European Union
On Mode Considerations

ENERGY STAR® Display Stakeholder Meeting

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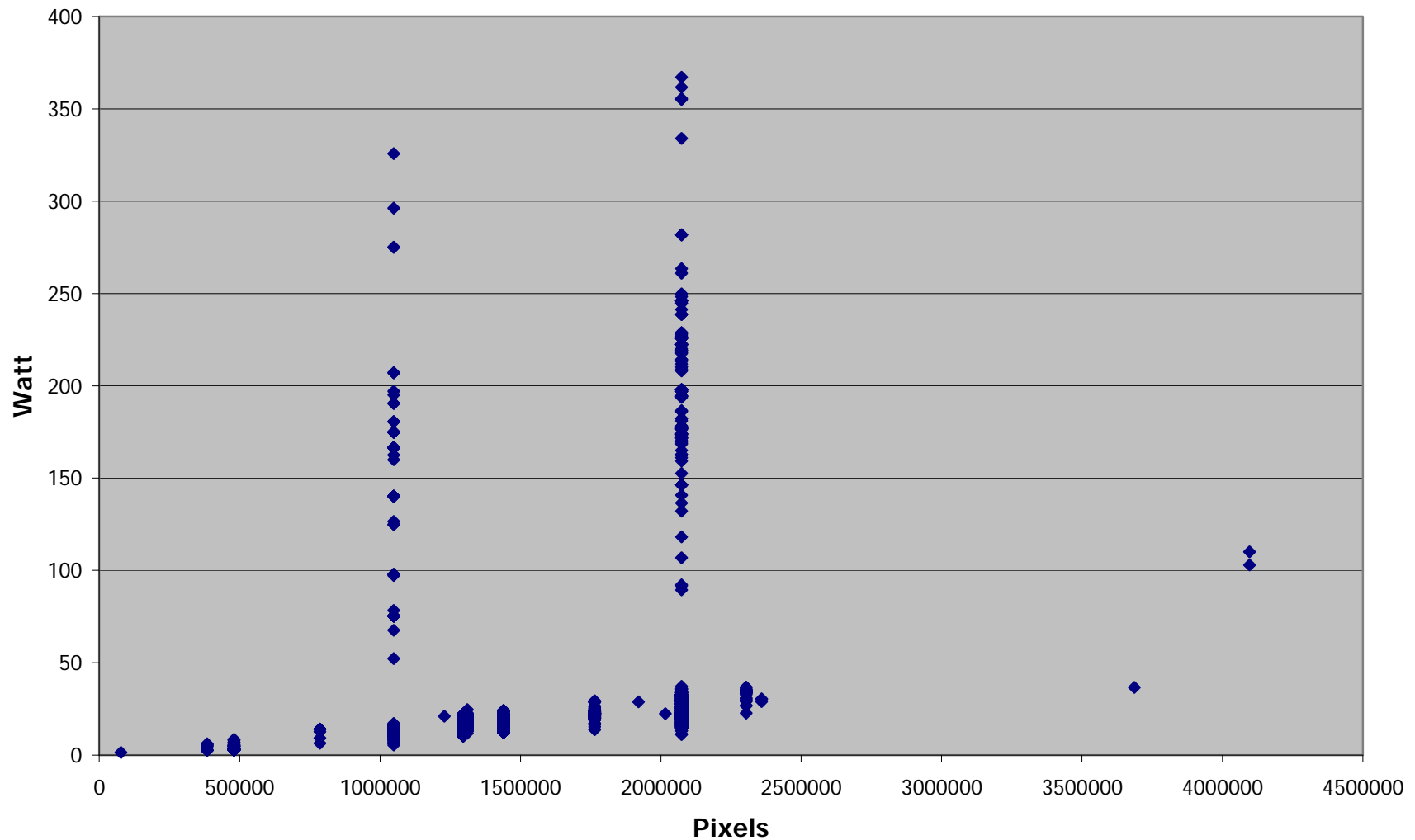# What should be included in equation?

- **Main service delivered by the product**
  - We believe size / area
  - Other: Resolution, panel types, technical features
- **Not all product features should have an adder**
  - Get complicated
  - May be open gate, difficult to keep overview of max. consumption
- **Consider at certain level a max. total consumption independently of e.g. size**
  - Not this version
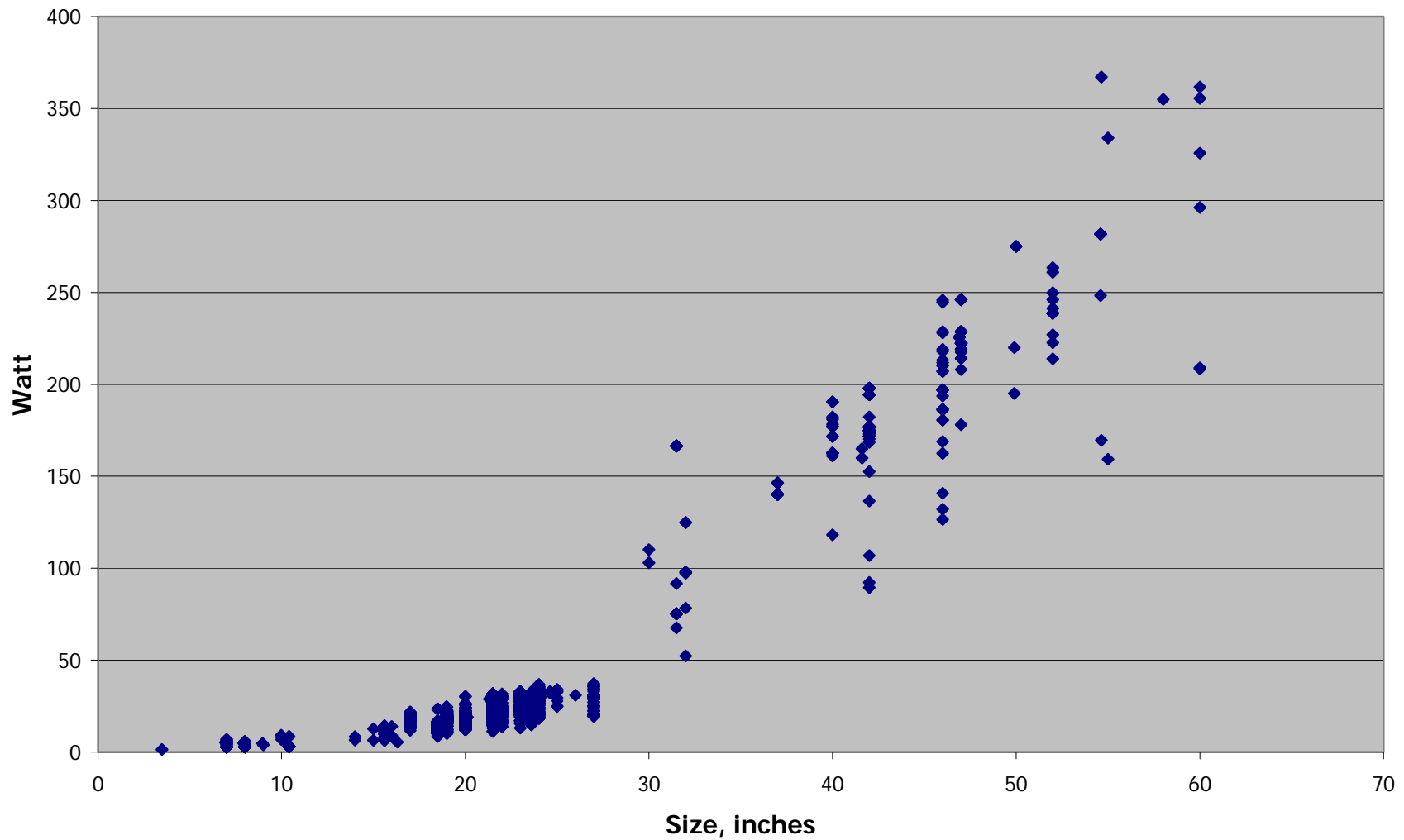
Impact of Resolution
- Design based

- Higher resolution gives a need for more powerful and power consuming electronics

- Higher resolution for LCD backlit panels gives a need for higher light intensity for the same luminance (less aperture)

- Impact on non-backlit panels apart from the electronics part (LED, plasma, O-LED)?

- Panel type has also an impact on the backlit intensity – but is not included – and should not
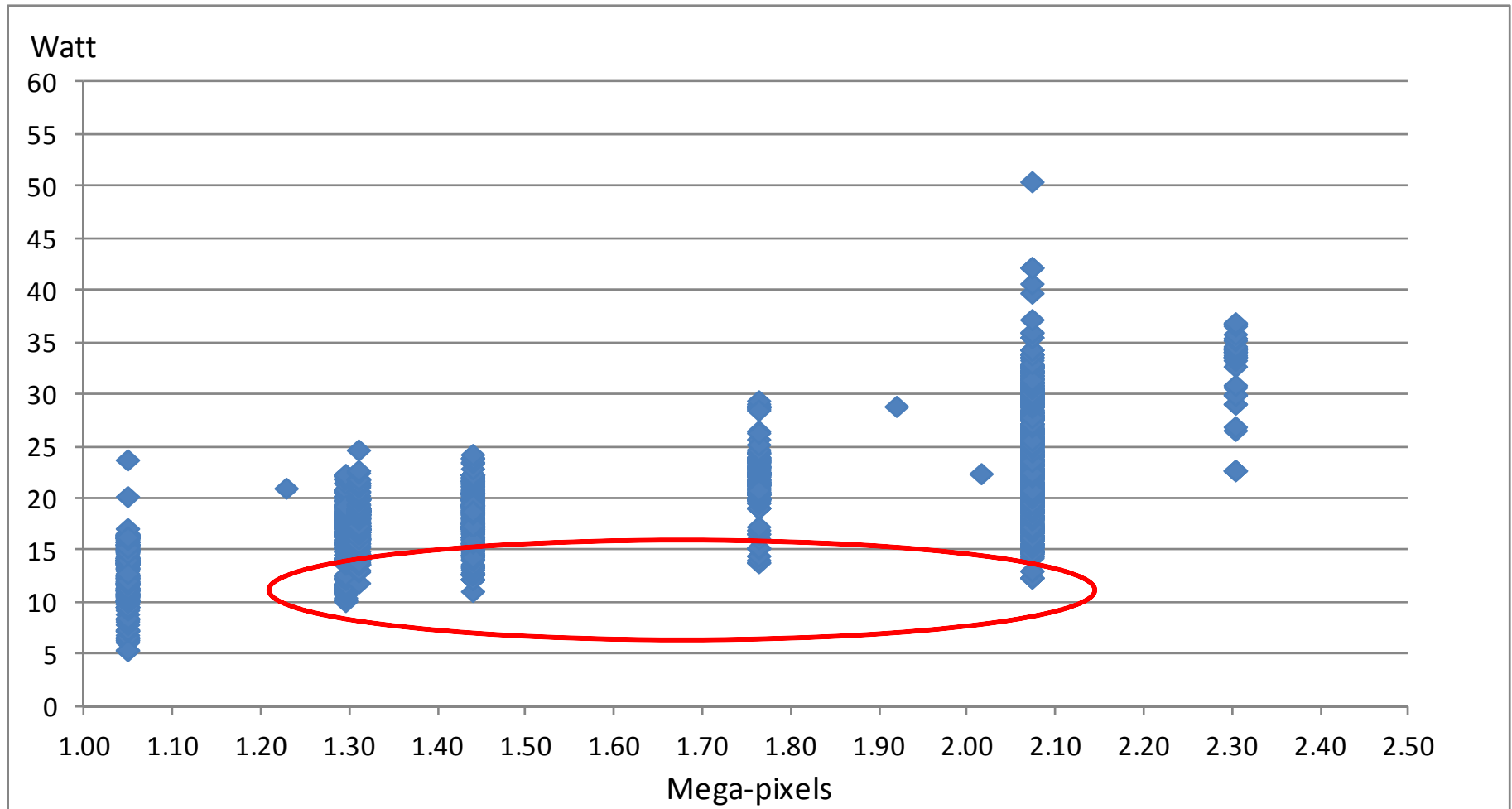
Resolution vs Power - all

EU Database of registered products (3193 products)

Area vs Power - all

EU Database of registered products (3193 products)

Resolution vs Power < 30"

Minimum power consumption is almost the same for typical monitor resolutions

EU Database of registered products < 30" (2932 products)

Area vs Resolution
- Conclusion

- **Area is most important for the equation**

- **Resolution less – but may be included because have importance for main panel types and is important at purchasing selection**

On Mode Equations - 1

$d < 12.0$	$(6.0 \times r) + (0.05 \times A) + 3.0$
$12.0 \leq d < 25.0$	$(6.0 \times r) + (0.0145 \times A) + 4.0$
$25.0 \leq d < 30.0$	$(6.0 \times r) + (0.18 \times A) - 40.0$
$30.0 \leq d \leq 60.0$	$(0.27 \times A) + 8.0$

How much power is attributed to resolution, area and constant in on mode equation (Watt) based on actual products

Average of products in size bins

Size	Resolution	Area	Constant
< 12	2.7	1.7	3.0
12-25	9.9	2.7	4.0
25-30	12.8	54.7	-40.0

EU Database of registered products < 30" (2932 products)

On Mode Equations - 2

$d < 12.0$	$(6.0 \times r) + (0.05 \times A) + 3.0$
$12.0 \leq d < 25.0$	$(6.0 \times r) + (0.0145 \times A) + 4.0$
$25.0 \leq d < 30.0$	$(6.0 \times r) + (0.18 \times A) - 40.0$
$30.0 \leq d \leq 60.0$	$(0.27 \times A) + 8.0$

Doubling resolution and area
% increase in consumption

Size	Double resolution	Double area
< 12	36	23
12-25	60	16
25-30	46	199

EU Database of registered products < 30" (2932 products)