



IEC 2013

Securing tomorrow's energy today:  
Policy & Regulations

Resource Allocation and Pricing



“Pricing and Resource Allocation to  
Take Place Under Market Forces Under  
an Effective and Credible Regulatory  
Oversight, as Far as Possible”

- Integrated Energy Policy , Government of India

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# Introduction

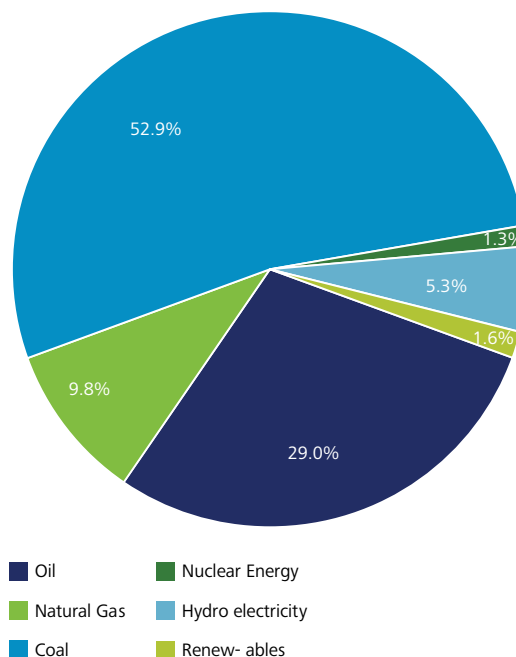
India is home to one-sixth of the world population however its per capita energy consumption of 585 kilograms of oil equivalent (kgoe) in 2009 is much below the global average of 1,839 kgoe. The stage however, is set for change; with continued economic growth and better living standards the per capita energy consumption in India is expected to be more than double by 2031-32 to around 1,124 kgoe, though this will still be lower than the 2009 world average of 1,839 kgoe.

Increasing population, economic activity and rising income levels with further push the demand for energy in India. The Integrated Energy Policy has estimated that India's primary energy supply will need to increase by 4 to 5 times and its electricity generation capacity by 6 to 7 times over its 2003-04 levels to deliver a sustained growth rate of 9 percent through 2031-32 with primary energy supply growth of around 5.8 percent per year. On the other hand, commercial energy supply would need to grow faster at about 6.8 percent per annum as it will incrementally replace non-commercial energy over this period.

The primary energy consumption in India is dominated by coal and hydrocarbons, with less than 10 percent of energy accounted by other sources like hydro, renewables and nuclear. In 2011, oil and gas accounted for around ~40 percent of India's total primary energy consumption, next only to coal, which accounts for ~53 percent (Figure 1).

In the last five years, India has averaged a growth rate of 8% and the demand for energy has been putting pressure on its supply sources. It is an established fact that if India continues to grow at 8% or so in the coming years a higher than average demand for energy will persist. In such a scenario, it is expected that there will be continued pressure on supply sources in the next decade largely driven by increasing urbanization and increasing demand for consumption.

**Figure 1: Primary Energy Mix of India (2011)**



Source: BP Statistical Review 2012

### Oil & Gas Demand Supply Scenario

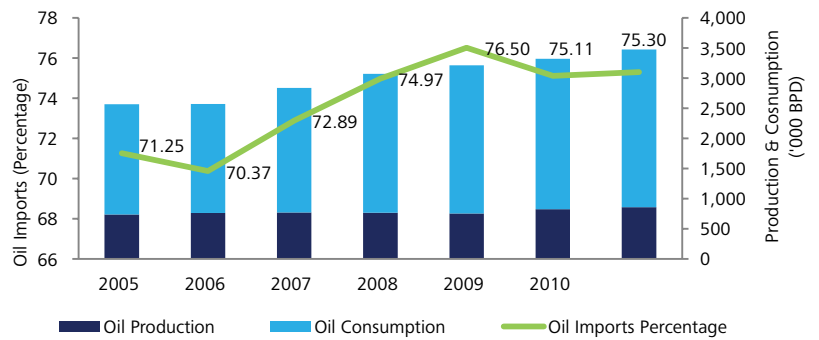
India has 0.5% of world’s proven oil reserves; however it houses more than 15 percent of the world’s population. The current reserve to production ratio is ~18 years. In terms of Natural Gas, India has 1,241 billion cubic meters (bcm) of proven and indicated reserves, which is 0.6 percent of the world's total proven gas reserves. At the existing production levels of 50.9 bcm per year, the country has a Gas R/P ratio of ~ 26.9 years.

India’s existing domestic production of about 858,000 barrels of oil per day (bopd) is less than 25 percent of its current consumption of 3,473,000 bopd, creating a wide gap to be met through imports. As a result, the volume of crude oil imports has been increasing steadily in India reaching more than 75 percent of its total crude requirement in 2011.

According to the draft approach paper on the 12th five year plan (2012-17), the gap between crude oil requirement and domestic production is expected to widen further over the next five years; this is observed as a result of India’s projected increasing GDP growth rate.. As per forecast made by the Working group on energy sector for the 12th Plan, the country requires energy supply to grow at CAGR of 6.5 percent to maintain the growth rate of 9 percent over the next five years. It is projected that the oil and gas requirement by the terminal year of the 12th Plan would reach 204.80 mtoe and 87.22 mtoe respectively. This demand for oil and gas would be fulfilled by import of 164.8 mtoe (or 80.5 percent) crude oil and 24.8 mtoe (28.4 percent) natural gas in 2016-17.

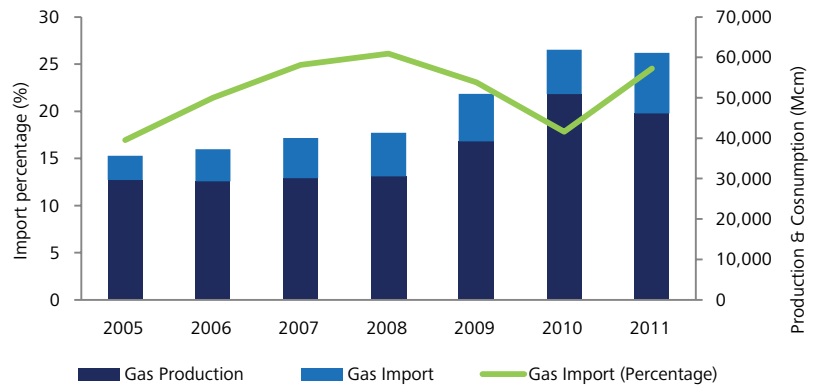
Natural gas constitutes around 10 percent of India’s total primary energy basket, which is well below the world average of 23.7 percent in 2011. As per estimates from Ministry of Petroleum and Natural Gas, by 2025, the share of natural gas in India’s energy basket is likely to reach 20 percent. The increased consumption of natural gas is expected to be fed both by increased domestic production and import of natural gas

Figure 2: Production and consumption of Crude Oil



Source: BP Statistical Review 2012

Figure 3: Production and consumption of Natural Gas



Source: BP Statistical Review 2012

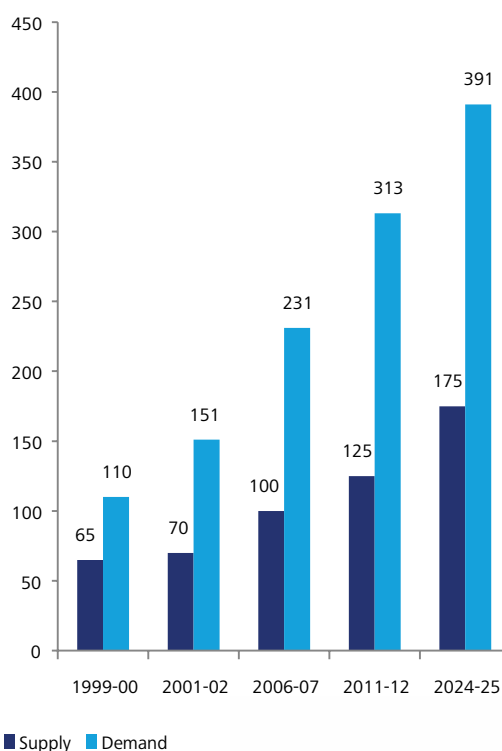
The natural gas consumption, in India was about 180 mmscmd in FY11 as against an estimated demand of approximately 279 mmscmd in 2011 (as per 11th Five Year Plan). Domestic supplies are not matching with the demand of oil and natural gas in India. Mature gas fields like that of ONGC (Panna Mukta Tapti and Bassein) and Niko in Surat have declining production and mature Bombay High oil fields are also past their peak production levels.

In 2002, Reliance Industries Ltd made a large discovery in the Krishna Godavari Basin (KG Basin) with an estimated 337 bcm of gas reserves. Hence, there was a sudden jump in domestic supply in 2010 (45 percent increase over 2009). The field started production in started in 2009. The initial production estimates were 28, 53 and 62 mmscmd respectively for FY10, FY11 and FY12. RIL was able to meet the FY10 target by achieving a total production of 40 mmscmd, but after peaking at 61.5 mmscmd in March 2010, the production started declining alarmingly to the extent that the current production levels hover around less than 30 mmscmd. Geological complexity of the basin and high water and sand ingress are the indicated causes of the decline in output volumes.

Power and Fertilizer sectors are two major consumers of gas in India. Other consumers include CGD, LPG, refineries, etc. Availability of domestic natural gas is an increasing concern for all the consuming sectors. There has been limited capacity addition in the past for fertilizer plants based on domestic natural gas. Similarly, there has been limited focus on developing natural gas based thermal projects which could have been better in terms of their capital cost, project construction time and also environmental concerns vis-à-vis the coal based projects. The price of imported re-gasified LNG is more than thrice as expensive and is thus considered prohibitive for development of plants which need to enter into PPA's on a competitive bidding basis

India is highly dependent on imports for both for crude oil as well as natural gas and with increasing demand and reducing domestic supplies, this dependence is expected to increase further. Currently, ~76% of the crude oil and ~21% of the natural gas is imported. Import dependence to increase to 80% by FY17 for crude oil and 35% by FY17 for Natural gas.

**Figure 4: Demand Supply Scenario of Natural Gas for Power Sector (mmscmd)**



Source: CEA



### Demand Supply Scenario of Coal in India

India has fifth largest coal reserves in the world and it is third largest producer after China and USA. Power, steel and cement are the major consuming sectors in India with power sector consuming ~70% of domestic coal produced in the country. Coal accounts for 69% of total power generated in the country.

However, coal production has observed slow growth rate. There has been limited commissioning of captive coal blocks allotted to private and public sector companies having presence in end user industries. The Demand Supply scenario after taking Business as usual scenario for coal production augmentation is shown below:

According to a press release by Ministry of Coal, India's coal demand increased at CAGR of 8.5% in the 11th plan. Compared to this, CIL's domestic production during this period increased at a CAGR 4.6% only. The cause for slow production is the time consuming procedure to obtain environmental and land permission from MOEF and state governments. CIL reported that 24 out of 44 of its currently delayed projects were due to land acquisition. The production shortage would continue to be a serious issue for the power sector. Recently, CIL agreed on the FSAs with power companies for those plants to be commissioned by March 2015. This would make CIL's total coal commitment amount to 555.56 Mt, nearly 250 Mt increase from the standing FSAs. The uncertainty over whether CIL can deliver the committed volume is definitely an area of deep analysis. Another concern is that any additional coal requirement for new power plants would be unlikely met through FSAs with CIL, hence finding alternative sources is unavoidable. Further, out of the 208 captive coal blocks allotted with 49 billion tonnes of reserve and a production potential of 657 MT per annum, estimated annual production by the end of the 11th plan is only about 37 MT.

Most of the coal consuming sectors are thereby looking for imported coal for both, development of new capacities as well as mitigating the fuel risk for plants that have domestic linkages. Several Indian developers have therefore acquired foreign coal mines to secure coal availability for the large portfolio of power plants that they are developing.

India's coal imports have more than doubled over the last five years. Coal imports have concerns due to limited

**Figure 5: Demand Supply Scenario of Coal (MMT)**

	XI FYP (MT)	XII FYP (MT Projected)	XIII FYP (MT Projected)
Demand	696.03	980.50	1373
Supply	554	715	950
Gap	142.03	265.5	423

Source: CEA

supporting infrastructure. Also, different characteristics of coal typically permit existing power plants to blend imported coal with domestic coal only up to 10% to 15%. In addition, there is a huge price difference between domestic and imported coal. In addition the dynamism in the regulations of the countries from where coal is being imported pose further hurdles by way of political risks.

The Indonesian government recently implemented the Indonesian Coal Price Regulation, which requires prices for all transactions to be benchmarked against a set of international and domestic indices and all sale contracts to be modified retrospectively by September. Several developers have already entered into long term PPA's with distribution utilities based on fuel tied up from Indonesian mines which have now been covered under the new law posing uncertainty over the operational viability of the affected plants.

Coal remains closed to private sector participation with CIL and SCCL having a monopoly on coal production for commercial sale – private participation is present only for captive production. One of the areas of concern for the coal sector is this lack of private investment. Where CIL and SCCL fail to achieve production targets, there are no alternative sources to make up the losses other than possible imports from countries like Indonesia, Australia etc.

# Policy and Regulatory Framework

## Regulatory Framework and Allocation in the Hydrocarbon Sector

Ministry of Petroleum and Natural Gas (MoPNG) is the apex regulatory body representing Government of India that regulates and oversees exploration, exploitation and utilization of petroleum resources, including natural gas. Two regulatory bodies under MoPNG, Directorate General of Hydrocarbons (DGH) and Petroleum and Natural Gas Regulatory Board (PNGRB) regulate and upstream and downstream hydrocarbon sector respectively.

Government of India has constituted an Empowered Group of Ministers to facilitate quick decision making at the apex level. Their role includes pricing of natural gas sources in consultation with the Ministry of Petroleum and Natural Gas and Directorate General of Hydrocarbons, revision of price based on the changes in the market conditions, allocation of the domestic gas to sectors based on the Gas Utilization Policy and framing the Gas Utilization Policy and any changes, if required, based on the market conditions prevalent

The Empowered group of ministers meets in order to undertake decision regarding allocation and pricing of domestic natural gas. 57.80 mmscmd of gas was allocated to different sectors at the start of production. However, due to lower than expected production from KG-D6 field, this production was reduced as given in the table below.

**Figure 6: Allocation of Gas from KG-D6 (MMSCMD)**

	Earlier	Current
Fertilizer	15.35	14.84
LPG	2.59	2.54
Power	29.74	11.71
Others	10.21	0.56
Total	57.89	29.65

Source: EGoM

## Gas utilization policy

In view of scarcity of natural gas in the country, priority for the commercial utilization of domestic gas was decided by Government of India, to make its most optimal use. The priority for utilization of gas produced from fields under Administered Price Mechanism (APM) i.e. gas produced by NOCs- ONGC and Oil India, for the fields awarded on nomination basis prior to the PSC regime and for the natural gas produced by NELP contractors including RIL's KG D6 field was decided by GoI. The guidelines for the gas sold from NELP fields were issued by Empowered Group of Ministers (EGoM) in May 2008. APM gas is mainly allocated to existing power and fertilizer plants. The order of priority has been laid down to give first priority to the existing plants to ensure utilization of capacities already created and to obtain faster monetization of natural gas. The second preference is given to substitute liquid fuels in energy-intensive industries and the third preference to plants in easing bottlenecks and expansion. The order of priority is as below:

- Order of priority for customers with existing units:
  - Fertilizer plants
  - LPG and petrochemical plants
  - Power plants
  - CGD (PNG + CNG) networks
  - Refineries

Other industries (like steel, ceramic)

The guidelines further elaborate that once the gas demand from existing units has been satisfied, the gas should be utilized in the order prescribed for green-field projects.

- Order of priority for green-field projects:
  - Fertilizer plants
  - Petrochemical plants
  - CGD (PNG + CNG) networks
  - Refineries
  - Power plants

The policy-guidelines are to be reviewed every five-years in view of demand-supply position of gas.



The regulatory environment in India is in evolving stage both in terms of upstream and downstream sector. Formation of PNGRB, introduction of NELP regime and increase in FDI limit through automatic route are certain positive steps taken by the government. Indian policy makers are required to make a stable and transparent regulatory environment in order to propel the growth of the sector. Equal treatment to private/ foreign players, transparent and fair bidding, market driven pricing and only need based interventions from state are certain aspects which are being considered by investors to make investment decisions.

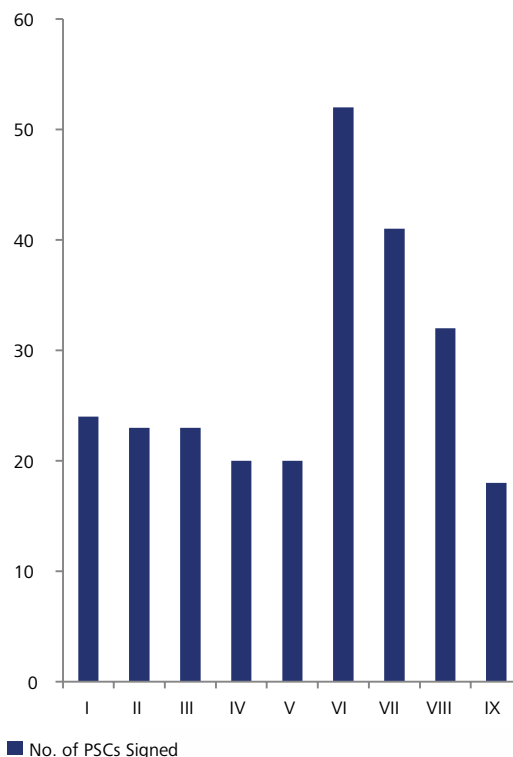
India's Exploration and Production (E&P) sector has seen success in form of NELP rounds. DGH has awarded 248 blocks covering a total area of 1,468,511 sqkm. Participation by foreign exploration companies has increased since the first NELP-I bidding round in 1999 and in 2006, the number of foreign companies exceeded the domestic companies bidding under NELP VI.

While the upstream segment has a well-established framework in the form NELP, the latest round of auctions have experienced declining interest, particularly from foreign oil & gas companies. Currently, Government is involved in contract administration, monitoring and review of investments decisions. Also, pricing of natural gas is not market driven and this may further impact the interest of investors. A more attractive set of framework may enhance interest levels in the Indian E&P segment.

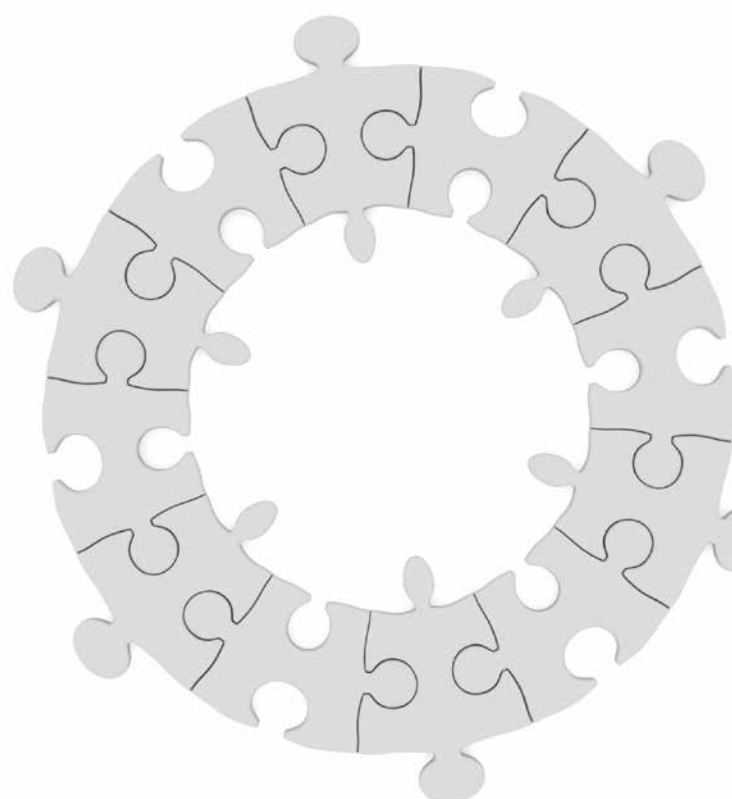
The GoI is in the process of introducing Open Acreage Licencing Policy; new policy for bidding under which oil and gas acreages will be available round the year instead of cyclic bidding rounds launched under NELP to generate interest of investors. One of the pre-requisite and challenge for the formulation of OALP is to establish a data repository centre to provide quality and reliable geo-scientific data for evaluation by E&P companies. In OALP, geological data would be made available to bidders through the NDR and it will enable bidders to bid for any oil & gas block throughout the year.

The recent report from Ranagarajan committee has suggested changes in the existing PSC regime addressing the existing concerns of upstream sector such as clarity on gas pricing, delays in investment approvals from government/ DGH and clearances related delays.

**Figure 7: Number of PSCs signed in the NELP Rounds**



Source: DGH, India



**Figure 8: Key Recommendations of Rangarajan Committee**

Some Key features of existing PSCs	Changes suggested by Rangarajan Committee
The existing PSC allows the contractor to recover his cost, before giving the Government its share in the contractor's revenues. Under this system, a close scrutiny of costs becomes critical for the Government. Since decisions are taken in a joint committee, called Management Committee, having government and private party representatives, decisions get delayed and execution under the contract is hampered	The current cost recovery mechanism to be discontinued and to be replaced by full revenue sharing between Government and contractor without setting off costs. The share to be determined through a competitive bid process with bids in form of a matrix with different percentage revenue shares for different levels of production and price levels.
Tax holiday given in the earlier regime was 7 years for all the blocks	Extended tax holiday of 10 years for blocks having a substantial portion involving drilling offshore at a depth of more than 1,500 metres
Eight year timeframe given for frontier, deep water and ultra-deep water blocks	Extension of timeframe for exploration in future PSCs for frontier, deep-water and ultra-deep-water to ten years.
Audit of oil and gas blocks done by CAG	CAG audit of selected blocks in different phase of E&P based on financial materiality; and other blocks to be audited by CAG appointed auditors. CAG's authority to audit the blocks would remain.

In terms of contract management, it is suggested by Rangarajan committee that for policy related issues, a Secretary-level inter-ministerial committee to be set-up to suggest policy solutions. For issues involving condonation of delay on the part of the contractor in preparing for and seeking approvals, and for minor technical issues, the mandate of the existing Empowered Committee of Secretaries (ECS) could be expanded. The downstream sector is evolving in terms of policies and powers of board and bidding framework for gas distribution. PNGRB had completed two rounds of bidding, while authorization in third round is still pending. The fourth round of bidding was called off and subsequent rounds have been suspended due to changes expected in the bidding structure. Also, there is a need to clearly define role and Power of downstream regulator.

Due to policy and regulatory challenges, India may lose on foreign investment, especially in areas like deep water E&P, Shale gas, CGD, fuel retailing, etc, despite being an attractive market in terms of demand potential. Stable and consistent regulatory environment and only need-based intervention from state is required to attract investment.

### Regulatory Framework and Allocation in the Coal Sector

Ministry of Coal has the primary responsibility of formulating policies around allocation and pricing for the coal sector. The sector is dominated by public sector companies like Coal India Limited, Neyveli Lignite Corporation limited and Singareni Collieries Company limited with CIL being the largest producer accounting for more than 80% of domestic coal production. As there is a significant gap between domestic production and demand and coal is consumed by number of sectors such as Power, Cement, Steel, etc., allocation and pricing of coal is a subject of deliberations. Coal sector requires interaction with host of inter-departmental co-ordination. Ministry of coal needs to work in tandem with Ministry of Environment and Forest, state governments, Ministry of Power, Ministry of Steel, Ministry of Railways, Ministry of shipping, etc. on a host of issues related to allocation, pricing, clearances, etc. Coal sector is evolving in terms of policies and regulatory scenario. Some of the prominent policies/ acts formulated by the government in the context of coal are as follows:

## **Coal Allocation Policy**

### **Captive Coal Mining, 1993**

The Coal Mines (Nationalization) Act, 1973 was amended in June 1993 to allow coal mining by both private and public sector for captive consumption for production of iron and steel, generation of power, washing of coal obtained from a mine and other end use, which would be notified by the Government from time to time.

### **New Coal Distribution policy, 2007**

On October 18, 2007, the Ministry of Coal issued the New Coal Distribution Policy in order to regulate the distribution of coal. This policy dispenses with the classification of consumers 'core' and 'non-core' sectors and instead treats each new consumer on merit. The salient features of the Policy are as follows:

- Defence and Railways to get full requirement at notified price.
- Power (utilities), including Independent Power Producers ("IPP")/Captive Power Plants ("CPP"), the fertilizer sector, would receive 100% of their normative coal requirement at prices notified by Coal India Ltd.;
- All other consumers would receive 75% of their coal requirement at prices notified by Coal India Ltd. and the balance would be met through e-auction scheme and imports;
- All consumers through the erstwhile linkage system to enter into Fuel Supply Agreements ('FSA') with Coal India Ltd.;
- New consumers such as power utilities, IPP, CPP, fertilizer and cement manufacturers will be issued with a Letter of Assurance ("LOA"), with a validity of 24 months which can be converted to an FSA on successfully meeting certain criteria;
- The existing Standing Linkage Committee (Long Term) will continue to recommend LOAs in respect of power utilities, IPP, CPP, cement and steel manufacturers;
- CIL to meet the full requirement of coal under the FSAs even by resorting to imports if necessary;
- After the execution of FSAs, parties to try to execute a tripartite agreement ('FSTA') with the transport provider (Railways) as well;

Introduction of an e-auction scheme by CIL, which will include provide for (i) access to any buyer, (ii) no floor price but rather an undisclosed reserve price not lower than the notified price, (iii) announcing the program of e-auction well in advance and with sufficient publicity, (iv) an announcement by CIL at the beginning of each financial year declaring the quantity and quality of coal to be available through e-auction, and the location from which it would be available, (v) initially around 10% of CIL production to be earmarked for e-auction.

### **Auction by Competitive Bidding of Coal Mines Rules, 2012**

The Central Government has introduced Rules under the Mines & Minerals (Development & Regulations) Act, 1957 with an objective to establish procedure for allocation of area containing coal through auction by competitive bidding. The Rule establishes how coal blocks shall be allocated for specific end use like power projects and also for commercial mining purpose and also outlines the framework for allocation coal blocks for government companies as well as other companies. As of January 2013, proposal for allocation of 17 coal blocks to government companies including 14 coal blocks for specific end use and 3 coal blocks for general mining purposes has been invited by the Ministry of Coal.

### **Allocation of Coal through LOA**

A Standing Linkage Committee (SLC) in Ministry of Coal reviews the applications for coal linkage every six months and based on the recommendation, CIL issues LOA to select consumers, thereafter this is generally firmed up into FSA (fuel supply agreement) upon meeting the conditions in LOA. Any consumer desiring the linkage routes the application through the concerned Ministry to the (SLC) for e.g. a power sector consumer may route it through central electricity authority and ministry of power and a steel sector consumer may route it through ministry of steel. In addition, Ministry of power came up with the Coal Linkage Policy for 12th Plan Projects and sector wise Priority and weightage of available coal was accorded and recommended to ministry of coal: -

- Central, State sector projects and through Case-II competitive bidding by states (60%)
- IPP projects (35%)
- CPPs (5%)

However, as per CIL, there may not be any scope for recommending fresh LOAs by the Committee for the 12th plan period. As per CIL, the gap between commitments made through LoAs / FSAs with power sector and other consumers' vis-à-vis the production projections is more than 400 MMT, even if no fresh commitment is made throughout the 12th plan period. The Working Group of Coal for the 12th Five Year Plan estimates a best case production scenario of 615 MT of coal in the optimistic scenario by the terminal year (FY2016-17). With about 75 GW of plants dependent on linkage coal under various stages of development, and only about 35 GW of this capacity possible to be supported by this level of production, large proportion of power plants could be stranded for want of fuel.

### **Captive Coal Block Allocation**

Apart from the availability of coal from CIL, coal block allocation was the alternate option available with the players in the power or other sectors until the sector was faced with legal trouble. CAG raised the issue that that the Government did not allocate coal blocks by a process of competitive bidding during the period 2004-09.

However, coal mine developers faced a host of challenges such as land acquisition, environment and forest clearances, infrastructure issues in terms of logistics and availability of mining equipment, lack of expertise and experience in mining and financing related issues. As a result, only a limited number of allocated coal blocks were put under production. With CAG allegations on the non-transparent manner of coal block allocations, a number of coal blocks have recently been de-allocated. Future coal blocks allocations likely to be through competitive bidding basis.

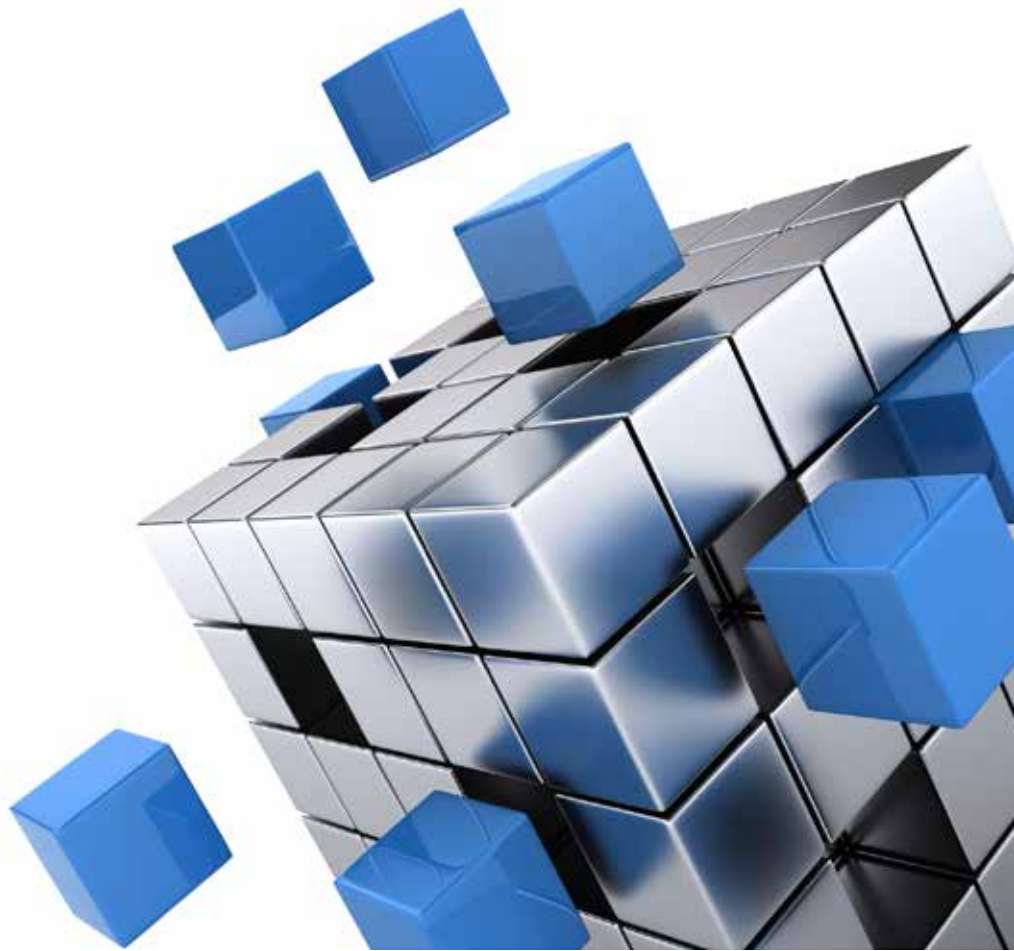
Industry sources indicate that the present regulatory environment in the Indian context needs a dynamic approach in planning resource allocation, development and attracting investment. A few of the concerns are mostly cutting across the sectors include getting the required clearances in time. A coordination committee at the Central and State level involving senior representation from the concerned departments and uniform R&R and land acquisition policies through central legislation could help in resolving the issues related to the sector

Coal scarcity in India is not a result of non-availability rather it is a factor of non-exploration and exploitation of new coal blocks. There is a pressing need in the coal sector to institutionalization of the Coal Regulator. In addition, there is a need to attract investment to develop a comprehensive plan for increasing the share of production from underground mines and suitable policy initiatives such as cost plus pricing, fiscal incentives and so on need to be introduced to improve potential returns currently available from underground mines.

**Figure 9: Allocation of Captive Coal Blocks**

Year of allocation	Government Companies		Private Companies		Power Projects		Total	
	No. of blocks	GR (in MT)	No. of blocks	GR (in MT)	No. of blocks	GR (in MT)	No. of blocks	GR (in MT)
Up to 2005	29	6,294.72	41	3,336.88	0	0	70	9,631.60
2006	32	12,363.15	15	3,793.14	6	1,635.24	53	17,791.53
2007	34	8,779.08	17	2,111.14	1	972	52	11,862.22
2008	3	509.99	20	2,939.53	1	100	24	3,549.52
2009	1	337	12	5,216.53	3	1,339.02	16	6,892.55
2010	0	0	0	0	1	800	1	800
Total	99	28,283.94	105	17,397.22	12	4,846.26	216	50,527.42

Source: MoM of SLC



# Pricing of Energy in India

## Gas Pricing in India

There are multiple pricing regimes existing in the country for Natural gas supplies. This could be broadly divided into three categories:

- APM Gas
- Non APM Gas
- LNG

Further there is differential pricing existing for different sectors. Subsidized sectors such as power and fertilizer get relatively less prices as compared to other sectors. Also, region specific pricing exists in the country with North Eastern states getting gas at relatively cheaper prices as compared to other parts of the country. Following table gives source wise, customer wise gas prices

Further, Pricing of major share of gas supplies in the Indian market is controlled and is not market driven as government approval is required before changing the

price. Controlled pricing may result in disincentivizing investments in the sector in terms of limited participation from foreign players, who have access to technology, much required in deep-water E&P activities. Also, controlled pricing hampers the competitiveness of consuming sectors (power/ fertilizer/ domestic) to compete with global energy markets as it leads to low investments in energy efficiency on the demand side. Policy makers have been considering various aspects to look at the pricing of natural gas. Some of the deliberations done by the government of India on pricing include:

- Pooled Pricing of Gas: As multiple pricing regimes exist in the country, pooling of gas from different sources has been deliberated by the policy makers. A sectoral pool was being considered with separate pools of power and fertilizer customers. Separate pools were considered in view of avoiding cross subsidies between the customer groups and related administrative issues arising.

**Figure 10: Gas Prices in India**

Source	Customers	Gas Price (US \$/mmbtu)
NOCs (APM)	Customer outside North East	4.2
NOCs (APM)	Customer in North East	2.52
PMT	Wtd. Avg price of PMT except RRVUNL & Torrent	5.65
PMT	RRVUNL	4.6
PMT	Torrent	4.75
Ravva	GAIL	3.5
Ravva Satellite	GAIL	4.3
Ravva Satellite	GPEC	4.75
Ravva Satellite	GSPC	5.5
Ravva Satellite	GTCL	6.22
Hazira (Niko)*	GACL/GSEG/GSPC Gas*	4.61
Olpad (NSA) (Niko)*	GGCL*	5.5
Dholka	Small Consumer	1.77
North Balol (HOEC)	GSPC	2.71
Palej (HOEC)	Small Consumer	3.5
KG-D6	All Consumers	4.2
Amguri Fields (Canero)	AGCL	2.15
Amguri Fields (Canero)	GAIL	1.29
Term R-LNG	For all	6.75
Spot-R-LNG	For all	6.75-11.7

Source: GAIL

- Rangarajan Committee recommendations on Pricing: The committee has suggested a uniform gas-pricing, at 'unbiased arms-length'. The formula of domestic gas pricing should be 12-month trailing average of volume-weighted average at well-head (on net-back basis) for gas imports and volume-weighted average of US Henry Hub, UK NBP and Japanese Crude Cocktail prices. Gas prices are expected to increase based on the suggested framework by Rangarajan committee.

It is important for the country to have a pricing regime such that it balances between factors like efficient consumption, preserving the incentives to gas suppliers, interest of price sensitive sectors such as power and fertilizer and development of natural gas infrastructure. A single benchmarked price of natural gas in India would be in the larger interest of the consumers, and also benefit the market development of natural gas in this country. A stable and rational pricing regime could help the Indian gas market in the following terms:

- Introducing new gas sources of gas in the market
- Long gestation investments based on stable price signals
- Deepening the pipeline network to expand the gas markets geographically
- Sending appropriate price signals for efficient use of gas

#### Natural Gas Pricing in the US and UK

Both the US and the UK natural gas markets are fed by domestic as well imported natural gas supplies. UK imports gas from countries like Qatar, Algeria, Egypt, Norway, US, Australia, etc. and imports are expected to be 70% of total supplies by FY20. While, the US, which is fed by domestic gas as well as imports from Canada, Middle east, Africa is expected to be self-sufficient till FY 20 because of the shale gas revolution.

The favorable regulatory environment the US and the UK has resulted in a highly liquid and transparent market for gas. The gas market in both the countries is well developed with commodity type pricing mechanism existing in these countries including spot and futures trading markets for gas.

In the UK gas is predominantly traded at the National Balancing Point and all the contracts are set around the NBP. In the US, the trading system has developed around hubs having pipeline interconnections and Henry Hub is the centre point of gas trading in the US. The national quotations for physical gas trading utilize Henry Hub as a reference point. It is also the focus for the Henry Hub futures market trading on the New York Mercantile Exchange (NYMEX).

### Pricing of coal

The price at which the various types and grades of coal were sold was controlled by the Central Government, under the provisions Colliery Control Order of 1945. Beginning March 1996, the Government gradually deregulated the price of various types and grades of coal. The pricing of coal in India was completely deregulated pursuant to the Colliery Control Order, 2000 with effect from January 1, 2000. As the sector is dominated by CIL, coal pricing is now entirely dependent on the price notified by the company. With effect from 1st January 2012 the GCV method was implemented by CIL resulting in coal being classified into 17 bands (in place of the seven grades under the UHV system) and prices were increased correspondingly for each band. These prices were expected to be 40% higher than the earlier method of UHV based pricing. However, immediately within a period of one month from the date of announcement Coal India rolled back to earlier methodology. It is pertinent to note that globally GCV based methodology is considered for coal pricing. Currently, the import prices are significantly higher than the domestic coal prices given by CIL. In addition, there is e-auction price which depends on the demand supply scenario of coal available for auction. There is a differential pricing in the coal sector on the basis of sector, as well as users in a particular sector. For e.g. CPPs get coal at a higher price than the IPPs and utilities.

Considering the limited availability of coal a framework for importing of coal has been considered - a scenario where Coal India would meet its obligations under the FSA is being positioned to be met partly by import of coal in the medium term. Under this regime a framework encompassing blending of domestic coal with imported has been envisaged. This scenario essentially considers a situation where FSA holders may be supplied by a certain portion of coal from imported sources, While, it would be impractical to physically supply imported coal to power generating companies which are at a significant distance from the ports a framework considering blending of price (domestic price with imported price) has been mooted. The mechanism as formulated by Central Electricity Authority in its strategy paper is under discussion by the Stakeholders.

### Pricing of Petroleum Products

Pricing of certain petroleum products is another key issue faced by Indian oil and gas sector Pricing of many refined products are controlled, including those which were announced to be decontrolled. Oil marketing companies are not allowed to sell products like diesel, LPG and Kerosene at market driven prices. Even for petrol, which got de-controlled in 2010, government approval is required before price revision. Most of the OMCs are currently operating under heavy burden of under recoveries and if the issue is not addressed on priority, it may lead to problems in sourcing crude, lower the refinery utilization and ultimately disrupt the hydrocarbon supply chain in the country. Also, there is a need for a transparent mechanism to be institutionalized with respect to the subsidies in the hydrocarbon sector. Though private players are present in refining, their participation in Indian fuel retailing sector is abysmally low due to subsidized product pricing. A clearer policy regarding pricing of such products is required as the subsidy burden on the government/ PSUs is ballooning and controlled pricing may also result in inefficiencies in the sector.





# Discussion Points

The most noticeable aspect of the integrated energy policy of Government of India is the focus on ensuring the transition to market economy where private companies can compete with public companies. There is a clear articulation around subsidies and pricing so that correct signal could be provided to the investors and consumers. Though the intent of the IEP has been to drive reforms through bringing in measure around transparent pricing and promoting investment, a lot of required reforms have not been undertaken till date. Market/price volatility Impact on energy security as price volatility discourages long-term investment due to the uncertainty of the long-term direction of the market and creates a barrier to providing adequate energy supply. India needs a functioning energy market, in other words, a system where national energy demand can be met by timely and adequate investment in a sustainable way and business entities operating in the energy market are commercially viable.

In the hydrocarbon sector, some regulatory issues faced by companies in the hydrocarbon sector are related to pricing mechanism, multiple pricing regimes of natural gas, subsidies in some of the petroleum products, transparency in subsidy mechanism, clarity regarding CGD bidding structure and role of the downstream regulator. India needs an attractive fiscal regime which incentivizes risk taking and promotes cost control, apart from capturing economic returns. While India's NELP rounds were able to attract investment to a certain extent, there is a need to re-look to further promote interest of foreign companies, especially in terms of ensuring sanctity of contracts and pricing of gas to incentivize the investments. Government has already commenced bidding rounds for Coal Bed Methane (CBM) license while bidding frame work for Under Ground Coal Gasification (UCG) and Shale gas are being formulated.

In the coal sector, there is a need to expedite clearance mechanism and way to resolve R&R issues, framework to allocate coal blocks on competitive basis, increasing the share of production from underground mines and enhancing the productivity of CIL. Also there is a need for institutionalizing a regulatory body in the coal sector. Energy sector requires regulatory oversight to balance consumer and producer interests, to ensure efficiency and level playing field. However, regulation should be consistent across different energy sources and across regions. Pricing continues to remain a key concern.

There have been instances to keep energy prices low, however going forward this may not be a sustainable practice. Since domestic energy prices are disconnected from the global trends, there is no signalling mechanism for active demand side management. It has been felt that low energy prices have limited benefit in terms of efficient usage.

At this crucial juncture, it is important for the Corporates, Industry experts and the policy makers to work together to create a healthy environment for the Energy sector. World Energy Council- India Energy Congress provides an opportunity for corporates, Industry experts and policy makers to work together and formulate roadmap to seek answers to regulatory, pricing and allocation related issues in the country. Some of the questions are listed below: -

- How to promote efficient allocation of various fuels and energy forms to different uses? What should be the relative prices of different forms of energy?
- How to obtain credible, independent, transparent and consistent regulatory oversight in the energy sector?
- How should Indian energy policy makers provide a level playing field to domestic private players, international players and PSUs in the energy space?
- What institutional reforms are needed to get competitive efficiency?
- How to expand domestic coal supply in a cost effective way?
- How to promote investment in coal production? How to expand production by captive mines?
- What should India do with respect to rising under recoveries of OMCs?
- What are the changes required in terms of tax structure of different fuels?

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