The KG Basin Issue

27 March 2014

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(Prepared as an input for the Electricity Blueprint)

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Extensive deltaic plain formed by two large east coast rivers, Krishna and Godavari in the state of Andhra Pradesh and the adjoining areas of Bay of Bengal in which these rivers discharge their water is known as Krishna Godavari Basin. The Krishna Godavari Basin is a proven petroliferous basin of continental margin located on the east coast of India. Its on-land part covers an area of 15000 sq. km and the offshore part covers an area of 25,000 sq. km up to 1000 m isobath. The basin contains about 5 km thick sediments with several cycles of deposition, ranging in age from Late Carboniferous to Pleistocene[1].

The KG Basin is considered to be the largest natural gas basin in India. A total of 19 discoveries have been made in the block during 2002-08, 18 of gas and one of oil; in two of them a declaration of 'commercial discovery' was made in 2003-04 in an area of 340 sq.km as those were substantial gas reserves; later commercial oil discovery was made in MA oil fields in an area of 50 sq.km.

KG-DWN-98/3 deepwater block (also referred to as the KG-D6 block) covers an area of 7645 sq.km. The site Dhirubhai-6 (D6) is where Reliance Industries discovered the biggest gas reserves in India.

Capital Costs in KG D6 Block

Block D-6 was awarded to Reliance Industries (90%) and Niko Resources Ltd (10%) under New Exploration Licensing Policy (NELP) bidding round under a Production Sharing Contract. Initially, the D6 was to produce 40 MMMSCD (Million Metric Standard Cubic meters per day), which was subsequently revised to 80 MMSCD. The initial development cost in the contract was *$ 2.39 billion* which was revised through an "addendum" in 2006 to *$ 5.2 billion* in Phase-I and *$ 3.6 billion* in Phase II.

The capital costs in the KG Basin D-6 Block went up from $2.4 billion in the initial contract to $8.8 billion for the D1 and D3 discoveries in the KG basin.

Production Sharing Contract (PSC)

The contract is supposed to be based on the idea that the contractor takes the risk for exploration in terms of initial investments, but in turn is rewarded with adequate returns along with a mechanism for profit sharing with the government. Thus the contract has built in a concept of an '*Investment Multiplier' (IM) i.e. the ratio of cumulative net income to cumulative capital investment in the project*. As the investment multiplier goes progressively up (because the initial

[1] http://www.dghindia.org/16.aspx

investment stagnates while revenues keep adding up) and the contractor has received adequate returns, the government share in the profits will go up increasingly.

The profit sharing plan in the PSC reads as follows: for IM less than 1.5 it is 10%, IM between 1.5 and 2 it is 16%, till 2.5 it is 28% and when IM is expected to go above 2.5, the government share in profits promised by the contractor jump to 85%[2]. The Production Sharing Contract (PSC) that the Government struck with RIL in 2000 envisaged that there would be something called "cost petroleum", which would cover Government royalty of 5%, operating costs, the costs of exploration, and the development cost of producing gas. Till the capital costs are recovered, 90% of the petroleum/gas sold would be considered as "cost" petroleum and the rest 10% would be "profit" petroleum.

Oily economics (RIL's cost-recovery versus capital costs)

Investment Multiple	Govt Share of profit %	RIL Share of profit %
Less than 1.5	10	90
1.5 to 2	16	84
2 to 2.5	28	72
2.5 to 3	85	15
3 and above	85	15

Investment Multiple: RIL revenues from KG Basin divided by costs

CAG commented, "The private contractors have inadequate incentives to reduce capital expenditure—and substantial incentive to increase capital expenditure or 'front end' capital expenditure, so as to retain the IM in lower slabs or delay movement to the higher slabs.

Pricing of KG-D6 Gas

The contract stipulates that the price should be set 'at arm's length', meaning, it should be market-determined. However, there is no single market price in gas, as in oil, and it varies from $ 3 in US to $ 16 in Asia[3]. Gas prices have serious implications for two critical industries, fertilizer and power, where it is a vital input. Before 2009 Oil and Natural Gas Corporation (ONGC, a PSU) gas was being sold at the rate of $ 1.83 per unit. In 2004, RIL bid a price of $ 2.34 per unit to National Thermal Power Corporation (NTPC, a PSU) against international competitive bidding. The gas was meant for its 2600 MW Kawas and Gandhar power projects and the offer was for 17 years. NTPC accepted the offer and issued a Letter of Intent (LoI), which in turn was accepted and confirmed by RIL[4]. After issuance of LoI, RIL did not come forward to sign the Gas Sale and Purchase Agreement (GSPA) and sought major changes in the

[2] http://sanhati.com/excerpted/6164/#sthash.10j9fDOy.dpuf
[3] http://articles.economictimes.indiatimes.com/2012-11-13/news/35086694_1_ril-bid-ril-s-kg-d6-cag-audit What's wrong with the Reliance Industries' production-sharing contract, Nov 13, 2012
[4] http://sanhati.com/excerpted/6164/#sthash.10j9fDOy.dpuf

draft GSPA. In spite of all efforts by NTPC, RIL did not sign the GSPA agreed during the bidding process, forcing NTPC to file a suit against RIL in Bombay High Court on December 20, 2005. The case after nine years is still sub-judice.

In the mean while Reliance group was split vertically between the two brothers, with the gas business of Reliance Industries remaining with Mukesh Ambani, the elder brother. Anil Ambani owned RNRL (Reliance Natural Resources Ltd), citing the agreement by the brothers in 2005, claimed it had rights to gas from Reliance KG basin for 17 years at $ 2.34 per mmBtu (million British thermal unit).The Supreme Court settled the matter by saying that '*the government owns the gas till it reaches its ultimate consumer and parties must restrict their negotiation within the conditions of the government policy*'.

Here the role of the government needs to be highlighted. None of the ministries involved in the process, including the oil ministry which Moily now represents, raised the point that the gas reserves belonged to the country and was not a property of the Ambani family. Even Prime Minister, ManMohan Singh requested the brothers to settle their differences in the interests of the country[5].

The court cases between RIL, RNRL and NTPC are primarily about pricing and utilization. Their genesis can be traced back to MoPNG's failure to act decisively at the beginning. Firstly, MoPNG was a mute witness as NTPC issued its global tender to buy 12 mmscmd of gas and RIL won the tender with a surprisingly low bid of $ 2.4/mmbtu (million btu). It then continued to watch as RNRL, then a group company of RIL, cited the NTPC auction as reference and signed an in-house agreement with RIL for supply of 28 mmscmd (more than twice the quantity promised to NTPC) at the same price[6].

While NTPC was fighting the case with Reliance in the Bombay High Court, the government referred the matter to an Empowered Group of Ministers (EGoM) in 2007 headed by the then finance minister Pranab Mukherjee. EGoM approved a rate hike of $ 4.2 per mmBtu of gas. This decision was taken without a single unit of gas coming out of the KG basin[7].

It might be noted that till 2008 ONGC was being paid only $ 1.83 per unit of gas.

MoPNG think it fit to intervene in the matter only when the Ambani brothers split and the gas price was 'fixed' at $ 4.2/mmbtu leading to the current court cases. It did so by filing an affidavit

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[5] http://www.business-standard.com/article/companies/10-things-you-should-know-about-the-reliance-kg-d6-gas-deal-114021200357_1.html; 10 things you should know about the Reliance KG-D6 gas deal - Ready reckoner on the KG D6 gas basin controversy; Feb 12, 2014

[6] Shortcomings in governance of natural gas sector; Ashok Sreenivas, Girish Sant, Prayas Energy Group; Published in the 25th July 2009 issue of the Economic and Political Weekly, Vol. 44, No. 30

[7] http://www.business-standard.com/article/companies/10-things-you-should-know-about-the-reliance-kg-d6-gas-deal-114021200357_1.html; 10 things you should know about the Reliance KG-D6 gas deal - Ready reckoner on the KG D6 gas basin controversy; Feb 12, 2014

in court saying the NTPC contract with RIL was not 'concluded' provoking furious objections from NTPC and the Ministry of Power (MoP), and allegations of bias from MPs, forcing it to retract its position in court. Clearly, this does not inspire confidence that MoPNG has consistently been protecting public interest, in spite of recent announcements to that effect by the minister for petroleum and natural gas[8].

In October 2012, Reliance has sought an 'import parity' price of $14.2 for KG D6 gas, straightaway more than three time increase, even before the period of present fixed price gets over in April 2014 and a committee headed by the chairman of the PM's Economic Advisory Council (EAC)has been formed to look into it.

While RIL had in its submission to the Supreme Court in the gas supply row with RNRL stated that it was merely a contractor who is bound by government decision on price and sale of gas in 'national interest' (thus arguing for $ 4.2 price from RNRL as determined by EGoM and not the $ 2.34 that the Anil Ambani was claiming as per their 'family' contract), the company in January this year wrote to the petroleum ministry seeking revision of "discriminatory" and "sub-market" price. Thus, while in its dispute with the Anil Ambani, RIL conveniently wanted to follow the government determined price in 2008 since that was almost double than what the Anil Ambani was willing to offer, it now wants to go with the international prices (because apparently it is significantly higher) and is ready to contest the same government determined price![9]

The Cabinet Committee on Economic Affairs (CCEA) has decided that from March 2014, the price of gas will double – it will rise from $ 4.2 per MMBTU to $ 8.40! This increase is even beyond the petroleum ministry's suggested price of $ 6.67, which was opposed by the power and the fertilizer ministries. Such a steep hike has been decided on the basis of Rangarajan Committee Report. The main impact of this rise is[10]

- Increase outflow in terms of subsidies for the power and fertilizers by Rs 400,000 crore,
- Increase profits to RIL of Rs 75,000-100,000 crore,
- Immediate doubling of LPG cost of cylinders,
- Risk to 28,000 MW of installed capacity of gas based plants becoming unviable.

Maharashtra has two gas fired power plants - Uran and Dabhol, which can benefit from KG-D6 basin. If Maharashtra receives gas at **$ 2.34 or $ 4.20 per MMBTU it would mean lower electricity tariffs in Maharashtra.**

[8] Shortcomings in governance of natural gas sector; Ashok Sreenivas, Girish Sant, Prayas Energy Group; Published in the 25th July 2009 issue of the Economic and Political Weekly, Vol. 44, No. 30

[9] http://defenceforumindia.com/forum/politics-society/58801-reliance-kg-basin-controversy.html & Cowboy Capitalism: The Curious Case of Reliance KG Basin Gas Business, February 24, 2013- http://sanhati.com/excerpted/6164/#sthash.10j9fDOy.dpuf

[10] http://newsclick.in/india/doubling-gas-price-self-reliance-reliance-govts-new-motto, Prabir Purkayastha, July 4, 2013

<u>Market cost of LPG cylinders will go up eventually will add to the existing cooking gas subsidy burden on Maharashtra State Government Treasury. Tax payers will suffer twice – in terms of higher cost for LPG cylinders and increasing subsidies on the same.</u>

> "The 8.40 number reportedly flows from the Rangarajan formula, which again is not used anywhere else in the world to establish the wellhead price of natural gas or any other form of gas anywhere. Can the government identify even a single gas field in the world that gets a well head price of $ 8.40/MMBtu for conventional dry natural gas? How come investments keep taking place elsewhere without resorting to such dubious pricing formulae? Can Dr. Rangarajan identify which element in his formula represents the wellhead price for dry natural gas actually received by conventional natural gas producers around the world? The truth is that none of the elements in the Rangarajan formula represents the wellhead price it sets out to establish, and yet it magically delivers a price at exactly twice the 4.20 level! The Henry Hub spot price (currently at $ 3.77/MMBtu), which is the only relevant element in the Rangarajan formula, is also greater than the wellhead price received by producers of conventional dry natural gas in the U.S"[11] - Surya Sethi, former Principal Adviser (Power & Energy), Government of India, The Hindu, July 1, 2013.

In Gulf countries, the price of gas is only $ 1 per MMBTU, in Egypt $ 2.57, in Nigeria $ 0.11, in Australia $ 5 and in Indonesia around $ 1[12].

Reliance itself admitted in the court case between it and NTPC/Anil Ambani Group that its production cost was $ 1.43 per MBTU. Reliance Industries Ltd. (RIL) had initially agreed to supply gas at $ 2.34 to both NTPC and Anil Ambani Group, which it subsequently reneged once the EGOM set the price at $ 4.2.

<u>RIL Monopoly Promotion in Gas</u>

At the moment, RIL is major gas producer. Reliance Gas Transportation and Infrastructure Limited (RGTIL) owns the pipeline and again RIL is getting orders for citywide distribution of gas. Unlike the electricity sector, the Government does not have a problem in gas sector with a vertical monopoly of the type that Reliance is building. Originally, there was a proposal of a national gas grid, which would have GAIL as the nodal agency. This also makes economic sense as whoever owns the gas grid effectively dictates to both the producers as well as the consumers. If we have a gas grid now, it will largely be a Reliance grid, with GAIL and others playing second fiddle.

We are already seeing the effect of this monopoly, with Government owned GAIL becoming a junior partner to Reliance and the transportation cost of $1.25 being charged by Reliance, over and above the $4.2 and again without any regulatory oversight[13].

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[11] http://www.thehindu.com/opinion/lead/of-reliance-by-reliance-for-reliance/article4866611.ece - Of Reliance, by Reliance, for Reliance, July 1, 2013

[12] http://newsdog.in/?p=52 - Nation loses over Rs 4 lakh crore due to world's highest gas price hike; to cause all-round inflation, slow down economy, Shivaji Sarkar, March 24, 2014

[13] http://newsclick.in/india/reliance-kg-gas-scam, Prabir Purkayastha, Newsclick, June 16, 2011

The market structure developing in the natural gas sector is heading towards a heavy concentration of one or two players across virtually all segments of the sector. As stated earlier, the upstream segment of exploration and production is dominated by two players, ONGC and RIL, who have won bids for most of the acreage so far. They are also expected to supply most of the country's gas in the near future with each supplying in the region of 100 mmscmd.

The situation is probably worse in the transmission and distribution segment. The traditional Government monopoly here was GAIL. It appears that there would be only two significant players – GAIL and RGTIL, the gas transmission subsidiary of RIL – in the gas transmission segment while their respective subsidiaries GAIL Gas Ltd. (GGL) and Reliance Gas Ltd. (RGL) would dominate the gas distribution segment. Moreover, the two main adversaries do not appear to be interested in competing with each other. They have signed MoUs between them for gas transmission. Out of the 60 cities for which the two intend to bid for CGD operations, they will be competing in just 2 cities! In fact, reports indicate that RGL and GGL will not compete against each other in any of the seven cities whose CGD licenses are currently up for auction, while GGL will compete in Ghaziabad against its own joint-venture, IGL![14]

[14] Shortcomings in governance of natural gas sector; Ashok Sreenivas, Girish Sant, Prayas Energy Group; Published in the 25th July 2009 issue of the Economic and Political Weekly, Vol. 44, No. 30

ANNEXURE - Timeline of KG-D6 Issue

- **1991**- GoI decides to invite foreign and domestic private sector companies to participate in the development of oil and gas already discovered or partly developed by National Oil companies like ONGC.

Small and medium sized blocks were opened up in this round

- 1991 - Directorate General of Hydrocarbons (DGH) created under administrative control of MoPNG
- **1997** - New Exploration and Licensing Policy (NELP) announced by government.
- **1999** - NELP notified.

NELP represented a landmark in hydrocarbon exploration and production (E&P). For the first time national oil companies competed with private sector companies to obtain E&P license through competitive bidding instead of direct nomination.

Production Sharing Contract introduced where the company will have to share royalty, according to the profit made

- **2000**- Reliance Industries Ltd (RIL) gets license to explore gas in Krishna Godavari Basin.
- **2003- 2008** - Reliance Industries discovered huge reserves of natural gas – and some small reserves of crude oil
- **2007** – CAG starts auditing.
- **2011** – CAG submits audit report.