Green requirements

PSES Product Safety Engineering Society

Taiwan Chapter Promotion Party - 2005, June

IEEE

Background

In order to achieve an environmental friendly society, several agencies started voluntary programs to reduce the waste of natural resources.

In order to reduce the amount of natural resources needed to provide our luxury level, they introduced guidelines on no-load power consumption and efficiency.

PSES Product Safety Engineering Society
Taiwan Chapter
since 4/29/05

Figures in the United States

If home appliances are replaced with Energy Star products; greenhouse gasses will be reduced with the equivalent emissions of 1.5 Million cars.

Annual savings to non - Energy Star:

Appliance	kWh	Savings
TV, DVD and Stereo	94	US$ 10
Computer and Monitor	420	US$ 45

PSES
Product Safety Engineering Society
Taiwan Chapter
since 4/29/05

Figures in Europe

According to a study in Europe, reduction in stand-by loses (No-Load power consumption) can save up to 5 TWh per year (500 M Euro / 20 Billion NT$) in Europe only.

Increase in efficiency can save 1 – 5 TWh per year.

PSES
Product Safety Engineering Society
Taiwan Chapter
since 4/29/05

The Green Agencies

- Energy Star by the EPA.
  http://www.energystar.gov/
- Code Of Conduct by the EU.
  http://energyefficiency.jrc.cec.eu.int/
- International Efficiency Level by EPA.

All these agencies are growing towards each other, ending up in the same requirements at around 2009.

PSES Product Safety Engineering Society
Taiwan Chapter
since 4/29/05

Scope for External Power Supplies

The scope of all requirements mentioned in this presentation are based on external power supplies only, with a maximum power rating of 250 W for Energy Star and international efficiency level and 150 W for the Code Of Conduct.

Internal power supplies (open-frame type) must comply with the relative end application requirements.

PSES Product Safety Engineering Society
Taiwan Chapter
since 4/29/05

Voluntary or Not?

At this time there is no country or region that has adopted any regulations on power saving requirements for external power supplies.

The state of California will be the first one. Mid March will be decided if they adopt Energy Star starting from July 1st, 2006.

PSES Product Safety Engineering Society
Taiwan Chapter
since 4/29/05

Energy Star

- Tier 1 (January 1, 2005)

No-load power
0 to <10 W ≤ 0.5 W
≥10 to ≤250W ≤ 0.75 W

Active mode efficiency
0 to ≤1 W ≥ 0.49 * Pno
>1 to ≤49 W ≥ 0.09*Ln(Pno)+0.49
>40 to ≤250W ≥ 0.84

Pno = Nameplate power rating

- Tier 2 (July 1, 2006)

No-Load power
0 to <10 W ≤ 0.3 W
≥10 to ≤250W ≤ 0.5 W

Active Mode Efficiency
Not decided yet, probably:
0 to ≤1 W ≥ 0.5 * Pno
>1 to ≤49 W ≥ 0.09*Ln(Pno)+0.5
>40 to ≤250W ≥ 0.85

PSES Product Safety Engineering Society
Taiwan Chapter
since 4/29/05

Code Of Conduct

- Phase 1 (January 1, 2005)

No-load power

0.3 to <15 W	≤ 0.3 W
≥15 to <50W	≤ 0.5 W
≥50 to <60W	≤ 0.75 W
≥60 to <150W	≤ 1 W

Active mode efficiency

0 to <1.5 W	≥ 0.3
≥1.5 to <2.5 W	≥ 0.4
≥2.5 to <4.5 W	≥ 0.5
≥4.5 to <6 W	≥ 0.6
≥6 to <10 W	≥ 0.7
≥10 to <25 W	≥ 0.75
≥25 to <150 W	≥ 0.8

- Phase 2 (January 1, 2007)

No-Load power

0.3 to <60 W	≤ 0.3 W
≥60 to <150W	≤ 0.5 W

Active Mode Efficiency

0 to ≤1 W	≥ 0.49 * Pno
>1 to ≤49 W	≥0.09*Ln(Pno)+0.49
>40 to ≤150W	≥ 0.84
>75 to ≤150W	≥ 0.8 (When PFC)

PSES Product Safety Engineering Society
Taiwan Chapter
since 4/29/05

International Efficiency Level

- Level III

No-load power

0 to <10 W	≤ 0.5 W
≥10 to ≤250W	≤ 0.75 W

Active mode efficiency

0 to ≤1 W	≥ 0.49 * Pno
>1 to ≤49 W	≥ 0.09*Ln(Pno)+0.49
>40 to ≤250W	≥ 0.84

- Level IV

No-load power

0 to ≤250W	≤ 0.5 W

Active mode efficiency

0 to ≤1 W	≥ 0.5 * Pno
>1 to ≤49 W	≥ 0.09*Ln(Pno)+0.5
>40 to ≤250W	≥ 0.85

PSES Product Safety Engineering Society
Taiwan Chapter
since 4/29/05

Marking on External Power Supplies

- Energy Star does not allow for marking on the product it self. Logo's are allowed on packaging, documentation and advertisements only.
- Code of conduct does not have any mark or logo
- Only International Efficiency Level has a mark to put on the product.

PSES Product Safety Engineering Society
Taiwan Chapter
since 4/29/05

Partnership or not?

There is no need to become a partner of Energy Star or sign the Code Of Conduct in order to mark the power supply with the International Efficiency Level.

A partnership with Energy Star must be committed in order to use the Energy Star Label on promotional documentation or on complying product documentation.

Only complete appliances can carry the Energy Star Logo. If they have an external power supply, then that power supply needs to come from a Energy Star partner as well.

PSES Product Safety Engineering Society
Taiwan Chapter
since 4/29/05

Consequences of Energy Star

If we sign a contract with Energy Star, we:

- Need to have the intention to develop all new power supplies conform Energy Star regulations or better.
- Need to report on quarterly and yearly bases on new models and quantities sold by region.

PSES
Product Safety Engineering Society
Taiwan Chapter
since 4/29/05

Consequences of Code Of Conduct

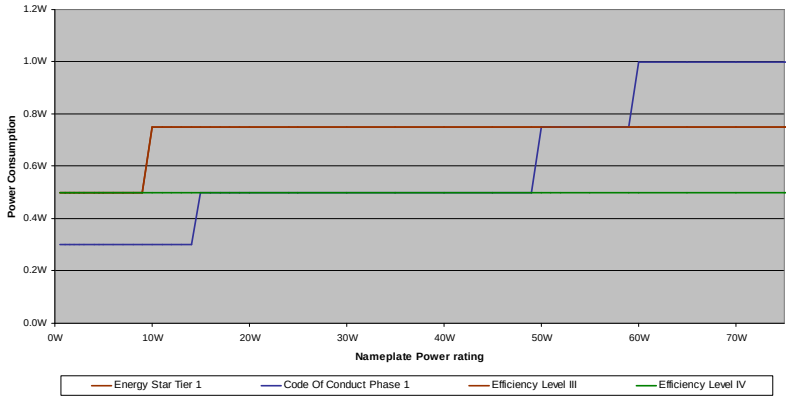
If we sign the Code Of Conduct, we:

- Need to have more then 80% of our "new products"[1] in phase 1 to comply.
- Need to have more then 90% of our "new products" in phase 2 to comply.
- Report on a yearly bases of new developments and quantities sold by region.

1. **New products can also be old designs with a new model number!**

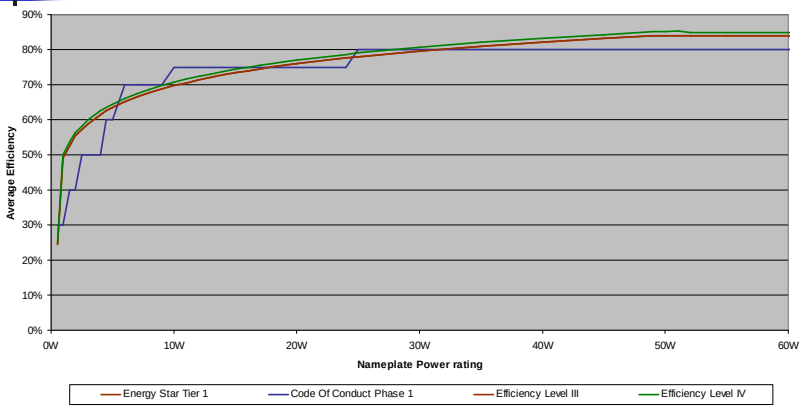
PSES
Product Safety Engineering Society
Taiwan Chapter
since 4/29/05

No-Load power 2005



PSES
Product Safety Engineering Society
Taiwan Chapter
since 4/29/05

Active-Mode Efficiency 2005



PSES
Product Safety Engineering Society
Taiwan Chapter
since 4/29/05

Thank you !!

PSES
Product Safety Engineering Society
Taiwan Chapter
since 4/29/05