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Consumer Electronics Television Initiative Market Progress Evaluation Report # 1

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EXECUTIVE SUMMARY

This report summarizes the results of the first Market Progress Evaluation Report (MPER) of the Consumer Electronics Television Initiative implemented by the Northwest Energy Efficiency Alliance (NEEA). This MPER not only provides the first insight into the progress of this initiative with a specific focus on 2010, but also reviews select information from as far back as the initiation of the program in 2009. The report additionally provides recommendations for future program years.

Program Description and Theory of Transformation

NEEA launched the Consumer Electronics Television Initiative ("Initiative") in September of 2009 in order to capture energy savings in the consumer electronics market in the Northwest. The design of this Initiative is based on the Business and Consumer Electronics (BCE) program implemented by California utilities and is intended to achieve energy savings by accelerating the adoption of more energy-efficient televisions in the Northwest. The Initiative provides incentives to retailers for the sale of energy-efficient consumer electronics products in an effort to encourage increased stocking of energy-efficient products at the retail level, thereby leading to increased sales of these energy-efficient products to consumers. Through the Initiative, NEEA also provides in-store retailer training and marketing tools for retailers to promote more energy-efficient televisions. NEEA works closely with other BCE programs to strengthen product qualification criteria, harmonize program elements, and to increase the collective influence of utility energy efficiency programs on the electronics market. NEEA and its BCE partners are also contributing stakeholders to the U.S. EPA ENERGY STAR® program, working to enable more stringent energy efficiency specifications which are the basis for the Initiative qualification criteria.

The Initiative is primarily focused on large national retailers and therefore is able to cover over 80% of the market with only nine participating retail partners. These partners include six national retailers, two "buying groups" that purchase collectively for smaller independent stores, and one regional Northwest chain with locations concentrated in a single state. In order to stay ahead of the fast-moving market, NEEA increases the rigor of its qualification criteria on a yearly basis. The qualification criteria include different "Tiers" which are progressively more stringent in energy efficiency requirements and are based on the ENERGY STAR specifications and test procedures. In 2010, NEEA provided a two-level incentive structure with a lower incentive for ENERGY STAR 4 televisions and a higher incentive for ENERGY STAR 5 televisions.

Summary of Conclusions

The initial design of this initiative followed a very logical and rational market transformation program model. In order to transform the television market, NEEA and its BCE partners employed targeted financial incentives, a strategy that experienced reasonable success in other product markets. In this instance, however, external market forces were considerably different than in other markets. A closer look at the dynamics of the television market and changes experienced in recent years indicates that it may have been difficult for any program to influence this market significantly and that the Initiative may not be fully achieving the expected impact.

The television market has experienced tremendous shifts since January 2008, including a greater than 60% decline in power density through the end of 2010. This shift started before NEEA began its initiative. Although stakeholders indicate that the NEEA Initiative has helped to contribute to this shift,

the exact level of influence of the NEEA initiative among all the various factors influencing this market is very difficult, if not impossible, to identify or quantify.

Given the level of program activity, in a less dynamic market one might logically expect to see a dramatic market lift of energy-efficient units within the Northwest compared to other states. However, data made available for this evaluation do not indicate a clear or dramatic difference in the market share of energy-efficient units sold in the Northwest as a result of the program. Although the absence of a clearly identified and substantial market lift could result from inadequate data or measurement techniques, this absence brings into question the extent of the impact that program incentives are having upon retailer stocking patterns in the Northwest.

The specific aspects of the television market that limit both the influence and measurability of the Initiative program design on the Northwest market include:

1. The rapid degree of innovation in energy-efficient display technology, especially the current adoption of LED backlight technology;
2. The market shift of sales to large national retailers (including online retailers);
3. The annual product refresh cycle for televisions;
4. The strong influence of the federal ENERGY STAR program on manufacturers.

The pace of technology evolution for flat screen technologies has been very fast. Since the start of this initiative, consumers have continued to abandon older CRT-based televisions at a rapid pace in favor of flat screen technology. More recently, the combined effects of increased consumer demand, manufacturer response to the Version 5 ENERGY STAR specification levels, and price drops in LED technology have all enabled a shift toward more energy-efficient LED backlight models. These shifts have resulted in a substantially more energy-efficient product due to market forces outside of utility program incentives.

The second factor is the market shift in sales channels from small local retailers to large national retailers. The large national retailers that now make up well over 80% of the consumer retail market do not typically vary their product mix on a local or regional level. The result of this is that regional incentives mostly work to affect the national assortment of products of these retailers. NEEA incentives, acting in concert with incentives from other utilities across the country, including BCE partners in California and Nevada and utilities in other areas such as DTE Energy, National Grid, NYSERDA, Energy Efficiency Vermont, etc., help influence the product mix of these national retailers. However, it is difficult to parse out the effect of the NEEA Initiative from among all of these market forces. Based on interviews with retailers and manufacturers, the incentives are not considered to be a leading factor in discussions between national buyers and international sellers, but often serve as a "tie-breaker" between two similar products. Also, in order to increase cost effectiveness of these programs with economies of scale, the actual incentive dollars are given to retailer headquarters, which means the Initiative does not provide direct incentives to local retail locations to increase sales of energy-efficient televisions. Locally, the influence of the Initiative incentives is higher among smaller local and regional stores; however, these stores are difficult to reach in a cost effective manner and are only a small part of the market that is likely to continue to shrink in future years. However, this may create an opportunity for evaluation in future years.

A third factor, the annual product refresh cycle for televisions, creates a substantial barrier to the ability of utility programs to influence this market. Each spring, retailers discount the previous year's models heavily in order to clear inventory for the new models for the current year. The product assortment (or the particular mix of models the retailer will offer over the year) is often chosen in the summer or fall of the previous year and final orders are typically placed at or around the yearly Consumer Electronics Show

in January. Because of this yearly refresh, the increase in market share of new energy-efficient products happens rapidly over the course of roughly three months and then stays relatively static the rest of that year. For this reason, utility programs need to finalize incentive criteria and levels the previous summer in order to have an impact on the product assortment of retailers, or up to 18 months in advance in order to influence the designs of manufacturers.

The fourth factor is the strength of the U.S. Environmental Protection Agency (EPA) ENERGY STAR products branding effort. The EPA has been active in promoting energy efficiency in televisions since 1998, and began a new focus on active power consumption in 2005. Manufacturers indicated the importance of the ENERGY STAR brand and their desire to meet the specifications for as many of their products as possible. As the EPA has responded to the rapid changes in the market, they have continually increased the stringency in these specifications, which has driven down the unit energy consumption (UEC) of these products over time. While NEEA and the other BCE utility program sponsors have been very actively involved in supporting and attempting to influence the level of energy efficiency required by the specifications, the US EPA has been largely responsible for leading the negotiations with manufacturers to create the progressively more stringent specifications. In this context, it was not possible to discern NEEA's distinct contribution to more stringent specifications.

MPIs Covered in This Report

Based upon the revised logic model for this program, EMI identified a set of Market Progress Indicators to be assessed through this evaluation. Because the research priorities identified by NEEA for this first MPER for the Television Initiative focused on market actors and short-term outcomes, the MPI's reflect this priority. These indicators show that the market for televisions has shifted markedly over the past four years, with per-unit energy use declining significantly. NEEA qualification levels were typically more stringent than the ENERGY STAR specifications, but the direct impact of this stringency upon the change within the market cannot be quantified.

Key MPIs and related findings covered in this MPER include:

1. **Market share of Initiative-qualified televisions compared to the Natural Occurring Baseline Market Share (NOBMS).** The market share of all televisions that meet any tiers of the Initiative (equivalent to the market share of Tier 1) grew from 42% in 2009 to 78.7% in 2010. At the end of 2010, market shares were 88%, 83%, 23.8%, and 3.8% for Tiers 1, 2, 3, and 4, respectively. Because the development of the natural occurring baseline market share was not transparent, the NOBMS is not verifiable through this evaluation. Therefore, this evaluation did not result in an independently verified comparison of the market share of initiative-qualified televisions to a naturally occurring baseline.
2. **Market share of televisions that consume 108 Watts or less.** The market share percentage of all televisions consuming 108 watts or less grew from 27.5% in January 2010 to 52.8% in December 2010.
3. **Stringency of the Initiative specification levels compared to ENERGY STAR.** The evaluation found that, since program inception, the NEEA qualification levels were either equal to or more stringent than the ENERGY STAR specifications that were currently in place, depending on the time of year. The NEEA qualification levels were typically more stringent than those of ENRGY STAR at the start of the year, when they took effect. ENERGY STAR specification levels then became equal to NEEA qualification levels when new ENERGY STAR specifications took effect in the middle of the year. The NEEA qualification criteria for the higher incentive were always more stringent than ENERGY STAR.

4. **Quarterly reporting of initiative data.** The implementation contractors provided NEEA reports on the implementation and progress of the program on a quarterly basis - at a minimum - including monthly progress reports toward key goals and deliverables, and sales of initiative qualified televisions by zip code.

Strengths of the Initiative

This evaluation found several strengths of the Initiative, all of which have made a positive contribution to efforts to decrease the energy use of televisions. These include:

1. Use of incentives to gain credibility for NEEA and secure a "seat at the table" with retailers and manufacturers;
2. The collection of television market data that would not otherwise be possible;
3. Reinforcing the collective influence of financial incentives to retailers.

The financial incentives provided to retailers, and the fact that NEEA was "bringing money to the table," likely helped build the credibility of the organization among both retailers and manufacturers. This credibility then provided a foundation for engaging in dialogue with manufacturers, working with retailers on marketing campaigns, and encouraging the EPA to increase the stringency of equipment specifications.

A second strength of this initiative is the data collection processes and protocols that were implemented for the program. This includes both data purchased from NPD and data collected through contractual obligations with retailers. The availability of these data has enabled planners, evaluators and stakeholders to track the market much more closely that otherwise would have been possible. Absent such data, it would be very difficult to track this market in terms of energy efficiency or estimate the magnitude and timing of market shifts in energy-efficient televisions.

It is also apparent that the number of different utilities providing incentives to national retailers is sizeable enough to have some influence on national retailers, likely encouraging them to increase their assortment of energy-efficient televisions. At the very minimum, the presence of incentives acts as an important "tie-breaker" between traditional and more energy-efficient products that are otherwise similar. However, national retailers interviewed for this analysis were not able to indicate the quantitative effect of these collective incentives. In addition, even if retailers could reliably quantify the extent to which they were influenced by collective utility incentives, the effect of the NEEA Initiative specifically cannot be precisely determined uniquely from all other utilities with similar programs.

Recommendations

EMI developed six primary recommendations from this evaluation. These were:

1. **Update the Initiative program theory and logic model.** EMI recommends that NEEA review the core program theory and work to ensure that the logic model for this Initiative reflects the complexity of the market dynamics and the key critical paths towards energy savings.
2. **Revise Initiative MPIs and update ACE model assumptions.** EMI recommends that NEEA develop new MPIs that are mapped directly to the updated Initiative logic model. The evaluation efforts of this program will be enhanced by the development of MPIs that are linked more closely to the critical paths in the logic model.
3. **Improve the ACE model and baseline assumptions.** EMI recommends that NEEA improve the estimate of the market baseline and update the ACE model assumptions to better reflect the market and program logic. NEEA may want to consider evaluating the baseline and savings on

the average UEC of the television market, as this may be less challenging to forecast and track than the specific market share of each Initiative tier.

4. **Harmonize the timing of criteria revisions with ENERGY STAR.** EMI recommends that NEEA time new qualification criteria with new ENERGY STAR specifications taking effect. This step would ensure NEEA criteria are always more stringent than the ENERGY STAR specification and could help drive the market to higher levels of energy efficiency.
5. **Consider a codes and standards approach.** NEEA may want to consider focusing energy savings goals on the long-term development of television standards in Northwest states.
6. **Determine the applicability of evaluation findings to other products.** EMI recommends that NEEA not assume the results of this evaluation are fully applicable to other consumer electronics products, and perform product-specific research where needed to determine the effectiveness of this program theory to these other products.

1. INTRODUCTION

The NEEA Consumer Electronics Initiative ("Initiative") is intended to achieve energy savings by accelerating the adoption of more energy-efficient televisions, computers, and monitors in the Northwest. The Initiative provides incentives on the sale of energy-efficient products to consumer electronics retailers in an effort to increase the stocking of energy-efficient models at the retail level, which, in turn, should lead to greater sales of these products to consumers. Through the Initiative, NEEA also provides marketing tools for retailers to promote more energy-efficient televisions and provides in-store retailer training. NEEA works closely with other BCE programs to strengthen qualification criteria, harmonize program elements and to increase the collective influence of utility energy efficiency programs on the electronics market. NEEA and its BCE partners are also contributing stakeholders to the U.S. EPA ENERGY STAR® program to enable more stringent energy efficiency specifications which are the basis for the Initiative criteria.

1.1. Initiative Description

In 2008, Pacific Gas and Electric (PG&E) and Sacramento Municipal Utility District (SMUD) launched a joint Business and Consumer Electronics (BCE) pilot program to promote energy-efficient televisions, computers, and monitors. This mid-stream program provided incentives to consumer-electronics retailers in an effort to increase the stocking of energy-efficient products.

Early in 2009, NEEA decided to launch a complementary program in the Northwest based on the BCE program. Realizing that the consumer electronics market evolves rapidly, NEEA moved quickly to secure utility funding and begin negotiations with electronics retailers. By September, NEEA had signed contracts with retailers and had begun to pay incentives for the sale of energy-efficient televisions, computers, and monitors. In 2010, the Initiative was added to the NEEA portfolio of core programs for the 2010 – 2014 funding cycle. Later, San Diego Gas and Electric (SDG&E), Southern California Edison (SCE) and Nevada Energy joined the BCE program, expanding the market coverage of the affiliated programs to approximately 11% of the national market[1]. In addition, a number of other utilities and public benefit organizations, such as DTE Energy, National Grid, NYSERDA, National Grid, and Energy Efficiency Vermont, have similar retailer-focused television initiatives.

Initiative Qualification Criteria

Originally, the BCE program defined an energy-efficient television as one that used 15% less energy than the U.S. EPA ENERGY STAR Version 3 television specification. This qualification is known as "ENERGY STAR 3+15%", or simply "ES 3+15%". In the process of creating the Initiative, NEEA worked with other BCE sponsors to specify ENERGY STAR 3+30%, a more rigorous standard for energy-efficient televisions. ENERGY STAR 3+30% requires energy use in active power mode to be 30% less than the ENERGY STAR 3 specification. As the ENERGY STAR program released a series of increasingly rigorous specifications, NEEA, in partnership with BCE, continued to increase the stringency of its own qualification criteria. The different energy efficiency qualification criteria are referred to as "tiers" in the Initiative. The four defined Initiative Tiers are shown below in Table 1-1.

[1] Draft NEEA 2010 Implementation Report

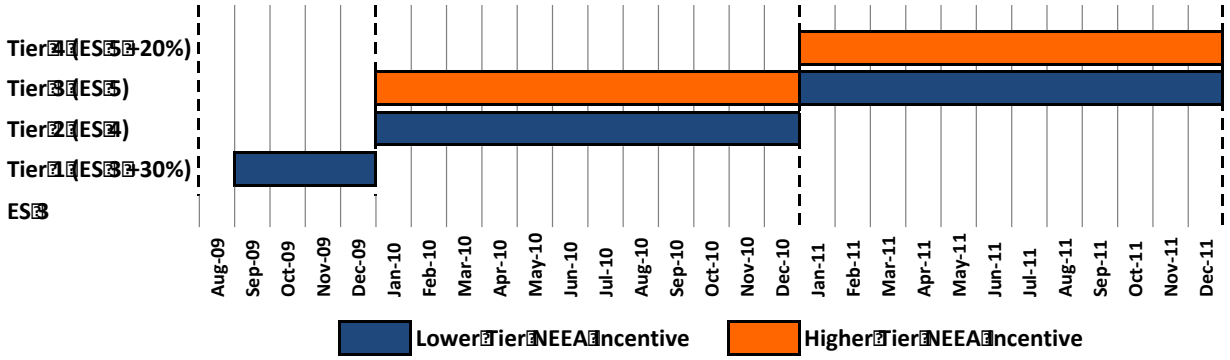
Table 1-1: NEEA Initiative Energy Efficiency Tiers and Associated ENERGY STAR Levels

Initiative Tier	ENERGY STAR Level
Tier 1	ENERGY STAR 3+30%
Tier 2	ENERGY STAR 4
Tier 3	ENERGY STAR 5
Tier 4	ENERGY STAR 5+20%

Source: NEEA staff interviews and background documentation.

To stay ahead of the fast moving market, NEEA increases the rigor of its qualification criteria on a yearly basis. Starting in 2010, NEEA began giving incentives at two different levels – one incentive level for a less stringent tier (Tier 2) and a higher incentive amount for a more stringent tier (Tier 3). In 2010 ENERGY STAR 4 televisions qualified for the lower tier NEEA incentive and ENERGY STAR 5 televisions qualified for the higher tier incentive. Both of these sets of criteria were implemented as NEEA tiers prior to taking effect as ENERGY STAR qualification levels (ENERGY STAR 4 took effect in May of 2010 and ENERGY STAR 5 is planned to take effect in September of 2011). In January of 2011, NEEA transitioned from giving incentives for Tier 2 and Tier 3 televisions to giving incentives for Tier 3 and Tier 4 televisions. Also in 2011, NEEA increased the incentives for models with screens larger than approximately 50" because of the "progressive energy efficiency" wattage cap of 108 Watts for these televisions in the ENERGY STAR 5 specification[2]. Figure 1-1 illustrates the progression the NEEA qualification criteria since the inception of the program.

Figure 1-1: NEEA Incentive Specification Levels



Source: NEEA staff interviews and background documentation.
Note: "ES" refers to specific ENERGY STAR levels, with +XX% indicating that the requirement is to use XX% less active power than the particular ENERGY STAR specification referenced.

Market Transformation Overview

The Initiative aims to motivate market transformation in the Northwest television market so that eventually only energy-efficient models are available in the region. To increase the market share of energy-efficient products, NEEA targeted market transformation through multiple channels. Although the Initiative could not work with every retailer, it was able to offer incentives to retailers covering over 80% of the regional television market. This was thought to be enough to push the entire market towards

[2] The measurement of screen size is approximate because the ENERGY STAR criteria are based on screen area rather than diagonal screen size. The actual wattage cap of 108 Watts is for televisions greater than 1068 square inches – equivalent to a 50" television with a 16:9 aspect ratio.

energy efficiency, in part by driving manufacturers to produce more energy-efficient televisions in response to increased demand from Northwest retailers. By influencing retailers to stock more energy-efficient televisions in their product assortments, the Initiative aims to increase the number of energy-efficient models available to consumers, making them more likely to purchase energy-efficient models. The Initiative also provides point-of-purchase (POP) marketing materials for retailers to identify the models that meet the Initiative requirements and provides retailer training so that retailer sales staff can identify these models and explain the significance to customers. In addition, by working with national energy efficiency programs, such as ENERGY STAR, the Initiative seeks to further influence manufacturers towards the increased production of energy-efficient models. Driving energy-energy efficiency in these ways, the Initiative should affect the entire Northwest market and also increase availability of energy-efficient models at retailers that are not participating in the Initiative. According to this market transformation strategy, eventually the market should shift to a point where most available models are energy-efficient, at which point it would be possible to lock in gains with state or national energy efficiency standards.

Key Initiative Activities and Stakeholder Roles

A variety of stakeholders collaborated to design, coordinate, and implement the Initiative through 2010. Key stakeholders included NEEA staff, third-party implementation contractors, participating retailers, partner utilities in the BCE program, and NEEA funding utilities. The activities of these stakeholders are described below.

- **NEEA Implementation Staff.** NEEA implementation staff is responsible for the central roles of managing and coordinating the implementation of the program among many key stakeholders, contractors and other partners. These key roles include: Initiative design and the development of Initiative criteria, managing the implementation contractors, determining and revising (as needed) incentive allotments to retailers, tracking and reporting the savings and cost-effectiveness of the Initiative, and collaborating with other utilities and programs.
- **QDI Strategies (Implementation Contractor).** The primary roles of QDI are general administration and planning for the Initiative, retailer recruiting, maintaining relationships with market actors (e.g., retailers and manufacturers), and delivering and maintaining point-of-purchase (POP) materials and training to retailers. A subcontractor to QDI, Premium Retail Services, executes POP placement and training.
- **Energy Solutions (Implementation Contractor).** The main role of Energy Solutions is to provide a safe house for data submitted by retailers. As an independent aggregator, Energy Solutions is able to compile these data and independently and confidentially pass them on to NEEA. In collecting and analyzing the data, Energy Solutions also does product model matching with the ENERGY STAR qualified product list to determine which models should receive incentives, and monitors and reports information on market share based on Initiative data and other market data. Energy Solutions also maintains the BCE website (an online database into which retailers upload their sales data) and provides program data to inform future program design and incentive qualification levels.
- **Participating Retailers.** The participating retailers offer Initiative-qualified televisions at retail locations in the Northwest. The retailers provide all their sales data in the Northwest to NEEA and receive incentives for models sold that meet the Initiative qualification criteria.
- **Partner BCE Utilities.** The partner utilities (such as PG&E, SMUD, Southern California Edison [SCE], and Nevada Energy) run similar versions of the BCE program in their own service territories. They primarily interact with the NEEA Initiative through weekly meetings to coordinate on program strategy, qualification criteria and feedback on national programs such as ENERGY STAR.

- **NEEA Funding Utilities.** The utilities that are funders of NEEA do not always participate directly in the program, but are able to report savings from the Initiative. Some utilities also provide supplemental marketing of the program, such as social media, special events, bill inserts, etc. NEEA utilities can also run pilot marketing programs or have additional consumer-facing rebate or incentive programs for energy-efficient televisions.

1.2. Initiative Logic Model

The core logic of the Television Initiative is to leverage retailers to increase the adoption of energy-efficient televisions. The Initiative provides incentives directly to retailers for the sale of more energy-efficient Initiative-qualified televisions. The Initiative also works to support the development of more stringent energy efficiency specifications and standards for televisions. This is accomplished through participating in industry conversations and by leveraging the sales data that are collected by the program.

A secondary focus of the Initiative is to increase awareness of energy-efficient product offerings among consumers and retail staff. Program marketing efforts include the placement of POP materials to identify Initiative-qualified models, a website promoting energy-efficient televisions[3], social media outreach, display videos at participating retailers, and training retail staff to promote qualifying products. These marketing efforts are meant to help consumers and retailer sales associates identify the Initiative-qualified televisions that are either as energy-efficient or more energy-efficient than the ENERGY STAR specification in effect at the time.

Logic Model Structure

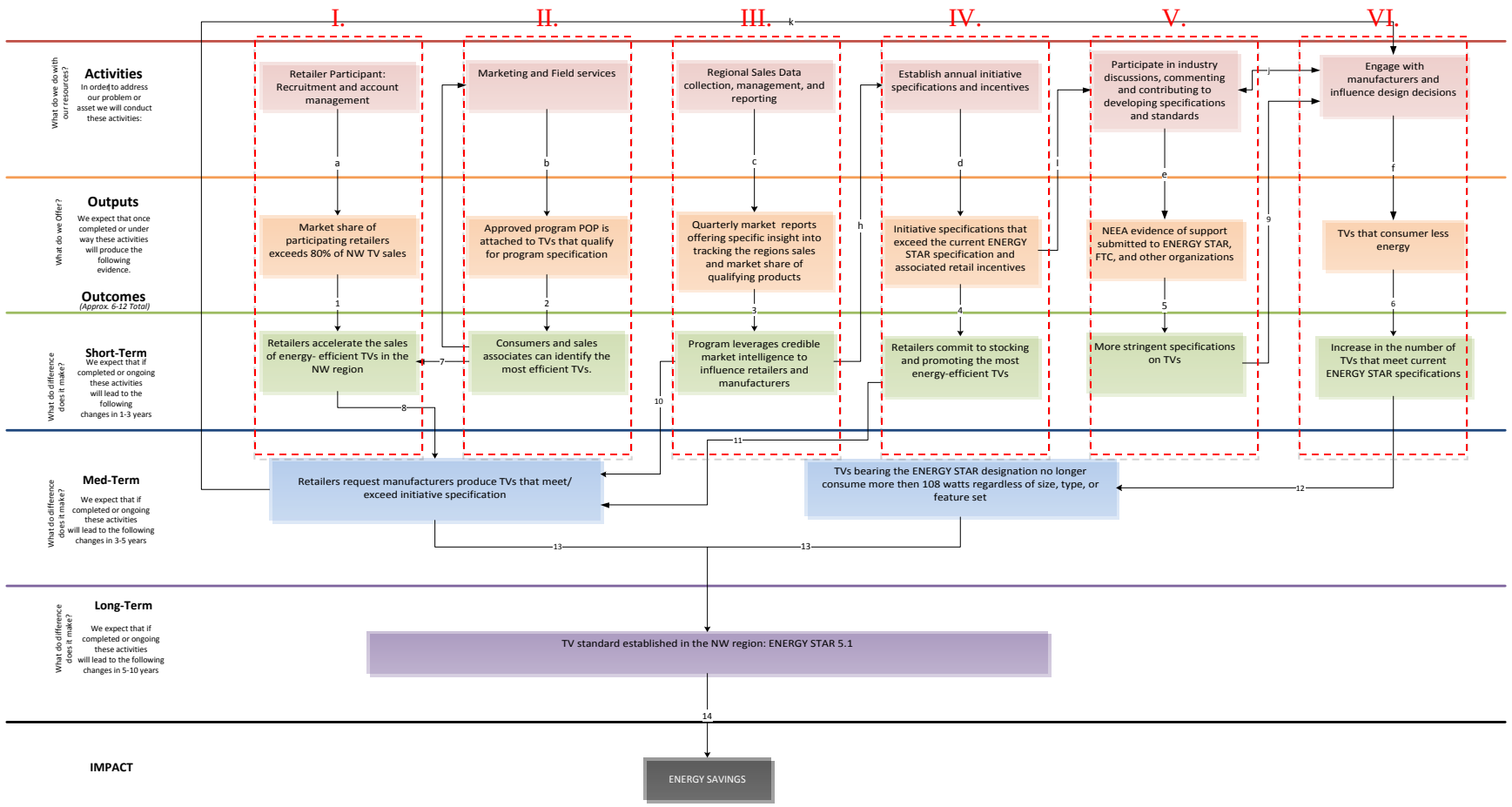
A logic model is a graphical representation of program activities, outputs of these activities, and intended outcomes. NEEA created a logic model for the Television Initiative, show below as Figure 1-2. Overlaid on the original logic model, EMI has included Key Critical Paths within the model. These paths group key program activities with their direct outcomes and intended effects, and are a useful way to organize the multiple channels of program impact. The Key Critical Paths are:

I. **Recruiting Retailers –** Recruiting retailers to participate in the Initiative;
II. **Marketing and Field Services–** Providing tools for retailers to market to consumers and training retail sales staff to allow easy identification of Initiative-qualified televisions;
III. **Leveraging Initiative Data –** Collecting retailer data and leveraging that data for other activities and outcomes;
IV. **Developing Initiative Specifications and Incentives –** Creating Initiative specifications and incentive levels for retailers and manufacturers;
V. **Contributing to the Development of Other Programs –** Working with other energy-efficient initiatives (e.g., CEE, ENERGY STAR, etc.) to further drive the energy efficiency of televisions;
VI. **Engaging Manufacturers –** Engaging manufacturers to produce more energy-efficient televisions.

Figure 1-2, below, shows the logic model and its key critical paths.

[3] www.energyenergy-efficientelectornics.org

Figure 1-2. Key Critical Paths in the NEEA Television Initiative Logic Model



Program Outcomes

The Consumer Electronics Television Initiative is a market transformation initiative, which aims to increase the overall energy efficiency of the entire television market in the Northwest. The Initiative creates energy savings by increasing the market share of energy-efficient televisions in the Northwest. Program theory holds that Initiative incentives drive retailers to stock a larger number of Initiative-qualified televisions. With greater demand from retailers, manufacturers will produce televisions that are more energy-efficient, and with a larger in-store availability of energy-efficient televisions, Northwest consumers will be more likely to purchase energy-efficient televisions. Concurrently, NEEA has also been supporting the ENERGY STAR program and helped push for the program to move up the effective date for ENERGY STAR 5 so that, starting September 30th, 2011, all ENERGY STAR labeled televisions will consume 108 Watts or less. In the long term, the Initiative has a goal of increasing the market share of ENERGY STAR 5 televisions to the point where this specification can be used as a basis for a mandatory energy efficiency standard in the Northwest, which would lock in substantial long-term energy savings.

1.3. Initiative Goals and Market Progress Indicators

For the first MPER of this initiative, EMI identified the key outcomes and Market Progress Indicators (MPIs) from the Initiative logic model, which is shown in Table 1-2. Because this is the first MPER of the program, EMI focused on the key linkages in the program logic regarding the influence of the program on market actors and on short-term outcomes. EMI did not cover consumer marketing efforts (e.g., POP) or the long-term energy savings from the establishment of a Northwest standard.

Table 1-2: Outcomes and MPIs from the Initiative Logic Model

MPI	Outcomes Covered	Covered in MPER #1
Market share of initiative-qualified televisions compared to the NOBMS	Retailers accelerate the sales of energy-efficient televisions in the Northwest region	YES
	Increase in the number of televisions that meet current ENERGY STAR specifications	
	Retailers commit to stocking and promoting the most energy-efficient televisions	
	Retailers request manufacturers produce televisions that meet/exceed Initiative specification	
Market share of televisions that consume 108 Watts or less.	Televisions bearing the ENERGY STAR designation no longer consume more than 108 watts regardless of size, type, or feature set	YES
Quarterly reporting of initiative data.	Program leverages credible market intelligence to influence retailers and manufacturers	YES
Stringency of the Initiative specification levels compared to ENERGY STAR	More stringent specifications on televisions	YES
The percent of qualifying televisions are correctly merchandised with program POP	Customers and store personnel can identify the most energy-efficient televisions	NO
ENERGY STAR 5.1 goes into effect as a NW standard	Television standard established in the Northwest region: ENERGY STAR 5.1	NO
Achieve energy-savings forecasted on the ACE model and NWCC Plan	Impact: Energy Saving	NO

2. EVALUATION ACTIVITIES

To complete this MPER, EMI conducted a thorough review of data from the Initiative and also collected primary data consisting of in-depth interviews and focus groups with Northwest television purchasers. Table 2-1 provides a high-level summary of the evaluation activities that were completed for this report.

Table 2-1: Summary of Evaluation Activities

Initiative Data Review Activities	Primary Data Collection Activities

• Initiative documentation
• Logic model (Version 10) and accompanying documentation
• Initiative tracking data
  ○ BCE Incentives online database
  ○ Salesforce.com online database
• ACE Model and Assumptions Memo
• Natural Occurring Baseline Market Share (NOBMS) Memo
• Summary of Methods Used to Analyze Television Sales Data Memo
	• In-Depth Interviews with:
	  ○ Program staff
	  ○ Implementation contractors
	  ○ Participating utilities
	  ○ One partner utility
	  ○ Other energy-efficient television program managers
	  ○ Participating retailers
	  ○ Television manufacturers
	• Focus groups with recent (Q4 2010) Northwest TELEVISION purchasers

2.1. Initiative Data Review

This section contains an overview of the primary and secondary Initiative data reviewed during this evaluation. EMI reviewed primary data from participating retailers and third-party data assembled by the implementation contractors in the evaluation of this initiative.

Retailer Sales Data

EMI had direct access to the BCE Incentives database,[4] the database of NEEA Initiative participant sales data. The database gives the user the ability to view and export participant data in several formats.

EMI reviewed this data in comparison to the qualified products list from CEE.[5] This data set contains both Initiative-qualified and non-qualified sales for most retailers, but one retailer did not include non-qualified sales. Due to the fact that this data set covers only program participants and is missing data from non-participating retailers in the Northwest, NEEA purchased NPD market share data for televisions in the region so that regional progress toward market transformation could be tracked and evaluated.

Energy Solutions Dataset

To calculate key MPIs, such as the market share of different Initiative Tiers and the percentage of televisions that consume 108 Watts or less, EMI used the Energy Solutions dataset, which uses third-party data to cover the entire Northwest market. Energy Solutions combined program participant data with

[4] www.bceincentives.com
[5] http://www.cee1.org/resid/rs-ce/files/Energy-efficientTelevisionsList.pdf

purchased NPD data to construct a dataset that covers the entire region. EMI used this combined data as it was received. A review of some of the key assumptions used to generate this combined data set are included in the ACE model review in Section 5.

Examples of NEEA Program Influence

To help determine the influence of the Television Initiative on retailers, manufacturers, and other programs, EMI reviewed a number of different data sources. The first data sources were email communications provided by NEEA staff. These communications were with retailer partners, BCE partners, other Television energy efficiency program managers, Federal Trade Commission (FTC) stakeholders, etc. EMI also reviewed the BCE salesforce.com online database that catalogs communications with stakeholders. In this case, EMI focused on the "Market Transformation Report," which included information that was tagged as supporting the influence of NEEA in the transformation of the Television market. Lastly, EMI visited the ENERGY STAR product development archives and reviewed public comments on the ENERGY STAR specifications from NEEA, either in collaboration with other BCE partners or CEE.

ACE Model and Assumptions

To assess the ACE model structure and assumptions, EMI reviewed the ACE model spreadsheet and inputs, and accompanying documentation, including the paper that outlines the key assumptions. The ACE model is a very detailed model with a large number of inputs, assumptions and complex calculations. The focus of this activity for the evaluation was the validity and transparency of the key assumptions used in the model. For this reason, EMI reviewed the model structure and assumptions on a high level and did not do a detailed review to confirm the actual calculations performed by the model.

EMI received the most recent version of the ACE Model and its supporting documentation on March 17, 2011. This update consisted of the following resources:

1. **ACE Model for Televisions.** The Alliance Cost Effectiveness Model for the Initiative;
2. **Energy Star Televisions ACE Model Assumptions Paper.** An overview of the ACE model assumptions and calculations;
3. **QDI Calculation of the Northwest Television Market Size**. Supporting spreadsheet detailing the assumed quantities of televisions sold in the Northwest;
4. **6th Power Plan Consumer Electronics Assumptions**. The NWPCC 6th Power Plan supporting data, for reference to the television market assumptions;
5. **Aggregated Data From Energy Solutions**. This spreadsheet combines participant tracking data and NPD data to allow calculation of market shares and unit energy consumption (UEC) by tier.

Additional documentation supporting the ACE Model and its assumptions included:

1. **Northwest Television Naturally Occurring Baseline Market Share Estimation Results**. This memo from ECONorthwest calculates the NOBMS by assigning allocation shares for increases in the market shares of energy-efficient televisions to different actors;
2. **Summary of Methods Used to Analyze Television Sales Data**. The December 9, 2010 memo from Energy Solutions describing their aggregation and analysis of the market data.

Initiative Logic Model

To assess the Initiative logic model, EMI broke down the model into three distinct elements, as described below:

1. **Key Critical Paths.** Key Critical Paths are vertical paths that clearly link the key Initiative activities to the key important short-term outcomes. These critical paths clearly link the key activities to the key short-term outcomes through an identifiable and measurable output;
2. **Medium- and Long-Term Outcomes**. Longer term outcomes are often the result of a number of the key critical paths and therefore are analyzed separately from the key critical paths;
3. **Secondary Linkages**. These linkages are not related to the key critical paths and include horizontal linkages (which link activities or outcomes together) and reverse linkages where a program outcome feeds back into an activity, for example.

To concentrate this evaluation effort, EMI focused on the assessment of the key critical paths and medium- and long-term outcomes, as these are the most important elements of the Initiative logic early in an initiative. The labeling of linkages and accompanying notes are also important in helping to communicate the details of the Initiative logic; however, an effective illustration of the Initiative logic model should be clear enough to communicate the key logic of a program on its own – with the notes being available for those interested in a higher level of detail. To concentrate this effort, the EMI analysis focused on the ability of the illustrated model to communicate the main Initiative logic on its own.

2.2. Primary Data Collection

The main primary data collection for this evaluation consisted of in-depth interviews and focus groups with Northwest television purchasers in Q4 of 2010. This section includes a brief summary of these data collection activities. Appendix D contains the full data collection instruments for these activities.

In-Depth Interviews

In-depth interviews were conducted with a number of stakeholders, including program staff, participating and partner utilities, participating retailers, and television manufacturers. In-depth interviews were conducted between January and May 2011. Interviews were designed in an open-ended format to allow the evaluation team to probe into issues specific to the perspectives of each of the respondents. Common themes were identified among in-depth interview respondents with respect to the functioning of the energy-efficient television market, the influence of the Initiative on manufacturing and sales of high-energy efficiency televisions, and suggestions for improvements in the Initiative, if any. Table 2-2 shows the number of interviews conducted with each type of stakeholder.

Table 2-2: In-Depth Telephone Interviews

Interview Target	Sample Size
NEEA Staff	3
Implementation Contractors	2
NEEA Participating Utilities	2
Partner Utilities	1
Other Programs	2
Participating Retailers	6
Manufacturers	5
Total	**21**

Focus Groups

To ensure that the focus groups captured responses from different subsets of the Northwest Market (i.e. west and east of Interstate 5), one focus group was conducted in Seattle, WA and one was conducted in Spokane, WA. Both groups were conducted in January 2011, and each group lasted 90 minutes.

All focus group participants had recently purchased a new television at a participating retail chain. Participants were screened so that half of the participants in each group had knowingly purchased an ENERGY STAR-qualified television, and the other half were not sure if their new television was ENERGY STAR-qualified or not. This enabled EMI to learn from the experiences and opinions of those who may have used ENERGY STAR as a purchasing criterion as well as those who may not have been familiar with the brand. Furthermore, EMI concentrated on recruiting participants who had purchased a new television within the last three months of 2010 to ensure the purchases took place after new marketing materials were introduced in the participating retail stores in October 2010. Fourteen of the sixteen respondents purchased their television in October through December, and one each purchased a television in September and August. Key characteristics of focus group respondents' television purchases are summarized in Appendix C.

Focus group respondents were asked to comment on and discuss a variety of topics that explored experiences with purchasing a new television and the influence of energy efficiency and the NEEA program on their purchase decisions. The focus group moderator began each topic with an initial discussion question, and then asked follow-up questions and probed into particular topics or issues that arose. There were also two activities that took place approximately mid-way through the discussion questions for each group. For the first activity, respondents were asked to rank-order the top five television features they considered when deciding which television to purchase. For the second activity, respondents were shown an example of the marketing sticker used in participating retail stores and were asked to report whether they had seen the sticker used in the store where they purchased their television. For the focus groups, common themes were identified with respect to the functioning of the energy-efficient television market, the influence of the Initiative on sales of high-energy efficiency televisions, and suggestions for improvements in the Initiative, if any. The analysis of focus groups focused specifically on identifying themes related to consumer decision-making and usage of televisions, as well as awareness of energy efficiency with respect to televisions and awareness of the NEEA Initiative marketing materials. Themes were identified both within each group and across groups to examine similarities and differences that are present within and between the Seattle and Spokane markets.

3. MARKET CHARACTERIZATION FINDINGS

This section describes important elements of the television market external to the Initiative, and focuses on three key aspects of the television market that are critical to understanding how the NEEA Television Initiative interacts with this market:

1. The breakdown of retailer types in the market;
2. The yearly assortment schedule for retailers;
3. The external market influences that continually drive the energy efficiency of televisions.

3.1. Television Retailer Market

The television retailer market can be divided into three main retailer types pertinent to the NEEA Television Initiative:

- **Large national retailers.** Often referred to as "big-box" retailers, these are chain stores with a large national presence and a corporate headquarters that is often found outside of the Northwest. These stores are typically very large retail spaces found in urban or suburban areas.
- **Small local/regional independent retailers.** These are local stores or regional chains contained entirely or mostly within the Northwest. These stores typically are much smaller than the large national retailers and are independently owned. In many rural areas, these may be the only local option for purchasing a television, although small independent retailers can also be found in urban and suburban areas.
- **Retail buying cooperatives.** Retail cooperatives are national purchasing groups consisting of many independent stores. By pooling their collective buying power, member stores are able to have a significant influence in the market and secure better pricing from manufacturers.

These three different retailer types have a few key differences. First, the national retailers typically pick their television assortment on a national basis, varying their assortment for a particular store only by store size (larger stores typically get a greater number of television models) and income demographics in the surrounding area. Therefore, individual stores or regions typically do not receive a different assortment of televisions based on criteria such as energy efficiency. In contrast, local and regional retailers, including those that are part of a buying cooperative, have a much greater say in the particular models they carry.

National chains have additional factors that prevent individual stores from emphasizing energy efficiency. The incentives paid as part of an initiative such as the NEEA Television Initiative go to the company corporate headquarters, not to the local stores, so the local store managers and/or staff may not even be aware of the incentives. Additionally, staff turnover in national retail chains is often very high (50% a year or higher), making it very difficult to train sales employees of national chains to promote program offerings.

According to NEEA estimates, the national retailers participating in the Initiative make up roughly 84% of the retailer television market in the Northwest. Table 3-1 shows the main retailer participants in the Initiative including the retailer type and market share.

Table 3-1: Initiative Retailer Participant Type and Market Share

Retailer	Retailer Type	Market Share[a]
Costco	National	26%
Best Buy	National	22%
Wal-Mart	National	21%
Sears	National	8%
Sam's Club	National	4%
Kmart	National	3%
Brandsource and Nationwide[b]	Cooperatives	3%
Vann's	Local	1%
Non-participants[c]	Mixed	12%
Total		**100%**

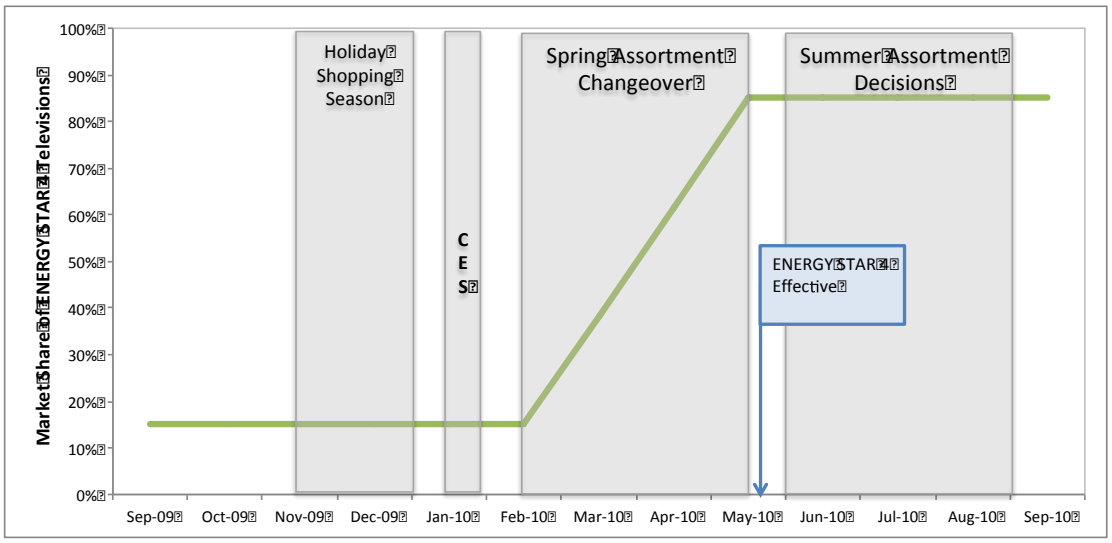
a. Market share data is from the NEEA 2010 Consumer Electronics Implementation Report
b. Together Brandsource and Nationwide represent 78 independent retailers throughout the NW
c. e.g., Target, Video Only, Fred Meyer, small retailers, etc.

3.2. Television Market Assortment Schedule

The television market typically operates on a fixed, and therefore predictable, yearly sales and marketing schedule, as new product lifetimes are often a year or less. A description of each stage of the product cycle is given below, followed by Figure 3-1, which shows the typical schedule and the rapid increase in market share of ENERGY STAR 4 televisions in the spring of 2009.

1. **Spring assortment changeover.** In the spring months the major retailers typically go through their main assortment changeover, when new models are introduced and old models go on closeout to clear the inventory for new models. This assortment changeover typically ends in May or June and after this changeover, the assortment typically stays the same until the following spring.
2. **Summer assortment decisions.** During the summer months, conversations will begin between retailers and manufacturers for the following year. During this phase retailers will start making initial plans for their assortment for the following year, and manufacturers will begin to decide which models/designs to emphasize for the following year based on retailer requirements.
3. **Holiday shopping season.** The holiday shopping season (end of November through December) drives high retailer sales volumes. During this time there is typically a very large volume of television sales. Program data analyzed from three participating retailers shows that roughly 30% of sales come during the holiday shopping season. In addition, high sales continue through January leading up to the Super Bowl in early February.
4. **Consumer Electronics Show (CES).** CES is the premier electronics show in the U.S. Around this time, many retailers make final decisions about the assortment for the rest of the year and place orders with the manufacturers.

Figure 3-1: Television Sales and Marketing Schedule



Source: NEEA TV Baseline Aggregation Analysis (Version 5) and stakeholder interviews (assortment schedule)

As Figure 3-1 illustrates, television assortment decisions start in the summer of the previous year. In order for any programs or specifications to truly affect these decisions, they ideally must be established and communicated prior to assortment planning for the following year.

3.3. External Influences on Energy Use in Televisions

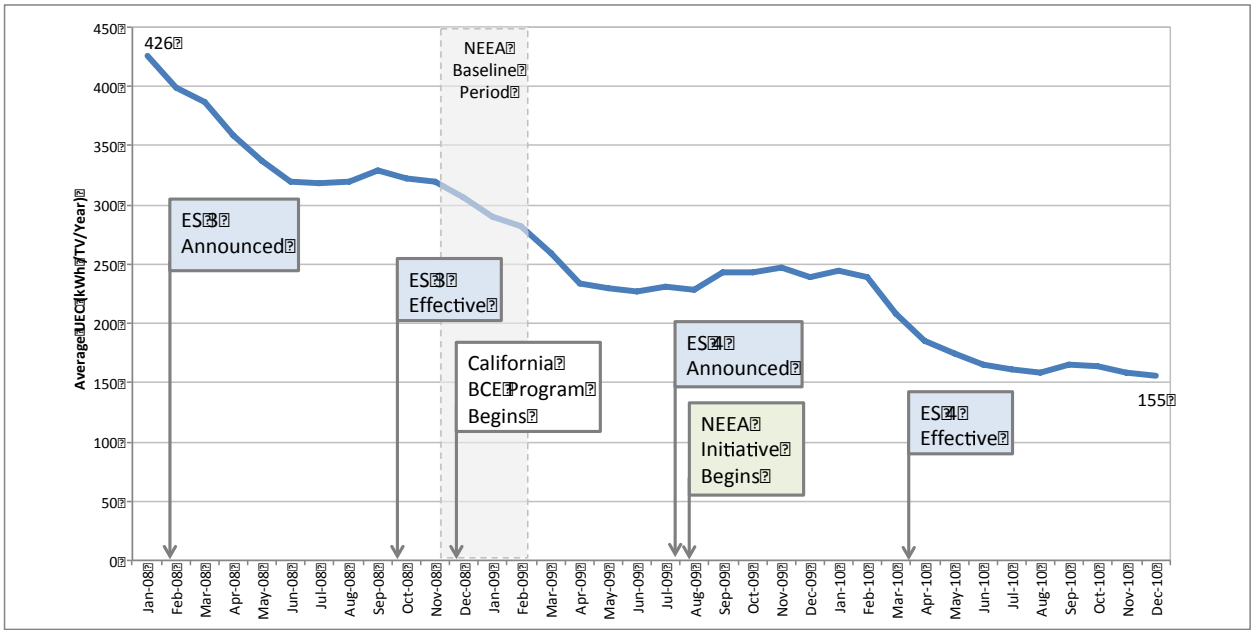
The two largest drivers of greater energy efficiency in this market identified by stakeholder interviews and data review were the rapid pace of new technology development and the EPA ENERGY program specifications.

ENERGY STAR

The ENERGY STAR 3 specification, the first specification covering active power use, was finalized and officially announced in February of 2008. Following this specification, there was a rapid decrease in television UEC (see Figure 3-2), and energy efficiency became a major focus of manufacturers in 2009. A rapid increase in the number of products that met the Version 3 specification caused EPA to quickly develop another set of specifications (Versions 4 and 5) to maintain the relevance of the ENERGY STAR label for televisions.

Manufacturers and retailers place a high level of importance on meeting the ENERGY STAR specifications. The desire to meet ENERGY STAR causes rapid shifts in television technology as manufacturers change designs to meet the specifications. The importance of ENERGY STAR is supported by the analysis of market share data, which shows significant upward jumps in the market share of ENERGY STAR models in the spring assortment changeover following a new ENERGY STAR specification level taking effect. EMI expects to see a similar jump in the qualification of ENERGY STAR 5 televisions in Spring 2012 as a result of the new specification that is planned to take effect in September 2011.

Figure 3-2: Average UEC of Televisions in the Northwest



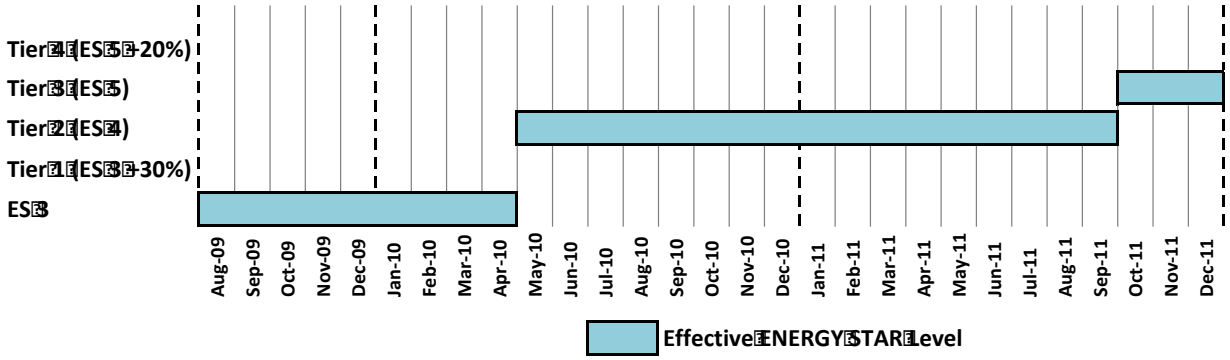
Source: NEEA TV Baseline Aggregation Analysis (Version 5)

The relevant ENERGY STAR criteria in effect during the Initiative implementation are summarized below and illustrated in Figure 3-3.

- **ENERGY STAR 3.** The ENERGY STAR 3 specification took effect on November 1, 2008, well before the beginning of the NEEA Initiative, and stayed in effect until May 1, 2010.
- **ENERGY STAR 4.** The ENERGY STAR 4 specification took effect on May 1, 2010, and will stay in effect until September 30, 2011.
- **ENERGY STAR 5.** The ENERGY STAR 5 specification will take effect on September 30, 2011 (moved forward from May 1, 2012), and will stay in effect until a new Version 6 specification is developed and becomes effective[6].

[6] Specification development for ENERGY STAR 6 for televisions was officially announced in April of 2011.

Figure 3-3: ENERGY STAR Specification Levels



Source: ENERGY STAR Product Development Website (www.energystar.gov/productdevelopment)

Technological Changes

The energy use of televisions is continually affected by yearly technological changes and this trend will likely continue into the future. Foremost among these recent changes has been the introduction and increased adoption of more energy-efficient LED backlight technology for LCDs. LEDs have gained popularity because of their better picture quality and lower energy use. The ENERGY STAR 5 specification has helped increase the adoption of LED televisions, as manufacturers indicated that a large portion of qualified ENERGY STAR 5 televisions use LED backlight technology. A rapid increase in the number of LED backlit models in 2011 is expected to bring this technology more into the mainstream compared to 2010.

In addition, there are a number of power management technologies in the market that could further reduce the energy use of televisions in the short-term, such as:

- Automatic Brightness Control (ABC), which decreases the brightness on a television in low light conditions. Many large televisions meeting the ENERGY STAR 5 specifications are using ABC to get down to the required levels;
- Occupancy sensors that sense whether or not actual viewers are present, and can turn off the display while maintaining audio when no one is actually watching the television.

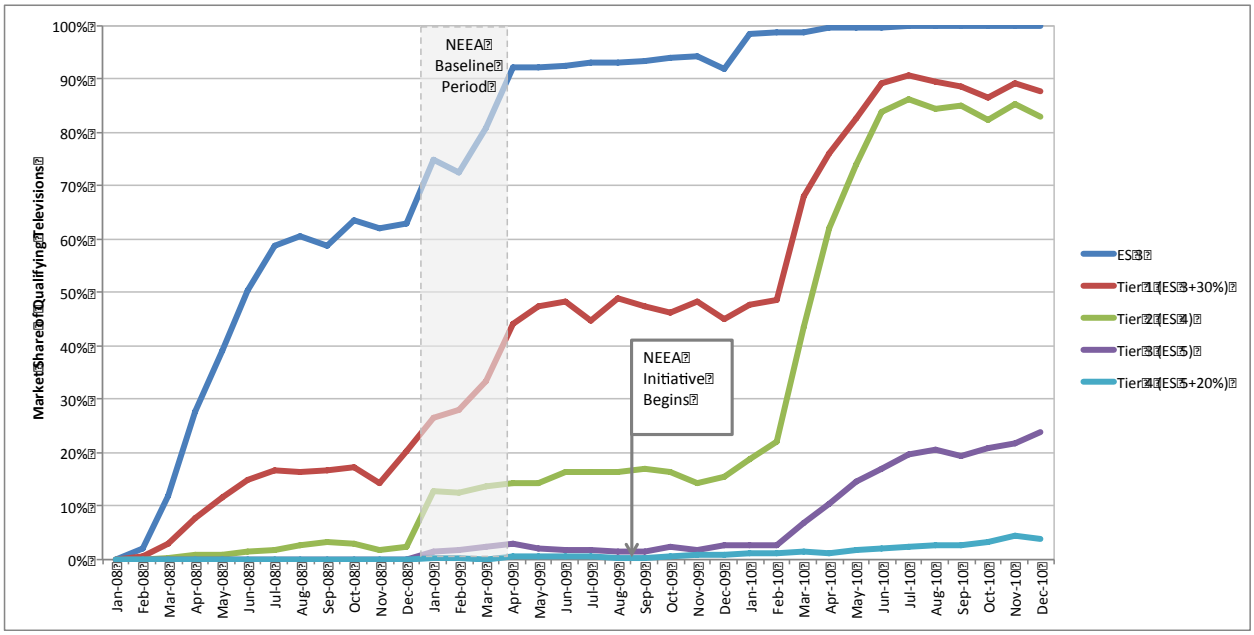
4. PROGRAM FINDINGS

The main activities in this evaluation were the review of available Initiative data and the collection of primary data from key stakeholders and consumers. This section summarizes the most important findings from these activities that lead to conclusions about the influence of the Initiative on the market. It also provides important context and information that feed into the two most critical activities of this evaluation: the logic model review (Section 4.4) and ACE model review (Section 5). Additional findings from the primary data collection activities (Stakeholder Interviews and Focus Groups) can be found in Appendices B and C, and data collection instruments for these activities can be found in Appendix D.

4.1. Tracking Data Review

The dataset from Energy Solutions combines tracking data from program participants with additional sales data from NPD, and was used to analyze information on the market share of the different Initiative ties and the UEC of televisions in the Northwest. This data goes back to January of 2008 and shows a consistent rise in the market share of each Initiative tier, as shown in Figure 4-1.

Figure 4-1: Northwest Market Share by Tier



Source: NEEA TV Baseline Aggregation Analysis (Version 5)

To give the proper context, the NEEA baseline period (Q1 2009) and the beginning of the Initiative (September 2009) are labeled on the graph. It is important to note that the market shares shown are cumulative, meaning that the Tier 1 market share includes all units that meet the Tier 1 qualification criteria, including the televisions in the more energy-efficient Tiers 2, 3 and 4.

Due to the television market assortment schedule (discussed in Section 3.2), the market share of each tier increased dramatically between February and June each year, and then remained relatively flat the rest of the year. This data shows a substantial increase in the market share of Initiative-qualifying televisions at

every Initiative Tier in 2010. The largest increase in 2010 was for the ENERGY STAR 4 (Tier 2) level. This specification was officially announced by ENERGY STAR in September 2009 and took effect shortly after the spring assortment changeover in May 2010. This level was used as the lower tier NEEA incentive for 2010. As a result, by the end of 2010 the market share of televisions qualifying for the lower tier NEEA incentive reached over 80%. Thus, NEEA was paying incentives for the vast majority of the television market. In 2010, the market share of ENERGY STAR 5 televisions also increased, going from close to zero in 2009 to over 20% by the end of 2010. These televisions qualified for the higher tier NEEA incentive in 2010, and were paid a higher incentive amount due to the increased difficulty of meeting this specification.

This yearly increase in market share of energy-efficient televisions has led to an increase in the market share of televisions that consume 108 Watts of active power or less, an important MPI for the NEEA Initiative. All ENERGY STAR 5 televisions will consume less than 108 watts or less, due to the absolute consumption cap; however, many smaller televisions at lower tiers also consume less than 108 watts. Table 4-2 shows the different combinations of Initiative tier and screen size bins that consume 108 watts or less.

Table 4-1: Tier and Screen Size Bin Combinations Consuming 108 Watts or Less

Screen Size Range (Inches)	Max Screen Area ($Inch^2$)[7]	Max Active Power for Tier 1 (ES 3 +30%)	Max Active Power for Tier 2 (ES 4)	Max Active Power for Tier 3 (ES 5)	Max Active Power for Tier 4 (ES 5 +20%)
<32	438	83.7	77.5	54.8	43.8
33-35	523	95.7	87.8	62.0	49.6
36-39	650	113.4	103.0	72.6	58.1
40-46	904	170.8	133.5	94.0	75.2
41-49	1026	191.3	148.1	104.2	83.3
50-60	1538	273.7	209.6	108.0	86.4
>60	>1538	>273.7	>209.6	108.0	86.4

Source: EMI analysis

The market share of ENERGY STAR 5 televisions was 23.8% at the end of 2010. When the total number of televisions consuming 108 Watts of active power or less are taken into account, the market share of televisions consuming 108 Watts or less is higher, amounting to 53% in December 2010. Table 4-3 summarizes these results along with the relevant market shares in January 2010.

Table 4-2: Market Share of Televisions Consuming 108 Watts or Less in 2010

	January 2010	December 2010
Market Share of ENERGY STAR 5	2.8%	23.8%
Market Share of All Televisions ≤ 108 W	27.5%	52.8%

Source: EMI analysis

[7] Maximum screen area for each bin was calculated using the formula provided by Energy Solutions: Screen Area (In^2)=(Diagonal Screen Size)^2 x .4273. Energy Solutions. "Memorandum – Confidential. Summary of methods used to analyze TV sales data." 12/9/2010, p. 7.

Urban Versus Rural Units

Program tracking data show that 96% of the Initiative-qualified televisions were sold in urban RUCC (Rural Urban Continuum Classification) and just 4% were sold in rural RUCC classifications[8]. This shows a skew toward sales in urban areas, as estimates derived from 2010 US census numbers indicate that only 78% of households are found in urban areas in the Northwest.

While this shows a significant skew toward urban areas, this does not necessarily mean that the program does not reach customers in rural areas, as rural customers may drive to larger towns (i.e. more urban areas) to make significant purchases such as a new television. To confirm this market dynamic future evaluation efforts could include research into the purchasing behavior of rural customers.

Table 4-3: 2010 Northwest Television Sales by RUCC Code

RUCC Type	RUCC Code	2010 Television Sales	Percent of Total Sales	Percent of Rural/Urban Sales	Percent of Northwest Households
Urban	1	152,496	34%	96%	78%
	2	62,964	14%		
	3	138,563	31%		
	4	31,530	7%		
	5	41,607	9%		
Rural	6	11,571	3%	4%	22%
	7	4,916	1%		

Source: EMI analysis on data supplied by Energy Solutions on May 19, 2011

4.2. Findings from Primary Data Collection

This section provides a high-level summary of findings from primary data collection (e.g., in-depth interviews and focus groups) related to the influence the Initiative has on the sales and stocking of energy-efficient televisions in the Northwest. There are six main findings relating to the influence of this program on the market for energy-efficient televisions in the Northwest market. A summary of these high-level findings is found below. More detailed findings from primary data collection can be found in Appendices B and C.

Indirect Influence of Incentives

As discussed in Section 3.1, market actor interviews revealed that assortment at large national retailers is mostly done on a national basis with little regional variation. In addition, the incentives are given to the corporate headquarters of the large retailers, often located outside the Northwest, not to the regional or local stores. Some retailers went further, describing that the incentive dollars are often channeled into marketing efforts for energy-efficient televisions, and, thus, they are not seen as directly increasing the profitability or margin of the sales of these products in the Northwest. Because incentives are not going directly to regional retailer locations, the Initiative does not give a direct incentive for these retail locations to increase the sales or stocking of energy-efficient televisions in the region. These factors lead to the incentives having little direct effect on the Northwest market, though they do contribute to an overall incentive to the retailer on a corporate level. One retailer indicated that it was this "collective influence" of all utility incentives that affects their national assortment. Smaller local/regional retailers

[8] NEEA defines "urban" as RUCC codes 1-5, and "rural" as RUCC codes 6-9. No sales were recorded for RUCC codes 8 and 9, so the EMI analysis includes only RUCC codes 1-7.

are more directly affected by the incentives, but these retailers make up a small part of the market that participates in the Initiative.

Unquantifiable Effect of Incentives

As part of the research for the determination of allocation shares by ECONorthwest, retailers were asked directly how much their assortment had been influenced by the incentives. All but one retailer could not directly answer the question and did not give an estimate. The one retailer that was able to provide a rough estimate was a regional retailer operating only in the Northwest, and this retailer approximated that the program resulted in 5% more energy-efficient televisions on store shelves due to the Initiative.

Emphasis on ENERGY STAR

Retailers and manufacturers place a large amount of emphasis on the ENERGY STAR brand when talking about energy efficiency. Manufacturer interviewees noted that they want as many models as possible to meet the ENERGY STAR specifications so they are not "left out" by not having available ENERGY STAR product. One retailer also indicated that they had corporate targets to only stock ENERGY STAR qualified products. Retailers also emphasized their marketing efforts (e.g., shelf tags and circulars) around ENERGY STAR products.

Energy Efficiency as a Consumer Buying Criterion

Results of consumer-focused focus groups indicate that consumers still rank energy efficiency very low in importance when purchasing a new television. This result was also supported by retailer and manufacturer interviews where respondents noted that consumers are not demanding energy efficiency in televisions. More specifically, retailers indicated that consumers do not often ask about energy use or energy efficiency when purchasing a new television at a retailer location.

Effect of Marketing and Training

Evaluation activities were not designed to determine whether training and POP display materials were effective, though preliminary evidence indicated that there was limited awareness among consumers and that POP may not have been used in all retail locations consistently. One retailer indicated that though retailer staff were trained in energy efficiency, this training was primarily to allow them to answer questions if consumers had them, not to directly try and sell energy efficiency to the customer. Retail sales staff also have very little time to influence the decision of the television purchaser. Furthermore, since staff turn over is very high at retail locations, it is difficult to keep all staff trained. To more fully understand the effect of marketing and training, future evaluation efforts could include specific research in this area.

Influence on ENERGY STAR Specifications

Interviews with CEE, EPA, and partner utilities confirmed the positive effect NEEA staff had on influencing and supporting the strengthening of the ENERGY STAR specifications on which the Initiative qualification criteria are based. Because of the emphasis retailers and manufacturers put on ENERGY STAR, the strengthening of these specifications helps to push the market to new levels of energy efficiency. The direct role of NEEA in influencing these specifications is explored in further detail in the next section, Section 4.3.

4.3. Examples of NEEA Program Influence

Review of NEEA Initiative data revealed many ways in which NEEA efforts have helped influence the energy-efficient television market. These are included below.

- **Support for moving up of the ENERGY STAR 5 effective date.** NEEA took the lead on an official letter to the EPA in support of moving up the effective date of ENERGY STAR 5 due to the increasing market share of these televisions in 2010. This letter was also cosigned by PG&E and SMUD.
- **Support for the progressive energy efficiency requirement in ENERGY STAR 5.** NEEA submitted a letter to CEE to oppose the lack of support from CEE for the progressive energy efficiency requirement for ENERGY STAR 5 (i.e. the wattage cap on televisions over approximately 50" in size).
- **Contribution of information to the FTC labeling effort.** NEEA contributed information to the Collaborative Labeling and Appliance Standards Program (CLASP) on experiences working with retailers on POP material that was used in support of the FTC label for televisions.
- **Motivating manufacturers to qualify models with ENERGY STAR.** Utility incentives such as the BCE incentives and other similar initiatives can motivate manufacturers to list products on the ENERGY STAR qualified products list because retailers can only collect incentives for the sale of models that qualify through ENERGY STAR. The Salesforce.com database included one specific example in the form of a communication where a participating retailer pressured a manufacturer to list products with ENERGY STAR so the retailer could collect incentives on those models through the BCE program;
- **Changing business practices of retailers.** There was also some anecdotal evidence from retailers indicating that they had changed business processes in response to the program, though these examples were not specific on what changes were made due to the program.

4.4. Logic Model Review

A primary goal of this evaluation was to review the Initiative logic model that illustrates and explains how the Initiative activities result in energy savings. Overall, the final version of the Initiative logic model reviewed by EMI (v10) was well organized and well documented. The illustrated model is well developed with clear Key Critical Paths, and Medium- and Long-Term Outcomes. All linkages are also clearly labeled and described in accompanying documentation. However, this research has revealed some potential inconsistencies between the Initiative logic as indicated in the model and the effect of the Initiative on the market.

Consistency of Initiative Logic

Through the study of three different versions of the logic model over the course of the evaluation, it is apparent that the Initiative began without a clearly articulated logic model documenting the intended effects of Initiative activities. As a result, the Initiative logic (or at least the expression of that logic) has shifted over time, with no corresponding change in Initiative activities. This is an indication that there was not a direct linkage between the Initiative logic and implementation activities, which can result in Initiative activities not effectively leading to the intended outcomes of the Initiative.

A number of stakeholders interviewed through this evaluation effort articulated the goal and logic of the Initiative as increasing the availability and sales of energy-efficient televisions through incentives to retailers and marketing to customers. However, this logic does not seem to be clearly expressed in the

logic model itself. It seems that this logic would be encapsulated in the critical logic paths the evaluation team has labeled the "Recruiting Retailers" path and the "Developing Initiative Specifications and Incentives" path, neither of which emphasize the role of incentives. For example, in the short-term output from the Recruiting Retailers path ("Retailers accelerate the sales of energy-efficient Televisions in the NW region") it is not clear how retailer recruitment in and of itself accelerates the sales of energy-efficient televisions in the Northwest. In the Developing Initiative Specifications and Incentives path, the establishment of annual Initiative specifications and incentives is linked to retailers committing to stocking and promoting the most energy-efficient televisions. However, it is not clear from the implementation of the Initiative that retailers are actually "committing" to stocking "the most energy-efficient Televisions," but rather that they should be motivated to stock more energy-efficient televisions because of the payments of incentives.

A more clear and consistent expression of this logic through the logic model would help future stakeholders and evaluators to understand the program rationale, and would ensure that the role of key activities (such as the payment of incentives) are clearly linked to their intended outcomes.

Influence on National Retailers

Evaluation activities found that some linkages identified in the logic model may not be as strong as may be needed to achieve the desired Initiative outcomes. For example, the finding that most large national retailers do assortment on a national instead of regional level makes it difficult to affect the regional assortment of Initiative-qualified televisions. While NEEA, in combination with other similar program incentives, seems to be having some effect on this national market, this effect may be limited and is difficult to quantify at either a national or regional level. In addition, retailer and manufacturer interviews performed for this evaluation indicated that retailers have a number of considerations that are of higher importance than energy efficiency (e.g., price, features, ENERGY STAR qualification, etc.) and that the specifications can, at best, be a tiebreaker in manufacturing and stocking decisions. Because the Initiative relies on the influence of incentives on retailers to create energy savings in the Northwest, a weak linkage in the Initiative logic here creates a large risk to the Initiative achieving the intended outcomes of the Initiative.

Influence on Manufacturers

Another potentially weak linkage in the Initiative logic is the influence of retailers on manufacturers to request televisions that meet the Initiative qualification criteria. Interviews with retailers and manufacturers leave it unclear what direct or indirect influence NEEA has on manufacturers through this initiative. Manufacturers are mostly focused on fulfilling the requests of retailers and are highly motivated by meeting the ENERGY STAR specification level in effect, with limited focus on Initiative qualification criteria. It is important to note, however, that the allocation shares used in the ACE model (discussed in Section 5, below) do not include direct influence of NEEA on manufacturers as a driver of energy savings, so this is not emphasized as an important aspect leading to energy savings, though it is prominently displayed in the Initiative logic model.

Importance of Consumer Facing Marketing

While the Initiative logic model clearly includes an element of consumer marketing, NEEA implementation staff and contractors de-emphasized this element of the Initiative logic during initial conversations with EMI regarding the logic model. In addition, the Natural Occurring Baseline Market Share memo gives significant credit to NEEA marketing efforts for driving energy-efficient television sales in the Northwest. These findings indicate that there is a possible disconnect between the role of marketing in the Initiative logic (including the savings calculations) and the importance of marketing to implementation staff.

While initial evaluation research indicates that consumer facing marketing may have had limited effect late in 2010, a number of stakeholders interviewed for this evaluation spoke about the importance of driving this market from the consumer side, with the belief that retailers want to sell products that consumers want to buy, and manufacturers want to manufacturer products that retailers want to sell. While the ENERGY STAR brand is well recognized by consumers after many years of promotion and development of the brand, the marketing of units meeting the more stringent Initiative requirements may require more time to materialize. The limited evaluation research focused on marketing was conducted early in the Initiative (Q4 2010 and Q1 2011), so more extensive and continued research would be required to truly assess the influence of NEEA marketing efforts for this initiative.

Televisions That Consume No More Than 108 Watts

One of the medium-term outcomes of the Initiative logic model is: "Televisions bearing the ENERGY STAR designation no longer consume more then 108 watts regardless of size, type, or feature set." The ENERGY STAR Version 5 specification has an absolute wattage cap of 108 Watts, so once this specification takes effect in September 2011, this will already be achieved. While NEEA has been supportive of the ENERGY STAR 5 specification development and its taking effect 7 months ahead of the original schedule, the U.S. EPA performs the ultimate setting of levels. The primary role of the Initiative is to attempt to increase the market share of televisions that meet these specifications in the region. Therefore, it may be more appropriate for this outcome to emphasize the market share of televisions that consume no more than 108 Watts in the Northwest. For this reason, EMI has performed an analysis to determine the market share of televisions that consume no more than 108 watts as part of this evaluation.

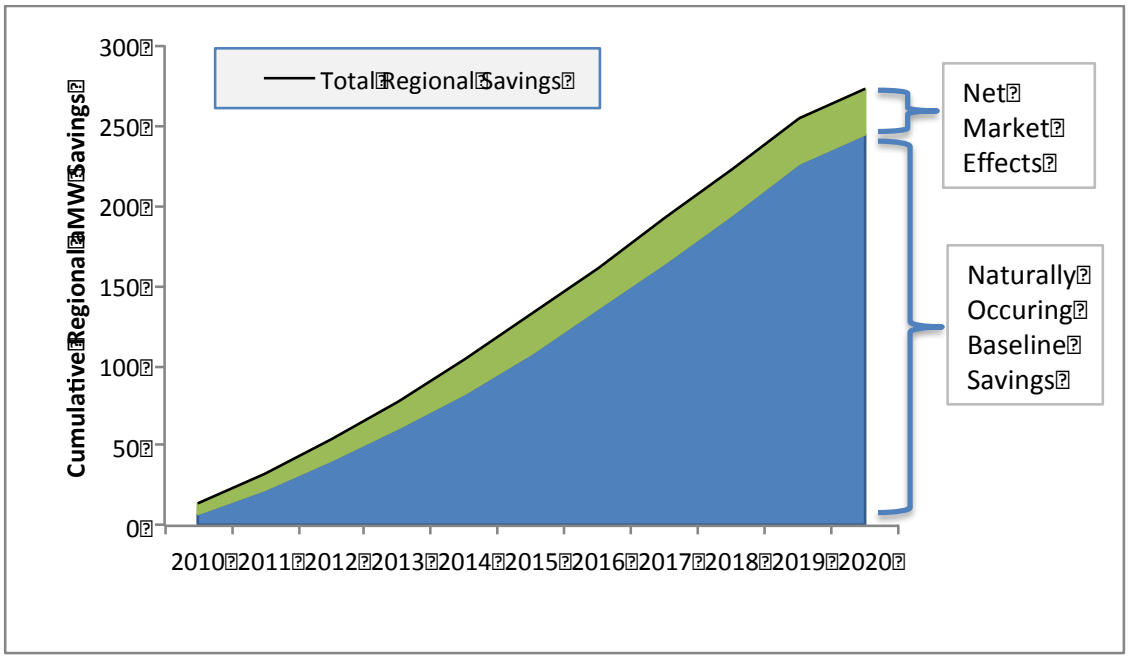
5. ACE MODEL REVIEW FINDINGS

EMI completed an in-depth review of the structure, inputs, and assumptions of the Alliance Cost Effectiveness (ACE) model for the Television Initiative. The ACE model review focused on evaluating the validity and transparency of key assumptions in the model.

5.1. ACE Model Structure

The ACE model estimates three key energy savings figures: Total Regional Savings, Naturally Occurring Baseline Savings, and Net Market Effects. Net Market Effects, or total Average Megawatt (aMW) savings attributable to the Initiative, represent the contribution of the NEEA Television Initiative to Total Regional Savings through increased market share of energy-efficient televisions and decreases in UEC. The Net Market Effects are calculated by subtracting the Naturally Occurring Baseline Savings from the Total Regional Savings. Figure 5-1 shows the ACE model estimates of Total Regional Savings, Naturally Occurring Baseline Savings, and Net Market Effects.

Figure 5-1: ACE Model Savings Structure



Source: NEEA Televisions Initiative ACE Model (Version 6)

The full ACE model review examined all of the key assumptions that feed into the calculation of these three reported figures. Below, this report summarizes key findings for Total Regional Savings and Naturally Occurring Baseline Savings. Since Net Market Effects is a composite of these two figures, it does not require separate key findings.

5.2. Total Regional Savings

Total Regional Savings represent the movement of the entire Northwest television market towards energy efficiency. They are defined as the aMW savings of the Northwest television market due to increases in the market share of energy-efficient televisions and decreases in the average UEC of energy-efficient televisions within each energy efficiency tier. The ACE model estimates 2010 Total Regional Savings from the following key inputs:

- **Total televisions sold in the Northwest.** The total unit sales in 2010 of all televisions in the Northwest market;
- **Market share by Tier.** The average 2010 market share of each energy efficiency tier, weighted by screen size;
- **Incremental savings per television, by tier.** The average incremental kWh savings over the next lower tier for each television in a given tier. The incremental savings for Tier 1 is the total energy savings when compared to the assumed baseline Unit Energy Consumption (UEC).

Key Findings for the Calculation of Total Regional Savings

EMI evaluated each of these inputs, and all key assumptions comprising them, and key findings from this evaluation are listed below.

- **The baseline UEC values are inconsistent with the savings calculation.** Having qualifying units in the baseline UEC estimate invalidates the Total Regional Savings and creates the need for an adjustment to the NOBMS. A more transparent and accurate method would be to use the correct baseline UEC and an unadjusted NOBMS. This would also limit unforeseen effects that may carry through the model due to this artificial adjustment to the market share.
- **The estimation of Total Northwest Market size may be overstated.** A NEEA-sponsored consumer electronics study[9] indicates that Northwest has as few as 8.5% fewer televisions per capita than the national average. Because total television sales in the Northwest are directly proportional to the calculated Total Regional Savings and Net Market Effects, and because the Model assumes that televisions in the Northwest are purchased at the same rate as the national average, this potential overstatement may result in savings estimates that are too high.
- **Estimations of dataset coverage show inconsistencies.** The estimate for the market coverage of the participant dataset was calculated using 2009 sales data. It would be more accurate to compute this using updated 2010 sales data. Furthermore, differences in Initiative-qualified television market share between the NPD and program datasets could be analyzed to see if the weighting of different data sources should be altered to increase the validity of the model.
- **Some retailer sales data is missing.** Some retailers failed to report sales data for some months, and therefore Energy Solutions estimated sales for those missing months. As a result, the participant dataset is less accurate than it would have been with full reporting from retailers.
- **The portion of televisions sold to the commercial market is based on information from one manufacturer.** The validity of the commercial television market share could be increased by finding an independent data source or collecting data from more than one manufacturer.
- **Savings from non-qualified units are not accounted for.** The ACE model accounts for changes in market share and UEC for televisions over time, based on data collected by NEEA and its implementation contractors. However, the model only measures savings from changes in

[9] The Market for Energy Energy-efficient Electronics: Pre- Program findings on consumer perceptions and retail shelf stocking practices, Opinion Dynamics, November 1, 2010.

market share and UEC within the different energy efficiency tiers of the Initiative. The UEC and market share of the non-qualified units are also changing over time, which must be factored into the Total Regional Savings calculation. It is likely that the energy use of non-qualified televisions decreases as the whole market moves towards higher levels of energy efficiency, so there would be savings within the non-qualified units as well.

5.3. Natural Occurring Baseline Savings

The Naturally Occurring Baseline Savings are defined as the aMW savings of the Northwest television market that would have occurred in the absence of a NEEA initiative. The Naturally Occurring Baseline Savings are calculated with the same methodology as the Total Regional Savings, but use the assumed Naturally Occurring Baseline Market Share (NOBMS) instead of the actual market share in 2010. The NOBMS represents the change in the market share of energy-efficient televisions that is *not* attributable to NEEA.

Calculating the Naturally Occurring Baseline Market Share (NOBMS)

ECONorthwest, a NEEA evaluation contractor, developed a memo estimating the NOBMS since the program baseline period of the first quarter of 2009[10]. The output of this memo is the allocation of market shares to different market actors. The memo does not describe or forecast a true market baseline, but instead develops an estimate of what percent of Total Regional Savings are attributable to each market actor, including NEEA.

To estimate the allocation shares of the increase in market share for each tier, ECONorthwest conducted qualitative interviews with market actors[11], and then assigned quantitative estimates of the share of the overall market gains attributable to these different market actors. In this process, ECONorthwest assigned shares of the increase in market share to:

1. Program incentives from NEEA and other BCE sponsors
2. The ENERGY STAR brand and specifications
3. California appliance standards
4. Natural technology improvements
5. NEEA television retail promotions and consumer demand

Table 5-1 shows the values of these allocation shares as defined by ECONorthwest.

[10] "Northwest TV Naturally Occurring Baseline Market Share Estimation Results," ECONorthwest, March 17, 2011.
[11] EMI was present for most of these interviews, so as to be most energy-efficient with interviewees' time.

Table 5-1: Allocation Shares of Total Regional Savings

	BCE Incentives	ENERGY STAR	CA Appliance Standards	Technology	Retail Promotions
ES 3.0 +15%	34%	50%	0%	15%	0%
ES 3.0 +15% to +30%	30%	45%	0%	15%	10%
ES 3.0 +30% to ES 4.1	19%	26%	10%	35%	10%
ES 4.1 to ES 5.1	19%	26%	10%	35%	10%

Source: Natural Occurring Baseline Market Share Memo

The allocation shares give NEEA credit for the multiple market interventions, and therefore NEEA is assigned a share of the savings from a number of these buckets. In this analysis, NEEA is given credit for the following market interventions:

1. Direct incentives from NEEA to participating Northwest retail locations;
2. Influence on the ENERGY STAR program that resulted in stricter specifications;
3. Participating television retailer promotions.

Table 5-2 shows another breakdown of allocation shares by market actor, with total allocation for NEEA unbundled and shown separately.

Table 5-2: Allocation Shares by Market Actor

	NEEA Total	ENERGY STAR	Other BCE Sponsors	Technology	Appliance Standards	STAR Stakeholders
ES 3.0 +15%	0%	20%	54%	15%	0%	10%
ES 3.0 +15% to +30%	37%	18%	21%	15%	0%	9%
ES 3.0 +30% to ES 4.1	20%	11%	19%	35%	10%	5%
ES 4.1 to ES 5.1	20%	11%	19%	35%	10%	5%

Source: Natural Occurring Baseline Market Share Memo

EMI finds that the allocation share values are not transparently derived. While the memo transparently and qualitatively describes the influence of each actor in the market, there is a not a clear linkage between these descriptions and the specific numbers used as the allocation share for each actor.

NOBMS Adjustment

NEEA has multiple reporting requirements. To fulfill reporting requirements from the Northwest Power and Conservation Council, the ACE model uses a different baseline for television energy consumption. This baseline UEC includes qualifying televisions, instead of only including non-qualifying televisions as program theory dictates. This results in lower incremental kWh savings for Tier 1 televisions, which, in

turn, results in a lower value for both Total Regional Savings and Net Market Effects. To account for this inconsistency, NEEA adjusted the NOBMS to a level that results in the same Net Market Effects that would have occurred using a baseline of only non-qualifying units. After adjusting the NOBMS, the Net Market Effects are correct, but the Total Regional Savings are no longer valid.

While the end result of these calculations are the same as if the calculation was done with the non-qualifying baseline, the NOBMS adjustment adds another layer of complexity to the model and results in misleading and incompatible numbers being presented within the model (e.g., the Tier 1 market share and incremental savings). For these reasons, the NOBMS adjustment reduces the transparency of the ACE Model calculations.

Areas of Uncertainty in the NOBMS Allocation Shares

EMI analyzed these allocation shares by assessing the above assumptions in light of the other observations taken from this evaluation, and by comparing the allocation shares of certain market actors to assess whether or not they can be considered valid and transparent.

- **The allocation shares for NEEA and other market actors are not transparent.** Allocation shares from the NOBMS memo were not transparently devised and, as a result, their validity cannot be confirmed. An analysis of comparing allocation shares from key market actors revealed some possible discrepancies in what the NOBMS represents (e.g., national or regional) and areas where allocation to NEEA is potentially overstated.
- **It is not clear whether the estimated allocation shares are meant to be regional or national.** The allocation shares identified in the baseline memo contain possible conflicts in how they might affect the national and regional market. While these two markets are effectively identical, the allocation shares must be consistent and clear as to whether they address one or the other.
- **Potentially overstated results for NEEA in-store marketing materials.** The allocation shares for consumer-facing advertising for Tiers 1, 2, and 3 are 10%. However, this is not considered a consumer-facing program, and program implementers de-emphasize the role of consumer-facing marketing. Additionally, since this influence would only be in the NEEA territories, a 10% increase in the number of energy-efficient units sold would make a measurable difference in market share of these units in the Northwest over a national market, which has not yet been demonstrated. Further, additional evaluation research (i.e. market actor interviews, retailer and manufacturer interviews, focus groups) raised some concern that marketing materials were not being used uniformly and consistently across the service territory, and that they had limited influence on consumers. These observations imply that a 10% allocation to NEEA for these activities is a potential overstatement.
- **For Tiers 2, 3, and 4, the allocation for NEEA was nearly double the influence of the national ENERGY STAR program.** Manufacturers interviewed for this initiative reported that they were strongly influenced by the national ENERGY STAR program. ENERGY STAR has been working with manufacturers for more than a decade to develop test procedures, harmonize standards, develop technical specifications, develop a powerful, nationally recognized brand, and maintain a public database of qualifying televisions. NEEA relies on all these factors to run the Television Initiative. In addition, manufacturer interviews showed that the desire to meet the ENERGY STAR program specifications is high in importance to manufacturers, while the desire to meet Initiative specifications is secondary. While evidence indicates that NEEA has succeeded in supporting and influencing the ENERGY STAR program to create more strict specifications on an accelerated timeline, it seems to be a potential overstatement that NEEA should be allocated almost 20% of the success of the ENERGY STAR program. This is especially true because, this

allocation would have to be consistent across the country, as ENERGY STAR acts on the national market, not just the Northwest market.

- **The overall influence of NEEA was comparable to or greater than the California BCE program.** Retailer interviews revealed that some retailers feel the collective influence of utility specifications is what drives these retailers to alter stocking habits to meet incentives. While the BCE sponsors share specification levels, some sponsors, such as PG&E, pay significantly higher incentives than NEEA. Since the population of the Northwest is comparable to the population of the PG&E service territory, one might expect PG&E to have more influence than NEEA based on its equivalent market size and higher incentive levels. However, even the entire group of other BCE sponsors is assumed to have less influence than NEEA. Furthermore, for Tier 1 televisions, NEEA is allocated 90% of the credit for the effect of the incentives for this tier, compared with the 10% credit given to the other BCE sponsors. While the ability of NEEA to influence an increase in the specification to stricter criteria is certainly important, diminishing the efforts of the other sponsors to this extent does not seem reasonable, given the efforts and funding that went into promoting this specification level. The allocation of BCE incentives should also be clarified to whether this is applied to the national market or just the regional market.
- **The NOBMS adjustment reduces the transparency of the ACE Model and results.** The NOBMS adjustment reduces the transparency of the ACE model and eliminating this aspect of the calculation would increase the clarity of the model.

6. CONCLUSIONS AND RECOMMENDATIONS

High-level conclusions and recommendations have been constructed by synthesizing the findings from the various evaluation activities.

6.1. Conclusions

At the commencement of the Television Initiative in 2009, the television market had already begun to become steadily more energy-efficient due to advances in technology and the development of more stringent ENERGY STAR specifications. Because of the speed at which this market was moving, NEEA implemented the program very quickly, and did not lock down the full logic of the Initiative ahead of implementation, as demonstrated by the lack of an established logic model.

This first year MPER has concluded that there are a number of large risks to the success of this initiative. EMI found that the fundamental logic of the Initiative potentially overstates the influence the Initiative has on the market through key market actors such as retailers, manufacturers, and other energy efficiency program developers. While available evidence supports some influence on these market actors, this initiative is only one of many contributing forces focused on the large national retailers that make up the vast majority of the television market. These other contributing forces include: internal goals of retailers and manufacturers, other utility sponsored energy efficiency programs across the country, the EPA ENERGY STAR program, California statewide standards, the Federal Trade Commission, and others. Aside from these market actors, rapid technological advancement such as power management and LED backlights continue to drive down the energy use of televisions. The influence of the NEEA Initiative is therefore diluted among many national pressures towards more energy-efficient televisions, and the Initiative logic model and ACE model assumptions do not properly reflect this. In addition, although the evaluation collected anecdotal evidence that the Initiative is contributing to this decrease in television UEC, a robust method for parsing out the influence of one organization from the myriad of stakeholders in such a large, complex, and rapidly moving market is not apparent.

These factors strongly suggest that energy savings estimates from the ACE model are likely to be overstated. The extent of this overstatement is not known because of the difficulty in determining the correct allocation of savings attributable uniquely to the NEEA efforts, but if the influence of the Initiative is significantly overstated, this could pose a significant risk to the ultimate cost effectiveness of an initiative based on the current program theory.

Additional conclusions of this evaluation are found below.

Key MPIs

The following conclusions provide a description of the results of the analysis of the key MPIs for this evaluation, which were taken from the final (Version 10) logic model for this initiative. These key MPIs are:

1. Market share of Initiative-qualified televisions compared to the NOBMS;
2. Market share of televisions that consume 108 watts or less;
3. Stringency of the Initiative specification levels compared to ENERGY STAR;
4. Quarterly reporting of Initiative data.

1. Market Share of Initiative-Qualified Televisions Compared to the NOBMS

The market share of Initiative-qualified televisions grew in every Initiative Tier in 2010. The Market share of televisions that meet Tier 1 of the Initiative (the least stringent criteria) grew from 45.2% at the end of 2009 to 87.7% at the end of 2010. Breaking results down by tier, Table 6-1 shows the market share of the four Initiative tiers at the beginning of the Initiative, the end of 2009 and the end of 2010.

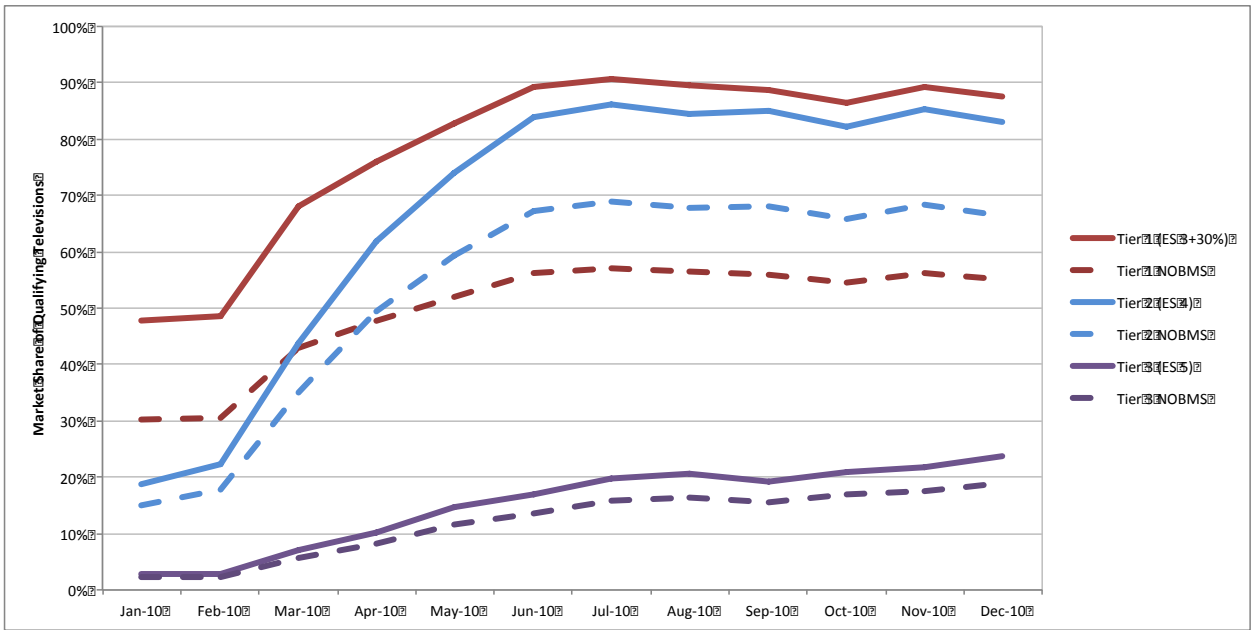
Table 6-1: 2010 Market Shares of Initiative-Qualifying Televisions in the Northwest

Initiative Tier	August 2009 (Pre-Program)	December 2009	December 2010	2010 Increase
Tier 1 (ES 3+30%)	48.9%	45.2%	87.7%	42.5%
Tier 2 (ES 4)	16.3%	15.6%	83.1%	67.5%
Tier 3 (ES 5)	1.6%	2.8%	23.8%	21.0%
Tier 4 (ES 5+20%)	0.4%	0.9%	3.8%	2.9%

Source: NEEA TV Baseline Aggregation Analysis (Version 5)

To examine the impact that NEEA had on these market changes, Figure 6-1 compares market shares by Tier with the NOBMS for each Tier over the course of 2010. Tier 4 had no NOBMS and therefore is not shown here. It is important to note that all NOBMS figures are based on the ECONorthwest allocation shares, which have not been independently verified and which may be overstated for the reasons indicated in Section 5.3.

Figure 6-1: 2010 Market Share and NOBMS by Tier



Sources: NEEA TV Baseline Aggregation Analysis (Version 5) and Natural Occurring Baseline Market Share Memo

The difference between Initiative-qualified market share and NOBMS is greatest in Tier 1 due to the larger allocation values determined by ECONorthwest. Table 6-2 shows the average 2010 market lift attributable to NEEA for Tiers 1 through 3.

Table 6-2: 2010 Average Market Shares and NOBMS

Initiative Tier	2010 Average Market Share[(a)]	2010 Average NOBMS[(a)]	2010 Net Market Lift
Tier 1 (ES 3+30%)	78.7%	49.6%	29.1%
Tier 2 (ES 4)	66.5%	54.1%	12.4%
Tier 3 (ES 5)	13.1%	12.0%	1.1%

Source: NEEA TV Baseline Aggregation Analysis (Version 5)
a.12 Month Average of 2010 NOBMS

While the market share of energy-efficient televisions did increase over the course of 2010, EMI was not able to confirm the validity of the NOBMS stated above, and therefore could not determine the direct effect of the NEEA Initiative separate from other market forces described in this report. Therefore, EMI could not determine the extent to which the market would have transformed in the absence of the NEEA Initiatives.

2. Market Share of Televisions that Consume 108 Watts or Less

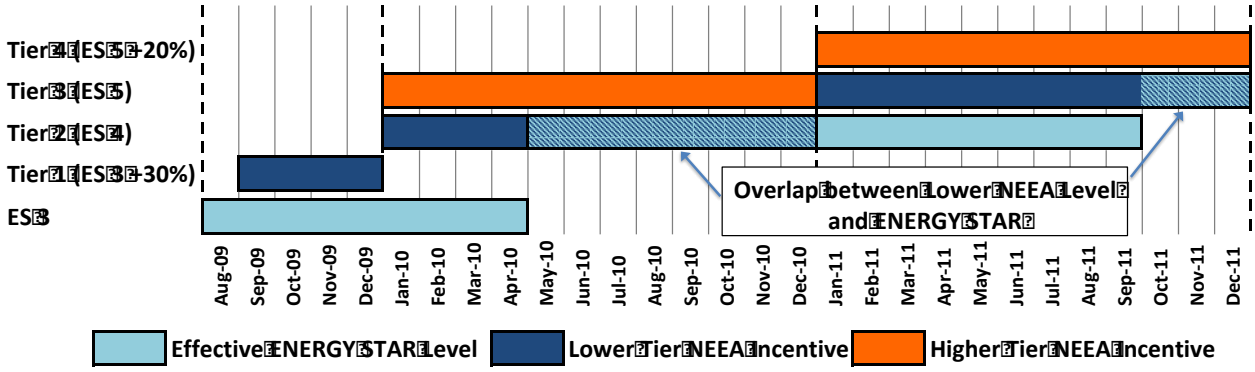
Another key NEEA MPI is the market share of televisions that consume 108 watts or less – the consumption cap for ENERGY STAR 5 (Tier 3) televisions. This absolute consumption cap in the ENERGY STAR 5 specification levels assure that all Tier 3 televisions consume 108 watts or less, and, in addition, many smaller televisions in Tiers 1 and 2 also consume 108 watts or less. Therefore, the total market share of all televisions that consume 108 watts or less is greater than the market share of Tier 3 alone. During 2010, the market share of televisions consuming 108 watts or less increased from 27.5% to 52.8%.

3. Stringency of the Initiative Specification Levels Compared to ENERGY STAR

While the higher tier NEEA incentive criteria were always more stringent than the ENERGY STAR qualification levels, the lower tier criteria were only equal to the ENERGY STAR levels at some points during the Initiative. This was a result of ENERGY STAR levels increasing mid-year, while the NEEA criteria are updated at the beginning of every calendar year. Having criteria that are equal to ENERGY STAR requires that the Initiative provide incentive payments to a large portion of the market once the market responds to the new ENERGY STAR standard, and therefore could decrease the cost effectiveness of the Initiative.

Figure 6-2 gives a graphical representation of the NEEA and ENERGY STAR qualification levels starting just before the Initiative began (August of 2009), and ending at the end of 2011.

Figure 6-2: Comparison of ENERGY STAR and NEEA Criteria



Source: ENERGY STAR Product Development Website; and NEEA staff interviews and background documentation.
Note: "ES" refers to specific ENERGY STAR levels, with +XX% indicating that the requirement is to use XX% less active power than the particular ENERGY STAR specification referenced.

4. Quarterly Reporting of Initiative Data

A variety of information was provided to NEEA by the implementation contractors on the implementation and progress of the program on a quarterly basis at a minimum. QDI provides a number of different reports to NEEA, including:

- Weekly updates of activities;
- Monthly reports of progress toward key goals and deliverables;
- Reports covering detailing visits and POP placement as needed;
- Reports from audits of POP placement.

Energy Solutions also indicated that they provide quarterly updates to NEEA with sales of Initiative-qualified televisions by zip code. While this progress indicator is present, it is not clear as to how the quarterly reporting leads to a change in the television market.

Additional Conclusions:

The following section provides additional conclusions of this research focused on the influence of the Initiative on market actors, the clarity and consistency of the Initiative logic model, and the transparency and validity of the ACE model assumptions. These conclusions were developed to answer specific evaluation questions developed during project scoping.

Influence of the Initiative on Market Actors

Review of NEEA Initiative data and primary data collection revealed many ways in which NEEA efforts have influenced market actors. The NEEA Initiative was one of many contributing forces that influenced the national retailers to stock and market energy-efficient televisions. Evidence of the influence of the NEEA Initiative found during this evaluation includes:

1. The collective financial incentives from many utilities influenced national retailers to stock more energy-efficient televisions;
2. NEEA-specific incentives had a more direct influence on smaller regional retailers that make up a small portion of the market to stock more energy-efficient televisions;
3. Incentives earn NEEA a seat at the table to collect market data from retailers and market to customers through retailers.

While the NEEA Initiative seemed to have some influence on national retailers, the influence of this initiative is diluted among the many different actors of the market. In addition, research indicated that

both the direct and indirect influence of the Initiative on manufacturers was limited, as discussions between national retailers and manufacturers do not prioritize energy efficiency and instead focus on other features and price. The main forces driving manufacturers to decrease the energy consumption of new designs are technological change (e.g., LED backlights) and the ENERGY STAR specifications.

NEEA was also actively involved in supporting more stringent energy efficiency specifications or programs. The main cases where NEEA helped influence the market are listed here and detailed in Section 4.3:

1. NEEA worked to implement higher-level qualification criteria and worked with California sponsors to harmonize to these specifications, as happened with the move from ENERGY STAR 3+15% to ENERGY STAR 3+30% in 2009.
2. BCE incentives motivated manufacturers to list products on the ENERGY STAR qualified products list, in order to collect incentives for these products.
3. NEEA took the lead on supporting the decision to move up the ENERGY STAR 5 effective date.
4. NEEA was a strong supporter of the progressive energy efficiency requirement (i.e. the 108 watt consumption cap) for ENERGY STAR.
5. NEEA contributed useful information to the Collaborative Labeling and Appliance Standards Program (CLASP) in support of the FTC label for televisions.

It is important to note that in many cases NEEA is working in collaboration with other organizations (e.g., CEE, other BCE sponsors) to leverage these organizations to increase the effective influence of these efforts.

Initiative Logic Model

EMI found that the logic model did not clearly articulate the main logic of the program, which dictates that the incentives lead to increased stocking and sales of Initiative-qualified televisions. This logic model could be altered to provide additional clarity and to more accurately reflect the observed effects of the Initiative. The logic of this initiative also changed over time, as EMI reviewed three different versions of the Initiative logic model over the course of the evaluation.

As indicated above, the Initiative incentives appear to have a limited effect on the regional assortments of televisions. Any influence on national retailers is on the national level, and therefore diluted among many market forces driving increased energy efficiency in televisions. In addition, these funds are channeled to the corporate level and are often funneled into energy efficiency marketing campaigns; corporate retailers indicated that they do not view the incentives as specifically increasing the profit margin on Initiative-qualified televisions in the Northwest.

Marketing to consumers is another area where program activities diverge from the logic model. While implementation staff de-emphasized the importance of the consumer-facing aspect of the program, this is a clear aspect of the Initiative logic model, and one of the main Initiative activities. Initial information gathered from the evaluation indicates that the consumer marketing aspect of the program may be having a limited effect, though NEEA had just begun a new marketing campaign and more in-depth research would be required to accurately assess the effect.

EMI found that other areas of the program logic were clear and consistent with the identified market effects. These areas include reporting of Initiative data, establishing annual specifications, and the contributions of NEEA to the development of more stringent specifications on televisions.

ACE Model Assumptions

There are a number of ACE model assumptions that pose a risk to the validity of the outputs of the ACE model. The highest risks identified in this research are listed here and discussed in detail in Section 5:

1. The NEEA allocation shares are potentially overstated.
2. The NEEA allocation shares are not transparent and therefore not verifiable. The selected baseline period may be underestimating the Initiative-qualified televisions on the market prior to Initiative implementation.
3. The estimation of total Northwest market size may be overstated.

The primary risk to the validity of the output of the ACE model is that the allocation shares are potentially overstated as discussed in Section 5.3. The ACE model could better reflect that the Initiative is focused primarily on large national retailers that are part of a national television market. Because of this, when assessing savings allocated to the Initiative in comparison to other market forces, NEEA is one of many contributing forces on a national basis. The NEEA influence is therefore diluted among all other regional, national, and international parties and drivers that affect the US market.

In addition, NEEA reports on consumer electronics have indicated that some demographics in the Northwest, such as televisions per capita and number of CRTs per capita, may differ from national averages. This likely leads to the overstatement of the Northwest market size and overstatement of total regional savings.

6.2. Recommendations

Over the course of this research EMI identified a number of primary recommendations that are described in this section. Prior to the completion of this report, NEEA had already begun to implement a number of changes to the Initiative, including an update of the program theory and logic model that includes a revision to the market progress indicators and ACE model assumptions. Future evaluation reports for this initiative will assess the results of these changes and estimate market progress accordingly.

Update the Initiative Program Theory and Logic Model

EMI recommends that NEEA review the core program theory and work to ensure that the logic model for this Initiative reflects the complexity of the market dynamics and the key critical paths towards energy savings. The development of a logic model is a useful tool for program designers, implementers, and evaluators, because it allows all stakeholders to come to a shared understanding of how a program will operate and how it will bring about change. Ideally this model is developed prior to program implementation. Through the course of this evaluation EMI has observed that different stakeholders have different expressions of the Initiative logic and that this logic has been changing over time. In this further development of the logic model, EMI recommends that NEEA focus on the difference between regional and national effects, the role of the incentives in bringing about market transformation, and the role and importance of consumer-faced marketing to the Initiative.

Revise Initiative MPIs and Update ACE Model Assumptions

EMI recommends that NEEA develop new MPIs that are mapped directly to the updated Initiative logic model. The evaluation efforts of this program will be enhanced by the development of MPIs that are linked more closely to the critical paths in the logic model. A separate MPI should be developed for all key critical paths in a way that measurement of that MPI will test the strength of that path in future

evaluations. Key MPIs to consider could be a metric for the relative influence of NEEA on retailers and a measurement of the average UEC of televisions in the Northwest market.

Improve the ACE Model and Baseline Assumptions

EMI recommends that NEEA improve the estimate of the market baseline and update the ACE model assumptions to better reflect the market and program logic. NEEA may want to consider evaluating the baseline and savings based on the average UEC of the television market, as this may be less challenging to forecast and track than the specific market share of each Initiative tier. EMI recommends that NEEA develop a detailed forecast of projected UEC going forward in the future and measure progress against this baseline. To determine this baseline, NEEA could look at the past national trends in UEC, which have shown a yearly 25% - 30% drop over the last few years during the assortment change over.

Further research into Northwest demographics could increase the transparency and validity of the ACE model assumptions. NEEA could identify more independent sources for information, or cross reference a number of different sources to tighten up some assumptions such as the percentage of televisions not sold in physical retail locations in the Northwest. NEEA could also perform more research to understand the effect of Initiative marketing materials such as surveys of Northwest residents that purchased televisions at participating retailers or mystery shopping visits to assess the placement of marketing materials. This information could be used to adjust the allocation shares for marketing materials, if applicable.

Harmonize the Timing of Criteria Revisions with ENERGY STAR.

EMI recommends that NEEA time the release of new qualification criteria with the dates when new ENERGY STAR specifications take effect. This step would ensure NEEA criteria are always more stringent than the ENERGY STAR specification and could help drive the market to higher levels of energy efficiency. By always keeping criteria more stringent than the ENERGY STAR specification in effect, NEEA will avoid paying incentives on large portions of the market due to the large increase in the number of qualified televisions after a new specification. This would ensure that retailers and manufacturers have to go above and beyond the ENERGY STAR criteria to receive incentives. If done effectively, this would accelerate the development of new ENERGY STAR specifications, and strengthen their criteria, by driving up the market share of televisions that are more energy-efficient than ENERGY STAR.

Consider a Codes and Standards Approach

NEEA may want to consider focusing energy savings goals on the long-term development of television standards in Northwest states. Because of the many market forces and dynamics, the average UEC for televisions was falling rapidly before the NEEA Initiative and is likely to continue falling into the future. There is still potential, however, for NEEA to influence the rate at which this change occurs. Utility programs often work in a leadership capacity to support the development and implementation of codes and such an approach may be warranted in the television market. A key advantage to this approach is the ability to evaluate this approach. An econometric forecast of expected *average* UECs could be developed for the television market (similar to average vehicle fleet efficiencies tracked by the Federal government), and NEEA could then establish an accelerated target for these average UEC levels, culminating in a regional standard for televisions. Long-term program evaluation would then be based upon this initial forecast of UECs in comparison to actuals, rather than tracking of market shares of various product tiers along the way toward the goal. Programmatic efforts would then focus on continued support of EPA in its work with manufacturers, but less on retailer and consumer market channels. In the near term, because of the rapid changes in the market, EMI recommends pushing for a standard that is more stringent than ENERGY STAR 5, such as the new ENERGY STAR 6 specification that is currently under development.

Determine the Applicability of Evaluation Findings to Other Products

EMI recommends that NEEA not assume the results of this evaluation are fully applicable to other consumer electronics products, and perform product-specific research where needed to determine the effectiveness of this program theory to these other products.

Recommended Data Collection Activities for MPER 2

There are a number of additional research tasks that EMI recommends NEEA consider for MPER #2 of this initiative.

1. **Interviews and Surveys with Market Actors.** For the second MPER, NEEA could perform additional interviews with market actors such as retailers and manufacturers to understand how attitudes towards the Initiative may have changed. In addition, NEEA may consider a short survey with key market actors to track any newly developed MPIs that cover the influence of the Initiative on these market actors over time.
2. **Survey of recent television purchasers and potential purchasers in the Northwest.** This could be performed in order to understand the true effect of the NEEA marketing efforts, and to determine what emphasis should be put on these activities in the future. This research could also be used to better understand aspects of the television market specific to the Northwest.
3. **Mystery shoppers.** This could be performed to understand the shelf-level saturation of Initiative-qualified televisions, to observe how well retailer staff is trained about Initiative-qualified televisions, and to confirm the correct placement of POP marketing materials. Comparisons to the initial NEEA market characterization reports could demonstrate key changes in the market since the inception of the Initiative.
4. **Survey of retailer sales staff.** This could generate information about trends in consumer buying criteria, the effect of initiative marketing criteria, staff turnover, and the use and satisfaction of retailer staff training.
5. **Perform comparison state analysis.** NEEA could focus research on determining exactly how the sales and market share of energy-efficient televisions in Northwest compare to a number of other target markets such as California, the Northeast, and areas without consumer electronics initiatives. This would help in forecasting and understanding how the Northwest market is different from other markets. For instance, the market share of energy-efficient televisions is likely affected by the mix of retailer types in the market (i.e. small local versus large national, electronics specialty stores versus general department stores). This could also offer a basis for future comparisons of regional data to other markets for any future Initiative strategy that may better affect the regional assortment or sales of highly energy-efficient televisions.

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Appendix B: DETAILED INTERVIEW FINDINGS

B.1 Retailer and Manufacturer Interviews

As part of the evaluation of the Northwest Energy Efficiency Alliance (NEEA) Consumer Electronics Initiative Television Program, EMI conducted interviews with six retailers participating in the Initiative and five manufacturers that produce qualifying televisions. Interviews were conducted in February 2011. These interviews were conducted to gauge retailer and manufacturer satisfaction with the Initiative, better understand the intricacies of the energy efficient television market, examine the Initiative influence on manufacturing and sales of energy-efficient televisions, and to identify suggestions for improvements in the Initiative, if any. This document provides a detailed description of the respondent sample selection and interview objectives, followed by a summary of the results of the interviews, and then conclusions and recommendations stemming from these findings.

Sample Selection

Retailer and manufacturer interviews were conducted in collaboration with ECONorthwest, who was simultaneously conducting market research to estimate the naturally occurring baseline market share of televisions in the Northwest. Interviews were scheduled and conducted simultaneously in order to decrease the amount of burden placed on manufacturers and retail partners. All interviews were conducted with individuals familiar with the NEEA Initiative and responsible for some aspect of utility programs and/or television design/purchasing for their companies.

Retailer Sample

As part of the collaborative effort, ECONorthwest attempted to contact ten of contacts from participating retailers provided by the implementer QDI. EMI was able to complete interviews with six of the representatives in collaboration with ECONorthwest. One additional interview was conducted by ECONorthwest only. Because the interview questions asked by ECONorthwest had a different focus, findings from this particular interview are not reflected in this analysis.

Manufacturer Sample

NEEA provided EMI with contacts for twelve manufacturers whose products are incentivized for the Program. EMI targeted and completed interviews with representatives of five manufacturers. The five manufacturers were selected by the implementer QDI, who recommended contacts who were likely to respond to an interview request.

Interview Analysis Objectives

The objectives of this analysis were to:

- Gauge retailer and manufacturer satisfaction with the Initiative;
- Understand distribution and sales channels of television manufacturers and retailers;
- Understand how the Initiative influences retailers and manufacturers;
- Determine influence of the Initiative on television manufacturing, stocking and sales practices;
- Identify trends in consumer demand, sales, and marketing practices;
- Understand how Initiative marketing materials are used and valued by retailers;
- Identify suggestions for improvements, if any.

Results

This section summarizes the key results with respect to the objectives listed above.

Retailer Satisfaction

Retailers were asked to report on their satisfaction with the Initiative overall, as well as with the performance of the implementers, QDI, Energy Solutions, and Premium Retail Services. Retailers were generally satisfied with the Initiative and implementers, although more than one respondent would like more transparency with respect to the incentive payment process. Retailers mentioned that they turn over all their sales data to Energy Solutions, who determines how many Initiative-qualified models were sold, and then determines the amount of the incentive payment.

Retailers are generally satisfied with the NEEA Initiative, but also have suggestions for improvements. Five out of the six retailer respondents were asked how satisfied they were with the NEEA Initiative, on a scale of 1 ("very dissatisfied") to 5 ("very satisfied"). Of the five responses, one gave a rating of 5 ("very satisfied"), three gave a rating of 4 ("somewhat satisfied"), and one gave a rating of 3 ("neither satisfied nor dissatisfied"). Reasons for a less than "5" rating were varied. One respondent wanted the incentive payment process to be more transparent. Another commented on the lower incentives offered by the NEEA Initiative compared to other programs. One respondent commented on the fact that the NEEA Initiative qualification criteria are different from the other programs, which makes it more difficult to participate effectively. Finally, one respondent expressed that he/she would like to have more of a sense of partnership and more regular communication with both NEEA and QDI.

Retailers are generally satisfied with the performance of QDI. Five retailer respondents also rated their satisfaction with the implementer, QDI. One gave a rating of 5 ("very satisfied"), stating that QDI has been extremely helpful because they have been involved in assembling all the utilities to participate in the various programs, making them a "one stop shop" for interfacing with energy-efficient television programs offered by different utilities. One retailer respondent gave a rating of 4 and the remaining three respondents gave a rating of 3. Reasons for lower satisfaction ratings included wanting more engagement with QDI and preferring to work directly with the utility rather than going through a third party implementer.

Retailers had less interaction with the implementers Energy Solutions and Premium Retail Services. Three retailers could comment on the performance of Energy Solutions, and none could comment on the performance of Premium Retail Services because some of the contacts had not had any personal interaction with the subcontractor Premium Retail Services. For Energy Solutions, one retailer respondent gave a rating of 4 and two gave a rating of 3. These respondents commented that they did not know how much incentive to expect, remarking that the incentive reimbursement process operated in a "black box." Another respondent commented that Energy Solutions was slow to respond to requests, and that changes in reporting had taken months to resolve. Another gave a rating of 4 rather than 5 because of the limitations and requirements with the sales data submission process. Specifically, this retailer commented on the fact that the retailer turns over the sales data to Energy Solutions and does not know how much of an incentive payment to expect each month, because that calculation is made by Energy Solutions, again hinting at the "black box" analogy.

Distribution and Sales Channels of Television Manufacturers and Retailers

The NEEA Initiative works to increase the adoption of televisions that exceed current ENERGY STAR specification in the Northwest. The Initiative rationale indicates that providing incentives to retailers will lead to increased sales of high-efficiency televisions to consumers, and that retailers will in turn influence manufacturers to produce more high-efficiency televisions. EMI examined the distribution and sales

channels of manufacturers and retailers to gauge the feasibility of this part of the Initiative logic and to determine if there are any barriers to the success of the Initiative.

Television distribution largely operates at a national, rather than a regional level. Large, national retailers tend to make assortment decisions (i.e., decisions about the mix of models to stock) that are identical for all store locations, regardless of region. Depending on physical store size, a store may stock fewer models, but the selection of models generally does not vary from region to region. However, if a particular store location is "selling through" all the stock of a particular model, that store could be replenished through their national distribution center. Regardless, there are not particular assortments that are used uniquely in the Northwest compared to other store locations. According to one manufacturer, one national retailer's database does not even allow regional assortment. This suggests that the ability of NEEA to influence the shelf level penetration of high efficient television in the Northwest is somewhat limited.

According to two retailer respondents, NEEA may be driving the national market. One respondent indicated that the retailer aims to make their high efficiency televisions consistent across the country. Although this retailer participates in utility programs across the country, the NEEA Initiative has more stringent standards. Thus, if the retailer chooses models that qualify for the NEEA incentives, they will by default qualify for incentives of other utility programs across the nation. This way, they can keep their assortment the same across the nation, and still qualify for incentives across all the different utilities. This retailer stated that although it seems that the NEEA Initiative is effective, it is not possible to quantify the amount of influence attributable to the Initiative. Another retailer stated that the West coast may be driving the East coast, or the entire nation, again because the standards for the West coast are more stringent, and the assortment decisions of retailers are made on a national level. However, this retailer emphasized that the assortments are based on the requests of the customers, rather than on energy efficiency criteria or utility incentives, which are very low on the list of priorities.

Program Influence on Retailers and Manufacturers

The Initiative logic states that NEEA incentives will influence the retailers to sell more high efficiency televisions to consumers. In turn, retailers are expected to leverage manufacturers to deliver high efficiency televisions. Thus, it is important to understand the ways in which the Initiative influences retailers, and the ways in which retailers can influence manufacturers.

Only two respondents, both large national retailers, spoke of being able to influence the manufacturer. One retailer mentioned that they have corporate goals to only stock ENERGY STAR-qualified products, and that the manufacturers know that efficiency is a criterion for them. This retailer has been able to influence manufacturers simply because of their size. However, the NEEA Initiative does not influence the products they carry because the Northwest is only a small part of their market; this retailer's assortment decisions are influenced more by their corporate goals about stocking ENERGY STAR-qualified products. At this time, their corporate goals are what is driving their assortment decisions. Another large national retailer mentioned that they could influence the manufacturer to produce more energy efficient products, but again mentioned that the NEEA incentives serve only as a tie-breaker between comparable models. One smaller regional retailer mentioned that they have no influence at all over the manufacturers.

The Initiative does not generally influence the manner in which retailers sell televisions. Because the primary determination of stocking of televisions is profit, more expensive models are pushed more, simply because they have a higher profit margin. Higher efficiency televisions tend to be more expensive, and thus have higher profit margins. Two manufacturers stated that the Initiative is essentially giving retailers "free money." Manufacturers claimed that retailers are still selling the same amount of energy

efficient televisions no matter what, and that retailers' focus is on profit; if there is a more profitable model that is less efficient, retailers will focus on selling that one. One retailer estimated that the NEEA Initiative has been responsible for a modest 5% increase in stocking and sale of high efficiency televisions.

Influence of the Program on Television Manufacturing

EMI asked retailers and manufactures to comment on the influence of the Initiative with respect to manufacturing, distribution, stocking, and sales to consumers. Most manufacturers noted that the NEEA Initiative does not impact the products that they manufacture.

Manufacturers stated that the large gains in efficiency have already been made, and that opportunities for new efficiency gains are modest. Manufacturer respondents argued that because television efficiency made large leaps in the transition from CRT to LCD, there is effectively less room to make large efficiency gains. One manufacturer commented that finding a way to remove old CRT televisions from use would be a greater opportunity for energy savings, because all new televisions are much more efficient. Another manufacturer added that while the market for energy efficiency is still growing, the demand is beginning to stabilize; only with a new technology would it be possible to continue to make substantial gains in efficiency.

Technology advances are not necessarily driven by potential gains in energy efficiency. One manufacturer stated that technology drives efficiency, rather than efficiency standards driving technology improvements. For example, manufacturers are driven to reduce the amount of heat produced by displays, not necessarily as a way to increase efficiency, but because heat has a negative impact on the lifespan on television components. The increased efficiency is considered a secondary benefit. This respondent also mentioned that flat screen televisions are more cost-effective to ship; therefore the movement away from the more bulky CRT screens has other benefits besides energy efficiency. The flat-screen technology allows the manufacturer to save on shipping costs, and also happens to be more energy efficient than a CRT television.

ENERGY STAR ratings have varying levels of influence on manufacturers in terms of energy efficiency. One manufacturer stated that ENERGY STAR drives sudden increases in efficiency, stating that manufacturers initially complained about the ENERGY STAR 3.0 standard, but then quickly went up to 85% compliance. This respondent continued to say that manufacturers do not want to be left out of the scramble to meet ENERGY STAR specifications. Another manufacturer stated that ENERGY STAR is a driving factor and helps the manufacturer communicate their energy savings. Yet another manufacturer stated that because televisions have already been produced when the ENERGY STAR specifications are announced, the manufacturers make minor revisions to the display settings after the models are already produced to meet the specifications.

One manufacturer noted that product design is influenced by the primary features that are included at a particular price point that the retailer is looking for. Although large retailers have the ability to bargain with manufacturers, the conversation generally revolves around features and price, rather than energy efficiency. Although manufacturers are interested in keeping up with efficiency, it is not a primary focus, as certain features are, such as internet connectivity or 3D displays.

Influence of the Program on Stocking and Sales

Both retailers and manufacturers noted that energy efficiency is not a primary determinant of manufacturing or stocking decisions, but rather serves as a "tie-breaker" when all else is equal.

Retailers choose their assortment prior to the announcement of NEEA incentive levels and qualifying models. Retailers stated that they need more lead time for the incentives to be truly influential, as they make assortment decisions at a time of year before the NEEA standards and incentives are known. There is a similar issue with the release of new ENERGY STAR specifications. According to one manufacturer, the design cycle is 18 months to 2 years, while ENERGY STAR announces their specifications 9 months in advance. Thus, when the ENERGY STAR specification is announced, the television models are already in production. One manufacturer mentioned that although major design changes are not possible at this point, minor alterations (such as adjusting default brightness levels) can be made to meet the specification. Manufacturers and retailers indicate that they cannot plan ahead if they do not know what the specifications and incentive levels will be when they are in the design process or placing orders for their assortment.

Both retailers and manufacturers stressed that energy efficiency and the NEEA incentives are a "tie-breaker." One manufacturer stated that the incentives can be used in negotiation with retailers. This manufacturer can bargain for a higher price for models for which the retailer will get incentives. However, efficiency is typically the last consideration. One large retailer noted that the NEEA incentives were a tie-breaker when deciding between two very similar models – one that qualified for the NEEA incentives and one that did not. All else being equal, they chose the model that qualified for incentives and informed the manufacturer of the reason why they did not choose their model.

Retail sales associates are not directly incentivized to sell high-efficient televisions. The NEEA incentives are not distributed directly to sales associates. Instead, retailers stated that the incentives tend to go toward advertising the incentivized products. Two smaller retailers indicated that sales staff are paid on commission, and because high-efficiency televisions tend to have higher profit margins, staff are coincidentally motivated to sell high-efficiency televisions. However, the big-box retailers do not pay their sales staff on commission; instead they are paid hourly.

Retail sales associates do not always highlight efficiency when selling to customers. Two retailers stated that their retail staff are trained by the retailer on energy efficiency in televisions. However, sales associates do not necessarily emphasize energy efficiency when they are speaking with customers. In most cases, sales associates only have a few minutes of the customer's time and they must choose a few points to make about the products the customer is considering. One retailer specifically stated that energy efficiency may or may not come up in conversation, depending on the customer. Another retailer stated that it is difficult to communicate the value of energy efficiency in televisions to the consumer because the monetary value of energy savings from an energy efficient television is relatively low for an individual television that the customer may be purchasing.

Value of Marketing Materials by Retailers

The NEEA Initiative is marketed to consumers inside participating retail locations. Point-of-purchase (POP) materials indicate which models qualify as high-efficiency (or "the best of ENERGY STAR"), and sales associates are trained to assist consumers in identifying high-efficiency televisions. The subcontractor Premium Retail Services is responsible for placing POP materials on the qualifying units in the stores, and for training retail sales associates. EMI asked retailer respondents to report the ways that the high-efficiency televisions are advertised and how satisfied they were with the NEEA marketing materials.

Although respondents generally thought the marketing sticker was effective, they nonetheless had suggestions for improvements. Four retailers were able to comment on the NEEA Initiative marketing materials, with one of these saying he/she had seen an electronic version of the marketing sticker only. One retailer respondent suggested that the marketing materials could be altered to fit into the cosmetic

design of televisions, or play into the desirability of consumer electronics. Another stated that the marketing materials do not include enough detail, and that the energy savings would ideally be quantified for the consumer. Likewise, another respondent stated that the new "Energy Forward" design is less than desirable because the "most efficient" claim has not been substantiated to his/her satisfaction.

NEEA marketing materials and retailer training may not be implemented among all retailers. Four of the six retailer respondents stated that the NEEA Initiative marketing materials are being used in their retail locations. However, none of the six respondents mentioned receiving training for their sales associates from the NEEA Initiative implementers. One manufacturer stated that he had specifically looked for the NEEA marketing materials at participating store locations and had not seen any displayed, and one retailer mentioned that they are not using the current NEEA Initiative sticker design, and they continue to use the old sticker design.

Trends in Consumer Demand, Sales, and Marketing Practices

Because the NEEA Initiative is a market transformation program, it is important to understand not only where the market is currently, but also where it is going. Thus, EMI asked retailers and manufacturers to comment on the particular television features or technologies that consumers are demanding, as well as to forecast what consumers may be demanding in the next year.

One retailer noted that energy efficiency is no longer a "trend" and that it is not emphasized by manufacturers. This retailer mentioned that energy efficiency was a big focus among manufacturers in 2009, and that manufacturers even had meters comparing the energy use of a new LCD television to that of an older tube television. Then, in 2010, manufacturers no longer emphasized energy efficiency; instead they emphasized 3D technology. This retailer mentioned that for 2011, manufacturers are emphasizing internet connectivity. Other retailers stated that while manufacturers still mention ENERGY STAR, it is not typically emphasized over other features.

Technology trends influence the retailer assortment of television models. Several retailers mentioned that the trend is toward LED televisions, along with 3D capability and internet connectivity. Because LED televisions tend to be more costly than their non-LED counterparts, there is a higher profit margin for LED televisions. Sales associated that are paid on commission tend to push the LED televisions due to the higher commission they would earn. An ancillary benefit to the retailer is that they are likely to earn NEEA incentives from LED televisions; however, the NEEA incentives are not the primary reason for selling LED televisions. Several retailers and manufacturers remarked that they expect the popularity of 3D televisions to increase in the near future. One retailer mentioned that 3D technology could drive consumers to purchase more efficient products sooner, because 3D televisions often have LED displays.

Consumer demand for energy efficiency is low. Both retailers and manufacturers noted that consumers are not demanding energy efficiency in televisions. However, one retailer respondent mentioned that consumers are becoming more aware of energy efficiency in televisions, partly in response to the NEEA marketing materials. Nevertheless, energy efficiency in televisions is not a customer priority.

Suggestions for Improvements

EMI asked both retailers and manufacturers to report what they view as the greatest strengths of the NEEA Program as well as what could be improved, or what they would most like to change.

Retailers and manufacturers both remarked on the differences between the NEEA Initiative and other utility programs. Two manufacturers remarked that the NEEA Initiative provides incentives that are lower than those from other utilities. One retailer mentioned that the NEEA standards and incentives are different from other utilities, and if all utilities adopted the higher NEEA standards, it would allow

retailers to more easily influence manufacturers. Another retailer commented that the NEEA incentives are the lowest of all of the utility programs, however, they also commented that NEEA offers a lot of resources compared to the other programs. The fact that NEEA standards and incentives are different from other utility programs means that it is more difficult for retailers to participate effectively, because their distribution operates at a national, not regional level. Likewise, it is difficult for manufacturers to keep up with all the different criteria across the programs, and manufacturer respondents suggested that consistency would help the programs be more effective.

Two of the five manufacturer retailers commented on the "unfairness" of the ENERGY STAR wattage cap. The ENERGY STAR 5.3 specification that will go into effect in September 2011 will require televisions to use no more than 108 watts in active mode, regardless of screen size. One manufacturer we spoke with indicated that the company produces a 75" television that uses 120 watts, and thus even though this large display television is quite efficient relative to others of it size, it will not meet the requirements for 5.1. Another manufacturer noted that they have a 55" plasma television that uses 119 watts, down from 400 watts in the past. One argument is that the specification should be based on watts per square inch, rather than placing an absolute cap on active mode energy use.

Retailers and manufacturers had various suggestions for improving the effectiveness of the Initiative. Two manufacturer respondents suggested that incentives to retailers may not be the opportunity for the most influence. This is because the incentive goes to the retailer at a corporate level, not the store-level or the sales associate who made the sale. These respondents also pointed out that a retailer might make more profit from an inefficient television than they would from the incentive for selling a more efficient television. Several respondents, both retailers and manufacturers remarked that the NEEA incentives are lower than those of other utilities and that the Initiative might have more influence if incentives were higher. One manufacturer suggested that the Initiative should focus on branding the NEEA specification and consumer-faced marketing materials and labeling of qualified products. This respondent also stated that the Initiative should provide incentives to the sales associate. One manufacturer suggested that the incentive could go to the consumer in the form of a mail-in rebate.

Conclusions

There are five primary conclusions stemming from the interviews conducted with manufacturers and retailers participating in the NEEA Consumer Electronics Television Program:

1. **Distribution of televisions is national, and the ability to affect just the Northwest market alone is limited.** However, there may be some opportunity to affect the national market. Because the NEEA Initiative criteria are more stringent compared to other utility program, stocking models that meet the NEEA standards means that retailers will meet the standards of all other programs in which they are participating. However, only two retailers mentioned that this is occurring, and it is unknown the extent to which all participating retailers are willing or able to stock high-efficiency models on a national level in order to meet the regional NEEA requirements.

2. **Incentives to retailers may not influence sales associates to sell Initiative-qualified televisions.** Incentives are not always considered additional profit for participating retailers, as the incentives are funneled into marketing the incentivized products. At some smaller retailers, sales associates are paid on commission, and so they are motivated to sell televisions with higher profit margins. These are often LED televisions, which are more expensive and higher efficiency. However, sales associates do not receive any of the NEEA Initiative incentives, and

thus the incentives themselves do not appear to motivate the sales associates to sell incentivized products.

3. **The ability of retailers to influence manufacturers is limited.** Very large national retailers mentioned that they have some influence. However, energy efficiency is generally considered a tie-breaker or a very low priority, rather than a primary feature to seek out. This limits the instances in which the NEEA Initiative incentives are motivating retailers with influence to press manufacturers to produce more high-efficiency models. Smaller independent or regional retailers have little to no influence over manufacturers.

4. **Marketing materials may not be used in all stores and sales associate training may not be occurring as intended.** If marketing materials are being used, the retailer and manufacturer respondents have not noticed them and are not aware of them. Without marketing stickers placed on qualifying products, it is likely that sales associates are unable or less able to identify qualifying products.

5. **Because manufacturers produce televisions and retailers choose their assortment far in advance of the ENERGY STAR specifications and NEEA Initiative qualification criteria, manufacturers and retailers cannot take these specifications into account.** In order to best influence which televisions are manufactured or chosen for assortment, the criteria must be known before the design process begins or the assortment decision is made. While manufacturers can always work on meeting the current specification in the next design cycle, there is no guarantee that another more stringent specification will be adopted before the next models are produced. From the perspective of the manufacturers, they are always playing "catch up," and the process is seen as unfair.

B.2 Other Energy-Efficient Television Programs

Two interviews were performed with national television energy efficiency programs to understand how NEEA collaborates with these programs and to understand the current state and the history of the energy-efficient television market in the U.S. These interviews were with the team leader of U.S. EPA ENERGY STAR product development and the Senior Program Manager from the Consortium for Energy Efficiency (CEE). Findings from these interviews are summarized below.

1. **NEEA involvement in national program development.** According to those interviewed, NEEA has had a definite presence in the ENERGY STAR and CEE programs. For ENERGY STAR, it was noted that NEEA staff were active in discussions and provided comments in combination with other organizations such as PG&E and SMUD. In particular, NEEA was noted to have weighed in especially strongly to move up the Version 5 effective date, as NEEA was the first to suggest this to the EPA in August of 2010. NEEA also offered data to the EPA to support this move, but the data was not used as the EPA already had supporting retailer data. The EPA respondent also indicated that they likely would not have been able to go forward with the progressive efficiency requirement in the Version 5 specification (i.e., the 108 watt cutoff for all televisions, regardless of size) without support from utilities such as PG&E and NEEA. For CEE, the respondent indicated that NEEA was very active in work on the Consumer Electronics Committee, which included providing comments to ENERGY STAR on specifications, and that this participation was valued. In particular, the CEE respondent indicted that NEEA had been

"very supportive" of the progressive efficiency requirement, and that the utilities had shared useful data on market share.

2. **Continued efforts to drive efficiency.** ENERGY STAR indicated that they plan to continue to push the energy efficiency of televisions with the development of more stringent Version 6 levels, which would potentially include stricter levels and alterations to the test method regarding Automatic Brightness Control (ABC). In addition they also announced a new ENERGY STAR "Most Efficient" pilot campaign[1] (officially kicked off May 5, 2011) to advance products in the market that are "truly superior" in energy efficiency (i.e. products even more energy efficient than ENERGY STAR levels). According to the interview respondent, the EPA plans to continue to increase the stringency of the specifications because of how quickly the television market continues to move, and there is some concern that the market share of qualified ENERGY STAR 5 televisions may be higher than desired going into 2012. CEE, as well, indicated that with the presence of the Version 4 and 5 specifications in the market there was no need for additional CEE levels at this time, but with the market getting more energy efficient, they were also considering developing more strict levels.

Harmonizing ENERGY STAR with NEEA specifications

NEEA also proposed to EPA that they harmonize the ENERGY STAR "Most Efficient" criteria with the NEEA ENERGY STAR 5 +20%, but the EPA respondent indicated that this level was too lenient for what they were trying to do with the pilot campaign, and EPA eventually released levels more stringent than the ENERGY STAR 5+20% levels.

B.3 Partner Utility

An interview was also performed with one of the partner utilities also running a BCE television program similar to the NEEA Initiative. This interview was performed to understand how NEEA collaborates with other utilities running similar initiatives and to understand barriers or lessons learned from similar initiatives.

1. **Coordination with NEEA and other programs.** The interviewee indicated that they worked closely with NEEA and talked to NEEA staff once a week. In addition, they worked every year to coordinate and set new specification levels for the incentives in order to stay harmonized. In addition, they would collaborate with NEEA and other utilities to offer feedback and support to ENERGY STAR and other programs. In one example of collaboration, they spoke of working with NEEA to propose to ENERGY STAR to move up the effect date of ENERGY STAR 5 from May 2012 to September 2011, which ENERGY STAR eventually did with utility support.
2. **Using market transformation for resource acquisition.** The partner utility respondent perceived NEEA Initiative as more of a market transformation effort, whereas the partner utility is using a "market transformation strategy to get resource acquisition". This partner utility program also gives higher incentive amounts due to the fact that they operate with different budgets and associated energy costs.
3. **Successes Influencing Retailers and Manufacturers.** The partner utility respondent indicated there have been big successes such as when retailers have indicated they have made changes to their stocking to meet the program, when retailers reach out to manufacturers to ask about ENERGY STAR, or when a manufacturer changes a panel to make a model more efficient.

[1] While sharing the same name, The ENERGY STAR "Most Efficient" pilot campaign is unrelated to the NEEA "Most Efficient" branding.

4. **Challenges with the speed of market movement, cost effectiveness and the ability to evaluate the program.** The partner utility respondent indicated that the biggest challenge is the speed at which the market moves, and that it is difficult to approve new levels in a timely manner to keep pace. The interview respondent also indicated that because the per-unit savings are small, cost-effectiveness of the program could be a problem, and that they were concerned that it will be difficult to evaluate the program.
5. **Pushing retailers beyond ENERGY STAR.** The respondent indicated that the program pushes retailers beyond the ENERGY STAR requirements to even more energy-efficient televisions, by having qualification levels that are more stringent than those of ENERGY STAR. The interviewee indicated, "I can't think of any reason they go beyond ENERGY STAR, except for these programs."
6. **Consumers are not focused on energy efficiency in televisions.** The respondent indicated that the focus of the program was on retailers, marketing and sales associate training, because energy efficiency was "six or seven" on the priority list of consumers. The respondent indicated that the energy efficiency message would not make a difference with the average consumer because the per unit energy savings are relatively low for energy-efficient televisions. This is why the program focuses on effectively increasing the profit margin on energy-efficient televisions for retailers.
7. **Moving the incentive schedule to coincide with the retailer market.** This interview respondent indicated that they switched their official specification update to the spring, instead of January 1, to coincide with the spring assortment change over. Because of this change, units that qualified the previous year would still qualify in early spring before they are replaced with the newer models in the assortment changeover.

B.4 Participating Utilities

The evaluation team conducted interviews with two participating utilities in the Northwest to understand the ways in which the NEEA participating utilities have been involved in the Initiative, as well as to get feedback from these stakeholders regarding the successes and challenges of the Initiative. Several key findings were identified in the interviews with participating utilities. There were a number of common themes across both interviews, as well as findings that were common to other data collection efforts for this evaluation.

1. **Supplemental marketing efforts of participating utilities.** NEEA implementation staff indicated that the role of participating utilities was largely to provide supplemental marketing support for the Initiative. Because utilities claim savings for the televisions sold in their territory, there is an incentive for the utilities to try and drive sales in their territory. One participating utility respondent had a number of examples of additional marketing their utility had done including press releases, Facebook announcements, bill inserts, promotions at special events, and inclusion on a home energy audit. This utility also had an additional local incentive for ENERGY STAR-qualified televisions. The other utility respondent indicated that they did some promotion of the energy-efficient televisions through "general marketing," but they mostly "leave it up to NEEA."
2. **Importance of Initiative data collection.** Both respondents indicated the access to local data on television sales and market share is one of the strengths of the Initiative. One mentioned that without this Initiative, "data from those big markets would be untouchable" for small utilities, as retailers would not give local utilities pertinent sales data. The other mentioned that they were

happy that they would be receiving quarterly savings results for this Initiative and that in most programs they do not get feedback that often.

3. **Focus on large retailers more prevalent in urban areas.** Both participating utility respondents expressed concern about the Initiative not reaching smaller retailers that are more prevalent in rural areas, and therefore that the Initiative is not equally representative across both urban and rural areas. One interviewee indicated that it was difficult for these retailers to provide the required data and that setting up the agreements with these smaller stores was difficult. This interviewee indicated that smaller stores would be more engaged, have less staff turnover (so training is more effective), and that these small stores should not be disadvantaged against larger stores by not being able to participate in the Initiative. In one case, the utility hired another contractor to try and reach out to smaller retailers in rural areas, in order to increase sales of energy-efficient televisions in rural areas. In this case NEEA allows these nonparticipating retailers to use the initiative POP, even though they are not given incentives and do not have their sales tracked by the Initiative. The other interviewee, while concerned about the lack of participation from these smaller stores in more rural areas, indicated that it may not be cost-effective to try and include these smaller retailers in the Initiative and that the influence that NEEA has on the market as a whole may also increase the efficiency of televisions stocked in these smaller stores as the efficiency of the entire market is pulled up by the Initiative.
4. **Opportunities for coordinating marketing efforts.** One utility respondent spoke of opportunities to coordinate marketing efforts or leverage the work from other programs. For example, many utilities run programs for other products through the same retailers that participate in the Television Initiative, and so utilities could train their staff to check television POP and train retailer staff about the Television Initiative while doing a store visit for a different program.
5. **Limited awareness of the effectiveness of the Initiative marketing materials.** Both interviewees indicated that they had limited awareness of what was happening at participating retailers with the POP and were not qualified to indicate whether it was effective. One retailer indicated that the materials might be effective in retail stores where the retailer education has been good, but that they had asked some sales associates about stickers in the associates' stores and the associates did not know what the stickers were for. This same interviewee also indicated that they had not heard that customers were ever asking for the Initiative-qualified televisions. Despite indicating a lack of awareness of their effectiveness, both utilities suggested providing better consumer-facing marketing, with better monitoring of POP materials and better sales associate training to raise recognition and awareness of the Initiative.

Appendix C: DETAILED FOCUS GROUP FINDINGS

As part of the evaluation of the Northwest Energy Efficiency Alliance (NEEA) Consumer Electronics Initiative Television Program, EMI conducted two focus groups in January 2011 with consumers who had recently purchased televisions. These focus groups were conducted in order to understand consumer decision-making and usage of televisions, as well as awareness of energy efficiency with respect to televisions and awareness of the NEEA Program marketing materials. This document provides a brief description of the NEEA Program, followed by a detailed description of the focus group objectives. This is followed by a summary of the results of the focus groups, and then by conclusions and recommendations stemming from these findings.

C.1 Program Overview

The NEEA Consumer Electronics Initiative began in July of 2009. To date, this initiative primarily aims to produce energy savings through the Television Program which aims to increase the market share of energy-efficient televisions (EETVs) in the Northwest. The Program offers incentives to retailers to promote the sale and stocking of EETVs in the northwest market, and also includes marketing materials to help promote EETVs to consumers. The Program is a result of a partnership with Pacific Gas and Electric (PG&E) and Sacramento Municipal Utility District (SMUD), utilities that launched a joint Consumer Electronics program covering televisions in 2008. NEEA joined this effort in mid-2009 and has continued the Program with progressively more stringent criteria. For 2009, NEEA offered incentives for televisions that met the ENERGY STAR® Version 3.0 television specification, but used 30% less energy than the Version 3.0 active mode requirements. Following the completion of new ENERGY STAR active mode levels in the fall of 2009, the 2010 NEEA Initiative began to offer incentives for the sale of televisions that meet the ENERGY STAR Version 4.1 active mode specifications. In 2011, the Program is offering incentives for televisions that meet the ENERGY STAR Version 5.3 specification.

The NEEA Initiative provides incentives directly to participating retailers for the sale of these more efficient models. The Initiative rationale is that the incentives to retailers will have a number of effects that lead to an increased market share of EETVs, and therefore, energy savings.

C.2 Focus Group Objectives

To ensure that the focus groups would capture responses from different subsets of the Northwest Market (i.e. west and east of Interstate 5), one focus group was conducted in Seattle, WA and one was conducted in Spokane, WA. Both groups were conducted in January 2011.

The objectives of the focus groups were to:

- Assess the prevalence of sales associates recommending energy-efficient televisions;
- Understand the terminology consumers use to discuss energy efficiency in televisions and measure the ability of consumers to identify energy-efficient televisions;
- Determine popular features sought after in television purchasing;

- Determine the extent to which energy efficiency is used as a purchasing criterion among consumers;
- Evaluate consumer awareness of specific marketing materials for the NEEA Program, and determine what influence these materials have on consumer purchase decisions;
- Assess if and how consumers typically configure their televisions, with a focus on brightness controls and other energy saving features;
- assess how usage of televisions among consumers (e.g., hours of use and types of use) is changing over time.

The remainder of this section describes the characteristics of the focus group respondents, followed by key results with respect to the research objectives listed above. Where appropriate, actual responses from focus group participants have been included in italicized text to illustrate the relevant results.

C.3 Focus Group Respondent Characteristics

All focus group participants had recently purchased a new television at a participating retail chain. Participants were screened so that half of the participants in each group had knowingly purchased an ENERGY STAR-qualified television, and the other half were not sure if their new television was ENERGY STAR-qualified or not. This enabled EMI to learn from the experiences and opinions of those who may have used ENERGY STAR as a purchasing criterion as well as those who may not have been familiar with the brand. Furthermore, EMI concentrated on recruiting participants who had purchased a new television within the last three months of 2010 to ensure the purchases took place after new marketing materials that were introduced in the participating retail stores in October 2010. The characteristics of focus group respondents are summarized in Table 0-1 below.

Table 0-1: Focus Group Respondent Characteristics

Characteristic	Frequency Seattle Group (N = 8)	Frequency Spokane Group (N = 8)
Gender		
Female	3	3
Male	5	5
Age Range		
25 – 34	3	1
35 – 44	3	4
45 – 54	1	1
55 – 64	1	2
Annual Household Income		
< $25k	-	1
$26k - $49k	1	3
$50k - $74k	2	2
$75k – 99k	2	1
100k - $124k	-	1
≥ $125k	3	-
Employment		
Full Time	8	7
Part Time	-	1
Month of Television Purchase		
August 2010	-	1
September 2010	1	-
October 2010	3	3
November 2010	3	2
December 2010	1	2
Knowingly Purchased an ENERGY STAR-Qualified Television?		
Yes	4	4
No/Not Sure	4	4

Note. All respondent characteristics are self-reported.

C.4 Results

This section summarizes results of the focus groups with respect to each of the objectives listed above.

Influence of Retail Sales Associates on Television Purchases

Rather than relying on sales associates to assist with purchase decisions, respondents reported that they tended to use websites or online reviews to help them narrow their choices before going into the store. Once they are in the store, the sales associate may assist them with deciding between a few particular options. However, the influence of the sales associates appears to be minimal, and it depends on the knowledge of the particular salesperson helping the consumer. Several respondents commented that sales associates tend to be very knowledgeable, but it can be "hit or miss."

Whereas the Seattle group tended to state that they did all of their research before making their purchase and either knew exactly which television they wanted or had narrowed down their options to a few models before going into the store, the Spokane group was more likely to research general characteristics online, go to the store with those in mind, then decide on the specific television in the store.

We did all our research online and then went to a couple of different stores to look at the models and then made our decision.

I knew what I was looking for so I just went in and got it. I didn't talk to anyone.

Consumer Terminology and Ability to Identify Energy-Efficient Televisions

Focus group respondents understood what is meant by "energy efficiency" in general, and they did not appear to use any other terms to refer to energy efficiency. However, when asked how they would identify an energy efficient television, respondents seemed less sure. Although respondents generally understand the concept of energy efficiency, they wanted more information to understand how efficiency specifically applies to televisions.

Some respondents commented on the television display (having a dimmer setting to make it more efficient) or the standby mode, and two respondents commented specifically on the heat produced by the displays of less efficient televisions. Respondents were not sure if their televisions were already energy-efficient when they came out of the box, or whether there was a setting that they needed to activate after they get them home.

A friend of mine, he likes to play games, and on a hot day, he says the room where he plays just heats up. And he has a plasma. They do throw off quite a bit (of heat) so they're using up quite a bit of electricity to create that heat.

Respondents mentioned that they would be able to identify an energy efficient television by the ENERGY STAR logo; however, they also mentioned that they weren't sure exactly what the logo indicated – they were not sure how much money they should expect to save with an ENERGY STAR television compared to another comparable television. Several respondents commented that it would be easier to identify energy efficient televisions if they had a tag similar to that on refrigerators and other "white goods," indicating what the yearly cost of electricity would be for each television model compared to other similar non energy-efficient televisions.[2] Almost all respondents seemed to want the efficiency information quantifiable. Several also commented that if the energy savings were important, someone (e.g., manufacturer, retailer, etc.) would have mentioned it to them.

That would be more of an impact if it said something like, "This is what it's going to cost you." Or, "You'll save this much." Because anything about saving money, I'll pay attention to it.

Why is it important to put (yearly energy cost) on refrigerators, but it is not important to put it on TVs? It's like they're not really concerned about it, so we're not either.

Respondents also mentioned that there can be several stickers on televisions in the store, meaning that the prominence of the ENERGY STAR logo, or NEEA marketing stickers is diminished. Consumers indicated that they are overwhelmed by the amount of information presented on the televisions for sale.

[2] Manufacturer interviews indicated that the Energy Guide stickers that show estimated yearly energy cost will be required on all televisions by the Federal Trade Commission beginning May 2011.

I know that nowadays there are so many different programs that there just isn't the one sticker down there. You can have 6 or 7 stickers…

It's not like there's one and you're like "Oh, what does that say?"

Popular Features Sought After in Television Purchasing

The focus groups suggested that consumers are using their televisions for a great variety of activities, and this influences the features consumers look for when purchasing a television. Although respondents reported that they do not often use their televisions to watch broadcast television when it originally airs, they occasionally watch live local news or weather broadcasts. To watch television shows, they often use a DVR (digital video recorder) and watch it later when it is more convenient, which also allows them to skip over commercials. Many respondents reported using their televisions to stream content from the internet or with gaming consoles.

I wanted to make sure it had all the inputs that I needed to hook up my DVD players, and games and stuff. I wanted to make sure it had all those on the back.

To determine which features consumers consider most when purchasing a television, focus group respondents were asked to engage in a card-ranking task. The task involved sorting cards containing potential decision factors, including television features and other factors that may have influenced their purchase decision. Each respondent ranked his or her top five factors. Respondents were also asked to note which factors they did not consider at all when making their purchase decision.

Focus group respondents received index cards pre-printed the following potential decision factors:[3]

- Energy consumption
- Screen size
- Type of television (e.g., plasma, LED, LCD, HD)
- 3D or 3D-capable television
- Screen refresh frequency (e.g., 60 Hz, 120 Hz, 240 Hz)
- Screen resolution (e.g., 720p, 1080p)
- Television footprint
- Price of the television
- Inputs (e.g., HDMI, Component Inputs, PC Inputs, USB Inputs)
- Internet connectivity
- Interaction with a salesperson
- Warranty
- Picture quality

Each respondent received the same set of factors contained on the cards, although each respondent's stack was randomly sorted to rule out order effects.

Table 0-2 shows the number of respondents that ranked each of the factors in their top five, as well as the number of respondents who noted that a factor was not at all considered in their purchase decision. Price,

[3] There were also three blank cards that respondents could use to write in features they may have used but were not on the pre-printed cards, however no respondents used the blank cards to write in additional features.

screen size, type of television, picture quality, and screen resolution were the most common factors used by respondents to make their purchase decision.

Internet connectivity was also an important feature, especially for the Seattle focus group respondents where three respondents indicated it was one of the top five features considered. In Spokane, internet connectivity was not a top five feature for anyone, and it was on the list of unused features for three respondents. Additionally, the Seattle group reported wanting internet connectivity built into their television, whereas the Spokane group felt that built-in internet capability was less important and just plugged in their laptop when they wanted that feature.

Some features did not at all influence respondents' purchasing decisions. For example, respondents did not want a 3D or 3D-capable television, although they stated that their interest might increase in the future when the technology is improved. Interestingly, six out of the eight respondents in both focus groups said they did not at all consider their interaction with a sales person when deciding which television to purchase. Both energy consumption and television footprint were less likely to be considered by respondents of the Spokane group than respondents of the Seattle group.

Table 0-2: Factors Used by Respondents When Deciding Which Television to Purchase

	Number of Respondents Listed Factor in Top 5		Number of Respondents Listed Feature as "Not a Factor"	
Decision Factors	**Seattle Respondents (N = 8)**	**Spokane Respondents (N = 8)**	**Seattle Respondents (N = 8)**	**Spokane Respondents (N = 8)**
Price of Television	7	7	-	1
Screen Size	7	7	-	1
Type of Television	6	6	-	1
Picture Quality	4	7	-	-
Screen Resolution	5	5	-	-
Inputs	4	4	-	1
Screen Refresh Frequency	3	2	2	3
Internet Connectivity	3	-	-	3
Warranty	2	1	2	-
Interaction with Sales Person	-	1	6	6
3D or 3D-Capability	-	-	6	7
Energy Consumption	-	-	2	7
Television Footprint	-	-	2	6

Energy Efficiency As a Consumer Purchasing Criterion

Energy efficiency was not a purchase criterion for any focus group participants. As shown previously in Table 0-2, no respondents listed energy efficiency in their top five purchase criteria. Two respondents in the Seattle group and seven respondents in the Spokane group said that energy consumption was not at all a factor they considered when purchasing their new television. Respondents were primarily concerned that the picture looked good, and did not usually consider energy use with respect to televisions. While it was not a purchase criterion, most respondents wanted to know more about energy efficiency in televisions, and again, they wanted it quantified. Several respondents noted that it seems that all new television should be energy efficient, and this is an assumption that they made.

I thought that (energy efficiency) only had an impact with refrigerators and washer and dryers. I didn't think it had anything to do with a TV.

(Energy efficiency) was a big concern for me. I saw it on the (online) reviews. It wasn't like they went into it. It was more just a note in the review or in the information. But I just assumed--whether it's wrong or right--that just any TV out there today is energy efficient, so who cares?

Several respondents relayed the perception that energy efficiency televisions would impact the picture quality negatively. This suggests that for some consumers, not only is energy efficiency not a purchasing criteria, but energy efficiency in televisions is something to avoid.

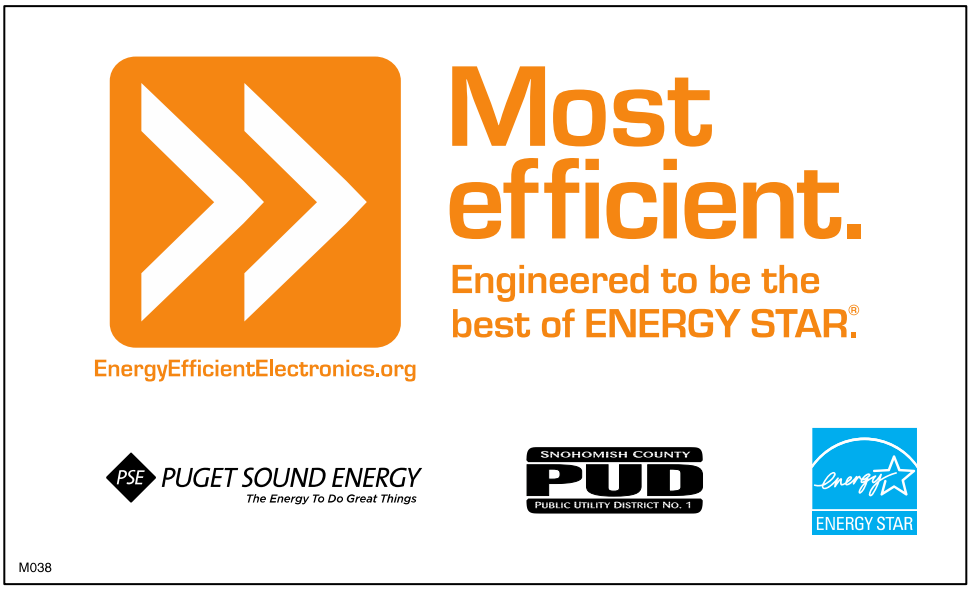
I pressed mine (an "energy efficiency button" on the remote control) one time and it made the picture dimmer. Another respondent: *That's why I don't use it.*

That's a little green button that I can hit and I can say, "Oh, I'm saving the planet, but my picture sucks. But I'm saving the planet." I don't want that.

Consumer Awareness and Influence of Marketing Materials for the NEEA Program

Marketing materials for the NEEA Television Program primarily consist of a 4" x 6" sticker placed on eligible televisions at participating retail locations. An example of the in-store marketing sticker is shown in Figure 0-1. Utility logos included on the stickers vary depending on the location of the retail store. In addition to the marketing sticker placed on eligible televisions, Costco locations also air an 18-second video advertising the Consumer Electronics Initiative's "Energy Forward" brand eights times per hour. NEEA also maintains a website[4], which allows users to locate participating retailers and provides a list of eligible products.

Figure 0-1: NEEA Television Program In-Store Marketing Sticker



The retailers where focus group respondents had purchased their new televisions are listed below.

[4] www.energyefficientelectronics.org/

Seattle:
- 5 purchased at Best Buy
- 3 purchased at Costco

Spokane:
- 2 purchased at Best Buy
- 2 purchased at Costco
- 4 purchased at Wal-Mart

No respondents recalled seeing marketing materials from the Program in the store when they were purchasing their television. However, in the Seattle group, five of the eight respondents had purchased their television at Best Buy, where a different form of the marketing sticker was used. In the Spokane group, both versions of the sticker (the Best Buy version and the newer version of the sticker which is shown at all other participating retailers) were shown to respondents, and none recognized either sticker or recalled seeing either of them in the store. Additionally, none of the five respondents who purchased their television at Costco recalled seeing the video advertising the "Energy Forward" brand.

Reactions to the marketing sticker were mixed. Respondents of both focus groups were shown the new marketing sticker and asked to comment on their reaction and interpretation. Respondents recognized the ENERGY STAR logo on the marketing sticker and suggested that that part of the sticker be made larger because that is a recognizable logo. The orange "Energy Forward" logo meant different things to different people. Some said it looked like a construction sign, while others said it looked like "fast-forward" or the button on a remote.

I think the "ENERGY STAR," the blue part, would be better because that's a recognizable logo.

If it (the ENERGY STAR logo) was bigger, then it would stand out and I think we'd pay more attention to it. But something that tiny, I'm just going to look over it.

We all look at that blue one (the ENERGY STAR logo) and we know what it means. (I am) not saying we care, but we know what it means. We look at this one (the Energy Forward logo), and we don't really know what it means. We don't know who's behind it…

Again, respondents noted that they wanted energy efficiency quantified.

What does that mean, most efficient of what? How efficient? What's the difference between all the other televisions here?

I feel like it's just not terribly quantifiable to me to be the best of ENERGY STAR. Does that mean it's 50% better than the average ENERGY STAR TV, does it mean it's… I don't know, what does that mean?

In addition to the ENERGY STAR logo, the marketing stickers also contain the local utility logo(s). The meaning of the utility logo to focus group participants varied between the two groups. Seattle respondents said that the utility logo included on the marketing sticker lent credibility to the "best of ENERGY STAR" claim. One respondent also noted that the utility logo means that the advertising is "local," and this was a positive attribute. On the other hand, Spokane respondents indicated that the utility logo neither added nor detracted from the claim, adding that televisions are not the utility's area of expertise.

Seattle respondents:

It gives validity to it (the claim). Like, hopefully these three companies (NEEA, ENERGY STAR, and the utility) stand for energy efficiency. That's dependable. If they're putting their backing, then it must be something that matters…

I think it just lends credibility.

Spokane respondents:

I don't have anything against (the electric utility) at all, but (the electric utility)… they're not a TV company or a reviewer, so that really doesn't do anything for me. They're just energy and power. So what do I care about that?

I don't think it's a positive or negative if (the utility name) wasn't on there. Or if it is on there, it's not going to make me buy the TV.

Respondents want education regarding energy efficiency to come from manufacturers, not from retailers. Participants of the Spokane focus group were asked from whom they would like to receive education on energy efficiency for televisions. Interestingly, customers noted that they would trust information from manufacturers, whereas they would be less likely to trust information from sales people. Retail sales staff were viewed as having ulterior motives, whereas manufacturers were seen as being more objective. Respondents also stated that they would need the information to come on a separate sheet, rather than buried in the manual, so that it stands out and is easily accessible. Again, respondents re-iterated that they would like to see cost savings, similar to that found on refrigerators.

I don't want it to be a sales tactic. Another respondent: *Yes. I'm not going to trust Wal-Mart.*

Participants of the Spokane group were also directly asked if the utility has a role in educating customers about energy efficient televisions. A few respondents indicated that the utility has a role, and that the utility is currently educating customers on the categories of household appliances that use the most energy. However, respondents questioned whether the energy savings for televisions would be large enough for the utility to have an interest.

I'm kind of wondering whether the cost savings would matter that much. Is it going to matter – 30 cents over a month – where, say, a refrigerator might save you $10 a month?

Consumer Configuration of Televisions

ENERGY STAR-qualified televisions are required to meet the specifications "out of the box." However, once consumers change the default settings, it is unknown whether the altered in situ settings continue to meet ENERGY STAR criteria. Therefore, focus group respondents were asked if they changed any of the settings, such as brightness, contrast, or standby mode, on their new televisions.

Television settings varied from person to person. Some respondents used the default settings that came with the television. Others experimented with the settings in an "unscientific" manner until they found a setting they liked. After finding this preferred setting, they would rarely or never change the setting again. Still others had determined different settings that would be ideal for different purposes (e.g., gaming, vs. watching a Blu-ray DVD), and they had these settings programmed so that they could easily select the setting they preferred based on the activity.

I just left mine on default. It looks fine the way it is unless there's sun glaring in or something. It's just set up the way it is.

I think the only thing I did was go in and figure out how to turn off the auto dim feature, the light sensitive feature. Because I felt like it got too dim.

Depending on the inputs, we might adjust things a little bit. But it's nothing with a lot of reason behind it. It's just "This looks better."

I dialed it in for three weeks. Back and forth and back and forth, trying to dial in the exact right flesh tones. Once I got the flesh tones, then I was good.

I locked mine in and it stays. …Unless you actually bump the menu button, my settings don't change.

We adjust before watching a Blu-ray, if we're doing something with Netflix, we may look at it and change the picture quality, or if this is too dark, we'll make the adjustments.

You have different modes. You've got your gaming mode, you've got your theater mode… you have five or six modes on the (television) that I have. Now if you set all that stuff initially, and then you can just click from user mode, to game mode, or movie mode.

Others commented on the "energy efficiency" settings and not knowing whether energy efficiency was automatic with an ENERGY STAR television, or whether they had to select a certain setting.

I think my TV has an ENERGY STAR setting on it if I'm not mistaken. I couldn't tell you what it's set to, but I think it's an option.

That (having to turn on an energy-efficiency features, as opposed to it being automatic on all ENERGY STAR TVs) defeats the purpose, we have to turn it on and I know we haven't turned anything on that's ENERGY STAR. I just assumed it was saving energy. I guess not.

Consumer Television Use Over Time

Focus group participants were asked to comment on how their television use has changed over the past ten years. Respondents commented on the many uses for their television now, compared to years past. For example, some respondents discussed the ability to use the television as a digital photo frame. Others stated that they now use their television to stream music instead of using a stereo. Respondents are watching less broadcast television, and their television use is much more diversified compared to a decade ago. Some respondents felt that they now spend more time using their televisions, but most respondents felt that the time they spend using their television has not necessarily increased, and some felt that it had decreased. However, despite the total amount of time spent using their television has stayed constant, all respondents agreed that the number of activities that involve the television has increased over time.

The SD card slot - I've used it a bit and it's nice to have, because you can just make it into a picture frame. Put a bunch of photos on it and run it in the background.

We game, I've used it as a monitor for work, it's like a little bit of everything. It's completely changed.

I got rid of my cable and just do Netflix and exactly what everybody else is saying, you stream the content to the TV, use the monitor for working on, you do a lot more with it.

One change that I've noticed in our family is for example after Christmas dinner we would always bring out the board games, play board games. Last several years, somebody brings out the Wii and we're like playing the Wii for the rest of the night. We're always doing something with it.

C.5 Conclusions and Recommendations

There are three primary conclusions stemming from the focus groups conducted for the NEEA Consumer Electronics Television Program:

1. Consumers need and want more information about energy efficiency in televisions. Although focus group participants knew generally what is meant by the phrase "energy efficiency," they were not sure what this meant specifically with respect to televisions. In fact, some respondents were surprised that ENERGY STAR applied to anything other than refrigerators and similar "white goods." Respondents were not sure if there is a specific setting or if ENERGY STAR televisions are energy efficient out of the box, but many held the belief that they would have to sacrifice picture quality for energy efficiency. Many respondents indicated that they changed the default settings after getting their new television home; it is unclear how this may affect the energy use of the television, compared to the ENERGY STAR specifications. Respondents of both groups expressed a desire to see the Energy Guide tags (detailing the annual energy cost to operate the television compared to similar models) or more information from manufacturers. Although respondents valued the opinions of sales associates who know a lot about televisions, they did not necessarily trust retailers to "sell" energy efficiency.

EMI recommends that NEEA pursue efforts to educate consumers on energy efficiency with respect to televisions. Although the Energy Guide tags will be required on all televisions beginning in May 2011, consumers do not appear to be aware of how their alteration of default settings can potentially override any energy savings they could otherwise expect. Focus group participants indicated that they would like to receive this information along with their new television, as a separate sheet of paper, rather than being contained in the manual where it might get overlooked.

2. The NEEA Program marketing materials and sales associate recommendations may not influence a great number of consumers. Most of the focus group participants had conducted a great deal of research online prior to going to a physical storefront to make their specific television selection. Twelve out of sixteen focus group participants indicated that they did not rely on a retail sales associate to make their purchase decision. Furthermore, none of the focus group participants recognized the marketing sticker or remembered seeing the "Energy Forward" video in Costco stores. One reason for this could be that there are a number of stickers displayed on the front of televisions for sale, and consumers may be overloaded by information in the store. However, when asked to comment on the marketing stickers, respondents indicated that the ENERGY STAR logo was more recognizable and meaningful than the Energy Forward logo. No focus group respondents used "energy efficiency" as a criterion when deciding which television to purchase, and consumers appear to be much more interested in other television characteristics such as screen size and picture quality when shopping for a television. However, the impact of the sticker cannot be fully determined based on two focus groups alone. Further research needs to occur to conclusively determine the impact of the sticker.

EMI recommends that NEEA systematically assess the impact of the in-store marketing materials, including whether they are being used as planned at all store locations, and NEEA should consider re-evaluating the marketing channels that this Program relies on to transform the market and produce energy savings. No respondents recalled seeing any of the marketing materials displayed in the store. Given respondents' understanding of, and significance placed on, the ENERGY STAR, Energy Forward, and utility logos, NEEA should consider evaluating the use, placement, and prominence of these logos for the in-store marketing materials. Furthermore, most respondents conducted research online prior to entering the store, and generally did not rely on a sales associate to make their purchase decision. Another way to increase consumer awareness may be to promote the energyefficientelectronics.org website, as many

respondents indicated that they had conducted online research prior to going to a retail location to purchase their new television.

3. Television use is greatly diversified. Although the amount of time spent watching live broadcast television appears to have decreased, televisions are now used for many more activities. Respondents use their televisions in a variety of ways, including streaming internet, viewing digital photos, gaming, using a DVR to record shows to watch later, and even listening to music. Some respondents indicated that although their use of television over time has diversified, the amount of time spent using the television has not changed. However, other respondents indicated that their use of the television has increased or decreased over the last ten years.

EMI recommends that NEEA continue to monitor televisions usage patterns over time. Although the focus group results are unclear as to whether hours of television use have increased in the last ten years, the variety of ways that consumers are using their televisions does appear to be increasing. Monitoring changes in the usage patterns of televisions (including hours of use) is important for determining the energy consumption and potential savings of televisions.

Appendix D: DATA COLLECTION INSTRUMENTS

D.1 Interview Guides

NEEA Staff and Implementation Contractors

Interview Objectives:

- Understand roles of staff and contractors involved in Initiative implementation.
- Understand details of Initiative implementation.
- Understand the Initiative theory and logic.
- Determine successes, challenges, and potential risks to the success of the Initiative.

Interviewees:

- NEEA: Mardi Cino / Lisa Watson / Stephanie Fleming
- QDI: Pat Kilroy
- Energy Solutions: Alex Chase

Note:
This interview guide is comprehensive in that it allows for discussion on a number of topics with various Initiative staff. Therefore, there will be sets of questions that will be more fully explored with some individuals than with others. The depth of the exploration with any particular respondent will be guided by the role that individual plays in the Initiative's design and operation.

INTRODUCTION

Hello my name is _____ from Energy Market Innovations. As you may know, we are evaluating NEEA's Consumer Electronics Initiative Television Initiative, and as part of that evaluation, we are speaking with program staff/implementation contractors to understand the details of the program and learn, from your perspective, what is going well and what may need to be improved.

1.1. To start, will you please explain your role and scope of responsibilities with respect to the NEEA Television Program?

- How long have you held this position?
- Have your role and responsibilities changed over time? [If so:] How?

2. PROGRAM IMPLEMENTATION

2.1. What is the role of [NEEA / QDI / Energy Solutions] in the implementation of the NEEA TV Program?

- Probe for particular activities:
  - Program energy efficiency criteria development
  - Retailer recruitment
  - Tracking incentives and/or sales data
  - Marketing activities
  - Retailer training
  - Maintain Salesforce database
  - Developing program criteria

2.2. How does [NEEA / QDI / Energy Solutions] interact with program stakeholders?

- Probe for particular Stakeholders:
  - Retailers
  - Manufacturers
  - Participating utilities
  - Partner utilities

3. PROGRAM THEORY

3.1. Please describe the state of the energy-efficient television market prior to the program implementation.

3.2. Please describe the key goals and intended outcomes of the program. Note that we'll also ask about secondary goals so please focus on the primary goals.

- Are there any secondary goals? If so, please describe?

3.3. Please describe how this program brings about market transformation and produces energy savings.

3.4. What are the key barriers to consumers investing in energy-efficient televisions?

- How does this program address these barriers?

4. PARTICIPATING UTILITIES [FOR NEEA PROGRAM STAFF ONLY]

4.1. What role do participating utilities play in this program?

4.2. Do the utilities claim savings in association with this program?

- [If so:] How does this occur?
- Does NEEA claim savings? [If so:] How does this occur?

4.3. How many Northwest utilities are currently participating? Which utilities are participating?

4.4. What role do the Northwest utilities play in the overall program?

- How does NEEA engage with these utilities?
- How does NEEA help these utilities in achieving any goals related to TVs?

4.5. Has program staff reached out to additional utilities to increase participation?

- Why or why not?
- Are there other Northwest utilities that are currently not participating, but have shown interest in partnering with NEEA on this program?

5. RETAILER RECRUITMENT [QDI ONLY]

5.1. How does retailer recruitment occur?

5.2. Once a potential retail participant is identified, how are contract negotiations conducted?

- What specifics does this involve (e.g., incentive levels, marketing requirements, data reporting requirements, access to data, etc.)?
- Who is the negotiation with (e.g., national or store-level staff)?

5.3. I understand that the goal is to recruit retailers that are responsible for 80% of the market share of television sales in the Northwest. Has this 80% goal been met?

- What is the plan for recruitment moving forward?
- Will recruitment continue once the 80% goal has been met?
- What do you see as the greatest barriers to retailer participation?
    - How can these barriers be addressed?

6. ACCOUNT MANAGEMENT [QDI ONLY]

6.1. Please describe the various account management activities. In other words, what activities occur in order for the implementation team to maintain its relationships with the retailer participants?

7. MARKETING ACTIVITIES [QDI ONLY]

7.1. Please explain how the program is marketed to consumers.

- In-store signage, placing marketing materials,
- Video,
- Collateral, etc.

7.2. Who is responsible for the key marketing activities?

- Who develops and delivers marketing materials?
- How are marketing materials customized for individual utility service territories?

7.3. How many stores in total have received marketing materials?

- How many visits do you typically make to a store?
- How frequently are stores provided with marketing materials?

7.4. How are marketing activities monitored?

- How is the success of marketing activities measured?
- What specific quality assurance processes do you use?

7.5. What do you perceive is the level of satisfaction among retailers with respect to the marketing materials?

8. SALES ASSOCIATE TRAINING [QDI ONLY]

8.1. Please describe the sales associate training.

- What are the goals of the sales associate training?
- Are there regular or one-time trainings?
- How many trainings do sales associates typically have per year?
- What topics are covered?

8.2. How do you determine whether training and marketing materials are being used by the retail staff?

- Is the Salesforce.com database used to track this?

8.3. Who is responsible for the key activities?

- Who develops and provides the training?
- Is training standard across retailers, or does it vary?
  - If so: How does it vary?

8.4. How are retailer training activities monitored?

- What metrics are used for success of retailer training?

8.5. What do you perceive is the level of satisfaction among retailers with respect to the training?

9. INCENTIVES [QDI ONLY]

9.1. Are retailers generally satisfied with incentive levels?

- Why or why not?

9.2. Are incentives effective at influencing retailers to sell more energy-efficient televisions?

- Why or why not?

10. DATA TRACKING

10.1. How does QDI / Energy Solutions collect sales data from the retailers?

- How often are data collected? Are retailers timely in submitting their sales data?
- How is the accuracy of retailer sales data assessed?
- Do retailers submit data for non-qualifying units as well?

10.2. Please describe the QDI / Energy Solutions process for submitting data and updates to NEEA.

- How often are data updates submitted to NEEA? Market share updates?
- What information is contained in these updates?
- Is information for both qualifying and non-qualifying units submitted?

- How is the accuracy of the data assessed?

10.3. Please describe the incentive payment process.

- How are incentives calculated?
- How often are incentives paid to the retailers?
- Are incentives ever paid late?

11. PROGRAM EFFICIENCY CRITERIA

11.1. What is the current efficiency criteria used for the NEEA Television Program?

- Do they meet or exceed current ENERGY STAR level?
- Do criteria only cover active mode power, or does the specification cover other ENERGY STAR criteria?

11.2. Is there currently any intent to modify these levels?

- If so: How would they be changed? When?

11.3. How frequently are the efficiency criteria reviewed?

- What are the procedures for review? Who is involved?

11.4. What information/metrics are used to determine if the criteria need to be revised?

- How is program data used to justify alterations?

12. PRODUCT ALLOCATION [IF TIME ALLOWS]

12.1. How is it ensured that program-qualified TVs will be available from manufacturers?

- Who is responsible for this, and how does the communication with manufacturers, if any, take place?

12.2. Have there been any issues or concerns regarding the availability of qualified products?

13. DETERMINATION OF KEY PROGRAM GOALS

13.1. How is market share defined and measured / calculated?

13.2. How are energy savings calculated for this initiative?

- How is incremental market share attributable to the program determined?
- How are Unit Energy Consumptions (UECs) calculated?
- Are you confident in the assumptions used for savings calculations? Are there any assumptions at risk of not being accurate? [Probe for knowledge of ACE model and assumptions]

13.3. Is the program meeting its stated goals?

14. RELATIONSHIP/COMMUNICATIONS WITH ENERGY STAR AND CEE

14.1. How do ENERGY STAR and CEE influence the NEEA criteria?

14.2. How does NEEA influence national/regional specifications, such as CEE and ENERGY STAR?

- How influential is NEEA in the development of these national specifications?

15. PROGRAM STRENGTHS AND AREAS FOR IMPROVEMENT

15.1. What do you see as the greatest strengths of the program?

15.2. What do you see as the greatest weakness of the program? What would you most like to change?

- What, if anything, is standing in the way of making those changes at this time?

15.3. What potential risks exist that might negatively affect the ability of the program to meet its goals?

- Funding? Staff resources?
- Technological advances? Changing political priorities?

16. END

16.1. Do you have anything to add? Is there anything I've forgotten to ask you about?

16.2. Finally, how do you feel you will benefit from our research? What would you like to learn from our research that would be truly valuable for you and your team?

Thank you very much for taking the time to assist us with this evaluation. If I have any additional questions, do you mind if I send you an email or give you a quick call?

Participating Retailers

Interview Objectives:

- Determine influence of the program on television stocking and sales practices.
- Identify trends in consumer demand, sales, and marketing practices.
- Gauge retailers' awareness and understanding of the NEEA program.
- Gauge retailer satisfaction with the program, and identify suggestions for improvements, if any.
- Determine approximate market share of energy-efficient televisions.
- Understand distribution and sales channels of television manufacturers and retailers.
- Understand how the program influences retailers and manufacturers.
- Understand how program marketing materials are used and valued by retailers.

Interviewees:
Ten corporate-level staff at participating retail chains. These contacts will be taken from contact lists provided by NEEA.

INTRODUCTION

Hello my name is _____ from Energy Market Innovations. As a reminder, this interview is being held regarding the BCE program (Business and Consumer Electronics) which provides monetary incentives for the sale of energy-efficient televisions in California and the Northwest. We are doing an evaluation of the role of the Northwest Energy Efficiency Alliance, or NEEA, in this program. NEEA is the major funder of this program in the Northwest, including Washington, Oregon, Idaho and Montana. Your input into this evaluation is important to help determine the effectiveness of the program to help justify future program operations. We are also trying to determine what is going well with the program and what may need to be improved.

1 CONTACT QUALIFICATIONS AND AWARENESS

1.1 To start, will you please explain your role and scope of responsibilities at [RETAILER NAME]?

- How long have you held this position?

1.2 What is your role at [RETAILER NAME] with respect to the NEAA Television Program?

- How do you typically interact with the program and its representatives?
- How long have you been involved with the program?

1.3 Can you briefly describe your knowledge of the NEEA Television program? What are the program goals? How does the program operate to achieve those goals?

1.4 Can you describe the different energy efficiency tiers and incentives and used by the NEEA program?

- What are the current tiers and incentives?

2 RETAILER OPERATIONS

2.1 Please describe the process for submitting sales data.

- Who submits, to whom, and when?
- What data are submitted and how often?

2.2 Please describe the process for receiving incentive payments.

- How often are incentive payments received?
- Typically how long is it between data submittal and when you get paid?
- Are there often disputes in the amount of the payment? In other words, are there often many products that you don't receive incentives for that you think you should have? Why do you think that is?

2.3 How does [RETAILER NAME] define energy-efficient televisions?

- What specification or power/energy usage is used for the definition?

2.4 Does [RETAILER] currently market televisions as being energy-efficient to customers?

- [If yes:] How? Is this increasing over time? When did you begin marketing them as energy-efficient?

2.5 Please describe program marketing materials used at your retail locations.

- What marketing materials are provided by NEEA?
- What marketing materials are developed by [RETAILER NAME]?

2.6 Do you think these materials are effective at promoting the sale of energy-efficient televisions?

- Do you have suggestions for making these materials more effective?

2.7 Are retail staff at your stores trained to mention energy efficiency as feature when selling TVs?

- To your knowledge do retail staff generally mention energy efficiency as a product feature?
- Does [RETAILER] encourage retail staff to do so? Do you see this increasing over time?

2.8 Are manufacturers currently marketing products to you as being energy-efficient?

- Do you expect them to?
- Have you seen this change lately?

2.9 Are energy-efficient TVs generally available through manufacturers?

- If not: Please explain.

2.10 Do you feel that the manufacturing and availability of energy-efficient TVs is influenced by this program?

- Why or why not?

2.11 Approximately what percentage of the televisions sold by [RETAILER NAME] in the Northwest in 2010 were energy-efficient?

- Is this different than in other markets? Nationally? In California?
- Has this changed over time? Increased? Decreased?

2.12 Do the individual stores typically buy differently for different regions or store locations, or does model assortment typically happen at a national level?

2.13 Do you find that particular store locations request or demand more energy-efficient TVs compared to other store locations?

- Which ones?

3 MARKET CHARACTERIZATION / EFFECTS

3.1 In your opinion, what particular television technologies or features are consumers demanding right now?

- Are there particular energy-efficient features that consumers want?
- Are there particular energy-efficient features that your organization plans to market more aggressively towards consumers?
- Are there technologies or features upcoming on the market that you think consumers will be demanding by the end of this year?

3.2 What impact do the current incentives have on encouraging your organization to *purchase and stock more* energy-efficient televisions in the Northwest market? Do you think more energy-efficient TVs are *purchased and stocked* in the Northwest as a result of the program?

- Do you think a different incentive level would be more effective?
- If yes, would you increase it or reduce it and by how much?

3.3 What impact do the current incentives have on encouraging your organization to *sell* energy-efficient televisions to its customers in the Northwest market? Do you think more energy-efficient TVs are *sold to customers* in the Northwest as a result of the program?

- Do you think a different incentive level would be more effective?
- If yes, would you increase it or reduce it and by how much?

3.4 Have you observed any differences between television sales patterns in the Northwest and nationally?

- What about similarities or differences between California and Northwest sales patterns?
-

3.5 How do you think that the NEEA TV program has influenced the manufacturing or design of energy-efficient TVs?

3.6 Over 2010, has demand for energy-efficient televisions:

- Increased,
- Decreased, or
- Remained approximately the same?

- Please explain.

3.7 Looking forward to 2011, do you think the manufacturing of energy-efficient TVs will…

- Increase,
- Decrease, or
- Remain approximately the same?

- Please explain.
- Do you think NEEA has influenced this change? If so, how?

3.8 Do programs such as the National ENERGY STAR program, or the *Consortium for Energy Efficiency, have influence on the types of televisions that are manufactured or sold?*

- How much influence? More or less influence than the NEEA program?

4 SATISFACTION

4.1 How satisfied are you with the NEEA program? Would you say you are:

Very satisfied,
Somewhat satisfied,
Neither satisfied nor dissatisfied,
Somewhat dissatisfied, or
Very dissatisfied?

- Please explain why you gave that rating.

4.2 How satisfied are you with the performance of the implementer QDI? They are responsible for setting up program contracting and other account management tasks. Would you say you are…

5. Very SATISFIED
4. Somewhat SATISFIED
3. Neither satisfied nor dissatisfied
2. Somewhat DISSATISFIED
1. VERY DISSATISFIED
98. Don't Know

- Please explain why you gave that rating.
- Probe to determine the extent of interaction/knowledge of work performed.

4.3 How satisfied are you with the performance of the implementer Energy Solutions? They are responsible for collecting sales data and making incentive payments. Would you say you are…

5. Very SATISFIED
4. Somewhat SATISFIED
3. Neither satisfied nor dissatisfied
2. Somewhat DISSATISFIED
1. VERY DISSATISFIED
98. Don't Know

- Please explain why you gave that rating.
- Probe to determine the extent of interaction/knowledge of work performed.

4.4 How satisfied are you with the marketing materials that NEEA has developed and placed in your participating stores? Would you say you are…

5. Very SATISFIED
4. Somewhat SATISFIED
3. Neither satisfied nor dissatisfied
2. Somewhat DISSATISFIED
1. VERY DISSATISFIED
98. Don't Know

- Please explain why you gave that rating.

4.5 How satisfied are you with the performance of the implementer Premium Retail Services? They are responsible for placing the marketing materials in participating the store locations.

- Probe to determine the extent of interaction/knowledge of work performed.

5 PROGRAM STRENGTHS AND AREAS FOR IMPROVEMENT [IF TIME ALLOWS]

5.1 What do you see as the greatest strengths of the NEEA program? What is working well?

- What do you see as the greatest weaknesses of the NEEA program? What would you most like to change?

6 END

6.1 Do you have anything to add? Is there anything I've forgotten to ask you about?

Thank you very much for taking the time to assist us with this evaluation. If I have any additional questions, do you mind if I send you an email or give you a quick call?

Participating Manufacturers

Interview Objectives:

- Determine influence of the NEEA television program on television manufacturing and sales.
- Identify trends in consumer demand, sales, and marketing practices.
- Gauge manufacturers' awareness and understanding of the NEEA program.
- Gauge manufacturer satisfaction with the program, and identify suggestions for improvements, if any.
- Determine approximate market share of energy-efficient televisions.
- Understand distribution and sales channels of television manufacturers and retailers.
- Understand how the program influences retailers and manufacturers.

Interviewees:
Five manufacturers involved in the program. These contacts will be taken from contact lists provided by NEEA and QDI.

INTRODUCTION

Hello my name is _____ from Energy Market Innovations. As a reminder, this interview is being held regarding the BCE program (Business and Consumer Electronics) which provides monetary incentives for the sale of energy-efficient televisions in California and the Northwest. We are doing an evaluation of the role of the Northwest Energy Efficiency Alliance, or NEEA, in this program. NEEA is the major funder of this program in the Northwest, including Washington, Oregon, Idaho and Montana. Your input into this evaluation is important to help determine the effectiveness of the program to help justify future program operations. We are also trying to determine what is going well with the program and what may need to be improved.

1. CONTACT QUALIFICATIONS AND AWARENESS

1.1. To start, will you please explain your role and scope of responsibilities at [MANUFACTURER NAME]?

- How long have you held this position?

1.2. What is your role at [MANUFACTURER NAME] with respect to the NEAA Television Program?

- How do you typically interact with the program and its representatives?
- How long have you been involved with the program?

1.3. Can you briefly describe your knowledge of the NEEA Television program? What are the program goals? How does the program operate to achieve those goals?

1.4. Can you describe the different energy efficiency tiers and incentives and used by the NEEA program?

- What are the current tiers and incentives?

2. MANUFACTURER OPERATIONS

2.1. How does [MANUFACTURER NAME] define energy-efficient televisions?

- What specification or power/energy usage is used for the definition?

2.2. Does [MANUFACTURER] currently market its televisions as being energy-efficient?

- [If yes:] How? Is this increasing over time? When did you begin marketing them as energy-efficient?
- [If yes:] What are examples of marketing televisions as energy efficient?

2.3. To your knowledge, are retailers currently marketing your products as being energy-efficient?

- Do you expect them to?
- Do you see this changing anytime soon? If so, how?

2.4. Approximately what percentage of the televisions sold by [MANUFACTURER NAME] in the Northwest in 2010 were energy-efficient?

- Is this different than in other markets? Nationally? In California?
- Has this changed over time? Increased? Decreased?

2.5. Do the retailers typically buy differently for different regions or store locations, or does model assortment typically happen at a national level?

3. MARKET CHARACTERIZATION / EFFECTS

3.1. In your opinion, what particular television technologies or features are consumers demanding right now?

- Are there particular energy-efficient features that consumers want?

- Are there particular energy-efficient features that your organization plans to market more aggressively towards retailers?
- Are there technologies or features upcoming on the market that you think consumers will be demanding by the end of this year?

3.2. Do you think retailers purchase more energy-efficient TVs in the Northwest as a result of the program?

- Do retailers request or demand more Energy-efficient televisions as a result of the program?

3.3. How do you think that the NEEA TV program has influenced the manufacturing or design of energy-efficient TVs?

3.4. Over 2010, has demand for energy-efficient televisions:

- Increased,
- Decreased, or
- Remained approximately the same?

- Please explain.

3.5. Looking forward to 2011, do you think the manufacturing of energy-efficient TVs will…

- Increase,
- Decrease, or
- Remain approximately the same?

- Please explain.
- Do you think NEEA has influenced this change? If so, how?

3.6. Do programs such as the National ENERGY STAR program, or the *Consortium for Energy Efficiency, have influence on the types of televisions that are manufactured or sold?*

- How much influence? More or less influence than the NEEA program?

4. PROGRAM STRENGTHS AND AREAS FOR IMPROVEMENT [IF TIME ALLOWS]

4.1. What do you see as the greatest strengths of the NEEA program? What is working well?

4.2. What do you see as the greatest weaknesses of the NEEA program? What would you most like to change?

5. END

5.1. Do you have anything to add? Is there anything I've forgotten to ask you about?

Thank you very much for taking the time to assist us with this evaluation. If I have any additional questions, do you mind if I send you an email or give you a quick call?

Utilities

Interview Objectives:

- Determine the role of participating utilities in the program.
- Determine how NEEA collaborates with partner utilities.
- Assess the effectiveness of marketing materials and efforts.
- Determine barriers to participation in the program.
- Determine satisfaction in the program from participating utilities.
- Examine successes and challenges thus far among participating Northwest utilities and partner utilities.
- Determine successes and challenges from partner programs.

Potential Interviewees:

- Partner Utilities (1)
  - PG&E (Sarah Bresko)
- Northwest Participating Utilities (2)
  - Energy Trust of Oregon
  - Northwestern Energy
  - Seattle City Light
  - Avista

Note:
This interview guide is comprehensive in that it allows for discussion with staff at both partnering and participating utilities. Therefore, there will be sets of questions that will be more fully explored with some individuals than with others. In particular, Section 2 is intended for participating Northwest utilities only, and Section 6 is intended for partner utilities (e.g., PG&E) only.

INTRODUCTION

Hello my name is _____ from Energy Market Innovations. As you may know, we are evaluating NEEA's Consumer Electronics Television Initiative, and as part of that evaluation, we are speaking with staff at [partner/participating/non-participating] utilities to understand the details of the program and learn, from your perspective, what is working well and what might be improved in the program.

1.1. To start, will you please explain your role and scope of responsibilities at [UTILITY]?

- How long have you held this position?

1.2. Please describe your role and scope of responsibilities in relation to the NEEA Consumer Electronics Television Initiative.

1.3. Can you briefly describe your knowledge of the NEEA Television program? What are the program goals? How does the program operate to achieve those goals?

1.4. Can you describe the different energy efficiency tiers and incentives used by the NEEA program?

- What are the current tiers and incentives?

2. PROGRAM PROCESSES [PARTICIPATING UTILITIES ONLY]

2.1. Please describe the role of [UTILITY] in administering this program.

- What activities does [UTILITY] perform in relation to this program?

2.2. Please explain the marketing activities for this program.

- E.g., in-store signage, POP information, video, etc.
- How are marketing activities monitored?
- How is the success of marketing activities measured?

- To your knowledge are marketing materials used consistently across your service territory? Is this consistent for both independent and big box retailers?

2.3. Do you think these materials are effective at promoting the sale of energy-efficient televisions?

- What suggestions do you have for making these materials more effective?

2.4. What successes and challenges have you encountered while participating in this program?

3. UTILITY COLLABORATION [PARTNER UTILITIES ONLY]

3.1. How does your program differ from the NEEA program, if at all?

3.2. How does your utility collaborate with NEEA on this program?

- What is the greatest value in this collaboration?
- How could collaboration be improved?

3.3. How do you collaborate with other partner/ participating utilities?

- What is the greatest value in this collaboration?
- How could the different program utilities better collaborate?
    - How do you see this helping the program?

3.4. Are there other stakeholders you would like to see join this effort?

- If so: Who and how would you like to see them involved?

3.5. What successes and challenges have you encountered while implementing this program?

3.6. What successes and challenges have you encountered working with NEEA?

4. PROGRAM INFLUENCE

4.1. What did the market for energy-efficient televisions [defined as televisions that meet the program criteria and are eligible for incentives, e.g., ENERGY STAR 4.1 and 5.1 in 2010] look like prior to the NEEA Program?

- What programs or legislation covered energy-efficient televisions?

- Were these programs effective in changing the television market?

4.2. What impact has the current program had on encouraging the *sale and stocking* of energy-efficient televisions in the market in 2010?

- Do you think more energy-efficient TVs are *purchased and stocked* in your service territory as a result of the program?
- Do you think a different incentive level would be more effective?
- If yes, would you increase it or reduce it? By how much?

4.3. What impact has the current program had on encouraging the *manufacturing* of energy-efficient televisions in 2010?

- Do you think more energy-efficient TVs are *manufactured* as a result of the program?
- Do you think a different incentive level would be more effective?
- If yes, would you increase it or reduce it and by how much?

5. BARRIERS TO PARTICIPATION

5.1. What do you think might prevent consumers from purchasing energy-efficient televisions?

5.2. What do you think might prevent additional retailers from participating in this program?

5.3. What, if anything, do you think might prevent additional utilities from participating in this effort?

6. SATISFACTION [PARTICIPATING UTILITIES ONLY]

6.1. How satisfied are you with the NEEA program? Would you say you are:

Very satisfied,
Somewhat satisfied,
Neither satisfied nor dissatisfied,
Somewhat dissatisfied, or
Very dissatisfied?

- Please explain why you gave that rating.

6.2. What do you perceive is the level of satisfaction with the program among retailers in your service territory?

- What, if anything, would make retailers more satisfied with the program?

6.3. Do you think sales of program-qualified televisions in 2010 have been:

About what you expected,
Greater than what you expected,
Lower than what you expected, or
Don't know?

- Why do you think that is?
- What could NEEA do to increase sales of energy efficient TVs moving forward? What could [UTILITY] do? Anything else that would help sales?

7. PROGRAM STRENGTHS AND AREAS FOR IMPROVEMENT [IF TIME ALLOWS]

7.1. What do you see as the greatest strengths of the NEEA program? What is working well?

7.2. What do you see as the greatest weaknesses of the NEEA program? What would you most like to change?

8. END

8.1. Do you have anything to add? Is there anything I've forgotten to ask you about?

Thank you very much for taking the time to assist us with this evaluation. If I have any additional questions, do you mind if I send you an email or give you a quick call?

Other Programs

Other Interview Objectives:

- Determine national trends the television market
- Determine the influence of NEEA on these other programs

Potential Interviewees:

- ENERGY STAR (Katharine Kaplan)
- CEE (Margie Lynch)

INTRODUCTION

Hello my name is _____ from Energy Market Innovations. As a reminder, this interview is being held regarding the BCE program (Business and Consumer Electronics) which provides monetary incentives for the sale of energy-efficient televisions in California and the Northwest. We are doing an evaluation of the role of the Northwest Energy Efficiency Alliance, or NEEA, in this program. NEEA is the major funder of this program in the Northwest, including Washington, Oregon, Idaho and Montana. Your input into this evaluation is important to help determine the effectiveness of the program to help justify future program operations. We are also trying to determine what is going well with the program and what may need to be improved.

1.1. To start, will you please explain your role and scope of responsibilities at [ORGANIZATION]?

- How long have you held this position?

1.2. Please describe your role and scope of responsibilities with respect to the NEEA Consumer Electronics Television Initiative.

1.3. Can you briefly describe your knowledge of the NEEA Television Initiative? What are the program goals? How does the program operate to achieve those goals?

1.4. Can you describe the different energy efficiency tiers and incentives used by the NEEA program?

- What are the current tiers and incentives?

2. BACKGROUND OF ENERGY STAR / CEE

2.1. Please describe the [ENERGY STAR / Consortium for Energy Efficiency] television program.

- Please describe how this program influences the energy-efficient television market?

2.2. What are the current [ENERGY STAR / CEE] criteria?

2.3. Is there currently any intent to modify these levels?

- If so: How would they be changed? When?

2.4. How frequently are the efficiency criteria reviewed?

- What are the procedures for review? Who is involved?

2.5. What information/metrics are used to determine if the criteria need to be revised?

- How is program data used to justify alterations?

2.6. How is NEEA currently engaged with the program?

2.7. How has NEEA been engaged in the past?

- What impact has NEEA had on impacting program specifications or timing?

2.8. Can you give one or more examples of a time when NEEA's support has been critical in supporting the program?

3. PROGRAM INFLUENCE

3.1. What did the market for energy efficient televisions [defined as televisions that meet the program criteria and are eligible for incentives, e.g., ENERGY STAR 4.1 and 5.1 in 2010] look like prior to the NEEA Program?

- What programs or legislation covered energy-efficient televisions?
- Were these programs effective in changing the television market?

3.2. Are retailer incentives effective at influencing retailers to sell more energy-efficient televisions?

- Why or why not?

3.3. What impact has the current program had on encouraging the *sale and stocking* of energy-efficient televisions in the market in 2010?

- Do you think more energy-efficient TVs are *purchased and stocked* as a result of the program?
- Do you think a different incentive level would be more effective?

- If yes, would you increase it or reduce it? By how much?

3.4. What impact has the current program had on encouraging the *manufacturing* of energy-efficient televisions in 2010?

- Do you think more energy-efficient TVs are *manufactured* as a result of the program?
- Do you think a different incentive level would be more effective?
- If yes, would you increase it or reduce it and by how much?

4. MARKET CHARACTERIZATION / EFFECTS

4.1. In your opinion, what particular television technologies or features are consumers demanding right now?

- Are there particular energy-efficient features that consumers want?
- Are there technologies or features upcoming on the market that you think consumers will be demanding by the end of this year?

4.2. In your opinion, what technologies are manufacturers currently focusing on?

- What do they plan to focus on in the future?

4.3. Do retailers and manufacturers currently market televisions as being energy-efficient to customers?

- [If yes:] How? Is this increasing over time?

4.4. Are energy-efficient TVs generally available from manufacturers?

- If not: Please explain.

4.5. Over 2010, has demand for energy-efficient televisions:

- Increased,
- Decreased, or
- Remained approximately the same?

- Please explain.

4.6. Looking forward to 2011, do you think the manufacturing of energy-efficient TVs will…

- Increase,
- Decrease, or
- Remain approximately the same?

- Please explain.
- Do you think NEEA has influenced this change? If so, how?

4.7. What are the key barriers to consumers investing in energy-efficient televisions?

- How does this program address these barriers?

5. PROGRAM STRENGTHS AND AREAS FOR IMPROVEMENT [IF TIME ALLOWS]

5.1. What do you see as the greatest strengths of the NEEA program? What is working well?

5.2. What do you see as the greatest weaknesses of the NEEA program? What would you most like to change?

6. END

6.1. Do you have anything to add? Is there anything I've forgotten to ask you about?

Thank you very much for taking the time to assist us with this evaluation. If I have any additional questions, do you mind if I send you an email or give you a quick call?

D.2 Focus Group Instruments

Focus Group Screener

INTRODUCTION: "Hi, I'm calling from _____(Consumer Opinion Services/Strategic Research Associates). We'd like to ask you a few quick questions to determine if you'd be eligible to participate in a paid focus group this month. The goal of the focus group is for the Northwest Energy Efficiency Alliance to better understand television purchase decisions in the Northwest. Do you have a couple of minutes?"

___No (**terminate,** or call back if so requested)
___Yes (continue)

Have you participated in any focus groups in the past three months?
___Yes (continue) ___No (**terminate**)

Have you purchased a new TV in the past 3 months (Hold if 6 months, we may expand criteria if necessary)?
___Yes (continue) ___No (**terminate**)

If yes: What month did you purchase your TV?
_____ Record month (continue if October (or July if expanding to six months) 2010 or later)

Where did you purchase your TV?
_____Second-hand [Specify source_____, e.g., individual on craigslist, from a friend, etc.] (**terminate**)
_____From a physical store [Specify retailer_____] (continue)
_____From an online store [Specify retailer _____] (continue)

Who in your household was primarily responsible for deciding which TV to purchase?
____I was the primary decision-maker (continue)
____I shared the decision-making responsibility equally with another person (continue)
____Someone else in my household was the primary decision-maker (ask if primary decision-maker is interested/available and go back to Question 1; otherwise, **terminate**)

Do you know if the new TV you purchased is Energy Star-rated [respondent must answer this question without going to look at the TV]?
____Yes, it is Energy-Star rated (continue to question 6)
____No, it is not Energy Star-rated (continue to question 6)
____I don't know if it is or not:
Did you purchase an energy-efficient TV?
___Yes (continue) ___No/Don't Know (continue)

Are you currently employed, either part-time or full time?
___No (**terminate**)
___Yes, full-time (continue to question 7)
___Yes, part-time:
How many hours per week do you currently work?
___ ≥ 24 hours/wk (continue)
___ < 24 hours/wk (**terminate**)

Have you ever worked in any of the following industries:
Electronics manufacturing?
___Yes (continue) ___No (**terminate**)

Electronics retail or electronics department?
___Yes (continue) ___No (**terminate**)

An electric utility?
___Yes (continue) ___No (**terminate**)

Have you ever worked for a company that specializes in energy efficiency (e.g., energy efficiency program implementation, energy efficiency engineering, energy efficiency consulting, or energy policy work)?
___Yes (continue) ___No (**terminate**)

Can you please tell me what the brand and model # of your new TV is? I can wait while you go look.
___Yes
Record brand (e.g., Sony, LG, etc.) _____ (continue)
Record model # _____ (continue)
___No (e.g., respondent is not at home or cannot currently access the TV)
Record reason and ask for a good time to call R back for the information_____
_____
_____
(continue)

What was your approximate annual income in 2010? Your best guess is fine.
$_____ Record amount (continue)

What is your age? Are you:
___ younger than 18
___ 18 – 24 (continue)
___ 25 – 34 (continue)
___ 35 – 44 (continue)
___ 45 – 54 (continue)
___ 55 – 64 (continue)
___ 65 or older (continue)

Record respondent's sex:
_____ female (continue) ____male (continue)

Could you be available to attend a focus group in (Seattle/Spokane) on (Tue, January 11/Wed, January 12) at 6:30pm? You would be compensated $100 for your time.
___No (**terminate**)
___Yes (continue)

IF COMPLETED: "Thank you for answering my questions. We will call you back in a few days to let you know if we would like you to participate in our focus group. In the mean time, please save the following time and date on your calendar: (Tue, January 11/Wed, January 12) at 6:30 pm. Have a nice day."

IF TERMINATED AT ANY POINT: "Thank you. Given our specific requirements, we're sorry to say that we won't be able to invite you to this round of focus groups. Have a nice day."

Focus Group Moderator Guide

Focus Group 1 (Seattle, WA) – Tue, Jan 11, 6:30pm

Consumer Opinion Services, Inc.
US Bank Centre
1420 Fifth Avenue, Suite #525
Seattle, WA 98101

Jerry Carter
206-241-6050

Focus Group 2 (Spokane, WA) – Wed, Jan 12, 6:30pm

Strategic Research Associates
25 W. Cataldo Avenue, Suite D
Spokane, WA 99201

Jennifer Gray
509-324-7882

Participant Recruiting Criteria

Each focus group consists of seven to eight recent television purchasers who were the primary decision maker for the purchase (i.e., those who decided on TV features). Approximately half of the participants will have knowingly bought an Energy Star TV. Participants are employed a minimum of 24 hours per week. No industry experts (e.g., anyone that has worked for an electronics manufacturer or retailer, no utilities, no EE professionals) will be participating in the groups. Additionally, none of the participants will have participated in any focus groups in the last 3 months. We are aiming for a mix of men and women, and a range of incomes.

Verification Of Screening Information

As participants sign in at the facility, verify:

- Recruit name
- Month of TV purchase
- Where purchased

- Who was the primary decision-maker regarding which TV to purchase

1 - If name does not match the screening information we have, the individual will not be allowed to participate in the focus group. A friend or relative is not allowed to sub for the person who was originally recruited.

For the three remaining criteria, a judgment call will be made as to whether to keep the recruit or send him/her home without participating. For example, we may choose to keep a recruit who purchased a TV at a non-participating retail chain – if we need that person to meet a group size of 8 participants.

2 - If month of TV purchase is different from the information we have, he or she will be allowed to participate if the TV was purchased in the last 6 months of 2010. If the TV was not purchased in the last 6 months of 2010, he or she will not be allowed to participate.

3 - If the store where purchased does not match, we will ask for clarification (e.g., we have "Best Buy," you said "Target" – which one is correct?). If the purchase was made at a non-participating retailer, we will not allow that person to participate in the group.

4 - The recruit should state that the decision regarding which TV to purchase was either 1.) his or her sole responsibility, or 2.) a responsibility they shared with someone else. If he or she says that someone else was the primary decision maker, the individual will not be allowed to participate in the focus group.

Statement Of Research Objectives

Primary Objectives

- Understand the terminology consumers use to discuss energy efficiency in televisions.
- Measure the ability of consumers to identify energy-efficient televisions.
- Monitor the prevalence of sales associates recommending energy-efficient televisions.
- Determine the extent to which consumer awareness of energy efficiency is a purchasing criterion.
- Evaluate consumer awareness of the television program's specific marketing materials, and determine what influence these materials have on consumer purchase decisions.

Secondary Objectives

- Assess how consumers' usage of televisions is changing over time – the types of usage of interest include: hours of use and types of use (e.g., broadcast, digital video recording, gaming, internet video or music streaming).
- Assess if and how consumers' typically configure their televisions, with a focus on brightness controls and other energy saving features.
- Determine popular features sought after in television purchasing.

Focus Group Timing

- Opening/Introductions/Ground Rules = 10 Minutes
- Questions = 75 - 90 Minutes
- Wrap-Up = 5 Minutes

Focus Group Introduction

MODERATOR: Hello and welcome. Thank you for taking the time to join our discussion. My name is Ellen Steiner. I have been contracted by the Northwest Energy Efficiency Alliance (NEEA) to conduct this focus group and will be the moderator this evening. NEEA is a non-profit organization that collaborates with more than 100 Northwest utilities to maximize energy efficiency and meet our future energy needs. This group should last for about one hour and 45 minutes.

You have all been selected because you recently purchased a new television. The purpose of the group is to understand the decision-making process for television purchases.

Has anyone ever been in a focus group before?

The first thing to keep in mind today is there are no right or wrong answers, just your experiences and opinions. Your opinion is the most valuable thing you can contribute to this group. Please be honest in your opinions and feel free to share your point of view even if it differs from what others have said.

The rules of group interaction are:

- Only one person may talk at a time.
- Responding directly to the comments of others is encouraged; responses do not necessarily have to be directed to me.
- All participants must contribute to the group, though each participant does not need to contribute to all questions.
- No participant or group of participants should dominate the group discussion.
- I may interrupt you while you are talking if we need to move on to another person or topic area or to assist the flow of discussion. No offense is intended.
- No smoking.
- Please turn off all cell phones.

Everything said here is confidential, which means that your names will not be associated with your comments. Also, I'd like to video record the proceedings. Many good ideas flow rather quickly in a focus group and a recording would help me catch all the thoughts and ideas that surface in these dynamic discussions? Do I have everyone's permission to record this session? [Thanks.] In addition, this focus group is being observed by representatives from the Northwest Energy Efficiency Alliance, who may send notes in occasionally if they want me to probe deeper into a particular statement or topic that comes up in our discussion this evening.

Does anyone have any questions before we begin?

Participant Introductions

First, let's give everyone the opportunity to introduce themselves. Please take 30-60 seconds to tell us your name, and describe what kind of TV you purchased, the size of the TV, and when you purchased the TV. Also tell us if this new TV is the one you use the most.

General Topic Discussion

TOPIC 1: Sales Associates' Recommendations

GOAL: Determine whether sales associates recommended energy-efficient televisions

TIME ALLOTMENT: 10 Minutes

- ⇨ **QUESTION – Did a sales associate help you in any way when you were deciding which new television to purchase?**
  - Probes:
    1. What did he/she help you with?
    2. Did the sales associate explain any of the TV features to you? [If so:] Which ones? What did he/she say?
    3. Did the sales associate point out which TVs are more energy efficient? [If so:] How did he/she explain this? What did he/she say?
    4. Did the sales associate recommend energy efficient TVs?
    5. How much time would you say the sales associate spent with you?

TOPIC 2: Consumer TV Terminology

GOAL: Understand the terminology consumers use to discuss specific television features, particularly energy efficiency.

TIME ALLOTMENT: 10 Minutes

- ⇨ **QUESTION – Say you purchased a TV that uses less energy than most other TVs. What words or phrases would you use to describe this type of TV?**

- ⇨ **QUESTION – Say you purchased a TV that you can use with an Internet connection. What words or phrases would you use to describe this type of TV?**

- ⇨ **QUESTION – Say that you purchased a TV that you can watch 3D content on. What words or phrases would you use to describe this type of TV?**

TOPIC 3: Identifying Energy-Efficient Televisions

GOAL: Understand the ability of consumers to identify energy-efficient televisions.

TIME ALLOTMENT: 10 Minutes

⇨ **QUESTION – What would you look for if you were trying to identify whether a TV is energy-efficient or not?**

- Probes:
    1. If you were shopping in a retail store, how would you find out which TVs are energy efficient?
    2. What aspects of a television would you say make it energy efficient?
    3. In what ways might some televisions use less energy than others?
    4. What are the characteristics or features of an energy-efficient television?

TOPIC 4: TV Features

GOAL: Determine the features that consumers look for when deciding to purchase a new TV.

TIME ALLOTMENT: 15 Minutes

⇨ **ACTIVITY – Television Features Card Ranking Activity**

- *Pre-make cards with the following TV features written on them:*
    - Energy consumption
    - Screen size
    - Type of TV (e.g., plasma, LED, LCD, HD)
    - 3D or 3D-capable TV
    - Screen refresh frequency (e.g., 60 Hz,120Hz, 240 Hz)
    - Screen resolution (e.g., 720p, 1080p)
    - TV Footprint
    - Price of the TV
    - Inputs (e.g., HDMI, Component Inputs, PC Inputs, USB Inputs)
    - Internet connectivity
    - Information provided by the salesperson
    - Warranty
    - Picture quality
- *Provide blank cards for participants to write additional TV features.*
- *Instruct participants to take the cards and determine if any of the features were important to them when they were shopping for a new TV. They can add any that they feel are missing*.
    1. Please think about the features you were looking for when you were shopping for a new TV. Please rank-order the cards with the five most important features that you considered when you decided which TV to purchase. After you have finished ranking the top 5 criteria, come up to this wall poster and tape the cards in their rank-order.

2. After you have ranked your top 5, please review the remaining cards and place an "X" through any features that you did **not** use when you were deciding which TV to purchase. That is, place an X through any features that were not at all important to you when you were shopping for a new TV.
3. [Single out a few participants and ask…] Why did you order your list this way?
4. [If "energy consumption" is on their list:] Why did you include "energy consumption"? Why did you rank it number _____?

TOPIC 5: Energy Efficiency as a Purchasing Criterion

GOAL: Determine the extent to which consumer awareness of energy efficiency is a purchasing criterion.

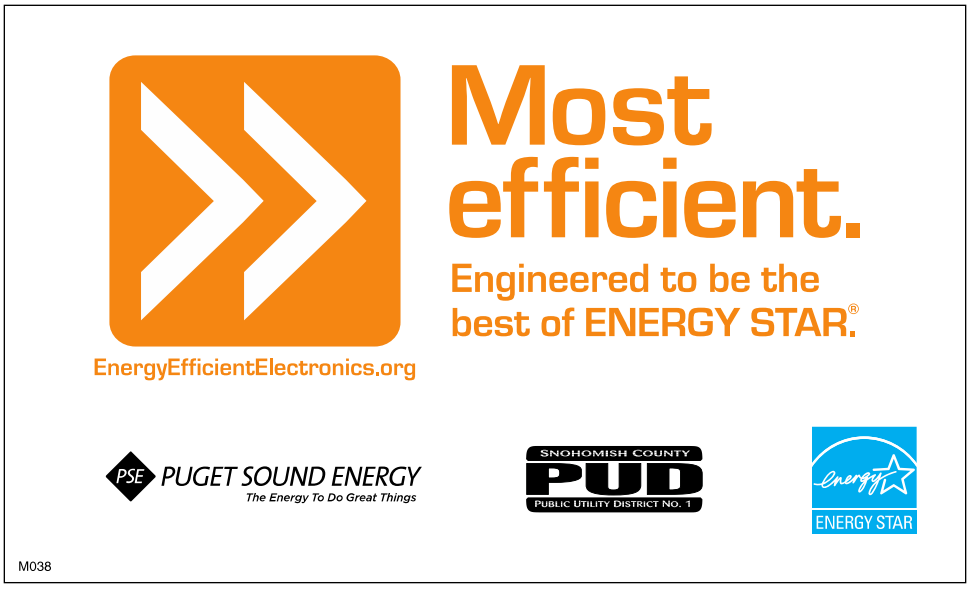
TIME ALLOTMENT: 10 Minutes

⇨ **QUESTION – How important was saving energy when you decided which new TV to purchase?**

- Probes:
  1. Was it important to you to purchase a television that is more energy efficient than other televisions?
  2. Did you consider how much energy your TV uses when you decided to purchase it?

TOPIC 6: Marketing Materials

VISUAL: Orient participants to the program marketing sticker.



GOAL: Evaluate consumer awareness of the program marketing materials, and determine whether these materials influenced consumers purchase decisions.

TIME ALLOTMENT: 15 Minutes

- ⇨ **QUESTION – Was this sign attached to any of the TVs for sale at the store where you purchased your TV?**
  - Probes:
    1. How did/do you interpret this sign?
    2. Did the sales associate point out the signs to you? Did the sales associate explain what the sign means? [If so:] What did he/she say?
    3. Did this sign help you decide which TV to purchase? Why or why not?
    4. What sort of information did you see? [Do not probe directly on the video - if you don't hear it on first mention then ask directly:] Did you watch a video about energy efficient TVs in the store? What did the video contain? Was the information helpful/new to you? Did the video influence your purchase decision? [If so:] How so?
    5. Were there any pamphlets in the store to help you select an energy efficient TV? Did this influence your purchase decision? [If so:] How so?
    6. While you were in the store, were there any other ways to determine which TVs were more efficient than others?

TOPIC 7: Consumer TV Configuration

GOAL: Assess if and how consumers typically configure their televisions, with a focus on brightness controls and other energy-saving features.

TIME ALLOTMENT: 10 Minutes (If Time Allows)

- ⇨ **QUESTION – After you purchased your new TV, did you change any of the settings such as brightness, contrast, or standby settings?**
  - Probes:
    1. [If so:] Why did you change the settings? [If not:] Why not?
    2. Are you using any energy-saving features that were included with your new TV? [If so:] Which energy-saving features are you using? [If not:] Why not?
    3. [If not:] What would prompt you to change the settings?

TOPIC 8: Consumer Use of Televisions

GOAL: Begin to assess how consumers' use of televisions is changing over time (e.g., hours of use, type of use)

TIME ALLOTMENT: 10 Minutes (If Time Allows)

- ⇨ **QUESTION – Thinking about how you currently use all the televisions in your home, how has your television use changed over the past few years?**
  - Probes:
    1. Has the amount of time you spend using your TV(s) increased or decreased? [If so:] Why do you think that is?
    2. What types of things do you use your TV(s) for now, compared to a few years ago?

3. Compared to a few years ago, to what extent do you use your TV(s) to:
    - view live broadcast television programs?
    - view recorded television content?
    - view streaming video from the internet?
    - stream music from the internet?
    - use with a gaming console?
4. Do you use any televisions in your home for any other purpose that hasn't already been mentioned?

Closing

Well, that wraps things up. Thank you for coming this evening! I appreciate your candid and insightful thoughts. We will be using this information to help the Northwest Energy Efficiency Alliance assist consumers in identifying energy efficient televisions.

Your incentive payment will be paid in cash as you exit the facility.
Thanks again!