



The gas reserves could be transformative

Is Bangladesh ready to power up?

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Bangladesh is sitting on potentially huge gas reserves, but the country is gripped in a dilemma over what to do with them

Great expectations

If exploited fully, this natural resource could transform Bangladesh into a significant regional gas producer and potential supplier to the energy-hungry market of neighbouring India – politics permitting. Yet, many Bangladeshis fear that foreign involvement in the gas sector could hamper long-term economic development in a country where agriculture is no longer able to sustain economic growth.

Bangladesh has been producing natural gas since 1960, when it was part of Pakistan. However, its major gas fields are under-developed and operating well under their potential. Bangladesh's most significant natural gas fields are mostly operated by subsidiaries of the state-owned Petrobangla. Natural gas exploration was opened up to foreign investment in 1993 with the first bidding round of production sharing contracts (PSCs). Gas fields operated by Chevron and Cairn currently produce around a quarter of total output. The opening up of new blocks for exploration is also being hampered by the courts and Bangladesh's ongoing political crisis. Offshore exploration was dealt a blow in 2001 when the courts issued an injunction against new PSCs with international oil companies (IOCs). The

Khaleda Zia administration, which stepped down in October 2006 to pass over power to an interim administration, had hoped to initiate a third round of bidding for allocation of offshore blocks for exploration. However, red tape and the political turbulence that surrounds the election period mean that a third round is unlikely to occur until after a new elected government is in place.

Under the terms of PSCs, Petrobangla purchases gas from IOCs at a rate of around US\$1-3 per 1,000 cubic feet, depending on whether it is purchasing gas from an onshore or offshore field. This compares with a world price of \$7-11 and \$4 in the Indian market. Petrobangla resells the gas to electricity power operators at a subsidised rate of \$1-2 in order to maintain low electricity prices. The low price paid by Petrobangla under the PSCs makes Bangladesh an unattractive investment destination for IOCs, while the subsidised price paid by power companies is a huge drain on the national economy, with Petrobangla's borrowing requirements crowding out lending to the private sector and draining state coffers. Consequently, IOCs are pushing the Bangladeshi government to allow exports – particularly to India – at more commercially attractive rates.

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The power dilemma

The dilemma faced by Bangladesh is whether to export gas output, earning it more money than channelling it into the domestic market where gas prices are heavily subsidised by the state, or to utilise it for the industrialisation of the economy, which is a far less attractive prospect for foreign investors. Supporters of either proposal use very different estimates of probable recoverable reserves. Those who argue that gas output should only be used domestically tend to take a more conservative estimate of total gas reserves, while those who believe that Bangladesh has plenty to spare for export have substantially higher estimates. The Asian Development Bank and the World Bank are urging Bangladesh to export gas, arguing that exports would simultaneously boost foreign direct investment and provide Bangladesh with the opportunity to channel an estimated \$300m in annual export earnings into beneficial developments elsewhere. The Government's own advisers are more cautionary, while society at large is sceptical if not hostile to the notion that a valuable national resource should be exported in a country that is under-developed.

Net recoverable reserves are around 11tcf (trillion cubic feet), while probable reserves are estimated at anything up to 50tcf.

Reserve level doubts

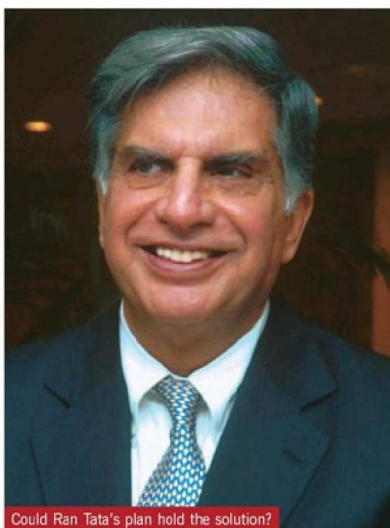
The opponents of gas exports may well be justified in their concerns about the long-term viability of guaranteeing a large

proportion of gas output to one industrial venture. There are uncertainties over the financial sustainability of existing industrial projects relying on domestically produced gas. The country's only offshore gas field, Sangu, is witnessing mounting recovery costs while gas production is falling, reaching 90-113mcf (million cubic feet) per day by early 2007. The costs of recovery for the operator, Cairn, are nearly three times the level of on-shore gas fields and the cost of extraction and investment in increased recoverable capacity threatens to exceed annual revenue. The problem was worsened in 2006 by faulty well drilling, which led to a significant fall in pressure. The fall in output at Sangu is threatening the future of downstream industries, such as the Karnaphuli Fertiliser Company (Kafco), Chittagong Urea Fertiliser Ltd (CUFL), Shikalbaha Power Plant, Rauzan Power Plant and a barge-mounted power plant in Chittagong. The situation at Sangu indicates that downstream industries could be placed in a precarious situation if Bangladesh agreed to export gas on the basis of more optimistic estimates of gas reserves.

Doubts about the extent of probable reserves also surfaced in February 2007, when Cairn declared that its \$15m appraisal well at the South Sangu gas field failed to find a commercially viable gas reserve. The announcement came soon after Cairn announced that the main Sangu gas field contained 187bcf (billion cubic feet) less than originally estimated, bringing the current reserve to 150bcf. An official at the government's Energy and Mineral Resources Division said: "The non-availability of an economically viable amount of gas in South Sangu is really a big blow to the country's energy sector as we had expected that gas-field to be very productive." A number of offshore blocks have yet to be explored and Cairn is currently drilling exploratory wells at two promising offshore prospects. Nevertheless, the problems at Sangu and the disappointment at South Sangu indicate that reserves are lower and more costly than originally estimated.

Development issues

The true extent of reserves is essential for the government's long-term development strategy. The government's Committee for Gas Demand Projections suggests that if the economy grows on a 'business as usual' basis, with annual growth continuing at an



average of 4.55 per cent, cumulative domestic gas demand will reach 41.6tcf by 2040 – higher than the mean estimated probable reserves of 32tcf. Much of the demand will come from the power sector, which already accounts for around 47 per cent of domestic gas consumption. The National Energy Policy (NEP) envisages that 45-50 per cent of domestically produced gas will be dedicated to electricity generation over the next 20 years. Electrification is essential for Bangladesh's economic development. The country is beset with power supply problems. Total daily demand is estimated at around 4,900MW, while supply is 3,065MW. The country is in a severe energy debt crisis with factories hit by frequent power cuts that undermine productivity and competitiveness, yet only 25 per cent of the population has access to electricity and capacity expansion will be necessary to cope with future demand in a country with a rapidly growing population and a growing industrial sector. It is clear that Bangladesh's energy requirements are set to accelerate in the years ahead and gas-powered power stations will be crucial to meeting future demand.

Exports would reduce the amount available to domestic industry and possibly hinder the sustainability of future industrial growth by reducing the level of gas supply for the local market, making it vulnerable to international gas prices. A report by the National Committee on Gas Resources Utilisation claimed that proven reserves will run out by 2015 and advised that gas exports be halted until more recoverable reserves can be found. However, its projections were based on its estimates of current recoverable reserves of around

12.04-15.55tcf, which is well below the probable level of reserves even based on conservative estimates.

Exploitation of gas reserves will require foreign capital and this will only be generated if the government guarantees investors access to markets beyond Bangladesh. Despite an expected acceleration of demand in the years ahead, the Bangladeshi market is still too small to enable investors to recoup their investment unless production is ramped up. The obvious source of investment and markets is India, but the issue is highly politicised due to anti-Indian sentiment in Bangladesh, with the opposition and even members of the ruling coalition arguing that national resources should be used to serve the nation's priorities.

Gas exports could also expose Bangladesh to greater risks from international energy markets and could increase political risks in an increasingly turbulent domestic political environment. It would also waste a resource that could be used for domestic industries and power generation. Also, the export of gas could deter future foreign investors from setting up industrial projects that would utilise gas resources. By limiting natural gas extraction for domestic use, the country will be able to add value domestically and therefore raise export values. The Asian Development Bank estimates that Bangladesh could earn \$300m annually in export revenue from gas exports. But this will only add an additional 2.5 per cent to the value of current export levels, less than half the contribution made by fish and shrimps.

Tata solution

India's Tata Group proposed a solution which would use gas as a feedstock for downstream industries such as fertiliser and energy to manufacture steel. This could utilise domestic gas reserves for industrial purposes, thereby adding value to domestic gas production. The foreign exchange earned from value added projects could easily support fuel imports and ensure macroeconomic stability. Utilising domestic energy sources for local heavy industries also means that the country is less vulnerable to global energy price fluctuations. Consequently, the financial benefits are outweighed by the potential risks associated with dedicating a portion of gas for export to India. However, given the fact that it has made no decision on the utilisation of gas resources ►►