COMPLIANTV

Compliance of TVs
with Energy Label and Ecodesign Requirements

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Final Publishable Report

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1. Executive summary

The 2014 evaluation of the Energy Label prioritised the need to address Market Surveillance to recoup the estimated 10% of potential energy savings lost as a consequence of poor enforcement[1]. ComplianTV was initiated to address these needs specifically for televisions (TVs), given the recent entry into force of the TV related regulations and the specific challenges that exist in this market – for example the market size, the breadth of suppliers, the energy impacts and the complexities around the standardisation and measurement process.

The objective of ComplianTV was to support the market transformation of TVs towards more energy-efficient products. The project worked alongside the EU Energy Labelling (1062/2010) and Ecodesign (642/2009) Regulations for TVs in a number of ways: ensuring that non-compliant products were identified and removed from the market, engaging in dialogue with all stakeholders, improving performance through competition and guiding consumers towards the most efficient products available. The project aimed to support the activities of national Market Surveillance Authorities (MSAs), existing efforts by industry seeking to adhere to regulations (by increasing knowledge and reducing administrative burdens) and an overall increased culture of compliance among manufacturers and retailers.

The project assessed 172 TV models, identified a number of non-compliant products and published the results in a publically accessible database on the project website (www.compliantv.eu). It identified anomalies and produced guidelines for TV testing and recommendations for future policy development; it inspected the compliance of 100 physical and 100 online shops across 5 EU Member States measuring rates of non-compliant energy labelling (most commonly where a TV does not display the label in a store or omits required information online) and it established a detailed dialogue with MSAs, manufacturers and retailers across Europe.

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1 *Monitoring, Verification and Enforcement Capabilities and Practices for the Implementation of the Ecodesign and Labelling Directives in EU Member States*, CLASP 2011. In *CLASP's Compliance Counts: a Practitioner's Guidebook* (2010) the UK Department for Environment, Food and Rural Affairs noted that: "At present the rate of non-compliance in the UK is estimated to be around 10 to 15% at manufacturing level (failure to meet the claim on the label) and 20% at retail level (absent or incorrect labelling)."

The final report from the Evaluation of the Ecodesign Directive was published in 2012 and concluded that *Growing evidence indicates that the level of non-compliance is in the range of 10–20%*. The Intelligent Energy Europe funded "ATLETE" project (2009–2011) found a 20% non-compliance rate following the testing of the Energy Label declarations from a range of domestic refrigerators.

Executive summary

The project delivered an improved compliance rate of future TVs through a detailed discussion and remedy action process with non-compliant manufacturers and retailers, by means of returning to the retailers and checking manufacturer's products to verify the implementation of remedy actions; through capacity-building with European testing laboratories on the TV testing issues and standardisation anomalies uncovered; and national and European workshops with MSAs sharing project outputs.

2. Introduction

TVs are facing new legislation as the new models placed on the market have to display the Energy Labels at their point of sale (since late 2011). This requirement has the objective of helping consumers to easily determine the energy consumption of the models they wish to purchase. The legislation is specified in the Commission Delegated Regulation (EU) No. 1062/2010 of 28 September 2010 supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to Energy Labelling of TVs, and Commission Delegated Regulation No 518/2014 of 5 March 2014 amending Regulation 1062/2010 with regard to labelling of energy-related products on the internet. The Ecodesign Directive requirements for TVs are set in Commission Regulation 2009/642/EC of 22 July 2009 and provide the procedures for the measurement of mode specific power consumption in Annex II of the Directive.

The legislation in the Regulation No 1062/2010 requires that: “The information provided on the label should be obtained through reliable, accurate and reproducible measurement procedures that take into account the recognised state-of-the-art measurement methods including, where available, harmonised standards adopted by the European standardisation bodies”. However, since the legislation was recent, very little experience existed verifying the real electricity consumption of these products – both in terms of the organisation of formal surveillance activities, and in terms of laboratory testing practices.

The energy efficiency performance of the products available on the market needed to be verified, both in terms of the compliance and the monitoring of market supply.

With the implementation of the legal framework for Ecodesign and Labelling of energy-related products, the EU has established powerful instruments to support market transformation towards more energy-efficient products.

The market development for televisions shows a clear trend to higher energy efficiency and thus illustrates the positive impact of the EU Ecodesign and Energy Labelling framework.

Introduction

ComplianTV addressed the following major market needs:

- Assurance of the correctness of information regarding energy efficiency of TVs provided in the EU market. This involved independent confirmation of energy efficiency declarations for products based on Ecodesign and Energy Labelling requirements and thus validation of the correctness of current buyer information as well as efficiency trends in the market.
- Full and transparent coverage of product information criteria (as required by Ecodesign and Energy Labelling) in all relevant information media.

At the beginning of the project, the main barriers against fulfilment of these markets needs were:

- A lack of standardised market surveillance in-store and online verifying correct implementation of the information requirements in Ecodesign and Energy Labelling;
- A lack of standardised testing for the specific product groups in the EU Member States.

These barriers were due to the following underlying shortfalls and limitations, namely a lack of:

- Resources at Member State level to support sufficient market surveys and product testing as well as other priorities of market surveillance due to resource restrictions;
- More standardised and thus more cost-efficient processes for product testing as well as online and web-based market surveys;
- Expertise of market surveillance authorities and test labs that would allow more efficient and thus more cost effective testing;
- Concerted alignment of testing activities allowing for an efficient share of the effort of product testing for the many product groups covered by Ecodesign and Energy Labelling Regulations between Member States.

ComplianTV[2] was an EU co-financed project in the framework of the Intelligent Energy Europe programme running from April 2013 until September 2015.

ComplianTV project aimed at providing a fully-fledged and detailed methodological guidance to allow EU Member State (MS) market

2 www.compliantv.eu

surveillance authorities to face the new legislative and market challenges for TVs in an effective and cost-efficient way. In the long term, ComplianTV aims to support the achievement of the energy saving target (20% energy saving target established at EU level by 2020 and 27% by 2030).

ComplianTV had the following objectives:

- Analysing the implication of the new Energy Labelling Directive (labelling declarations, Commission Delegated Regulation (EU) No 1062/2010, Commission Delegated Regulation No 518/2014) and Ecodesign Directive (Commission Regulation (EC) No 642/2009 defining the minimum ecodesign requirements) on the market surveillance activities by carrying out ad-hoc surveys;
- Assessing the compliance of TVs in the framework of the new Energy Labelling and Ecodesign Regulations, through verification procedures;
- Improving the expertise and testing capability of laboratories with regard to the new and complex measurement method for measuring energy efficiency of televisions. This capacity-building was carried out through harmonisation and coordination between laboratory partners of this project and other laboratories;
- Evaluating the outcomes of the product tests carried out and proposing corrective approaches to manufacturers and retailers; and
- Educating the stakeholders, including manufacturers, retailers, end consumers, on the Energy Label and Ecodesign requirements for televisions.

The main project outputs are outlined in the following sections: product testing, the online and in-store retail shop inspections, and the various activities to strengthen the community of stakeholders e.g. MSAs, manufacturers, retailers, policy makers and end consumers.

3. Applied approach and methodology

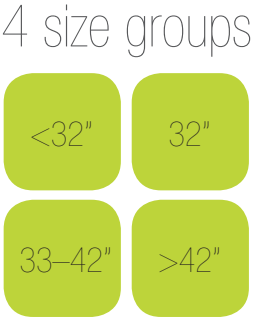
Methodology, Product Selection and Targeting

The project team purchased and tested 197 TV units against the technical and information requirements of the Energy Labelling and Ecodesign Regulations for TVs. The testing was divided into 4 batches. Batch one constituted 60 models, batch two 40, batch three 62 and batch four 10 – the remaining units were reserved for step 2 testing whereby 3 additional units were purchased and tested to confirm or otherwise the suspected non-compliance after step 1 testing.

To provide clarity to the market and to consult on due process with the MSAs, it was necessary for the Project to set out and declare how it interpreted certain specific requirements from the Energy Labelling and Ecodesign Regulations for TVs and how it would assess the compliance of TVs in general. These were set out and validated within a document called “Test Method Interpretations, Tolerances and Communication of Results”. As well as providing clarity on the process for step 2 testing, the document also importantly established clear terminology with respect to the term “non-compliant”. This simultaneously recognised the importance and position of the MSAs with respect to enforcement, and defined the Project’s use of non-compliant as referring to a conformity check performed by the Project against the requirements specified. The interpretation of industry stakeholders was also strongly taken into account, via consultation and due to the presence of DigitalEurope in the project consortium.

A market analysis was conducted based on data from Amazon, a price comparison portal and available market statistics data. Based on the results of the market analysis and online research, a product selection methodology was created. The criteria encompassed technical aspects and economic aspects. Based on the established selection criteria, a list of TVs to be tested was completed and published[3].

The first batch constituted 57 LCD TVs and 3 Plasmas, with a split of 36 A-brand TVs and 24 non-A brands. A-brand manufacturers are defined by the Project as LG, Panasonic, Philips, Samsung, Sony, TCL, Thomson and Toshiba. The screen sizes of the 60 models were split evenly between 4 size groups: <32”, 32”, 33–42”, >42” with models <16” and >55” excluded. The Project was keen to take an intelligence-led approach from batch to batch. Therefore, the results of the first batch of testing was used to inform the model selection and targeting approach for batches two and



3 http://www.compliantv.eu/eu/product-testing/product-selection/

three – in particular the brands included within the sample. The A-brand non-A-brand split evolved in the second and third batches from 36 and 24, to 12 and 28 in batch 2, and 27 and 35 in batch 3. The impact of the batch 3 sample was further enhanced by the use of GfK data depicting which countries the models were sold in: it was the Project's ambition to maximise the reach of the results. Batch 4 testing was formed out of the brands that failed the verification of the technical ecodesign requirements in the previous batches (1–3) and where remedy actions have been applied. A total of 10 televisions have been selected, with a split of 2 A-brands and 8 non-A brands.

Consumer eye view: inspecting TVs in-store and online

Methodology

The objective of this exercise was to check a sample of retailers across 5 Member States to understand their level of compliance with the display and proper use of the energy label. The inspections were divided into two rounds. For each round, each partner in respective country visited 20 stores. The second round constituted a repeat inspection of all stores from the first round, after a discussion period about the findings and implementation of the agreed remedy actions with the retailers involved. Project partners from France, Germany, Austria and the Czech Republic all delivered 20 in-store and 20 online inspections, with the UK partner conducting 20 in-store inspections and the Belgium partner 20 online inspections: totalling 200 inspections – 100 each for in-store and online.

For the in-store inspections, retailers were divided into 4 categories: electronic superstores, department stores, supermarkets and electronic specialists / independents. Each national partner was allowed to use local intelligence and national priorities in selecting what proportion of each store type made up the sample of 20 and their geographical location – with the exception that at least 2 of the stores visited be electronic superstores and a minimum of 12 of the stores in the sample be drawn from the other 3 store types. Labels should conform entirely to the format specified in Annex V of EC Regulation 1062/2010[4] and be placed on the front of the TV, clearly visible. Instances of non-compliance were characterised into 4 classifications: placement issues when the label was either hidden or otherwise obstructed from view, format issues when the label was graphically amended, in the wrong colour, size or otherwise not

4 http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:314:0064:0080:EN:PDF

Applied approach and methodology

following the regulated format, application issues when the label did not match the model it was affixed too, or otherwise missing in its entirety.

For the in-store inspections, data was collated for both unboxed and boxed TVs. All boxed TVs at the point of sale are required to display an energy label in the same way that unboxed ones are. In terms of classification of non-compliance, where there are a number of unlabelled boxed TVs, if one model is unboxed and fully labelled, all of the related boxed TVs with the same model number were recorded as correctly labelled. Where there is an unboxed TV price marked but without an energy label (or even if there is no example unboxed, but still priced and individual boxes do not bear the label), all the associated boxed TVs of that same model are considered non-compliant according to Regulation 1062/2010. Data was collated at both the individual unit level and at the model level, where many units of the same model were for sale – such as can be the case for boxed TVs. ComplianTV used the 'model' level comparison for comparing and reporting data from rounds 1 and 2.

For the online inspections, retailers were selected by the national partners with central organisation and communication so as not to duplicate on international retailers. For each store, 20 TV models were selected, drawn from a stratified random sample which specified an equal share across 4 different screen size groups and proportional mix of brands. In order to be considered correctly labelled at the time of the inspection, if the seller was not displaying the energy label, it was required to display the following 4 pieces of energy related information, in this specified order, according to Annex VI of EC Regulation 1062/2010:

1. Energy efficiency class
2. On-mode power consumption
3. Annual power consumption
4. Visible display size

Instances of non-compliance were categorized into 3 classifications: format issues, where the energy related information was not displayed in the right order or some information was missing, the displayed label did not fit the colour, or the format which is required from the Regulation; application issues where the label did not match the model; or otherwise the TV was missing the label and the energy related information altogether.

4. Results, findings and impacts achieved

Results of product testing

Batch 1

After step 1 testing of batch 1, 43 TVs were declared compliant with the technical requirements with 17 identified as suspected non-compliant. The Project established a dialogue with the respective manufacturers to provide the test results and if required – to clarify the test procedures. The results regarding the 17 suspected non-compliant cases were further clarified:

- Five models were declared as non-compliant: the non-compliance was accepted after step 1 in the case of four models. One model progressed to step 2 testing, which subsequently failed.
- Six models were declared as compliant: after communication with the manufacturers and in line with the testing procedures, the testing reports were revised. For one specific model, step 2 was initiated and passed.
- The compliance status of six models could not be clarified: five models could not be purchased from the market for retest and whilst three additional units for one model were purchased, on delivery they showed clear signs of use, and were rejected.

In summary, setting aside the six models above, the results of the TVs under test for batch 1 showed:

- 49 (LCD and plasma) models comply with the technical requirements set in Regulations 642/2009 and 1062/2010.
- 5 TVs were non-compliant in respect to technical requirements set in Regulations 642/2009 and 1062/2010.

Furthermore, the overall evaluation of the test results revealed the following trend:

- The highest compliance rate came from the two highest price segments (both 100%). The lowest two price segments, <400 Euro and 400-800 Euro, had the lowest compliance rates (73% and 88% respectively).
- Out of the 5 non-compliant cases, one was declared energy class A+, three A and one B.
- The non-compliant cases all originated from non A-brands.
- Four models failed the automatic power down (APD) requirement and one model failed the peak luminance ratio (PLR).

Results, findings and impacts achieved

Regarding information requirements, 5 models failed in product fiche requirements, 29 publicly available information and 14 the energy label format requirements. In addition, there were 55 cases where the availability of the product fiche could not be assessed. In this batch, 7 manufacturers have accepted results and carried out corrective actions within the project time frame and 5 manufacturers accepted the results, proposed remedy actions and are working on their implementation beyond the ComplianTV duration. Cases where the manufacturers have not completed the remedy action e MSA.

Batch 2

Results from batch 1 informed the product selection in batch 2, including a greater proportion of non A-brands. After step 1 testing, 3 models were suspected non-compliant on technical measurements, all due to Automatic Power Down and from non A-brands. Dialogue with manufacturers ensued.

- One manufacturer accepted the results and subsequently carried out corrective action which was accepted by the project team.
- Two TVs proceeded to step 2 testing; After the testing of three additional samples of each model the results indicate that the models are both non-compliant regarding the physical ecodesign requirements.
- Therefore 37 of the 40 TVs complied with technical requirements set in Regulations 642/2009 and 1062/2010.

Non-compliance on information requirements set out in Regulation 642/2009 was initially seen for 28 of the TVs from batch 2, whereas 20 TV models failed the information requirements set out in Regulation 1062/2010. Manufacturers responded to the majority of these cases to agree remedy actions with the project team. Throughout the project execution, 15 manufacturers applied corrective measures. Cases where the manufacturers have not completed the remedy actions or did not respond at all have been all passed to the MSA.

Batch 3

This batch again placed a strong emphasis on testing non A-brands, and also focused on products that declared a high energy rating, brands not yet tested, those with display technologies such as OLED, full/edge LED backlight, multiple tuners, and 3D, and ones that were sold in more than one country to increase the reach of the project. Results were as follows:

- 4 TVs were suspected non-compliant on Peak Luminance Ratio.

Results, findings and impacts achieved

- There were 7 cases of suspected non-compliance for Automatic Power Down.
- 1 TV was suspected as non-compliant for both PLR and APD.

Again, all the cases of suspected non-compliance against technical requirements were seen from non-A brand TVs. Dialogue with manufacturers and determination of remedy action led to one TV that has moved to step 2 testing. After testing of three addition units of the same model, the TV's non-compliance has been confirmed,

In total, 40 TVs were assessed as non-compliant against various information requirements and subjected to the remedy action process; 11 of these cases have been resolved. The majority of the manufacturers did not respond to the remedy actions and all these cases have been transferred to the MSA.

Batch 4

In this batch 10 televisions have been tested, all from manufacturers of TVs previously tested and suspected non-compliant by the project, but where remedy action was taken by the manufacturer; further testing sought to assess effectiveness of the actions. There were 2 products of A brand and 8 of non-A brand, and 6 models had high energy efficiency declaration (A+).

Results were as follows:

- 2 TVs were suspected non-compliant on APD and 1 TV on both APD and energy label declaration (regarding the energy efficiency class).
- One manufacturer accepted the results and therefore the non-compliance. In the dialogue regarding the remedy actions, the manufacturer claimed that all corrective measures will be applied for the future models.
- For one model step 2 testing was performed and passed.

In batch 4 the majority of the TVs failed to fulfil the information requirements, where 6 TVs were assessed as non-compliant against the requirements of Regulation 1062/2010 regarding the product fiche and 4 TVs showed format issues regarding the energy label. Two manufacturers accepted the results and implemented corrective measures. Two other manufacturers accepted the results, proposed remedy actions and have been working on their implementation. The rest 6 cases where the manufacturer either did not complete the remedy actions or did not respond have been handed over to the relevant MSA.

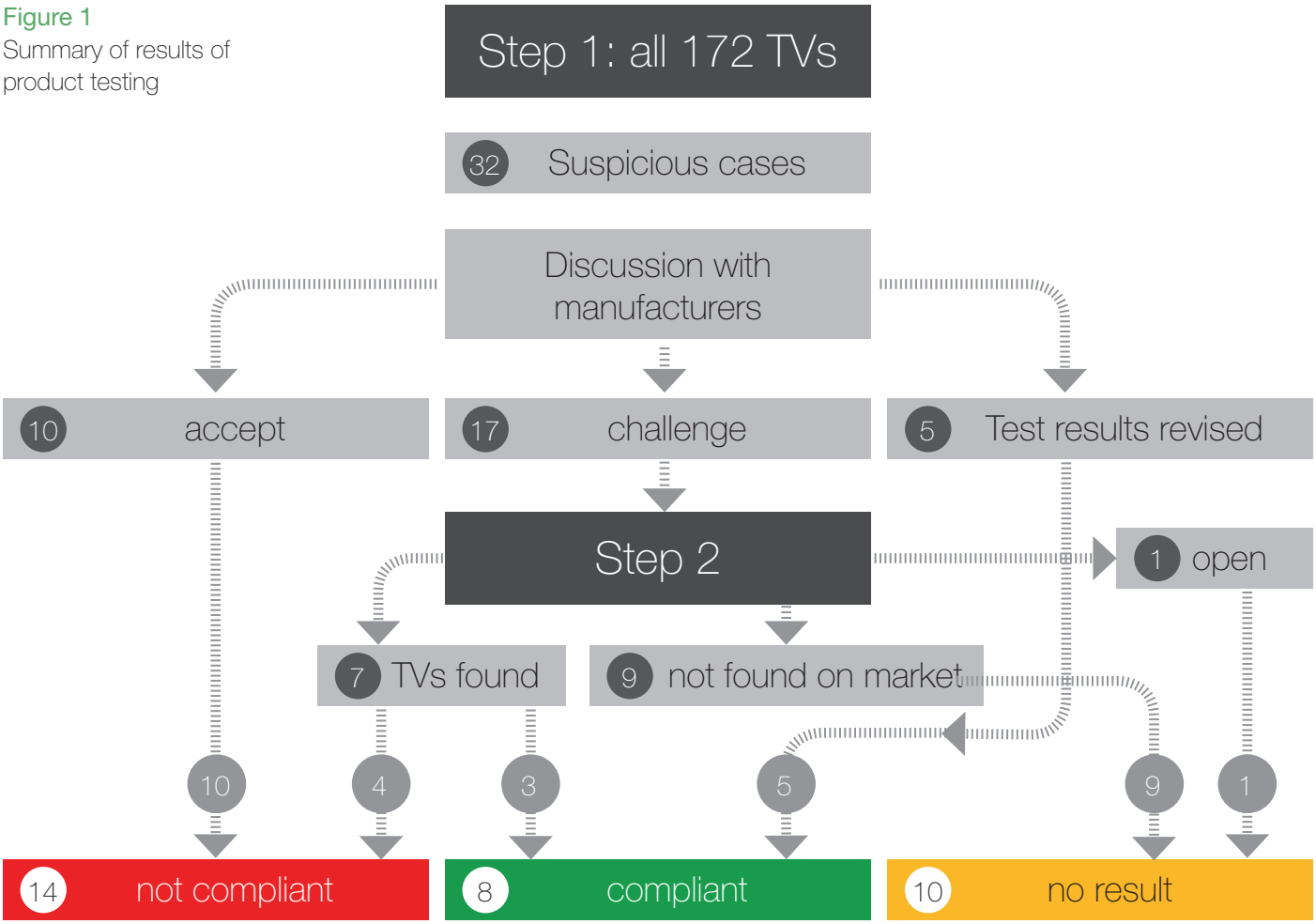
Results, findings and impacts achieved

Summary

ComplianTV conducted full laboratory testing of 172 TVs. The final testing results are available for 162 models[5] (see reports for each tested model at: http://www.compliantv.eu/eu/product-database/).

Trends seen from the 162 models tested in batches 1–4 show that cases of suspected and confirmed technical non-compliance were all from non-A brands and all due to Automatic Power Down or Peak Luminance Ratio. By definition, non-A brands are of lower market share and from batches 1–4, 85% of failures were seen from TVs in the lower price bracket of < €400. Beyond this, there were no other significant trends linking the non-compliant models, such as screen size or display

Figure 1
Summary of results of product testing



5 Where the project moved to step 2 technical testing, some issues were seen with availability of models due to the relatively short shelf life of TVs. In total, 10 compliant models were unable to be sourced for follow-up testing despite best endeavours, removing the ability to fully resolve these cases.

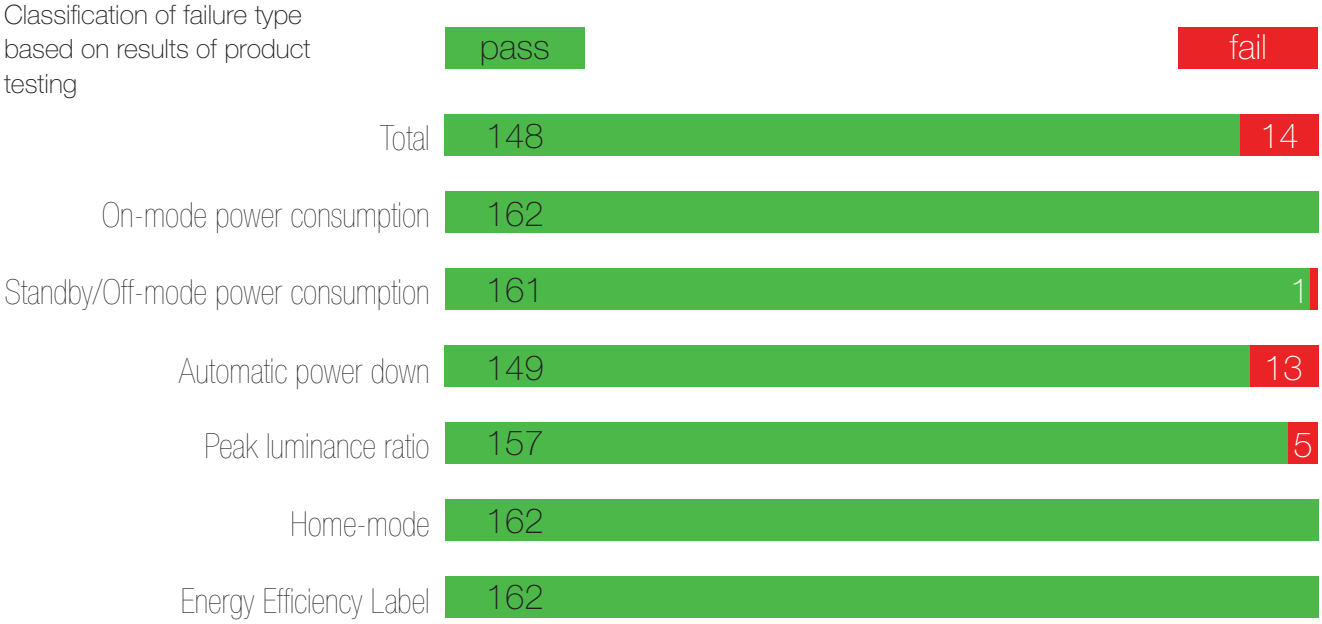
technology. Whilst it is difficult to quantify energy savings lost from non-compliance with these two metrics, these findings have fed into the project's policy recommendations.

A relatively low level of compliance against information requirements was seen in checks of documentation and publically available information accompanying the physical testing. Publicly available information was found to be initially non-compliant for 98 of the 172 TVs; the product fiche did not fully comply in around 1 of 3 cases, and just over a quarter of supplied energy labels had a formatting issue.

Regarding remedy action and dialogue with manufacturers, this appeared to be generally effective. In total, 32 cases of non-compliance regarding information requirements received no response from manufacturers and had to be referred directly to MSAs.

The reasons of non-compliance for the 14 identified models are mainly due to the auto power down mode and to the peak luminance ratio as presented in Figure 2.

Figure 2
Classification of failure type based on results of product testing



In-store inspection results

Results Round 1

With a sample size of over 5,000 TVs the non-compliance rate was 32% (at the individual model level). When considering each unit of a TV present, non-compliance was measured at 41%, increased by instances of multiple non-compliant boxed TV units of the same model present in larger stores. Out of the 100 stores inspected, nearly half were electronic specialists, with the remainder being electronic superstores, department stores and supermarkets. On average, superstores had the highest level of compliance and supermarkets the lowest. The predominant reason for non-conformities were due to TVs missing the energy label (84%) followed by formatting issues on 10%. There was anecdotal evidence of a low level of engagement in labelling by some retailers (particularly smaller independents), some of whom were simply not aware of their responsibilities to ensure labelling at the point of sale. Consumers are believed to broadly understand the energy label[6] but its omission at the point of sale dramatically reduces the chance of energy efficiency being a factor in the purchasing decision.

Geographically, the highest proportion of compliant TVs on sale were found in Germany (82%) and least in the UK and France (57%). Electronic superstores had the highest average level of compliance (76%) with supermarkets the lowest (53%).

Boxed TVs

The issue of non-compliance was more prominent for boxed TVs, where 46% seen were non-compliant, as opposed to un-boxed TVs where this number was 30% (according to the model level assessment). Out

Figure 3
Non-compliant boxed TVs. With no example model labelled; all TVs were counted non-compliant.

6 http://www.clasponline.org/Resources/Resources/StandardsLabelingResourceLibrary/2013/~/media/Files/SLDocuments/2013/2013_05_EU-Energy-Labelling-Comprehension-Study.pdf

of all the non-compliances seen at unit level, boxed TVs represented 40% despite only representing 21% of the total sample size. Most of the boxed TV units inspected were found in the electronic superstores (62%), followed by the supermarkets (20%).

Results Round 2

Round 2 saw the project team again check display of the energy label on over 5,000 TV models in 100 stores, 86 of which were visited in round 1. After round 1, the project team communicated results with retailers and provided guidance on improving the situation where compliance was low. The result was an overall improvement – comparing both rounds at the 'model' level, an increase in compliance of 10 percentage points was seen. In total, 61 of the 86 stores revisited (14 stores had closed down since round 1 and were replaced by other stores for visits) improved the level of correct labelling, and a significant increase in stores achieving over 80% compliance was seen; 48 stores reached this level in round 2 compared with 25 in round 1.

Geographically, compliance was seen to be higher in the Czech Republic (89%) and Germany (88%) than in the UK (70%) and France (65%). Supermarkets again saw the lowest compliance and electronic superstores the highest in round 2, but this improved to 66% and 84% respectively.

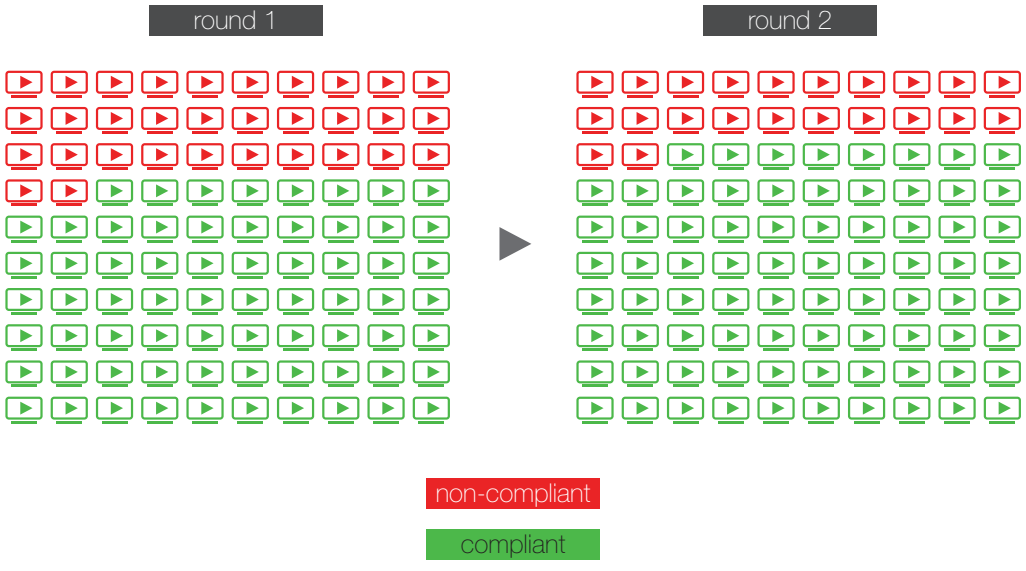


Figure 4
Non-compliant TVs in-store (rounds 1&2). In round 1 conducted at the end of 2013, 32% of TVs were found non-compliant (using the model level assessment) in 100 stores across 5 countries (n=5,128) – this decreased to 22% in round 2 (n=5,398) conducted about one year later.

Remedy Actions

The project team continued communication with retailers after round 2 and requested further remedy actions where necessary. There were several positive examples where retailers communicated extensively with the project to improve procedures on labelling, knowledge of the Regulations and access to labels when not initially provided by the manufacturer between rounds. Specifically these included an electronic specialist in the Czech Republic which increased compliance from 13% to 100% and a large UK department store improved compliance across three of its stores by an average of 23%, with all three achieving compliance of over 82% in round 2.

Summary

Overall, energy labelling of TVs in stores is improving, as retailers become more familiar with their responsibilities. The figure of 78% compliance in round 2 (at the 'model' level) compared to the score of 68% in round 1. Compliant labelling of unboxed display TVs, typically an action performed by the retailer was seen to improve to 80% in round 2 (from 70% in round 1).

Some issues remain with the labelling of boxed TVs, particularly in electronic superstores and supermarkets; while compliance improved by 11 percentage points in round 2, still around 1 in every 3 boxed TV models was non-compliant, most often as a result of a missing label. Some label formatting issues were seen in round 2, which were addressed in round 1 communications, but may have been due to older stock running through the supply chain. The project produced guidance materials on labelling for retailers and understanding the energy label for consumers which were disseminated widely as part of round 2 communication.

Online stores inspection results

Results Round 1

In summary, out of a total of 2,002 TVs inspected there was a 74% non-compliance rate regarding the display of energy labels or energy related information on TVs[7]. Over 80% of the non-compliant cases were due to formatting errors – in this context (prior to the change in Regulations for

7 For products placed on the EU market before 2015, displaying energy label was not mandatory. Retailer that sold products via an online store was obligated to provide a number of information related to energy consumption of the product, the energy label could have been displayed however on voluntary basis.

online retailers from January 2015) this is where some of the required energy information to be displayed is either missing or presented in the wrong order to the consumer. This picture varied country by country, with Germany having a 53% non-compliance rate and the Czech Republic a 95% non-compliance rate.

Results Round 2

Round 2 saw a further 1,982 TVs checked online, following the change in legislation from January 2015 requiring online retailers to display the energy label and product fiche in listings for new products placed on the market. As the date of which the products entered the market could not always be ascertained, application of the appropriate form of the Regulation was not always possible, but the project team was able to assess whether a product did not comply against either iteration of the regulation.

Across the five countries, 26% of products checked were assessed as compliant. The compliance rate varied by country; none of the TVs checked in the Czech Republic achieved full compliance whereas German online retailers scored the highest rate of compliance at 60%.

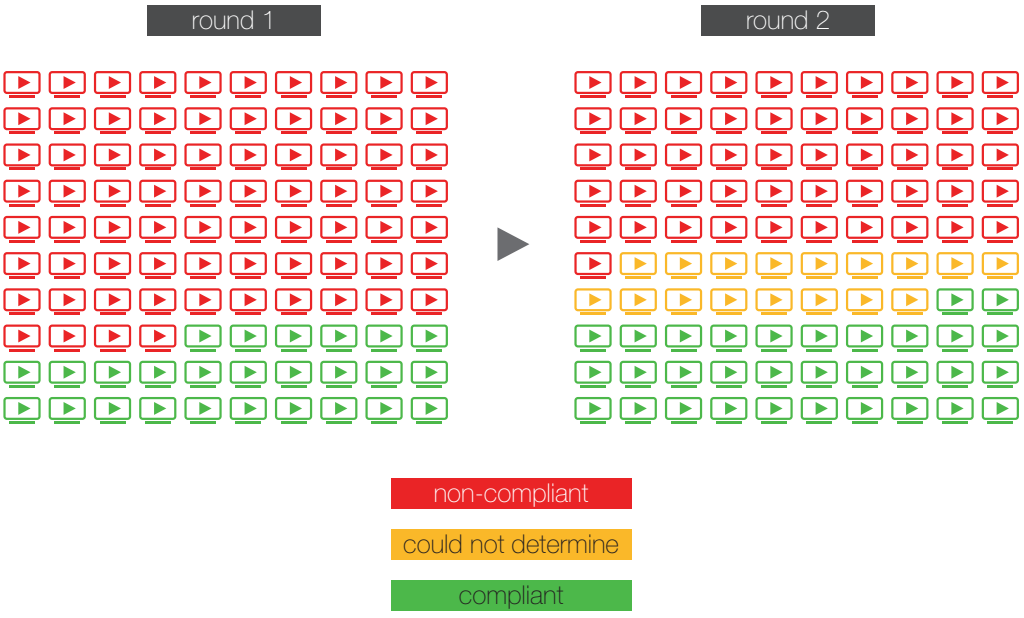


Figure 5
Non-compliant TVs online (rounds 1&2). Round 1 was conducted at the end of 2013/beginning of 2014, with 74% of TVs were found non-compliant – this decreased to 69% in round 2 conducted in April-May 2015, however compliance could not be determined for 17% of TVs.

Results, findings and impacts achieved

Remedy Actions

Results after both rounds were communicated to retailers. In some countries, establishing contact with the retailers was difficult; with most of these retailers discussion was positive and they improved compliance. However, compliance of energy label or information online remains at a much lower level than in-store.

Engagement with online retailers suggests there is still significant scope for providing guidance in this area, and as online sales continue to increase, provision of compliant and accessible online energy information remains crucial to ensuring further market transformation. This is an area where more formal involvement of MSAs could facilitate a quick improvement in compliance, in what is a relatively simple process.

Summary

Results suggest a small (6%) improvement measured in a period of more than a year, and the timing of the checks allows assessment of whether the change in regulations for online retailers has made achieving compliance easier. Review of screenshots suggest around two-thirds of the 100 retailers checked have made at least some attempt to present listings in a form compliant with the new regulations, around 6 months after coming into force. The new legislation should ease the administrative burden for retailers, point consumers toward product energy data and standardize information for easier comparison.

Strengthening the community: sharing project outputs

The outputs of the project are designed to empower and / or strengthen those actors, stakeholders and audiences that are involved in the TV

Table 1
How ComplianTV project outputs get shared with stakeholders and audiences

	MSAs	Manufacturers	Retailers	Laboratories	Policy Makers	Consumers
Product Database	✓	✓		✓	✓	✓
Workshops	✓	✓	✓	✓	✓	
Guidelines	✓	✓	✓	✓	✓	
Test Report Template	✓	✓		✓		
Policy Recommendations	✓	✓	✓	✓	✓	
Consumer Leaflets			✓			✓

market – whether they are the makers, the sellers, the purchasers or those that set policy for them, test them or enforce their laws and regulations. The table below highlights how the many project's outputs serve to help these wide and varied audiences.

Product Database

The main objective for the database is to make the data from product testing available to MSAs and other relevant stakeholders. In order to allow a quick overview of the tested TV models, the front page of the database displays the overall compliance as well as the energy efficiency class, both declared (by the manufacturer) and measured (by the laboratory). Then, for each model, there is the possibility to have several further testing criteria displayed in individual factsheets. The goal was to develop an online tool, which was both informative and succinctly arranged.

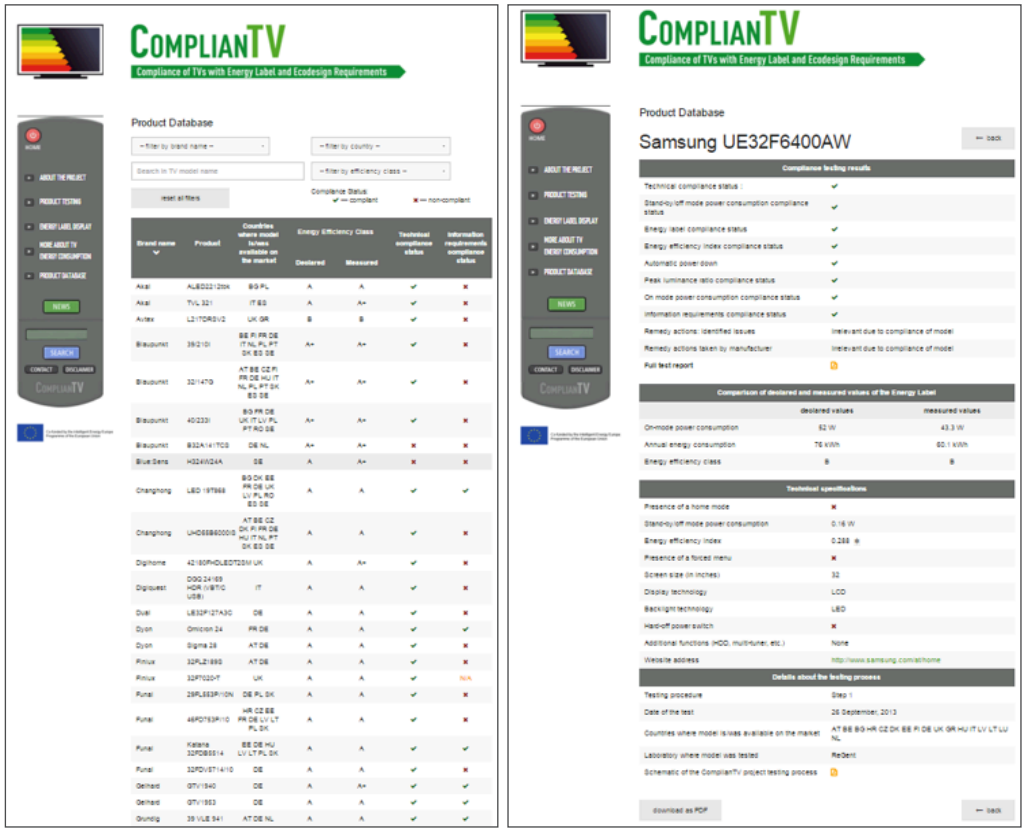


Figure 6
Screen shots from the ComplianTV online product database showing the summary view (left) and the model view source (right). Full database available at: www.compliantv.eu/eu/product-database

Test Report Template

Similarly to other market surveillance projects of this type, ComplianTV has utilised the skills and experience within the consortium to draft, refine, test and implement a product test reporting template – for the benefit

primarily of laboratories and MSAs. But unlike other projects, ComplianTV published the test report template (available at: http://www.compliantv.eu/download-library/compliantvs-tv-testing-report-template) for the benefit of those who would save time and money in utilising it, including European laboratories external to the project team.

Guidelines & Leaflets

Various sets of guidelines and leaflets have been produced by the project to serve the TV community in various languages. They include:

- Guidelines for Product Testing: http://www.compliantv.eu/download-library/guidelines-on-television-set-testing
- Guidelines for Conducting In-store and Online Shop Inspections: http://www.compliantv.eu/download-library/guidelines-on-in-store-and-online-shops-label-display-surveys
- Brochures on How to Display Energy Labels in Store and Online: http://www.compliantv.eu/download-library/guidance-on-how-the-tv-labels-should-be-made-available-to-the-consumers-at-the-point-of-sale
- Consumer Leaflet on Understanding the Energy Label: http://www.compliantv.eu/download-library/compliantv-leaflet-on-energy-label-for-televisions-in-english

Workshops

The production of guidelines was supplemented by the action of hosting national and international workshops across a range of topics including the preparation, delivery and evaluation of in-store and online shop inspections, the outputs of the project in general and more specifically, the experience from the compliance testing of products.

Reviewing the Regulations: How Can They Be Improved?

With the combined expertise of three testing and certification laboratories – VDE, ipi and Re/genT – and the oversight of the Technical University of Berlin, and with the benefit of testing and verifying 172 TV models, the project team was able to learn and understand a considerable amount about the European regulations used to implement standards and verify conformity. What follows is the observations and recommendations for improving the current suite of Ecodesign 642/2009 and Energy Labelling 1062/2010 and 518/2014 Regulations, which have been provided to the policy makers.

Volume Setting

The testing programme identified and concluded that the volume setting of the TV can have an impact on the measured power consumption.

Results, findings and impacts achieved

Specifically, that setting the speak volume to a lower level can result in considerably lower power consumption. Currently, the test standards do not set a standard requirement for the volume setting when models are under test.

The Dynamic Broadcast content

During the testing programme a different power consumption curve was measured in response to the “Dynamic Broadcast Content”. This was a new behaviour for on-mode power consumption, not previously experienced by the laboratory testing team.

Automatic Power down

The testing programme identified that there was a lack of a measurement tolerance for the verification of the 4 hours automatic power down requirement within the TV Ecodesign Regulation and furthermore that it was unclear whether or not the TV had to complete the power down process within the 4 hours or to have started it.

Peak Luminance Ratio

The experience from testing 172 individual models demonstrated the complexity of verifying TV performance against this requirement. On account of the flexibility provided for in the Regulation, the lack of a defined unified test pattern makes the independent testing and verification process longer and more costly: complicating the issue for MSAs and laboratories.

Energy Efficiency Index (EEI) and annual power consumption

For the calculation of the EEI and the annual on-mode energy consumption, the Energy Label Regulation 1062/2010 defines the calculation formula, where P_{basic} depends on the number of tuners in the TV. However, there is no explicit definition or explanation in the Regulation (e.g. whether it is based on hardware or on functionality).

The Energy Label Regulation also states that “the luminance of the television in the home-mode or the on-mode condition as set by the supplier, is automatically reduced between an ambient light intensity of at least 20 lux and 0 lux”. This requirement creates a grey area because any reduction of the power consumption between any light intensity of at least 20 lux, and 0 lux, will make a television compliant. In a testing perspective, ComplianTV recommended, if such a requirement is maintained, that the levels of the light intensity should be set more precisely, and the required power consumption reduction should be quantified.

5. Conclusions and recommendations

In short, the achieved results of ComplianTV are:

- Development of a guidance methodology and testing database of 172 different TV models;
- Increased motivation of manufacturers in developing energy efficient models achieved through discussions and remedy actions process;
- Improved compliance rate of future TV and higher level and better consistency of MSAs activities;
- Increased capacity building in terms of testing skills for laboratories involved in the project and others;
- Increased awareness of retailers about Energy Label and Ecodesign requirements, energy related information display for TV, increased compliance of products on sale, in consequence higher consumer confidence and better understanding of Energy label for the general public, achieved through dissemination activities.

Overall findings of the project show examples of both good and poor compliance against the various requirements in the Energy Labelling and Ecodesign Directives for TVs. Implementation by the market has been seen to be effective against many of the technical performance requirements, with the majority of TVs measured as compliant against their declarations of energy efficiency, standby power and on-mode power.

Through the large volume of the project's testing program, a number of useful trends and insights have been uncovered. These include the several cases of non-compliance against automatic power down and peak luminance requirements, and the concentration of this among cheaper TVs and non-A brand; the correlation between volume level and power consumption and the behaviour of a TV's power consumption in response to the Dynamic Broadcast Content. The testing of 172 TV models has enabled a significant transfer of information on testing best practice and enabled harmonized approaches between laboratories providing a strong evidence base for areas of focus in the upcoming revision of Regulations for TVs and the policy recommendations detailed above.

However, compliance on information requirements in the Regulations was seen to be low, and there remains significant scope for improvement in the provision of this to consumers, particularly by online retailers. Manufacturers and retailers on the whole did co-operate with the project and often undertook remedy actions where necessary, and improvement

Conclusions and recommendations

was seen in retailers' energy labelling compliance during the project. Comparing the improvement in the provision of energy information with that of the market share of TVs in the higher energy classes will remain an important metric to determine the effectiveness of this aspect of the regulation addressing consumer education on energy using products.

Further improvement in this area is essential for a product category such as TVs, where performance and features are often the primary factor in a purchasing decision ahead of energy efficiency, to bolster the energy saving potential of the Regulations. Therefore this remains an aspect of Ecodesign and Energy Labelling policy that still has potential as a tool to drive market transformation towards TVs of the higher energy classes.

Nonetheless, ComplianTV's extensive picture of the market provides further useful guidance on whether information requirements and their provision should be revised and how this could best align with the Commission's recent proposal of a database for energy-related products.

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www.compliantv.eu

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