

Oxford Energy Comment

September 2004

The Indian Dash for Gas: Will Gas Be the Fuel of Choice for Power Projects?

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At first glance, it would seem that India is now poised for its own version of the ‘dash for gas’; high demand for electricity, aging power infrastructure, a new regulatory climate and newly discovered, large supplies of natural gas have provided a confluence of forces, which may well make gas the fuel of choice for Indian power companies. With annual GDP growing at 8%, and electricity-sector growth normally even faster, power demand is likely to increase by more than 10% per year. To meet this demand, a broad range of technologies and fuels are available. The long time frames for power sector capital investment means that decisions now will have long-term implications for the Indian economy and the development of a sustainable and reliable energy portfolio. This note examines the various options, and concludes that gas proponents should remain cautious in their investment approach.

The future of gas in the medium-term depends on two main factors. First, whether gas prices will fall enough to drive reticulation and industry investment compared to coal and other fuel options; and second, whether an adequate gas pipeline network and regulatory structure for transport will be created to send clear, stable signals to the market. The two reinforce each other: high gas demand is likely to provide the political pressure to solve access and regulatory issues, and better regulation would help increase gas demand. In terms of the price, LNG contracts have historically been tied to oil price baskets. This arrangement acts to effectively reduce gas as an alternative power fuel during periods of high oil prices and put the brakes on new CCGT investment. LNG suppliers will likely have to accept more of the price risk in order to move the quantities of gas they envision. For example, the two LNG regasification facilities in Gujarat are slated to receive as much as 10 million tonnes/annum (mta) (12 bcm) by the end of the decade, compared with 23 bcm total India consumption in 2001, an ambitious plan if prices cannot be reduced and ‘guaranteed’ for the anchor customers - power companies. This process may require using a more inclusive basket of fuels to establish contracts, such as international coal prices, not just oil linked pricing.

The two new LNG regasification facilities in Gujarat represent a new era for fuel supplies in the west of India. Petronet and Shell Hazira LNG projects use the relative proximity of LNG liquefaction plants in Oman and Qatar to supply 'cost competitive' gas. The current transport costs for this gas are approximately \$0.30/MMBTU, with regasification charges in the range of \$0.44-0.50 MMBTU, for a total delivery price at port of less than \$3.50/MMBTU. The first tranches of the gas have been sold by Petronet for \$4.87/MMBTU in Gujarat, and about six cents more in northern India, the difference being a reflection of pipeline costs. The quick sale of this LNG to industry for non-power use, priced at nearly double the subsidised administered gas price of \$2.5/MMBTU, demonstrates large pent-up demand for gas. This bodes well for Shell/Total as they continue to negotiate deals for the new LNG capacity that will be online early in 2005. However, if LNG prices remain high, a cheaper alternative may come from Reliance Gas via pipeline.

Reliance has recently signed a contract with National Thermal Power Corporation (NTPC) to supply gas via pipeline at \$2.97/MMBTU on a long-term contract basis from its offshore fields in the Krishna Godavari Basin. Development plans indicate that the infrastructure will be available by 2007, but uncertainty over total gas reserves (estimated anywhere from 3-14 tcf recoverable) and a number of regulatory and land purchase issues will likely slow the pipeline completion. One thing is clear, gas prices over \$4.25/MMBTU will make gas-fired power generation untenable in almost every scenario, and thus both pipeline gas and LNG will have to be wary of strong price elasticity in the Indian power market.

The other competitive threat to the dash for gas is the use of coal in mine-mouth generation projects, especially if inter-state power transmission continues to grow in India. In the west, coal transport linkage limitations make mine-mouth projects the most viable new-build option if power evacuation is available. The Power Trading Corporation (PTC) and PowerGrid seem poised to expand these facilities significantly, with massive new investments planned over the next several years.

While the gas regulatory picture is still somewhat cloudy, with the national gas pipeline policy still in draft form, there have been positive signals for gas developers. The recent reduction in gas sales tax in Gujarat from 20% to 12% and the Indian Supreme Court's decision to strike down state regulatory authority over gas have both been reassuring to investors. Reports in July 2004 indicated that Gujarat Gas, India Oil Company (IOC), Reliance (through Gujarat Adani Energy Ltd.) and GAIL will all invest heavily in gas reticulation to serve industrial, CNG transport demand and urban areas. In addition, the state-owned Gujarat State Petroleum Corporation Ltd. (GSPCL) may soon be closing a deal with Shell Hazira to purchase its entire initial LNG capacity of 2.5 mta for power and fertilizer plants.

In summary, the dash for gas faces several major hurdles, including competitive coal plants, increased power trading and regulatory uncertainty. In addition, in Gujarat the delivered price of gas derived from LNG is currently too high and volatile to support most gas turbine investments. Innovative contractual arrangements, in which power plant

owners bear less of the price risk, are needed for the dash to continue. The first adopters are likely to be large scale CCGTs and the under-estimated demand from captive power producers (CPP), the latter accounting for nearly one-third of all Indian generation capacity and most currently relying on expensive oil products or coal for fuel. CPP are set to be a significant factor in the 'dash' in the near-term if industrial power tariffs remain high and if reliable, accessible, reasonably-priced gas comes to market quickly. In order to make gas to power a reality, suppliers and industry must come to an agreement on what constitutes a 'reasonable' price. Let us hope the market will be the final arbiter.