ENERGY STAR Display Specification 6.0 Draft 1
Comments from the European Commission

We provide in the following comments from the European Commission to the Product Specification for Displays – Eligibility Criteria – Draft 1 Version 6.0. We generally appreciate and support the contents of the document.

Definitions

Line 9 – External storage connection: We suggest combining item (2) and (3) into 1 item for external storage e.g. "external storage directly connected". The reason is that (2) and (3) are basically the same, just with different connections. Furthermore, rotary drives are not mentioned, while this might be an option for some displays.

Line 11–21 – Display products: If the intent is that this specification should be a cover-all specification, the list of display products should be given as examples and not as a complete list.

Line 37 – Activation function: We suggest adding "a network connection" and "remote control" to the possible activation triggers. "Remote control" is mentioned on line 44. Furthermore, a word is missing ("via" or "through").

Line 41–44 – Sleep mode: The text here is partly a repetition of the previous text. We suggest editing and remove overlapping text.

Line 58–59 – As-shipped luminance: The explanation should be edited, because it should correspond to the the settings for the display when leaving the factory and not what else is recommended by the manufacturer. This is probably also the meaning behind the words, but it may be misinterpreted.

Line 69 – Product families: In other specifications such as computers and servers, we accept product families with more difference between the family members as described here as long as the registered energy consumption is the highest in the family. We should be open for doing this as well for the display specification, however, probably the need is smaller because displays are typically not marketed in many configurations.

Line 85 – Included products: We suggest including touch screen displays to avoid possible misunderstanding. No additional power should be allowed for these displays, because touch technology exists that do not require additional power.

Line 102 & 108 – Integrated TV tuner: Item iii. and v. on the list seems to be covered by item ii. and could be removed or integrated with item ii. 2.2.2 also overlaps with 2.2.1. We suggest making 1 list, which includes the text in 2.2.1.

Line 110 – Tablet computers: The "i.e." ("that is") should be substituted by "e.g." or "incl."

Line 111 – Medical applications: We recommend not to exclude all products used in diagnostic medical applications but only where national or international medical regulation makes it impossible to comply.

Line 100–114 – All-in-one computers: We should consider to include all-in-one computers on the list. The market is increasing for all-in-one computers, which look like displays, but have computers built in.

Line 116 – Larger than 60" displays: We support this if market data shows that the market is increasing for these sizes and we can get energy data for them.

Line 150 – Networking capabilities: We agree that the networking capability will more and more be integrated in many products including displays. We should define networked sleep and off modes with a slightly higher consumption level. Probably no power adder is needed for the on mode and there should be no adder for multiple ports.

Line 158 – Power management – Dim: We have previously recommended considering a dim mode requirement with a low default time. We have however considered an alternative – and probably better way – to promote display dimming: We suggest not requiring dimming but including it in the on mode formula by calculating the on mode consumption as "xx % power consumption in dim mode + (100–xx) % power consumption in normal mode". xx is to be considered but could be in the range 10 to 20 %. This corresponds to the principle of calculating power consumption for ABC.

Line 162 – Power management – Default time: We recommend to include a default time to sleep for all display products. Computer monitors should be included because the increasing use of notebooks connected to external displays, where the notebook is transported to home, meetings etc., result in many displays not switched off and permanently consuming the on mode consumption.

Line 177 – Calculation of on mode power for ABC products: For office use of displays the light levels are typically around 200 lux most of the time (the required level in some countries) and here the formula is too skewed towards the low end. This results in measured values, which are lower than real use value. For household use the formula might be more correct.
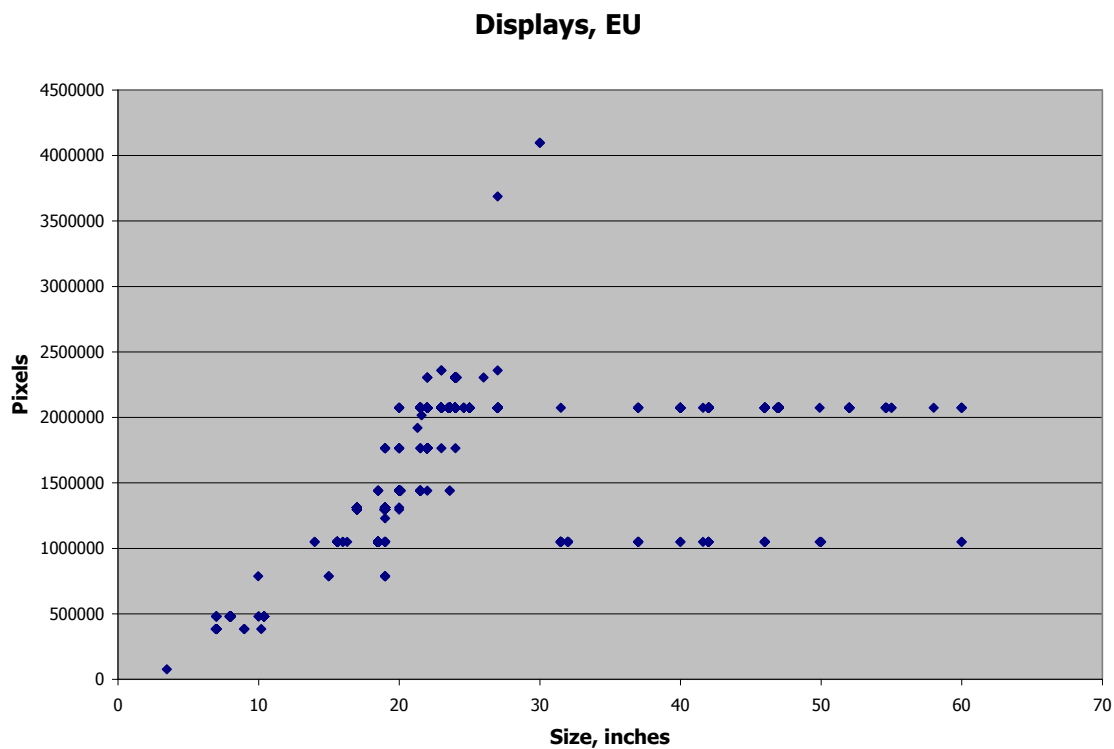
The formula might need to be adjusted e.g. to have at least 75 % weighting totally at 150 and 300 lux. In addition, we believe that the light source, test configuration etc. may have high impact on how the ABC regulates the luminance of the display.

A survey might be made of the actual lighting conditions in offices and homes, where most displays are used.
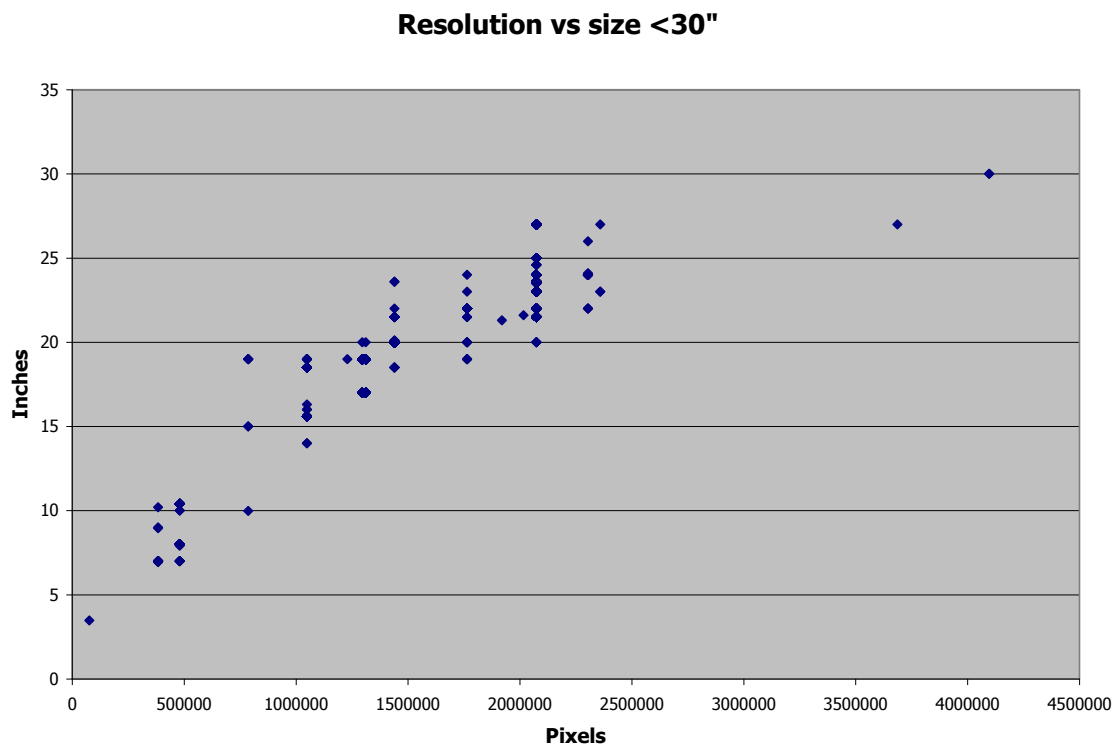
Line 221 – Use of IEC 62087: We support to use this test standard, but it should be in the most recent version i.e. ed. 3.0. We suggest to consider providing a small guide in which parts of the test standard is relevant for this specification, because much of the content is not directly relevant for the display testing.

Line 244 – Screen resolution: We have made an analysis of the product data from the EU database, which we describe in the following.
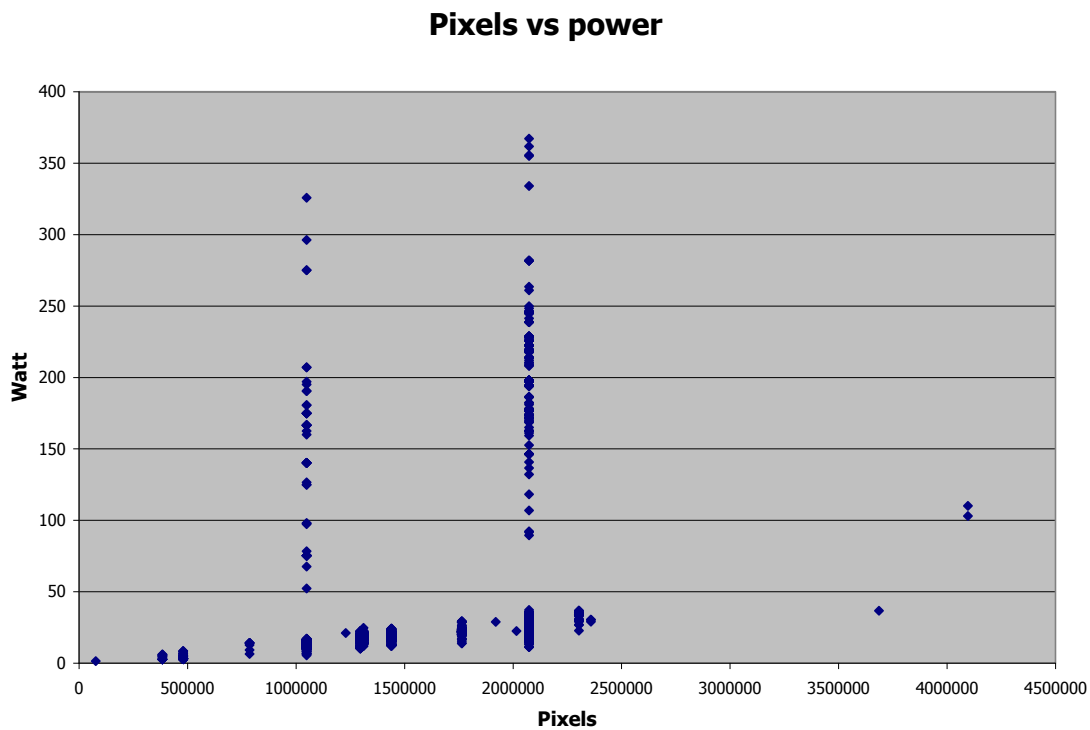
Data has been arranged and filtered (various null-data omitted), and a diagram with the relation between size and resolution has been made. The diagram clearly shows that the resolution to a very high degree depends on the screen size for this data-set. The bigger the screen, the higher the resolution. The following diagram shows the whole filtered dataset:

Displays, EU

Below, the data-set is shown without the display sizes above 30 inches, and with resolution as x-axis:
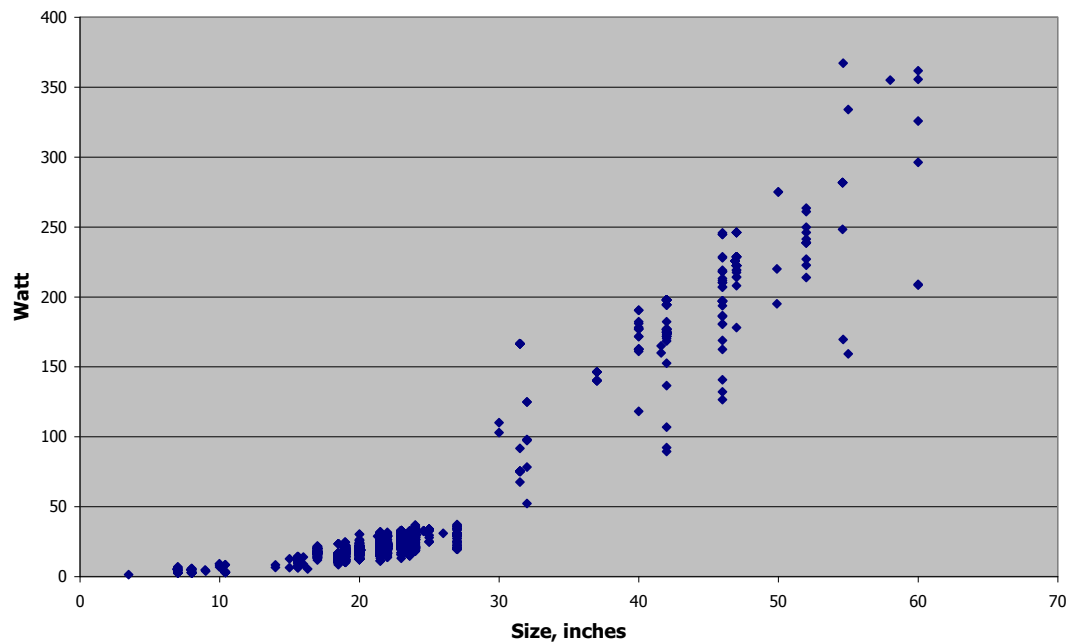
Resolution vs size <30"

Below is the power for all screen-sizes shown according to the resolution. It is quite clear that a certain reso-lution can have a wide variety of power consumptions.
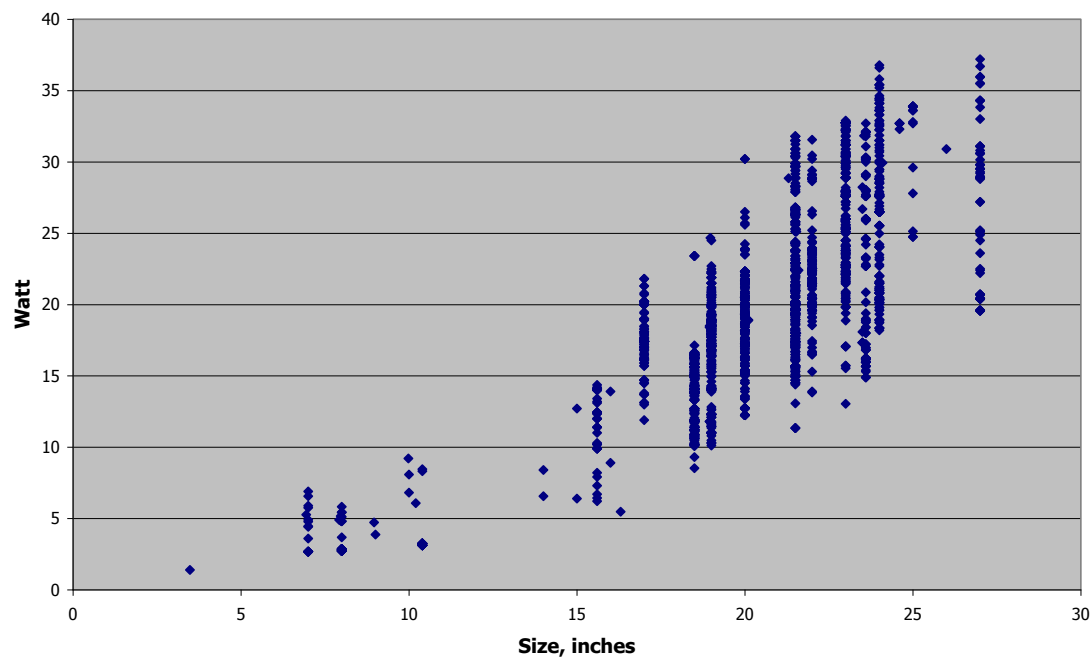
Pixels vs power

In contrast to the above diagram, the following diagram below shows a very good correlation between screen size and power:
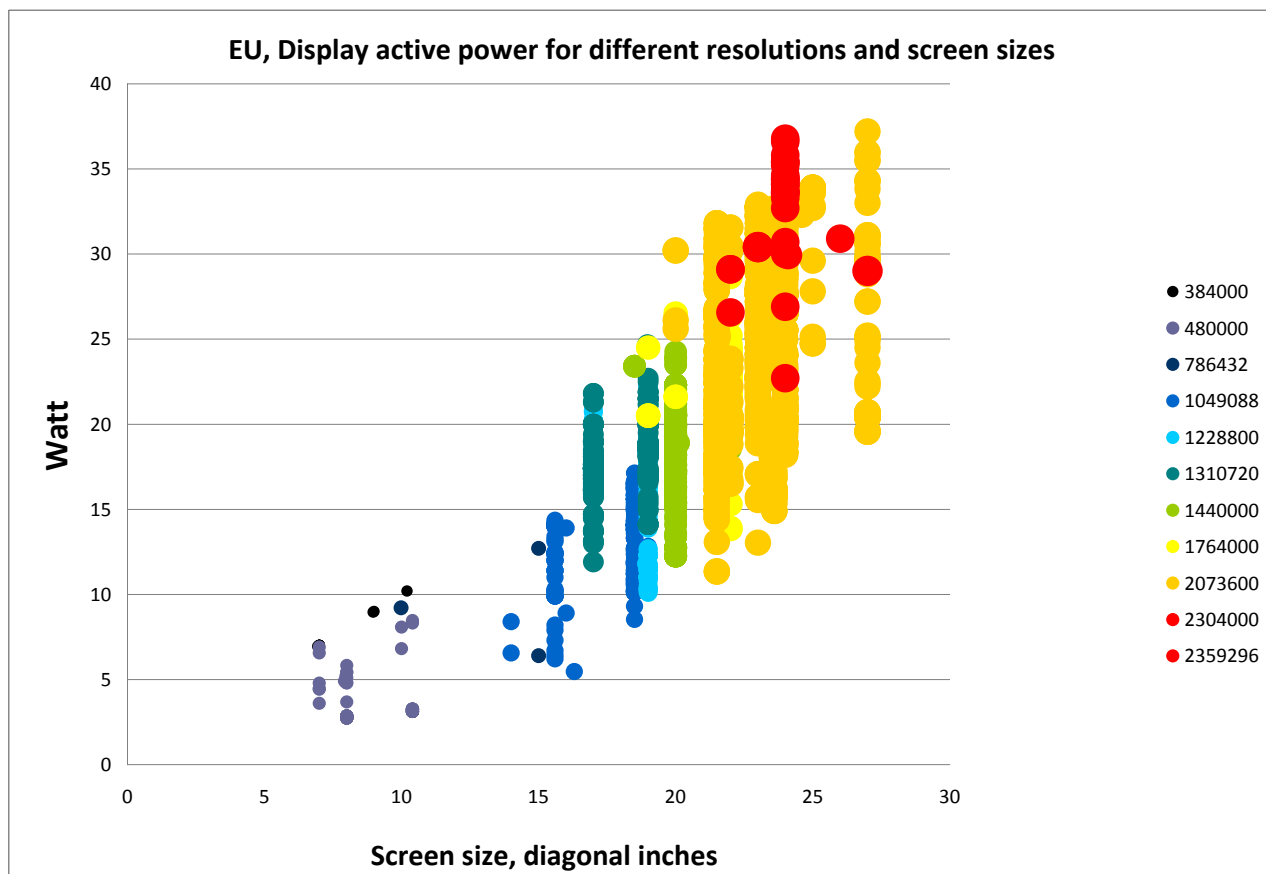
Size vs Power

And here only displays with sizes less than 30 inches are shown:

Size (<30") vs Power

We tried to make a 3-dimentional diagram showing both size, resolution and power, but the result is not very illustrative due to high variation in power for similar set of resolution and size. Instead the diagram below shows size vs power for series of resolution-data. The higher the resolution the bigger the dots:

EU, Display active power for different resolutions and screen sizes

Our conclusion is that we do not see a significant relation between resolution and power consumption in the EU dataset. If there is such a ration, it is masked by the fact that bigger screens have higher resolution. Still there is a rather big variety in power consumption for displays with the same specification for size and resolution.

Line 337 – Toxicity etc.: We consider that in the context of EU ENERGY STAR, preparatory work should remain focused on energy consumption in the use phase. Other environmental aspects throughout the life-cycle of products are considered in different EU programmes such as the Ecolabel, the Green Public Procurement and Ecodesign ErP.

Line 273 – Luminance requirements: We agree in testing at as-shipped luminance value with the precondition that it is greater than or equal to 65 % of maximum luminance.