



# **Manufacturer's Perspective on Energy Efficiency Standard and Labelling**

**By:**

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**Mission = the government  
assigned to the Electricity  
Generating Authority of  
Thailand (EGAT) to promote  
the efficient use of electricity  
in Thailand**



**“Let’s join hands to save electricity”**

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- September 20, 1993 is the 109th anniversary.
  - “Let’s join hands to save electricity by use the new thin Tube fluorescent lamp”

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- **5 major refrigerator manufacturers in Thailand**
    - Mitsubishi, National, Toshiba, Sanyo and Hitachi



- The proportion of refrigerator sale of one-door model is about 85% and two door model is about 15%.
- The proportion of refrigerator sale of one-door model are as follow:
  - Size 6 cubic-foot (170-180 liter) with the highest sale of 60-65%
  - Size 4 cubic-foot (120-130 liter) with the highest sale of 20%.

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- Size 2 cubic-foot (60-70 liter) has uncertainly sale volume based on business condition of the hotel and real estate with the proportion of 5%.
  - The other sizes such as 5 cubic-foot (140-155 liter), size 7 cubic-foot (190-200 liter), and larger than 8 cubic-foot (230-250 liter) together they has the sale proportion of 10%.
  - The consumption refrigerator product increased 10% annually.



**EGAT and the representatives  
from the refrigerator  
producers started to use the  
energy saving label with the  
one-door model refrigerator  
(size 6 cubic-foot)**



**September 20, 1994, 14 models on refrigerators being tested, but only one model was awarded the highest energy saving standard of level 5.**

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- In 1996, the refrigerators' producers were more ready, EGAT extended the project to cover every model of refrigerator in one-door model.
  - Two-door model and more than two-door model as well as to cover all brands available in the market.



- In 1997, EGAT issued the Act on Energy Saving Label for every one-door model in the market.
- In 1998, EGAT required that two-door model refrigerator have the energy saving label for the first time.



**Year 2000, EGAT has adjusted energy saving up to 20% because it has been 6 years then that all refrigerators received the energy saving label of level 5.**

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- The result of this project is that from the 20th of September 1996 to the 30th of June 2000, 5,462,282 refrigerators are certified with the energy saving label.
  - We can save as much as 73 megawatt of electricity or 533 million units of electricity consumption.



**The next in line of electrical appliances to be promoted in the campaign is air-conditioner as it is one of the home appliances with high growth rate.**



The result of the project from the 20th of September 1995 to the 30th of June 2000, showed that it can reduce the highest demand of electricity consumption of 45 Megawatt or 680 million units of energy consumption.



**EGAT has expanded its project to cover ballast and hand-polished rice because the latter can save energy more than 60% if it is not being transformed into white rice and most importantly it can maintain its nutrients.**



# Efforts and Achievements

- Upgrade the quality and efficiency of a product.
- All the costs that the manufacturer have to bear and could not throw to the consumer due to the marketing mechanism and social responsibility.

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- Collaboration between EGAT, TISI, and the refrigerator manufacturer.
  - TISI was assigned to serve as the central body for testing, determined the technical testing method to determine the temperature within the refrigerator, the duration for test, load or no load with the food, error used to test to calculate the output of energy consuming.



# Energy consuming point and the size of the refrigerator.

- Begin the test with the 6 cubic foot refrigerator (170-180 liters)
  - Label level 1 means the efficiency is 25% less than  $\bar{x}$
  - Label level 2 means the efficiency is 15% less than  $\bar{x}$  but not exceed 25%



- Label Level 3 means the efficiency 15% less than  $\bar{x}$  but more than  $\bar{x}$  and not exceed 10%
- Label Level 4 means the efficiency is 10% more than  $\bar{x}$  but not exceed 20%
- Label Level 5 means the efficiency is 20% less than  $\bar{x}$



**The social responsibility and the marketing mechanism have forced each manufacturer to develop level 5 label refrigerator as soon as possible**



- **In 1995, the Montreal Treaty**
- **Green House Affect**



**In 2000, the Standard value  
be increased by 20% of or  
an increase of  $x$  to 20%.**



**The success of these particular project dose not lie only on EGAT's performance or related agencies but also the cooperation of all people in Thailand.**