

Policy into practice: the SEAD global efficiency medal

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Abstract

The SEAD Global Efficiency Medal competition is a global and regional awards program that encourages the production and sale of super-efficient products. This winner-takes-all competition spurs energy efficiency innovation among manufacturers and guides early adopter consumers towards the most efficient product choices. The first annual competition recognized the most energy-efficient flat panel televisions (TVs) in three different size categories and four regions around the world. This paper focuses on the development and implementation of the SEAD Global Efficiency Medal competition with the European Awards as an example of a policy mechanism to promote highly-efficient products through awards programs or other voluntary schemes. The paper will also demonstrate how the competition subsequently informed some national and international energy efficiency policies for televisions.

Introduction

The Super-efficient Equipment and Appliance Deployment (SEAD) Initiative of the Clean Energy Ministerial launched the first Global Efficiency Medal competition at the Consumer Electronics Show (CES) in Las Vegas, Nevada, U.S.A. on 6 January 2012¹. As the only global mark of energy efficiency, SEAD's Global Efficiency Medal helps identify the world's

most efficient products, with the first competition focusing on flat-panel televisions. It allows consumers that care about energy-efficiency differentiate the most efficient products on the market and spurs innovation among manufacturers. The competition also demonstrates support for more transparent and harmonized product efficiency testing around the world by using an internationally accepted test procedure to evaluate product nominations.

In the months following the competition's launch, interested manufacturers nominated the televisions from their product lines that they considered the most energy efficient. Presumptive winners were selected based on manufacturer claims for product energy efficiency performance, and samples were selected at random to test and verify these claims. Verification testing, supported by sponsor governments, was conducted at test laboratories that had been carefully certified through an unprecedented international inter-laboratory TV testing scheme; this ensured that test results were comparable across the participating test laboratories. On 31 August 2012, the first winners were announced for the European Region at the Internationale Funkausstellung (IFA) Fair in Berlin. Announcements soon followed in Australia, India and North America.

This paper focuses on the design and implementation of the SEAD Global Efficiency Medal competition for flat-panel televisions, the first in a series of such awarded products. It provides an overview of the awards program goals, a close examination of how a competition that promotes energy efficient products may be structured and administered to achieve those goals, a description of salient features and processes and, finally, a summary of program impacts and lessons for policy makers interested in similar efforts.

1. See <http://superefficient.org/> and links therein.

Background

The SEAD Initiative of the Clean Energy Ministerial is a voluntary international government collaboration that seeks to engage governments and the private sector to advance global market transformation for energy efficient equipment and appliances. To this end, SEAD is engaged in the following five activities: awards (SEAD Global Efficiency Medal competition), procurement, incentives, standards and labeling, and technical analysis. The first three activities focus on mechanisms to increase demand for energy efficient products, the fourth facilitates exchange of technical information, and the last creates a strong analytical foundation for SEAD activities. Each activity is managed by a working group comprised of government representatives from participating countries. The SEAD Global Efficiency Medal competition is developed by the SEAD Awards Working Group, which comprises of government representatives from Canada, India, Japan, Sweden, the United Kingdom and the United States, and administered by the Collaborative Labeling and Appliance Standards Program (CLASP).

The SEAD Global Efficiency Medal competition is a global and regional awards program that encourages the production and sale of super-efficient products. Specifically, this competition aims to accelerate efficiency gains in existing technologies and to promote the introduction of new technologies into the market by recognizing both commercially available and emerging technologies. The SEAD Global Efficiency Medals complement existing national and regional efficiency labeling programs and the competition process actively engages the manufacturing industry in the design of the award categories and rules. It fosters international collaboration amongst government agencies responsible for promoting and regulating product energy efficiency by encouraging the development of transparent international test procedures. As SEAD's most publicly visible activity, the awards program is a cornerstone of SEAD's market transformation strategy.

The first SEAD Global Efficiency Medal competition successfully identified the world's most efficient TVs in 2012. Winning products in the commercially available TVs award category utilized light emitting diode (LED)-backlit liquid crystal display (LCD) technology and consumed between 33 to 44 percent less energy per unit of screen area than comparable LED-backlit LCD televisions. These products also used 50 to 60 percent less energy than comparable cold cathode fluorescent lamp (CCFL)-backlit LCD TVs and qualified as A+/A++ products.² The Emerging Technology winner, a category for TVs not yet commercially available, was even more impressive; the winning prototype used an advanced optical film, called reflective polarizer, combined with backlight dimming scheme, thus reducing consumption by an additional 30 percent over the commercially available large-size category winner.

However impressive the energy performance of the winning products, possibly even more remarkable was the depth and breadth of international cooperation required to meet the practical challenges of running an international market transformation initiative.

Competition Objectives

The SEAD Initiative chose to develop a recognition program for energy efficient products, as awards are an easily understood market transformation mechanism available to energy efficiency policymakers. The SEAD Awards Working Group identified and prioritized the following objectives in order to achieve the market transformation goals of SEAD:

1. *Maximize energy savings:* A primary objective of SEAD is to maximize energy savings by increasing the energy efficiency of products in the market. Thus, products with the highest energy savings, efficiency improvement and efficiency promotion potential are selected for the SEAD Global Efficiency Medal competitions.
2. *Increase market share of highly efficient products:* For many products, there is a broad range of efficiencies in the market. The SEAD awards program aims to move the median of this distribution towards more efficient products already available in the market.
3. *Spur innovation among manufacturers:* The market for efficient products is continuously improving in response to increased consumer awareness and consequent demand. For certain products, manufacturers make running improvements on a product line even as the products are being shipped out. SEAD aspires to accelerate the manufacturer innovation cycle to drive more rapid market transformation. This objective will be more effectively achieved when the SEAD Global Efficiency Medal competition is well established and can elevate the recognition for the manufacturers that participate in the competition.
4. *Support test procedure harmonization activities:* As markets become more global, greater test procedure harmonization will make it possible for manufacturers to test a product in one region and sell in another region, thus fostering competition and reducing compliance costs for manufacturers.
5. *Build capacity of test laboratories:* Robust laboratory testing ensures that product energy efficiency claims are credible and that there is a level playing field against which manufacturers may test their products. Improving global test laboratory capabilities is aligned with the mission of SEAD, and inter-laboratory comparison testing can be used to bolster test laboratory capacity in the participating award regions. Improved test laboratory capabilities can also support the minimum energy performance standards (MEPS) and labeling efforts in regions.
6. *Provide internationally-comparable and transparent test results:* Internationally comparable and transparent test results are critical to support the efforts of global test procedure harmonization and creating global markets. These results may be provided by the testing conducted in the award regions as part of this competition.
7. *Complement Standards and Labeling policies:* Governments invest in multiple efforts to promote energy efficiency. Standards programs set the minimum permissible level of product energy performance for a market. Labeling programs, such as the EU energy label and ENERGY STAR label, allow consumers to differentiate among products by

2. Classification according to the EU regulation on energy labelling for TVs: see <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=L:2010:314:0064:0080:EN:PDF>.

energy efficiency. The SEAD Global Efficiency Medal competition complements both standards and labeling efforts by recognizing the most efficient products submitted by manufacturers, subject to testing against internationally accepted test procedures.

It is worth noting that the way in which objectives were prioritized played a significant role in determining the design of the competition. A change in the order of priority of these objectives may have resulted in a different design.

Competition Requirements and Considerations

For the first SEAD Global Efficiency Medal competition, three priority requirements emerged that led to the choice of flat-panel televisions.

1. *Significant energy savings potential:* The choice of a product with a significant energy savings potential was guided by the primary competition objective to maximize energy savings. The consumer electronics market, including televisions, is a significant contributor to increasing global energy consumption (Park et al. 2011). The rapid evolution of consumer electronic products provides an opportunity to make energy efficiency a consistent design consideration. Although government and utility initiatives have done much to move the television market towards improved energy efficiency, there are still significant opportunities to raise awareness and drive savings for TVs. According to a SEAD study conducted by the Lawrence Berkeley National Laboratory, televisions world-wide consume more than 3 to 4 % of global residential electricity consumption with a potential to save 156 terawatt-hours (TWh) from 2012 through 2030, avoiding the energy generated and emissions from 52 coal-fired power plants (Park et al. 2011).
2. *Well-established and accepted test method:* A well-established and globally accepted test method is critical for the credibility of a competition and to encourage strong participation. For televisions, the IEC 62087 test method is such an internationally accepted energy efficiency test procedure that is referenced by many government standards and labeling programs.
3. *Energy efficiency differentiability:* The ability to differentiate between the energy efficiency of the products is important for a clear outcome of the competition. Televisions as a product and the IEC 62087 test procedure allow the competition to differentiate one model's efficiency performance from another.

Additional considerations further supported televisions as the choice for the first award.

1. *Homogeneity of market:* Due to the relative homogeneity of the global television market, SEAD was able to quickly define an international competition based on a single test procedure. The competition also expected to have more global impacts as a result of this homogeneity.
2. *Centralized market dominance:* The top five television manufacturers control 60 % of the global market (Park et al. 2011), making it easier to engage the manufacturers in the competition and drive significant energy efficiency gains.

Competition Features

The SEAD Global Efficiency Medal competition includes a number of features that best support the objectives described above while encouraging manufacturer engagement.

- *Product Definition:* With the market trending towards flat-panel televisions, this product definition was selected for the competition to maximize the savings potential of television energy consumption.
- *Technology:* The competition was deliberately technology-neutral and allowed the market to determine the most energy efficient technologies.
- *Size categories:* The competition included three size categories for commercially available TVs: small (up to 29 inches diagonal screen size), medium (29 inches to 42 inches) and large category (greater than 42 inches). These size categories were chosen to align with the size categories established by the U.S. Environmental Protection Agency's ENERGY STAR (version 5) product specifications for televisions.
- *TV features:* The following features seek to maximize energy savings and increase market share of efficient products:
 - *On-mode power:* The main criterion for energy efficiency is on-mode power consumption. This criterion is normalized by TV screen area (W/cm^2) to account for size-dependent variations and allow a range of TVs within each size category to be compared to one another.
 - *Standby power:* In addition to the primary on-mode criterion, standby power often contributes to significant energy consumption for many products. Most TVs in the global market have been moving toward an average standby power consumption of 1 W or less³. The competition sustains this trend by stipulating a maximum consumption for nominated products of no more than 0.5 W.
 - *Luminance:* Given that backlighting is a principal driver of TV power consumption and on-mode power consumption can be lowered at the cost of luminance, it would have been possible for a manufacturer to win the award by producing a TV with an overly dim backlight. Therefore, the competition included screen luminance requirements to ensure that brightness would be on par with typical TVs in the market and that winning products would be desirable to consumers.
 - *Automatic Brightness Control (ABC):* Although Automatic Brightness Control technology can be used to reduce the energy consumption of TVs, the competition stipulated that the nominated products would be tested with ABC disabled, as there is no established procedure for testing the efficacy of ABC at the time the competition was launched.

The above features seek to maximize energy savings and increase market share of efficient products.

3. 0.5 W in EU since August 2011, as stipulated in the ecodesign regulations for televisions.

- *Test Procedure:* The competition was based on testing to the IEC 62087: 2011 procedure. This is an internationally accepted test procedure that is used to measure the power consumption of televisions and other video equipment, and is referenced by the majority of international standards and labeling programs. This choice of test procedure is an acknowledgement of the global nature of the TV market and makes a case for more test harmonization activities that can support global market transformation mechanisms. This also allowed SEAD to provide internationally comparable test results.
- *Out-of-box testing:* Products were tested in their default out-of-the-box settings so that test results would be most representative of actual consumer usage.
- *Prize:* The SEAD Global Efficiency Medal competition is a global recognition program and does not include monetary prizes. Manufacturers of winning products receive recognition from energy ministers and international marketing and promotional efforts. In order to enhance the recognition of the award, SEAD developed a logo, which may be used to market and promote winning products through the following calendar year. In the case of the 2012 competition for flat-panel TVs, manufacturers are permitted to affix the SEAD Global Efficiency Medal logo on winning products and packaging through the end of 2013. The logo may be used in addition to other labeling mechanisms.
- *Regional Awards:* While TVs have a largely homogenous market globally, some differences exist among regional markets with respect to the consumer base and regional promotional efforts. SEAD Awards Working Group members from Australia, Europe, India and North America volunteered to manage the competition in their respective “regions”, based on resources and market appropriateness. Participation in the competition was not constrained by manufacturer country of origin or location; manufacturers from any country could submit nominations for all regions. The regional governments were responsible for promoting the competition, testing the presumptive regional winning products, and promoting the award-winning products in their respective markets. The Swedish and UK governments collaborated to promote the competition in the European Region⁴. Regional awards support test laboratory capacity building in the participating regions, when needed, and generate internationally comparable test results.
- *International Awards:* The international award was designed to be granted to the most efficient commercially available TVs in each size category across all regions. An international award was also given to an emerging technology with the greatest potential to reduce TV energy consumption. The latter award is forward-looking and was designed to support technologies that are likely to be commercially available in two years, potentially spurring innovation among manufacturers.
- *Sales threshold:* The Awards Working Group established minimum sales thresholds to ensure that winning products

in the commercially available award category would be widely available in each award region. The threshold varied by region: 5,000 units for Australia; 5,000 for India; 50,000 for North America; and at least 10,000 units in one country in Europe or 50,000 units across all EU27 and EFTA-countries. The sales threshold was designed to increase the chance for greater energy savings and to avoid awarding niche products that were unlikely to gain significant market traction. Manufacturers were required to meet the threshold in a time period of one year, with a start date no later than the winner announcement date (31 August 2012 for Europe and 1 October 2012 for the other regions). CLASP, as the Awards Administrator, may request sales information in the time period specified by the winning manufacturers to support their claims of satisfying the minimum threshold. If the manufacturer fails to meet the appropriate minimum sales thresholds, the Administrator may disqualify the manufacturer from participating in future competitions.

Competition Process

The design of an awards competition is critical in ensuring that program objectives are met. Achieving market transformation through awards requires a thorough understanding of market trends and an ability to leverage sales. The SEAD Awards Working Group consulted with technical experts and industry stakeholders from the very early stages of the competition to understand the market trends and to ensure the timing of the competition maximized consumer awareness and sales of award-winning products.

- *Timelines and announcement venues:* The competition was formally launched on 6 January 2012 in Las Vegas, Nevada, U.S.A. at the Consumer Electronics Show, a conference and exhibition of consumer electronics attracting a global audience of more than 100,000 participants. The nomination period for the contest was open from February through the end of May. Winners were scheduled to be announced between late September and early October to leverage the holiday sales season in increasing sales of the award-winning products. Winners for the European Region were announced on 31 August 2012, earlier than originally scheduled, in order to coincide with Europe’s consumer electronics tradeshow, the Internationale Funkausstellung (IFA) Fair in Berlin. International winners and winners for the remaining regions were announced on 1 October 2012. The timeline and announcement venues were chosen in consultation with industry stakeholders for maximum impact.
- *Declaration vs. Testing:* The Awards Working Group developed a product performance declaration form that manufacturers were required to complete and submit with each nomination. Manufacturer claims were required to be within 2 % of independent verification testing results in order to discourage manufacturers from exaggerating product performance. At the end of the nomination period, nominations were reviewed and a presumed winner was selected for each award category. Two samples of each presumptive winning model were randomly selected and sent to regional testing laboratories at the manufacturer’s expense. Costs of testing

4. Defined as EU27 and the EFTA countries Switzerland, Norway, Iceland and Liechtenstein, for the purposes of the SEAD Global Efficiency Medal competition.

were borne by the governments of the respective regions. If the verification test results satisfied the manufacturer claims, products were deemed winners of the competition. In the event that a claim failed to meet the 2 % verification threshold, the nominated product with the next best declared energy efficiency performance would have been selected for verification testing. By limiting testing requirements to just the presumed winners, costs both to governments and manufacturers were minimized.

- *Inter-laboratory Testing and Comparison:* In the early stages of the competition, the SEAD Awards Working Group compared test laboratories in the different participating regions by shipping the same set of 6 TVs to the different laboratories and testing them in an out-of-box condition as per the IEC 62087 test procedure. This comparison established the capability of the various laboratories to test against the IEC test procedure and provide consistent results. The latter allowed the competition to determine international winners without having to test all the regional winners in the same laboratory.
- *Communications Strategy and Promotion:* The SEAD Awards Working Group invested considerable efforts in promoting the competition and award-winning products. Such efforts were essential to raise the awareness of the competition and establish it as a significant influence in promoting energy efficiency in the marketplace. The Working Group commissioned the development of a communications strategy to define key audiences critical for increasing awareness the SEAD Global Efficiency Medal competition, and to refine messaging and marketing tactics. The promotion efforts considered four distinct audiences – manufacturers, retailers, energy efficiency program administrators and other non-profit organizations interested in energy efficiency. Manufacturers were engaged from the outset both to inform them of the competition and encourage participation. Dialogues with retailers were started in the course of the competition to enlist their support by carrying the winning product and investing in consumer-facing efforts to promote the winners. Some regions have energy efficiency program administrators that support and deploy energy efficiency measures (including promotion efforts) to achieve their energy demand reduction goals. These program administrators are natural allies to the competition since promoting the sales of the award-winning products advances shared goals. Working Group members reached out to various energy efficiency program administrators to raise their awareness about the competition. Other non-governmental organizations, such as Top Ten International and The Green Electronics Council (EPEAT) were engaged to collaborate on promotion of the awards. Several press releases announced the launch of the competition and the winners. During the course of the competition, there were news and promotion articles from mainstream media and on the internet through the collaborating NGOs.
- *Awards Ceremony:* The announcement of European Region winners on 31 August 2012 was made at a formal presentation ceremony at the IFA fair in Berlin. Swedish government officials presented award certificates to manufacturer rep-

resentatives, and a press conference was held to discuss the SEAD Global Efficiency medal competition and the award-winning products.

Competition Results

The SEAD Global Efficiency Medal competition for flat-panel TVs was successful in securing nominations in all award categories and participating regions. Results of the competition are presented below.

OVERVIEW OF TV AWARDS RESULTS FOR ALL REGIONS

All award-winning models are LED backlit LCD TVs. All winning models meet the Australian Energy Rating 8 Stars, European Energy Efficiency Index (EEI) A, India 5 Stars, or ENERGY STAR Version 6 requirements. The large-size winners meet Australian Energy Rating 9 Stars and European EEI A++ requirements. Table 1 shows on-mode power consumption of the Award-winning models.

The award-winning models for the small and medium categories are regarded as the most efficient products in the corresponding local markets. The large size and emerging technology winners demonstrate greater energy efficiency than other TV models available in the markets. The international award-winning model for the Emerging Technology category is approximately 30 percent more efficient than the large-size winners of the Commercially Available Technology category. Figure 1 compares the on-mode power performance of award-winning models against other commercially available TVs in each local market.

This comparison was made with TVs registered to regional databases (e.g., ENERGY STAR and Energy Rating) in 2012. The majority of TV models compared with the European winning models are from the Intertek database, which can be regarded as representative of TVs sold in Europe, as country-specific changes from basic models are made mostly in tuners. The dataset includes only TVs with standby power consumption less than 0.5 W and the luminance ratio between default home mode and brightest picture mode greater than 65 %.

RESULTS HIGHLIGHTS

- The Australian award-winning models for the Commercially Available Technology category are 34 to 45 percent and 55 to 69 percent more efficient than TVs with comparable technology and conventional technology, respectively.⁵
- The European award-winning models for the Commercially Available Technology category are 22 to 39 percent and 32 to 45 percent more efficient than TVs with comparable technology and conventional technology, respectively.
- The North American award-winning models for the Commercially Available Technology category are 28 to 44 percent and 42 to 58 percent more efficient than TVs with comparable technology and conventional technology, respectively.

5. Comparable technology here is defined as LED backlit LCD TVs as all award-winning models are LED backlit LCD TVs. Conventional technology is defined as Cold Cathode Fluorescent Lamp backlit (CCFL) backlit LCD TVs which had been dominant in the global TV market, but are now phasing out. Other screen technologies such as PDP, OLED, and CRT TVs are not included in the comparison.

Table 1. On-Mode Power Consumption of the 2012 TV Awards Winners

| Region | Size Category | Brand | Model | Nominal Diagonal Screen Size | Declared | |
|---------------|---------------|---------|-------------|------------------------------|-----------|-------------------|
| | | | | | watts [W] | W/cm ² |
| Australia | Small | Samsung | UA26EH4000M | 26 | 24.5 | 0.0131 |
| | Medium | Samsung | UA40EH5306M | 40 | 47.4 | 0.0107 |
| | Large | LG | 47LM6700-TA | 47 | 43.4 | 0.0071 |
| Europe | Small | Samsung | UE26EH4000W | 26 | 24.9 | 0.0134 |
| | Medium | Samsung | UE40EH5000W | 40 | 44.1 | 0.0100 |
| | Large | LG | 47LM670S | 47 | 43.1 | 0.0071 |
| North America | Small | Samsung | UN26EH4000F | 26 | 22.0 | 0.0134 |
| | Medium | Samsung | UN40EH5000F | 40 | 44.1 | 0.0107 |
| | Large | LG | 47LM6700 | 47 | 44.5 | 0.0071 |
| India | Small | Samsung | UA26EH4000R | 26 | 24.9 | 0.0118 |
| | Medium | Samsung | UA40EH5330R | 40 | 47.4 | 0.0100 |
| | Large | LG | 47LM6700 | 47 | 43.4 | 0.0073 |
| Emerging | – | LG | – | 47 | 30.9 | 0.0051 |

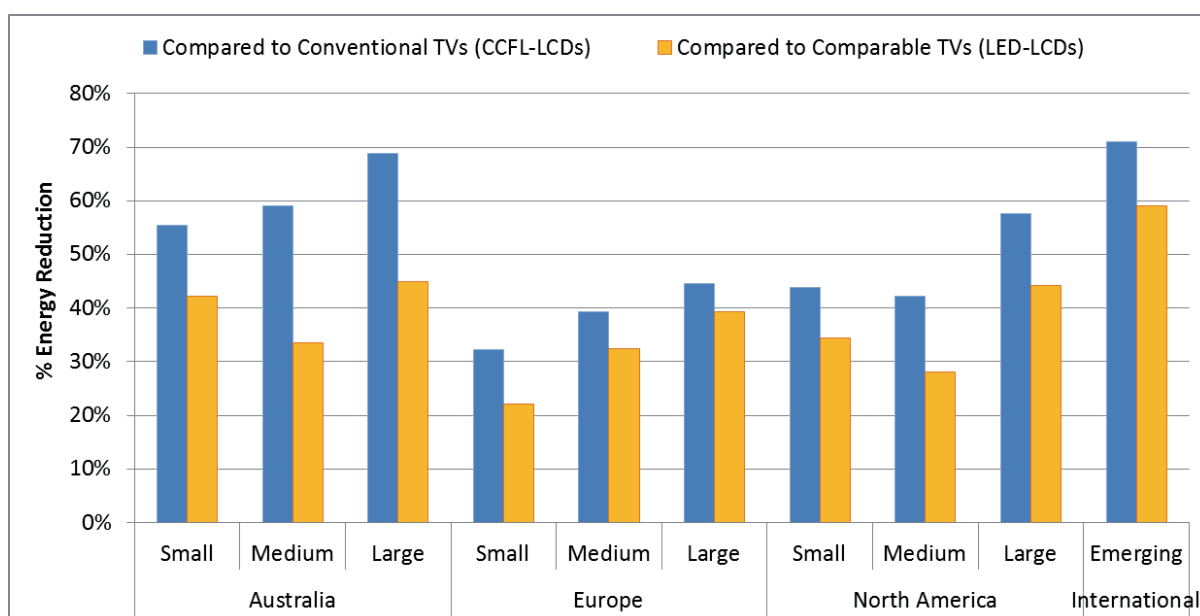


Figure 1. Comparison of Award-Winning Models vs. Commercially Available TVs.

- The international award-winning model for Emerging Technology category is 59 to 71 percent more efficient than commercially available TVs with comparable technology and conventional technology, respectively.

EUROPEAN TV AWARDS RESULTS

The on-mode power performance expressed in W/cm² of the European winners is 22 to 38 percent better than the median values of products sorted from the Intertek database for each size category, and 19 to 40 percent better than TV models from the same screen size and backlight technology; i.e., 26-, 40-, 47-inch LED-LCD TVs (see Table 2).

The increased energy efficiency performance of the large-size, commercially-available winning TV, the LG 47LM670x, is particularly noteworthy. The on-mode power consumption of the LG 47LM670x series was 63 W when registered to the EU database in early 2012. Typically, manufacturers take into account some margin of error when they report on-mode power consumption of their products to the regional databases. The declared value for the 2012 TV Awards was 43.1 W, a dramatic 30 % lower than the product's maximum power consumption compared to the value registered in the database. The significant improvement in energy efficiency made by LG through its participation in the SEAD Global Efficiency Medal competition

Table 2. On-Mode Power Consumption of the 2012 European TV Awards Winners.

| | Model | Brand/ Manufacturer | On-mode power performance [W/cm ²] (on-mode power) | Energy Efficiency Index (EEI) |
|--------|---|------------------------|--|-------------------------------------|
| Small | SEAD Winner – UE26EH4000W (26 in) | Samsung | 0.0134 (24.9 W) | A |
| | LED-LCD TVs (26 in) | – | 0.0154 (28.9 W) | B |
| | LED-LCD TVs (less than 29 in) | – | 0.0172 (N/A) | N/A |
| Medium | SEAD Winner – UE40EH5000W | Samsung | 0.0100 (44 W) | A+ |
| | LED-LCD TVs (40 in) | – | 0.0166 (64.4 W) | B |
| | LED-LCD TVs (29 in to less than 42 in) | – | 0.0146 (N/A) | N/A |
| Large | SEAD Winner – 47LM670S | LG | 0.0071 (43.1 W) | A++ |
| | LED-LCD TVs (47 in) | – | 0.0112 (68 W) | A |
| | LED-LCD TVs (equal to or larger than 42 in) | – | 0.0115 (N/A) | N/A |

is well beyond the level that would have been achieved in a business-as-usual scenario.

Figure 2 compares the European award-winning models to other TVs in the market.

For the European Region winner announcement at the 2012 IFA event, the Swedish Energy Agency (SEA) estimated the European energy savings potential as follows: If all Swedish TV buyers were to buy a TV as efficient as those represented by the award-winning models, it would provide an additional annual savings in Sweden of about 0.65 TWh in 2020. Since the Swedish gross domestic product (GDP) is approximately 2.86 % of the European GDP, and since the Swedish electricity use is about 4.86 % of the European electricity use, one could scale up all the Swedish figures to a European level to a rough estimation for Europe. Scaled up to European level using the factor 3.5 %, it provides that in 2020 Europe would achieve annual savings of more than 18 TWh with the use of best available technology (BAT) for TVs, compared with the current forecasts (i.e., the expected market transition including the effects of the current ecodesign and energy labeling regulations for TVs, not technological improvement within each specific screen technology) in the field (Park et al. 2012).

Competition Impacts

The SEAD Awards Working Group conducted a preliminary analysis of the impacts of the first round of the Global Efficiency Medal competition. While efforts to promote award winners will continue throughout 2013 to further the impacts of the competition, benefits are already evident.

- Highlights:
 - The SEAD Global Efficiency Medal competition generated multiple nominations in each award category and region. This indicates that energy efficiency remains a leading area for product differentiation in global markets.
 - The winning products are among the most energy efficient products in the market, according to preliminary results of an analysis by the Lawrence Berkeley National Laboratory (Park et al. 2012). This suggests that the

competition was successful in attracting quality nominations from leading manufacturers.

- All of the winning products are commercially available. While the winning products may not have been the most efficient product in the market due to the sales requirement, their commercial availability inspires confidence that they are likely to gain traction in the market and that the Global Efficiency Medal may lead to increased sales and consequently increased energy savings.
- Winning televisions in each size category were often similar (with only minor model number variations) across all regions, confirming the global homogenous nature of the flat-panel television market and ensuring that purchasers of award-winning products will receive consistent performance regardless of geographical location.
- The underlying technology for the Emerging Technology award winner, an advanced optical reflective polarizer film combined with local backlight dimming, is currently available for use by manufacturers and is known to improve energy efficiency. However, there has been little investment in this combination of technologies to date. The Emerging Technology winner offers a promising indicator of long-term changes in this trend.
- Collaboration with NGOs interested in energy efficiency indicates that there is wide interest in promoting energy efficiency through a competition of this nature.
- Policy Outcomes:
 - *Capacity building*: The awards competition required testing laboratories in all participating regions to use the latest version of the IEC 62087 test procedure – as a result, laboratories in India that previously used only an earlier version of the same test procedure were trained to conduct testing to the most recent version. India is currently considering revising its TV labeling program to reference the most recent test method as a result of

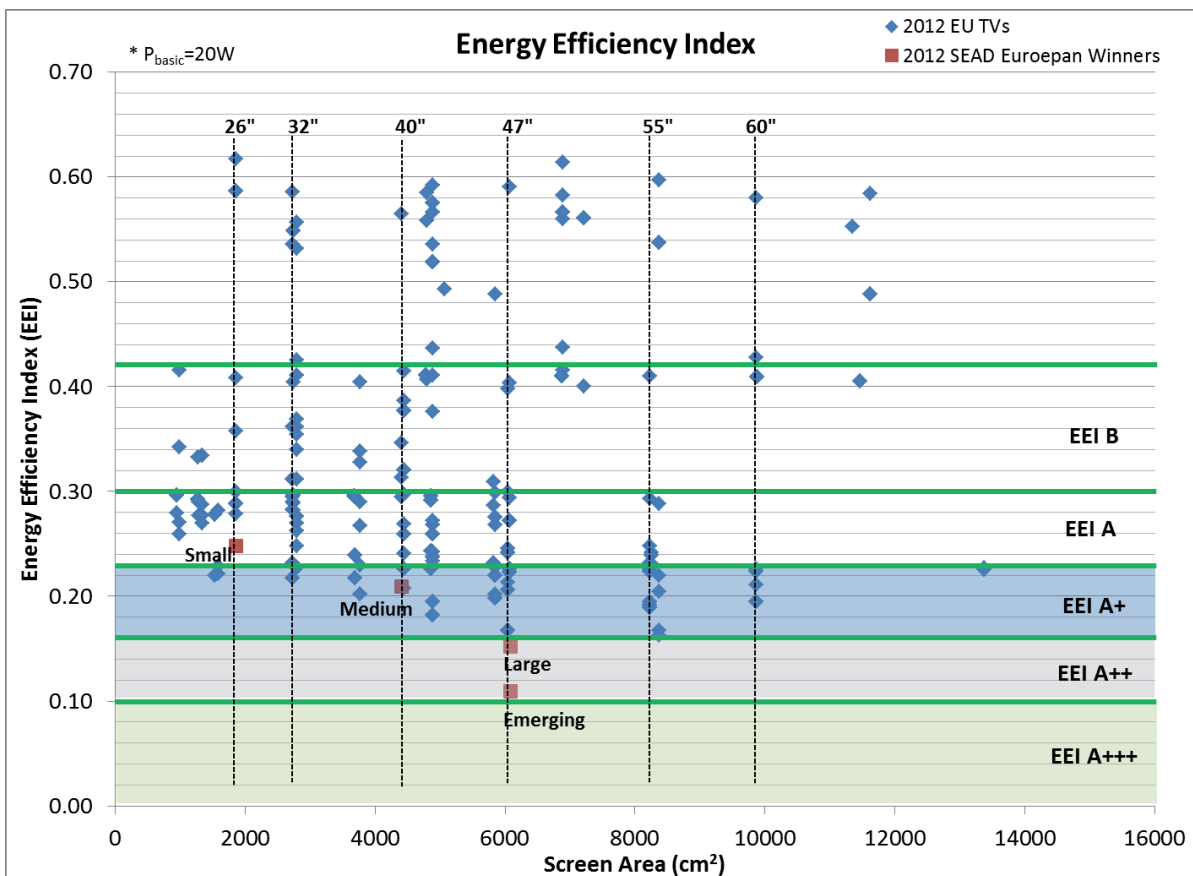


Figure 2. European Energy Efficiency Index: The SEAD Winners vs. Other TVs in the Market.

this upgraded lab capability, and is also evaluating other policy changes based on their experience through the SEAD award competition.

- Energy Efficiency Promotion:
 - In Korea, the competition and its associated analysis prompted an update of its energy efficiency label to differentiate the most energy efficient TVs available in the market.
 - The process of the revision of the Eco-design regulation for TVs by the EU Commission, based on market trends and best available technology (BAT) specifications, benefited from the results of the SEAD Global Efficiency Medal competition.

Conclusion

The SEAD Global Efficiency Medal competition is a valuable example of the practical application of an international energy efficiency market transformation program highlighting the most efficient products in the global market. The competition was successful in securing nominations in all regions and all categories, demonstrating strong industry interest in the competition. By recognizing the most energy efficiency flat-panel televisions in the world, it rewarded manufacturers for their

leadership in energy efficiency. The winning televisions were significantly more efficient than comparable televisions in all the markets, signalling a large energy efficiency improvement potential in TVs. The Awards Working Group partnered with a variety of organizations to promote the competition. The competition also generated a wealth of data to inform international energy efficiency policymakers about current TV efficiency and insights into future efficiency possibilities. The test laboratory capacity building that resulted was a significant benefit. The SEAD Global Efficiency Medal competition provides an effective forum for practical cooperation amongst participating governments, and serves a positive template for more successful collaboration to support global markets for energy efficient products in the future.

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