

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Presently, we live in an energy-driven society. We can not deny that energy is the main factor not only to support the economic development process, but also to elevate the standard of living. Discovery of new energy resources in some countries can turn poor nations into prosperous ones. Currently, Thailand depends so much on energy imported from OPEC (Organization of the Petroleum Exporting Countries, consisting of Algeria, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates and Venezuela). Our country spends huge sums of money which is almost 300 billion baht per year to import energy. This trend does not decrease, but it tends to increase every year.

Global energy consumption has increased steadily for much of the twentieth century, particularly since 1950. Today, the world consumes approximately 320 billion kilowatt-hours a day, the equivalent of 22 bulbs burning nonstop for every person on the planet. The demand for energy continues to grow and is expected to rise 60% over the next 25 years, at an average of 1.7% per year. The rise in demand comes mainly from not only developing countries and rapidly growing economic powers such as Brazil, India and China (the so-called BRIC countries), but also from OECD countries (in particular the United States). However, oil reserves are mainly in OPEC countries (Organization of the Petroleum Exporting Countries) (Energized Foreign Policy, 2005).

Oil prices have risen sharply since 2006-2008. For a long time, the price of oil has fluctuated between \$80 and \$100 per barrel. It is likely that the price of oil will remain higher for the foreseeable future. Prices have reached its highest record at \$109 per barrel in April, 2008. In real terms, this is close to price levels during the oil crises of the 1970s (cited in energized foreign policy, 2005). The underlying price rise is mainly an expression of the growing demand of energy, especially oil, in countries like China and India, the United States and the European Union. However, growth of oil supply and refining capacity remain inadequate, while the supply of LNG

(liquefied natural gas) is hampered by setbacks the impact of which is expected to last until 2009-2010 (Energized Foreign Policy, 2005, p. 9).

The outlook for energy use throughout the world continues to show strong prospects for rising levels of consumption over the next two decades, led by a growing demand for end-use energy in Asia. World energy demand in 2015 is projected to reach nearly 562 quadrillion British thermal units (Btu). The figure which is the expected increment in total world energy consumption that recorded in 1970, just before the energy crisis of 1973. Two-thirds of growth in energy demand will occur in developing economies and economies in transition, with much of that growth concentrated in Asia. Energy demand in the developing countries of Asia is projected to average 4.2 percent per year, compared with 1.3 percent for industrialized economies. By 2015, energy use in developing Asia is expected to exceed U.S. consumption by 48 quadrillion Btu (Industrial Energy Rationalization, 2001).

In most developing countries, the opportunities to reduce the energy bill are substantial. Economically increasing efficiency of energy use is normally more attractive than investing additional resources to increase the domestic supply. This is particularly true for the industrial sector - the single largest consumer of commercial energy in most developing countries. Therefore, management of energy demand should be a critical element of an overall national energy strategy (Industrial Energy Rationalization, 2001).

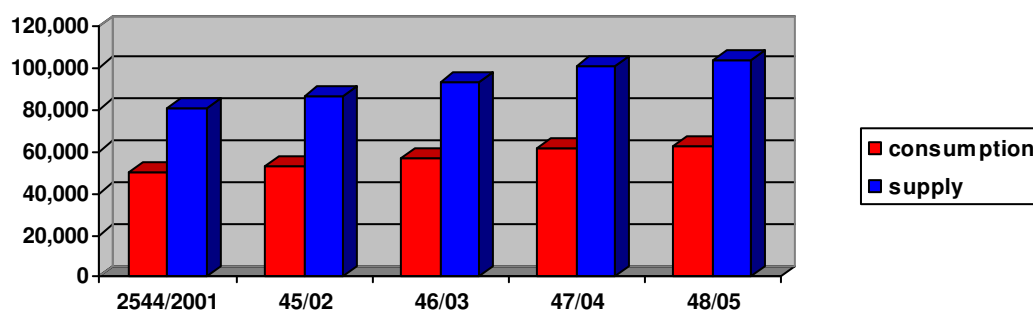
After a decade of strong economic growth and expansion, Thailand was in the midst of an economic crisis. The crisis started in early July 1997 after the Thai Government floated its currency, resulting in an immediate decline in the Baht's value. The depreciation of the Thai Baht pushed the Thai economy into a severe recession that immediately resulted in decreasing activities in almost all sectors (Asian Production Organization, 2000, p. 166).

It is the seventh consecutive year that the final energy consumption of Thailand had increased at the rate of 1.8%. Commercial energy consumption, which comprises petroleum products, natural gas, coal & its products, and electricity, increased 1.6%, and new and renewable energy, including fuel wood, charcoal, paddy husk, and bagasse, increased 2.9%. In 2005, the total Energy Demand of Thailand amounted to 62,395 ktoe (kilo tons of oil equivalent), rising up 1.8% from the

previous year, while the expansion of Thai economy rose up 4.5%. Modern or Commercial Energy shared 51,571 ktoe (kilo tons of oil equivalent) or 82.7% of the total Energy Demand whereas Renewable Energy was consumed 10,824 ktoe (kilo tons of oil equivalent) or 17.3%. The total of Energy Supply was 103,302 ktoe (kilo tons of oil equivalent), rose 2.8% from Year 2004, with the net import of 49,662 ktoe (kilo tons of oil equivalent), or 48.1% of the total Energy Supply while the Domestic Production was 53,640 ktoe (kilo tons of oil equivalent), or 51.9% (Department of Alternative Energy Development and Efficiency, 2007, p. 1).

Energy is a resource necessary for every business, whether the business sells goods or services, has 10 or 10 thousand employees, or is located in Alaska or Antigua. Using energy efficiently helps businesses maintain (or improve) their image as a responsible environmental concern while improving the bottom line. Increased energy efficiency means realizing more profit per unit of energy. Energy efficiency can be best achieved by using both products and practices. Products that enhance efficiency include compact florescent lights bulbs, and practices include such behaviors as turning off office equipment at the end of the day.

Table 1. Trend of Primary Energy Supply and Final Energy Consumption

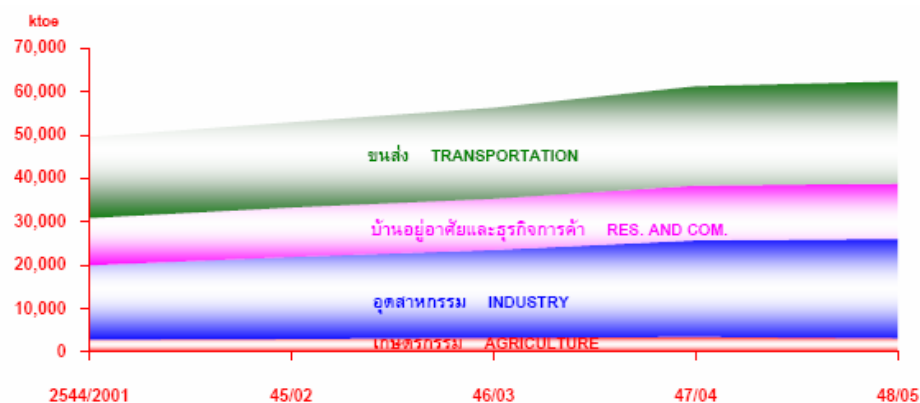


From: Trends of primary energy supply and final energy consumption, by Department of Alternative Energy Development and Efficiency. Retrieved October 10, 2007, from <http://www.dede.go.th>

A survey conducted by DEDP (Department of Energy Development and Promotion) showed that the energy consumption by economic sectors has also increased significantly from 49,542 ktoe(kilo tons of oil equivalent) in 2001 to be 62,395 ktoe(kilo tons of oil equivalent) in 2005 as shown in table 2. Energy was used

mainly in the transportation sector whereas the industry sector shares in the final energy usage at the 2nd and 3rd rank respectively.

Table 2. Trend of Final Energy Consumption by Economic Sector



From: Trends of Primary Energy Supply and Final Energy Consumption, by Department of Alternative Energy Development and Efficiency. Retrieved October 10, 2007, from <http://www.dede.go.th>

CMA CGM is a French container transportation and shipping company, headed by M. Jacques R. Saadé. It is the largest container shipping company in France and the third largest container company in the world, using 76 major shipping routes between 216 ports in 126 different countries. CMA CGM's mission is to become one of the worldwide leading container shipping groups offering its customer top quality, door-to-door solutions and increasingly comprehensive global coverage. The company has just established branch office in Thailand for in the last 2 years. As part of the industry sector which is the largest energy consumer in Thailand, the organization encounters a high expenditure on energy which we can see through the monthly bills in the year 2007.

Month	Electricity cost (in Baht)
January	40,950.67
February	45,421.69
March	40,879.10
April	44,785.98
May	40,820.16

June	45,308.02
July	45,964.78
August	33,326.36
September	55,188.89

As shown in the electricity bill table above, the only month that has the lowest cost on electricity bill is August and its expense is 33,326.36 Baht, even though the company has tried to reduce this cost ambitiously through its campaign all year round. The cost of electricity still reached its highest point in September with 55,188.89 Baht.

CMA CGM (Thailand) has run a campaign to promote energy conservation in the organization; however, there are some people who have not acknowledged this matter. In this research, the investigator would like to survey the employees' attitude toward energy conservation and an awareness of energy conservation in the organization. As a result, the result of the study can help the company to set a suitable policy of energy conservation and disseminate the knowledge of energy conservation to all levels of employee.

1.2 STATEMENT OF THE PROBLEM

Main Problem

1. To what extent does the attitude of employees at CMA CGM (Thailand) toward energy conservation affect their energy conservation behavior at the office?

Sub Objectives

1. Are the employees at CMA CGM (Thailand) aware of government campaign and company policy about energy conservation strategies?
2. What is the opinion of employees at CMA CGM (Thailand) on energy conservation?
3. What is the energy consumption behavior of the employees at CMA CGM (Thailand)?
4. What is the relationship between the energy consumption behavior and the attitude toward the energy conservation?

1.3 OBJECTIVE OF THE STUDY

Main Objective

1. To investigate the extent to which the attitude of the CMA CGM employees' energy conservation affects their energy conservation behavior at the office.

Sub Objectives

1. To examine the awareness of the employees at CMA CGM (Thailand) of the government campaign and the company policy about energy conservation strategies.
2. To find out the employees' opinion on energy conservation campaign launched by the government and the company's policy.
3. To investigate the energy consumption behavior of the employees at CMA CGM (Thailand).
4. To find out the relationship between the employees' energy consumption behavior and the employees' attitude toward the government's energy conservation campaign and the company's policy.

1.4 FRAMEWORK OF THE STUDY

1.4.1 Variables in this study, the researcher study on both independent variable and dependent variable as below

Figure 1. Conceptual framework showing the relationship between independent and dependent variables.



1.4.2 Hypothesis

An attitude of employees at CMA CGM (Thailand) has an effect on their own behaviors of energy consumption at the office.

1.4.3 Operational Definition of the Terms

The terms used in this survey were defined as follows:

Attitude: the way that you think, feel or behave. In this research an attitude was the level of agreement / disagreement of respondents on the energy conservation. This attitude was measured by a 3-point summated scale:

- 3 means strongly agree
- 2 means moderately agree
- 1 means rather disagree

Awareness: the knowledge of people about something. In this research, the researcher asked the respondents whether they knew or did not know about the energy conservation. The same statements used to measure their attitude were used and the respondents answered the questions by marking “yes” or “no”.

Energy Conservation Behaviors: the practice or the way that one acts of decreasing the quantity of energy while achieving a similar outcome. In the questionnaire, the research measured the level of employees’ energy conservation at the workplace at Q-House Lumpini. The employees’ behaviors were divided into groups and they were asked to choose what energy-using behaviors matched with their own by using summated scale below:

- Often
- Sometimes
- Hardly

1.5 SCOPE OF THE STUDY

This study surveyed both the attitude toward energy conservation and the awareness of energy conservation of all employees in every department at CMA CGM (Thailand) located at Q-House Lumpini Building, but did not include the branch offices in other areas such as the Laemchabang depot and the Bangkok depot. Neither was the attitude of employees in overseas branch offices studied.

1.6 SIGNIFICANCE OF THE STUDY

The results of the study can be used as information for the company to set a practical policy on energy conservation and to properly disseminate knowledge of energy saving to all levels of employees in the organization.

1.7 ORGANIZATION OF THE STUDY

The survey reports on the effects of attitude toward and awareness of energy conservation on the energy conservation behavior of employees at CMA CGM (Thailand) is divided into five chapters. Chapter one includes the background of the study and statement of the problem, the objectives of the study, framework of the study, scope of the study, and the significance of the study. Chapter two reviews the literature concerning the knowledge of attitude toward and awareness of energy conservation on the energy conservation behavior. Chapter three describes the research methodology concerning subjects, materials, procedures, and data analysis. Chapter four presents the findings of the survey. Chapter five includes summary of the survey, its findings, discussion, conclusions, and recommendations for further study.

In the appendices, the questionnaire in English and that in Thai, used for data collection from the sample group, was also included.