

India's Energy Policy Objectives: An Overview

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Abstract:

The ever growing demand of energy and mounting concern about social, political, environmental and economic consequences call for systematic and effective energy governance in India. To have a clear understanding about the dynamics of the energy policy framework in the Indian context, it is vital to comprehend the policy context and objectives in which they are placed. The article is divided into three parts. The first part gives a brief introduction of India's political-social and economic landscape, aiming to provide insights into India's energy sector and the context of its energy issues. It also provides a comprehensive overview of India's energy sector and identifies challenges towards achieving the country's energy objectives. The second part deals with India's energy policy context, institutional arrangements and key overarching policies for better understanding of the country's energy sector. Finally, it explores policy concepts, which are helpful to comprehend the motivation and rationale affecting certain energy policy objectives or initiatives.

Key words: India, Energy sector, Policy, Economy, Security

INTRODUCTION

India has the world's second largest population of 1.24 billion in 2011 (WDI, 2012) and the world's seventh largest landmass (IEA, 2011c). The Indian subcontinent is located in Southern Asia, bordering the Arabian Sea and the Bay of Bengal. It is an ethnically and religiously diverse society with 23 official languages, whilst English is the subsidiary official language (IEA, 2007). India has achieved rapid and remarkable economic development in the past two decades and became the world's tenth largest economy in 2011. With its relatively young population with a median age of 26.2 years, India is expected to take over China as the world's most populous nation around 2025. The country, thus, has emerged as one of the most dynamic economic powers in the world. Yet there exist contradictions and complexities that posit considerable challenges to grasp the reality of India: a democratic political system co-existing with an economy with traces of socialism and a widening income gap between urban and rural areas as well as among states. This section presents a brief introduction of India's political-socio-economic landscape, aiming to provide insights into India's energy sector and the context of its energy issues.

Currently, India is one of the world's fastest-growing economies. During the period between 2006 and 2010, the country's gross domestic product (GDP) increased at 8.2%, while global GDP increased at a rate of 4.5%. The rapid increase in economic activity has been accompanied by rising energy consumption. During the period between 2006 and 2010, India's primary energy consumption increased 8.3%, from 381.4 million tons and natural gas are major sources of primary energy in India, accounting for 52.9%, 29.6% and 10.6%, respectively, of the primary energy consumption just 0.7% of the world's proven oil reserves while accounting for 3.9% of the global oil consumption —thus importing 73% of its oil consumed. Similarly, the country has 0.8% of the world's proven

natural gas reserves, while accounting for 1.9% of the worldwide gas consumption, which results in India importing nearly 20% of its natural gas consumed through LNG.

Although the country has the world's fourth-largest coal reserves, the demand-supply gap of coal has been consistently increasing, with domestic just 0.7% of the world's proven oil reserves while accounting for 3.9% of the global oil consumption — thus importing 73% of its oil consumed. Similarly, the country has 0.8% of the world's proven natural gas reserves, while accounting for 1.9% of the worldwide gas consumption, which results in India importing nearly 20% of its natural gas consumed through LNG.

Rapidly increasing energy demand and growing concern about economic and environmental consequences call for effective and thorough energy governance in India. To understand the dynamics of the energy policy framework governing India's energy sector, it is essential to comprehend the policy objectives and context in which they are placed. Three main energy policy objectives are pursued by the Indian government: First, access to energy is the foremost goal in India's energy policy making, as nearly one-quarter of the population lacks access to electricity. This implies ensuring the supply of adequate and reliable energy to the Indian population amid growing energy demand, bolstered by economic growth. Second, energy security is driven by increasing dependence on imported fuels, which is crucial to meet the India's huge energy demand. Increased import dependence also exposes the country to greater geopolitical risks and international price volatility. Finally, India is dedicated to the mitigation of climate change, although overcoming energy poverty and ensuring economic and social development remains a top priority. Fulfilling all three objectives is not an easy task, as they can stand in conflict with one another. For example, supplying an affordable and considerable amount of energy using low-cost energy fuels, primarily coal, potentially undermines efforts to tackle climate change and local pollution. Pursuing the utilisation of domestic

resources and promoting indigenous energy technologies could help enhance energy security in the long term, but does not solve India's energy problems in the short term. This paper provides a comprehensive overview of India's energy sector and identifies challenges towards achieving the country's energy objectives. The paper is attempting to provide the basic understanding of India's political economy, overarching energy policy framework and key features of India's energy sector as a whole. How each fuel sector contributes to India's energy objectives and discusses pressing Issues currently facing these objectives.

Outlook (WEO) 2011 and Energy Technology Perspectives (ETP) 2010, as well as two India-specific working papers: Technology Development Prospects for the Indian Power Sector and Energy Transition for Industry: India and the Global Context. IEA data is used as a basis for historical trends and current status, and for international comparison. This paper also used the latest official data and figures that were publicly available by the Indian government at the time this paper was written. The impact and importance of India's energy policy in an integrated and interdependent global energy market is without question. A strong and sustainable energy sector in India is crucial to maintain the vibrancy of the Indian economy. This is also essential to the prosperity of the global economy.

The Indian government as a whole plays an indispensable role in the energy sector through state-owned Enterprises, public policy and market regulation, indirect guidance and personal networks. To grasp the intertwined dynamics in India's energy policy framework, comprehending not only the individual role of each ministry and government agency but also their interaction and coordination with other energy players is essential. Furthermore, some of the main ideas and themes that drive energy policy discourse in India should be taken into consideration. This section provides India's energy policy context, institutional arrangements and key

overarching policies for better understanding of the country's energy sector.

POLICY CONTEXT

Understanding India's energy policy framework should begin by looking at policy contexts in which policy objectives and concepts are laid out. This will help to answer some of the questions about various decisions made by Indian policy makers. For instance, why has India adopted extensive subsidy programmes for energy products despite the fiscal burden? Why is India reluctant to actively participate in the international legal framework for climate change? How do Indian policy makers perceive rising dependence on imported energy and resulting greater exposure to geopolitical risks, and how do they try to address it? The policy objectives and concepts shed light on the rationales and motivations and eventually, energy policy making, which are to be discussed in the following chapters on the individual fuel sectors.

POLICY OBJECTIVES

There are three major policy objectives that India pursues: energy access, energy security and mitigation of climate change. All three objectives are closely related, but sometimes conflict with one another and are derived from the reality in India. Thus, it is challenging for India to maintain a balanced approach in pursuit of all three objectives.

Energy access

Nearly one-quarter of the population of India lacks access to electricity. It is important to understand this peculiarity of India's energy situation where the majority of potential energy demand still remains unmet, unlike most developed countries where energy demand has reached or is close to saturation stage. The Indian government recognised that economic

development is being hindered as a consequence of energy poverty. Thus, providing energy access to its entire population has been a top priority of Indian policy makers for a long time, making it equally or even more important than energy security. India's major rural electrification scheme is an example of the government's determination to expand access to electricity in India's rural villages.

Energy security

Energy security takes a central position in government policy making. The emphasis of energy policy until the 1990s was on electricity shortage and unsatisfied energy needs. However, increasing dependence on imported energy sources, mainly oil, but also natural gas and coal, resulted in greater government attention to the subject. Energy security is defined comprehensively in India, as "we are energy secure when we can supply lifeline energy to all our citizens irrespective of their ability to pay for it as well as meet their effective demand for safe and convenient energy to satisfy their various needs at competitive prices, at all times and with a prescribed confidence level considering shocks and disruptions that can be reasonably expected" (PC, 2006). From this definition, India's concern for energy security is threefold: First, India asserts that energy is a lifeline to all citizens, which should be factored into its energy security strategy. Second, India is anxious about sudden increases in global energy prices as they undermine the availability of energy to its people and exacerbate the national financial burden. Finally, there is a concern about possible abrupt supply disruption, which has led to efforts to diversify supply and fuel and acquire overseas assets.

Climate change

There is well-accepted recognition of the impacts of climate change among Indian policy makers and the general public, although priority is given to economic and social development. India is a signatory to the United Nations Framework

Convention on Climate Change (UNFCCC), but is not obliged to contain its carbon emissions as an Annex II country. Regarding international attempts to establish an internationally-binding regime to curb carbon emissions, India finds it unacceptable, stating that most emissions were produced by developed countries and that India needs economic development and industrialisation. India's per-capita emissions are only one-third of the world average and 14% of per-capita emissions of OECD member countries. India took a leading role in the G77 during the COP 15 in 2009, denouncing any attempt by industrialised countries to impose carbon reduction targets on developing countries.

That said, India is increasingly engaged in reducing carbon emissions and alleviating environmental degradation. India announced its National Action Plan on Climate Change in 2008, and during COP15 in Copenhagen in 2009, India's environment minister reconfirmed India's goal to reduce carbon emissions per unit of GDP by 20% to 25% below 2005 levels by 2020. Frequent flooding and droughts, deforestation and desertification as well as possible glacial melting in the Himalayas have focused on climate change and provide strong impetus towards India's transition to a low-carbon economy.

POLICY CONCEPTS

This section explores policy concepts, which are helpful to comprehend the motivation and rationale affecting certain energy policy objectives or initiatives. They are rooted in certain Indian historical and cultural traditions. Foremost are the ideas of India's first Prime Minister, Jawaharlal Nehru, who was the key architect of India's political and economic structure, and left a significant lasting impact. His vision for pan-Asian solidarity and the non-aligned movement in 1950s and 1960s was based on core principles, including non-interference in internal affairs and equality and mutual benefits. He was also committed to promoting self-reliance and

chose import substitution as an economic strategy (Mathew, 2003). The policy concepts based on Nehru's ideas can still be frequently observed in policy documents and politicians' rhetoric; they are self-sufficiency, non-interference and inclusive development.

Self-sufficiency

Self-sufficiency or energy independence is a frequently occurring theme in the energy policy dialogue in India (Madan, 2006). This is a useful concept to understand India's approach to energy security. Although India adopted strategies of supply or fuel diversification to enhance energy security, it has placed a stronger emphasis on maximum utilisation of domestic sources, including hydrocarbon, thorium and renewables. In 2007, former Indian President APJ Abdul Kalam announced an ambitious plan to realise energy independence based on hydro, nuclear and renewable energy, stating "we need to graduate from [talking about] energy security to [attaining] energy independence" (FE, 2007a).

However, the pursuit of self-sufficiency led to India's current over-reliance on state-owned enterprises in the energy sector, which was recognised by the Indian government. "The institutional structure in the public sector that we have so assiduously built up during the last 55 years or so to promote self-sufficiency and self-reliance in energy, has led to a monopolistic market structure and led to the systemic infirmities that are inherent in cases of majority public ownership of an enterprise" (PC, 2006).

Non-interference

Nehru's notion of non-interference retains a considerable influence on India's policy making (Price, 2011). As demonstrated by India's non-participation in the Non-Proliferation Treaty to its reluctance to support US sanctions on Iran, non-interference by outsiders and the protection of

Indian sovereignty are fundamental features of Indian domestic and foreign policy.

Since India is all set to have a new energy security policy under the current government. The above mentioned factors have to be addressed to draft an effective policy document.

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