



## FEASIBILITY ASSESSMENT OF CANADIAN ENERGY STAR SET-TOP BOX PROMOTION PROGRAM



### *–Executive Summary–*

*[Marbek Project 29003]*

*Submitted to:*  
**BC Hydro**  
*and the*  
**Canadian Set-top Box Initiative Working Group**

*Submitted by:*  
**Marbek Resources Consultants**  
*in association with:*  
**Ecos Consulting**



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Natural Resources  
Canada



# EXECUTIVE SUMMARY

## INTRODUCTION

With the rapidly changing Canadian TV broadcasting market, service providers and customers are increasingly switching to digital TV, delivered through cable, satellite, and internet TV (IPTV) subscriptions. The federal government and major Canadian utilities are concerned, however, about the 150-500 kWh/yr of electricity required to operate the associated set-top boxes (STBs) at subscribers' premises, with higher-end models consuming as much energy per unit as a modern refrigerator.

Marbek Resource Consultants and Ecos Consulting were commissioned to assess the feasibility of an ENERGY STAR promotion program to accelerate the market uptake of ENERGY STAR-qualified STBs. This included establishing relationships with the Canadian supply chain, investigating their business cases for deploying ENERGY STAR STBs, exploring ways to overcome deployment barriers, and estimating the resulting potential energy savings.

## ENERGY STAR FOR STBS

The ENERGY STAR program provides a voluntary endorsement label for qualified energy-efficient products. The latest ENERGY STAR specification (v2) for set-top boxes is implemented in two tiers, effective January 1, 2009 and 2011, respectively in Canada. Each tier outlines *technical requirements for the boxes* (e.g., active and sleep mode power requirements) and "*Partner*" requirements for service providers (e.g., purchase and fleet requirements). Tier 1 requires STBs to reduce their electricity consumption from 150-500 kWh/yr to 85-275 kWh/yr (depending on the type of model). Tier 2 requires a further reduction to 75-140 kWh/yr.

Tier 1 appears to be achievable at little to no incremental cost and compliant units may ship in 2009. Tier 2 may not be technically or financially feasible for cable and satellite networks under the current Tier 2 timeline, due to communication and sleep mode limitations. The uncertainty about the achievability of Tier 2 and confusion about the transition provisions from Tier 1 to Tier 2 appear to be acting as a barrier for some manufacturers.

## CANADIAN MARKET FOR STBS

Canadian service providers rely on manufacturers (mainly in the U.S.) to supply the STBs. These, in turn, are sold or rented to the customers. Service providers have limited flexibility to change manufacturers in the short term but have more flexibility over the medium and long term. The major Canadian digital TV service providers are: *Shaw, Rogers, Cogeco*, and *Videotron* (all cable); *Star Choice* and *Bell TV* (both satellite); and *TelusTV, SaskTel Max, MTS TV, JumpTV/NeuLion*, and *Aliant TV* (all IPTV). Shaw, Rogers, Star Choice, and Bell shared just under 75% of the market in 2008. Service provider interest in ENERGY STAR is generally very high, but variable.

## **CANADIAN STB STOCK & ENERGY USE**

The Canadian STB stock is expected to increase from 10.7 million units in 2008 to near 16 million by 2010 and 23 million by 2012. In the absence of ENERGY STAR STBs, this would lead to an increase in total electricity consumption from 1.9 TWh/yr in 2008 to 5.2 TWh/yr in 2014. There is a window of opportunity until 2012 to capture 4.4 million new customers switching from analog to digital TV.

Given levels of interest from manufacturers and service providers and the potential to generate greater awareness among consumers, it should be feasible for an ENERGY STAR promotion program to accelerate natural adoption in order to achieve significant penetration of Tier 1 units prior to January 1, 2011 and Tier 2 units after that. These targets could reduce gross electricity use by half by 2014.

## **PROGRAM OPTIONS & RECOMMENDATIONS**

A potential Canadian ENERGY STAR STB promotion program could include:

- *Facilitation and capacity building*, including assistance developing business cases; sharing information on customer awareness and interest; education on energy issues and implications; organization of bilateral and multilateral meetings on opportunities and barriers; and helping service providers solve availability issues.
- *Research and marketing*, including further research; market studies on consumer interest; and advice on how to promote ENERGY STAR products. Beyond the value of the marketing, the endorsement of utilities and governments would be valuable in itself.
- *Financial incentives* to offset the higher costs of ENERGY STAR models, potentially for higher-end Tier 1 models and for all Tier 2 models.

The recommendation is to proceed with a program that combines facilitation and marketing assistance, including the following initial steps:

- Plan, organize and facilitate a Canadian Set-top Box Workshop to present results of this initial research, facilitate discussions and invite service provider participation.
- Further investigate barriers (e.g. uncertainty in transition from Tier 1 to Tier 2)
- Further investigate opportunities to involve service providers and utilities in the U.S.