



CHAPTER I

INTRODUCTION

1.1 Background of the Study

China is one of the countries that have received the most academic attention in the decades that followed the opening of the country. As the country that contains a sixth of the world's population, any changes in China would have global implications. The potential for growth in China is massive as it enters global trade and its citizens discover the delights of consumerism. This potential is emphasized by China's low per capita income, which according to China's National Bureau of Statistics and the National Development and Reform Commission was \$1,740 in 2006.¹ This indicates that there is ample room for continued growth as an increase in income translates into increased consumption which in turn drives production. According to World Bank statistics, China has had steady economic growth of 9% for the past 20 years, compared to global growth of 4%, which substantiates that China is able to take advantage of this opportunity. China's leaps in economic growth have, however, come at a cost: self-reliance. Self-reliance, in this case, does not mean total independence. According to Kenneth Lieberthal, self-reliance (*zili gengsheng*) refers to the ability to "keep the initiative in one's own hands" (Downs, 2006: 11). This was the guiding principle for economic development in the 1960s and 1970s. However, the increase in energy consumption and demand has made China lose its ability to be self-reliant in the area of energy.

All modern societies run on energy, China is no exception. Energy is the lifeblood of our way of life as it fuels production, transportation and operation of the components that make our lives different from those people who lived in the pre-industrial age. China is a developing country that is pursuing growth through energy-

¹ In the same year, per capita income in the US, according to the US Census Bureau, was \$26,352.

intensive industry, a pattern established by developed countries. The development of China is considered to be more problematic to the world than development of other states because of its scale. Take, for example, Luxembourg and Singapore, both are very high per capita energy consumers. Yet China's energy consumption causes more alarm because both Luxembourg and Singapore have only a handful of citizens when compared to China's which makes their total consumption lower. Data collected by the United States (US) Energy Information Administration (EIA) clearly states that China has an above average growth in energy consumption as it reveals an average annual growth rate of 7.5% when compared with the world average of 2.5% within the period of 1994 to 2004. China's lack of self-reliance in energy is a recent development as energy self-reliance was one of Mao Tse Tung's core tenets. China was not only self reliant, it was even a net exporter of oil until the early 90s when demand growths outstripped production capacity and turned China into a net importer of oil (Ebel, 2005: 2). Even with this enormous growth, per capita consumption in China remains low but will continue to grow steadily as China's economy grows, augmenting energy intensive industries and delivering the energy intensive lifestyle of developed countries within reach of China's expanding middle class.

The increase in energy consumption in China will have global repercussions. Both the United States and China, the world's highest and second highest energy consumers, regard continued access to energy as paramount to their security. Especially in China, future energy plans concentrate on increasing the amount of energy for consumption. Energy usage in China will heighten the stress on the remaining supply of non-renewable resources. The nature of non-renewable resources, being non-renewable, means that at some point in time, these energy sources will become scarce, if not outright depleted. Either way, this could lead to conflict over the remaining supply, as energy is necessary to any modern society, if the composition of the world's main energy sources remain the same.

1.2 Statement of Problem

There are, in a simplified sense, two views on the issue of China's search for energy security. On the one side, there are those who see China's energy and resource deals as a destabilizing force while the other side regards China's activities as any other economic transaction.

Since the end of the Cold War, the world has drifted from the bi-polar model but did not transform into the multi-polar world that many had hoped for. Never before in history has one country had so much influence and power over the rest of the world. China's rise gives hope to developing countries who feel resentful of US hegemony. Amy Chua (2003) raises the concern that US export of free market along with democracy has fueled a rising wave of ethnic hatred. She argues that free market in most developing countries has helped an ethnic minority become the custodian of most of the wealth while the ethnic majority is left resentful and usually in poverty. However, democracy empowers the majority, and this is the cause behind the retaliations against the dominant minority. The US is the metaphorical privileged ethnic minority, the small group that holds much of the world's wealth and incurs the resentment of the other countries. The rise of China is therefore viewed by these other countries as a counter-weight to US hegemony. These countries do not see China's dealings with countries with bad human rights records as a destabilizing force but as normal transactions that are not much different from those of the US. China views these activities as ordinary economic activities that any country could engage in if they so choose; the US has itself decided not to deal with these countries, labeling such countries as "evil", and leaving the path wide open for China and its checkbook. China's foreign policy has consistently followed a path of non-interference in other countries' domestic policy. No matter how severely a country disregards human rights, even in instances of genocide, as in the case of Cambodia during the Pol Pot, China regarded as internal affair (Seymour, 1998: 226). Much of US practice with economic sanctions is seen as ways of interfering with domestic policy.

China, on its side, wants to end its deepening reliance on foreign imports as soon as it possibly can. This uneasiness with being dependant on foreign energy sources, according to Downs (2006: 11-12), can be traced back to the Sino-Soviet split in the 1960s. During the 1950s, Soviet advisors played a major role in the development of the Chinese energy sector. By the time of the split, China was dependent on the Soviet Union for more than 50% of critical refined oil products and was compelled to continue the imports even after the split. Paul McDonald points out that some of the leaders of China today are therefore very suspicious of dependence on oil imports and consider any foreign involvement in the oil sector as dangerous since removal of Soviet assistance, combined with the economic collapse caused by the Great Leap Forward, caused energy shortages throughout the country (Downs, 2006: 11-12). China aims to secure its energy access through the acquisition to new energy sources to prevent a repeat of history. China is therefore seeking to acquire stakes in foreign energy fields. As China's economy grows, so does its pocket, which allows it to outbid competitors. Conflict, on the part of China, seems unlikely since it is succeeding in its aims of acquiring foreign assets through economic activities and therefore do not need to resort to military force to gain access. As long as their economy grows, their funds for buying stakes in energy foreign sources will also increase.

The US, on the other hand, is becoming more alarmed by the range of China's global energy deals. US strategists and many academics perceive China's energy acquisitions as a potentially destabilizing force. Matthew E. Chen (2007), a researcher at the James A. Baker III Institute for Public Policy at Rice University, considers China's blatant disregard of human rights norms as detrimental to international peace and security. He argues that profits gained from oil deals with China increase the tyrannical grip of those governments and make Chinese workers a target for rebels, which will, in turn, prompt China to interfere and could result in an increase in violence and conflict. Others regard China's dramatic rise in energy demands and huge population as a recipe for disaster. Growth projections estimates portray disastrous scenarios one after another, and are only staved off by larger calamities such as war, revolution, environmental catastrophe or economic slow-down

caused by famine or any of the reasons mentioned previously. Simple doomsday scenarios merely project China's population growth in 20-50 years and multiply their consumption with the standard US rate to project numbers that exceed world production. Lobe (2005) calculated that if China were to grow economically at 8% per year, lower than its 9.5 average, it would overtake the US per capita income in 25 years. In 25 years, based on current production capabilities, if China were to use oil and coal at the same rate as the US today, China's oil need would exceed world production by 20 million barrels per day and coal demand would exceed world production by 500 million tonnes a year. This figure demonstrates that were China to develop along the same path as the US, and that there is no drastic technological discovery in the near future, China's demands alone will exceed world production. The US therefore sees China in direct competition for acquisition of resources. Any reference to China's energy acquisitions is steeped with conflict.

US academics view the anxieties of energy security around the region as mostly generated from access to oil. First, there is the vulnerability from changes in oil prices caused by political instability in the oil-producing region, though these problems can be addressed by markets and policies. Oil prices have gone up since the war in Iraq but prices have since stabilized. The finite nature of oil can also increase tension within the region and lead to conflict in places like the Spratly Islands in the South China Sea. An energy shortage could bring the conflicting claims to clash as it is believed that there is a total of 17.7 billion tons of oil and natural gas reserves in that region, making it the fourth largest reserve bed in the world (Spratly Island dispute, 1997). The conflicting claims over parts of these 200 tiny islands, rocks and reefs are between China, Vietnam, the Philippines, Malaysia, Taiwan and Brunei and the larger the number of players, the higher the chances of conflict (Manning, 2000: 185). The problem lies, however, in the physical control of the supply rather than access to it. As more oil is needed in the region, the traffic in the already congested choke points of Southeast Asia would become worse. Sien draws attention to the 123 % traffic increase from 1982-1993 in the Strait of Malacca, from 43,600 ships to nearly 100,000 (cited in Stares, 2000: 31). This poses a unique vulnerability to all the oil dependant economies as whoever controls the sea routes is able to effectively stop

any shipment from passing through. The US possesses the strongest naval force in the region and could stop oil from reaching China from the Middle East, as it uses that route, were conflict to erupt between the two countries.

The fear of oil as the cause for conflict is incredibly real to US minds. Japan's decision to attack Pearl Harbor was partly due to the oil embargo placed upon Japan by the US. Many believe that China plans on securing as much oil for its own consumption as possible before shortage begins while others see China as having some grand design over the region as a whole. Johnston pointed out that perception of Chinese aggressiveness may stem from its record of over 118 cases of use of force on territorial issues within the period of 1949 and 1992 (cited in Feigenbaum, 2004: 6). Kent E. Calder (1996:142) regards China as the major catalyst for deepening naval rivalry in East Asia. China's navy possesses the capability to carry out offensive missions within the South China Sea both with its amphibious force and its naval air force. As China expands its army, so do the countries around it. Taiwan has purchased sixteen Lafayette-class frigates and built eight US Perry-class frigates. Malaysia, Thailand and Singapore are all upgrading their capabilities. Japan has expanded its submarine fleet (Calder, 1996:144-5).

Energy security is an area of concern because of its high potential for conflict. Current patterns of growth and growth predictions for China indicate that energy shortages are probable. Much research has been done about the potential for oil conflicts. Yet it seems that conflict over oil appears unlikely, as the disruption in oil would be detrimental to the global economy, afflicting all those involved. It remains in every country's best interest to avoid conflict for as long as their economy relies on foreign oil imports or exports. However, since conflict is a possibility, what can be done to alleviate the risks? Leaving the problem of energy shortages to market mechanisms and technological advances seems somewhat imprudent.

China's growth and increasing consumption of energy provides a unique opportunity for the global community. The developed nations' current high level of energy consumption was developed over a long period of time and did not provide

such a wake-up call towards the sustainability of such a path as the dramatic rise of China's consumption. Global warming and climate change is putting further pressure on China to restrict its energy consumption or change to cleaner sources as the global capacity of natural carbon sinks, which reabsorbs emitted CO₂, dwindles due to deforestation while the byproducts of energy consumption, CO₂ and green house gases, increase. China represents the rise of energy consumption in developing countries hoping to develop along the industrialized countries' development model. If nothing can be done to secure China's energy needs, then what are the prospects for developing countries that have less international clout than China?

It is therefore important to research on what can be done to alleviate the problem of energy security before there is an energy crisis so as to prevent conflict over the issue. One of the ways that could increase the chances of a solution over the energy issue is international cooperation. International cooperation in the past has not had a good record for success, though issues with global implications such as the loss of the ozone layer, have generated successful cooperative action. Since energy shortages or a war over energy would have global implications, it seems international cooperation over this issue might stand a chance.

While oil physical shortages do not seem imminent, it is inevitable that there will be one as we continue to rely on a finite resource as one of our primary energy sources. The purpose of this research is to examine one of the alternatives, that of international cooperation over renewable energy and its potential to dissipate energy security concerns.

1.3 Research Questions and Objectives of the Study

1.3.1 Research Question

1. What are the potentials of the international cooperation projects over renewable resources for dissipating the growing energy concerns for China?

This question translates into a set of objectives that guide the research process.

1.3.2 Research Objectives

1. To examine China's effort to diversify its energy consumption in order to ensure energy security via international cooperation.
2. To determine whether the current level of international cooperation over renewable energy is enough to dissipate energy concerns for China.
3. To evaluate the potential for international cooperation on renewable energy in China.

1.3.3 Hypothesis to be Tested

Realist international relations theorists assert that states will act in accordance with their best interest. Consistent with this idea, the US and other developed oil dependant countries will find it in their interests to financially support China and exchange know-how in developing alternative energy due to conflict prevention and financial incentives. In the first place, China's aggressive energy policy might aggravate tense territorial disputes with its neighbors and increase tension in the US-China relationship as China undermines US sanctions with energy deals. In the second, it is more cost effective to alter China's energy composition as its infrastructure is not as developed as in the US and other developed countries. By helping China, these countries will buy themselves time to alter their own energy composition to a more sustainable alternative. China's increased consumption has already driven up the price of oil. Letting China continue along this path will drive up oil prices even further and disrupt the economies of oil dependent developed countries.

1.4 Methodology

The research will be documentary research focusing on the reports of alternative energy projects between the US and China. The research will look at government and non governmental cooperation. Ongoing projects will demonstrate the current level of cooperation in the area. One of the projects the research will look at is the China Rural Energy Enterprise Development (CREED) initiative which is organized with the support of many agencies, such as the United Nations Environment Programme (UNEP), The Nature Conservancy (TNC), and Energy Through Enterprise (E+Co). It aims to create a sustainable energy development path for rural people in certain areas of China. The Energy Foundation and Renewable Energy Network for the 21st Century (REN21) demonstrate how non-profit organizations can effectively work with governments and government agencies as they help Chinese policy makers develop effective renewable energy policy. The research will also examine the projects sponsored by the Energy Foundation, a partnership of donors that are interested in solving the world's energy problems and focus on the US and China. This would provide a range of large and small projects.

Though the goals of each project examined in the research and their supporting agencies may be different, from conserving the environment, to the empowerment of small to medium energy enterprises, to profit, the result is still the diversification of energy usage in China. The study of the result of these projects will help to determine whether the current level of cooperation between agencies and governments are enough and whether the mechanisms put into place by these projects have potential to facilitate the increase of future alternative energy projects.

1.5 Scope and Limitation of the Study

The research will look at the change in China's energy demand and the corresponding change in energy security policy within the past 20 years and focus on intergovernmental and non-governmental initiatives for renewable energy within the past ten years, especially those between US organizations and China. The US is chosen as it is the largest consumer of oil and could face significant problems, if not oil shortages then a dramatic rise in global oil prices, if China fulfills its potential and becomes a monstrous oil guzzler that supersedes the US in consumption. It is not within the scope of this research to track every single international cooperation initiative in China, and this paper will only focus on renewable energy initiatives that have direct impact in China, potential to alleviate energy security concerns, or national or global implications, and/or enhance China's capacity for renewable energy.

1.6 Significance of Research

It is accepted that the current world energy composition is neither sustainable nor desirable as it causes numerous problems from pollution to global warming. However, there is no consensus on when and how this will change. The renewable energy sector has expanded steadily but so has energy consumption. Without significant changes, the current reliance on nonrenewable sources of energy is a potential source of conflict as the finite amount dwindles year after year.

Different researches have recommended international cooperation as a way to stabilize energy security concerns. However, these researches point to international cooperation as a future policy even though there are already cooperative efforts in operation. This research explores whether cooperation can be a way out of conflict. It will examine the current level of cooperation with other countries and its potential to fulfill China's energy needs within a level that would not drain current nonrenewable energy sources and raise tensions. China's stability is very important as it supplies the world with cheap goods and allows prices to stay low. Instability in China could

affect the global market in a very significant way. It is therefore important to determine whether there is a risk of conflict and if there is, attempt to dissolve it before it becomes a problem.

1.7 Structure of the Report

This study is structured into five main chapters. Chapter Two provides an overall picture of China's search for energy security. Chapter Three describes the various international cooperation efforts, what they entail and examines them in detail to determine the potential of international cooperation on China's energy security concerns. It also examines China's role in the cooperative efforts to determine whether China is playing an active enough role. Chapter Four ends the report with the main conclusions.