

## ABSTRACT

In Malaysia, the popularization of 24 hours pay-TV, interactive video games, web-TV, VCD and DVD are poised to have a large impact on overall TV energy consumption. Additionally the numbers of TV ownership have also increased tremendously over the past three decades. With the increase of overall TV energy consumption, energy efficiency standard and label is one of the highly effective policies for decreasing electricity consumption in the residential sector. Energy efficiency standard and label for TVs in Malaysia are also capable of reducing electricity bill and contributing towards positive environmental impacts.

In this study there are two methods adopted for proposing a standard, which are statistical analysis and engineering/economic analysis. The statistical analysis is used to fix the standard whereas the engineering/economic analysis is used to examine the potential TV efficiency improvement and cost estimates on the future energy consumption. The energy label adopted in this study is the comparative style which ranks TV sets according to number of stars and displays the energy efficiency index for each unit. In order to justify the proposed standard and label program is an effective policy to be implemented, the potential energy savings, economical benefits and positive environmental impact are investigated.

It has been estimated from this study that the proposed standard and label will save approximately 8,452 GWh of energy which corresponds to bill savings of

approximately RM 1,986,149,662 (US\$ 522,670,964) during the standard period of 4 years. Furthermore, the standard and label program will bring a total of CO<sub>2</sub> emission reduction of approximately 4,510,346 tonne, SO<sub>2</sub> reduction of approximately 20,452,192 kg, NO<sub>x</sub> reduction of approximately 11,529,027 kg and CO emission reduction of approximately 3,130,478 kg from power generation in this country. The cost-efficiency analysis on the other hand proved that with the current available technology, it is possible to improve TV sets energy consumption to meet the proposed standard.