these products. The exact efficiency requirements for the specification have not yet been determined, but in light of the above information, EPA expects to propose efficiency requirements that help realize efficiency in all operational modes. EPA is aiming to distribute a Draft 1 specification to stakeholders for review and comment by the end of September.

EPA anticipates establishing performance requirements for converter boxes eligible to earn the ENERGY STAR mark that mirror requirements set by NTIA. EPA intends to finalize the converter box specification

late in 2006 and have it take effect immediately, so manufacturers have time to incorporate ENERGY STAR requirements into their design specs for converter boxes intended for sale in the U.S. For more information on the ENERGY STAR specification development process for converter boxes, please go to: http://www.energystar.gov/index.cfm?c=new_specs.digital_tv_adapters.

Adding Energy Efficiency to Converter Box Requirements for Coupon Eligibility
As with other ENERGY STAR product categories, EPA will maintain a list of qualified products on its Web site, which will be updated on a monthly basis. If NTIA required that converter boxes meet ENERGY STAR requirements in order to be eligible for the $40 coupon, they could simply point consumers and retailers to the ENERGY STAR Web site for a list of eligible products. As mentioned earlier, the ENERGY STAR mark also has high nationwide recognition – due in no small measure to the consumer education campaigns that have been in place for many years to educate the U.S. public about the program. NTIA would be able to benefit from this high recognition, simply telling consumers to "look for the ENERGY STAR mark" to identify products eligible for the $40 coupon.

At this time of rising energy costs, identifying ways to reduce utility bills is more important than ever. Consumer electronics represent an ever growing slice of household electric bills. Improving the efficiency of DTAs with ENERGY STAR is a meaningful way to stem the tide of rising costs without any sacrifice to consumer satisfaction. ENERGY STAR has experience in developing efficiency specifications for a wide range of consumer electronic products and a standing relationship with manufacturers of consumer electronics. If NTIA aligns with the ENERGY STAR program, U.S. consumers that purchase a converter box following the transition to all-digital broadcasting will be ensured a high-quality, high-efficiency product that will save them money on their utility bills while continuing to provide them with over-the-air TV broadcasts. I would be pleased to discuss our program and ways ENERGY STAR can support NTIA's work, in greater detail with you. Please feel free to contact me at 202-343-9120 or osdoba.katharine@epa.gov with any questions or comments. EPA looks forward to working with NTIA to develop a standard that best serves the U.S. public.

Respectfully,

Katharine Kaplan Osdoba, EPA Product Manager
ENERGY STAR for Consumer Electronics