

**Before the
Federal Communications Commission
Washington, D.C.**

In the Matter of)	
)	
Expanding Consumers' Video Navigation Choices)	MB Docket No. 16-42
)	CS Docket No. 97-80
)	
Commercial Availability of Navigation Devices)	

Comments on the FCC Proposal on Set-top Boxes by the Natural Resources Defense Council

**Submitted by Noah Horowitz
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April 13, 2016

On behalf of the Natural Resources Defense Council (NRDC), a leading US based advocacy group dedicated to protecting public health and the environment, and its more than 2 million members and online activists, we respectfully submit comments in response to the Federal Communications Commission's (FCC's) Public Notice that invited input on its Notice of Proposed Rulemaking (NOPR) regarding set-top boxes.

Our interest in this rulemaking is the energy consumed by set top boxes (STBs) and the pollution that is caused by the electricity they consume. NRDC performed a [comprehensive study](#) on STB energy use and found that in 2010 STBs in the United States consumed approximately 27 billion kilowatt-hours of electricity, which is equivalent to the annual output of nine average (500 MW) coal-fired power plants. The electricity required to operate all U.S. STBs in 2010 is equal to the annual household electricity consumption of the entire state of Maryland, results in 16 million metric tons of carbon dioxide (CO2) emissions, and costs households more than \$3 billion each year. Our study generated a lot of media attention and served as a catalyst for the service providers and set top box manufacturers to reduce the energy consumed by their products. Much progress has been made to date to bring this down and various efforts, which are described below, are underway to further reduce the amount of energy used throughout the home to deliver pay TV services.

While we do not have knowledge of all the details of this proceeding, it appears to us that the FCC did not take into account the energy use and environmental implications of its proposal. As the industry is on track to significantly bring down the energy use and operating costs of the STBs it deploys to deliver customer access to pay TV services, we encourage the FCC to carefully review its proposal and to consider making modifications to its proposal that may be needed to remove barriers it may be creating that could prevent attainment of these energy reductions.

We also want to point out that NRDC shares the FCC's goal of increasing consumer STB choices and direct access to pay TV services and believes this can be accomplished in a way that also minimizes the energy used to access video content. Allowing energy efficient solutions to be implemented could save consumers more than a billion dollars per year and prevent millions of tons of CO2 emissions from power plants.

Below we provide further details on the potential energy implications of the FCC proposal as well as some additional background on the pay TV industry's efforts to reduce STB energy use.

1. We urge the FCC to clarify/amend its proposal so that it: a) allows "boxless" or apps based solutions for receiving pay TV service to move forward, and b) does not require in some circumstances the introduction of a new box in the home that resides between the incoming content from the service provider and third party devices such as Apple TV, Google Chromecast, Roku devices and other similar products.

Over the past two years, significant advances have been made by the industry to reengineer the way customers access video content from their service providers. Most notably Time Warner cable is introducing an "apps" based solution whereby consumers receive their pay TV content directly on their smart TV without the need for a traditional set top box. (We expect other service providers to bring similar offerings to the market and to also incorporate DVR functionality whereby customers can perform time shifting and view a broadcasted show at a later time.) If the consumer does not have a TV that can be directly hooked up to the internet, consumers can purchase an inexpensive over the top (OTT) streaming box offered by Apple, Roku, Amazon and Google. These OTT boxes use much less energy than the STBs offered by the service providers. An Apple TV for example only uses 2.5 W to deliver pay TV content to a TV or secondary device such as a tablet, whereas a set top box, depending on its vintage and features consumes anywhere from 8 to 30 Watts. In addition, the Apple TV consumes a few tenths of a watt when not in use, whereas current set top boxes from service providers continue to use almost the same amount of power even when they are not in use or appear to be "off".

In reading through the proposal it appeared that these type of emerging consumer and environmentally friendly solutions might be prohibited or restricted in the future by the FCC proposal.

In addition, it appeared that in some cases, the service provider might be required to install a new type of set top box that would essentially disaggregate the incoming content for use by third party companies who would then rebundle this content for their customer's use. We encourage FCC to provide further guidance on whether this is the case and if so to try to quantify the capabilities and corresponding energy use of such devices. If these new STB consume energy levels similar to basic STBs that have been deployed, then we are looking at adding 100 kWh/yr. or more to the consumer's electric bill, which translates to roughly \$60 or more over an assumed five year lifetime of the new box. The energy and environmental costs of such an additional box will really add up if a large percentage of the 90 million homes that subscribe to pay TV services are affected.

2. A Voluntary Agreement was created and signed by the pay TV service providers, set top box manufacturers and leading environmental and energy efficiency advocates, including NRDC, to bring down the energy use of new set top boxes installed after January 1, 2014. FCC should evaluate its proposal and make modifications where possible to allow these energy savings efforts to proceed.

The NRDC report and subsequent media coverage served as a catalyst for the service providers and their equipment suppliers to pay more attention to the energy consumed by the STBs being placed in consumer's homes. In December 2013, a Voluntary Agreement was signed that committed the service providers to improve the energy efficiency of the new STBs they install in customer's homes. The [VA required the industry](#) to improve set-top box efficiency by 10 to 45 percent (depending on box type) by 2017, and these changes are expected to save more than \$1 billion on consumer energy bills annually once the existing stock of STBs are replaced with the more efficient ones.

The VA requires service providers to make publicly available the energy use of their new STBs, to procure new models that meet the energy levels similar to the latest version of the EPA's ENERGY STAR specification for STBs, and requires service providers to offer whole home solutions based on a multi room DVR and eliminate the need to install a DVR, many of which consume 250 or more kWh/yr. on all the TVs in a home. Instead the second and third TV can have a STB that only draws around 100 kWh/yr. or a thin client that can draw half that amount, while still providing consumers the ability to access both live and recorded on any of the TVs in the home. And perhaps most importantly the VA requires cable service providers to develop and test in the field prototype STBs that offer low power deep sleep and quick resume capabilities. These trials are underway and we expect these new designs to cut household STB energy use by more than 50% for those homes with multiple TVs.

We encourage the FCC to review the VA and to evaluate whether its proposal would interfere with the efficiency improvements that are being implemented.

3. Consumers currently have very little choice in the STB that their service providers currently installs and the FCC proposal should greatly expand consumer choices and allow them to shop for more energy efficient options.

The current service provider–customer relationship leaves consumers with little to no choice in the STB that gets installed in their home as part of their service. In short, the customer's choice is essentially:

- 1) Do you pick service from cable, satellite or a telco;
- 2) Do you want service on one or more TVs; and
- 3) Do you want a DVR so you can record and playback shows? The consumer then essentially gets whatever box is on the installer's truck that day.

A successful FCC proposal would allow consumers the ability to purchase a STB at retail and to consider the STB's energy use and operating cost as part of their decision making process. Those consumers that have a smart TV or a streaming device might decide that they are

comfortable with one of the emerging “apps” based solutions to access content from the service provider. As we stated earlier we encourage FCC to allow these type of “boxless” options to remain a viable option.

Dated: April 13, 2016

Respectfully submitted,

A handwritten signature in black ink that reads "Noah Horowitz". The signature is written in a cursive style with a horizontal line underneath the name.

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