Chapter 8
China's Energy Conundrum: Navigating Through Crises, Policy Responses, and Global Impact

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ABSTRACT

China's energy dilemma is examined in this chapter, along with its historical and geopolitical settings. China's energy initiatives have a major impact on international energy stability because of the country's position as the world's largest energy consumer. The energy challenges caused by fast industrial growth and dependency on fossil fuels are discussed after a brief history of China's energy sector is presented. China's reaction to these challenges is dissected, including the measures it has taken to diversify its energy supply, increase the use of renewable energy, boost energy efficiency, and get involved in global energy governance. The chapter analyzes the effects of these policies on China's economy, social stability, environment, and foreign relations, both at home and abroad. The chapter wraps up with a glimpse into the future of China's energy plans. A sustainable and secure global energy system is the goal of the analysis, and it can help guide stakeholders in the right direction.

1. INTRODUCTION

The energy sector in China is a complex web of tradition, innovation, and explosive development. China's influence on the international energy market is significant because it is the largest energy consumer and the world's second largest economy (Zreik, 2023a). An ever-increasing need for energy is being driven by the country's large population and fast rising economy, necessitating the development of a diverse and sustainable energy mix (Akhtar et al., 2022). According to the International Energy Agency (IEA) data for 2019, China consumed approximately 3.9 billion tons of oil equivalent in primary energy, with coal accounting for 57.7% of this consumption (Clark & Zhang, 2022).

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China used to get most of its energy from coal mined within the country. However, the country's industrialization and urbanization required a switch to cleaner energy sources due to the environmental problems linked with coal usage. As a result, the nation shifted its focus to investigating and perhaps investing in alternative energy sources like oil, natural gas, nuclear power, and various renewables (Wang, Sun, & Iqbal, 2022).

Coal, oil, natural gas, hydroelectric electricity, nuclear power, and renewable sources like wind and solar all factor into China's current energy mix (Wang et al., 2023). Coal is still an important element of China's energy mix, but the government has taken major steps in recent years to lessen reliance on it, in part because of concerns about the country's impact on the environment (Wang, Sun, & Iqbal, 2022).

China is now the largest coal producer, consumer, and importer, as well as a major oil and natural gas user and importer. It's leading the way toward a cleaner energy future by investing heavily in renewable energy and manufacturing renewable energy technologies.

However, China's energy sector faces its fair share of obstacles. China's energy industry is facing serious challenges, including the need to meet the rising energy demands of the country's expanding middle class, maintain energy security, cut greenhouse gas emissions, and move toward a low-carbon economy. The way China handles these issues and implements its energy policies will have far-reaching effects on the energy landscape worldwide.

Due to the country's outsized position in both energy use and production, China's energy policies carry considerable weight on a worldwide scale. Energy costs, investment trends, and the rate at which countries embrace renewable energy are all affected by China's policies to meet its domestic energy demands, battle climate change, and secure its energy supplies (Stern & Xie, 2023).

China consumes a lot of energy, therefore its domestic energy decisions, including whether to keep using coal or switch to renewables, have an outsized effect on global energy output, demand, and carbon emission levels. Its energy policies, likewise, have the potential to influence global developments. For instance, China's heavy spending on renewable energy has helped bring down the price of such technology around the world, speeding up their widespread acceptance (Gielen et al., 2019).

China is a major oil importer, and its oil consumption and procurement policies have the potential to affect prices worldwide (Liadze et al., 2023). The country's ties to oil-producing countries might also affect international affairs. It is possible that global energy trade patterns and alliances will change as a result of China's efforts to ensure its own energy security through the diversification of supply sources and foreign relationships.

This chapter will look deeper into the nuanced nature of China's energy environment, the nature of its energy crises, and the measures the country has put in place to deal with them. It will examine the development of China's energy sector across time, address the difficulties caused by the country's rapid industrialization and its disproportionate reliance on fossil fuels, and evaluate China's policy responses.

Implications for international relations and the global energy landscape, as well as China's economic development, social stability, and environmental sustainability, will be explored in this chapter. By looking ahead at where China's energy policies are headed, it is hoped to provide light on how the country's energy initiatives may affect international energy security and geopolitics in the years to come.