NATURAL RESOURCES DEFENSE COUNCIL

# NRDC Comments on

Proposed Revisions to the ENERGY STAR Program Requirements for STB Manufacturers and Service Providers of July 7, 2010

## Submitted by:

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On behalf of the Natural Resources Defense Council (NRDC) and our more than 1.2 million members and on-line activists, we respectfully submit these comments on EPA's proposed revisions to the ENERGY STAR Program Requirements for Set-Top Boxes (STB) manufacturers and service providers presented at the July 7, 2010 stakeholder conference call.

A recent field study[1] shows that set-top boxes are the third largest electronic plug load in American homes, after only TVs and desktop computers. In fact, the annual energy use of current full featured STBs may be higher than the television set that they are providing content to, in large part due to the unnecessarily high power use in Sleep mode.

After over five years of efforts on Set-Top Boxes by the Energy Star Program, NRDC remains concerned with the slow pace of progress toward achieving market transformation for STBs, in part due to the very high power draw during periods of extended user inactivity.

Current development in the TV market such as the emergence of IP-enabled TVs and the draft National Broadband Plan offer promising opportunities to transform the architecture of the multimedia delivery ecosystem in the home and dramatically increase its energy efficiency. We look forward to working with EPA to help capture this opportunity.

[1] Electricity Savings Opportunities for Home Electronics and Other Plug-In Devices in Minnesota Homes, by the Energy Center of Wisconsin, May 2010

## Purchase/Fleet Requirements

NRDC supports the proposed new Service Provider pro-rated purchase requirement (Option 1), which we think will effectively incentivize new Service Providers to partner with ENERGY STAR.

## Power Management

Most STBs are on 24x7. Few have Auto Power Down (APD) functionality, and Sleep mode – whether automatically or user-activated – draws virtually the same amount of power as Active mode. This results in a situation where up to two thirds of STB energy use occurs when the user is neither viewing nor recording programs with the STB, per NRDC estimates.

This also presents a major opportunity to reduce energy waste by auto powering down STBs to a very low-power state. European STB OEMs now have 1W standby, and are working on integrating this capability with APD.

NRDC supports EPA's proposal to encourage Service Providers to deploy products with capability for advanced energy efficiency by granting them a 50% credit towards annual purchase/fleet requirements.

However we are concerned that approval based on "review on a case-by-case basis" may not provide OEMs and Service Providers with the certainty they need to make the investments required to implement effective energy efficiency in their products. We suggest that EPA set a firm deep sleep requirement of 2W or less for at least 4 hours per day and verify this in the field with appropriate and sufficient testing and verification procedures. EPA could in addition leave the door open to other capabilities to be reviewed on a case-by-case basis, in order to encourage other innovations that may not fit in this predefined criterion.

While a 2W for 4 hours requirement would be a first step in the right direction, it falls far short from the potential for deep sleep operation. NRDC proposes that future revisions of this requirement drive STBs to maximize time spent in low-power mode, and limit Active mode to a maximum of **1 hour per day beyond viewing and recording time**. This would include program guide updates and software downloads, but exclude speculative recording and update installations.

Program guide updates and download of software updates can happen in parallel with normal viewing and recording and should not require additional On time. Installations of software updates and speculative recording may require additional On time, but should be implemented in such a way that the STB auto-powers down as soon as these activities complete.

STBs have a very similar architecture to computers, and therefore ought to be able to implement Wake-on-LAN from 2W deep sleep as computers can.

## Testing, Qualification and Labeling

The EPA proposes that product testing, submission, labeling and reporting for leased STBs whose energy performance is independent of configuration/usage may be performed by either the OEM or the Service Provider.

While NRDC supports this principle, it raises two practical concerns:

1. What is the process to determine that the energy performance of certain STB models is truly independent of configuration/usage?
2. In the case of independent STBs, how do we ensure a clear and easy way to enforce accountability? If some STB are found not to comply with the Energy Star requirements, how will the EPA enforce accountability for non-compliance?

NRDC encourages the EPA to clarify these two points in order to ensure the credibility and strength of the program.

## Energy Efficiency Criteria

Given the following:

- Viewers are moving towards multi-room solutions that let them watch what they want, when then want from any room,
- There are multi-room solutions in Europe (e.g. Tele2 IPTV 160GB HD-DVR: 9.5W On, 8.5W Sleep) that use significantly less energy than even ENERGY STAR qualified solutions in the U.S.,
- Interactive TV (TVs that can interact directly with the internet), which has the technical potential to act as a client to the multi-room DVR, is experiencing rapid market penetration,

ENERGY STAR should set expectations with stakeholders that future versions of the specification may:

- Group all land-line-based Pay TV solutions (i.e. Cable and Telco) as a single category with a single base functionality TEC level. This would encourage cable operators to accelerate adoption of best-in-class energy performance such as IPTV. Cable and IPTV offer similar service and therefore need to be treated as a single functional category. Satellite technology offers the additional service of providing access in locations with no cable infrastructure, which justifies that it be managed as a separate category.
- For all technologies, including cable, IPTV and satellite, continue to transition towards multi-room architectures with low-power thin clients.
- Reward multi-room solutions that have the ability to stream to interactive TVs, PCs, optical disk players and other IP-based video display devices with the objective of reducing the number of client STBs.

Furthermore, NRDC has observed that some STBs provide the ability to view and change channels during boot-up time. ENERGY STAR may want to signal in the discussion of advanced

energy efficiency features that efforts to achieve a customer-acceptable experience during resume from deep sleep (1 or 2 Watt depending on presence of info display per EU Eco-Design requirement) will be rewarded. Factors that might improve the resume experience include:

a) the ability to view any channel,
b) some indication, perhaps as an overlay, of when other features will become available.

## Conclusion

We appreciate the opportunity to provide comments on the proposed revisions to the ENERGY STAR Program Requirements for STB manufacturers and service providers

If you have any questions, please feel free to contact Pierre Delforge (415-875-6100, pdelforge@nrdc.org) or Pierre Bull (212-727-4606, pbull@nrdc.org).

Sincerely,

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