

Energy and India's Foreign Policy

Jeremy Carl, Varun Rai *and* David Victor

Working Paper #75

May 2008

The Program on Energy and Sustainable Development at Stanford University is an interdisciplinary research program focused on the economic and environmental consequences of global energy consumption. Its studies examine the development of global natural gas markets, reform of electric power markets, international climate policy, and how the availability of modern energy services can affect the process of economic growth in the world's poorest regions.

The Program, established in September 2001, includes a global network of scholars—based at centers of excellence on five continents—in law, political science, economics and engineering. It is based at the Freeman Spogli Institute for International Studies at Stanford University.

Program on Energy and Sustainable Development

Encina Hall East, Room 415

Stanford University

Stanford, CA 94305-6055

<http://pesd.stanford.edu>

About the Authors

Jeremy Carl is a Ph.D. candidate in the Interdisciplinary Program in Environment and Resources at Stanford and a research fellow at the Program on Energy and Sustainable Development (PESD). He is supported by a David and Lucile Packard Foundation Stanford Graduate Fellowship. His research focuses on Indian and Chinese energy policy, the political economy of the global coal sector, and energy security. Mr. Carl previously worked with The Energy and Resources Institute (TERI) of New Delhi, India, on energy and resource economics and served as a staff member at Environmental Defense. He received his B.A. with distinction in history from Yale University, and an MPA from the John F. Kennedy School of Government, Harvard University

Varun Rai received his PhD in Mechanical Engineering (ME) at Stanford where his research focused on modeling and simulation of fuel cells. He is interested in understanding the geopolitics of energy and climate change with a focus on China and India. He is also leading PESD's current work in carbon capture and storage. Varun holds a Master's degree in ME with specialization in Energy Systems from Stanford and a Bachelor's degree in ME from IIT Kharagpur, India.

David Victor is Professor of Law at Stanford Law School and Director of the Program on Energy and Sustainable Development at Stanford University's Freeman Spogli Institute for International Studies. The Program, launched in September 2001, focuses on power sector reform, the emerging global market for natural gas, energy services for the world's poor, the practical challenges in managing climate change, and the role of state-controlled oil and gas companies in the world's hydrocarbon markets. Much of the Program's research concentrates in Brazil, China, India, Mexico and South Africa. He teaches energy law, regulation and political economy at Stanford Law School.

Previously, Dr. Victor directed the Science and Technology program at the Council on Foreign Relations in New York, where he remains Adjunct Senior Fellow. He directed the Council's task force on energy co-chaired by Jim Schlesinger and John Deutch and is senior adviser to the task force on climate change chaired by governors George Pataki and Tom Vilsack. He also leads a study group that is examining ways to improve management of the nation's \$50b strategic oil reserve. In the past, his research at the Council his research focused on the sources of technological innovation and the impact of innovation on economic growth. His research also examined global forest policy, global warming, and genetic engineering of food crops.

His Ph.D. is from the Massachusetts Institute of Technology (Political Science and International Relations), his B.A. from Harvard University (History and Science).

His publications include: *Natural Gas and Geopolitics* (Cambridge University Press, July 2006), *The Collapse of the Kyoto Protocol and the Struggle to Slow Global Warming* (Princeton University Press, April 2001; second edition July 2004); *Climate Change: Debating America's Policy Options* (New York: Council on Foreign Relations); *Technological Innovation and Economic Performance* (Princeton University Press, January 2002, co-edited with Benn Steil and Richard Nelson); and an edited book of case studies on the implementation of international environmental agreements (MIT Press, 1998). He is author of more than 100 essays and articles in scholarly journals, magazines and newspapers, such as *Climatic Change*, *The Financial Times*, *Foreign Affairs*, *International Journal of Hydrogen Energy*, *Nature*, *The New York Times*, *Science*, and *Scientific American*, and *The Washington Post*.

About this Study

This paper was originally presented at the conference “The Future of India’s Foreign Policy” held by the Center for the Advanced Study of India (CASI) on March 22 and 23rd at the University of Pennsylvania.

We would like to particularly thank CASI’s director, Devesh Kapur, whose invitation to attend the conference and compose this paper spurred us to a lively internal discussion about the confluence of India’s energy and foreign policy strategies. The associate director of CASI, Juliana di Giustini, did an exceptional job handling logistics, providing advice and assuring that our experience at the conference was a rich and productive one. We also greatly benefitted from the thoughts of our fellow conference attendees, who have given us fresh insights on how we might further examine India’s energy policy in the future.

At Stanford there are many people to thank, each of whom has been central our investigation of India’s energy system. In particular, we would like to acknowledge our former PESD colleague Mike Jackson who ably headed our Indian research efforts for two years, Thomas Heller, who has made invaluable insights into India’s energy policy in the context of climate change, and Rafiq Dossani, of the Shorenstein Asia-Pacific Resource Center at Stanford, who provided many useful insights about the Indian electricity sector and India’s domestic politics.

In India, we have benefitted from countless discussions with individuals from the public and private sectors who have enhanced our understanding. In particular, we would like to acknowledge the continuing support and research partnership of Vikas Kaushal, Anshuman Maheshwary, and their colleagues AT Kearney (India), Jyoti Parikh and her colleagues at IRADE, Kirit Parikh of the Planning Commission, and P.R. Shukla and his colleagues and students at the Indian Institute of Management, Ahmedabad. Numerous other organizations and individuals have supplied us with insight and assistance during our many visits to India including The Energy and Resources Institute (TERI), T.L. Sankar of the Expert Committee on Coal Sector reforms, C.D. Arha of the Indian Administrative Service. Finally, we have been fortunate to receive both counsel and aid from many managers and employees of major Indian corporations including the Tata Group, Reliance Industries and Coal India Ltd. To each of them, we give our thanks for their past and continuing assistance.

I. INTRODUCTION AND OVERVIEW

In 1991 India imported just 17.8% of its commercial energy—today it imports more than 30% and the share of imports is steadily growing.¹ Demand for oil has doubled to 2.9 million barrels per day (mbd) in just a decade,² and is projected to reach around 7 mbd by 2030, growing annually at about 4%.³ Coal imports are expected to surge more than 200% in the next decade, and natural gas imports will also rise dramatically.⁴ India's continued economic success hinges on obtaining reliable and cost-effective energy supplies; increasingly, those supplies depend on national and foreign delivery chains that are creaking and feared unreliable.

There is a growing recognition that energy security needs to be a critical component of India's foreign policy and energy policy.⁵ Energy security has been defined by India's political leadership as being able to “supply lifeline energy to all our citizens as well as meet their effective demand for safe and convenient energy . . .at affordable cost.”⁶ This same theme—the Indian energy vision—has found voice time and again among India's senior political leadership.⁷

¹ *Integrated Energy Policy, Report of the Expert Committee*, April 2006, Planning Commission, Government of India

² Data for 2006-07; Petroleum Planning and Analysis Cell (PPAC), Ministry of Petroleum and Natural Gas, India

³ *Integrated Energy Policy, Report of the Expert Committee*, *ibid.*

⁴ *Government of India Expert Committee on Coal Sector Reform*, 2006. and Jackson, Michael. “The Future of Natural Gas in India: a Study of Major Consuming Sectors”, August 2007, accessed at http://iis-db.stanford.edu/pubs/21994/Jackson_WP65_India_gas.pdf

⁵ *Integrated Energy Policy, Report of the Expert Committee*, *ibid.*

⁶ *Integrated Energy Policy, Report of the Expert Committee*, p.57

⁷ (i) Kalam, A.P.J. Abdul, Address to the Nation on the Eve of the 59th Independence Day (2005) (ii) Singh, Manmohan. Speech delivered in New Delhi, India, August 19, 2007

Yet, the across-the-board recognition of the need for reforms and the steps taken towards fulfilling them have not translated into sufficient real progress—while reforms in the coal sector may have begun to meaningfully take hold in the past couple of years, they are also very much incomplete. Dismantling of price controls on some oil products, the keystone of efforts to make the oil markets more responsive to world conditions (and thus more reliable), has been politically hobbled as the Government of India (GoI) has failed to embrace the politically toxic task of passing the true cost of petroleum products on to customers.⁸ A scheme to open the nation’s oil and gas fields to international capital and technology, with the aim of boosting national hydrocarbon output and cutting dependence on foreign sources, has failed to engage any major international oil and gas company in a meaningful way so far.

This paper explains the ever-increasing gap between India’s energy vision and its energy reality, with a special focus on the implications for India’s foreign policy. Like several other countries, most notably China, India has used its foreign policy muscle to attempt to secure particular energy sources; however, it has, for the most part, only been successful if foreign target is weak and particularly beholden to India.

We argue that the general failure of India’s energy strategy with respect to foreign policy hinges on three factors. First, and most importantly Indian policies hinge on political support that is fickle because the government is based on political coalitions that are constantly shifting and rooted in the marriage of uncommon bedfellows. In particular, India’s federalist system ensures that national policies are highly affected by state-level politics—often by parties and political forces that have little concern for India’s “national interest”. Second, the government’s administrative capacity in most areas of the energy system is extremely weak; in this vacuum, the government *de facto* relies heavily on lethargic

⁸ *Petroleum Pricing in India*, Misra *et al.*, TERI, 2005

state-owned enterprises that already dominate the sector to provide crucial administrative functions. This ensures that most policy reforms—which usually aim at reducing the influence of state enterprises and opening space for private players—are muted in their practical influence. Third, all this means that it is hard for the foreign policy apparatus to make credible commitments about India’s behavior in overseas projects; moreover, when working abroad, the parts of the energy system that are easiest for the foreign policy system to mobilize are those where India has the least to offer in technology and capital. Those parts include, notably, the overseas arm of the state oil company (ONGC’s “Videsh” Division, known as OVL)—a firm that has performed miserably in most efforts to secure overseas oil supplies.

We make these three arguments by looking across the entire Indian energy system. That is a daunting task, and to make it easier we focus on a few crucial sectors and revealing vignettes in each.

As we will discuss in more detail later, much of the current energy woes of India ensue from a tightly regulated energy sector organized through state-run companies. These companies are the main *agents* of the GoI. For instance, the coal sector is dominated by the extremely inefficient state-run behemoth Coal India Limited (CIL), which controls 85% of India’s coal mining market. CIL employs 50 times the manpower of private sector leader Peabody Coal while producing only one-third more coal. In the oil and gas sector, state-owned oil companies produce 87% of India’s domestic oil.⁹ But while India’s net oil import bill stood at nearly \$40 billion in 2006-07, the domestic crude oil production—and especially that of state-owned Oil and Natural Gas Corporation (ONGC)—has been flagging at best, reflecting both India’s increasingly depleted reserves and ONGC’s poor exploration and

⁹ *Energy Security Series: India*, Madan, T., The Brookings Institution, Washington, D.C., 2006

production (E&P) strategy. Historically, the GoI has entrusted these agents with the job of implementing the national plans that are developed by the planning commission. The GoI has only slowly built its own independent capacity to identify opportunities in the energy system and to regulate behavior.

Increasingly, frustrated by the poor performance of India's domestic energy sector, India's diplomatic corps has also become actively involved in helping India achieve energy sufficiency. In 2007, the foreign ministry announced the formation of an energy security unit in an effort to make better deals abroad for resource acquisition in the oil, gas, and coal markets, markets where India has frequently played second fiddle to a more aggressive China.

But regardless of the wisdom of such a strategy, India neither has China's financial power nor political muscle to advance its case. While China has been able to bundle attractive development packages along with sweet financial deals to acquire energy resources outside China, India has made only limited moves on this front, a consequence of its limited financial and political leverage. The only international energy projects that come online are when the party on the other side of the equation—for its special geographical location or heavy political dependence on India or some other special reasons—has extraordinary interests in the deal. A prominent example is recent hydro-power investment in Bhutan—a much smaller country that is geographically dependent on India. In situations that lack such dependencies, India has not been able to coordinate the necessary efforts to benefit its energy situation. India's tense, often hostile, relations with crucial neighbors, especially Pakistan and Bangladesh, do not help the situation either. India itself is in the midst of repositioning itself in global politics from a traditionally non-aligned country to a nation more integrated with the western economies. This state of political confusion further constrains India's international energy strategy.

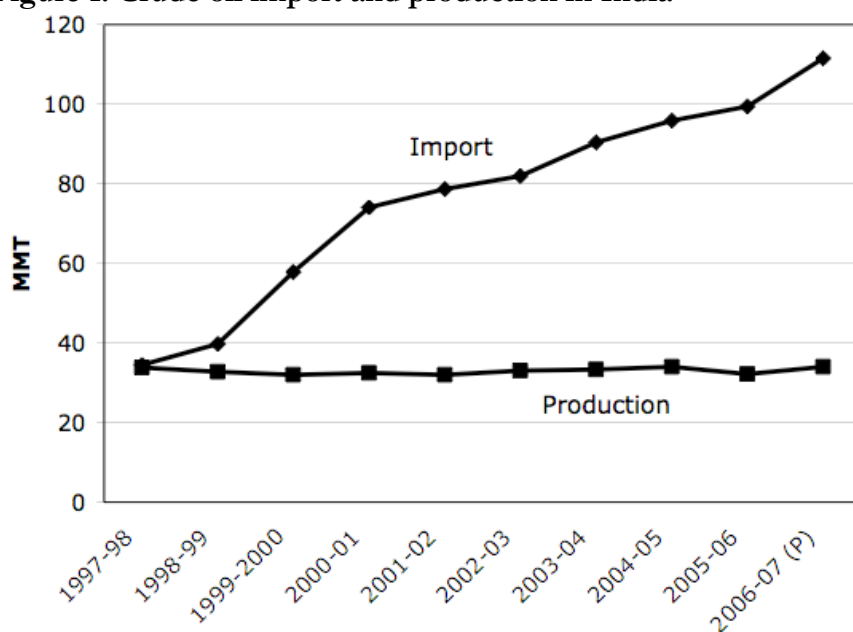
II. SECTORS AND VIGNETTES

The Indian energy system is huge and complex; its interactions with the foreign policy apparatus, too, are complex. To help focus on the forces that matter most, in this section we provide brief overviews of the three most important sectors of the energy system: oil & gas; coal; and electricity. In each sector we offer a vignette or two of important policy decisions that reveal the predominant politico-economic factors at play. Along the way, we elaborate the three main arguments introduced at the outset of this essay.

II.1 OIL AND GAS

India imported over 75% of its crude oil requirements in 2006-07, compared with about 50% in 1997-98. This rapid increase in import dependency has occurred—and is likely to continue increasing—because India’s oil demand has grown dramatically and, despite significant new domestic exploration efforts, domestic production has remained flat around 33 0.66 mbd.

Figure 1: Crude oil import and production in India



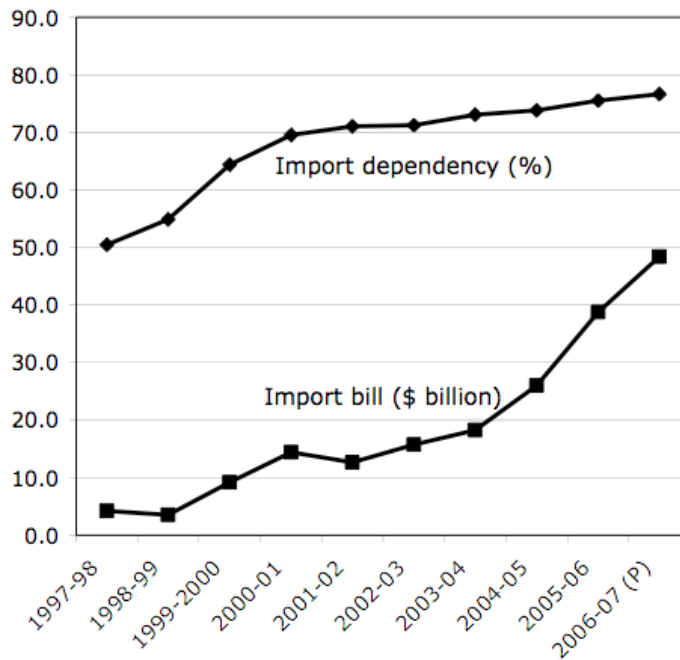
Source: Petroleum Planning and Analysis Cell (PPAC), Ministry of Petroleum and Natural Gas, India.

For 2006-07 data, P = Provisional.

From an Indian perspective, there are urgent reasons to press for rapid exploration and production (E&P) of domestic oil resources, while also improving oil-use efficiency. Due to both increased demand and prices, India spent \$48.4 billion to import crude oil in 2006-07,

up from \$24.9 billion in 2004-05.¹⁰ Although India may be out of the precarious foreign-exchange situation of the early 1990s, the oil import bill represents a substantial portion of India's imports and trade deficit.

Figure 2: Indian import dependency and import bill for crude oil



Source: Petroleum Planning and Analysis Cell (PPAC), Ministry of Petroleum and Natural Gas, India. For 2006-07 data, P = Provisional.

The India Hydrocarbon Vision-2025 (IHV-2025), drafted in 2000, recognized that sufficient supply of oil (and other hydrocarbons) was essential to India's planned economic growth of 8-10% over the next three decades. The plan envisioned a two-prong strategy. One track

¹⁰ (i) Petroleum Planning and Analysis Cell (PPAC), Ministry of Petroleum and Natural Gas, India (ii) Due to earnings from exported petroleum products—notably naphtha, petrol, and diesel—the *net* oil import bill was about \$40 billion in 2006-07. Close to the Persian Gulf sources of crude, India is well-positioned to become a refining hub; some of its refinery infrastructure is already oriented entirely for re-export.

would accelerate efforts to find and produce oil at home. The other would empower Indian companies to find equity oil abroad.

This two-pronged strategy involved many complex elements. Our analysis focuses on the two most important: the New Exploration and Licensing Policy (NELP), which was the keystone of efforts to spur domestic exploration and production (E&P); and the operations of ONGC Videsh Limited (OVL), the GoI's main agent in its quest for equity oil and gas reserves abroad.

Vignette: The New Exploration and Licensing Policy (NELP)

In the pre-NELP era, India had provisions that allowed private companies to search for oil. But the bidding provisions were opaque and covered only small areas. ONGC along with some other state-owned oil companies played a large role both in delineating the blocks to be offered and in the group that monitored the bidding process. In some cases it was found that these state-owned companies deliberately put on offer blocks that they had unsuccessfully explored before. In addition, finalizing the production sharing contracts (PSCs) was a long and cumbersome process, as it needed approval from several ministries.¹¹ These roadblocks reduced the attractiveness of the pre-NELP blocks. The results, not surprisingly, were not impressive.

In 1998 India instituted the NELP, which was intended to ensure that exploration blocks offered by the government were offered to companies in a competitive way. The intention was to encourage more players to enter the field and thus elicit more advanced technology and larger commitments of capital for E&P. NELP allows 100% foreign direct investment (FDI) and offers improved contractual terms that make business in the oil sector attractive

¹¹ *Review of E&P Licensing Policy*, Petroleum Federation of India, 2005

in India. Before the first NELP round in 1999, only 11% of the Indian sedimentary basin was under exploration. This number has gone up to over 40% through the 162 blocks that have been offered via six bidding rounds (NELP-I to VI).¹² Participating companies have committed to invest over \$8 billion in these blocks.¹³ During NELP-VII, which closes in April 2008, the ministry of petroleum and natural gas (MoPNG) is offering another 57 oil and gas blocks; it expects to attract \$3.5 billion via the latest offerings.

Although the private foreign bids for Indian oil and gas blocks have increased significantly through the NELP, the success in attracting foreign capital and technology has been slower than originally anticipated. The relatively lackluster performance of NELP is both due to design flaws in the NELP bidding process and due to the perception among international oil companies (IOCs) that India's geology is a poor prospect.

The initial design of NELP is partly to blame for poor elicitation of foreign technology. In the Bid Evaluation Criteria (BEC), heavy emphasis was given to the proposed work program for the blocks.¹⁴ While this was probably motivated by the GoI's desire to provide strong incentives for rapid investment in E&P, it seems to have backfired. Some domestic companies, like ONGC, that had the advantage of having worked extensively in the domestic business environment (and geology), were especially aware of the lack of adequate performance-tracking and enforcement mechanisms for the work program. This led these companies to submit very aggressive work programs, knowing they would not be held accountable once they won the bid and also knowing that the bid evaluators would not be able to detect whether a bid was unduly optimistic. As a result, ONGC has won over half of all the NELP blocks offered so far. Given ONGC's poor E&P track record in the last two

¹² MoPNG Press Release

¹³ "India to attract \$4 bn in oil exploration", www.rediff.com, 13 December 2007

¹⁴ *Review of E&P Licensing Policy*, Petroleum Federation of India, 2005

decades— this was part of the logic that led the GoI to create NELP—the overwhelming success of ONGC in winning NELP blocks has thwarted the government’s intentions of attracting foreign players. Not surprisingly, officials of MoPNG and Directorate General of Hydrocarbons (DGH) have publicly criticized ONGC’s poor performance in the recent past.¹⁵ And in a few deepwater exploration blocks for which ONGC was the highest bidder, the DGH recommended to the MoPNG to not award them to ONGC in view of ONGC’s poor track record in such projects.¹⁶ But these cases were aberrations. Most foreign bidders, already wary of capital-intensive investment in India, became even more circumspect.

Another reason for the limited participation by more international companies in NELP is the perception of a poor Indian geology—historically; IOCs have believed that Indian geology does not have promising structures with large hydrocarbon reserves. Lack of accessibility and availability of geo-seismic data for many of the blocks offered during NELP has not helped to dissuade these initial impressions. Indeed, the dearth of essential data has both hindered proper block evaluations by potential investors while also fueling suspicions that GoI is only offering unattractive acreage.¹⁷ However, GoI has found it difficult to learn which rules would be most competitive because it is beholden to the state-owned oil companies that have controlled the sector for many years—in particular, ONGC. While the GoI has its own, independent regulatory body on paper, in practice that body does not have the technical skills to provide strong guidance on critical policy strategies. Even obtaining data from state-owned oil companies has been difficult.¹⁸ The state-owned oil companies have relied on the weakness of GoI’s capacity to frustrate the government’s main reform initiative in this area.

¹⁵ “ONGC pumping more air than oil: DGH”, Moneycontrol.com, 24 November 2004

¹⁶ “ONGC may be denied NELP blocks”, The Financial Express, 23 November 2006

¹⁷ *Review of E&P Licensing Policy*, Petroleum Federation of India, 2005

¹⁸ Ibid

In an effort to put NELP back on track, the DGH has reformulated the selection criteria for NELP-VII, the next round of NELP that closes in April 2008, to make the process more effective.¹⁹ Many of the improvements inducted in NELP-VII were suggested in a study by the consultancy PetroFed that was commissioned by the MoPNG in 2005 to heed to the suggestions of international companies and to incorporate international best practices in NELP.²⁰ Further, all data will be available online for the blocks in NELP-VII. These changes and the positive impact of the recent oil and gas discoveries made under NELP may increase participation by overseas companies, probably in the form of joint ventures with domestic companies. But, the effective rigging of the policy so far by state-owned companies may well have set back the reform process by several years. Foreign companies, after observing years of NELP bidding that were not truly competitive, had to be cajoled into participating in NELP-VII.

Vignette: Equity oil and gas abroad

Besides efforts to accelerate domestic E&P through NELP to solve the potential oil supply problem in India, another idea has gathered significant traction within the GoI: obtaining equity oil abroad. Broadly, the GoI believes that oil production owned by Indian companies, whether at home or abroad, enhances energy security by securing supply.²¹ This argument is deeply flawed for a fungible commodity such as oil, but observing how the vision has played out in reality offers an insight into where and how the government is able to exert leverage.

¹⁹ Presentation on “Interactive Session, DGH and E&P Companies”, Directorate General of Hydrocarbons, India, February 2007

²⁰ *Review of E&P Licensing Policy*, Petroleum Federation of India, 2005

²¹ (i) *Integrated Energy Policy, Report of the Expert Committee*, April 2006, Planning Commission, Government of India (ii) Press release on Petroleum minister Mr. Murli Deora’s speech on 14 January 2008

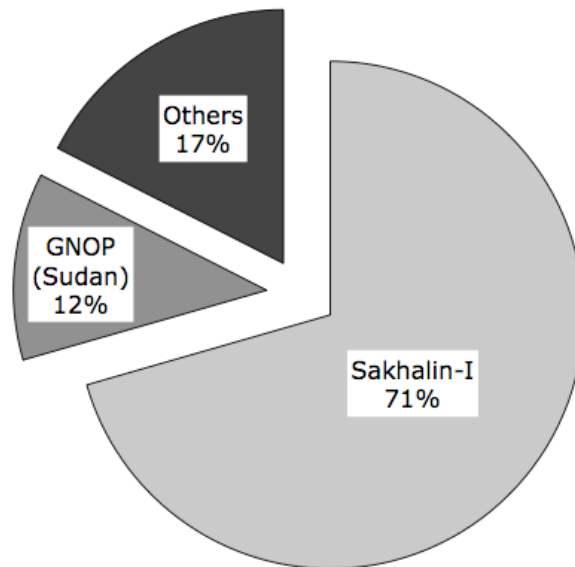
The government's keen interest in equity oil abroad has rejuvenated the interests of Indian companies in overseas E&P. Leading the GoI's quest is the overseas arm of ONGC: ONGC Videsh Limited (OVL). OVL aims to "tie-up" 60 MMPTA (1.2 mbd) oil and gas production overseas by 2025. As of 31st March 2007, OVL's assets had grown to about \$4.5 billion—mostly in loans from its parent company, state-owned ONGC—from virtually nothing in 2001, and it has 26 major projects in 15 countries, giving it a proven reserve base of 194.6 MMT (95.7 MMT oil and 98.9 MMT oil-equivalent gas) and an annual production of 7.95 MMT.²²

The two projects that account for most of OVL's proven and producing assets are Sakhalin-I (Russia) and the Great Nile Oil Project (GNOP; Sudan). Both these acquisitions were made early on when OVL was just waking up to the equity-oil-abroad game—OVL acquired 20% stake in Sakhalin-I in February 2001 by buying half of Rosneft's equity (Rosneft is a Russian state-owned company), while contracts for acquiring 25% equity in the GNOP project were signed in September 2002 by taking over the entire stake of Talisman Greater Nile BV (a subsidiary the Canadian company Talisman Energy).²³ When OVL acquired them, at a time when average crude-oil price was around \$25/barrel, both these assets had proven reserves. Spiraling crude prices since then have made both these investments very profitable for OVL.

²² Annual report 2006-07, ONGC Videsh Limited

²³ (i) "The Sakhalin Venture", *Frontline*, Vol. 22, Issue 22, 2005 (ii) "3 MT Sudan Crude for OVL Annually", *Business Line*, 14 March 2003

Figure 3: Share of Sakhalin-I and GNOP projects to OVL's reserves (as of 31st March 2007)

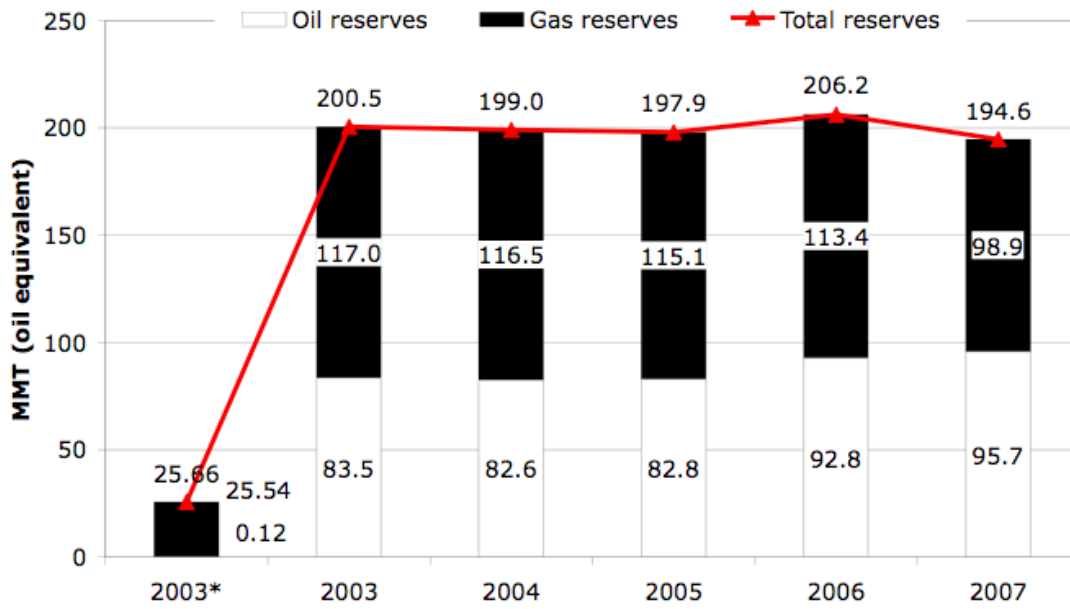


Source: ONGC Videsh Limited annual report 2006-07

Since these acquisitions, not much has changed on OVL's reserves book, as shown in Figure 4, although production has been creeping up, roughly at 1.5 MMTPA (0.03 mbd). Despite several attempts, OVL's success has been limited in acquiring other producing assets.²⁴

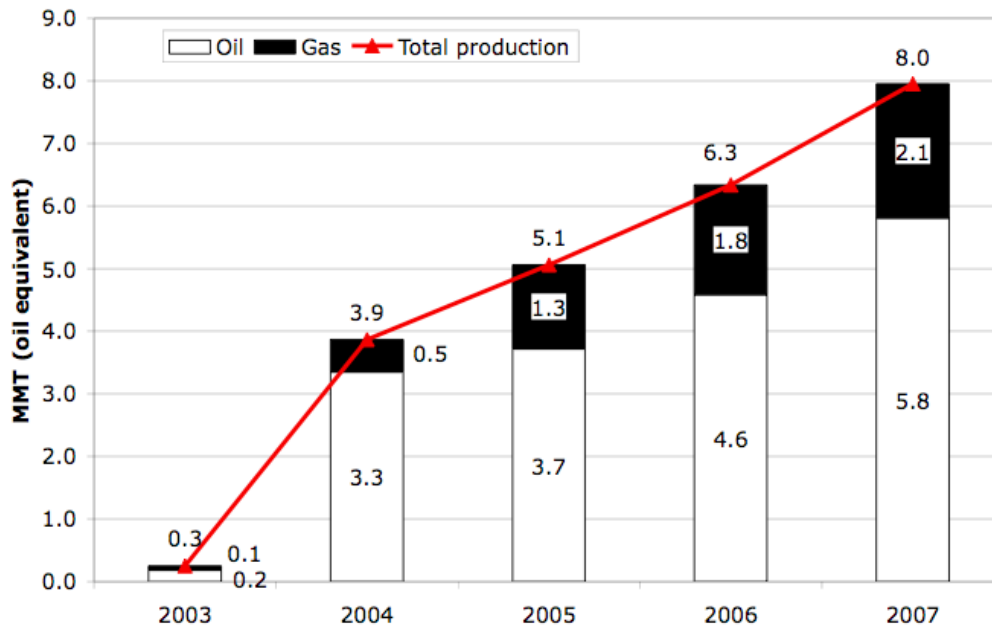
²⁴ "India Loses to China Again", India News Online, 26 June 2006

Figure 4: Oil and gas reserves of OVL as of 31st March of the indicated years. 1 MMT per year = 20,000 barrels per day



Source: Annual reports of ONGC Videsh Limited. 2003* shows data for 2003 without contributions from the Sakhalin-I and GNOP projects.

Figure 5: OVL oil and gas production, as of 31st March of the indicated years



Source: Annual reports of ONGC Videsh Limited

OVL's failure to have greater success is due in part to forces beyond its direct control. Increasingly, Chinese firms have outbid OVL in overseas bidding. Moreover, GoI gives little financial autonomy for OVL, and OVL must go through a lengthy approval process before the GoI.²⁵ OVL is empowered to invest on its own only in projects costing less than \$75 million. For investments with higher capital outlays, OVL has to seek GoI's approval.²⁶ In contrast, cash-rich Chinese companies, like CNPC, CNOOC, and Sinopec, in addition to using political influence of the Chinese government, have also been bidding aggressively (better financial package) for producing properties.²⁷ By bidding higher, these companies are willing to accept lower rates of return—a price that China has so far been ready to pay for securing equity oil.

But the Chinese firms have a better strategic game plan than OVL. One of the widely reported cases of OVL losing to its Chinese counterparts is the \$4.18 billion PetroKazakh deal, in which CNPC outbid²⁸ ONGC Mittal Energy Ltd. (a JV between ONGC and Mittal Investment Sarl). This acquisition makes sense for China—besides owning a string of other projects in Kazakhstan, China also has its own pipeline from Kazakhstan, which it is further augmenting so that the oil from these new fields could be directly transported to a refinery in Dusanzhi, China.²⁹ No similar benefits would have accrued to the Indians, and while OVL wanted to raise its bid, the deal would have turned out to be a costly affair with no real energy security benefits for India.

²⁵ Ibid

²⁶ "Cabinet Okays OVL JV with Venezuela Firm", *The Indian Express*, 5 March, 2008

²⁷ "China Outbids ONGC, Mittal to Snap up Prime Kazakhstan Oil Firm", *The Indian Express*, 23 August 2005

²⁸ The fairness of the bidding process has been questioned by the then Petroleum minister of India, Mr. Mani Shankar Aiyar. See for example, "China finally acquires PetroKazakh", *Rediff.com*, 27 October 2005.

²⁹ *Equity Oil and India's Energy Security*, Dadwal and Sinha, *Strategic Analysis*, Vol. 29, No. 3, 2005

Equity-oil abroad enhances energy security only to the extent that supplies could be transported to the home country at lower costs and with greater reliability than open-market transactions. From India's perspective, these basic criteria need to be met for supplies over 60 MMTPA (1.2 mbd) by 2025—OVL's target but still only a fifth of the projected demand—an order of magnitude greater than present OVL productions.

At present, OVL's operations do not much enhance India's energy security. OVL's unimpressive technical competence, especially in the international arena, puts severe limits on its ability to acquire and manage promising acreage abroad. Most of OVL's manpower is drawn from ONGC, which has a poor performance record even in India, where it has been the main upstream player since the Sixties. Further, ONGC has limited expertise in offshore exploration and virtually negligible experience in deepwater projects. So, in the present era of fiercely competitive bidding for promising prospects, it is doubtful that OVL has the technical competence to assess the risk-reward scenarios well enough to put it in an advantageous situation. If it tries to stretch too far too quickly, it will assume extremely high financial risk; indeed, many of the exploration blocks acquired by OVL are in the "very high risk" category.³⁰ Such a portfolio is particularly poorly matched for OVL's technical skills.

We think that OVL's main asset is not technological but political, and the firm's best prospects are in places where competition is limited, for example due to the associated political risks. Indeed, the only two successes in OVL's kitty, Sakhalin-I and GNOP, have more to do with politics than technical capability. The now much-vaunted Sakhalin-I investment was made possible only by serious lobbying by the MoPNG, and reportedly needed direct consultations between President Putin and Prime Minister Vajpayee to seal the

³⁰ *Equity Oil and India's Energy Security*, Dadwal and Sinha, *Strategic Analysis*, Vol. 29, No. 3, 2005

deal.³¹ And the GNOP deal panned out because Talisman Energy was selling its GNOP assets to reduce the political risk of its portfolio. The lack of other competitors to assume these risks offered a rare window for OVL's entry (Chinese firms already had significant investments in Sudan.)

These issues raise doubts about OVL's ability and competence to enhance India's energy security by assuring energy supplies at a reasonable price.

II.2 COAL

The development of India's coal sector and its increasing relevance to Indian foreign policy illustrate several of the main arguments in this paper. Coal's dominance in India's energy mix is a reflection not just of its abundance but also of India's strategic weakness. Coal is king in India because of the power of domestic political actors, the weakness of large state-run companies as effective agents of state interests, and the difficulties in effectively cooperating on substantial energy projects with India's regional neighbors.

Coal is India's sole significant domestic source of fossil energy. It dominates the Indian energy landscape and according to virtually every independent energy forecast, is predicted to do so for the foreseeable future.³² State-run CIL, the world's largest coal company, is also a major domestic political player; with a workforce of 450,000 that makes it second only to India's Railways as the country's biggest employer.³³ While coal is the backbone of India's energy system, India's needs to increase coal production have been trumped by the domestic

³¹ "The Sakhalin Venture", *Frontline*, Vol. 22, Issue 22, 2005

³² See for Example, the IEA *World Energy Outlook*, 2007, The Government of India's *Integrated Energy Policy, Report of the Expert Committee*, and the *BP Statistical Review of World Energy*, 2007

³³ Coal India Limited, *Annual Report*, 2007

politics that has delayed reform of CIL, particularly in the West Bengal, home of India's least productive (but highest employing) mines. The abundance of Indian coal reserves, in contrast to its paucity of oil and gas reserves, does much to explain the industry's privileged position.

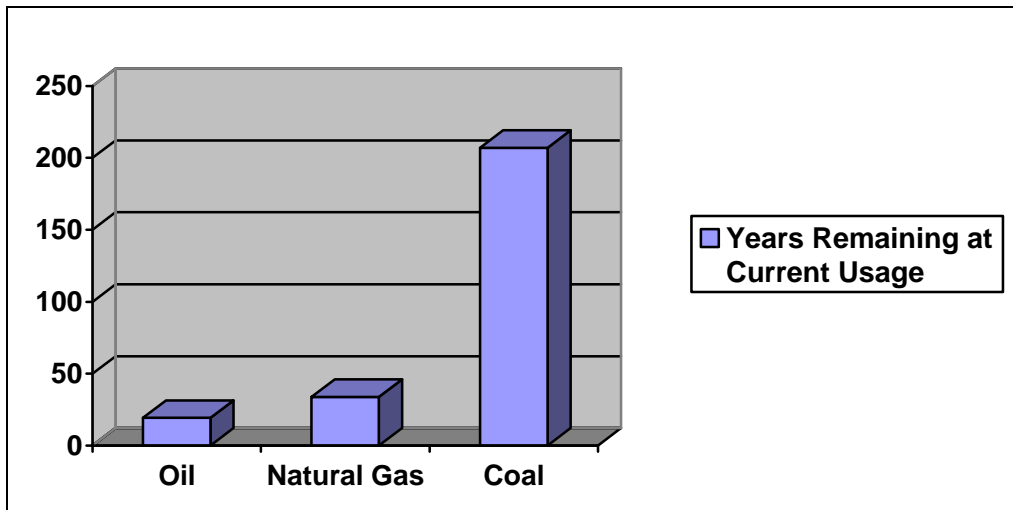
While CIL has generally achieved its government-set production targets it has done so with poor technology and an approach that left India's industry well behind international standards. In recent months, as production targets have grown rapidly to meet demand growth, CIL has begun consistently missing production targets.³⁴ While the mid-1990s economic reforms brought the end of direct budgetary subsidies for CIL, it still remained fiercely protective of its institutional prerogatives. Prices, while technically set on the free market since 2000, have, for practical purposes, continued to be set by the government.

Domestic political imperatives demand that prices be kept low, and those low prices in turn blunt the incentive to invest in new coal production and reliable delivery systems. Despite the general failure to bring about dramatic reform, there are signs that in the last decade, and particularly in the last 2-3 years, that market-oriented reforms have gained momentum as the coal sector has faced greater performance pressure from a number of entities that are dependent on it. For example, more than 150,000 surplus jobs have been shed by CIL in the last decade³⁵

³⁴ *Integrated Energy Policy, Report of the Expert Committee, ibid.*; *Coal Insights*, December 2007, p. 91

³⁵ Carl, Jeremy. "The Transformation of India's Coal Sector, Drivers and Policy Implications," unpublished manuscript.

Figure 6: Reserve to Production Ratios for Fossil Fuels in India



Source: BP Statistical Review of World Energy, 2007

Energy security has long been a central justification for the focus India has placed on India's coal sector. As the government's Expert Committee on Coal Sector Reforms noted "Developing domestic coal resources and successfully extracting this primary energy resource is critical to India's energy security."³⁶ CIL's management is very aware of this dynamic as well. As a recent CIL advertisement blared as its headline, CIL is "Consolidating India's Energy Security"³⁷


³⁶ *Integrated Energy Policy, Report of the Expert Committee, April 2006, Planning Commission, Government of India*


³⁷ *Coal Insights*. 28, May 2007

Figure 7: Coal India Advertisement, 2007

Consolidating India's Energy Security

- Coal is the most abundant and sustainable source of energy in India.
- India produced 662.429 Billion Units of power during 2006-07 of which coal based generation was 431.059 Billion Units, that is 65% of the total power generated, aptly defining coal's role in power generation of India.
- Contributing to 85% of coal produced in the country Coal India Limited is bulwark in Indian Energy Sector.
- With proved national coal reserves of 96 Billion Tonnes Coal India is set to continue its strident march into future consolidating India's energy security.
- During the X Plan Period (2002-03 to 2006-07), CIL has exceeded the originally planned and mid-term appraisal targets of 1557 Million Tonnes (MTs) and 1605.30 MTs by margins of 47.96 MTs and 19.66 MTs respectively.
- Coal India's coal supplies stoke 71 Thermal Power Plants in India sustaining around 60,000 MW of power generation.
- Aggregate tax and dividend payment made by CIL to Government of India during X plan period was Rs 16,384 crores which is 55.64% of the aggregate pre-tax profit of Rs 29,446 crores.
- Coal India and four of its profit making subsidiaries NCL, MCL, SECL and WCL now enjoy coveted 'Mini Ratna' status conferred by Govt. of India.
- The total coal production in India is projected at 680 MTs by the terminal year of XI Five Year Plan (2011-12) of which Coal India is to produce 520 MTs, - a quantum leap of 156 MTs in a single plan period.
- Striving to be the most dominant energy supplier in India with best practices from Mine to Market CIL is committed to meet the country's energy demand for years to come.

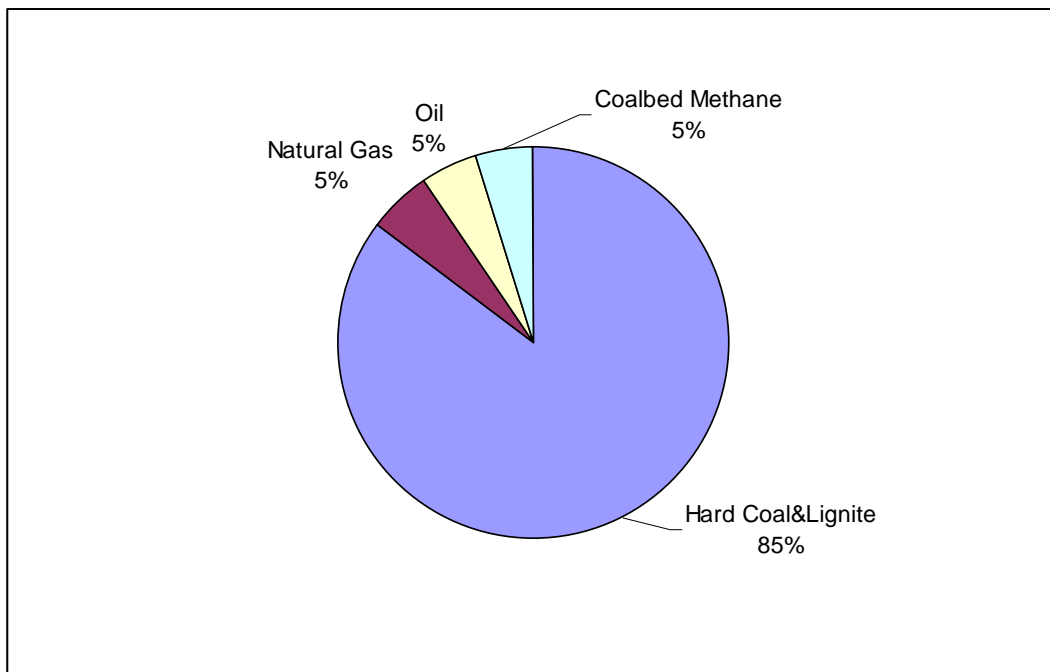

Coal India Limited
The single largest coal producing company in the world
www.coalindia.nic.in



The growth of the coal sector has been driven by India's lack of inexpensive alternative fuels—such as oil, gas and nuclear power. But while Indian officials pay lip service to energy security, domestic politics, driven by state-based parties that dominate India's political coalitions, frequently play a decisive role in ensuring that effective reforms are politically unviable. Alliances of powerful unions, coal mafias, CIL and the Communist Party of India (Marxist) (CPI(M)), have combined to largely thwart reform. The CPI(M) governs West Bengal, the state that is home to the least reformed divisions of CIL, ones that even their own staff note are the most backward parts of the company³⁸ As the Congress led government relies on CPI(M) support for its parliamentary majority, it is unable to dictate terms of reform to CIL, despite energy security imperatives and the overall reforms taking place in other parts of India's energy economy.

³⁸ Personal interview with senior staff of BCCL, July 2007

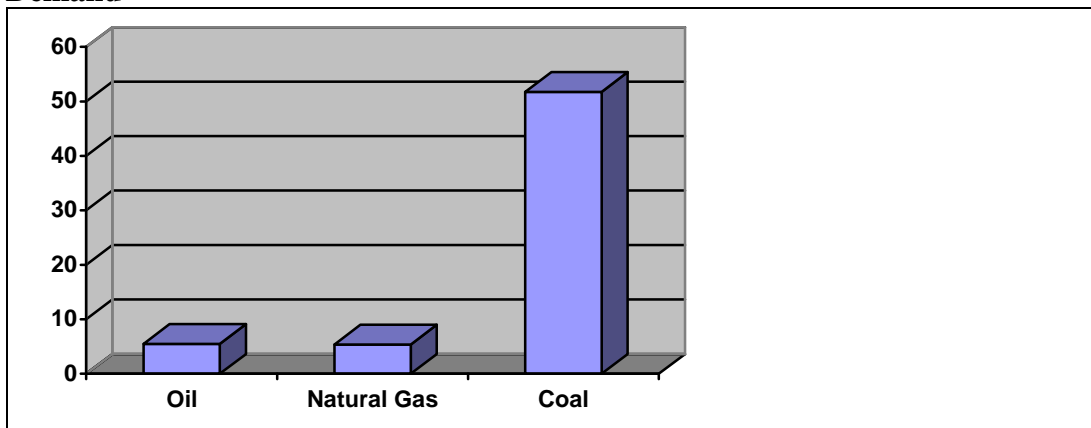
Figure 8: India's Fossil Fuel Reserves by Type: Using Conservative Assumptions about Coal Reserves



Source: Integrated Energy Policy, Report of the Expert Committee

Even in the scenario (discussed below), in which 50% of India's vastly expanded energy demand is still met by coal in 2031 (roughly the same percentage as is met today)³⁹, India's coal R/P ratio dwarfs that of its oil and gas.

Figure 9: Reserve to Production Ratio as a Percentage of Projected 2031 Demand



Source: Integrated Energy Policy, Report of the Expert Committee

³⁹ *Integrated Energy Policy, Report of the Expert Committee, April 2006, Planning Commission, Government of India p. 26*

Vignette: The Mundra “Ultra Mega” Project

In recent years, there has been much discussion in Indian policy circles of allowing international mining companies to participate in India’s coal sector. To date, international majors have been effectively shut out of the Indian market, frustrated by rules that make obtaining coal blocks effectively impossible. The best blocks invariably go to CIL for reasons similar to the reasons for ONGC’s success in the early NELP rounds—CIL, as the most competent and powerful of the government agents, has effective control over the allocation process. Moreover, poor port infrastructure has limited the country’s ability to import coal. India currently utilizes its import capacity fully yet imports only less than 40 Million tons of combined steam and coking coal every year, about ten percent of country’s total consumption, largely from Australia and Indonesia. For comparison, the single coal terminal at Richards Bay South Africa—a main world coal exporting hub—handles 68 million tons per year.⁴⁰ Substantial opportunities to increase coal imports and exports have been lost due to labor difficulties at key ports and a failure to expand necessary port and rail infrastructure.⁴¹

The forthcoming 4,000 MW “Ultra Mega” power project in the Mundra district of Gujarat, recently awarded to the Tata Group, exemplifies many of our themes. It features powerful non-state actors leading foreign energy policy in an environment of state weakness. And it is a project that only exists because of the failure of the state sector to provide secure domestic energy.

⁴⁰ McCloskey’s *Coal Report and Richards Bay Terminal Official Web Site* accessed at www.rbct.co.za

⁴¹ *Government of India Expert Committee on Coal Sector Reform*, *ibid.*.

The new Mundra coal terminal, an integral part of the project, will allow the plant to import fully its needed 15-20 Million tons of coal a year, represents by far the largest project of its kind in India. (When completed, the terminal will have a throughput of 35 million tons, allowing supplies not just for the plant but also for other users.).⁴² This project matters not just because it alone will generate large amounts of power and will nearly double the country's coal imports but also because it is the most prominent of a planned 11 "ultra mega" power projects, most of which are slated to rely on imported coal with private jetties and other import infrastructure. Mundra is a vision of India's coal and power future.

The Mundra project illustrates two important shifts in GoI's approach to energy security. First, the project is rooted in failures to make the domestic coal sector more capable. In effect, this project has created a large foreign profile for India and its companies because the domestic politics of serious coal sector reform are too difficult to handle at the pace needed to sustain rising demand for coal. Second, the government is relying increasingly on private companies—albeit those with strong political connection to the state—to assemble all the practical elements of viable overseas efforts and link them back to commercially viable projects at home. State-owned enterprises, the traditional champions in the Indian economy, play essentially no role.

The Mundra project is anchored in an alliance by Tata Corporation with Bumi Resources, a major Indonesian coal mining company. Tata organized the project, and in order to win the bidding competition it was required to show that it had a guaranteed coal supply-- and in order for Tata to obtain this coal supply it had to enter (with Bumi as its agent) the morass of Indonesian energy politics at a time in which Indonesians have become increasingly hostile to coal exports due to the environmental damage and the need for energy resources

⁴² Port of Mundra Web site accessed at <http://www.portofmundra.com/>

at home. Furthermore local villagers have become more assertive in demanding additional compensation for allowing mining in their immediate vicinity, bringing Tata, and by extension India, into potential ground-level conflict with rural Indonesians.⁴³

The deal also required Tata to purchase an equity stake in the Indonesian mining operations (US\$1.3 Billion for a 30% share) to create a natural hedge against changes in coal prices and to provide needed assurance to regulators that Tata could reliably deliver coal over the lifetime of the project.⁴⁴ Increases in the coal price, for example, would squeeze the power operations since coal fuel is a major cost for operating the power plant but would increase the value of the mining operations.⁴⁵ These arrangements, along with the high cost of transportation, nonetheless made sense because the delivered price for coal in Gujarat—which, on the west coast of India, is geographically far from the main sources of Indian domestic coal—is often three times the price at the Indian mine mouth. The Indian domestic rail and barge network is fragile and unreliable.⁴⁶ In one month in late 2007, twenty-three Indian Power plants were short of promised coal supplies.⁴⁷

⁴³ “Tata secures Bumi deal with 10mt/yr off-take” *McCloskey’s Coal Report*, vol 157 April 5, 2007

⁴⁴ The Tata-Bumi investment came joined with an agreement to supply 10 Million tons annually of coal from Bumi’s Indonesian mines to Tata’s Mundra Power plant at a price linked to international coal indexes. The Indian government effectively required an equity deal as a condition for approving the power plant. All bidders for the Ultra Mega project were required to have 15 years of secured imported coal supply, something that was not realistically possible, in the judgment of Tata executives without both an equity stake in foreign mining operations. (GGW Interview) Tata’s a take-or-pay deal for at least a 12 year term and the Bumi deal will supply half of the 21 MT Tata was going to need not just for the Ultra Mega but for 3000 MW of additional coastal coal projects in Gujarat that will be based entirely on imported coal. (all this from India coal articles section of my doc)

⁴⁵ Interview with Gerry Grove-White, June 2007

⁴⁶ *World Energy Outlook, 2007*. International Energy Agency

⁴⁷ *Coal Insights*, December 2007

Thus Indian power companies find themselves effectively entering the international coal mining market to make up for politically-generated shortcomings in the existing Indian system. The main source of insecurity in Indian coal supply is failure in domestic policy and in the operations of India's state-owned coal enterprise. The main source of security is imports. Tata is conducting foreign energy policy with deals as complex as any envisioned by OVL, with financially much better prospects. All of this is animated by the failure of the domestic market to provide reliable supplies for a large coal-fired power project.⁴⁸

Bumi, meanwhile, is using the proceeds of its equity sale to expand into other areas of mining with the goal of striking other similar deals with other Indian power producers at similarly beneficial rates. 95% of coal from Bumi's mine is destined for exports.⁴⁹

As an illustration of the power of competition, even CIL is now attempting to expand into foreign coal markets, given the difficulties of operating in their current environment.⁵⁰ CIL plans to purchase coking coal mines in Australia, Zimbabwe and Mozambique and thermal coal mines in Indonesia and South Africa. Recently, it has teamed with NTPC, India's largest power generator, and SAIL, the state-run steel producer are, who also are looking to "go out". In November of 2007, CIL joined with them and other major state-owned power and steel companies to create a special purpose vehicle for foreign coal investment with \$2.5 Billion in capital.⁵¹

⁴⁸ "Tata Buys 30% in Two Indonesian Coal Companies", *Hindu Business Line*, April 1, 2007 accessed at <http://www.thehindubusinessline.com/2007/04/01/stories/2007040103160100.htm>

⁴⁹ "Indonesian Energy Highlights, March 2007." Embassy of the United States of America in Jakarta—accessed at http://jakarta.usembassy.gov/econ/energy_highlight_march07.html

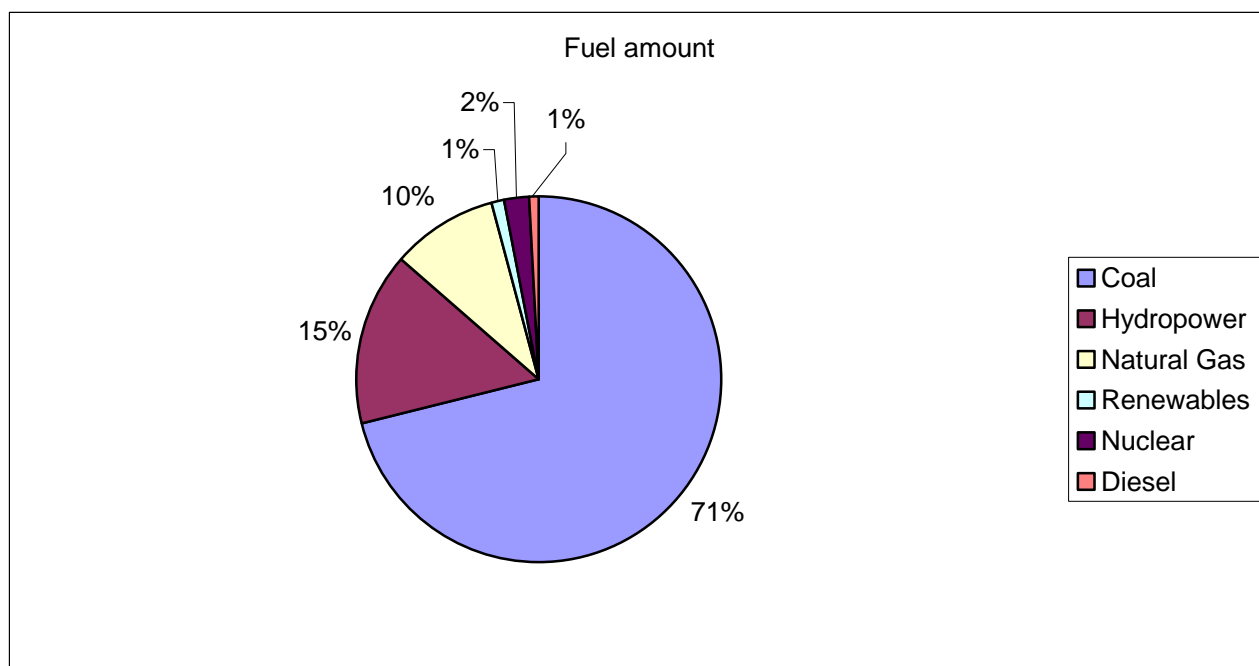
⁵⁰ Goswami, Manash and Archana Chaudhary . "Coal India may acquire mines overseas in two years" *Bloomberg.com* accessed at

<http://www.bloomberg.com/apps/news?pid=20601116&sid=awevZpsYHMF&refer=africa>

⁵¹ "India should not Rush to Buy Coal Mines—MMTC Exec. Reuters, March 12, 2007, accessed at <http://uk.reuters.com/article/oilRpt/idUKL1232067120070312>

II.3 ELECTRIC POWER

Figure 10: Indian Electricity Generation by Fuel Type, 2007



Source: Government of India, Ministry of Power and author estimates

With over 146,000 MW of installed generating capacity, India has the World's 4th largest electricity sector.⁵² About half of India's electricity is generated by state-level companies, and 34% is generated by the central government; the private sector share is barely 14%, although most statistics under-state the role of private "captive" supplies such as on-site generators that deliver power when the grid (as usual) is unreliable.⁵³ India's electricity generation is dominated by coal (65%) and hydropower (20%) although there is a small but growing role for natural gas and renewables as well. Large fractions of the generated power do not make it to customers—mainly due to losses that arise for technical reasons such as

⁵² *World Energy Outlook, 2007* *ibid.*

⁵³ Government of India Ministry of Power, accessed at <http://powermin.nic.in>

poor equipment and maintenance as well as so-called “commercial” losses such as theft and lack of bill collection. Those losses vary dramatically by state, indicative of the vastly different qualities of state governance in different parts of India. State Electricity Boards (SEBs), utilities that are owned by state-level governments, are responsible for administering the power sector in each state. Most SEBs are in disastrous financial shape due to the varied losses they must endure.

India’s economic growth has put enormous pressure on the country’s power system. Reformers keen to ensure that the economic miracle stays on track have therefore spent much effort improving power delivery. Those reforms bubbled throughout the 1990s, but the most important legislative initiative was the Electricity Act of 2003, which offered the potential for unbundling the various parts of the industry, empowered regulators, and created some of the needed framework for competition. (Earlier efforts to create competition had focused just on a few large, new privately owned power plants—such as the ill-fated Enron project in Dabhol.) Investment in “captive power” plants has boomed in the wake of the 2003 Electricity Act, not least because the Act removed legal prohibitions against many kinds of captive installations that are economically attractive. Some states have used the Act’s provisions to make accounts much more transparent and to boost performance of their SEBs, although wide variation still remains.

As with other sectors of India’s energy economy, the actual impact of these reforms has been conditioned heavily by Indian domestic politics. In particular, state governments keep power prices at artificially low levels and some offer free power to politically favored constituencies such as farmers. Poor accounting and corruption in the sector allow well-connected constituencies to steal power and hide the losses in loose accounts. (Indeed, many of the losses normally attributed to farmers is actually stolen by other constituencies;

“farmer” power is not actually metered but calculated as a residual that includes all commercial losses that can’t be assigned to other customer classes.)⁵⁴

Because of both technical limitations and theft, system losses are very high and in some settings account for roughly half of all power generated, compared with about a 10% loss in the transportation and distribution system of a typical power grid in a well-managed system.⁵⁵ The value of total system losses for the SEB’s were 1.2% of India’s GDP in 2005.⁵⁶ Many analysts underscore that the country has a large “deficit” in power—that is an unmet demand that could be satisfied at current prices if the country could deliver the extra supplies. According to the World Bank, that deficit in 2007 was worth over \$12 billion.⁵⁷

Vignette: Hydropower Imports and the Tala Hydro Project in Bhutan

India generates about 1/5th of its electricity from hydropower, and hydropower politics plays a significant role in India’s relations with China, Bhutan, and Nepal. China already has more than 400 hydropower generation projects on the Yarlung Zangbo—the headwaters that become the Brahmaputra river, one of India’s most important rivers. Chinese decisions and potential decisions around Brahmaputra hydropower projects have proved to be flashpoints of contention.⁵⁸ The Yarlung Zangbo has the world’s largest hydroelectric potential and

⁵⁴ Interview with Navroz Dubash, July 2007

⁵⁵ Total losses in 2005 were higher than 40% for eleven SEBs, 30% to 40% in seven SEBs, and 20% to 30% in eight SEBs. In Tamil Nadu and Goa, losses were under 20%. However, even this substantially understates the scope of the systemic problems, as such losses do not include uncollected billing, which brings average losses up to closer to 40-60%.

⁵⁶ Krishnaswamy, Venkataraman, et. al. *Prospects and Potential for Energy Trade in the South Asian Region*, World Bank Sustainable Development Department, June 2007

⁵⁷ This figure based on implied marginal value at current pricing. The deficit, of course, is a function of under-pricing for power—which leads to excessive consumption and under-investment in supply. Source: *Prospects and Potential for Energy Trade in the South Asian Region*, *ibid.*

⁵⁸ McElroy, Damien. “China Planning Nuclear Blasts to Build Giant Hydro Project” *The Telegraph*. 22 October 2000. Accessed at <http://www.tew.org/development/china.hydro.html>.

could generate 60,000 MW of power.⁵⁹ However, the mere discussion of such plans by the Chinese has caused official expressions of diplomatic concern from India, anxious about downstream effects in India. Nonetheless, given India's weak strategic and geographic position vis-à-vis China, the Indian government can do little more than complain. Indian leverage on these projects has been scant.

Hydropower imports could, in theory, play a major role in the Indian power system. The steep grades and ideal sites for power dams in the Himalaya are attractive to engineers. India has had some success on this front, but mainly under special circumstances—working with neighbors who are weak and highly dependent on Indian finance. For Bhutan, power exports (mainly to India) account for 45% of national GDP.⁶⁰ The potential benefits for India are also enormous since bulk power imports offer an opportunity to close India's power deficit. India imported 1,384 GWH, from the new 1,020 MW Tala hydropower project in Bhutan alone in 2006-2007. This electricity is worth approximately \$138 Million on the Indian retail market, and the Tala project currently generates 0.25% of India's electricity in its initial phase.⁶¹ By the time it is complete in 2010, Tala's capacity is expected to triple. As of 2007 India has the ability to import more than 16,400 MW of electricity an amount that is expected to double shortly with the completion of a joint Tata-GoI venture that will bring power capacity from Bhutanese sources to demand centers in North and Eastern India. This Tata-GOI joint venture was undertaken in conjunction with the Tala hydro project.

⁵⁹ Asian International Rivers Center, "Brahmaputra River Initial Resources Inventory" Accessed at <http://www.lancang-mekong.org/html/2005/07/20050719103722-1.htm>

⁵⁹ Bhattacharyya, Rajeev. "River of China Worry." November 7, 2003. accessed at http://www.telegraphindia.com/1031108/asp/nation/story_2548474.asp

⁶⁰ "Tala Hydroelectric Project, Bhutan" *Power Technology* <http://www.power-technology.com/projects/tala/>

⁶¹ This is calculated at an approximation of 4 rupees per KWH across all consumer categories. In reality, there is great regional heterogeneity and category (industrial, consumer, agricultural) difference throughout India.

India's hydropower imports constitute a key element of its foreign policy strategy with its poorer regional neighbors. In some key cases, they can do this while also being commercially attractive as is the case with Tala. India funded Tala in its entirety, with 60% of the funds coming as a complete grant by the Indian government and 40% from loans. In partial exchange, the Indian state-run BHEL received the construction contract for the project. "It is time for Bhutan and India to look at cooperation in hydro-power development not merely as an exercise in bilateral goodwill but as a commercial partnership," noted the Indian power minister at the time of the project's 1998 commissioning "⁶². However, with the exception of Tala and other, smaller Bhutanese projects, India's other hydropower imports (largely from Nepal) have been described by the World Bank "more political than commercial in character" lacking either take-or-pay, or supply-or-compensate provisions that would be standard in purely commercial contracts.

The Electricity Act of 2003 led the way for the potential internationalization of the Indian electricity generation business. The birth of power trading under the electricity act had important consequences for India's foreign policy, as the Act encouraged investment in the transmission network needed to transfer power from region-to-region. That, in turn, set the stage for a possible dramatic increase in power imports. Previously such imports had not been feasible as locations in India near hydropower often had modest power requirements. The fact that Tala's construction costs were 1.6 times the GDP of Bhutan in 2004⁶³ indicates that both necessity and geography were the mothers of the India deal.

Yet, even the relative successes of the 2003 electricity act in burnishing imports underscore the extent to which India has only been able to do energy deals in situations where its

⁶² "Bhutan's Mega Power Politics.." Khatmandu Post, Feb. 29, 2000 accessed at http://www.geocities.com/articlesonbhutan/indobhutan_pages/bhutanmegapower.htm

⁶³ *Potential for Energy Trade in the South Asian Region*, *ibid.*

partners had unique geographies or locations that made India their only viable partner. Bhutan had few other potential customers for their hydropower.⁶⁴ Even Nepal, wracked by political instability and poverty has largely refused to cooperate on significant hydro projects with India, largely because of domestic political opposition.

Vignette: The US-India Nuclear Deal

In contrast to hydropower, where policies are often little noticed outside the region, the agreement on the sharing of nuclear technologies between the United States and India in 2006, received enormous amounts of attention domestically and internationally. Approved by the U.S. Congress, the act would guarantee India nuclear fuel supplies and technology (which it badly needs to bolster its civilian nuclear capacity) in exchange for India accepting International Atomic Energy Agency (IAEA) safeguards on its reactors. The agreement was signed by Manmohan Singh and George Bush in March 2006 and was described as “a cornerstone of the new strategic partnership between the two countries.”⁶⁵ The deal, much hailed at the time of passage, is now in limbo due to domestic political controversy.

India had previously had difficulty obtaining such access as it was not a signatory to the Non-Proliferation Treaty (NPT) and had thus been shut out of the supply of nuclear technologies by the Nuclear Suppliers Group, a collection of industrialized countries that supply nuclear technology for peaceful purposes. The Bush Administration saw India as a stable democratic ally as well as a potentially substantial market for U.S. nuclear technologies. An additional attraction of the arrangement was nuclear power’s lack of greenhouse gas emissions, which made the deal more palatable to an environmental community that

⁶⁴ “Tala Hydroelectric Project, Bhutan”, *ibid.*

⁶⁵ Krishnaswami, Sridhar. “U.S. House Votes for Nuclear Deal”, *The Hindu*
<http://www.hindu.com/2006/07/28/stories/2006072812290100.htm>

expected India to take on more meaningful post-Kyoto commitments.⁶⁶ The agreement passed the U.S. House and Senate in overwhelming numbers, despite a general feeling among many non-partisan commentators that, in its desire to do a deal the U.S. had largely caved in to Indian demands. Prime Minister Singh publicly committed its implementation (approval of which did not require a parliamentary vote). However, Singh had not counted on the opposition of the Left Front (a collection of leftist parties supporting his government), led by the CPI(M).

The criticism of the agreement began with the BJP—the leading opposition party, despite the BJP’s role in initiating similar discussions under Vajpayee’s rule. However, it was the opposition of CPI(M) Secretary General Prakash Karat, who implied that the Left Front would withdraw support of the government if the deal were “operationalized”, that proved deadly to its short-term prospects. There were numerous reasons for the Left Front’s opposition to the deal— an inherent dislike and distrust of the U.S. combined with state-level electoral considerations being primary among them. As of this writing the final outcome of the arrangement is still unclear, with the Left Front officially to its opposition. Establishment Indian politicians are desperate to see the deal through fearing, quite correctly, that failing to ratify it will greatly damage India’s credibility in the international arena. Meanwhile the CPI(M), weakened by electoral setbacks in West Bengal, has moderated the tone of their opposition, not wanting to face immediate elections.

Regardless of the final outcome, the central fact of the agreement remains that it has shown that even the highest profile energy and energy security agreements in the sector can be held hostage to domestic politics. Even early on in the deal, such dangers were apparent. As one

⁶⁶ Victor, David. “The India Nuclear Deal: Implications for Global Climate Change”. *Testimony before the U.S. House of Representatives*, July 18, 2006.

of our co-authors had testified before the U.S. Congress concerning the deal, the framers of the agreement needed to “pay attention to how the deal plays locally. It is striking how much hostility the deal has engendered in the Indian press, as Indian nationalists portray this as an erosion of India’s sovereign prerogative to sustain a nuclear weapons program.”⁶⁷

Unfortunately, Indian politicians did not fully heed this warning, and as a result of their failure to fully account for domestic political considerations, India has lost both credibility and energy security.

CONCLUSIONS

There is a wide gap between the theoretical imperative for a strategic energy policy and the Government of India’s (GoI’s) ability to put such a policy into practice. There are large and real problems of insecure energy supply, and politicians devote much attention to the need for “energy security.” But while India’s relative weakness in international energy politics does present some real strategic problems, the most urgent problems in insecurity arise from the domestic functioning of the energy system—in particular, the supply of coal and the generation and distribution of electricity. Oil, which is the mainstay of energy security debates in most of the world, is also on the radar screen but of lesser consequence than coal and electricity because oil supplies have proved more reliable.

As we have argued, most of India’s “energy security” initiatives have little real impact for two reasons. First, policy initiatives are framed in a political environment that is highly fragmented and unstable, with power shared between the central and state governments and with many uneasy political coalitions dominating the landscape. Second, the GoI’s administrative capacity in the energy sector is extremely weak.

⁶⁷ Victor, *ibid.*

These domestic factors—relating to energy security priorities, political fragmentation and administrative capacity—usually overwhelm the foreign policy aspects of energy. India’s foreign policy apparatus has little leverage over what Indian firms do. It has had fleeting success with a few oil-based projects, such as OVL’s investment in Sakhalin-I (which arose partly due to foreign policy backing). But OVL’s technological and strategic weaknesses make it a poor player on the world stage. By contrast, actual investment and operations are poised to be much more important around the coal supply networks for the ultra mega power plants—there, the foreign policy apparatus plays very little role and success is rooted in commercially-cogent transactions led by commercially-managed Indian firms rather than state enterprises. Nonetheless, Indian firms are themselves exposed to contentious international issues through this framework, as we have seen with the Tata-Bumi deal in Indonesia.

We have illustrated our arguments using vignettes from several different energy sectors. In general, energy policy initiatives that require significant and effective involvement of the GoI—such as through the Government’s role in forging a political coalition, providing backing through foreign policy, or supplying effective regulation—are the least successful. Specifically, for example, political incoherence in India has severely limited reforms in the coal sector; that incoherence has also brought the US-India nuclear deal to the brink of collapse. The NELP and electricity sector reforms have had only limited success, owing mostly to the weak administrative capacity of the GoI. The capability of the GoI’s foreign policy apparatus to benefit India’s energy situation is muted either because its relatively miniscule leverage vis-à-vis Chinese counterparts (in the case of ONGC Videsh, for example) or because it is often hostage to domestic political interests (as in the case of the US-India nuclear deal or in the case of the Tala hydro project, which was undertaken not primarily

because of India's foreign policy efforts but because the Electricity Act of 2003 spurred investments in the domestic transmission infrastructure.)

These arguments lead to a final observation. A truly strategic energy policy is unlikely in India without a massive, and unlikely, transformation of the role of government in energy issues. The government must become much more capable of regulating and reforming the national energy system before it can successfully integrate strategic energy-related decisions into its foreign policy strategy.

BIBLIOGRAPHY

- “3 MT Sudan Crude for OVL Annually,” Business Line, 14 March 2003, Accessed at <http://www.thehindubusinessline.com/2003/03/14/stories/2003031401310500.htm>
- Annual Report*, Coal India Limited, 2006-07
- Annual Reports*, ONGC Videsh Limited, 2003-04 to 2006-07
- Asian International Rivers Center, “Brahmaputra River Initial Resources Inventory” Accessed at <http://www.lancang-mekong.org/html/2005/07/20050719103722-1.htm>
- Bhattacharyya, Rajeev. “River of China Worry.” November 7, 2003. Accessed at http://www.telegraphindia.com/1031108/asp/nation/story_2548474.asp
- “Bhutan’s Mega Power Politics.” Kathmandu Post, Feb. 29, 2000 accessed at http://www.geocities.com/articlesonbhutan/indobhutan_pages/bhutanmegapower.htm
- “Cabinet Okays OVL JV with Venezuela Firm”, The Indian Express, 5 March 2008, Accessed at <http://www.indianexpress.com/story/280275.html>
- Carl, Jeremy. “The Transformation of India’s Coal Sector, Drivers and Policy Implications”, unpublished manuscript.
- “China Outbids ONGC, Mittal to Snap up Prime Kazakhstan Oil Firm,” The Indian Express, 23 August 2005, Accessed at http://www.indianexpress.com/india-news/full_story.php?content_id=76802
- “CNPC Finally Acquires PetroKazakh”, Rediff.com, 27 October 2005, Accessed at <http://in.rediff.com/money/2005/oct/27petro.htm>
- Coal Insights*. 28, May 2007
- Coal Insights*, December 2007
- Coal India Limited, *Annual Report*, 2007
- Dubash, Navroz. personal interview, July 2007
- Energy Security Series: India*, Madan, T., The Brookings Institution, Washington, D.C., 2006
- Equity Oil and India’s Energy Security*, Dadwal, S. R. and Sinha, U. K., *Strategic Analysis*, Vol. 29, No. 3, 2005
- Goswami, Manash and Archana Chaudhary . “Coal India may acquire mines overseas in two years” *Bloomberg.com* accessed at <http://www.bloomberg.com/apps/news?pid=20601116&sid=awevZpsYHMF&refer=africa>
- Government of India, *Expert Committee on Coal Sector Reform*, 2006

Government of India Ministry of Power, accessed at <http://powermin.nic.in>

“India should not Rush to Buy Coal Mines—MMTC Exec. Reuters, March 12, 2007, accessed at <http://uk.reuters.com/article/oilRpt/idUKL1232067120070312>

India to Attract \$4 bn in Oil Exploration, Rediff.com, 13 December 2007, Accessed at <http://www.rediff.com/money/2007/dec/13oil.htm>

“Indonesian Energy Highlights, March 2007.” Embassy of the United States of America in Jakarta—accessed at http://jakarta.usembassy.gov/econ/energy_highlight_march07.html

Integrated Energy Policy, Report of the Expert Committee, Planning Commission, Government of India, 2006

Jackson, Michael. “The Future of Natural Gas in India: a Study of Major Consuming Sectors”, August 2007, accessed at http://iis-db.stanford.edu/pubs/21994/Jackson_WP65_India_gas.pdf

Kalam, A.P.J. Abdul, Address to the Nation on the Eve of the 59th Independence Day (2005)

Krishnaswami, Sridhar. “U.S. House Votes for Nuclear Deal”, *The Hindu* <http://www.hindu.com/2006/07/28/stories/2006072812290100.htm>

Krishnaswamy, Venkataraman, et. al. *Prospects and Potential for Energy Trade in the South Asian Region*, World Bank Sustainable Development Department, June 2007

McElroy, Damien. “China Planning Nuclear Blasts to Build Giant Hydro Project” *The Telegraph*. 22 October 2000. Accessed at <http://www.tew.org/development/china.hydro.html>.

Misra, N. et. al., *Petroleum Pricing in India*, TERI, 2005

“ONGC May Be Denied NELP Blocks”, *The Financial Express*, 23 November 2006, Accessed at <http://www.financialexpress.com/news/ONGC-may-be-denied-NELP-blocks/184656/>

“ONGC Pumping More Air Than Oil: DGH”, *Moneycontrol.com*, 24 November 2004, Accessed at <http://www.moneycontrol.com/india/news/business/ongcrelianceindustries/ongcpumpingmoreairthanoildgh/market/stocks/article/252758>

“OVL Loses to China Again,” *India News Online*, 26 June 2006, Accessed at <http://news.indiamart.com/news-analysis/ovl-loses-to-china-a-12757.html>

Review of E&P Licensing Policy, Petroleum Federation of India, 2005

“The Sakhalin Venture,” *Frontline*, Vol. 22, Issue 22, 2005, Accessed at <http://www.flonnet.com/fl2222/stories/20051104002810100.htm>

Singh, Manmohan. Speech delivered in New Delhi, India, August 19, 2007

“Tala Hydroelectric Project, Bhutan” *Power Technology* accessed at <http://www.power-technology.com/projects/tala/>

“Tata Buys 30% in Two Indonesian Coal Companies”, *Hindu Business Line*, April 1, 2007 accessed at <http://www.thehindubusinessline.com/2007/04/01/stories/2007040103160100.htm>

“Tata secures Bumi deal with 10mt/yr off-take” *McCloskey’s Coal Report*, vol 157 April 5, 2007

Towards a Quantum Leap, NELP VII Road Show, Reliance Industries Limited, 2008

Victor, David. “The India Nuclear Deal: Implications for Global Climate Change”. *Testimony before the U.S. House of Representatives*, July 18, 2006.

Victor, David. “What Resource Wars?”, *The National Interest*, Vol. 92, 2007

World Energy Outlook, 2007, International Energy Agency (IEA)

