


Electricity Conservation – Consumer Electronics



By:

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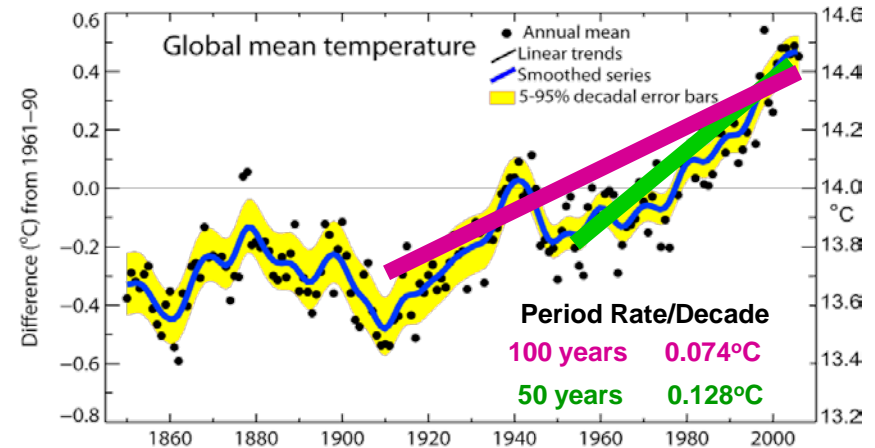
LG Electronics India Pvt. Ltd.

Energy Saving Requirement

Increasing Global Warming

- Eleven of the last twelve years rank among the twelve warmest years in the instrumental record of global surface temperature.
- Continued emissions would lead to further warming of 1.8°C to 4°C over the 21st century.

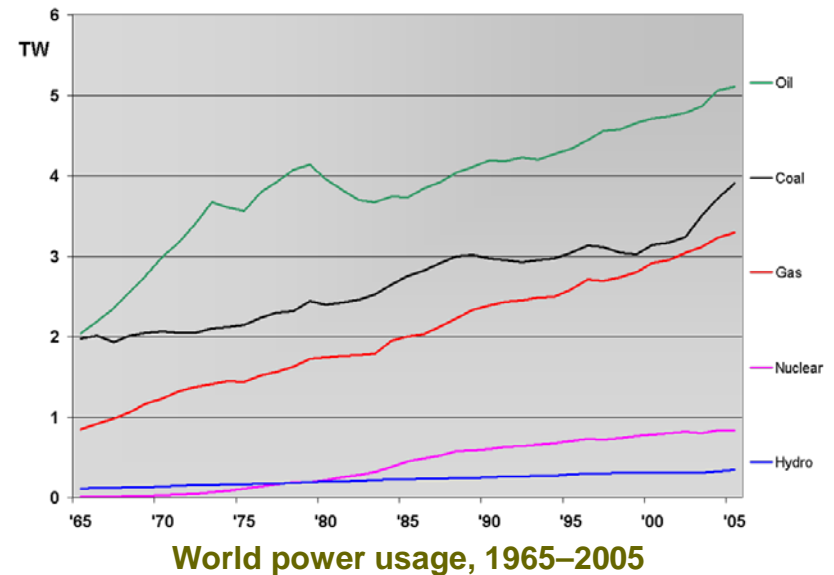
Source: http://persmin.gov.in/MajorEvents/GlobalWarming_Climate_Change/DrPachauri.ppt.



Increasing demand of energy over past years

- Electricity consumption in India, currently at some 600TWh annually, is set to double by next decade.
- India had the second highest growth rate between 2000 and 2008 with an electricity consumption of 5.7 percent.
- India's electricity consumption per capita is expected to be roughly 841 kWh in 2020, representing about one quarter of the global average.

Source: <http://www.kpmg.com>



Technology Advancement focused by LG in Consumer Electronics (to name a few)

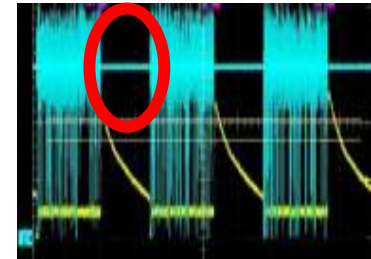
- Standby Power Consumption Reduction
- Picture Tube Design Changes
- Semiconductor Changes
- Introducing Class D amplifiers
- LED TVs

Ways of Electricity Saving

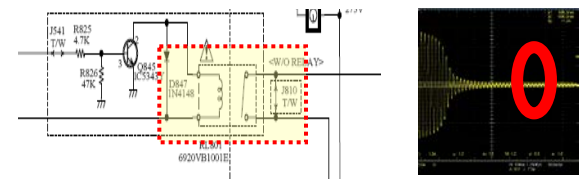
Standby Power Consumption Reduction

➤ Circuitry modify & additional circuit incorporated to reduce power consumption in Standby Mode

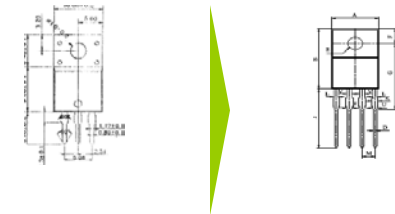
➤ STR operation mode change in STDBY Mode



➤ Relay circuitry added to cut OFF unused parts (eg DEG coil)



➤ Regulators change to LDO margin type with less Iq



Impact



Ways of Electricity Saving

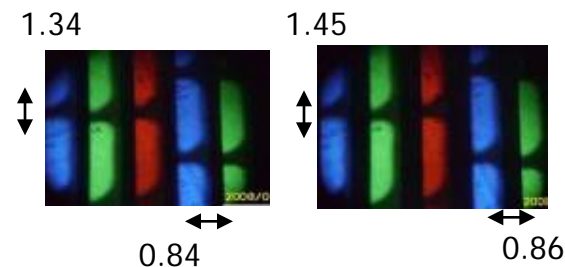
Picture Tube Design Changes

➤ Picture tube design is changed facilitating a reduction in ON mode power consumption

➤ Deflection Yoke design change

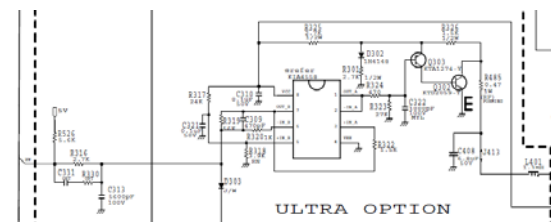
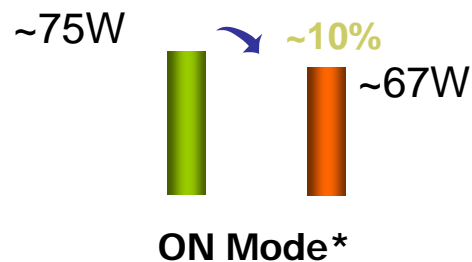


➤ Picture tube phosphor stripe design change



➤ Pin free Slim tube make EW correction circuitry redundant

Impact



*For typical 21" Slim TV Set under standard test conditions

Ways of Electricity Saving

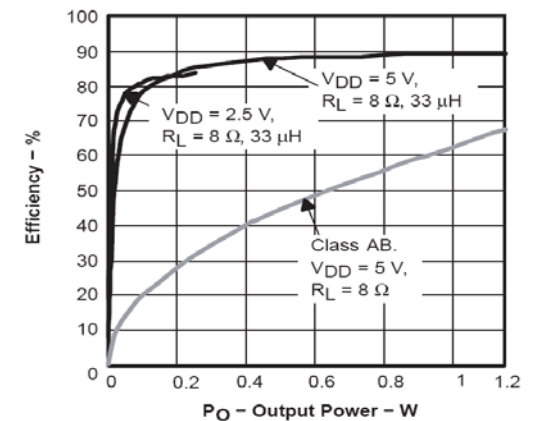
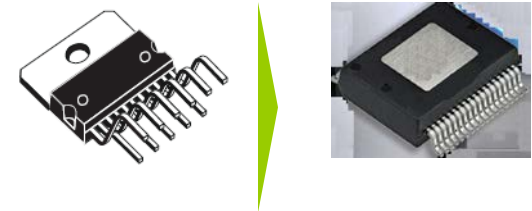
Semiconductor Changes

- R G B Amplifier change from IC type to discrete type
 - Consume comparatively less power, yet cost effective and comparable performance

Class D amplifiers

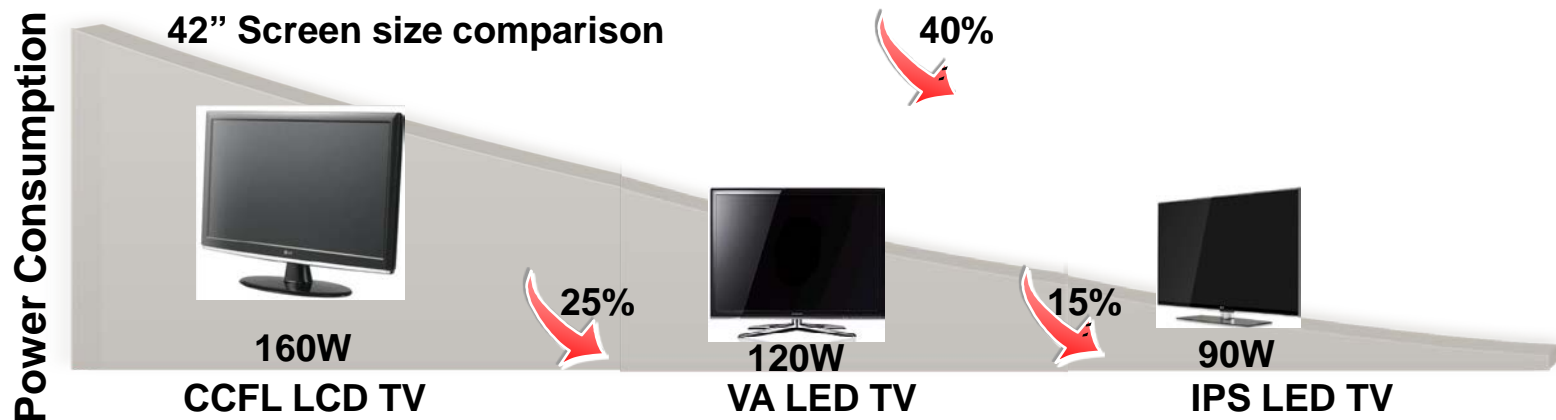
- Introduced in woofer models.
 - Very high efficiency (>90%) as compare to Class AB amplifier

Especially beneficial in very high output models, since it eliminates need of high power rating components.



Ways of Electricity Saving

LED LCD TVs



CCFL LCD TV

- CCFL Lamps require High operating Voltage around 1100 V
- Global Dimming Driving Scheme

LED

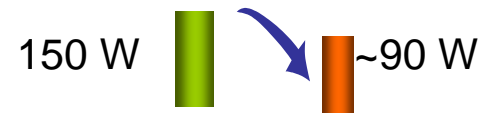
- Less operating Voltage 150V
- Local Dimming Driving Scheme

LED Backlight Further Improvements

- Innovation → Local Dimming driving introduced in Edge LED TV also (Earlier only Full LED Models)
- Module → a) IPS Panels have less Power Consumption than VA due to less Pixel Gate Driving Transistors used / less Rotational viscosity of Liquid crystals compared to VA

Impact

42"LCD Vs LED



ON Mode

Technological & Economic Benefit

❑ Green business creation under mitigation of climate change

Our aim is CO2 Reduction target : 75K ton by 2012 & 150K ton by 2020

❑ Technological Advantage

LG focus will always be on improving the technology in much faster way and it will give LG an edge over its competitors.

❑ Annual Saving through Star Rated Models



Units Saved (KWH) Per annum*

1500 Millions

Environmental & Social Benefits

❑ Conserve fossil fuel and other non-renewable natural Sources

❑ Help in reducing Global warming.



* For 2009-2010 produced Qty of star rated products as compare to non star models

Thank You.