Report

Getting the Prices Right: Promoting environmentally acceptable fuels through fiscal measures

In Response to the Hon'ble Supreme Court Order Dated May 09, 2002

(**In the matter of W.P.(C) No.13029 of 1985; M.C. Mehta v/s UOI & others**)

July 2002

Environment Pollution (Prevention & Control) Authority
for the National Capital Region

Summary of Recommendations

EPCA's mandate

The Hon'ble Supreme Court in its order of May 09, 2002 has directed Environment Pollution (Prevention and Control) Authority (EPCA) to examine the following:

> *"Investigate the pricing of CNG as done by the IGL and give report to this court whether there is any justification for the figure of Rs 16.83 per kg. In giving this report the Bhure Lal Committee should take into consideration the price at which petrol, diesel and kerosene are sold in Delhi. It will also indicate as to what extent of subsidy or cross subsidization, if any, given by the Central Government in respect of petrol, diesel or kerosene as compared to CNG."*
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> *"Learned Amicus Curiae draws our attention to the practice, which is prevalent in some other countries to the effect that tax concessions are given in respect of CNG so as to encourage the use of said fuel in an effort to bring down pollution, a topic about which the government seems to have little concern."*
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> *"The Indraprastha Gas ltd and the Union of India shall furnish to Bhure Lal Committee any particular which are asked for by the said committee. The Bhure Lal Committee will be at liberty to take assistance from any cost accountant or any other expert in the matter."*

A. Summary recommendations: Pricing of CNG in Delhi

1. Auditors' report: The cost accountants consulted by the EPCA from the Institute of Public Auditors of India have examined the cost data provided by the IGL and have made the following observations:

a. Need for rationalisation of costs and detailed scrutiny.

b. IGL should scrutinise its expenditure to bring in more efficiency and further reduction in operating costs and fixed costs. In particular, IGL must work to economise its expenditure on administration, salaries and repairs and maintenance.

c. Cost implication of the agreements with respect to annual maintenance would need review, as in the current agreements the savings cannot be quantified.

The Auditor's report therefore emphasises on the scope of further improvement in operational efficiency of the company.

2. No one can contest that all efforts should be made to improve the efficiency of the operations. However, in a fixed cost of Rs 4.91 a 10 per cent improvement in efficiency would save about 50 paise per kg of gas. At the same time in such operations real efficiency can be achieved only after the operations have stabilized.

3. IGL has justified the price hike from Rs 13.11 to Rs 16.83 arguing that sales revenue would not increase adequately to cover up increased costs of operation and infrastructure development. But it could be argued that the target of 16.1 lakh kg per day dispensing capacity has been mandated by the Hon'ble Supreme Court in its order of April 5, 2002 based on the projection made by the Ministry of Petroleum and Natural Gas in their earlier affidavit of April 24, 2001. Since this is the expected level of demand even a marginal increase in actual sales would improve revenue and obviate pressure for price hike. For instance, calculations at 40 per cent capacity utilization – a little over 37 per cent as anticipated by IGL in 2003-04 can increase profits to Rs 28.82 crores as against Rs 19.25 crore at 37 percent utilization. Return on equity on a net worth basis will increase to 14.53 per cent as against 9.7 per cent. Therefore, optimised utilisation of infrastructure, better capital planning and increased sales should be the focus.

EPCA would like to point out that the unique feature of the Delhi CNG market is that it is a Court mandated market and conversion of 10,000 buses to CNG is mandatory. More cars and autos are also expected to switch over to CNG in the years to come especially if the government comes up with appropriate incentives for such conversion in the interest of the environment. The gas should be made available and for this necessary infrastructure should be provided for convenient filling of vehicles. Already, there are over 60,000 vehicles on the road. With varying needs, these vehicles, as per IGL's own estimates need over 7 lakh kg of gas per day in July 2002. IGL is able to sell only 4.5 lakh kg per day.

In fact, IGL had commissioned ORG-Marg to do a demand survey which states, "the market survey report further suggests that the requirements of CNG shall increase manifold from the current requirements by March 2002, for which IGL has to gear up in terms of filling stations." IGL has also pointed out correctly, that to increase consumer confidence, "an awareness needs to be created among consumers in terms of consistent availability of CNG so as to avoid long unending queues and panic."

Therefore, in EPCA's view better sales and efficiency in operations in future should help in keeping further price increase in check.

4. Need for higher return on equity is yet another justification given by IGL. In its affidavit to the Hon'ble Supreme Court, IGL has claimed that its return on equity is 10 per cent. The estimates provided by IGL to EPCA, calculated on a net worth basis, which as explained later is not the normal practice in a new company, the returns on equity work out to be 14 per cent, in its fourth year of operation, at an estimated sales. In the following year 2003-04, returns are lower, only because of the projected low sales. As mentioned earlier increased in sales in future could provide opportunities to reduce the price of gas to consumers.

5. Towards this objective, it is important for government to recognize the developmental imperative of IGL and that investments in creating a gas infrastructure will earn long term gains – both in terms of high returns as well as high developmental, economic and societal rates of return. Therefore, appropriate fiscal policies and the use of economic instruments are needed to support this objective.

Given that the excise duty itself is as much as 14 per cent of the total price that the consumer pays. If any cost hike was necessary, the first effort should have been to do a fiscal correction, by adjusting the excise duty. This use of this economic instrument is a key to ensuring that the price of an environment "good" product, is kept below that of an environmental "bad" product, which it seeks to replace.

Therefore, EPCA would recommend that the government should provide a tax break on CNG for a certain period of time and subsequently, maintain an effective differential vis a vis other conventional fuels. The excise duty, which has been increased from 8 per cent to 16 per cent should be totally waived. This will not affect revenue generation of the government from this small niche market to any appreciable level. But this will amount to a decrease in the price of CNG by Rs. 2.32 per kg. This move should be subsequently supported by a favourable taxation policy. This should be further complimented with vehicles based incentive programmes.

6. The more serious problem is that the project has been conceived under tremendous time pressures, without adequate political and government support. Therefore, IGL has never been able to carefully plan and execute its business. Keeping the reality of the Delhi CNG market, the capacity expansion should have been properly planned and the infrastructure development to increase capacity should have been in line with the anticipated increase in demand and the addition of equipment should have been designed to speed up the gas filling capacity with suitable compressors and appropriate dispensers. As of date supply is chasing demand. It is important for IGL to now take stock of its opportunities and plan carefully to ensure that it is able to dispense gas to the growing market in Delhi. This is critical for the implementation of the CNG project in Delhi.

7.From the above EPCA concludes that there is scope for improvement both in terms of increased sale and in improving operational efficiencies to keep the price stable in the future. If the cost of present investments had to be cushioned then the government should have intervened with tax incentives and low interest loan package for IGL. As mentioned above, a major component of the price is excise duty. In addition to this, the interest burden as evident from the cost details provided by IGL is expected to increase substantially in the coming years: from 3 per cent of the expenditure to roughly 11 per cent of the expenditure by 2003-04. If IGL has recourse to low cost funding from Oil Industry Development Board (OIDB), under the Ministry of Petroleum and Natural Gas, it will substantially reduce the financial costs and obviate pressure to increase prices. In addition to this the government should implement tax break, phase in differential taxation and provide other tax incentives to IGL to make CNG more competitive with fuels it is replacing like diesel.

B. Fiscal policy for promoting environmentally acceptable fuels

1. It is clear from the review of the fuel taxation policies around the world that "favourable" taxation is an important instrument to maintain the price differential to encourage environmentally acceptable fuels. EPCA recommends that the Indian government must also frame a fiscal policy to allow for higher price competitiveness for environmentally acceptable fuels with competing conventional fuels.

2. In the context of Delhi and other critically polluted cities of India it is important to remember that CNG will directly compete with diesel more than petrol. As a result, the taxation policy should be designed in a manner that an appropriate and effective price differential is maintained with diesel. Therefore, in order to address the CNG taxation it is also important to address diesel taxation. In Delhi today the percentage difference between petrol and CNG prices is as high as 42 per cent in contrast to a meagre difference of 6 per cent between diesel and CNG. While tax on CNG should be lowered, tax on city diesel should be increased simultaneously.

3. It must be noted that the government is already using fiscal measures, such as tax adjustment in the excise duty, to manage the volatility in the diesel and petrol prices. For instance, given the high current prices of diesel and petrol, it has reduced the excise duty from 16 per cent to 14 per cent on diesel and 32 percent to 30 percent on petrol, to reduce the burden on the consumers.

EPCA would recommend that the government should also provide a tax break on CNG for a certain period of time. Amount of gas that is coming in for transport and city distribution is a very small fraction of the total gas market in the country – less than 2 per cent. The excise duty, which has been increased from 8 per cent to 16 percent, will earn a mere Rs 42 crore from the Delhi CNG market during 2002-2003 and can therefore be waived off till the time the market is established. This will not affect revenue generation of the government to any appreciable level. But this will amount to a decrease in the price of CNG by Rs. 2.32 per kg. Subsequently, differential taxation should be phased in. This should be further complimented with vehicle based incentive programmes as already directed by the Honorable Supreme Court.

5. The government is already poised towards deregulating the gas prices and gas sector reforms. But such moves will have to be examined carefully in the context of CNG as an autofuel. It is not within the purview of our report to look into these issues though we understand that there is need for an appropriate fiscal instrument that will enable natural gas and CNG to remain competitive in a market driven scenario. It is important that the government reviews the gas pricing system, status of gas sector reforms and practices in other countries to implement favourable taxation policy to promote environmentally acceptable fuels.

6. EPCA has noted, however, that with deregulation and reforms underway, there is little elaboration of the issue of CNG as an autofuel in official policies. The current focus of the pricing system is on industrial and power uses of gas, where it is competing with fuel oil and naphtha. But there is no discussion on policy intervention needed to make CNG competitive vis a vis its competing fuels especially when price deregulation happens. If pricing and market reforms are not synchronized with appropriate regulatory support it may lead to steep escalation in gas prices after deregulation and may make it difficult to sustain favourable taxation policy especially vis a vis competing fuels like diesel that are likely to remain cheaper. This requires immediate scrutiny.

7. The government must urgently formulate a policy for CNG and other environmental acceptable fuels for the transportation sector. The issue is not the price *per se*, but the comparative price of the fuel it is replacing. In the deregulated scenario if the price of diesel keeps fluctuating and remains too close or even lower than CNG it will have a negative impact on the CNG programme. Therefore, the government must urgently

formulate a policy to promote environmentally acceptable fuels like CNG by using economic instruments to maintain the critical differential between clean and dirty fuels.

Hon'ble Supreme Court directions: promoting environmentally acceptable fuels through fiscal measures

A. The Hon'ble Supreme Court in its order of May 9, 2002 has directed Environment Pollution (Prevention and Control) Authority (EPCA) to examine the following:

> *"Investigate the pricing of CNG as done by the IGL and give report to this court whether there is any justification for the figure of Rs 16.83 per kg. In giving this report the Bhure Lal Committee should take into consideration the price at which petrol, diesel and kerosene are sold in Delhi. It will also indicate as to what extent of subsidy or cross subsidization, if any, given by the Central Government in respect of petrol, diesel or kerosene as compared to CNG."*
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The Hon'ble Supreme Court order of May 9, 2002 had examined the issues of the price hike by the CNG provider to Delhi, Indraprastha Gas Limited (IGL). Its directions were based on the affidavit filed by IGL, which indicated as follows:

Cost of natural gas:	Rs 5.41 per kg
Fixed operating cost:	Rs 4.70 per kg
Other cost (variable operating cost, return on equity@10% etc)	Rs 6.72 per kg
Total	Rs 16.83 per kg

On this basis the Hon'ble Supreme Court had directed EPCA to "investigate the pricing of CNG as done by IGL", to examine the following issues:

- What, if any, is the justification for IGL to charge Rs 16.83 per kg of gas?
- Indicate the extent of subsidy or cross-subsidisation, if any, given by the Central government in respect of petrol, diesel or kerosene as compared to CNG; and,
- What is the practice prevalent in some countries for tax concessions given in respect of CNG to encourage the use of the said fuel in an effort to bring down pollution?

The process followed

During the process of our investigation we have consulted the concerned agencies and sought both oral and written submissions on issues under consideration. The agencies and institutions, which have made representations include:

- Ministry of Petroleum and Natural Gas (MoPNG)
- Gas Authority of India Ltd (GAIL)
- Indraprastha Gas Ltd (IGL)
- Oil and Natural Gas Corporation Ltd (ONGCC)
- Petronet LNG Limited
- Ministry of Environment and Forests (MoEF)

As per the Hon'ble Court's direction we have also consulted cost accounts, through the Institute of Public Auditors of India to analyze the cost details of IGL. The findings of their report are included in this report and details are appended.

We have summarized the key highlights of the written submission received by EPCA, which is appended as annexure. (Annexure 1)

A. Pricing of CNG in Delhi

The IGL has made representations to the EPCA on the necessity for the price hike. According to IGL estimates, the price hike was done because of increased costs of infrastructure and overheads. In the various scenarios presented to EPCA, IGL has claimed that without the price increase, it would have incurred a loss of Rs 15.39 crore in the financial year 2002-03 going up to Rs 40.21 in the financial year 2003-04 in the "realistic scenario[i] (see table 1). The optimistic scenario losses – as sales increase slowly – are marginally less, claims IGL. For purposes of examination, we have considered the realistic scenario, which in any case, is IGL's preferred option.[ii]

Table 1: Justification of price hike by IGL: If price remained at Rs 13.11 per kg it would incur losses each year

Particulars	**2001-02 cost sheet (provisional figures)**	**2002-03 cost sheet** (realistic scenario)	**2003-04 cost sheet** (realistic scenario)
Revenue			
Avg daily sale of CNG In lakh kg per day	2.67	5.01	6.04
Avg price of CNG Rs/kg	12.31	13.11	13.11
Revenue earned (Rs/crore)	119.91	239.92[iii]	289.02
Expenditure	Rs/crore	Rs/crore	Rs/crore
Excise duty of basic price	9.89	33.09	39.85

Gas purchase cost @Rs 5.41 per kg	51.05	99.01	119.23
Variable cost	9.73	20.76	25.19
Fixed cost	32.80	77.83	108.14
Interest charges	3.60	24.62	36.72
Total cost	107.07	264.16	329.13
Provision for tax	4.68	---	
Profit	8.16	- (15.39)	-(40.11)
ROE	5.30%	---	

Source: P S Bhargava 2002, director, Commercial Reply to chairman EPCA on CNG price, June 6

As per the estimates it has provided to EPCA it has calculated that with increase in price to Rs 16.83/Kg it makes a profit of Rs 25.16 crore in 2002-03 and Rs 19.25 crore in 2003-04. The return on equity is 17.9 per cent in 2002-03 and 13.75 per cent in 2003-04. But if the calculation for return on equity is done on the basis of net worth – therefore, the surpluses and reserves are included – then the return on equity is less, 14 per cent in 2002-03 and 9.7 per cent in 2003-04.

The difference between the realistic and optimistic scenario is the total sale of CNG expected. IGL has calculated in 2002-03 on the basis of sale of 5.01 lakh kg per day in realistic scenario and 5.53 in optimistic scenario. For 2003-04, realistic sales are 6.04 lakh kg per day and in optimistic 7.17 lakh kg per day.

Table 2: Justification for the revised prices: operating expenses and profits incurred

Particulars	**2001-02**[1] Cost sheet (provisional figures)	**2002-03**[2] Cost sheet (projected)	**2003-04**[2] Cost sheet (projected)
Average daily sale of CNG In lakh kg per day	2.67	5.01	6.04
Average price of CNG Rs/kg	12.31	16.61	16.83
Revenue (Rs/crore)	119.91	303.95	370.9
	Rs/crores	Rs/crores	Rs/crores
Excise duty[1,2]	9.89[3]	41.92[4]	51.16
Gas purchase price @ Rs. 5.41 per kg	51.05	99.01	119.23
Variable cost	9.73	20.76	25.19
Fixed cost	32.80	77.83	108.14
Interest charges	3.60	24.62	36.72
Total cost	107.07	264.14	340.44
Profit before tax	12.84	39.81	30.46
Provision for tax @ 36.8% of the profit before tax	4.68	14.65	11.21

Net profit	**8.16**	**25.16**	**19.25**
Net worth (Equity @ 140 Crores + reserves & surplus)	153.94 Crore	179.71 Crore	198.45 Crores
ROE (return on equity – PAT/equity)[5]	5.83%	17.97 %	13.75%
ROE (PAT/net worth) [6]	5.30%	14.00 %	9.70%
ROI (return on investment) [7]	5.8%	9.70 %	10.70%

Source: 1. P S Bhargava 2002, director, Commercial Reply to chairman EPCA on CNG price, June 6
2. P S Bhargava 2002, director, Commercial Reply to chairman EPCA on CNG price, June 26
Note: 1. Difference because of price – 13.11/kg till April 27 and Rs 16.83/kg for rest of year taken for calculation.
2. Taken at 16 per cent.
3. At base price of Rs 11.30.
4. At base price of Rs 14.51.
5. Return on equity: profit after tax/equity
6. Return on equity on net worth basis: profit after tax/net worth
7. Return on investment: profit after tax+interest/cost of project

A.1 Findings of the Auditors' report

As per the Honb'le Court's direction we have consulted a cost accounts, through the Institute of Public Auditors of India to analyse the cost details of IGL. The Auditor's were requested to verify the details of pricing of CNG as shown in the cost sheets provided by IGL. (Annexure 2: Report from the Institute of Public Auditors of India is appended).

After analyzing the cost data provided by the IGL, the Institute of Public Auditors of India has made the following observations:

- There is a need for rationalisation of costs in many areas, as indicated in the report;
- There is need for detailed scrutiny of cost;
- The cost implication of the annual maintenance agreements needs a review, as in the current agreements savings cannot be quantified.

The Auditor's report therefore points to and emphasizes on the possibility of further scope of improvement in operational efficiency of the company.

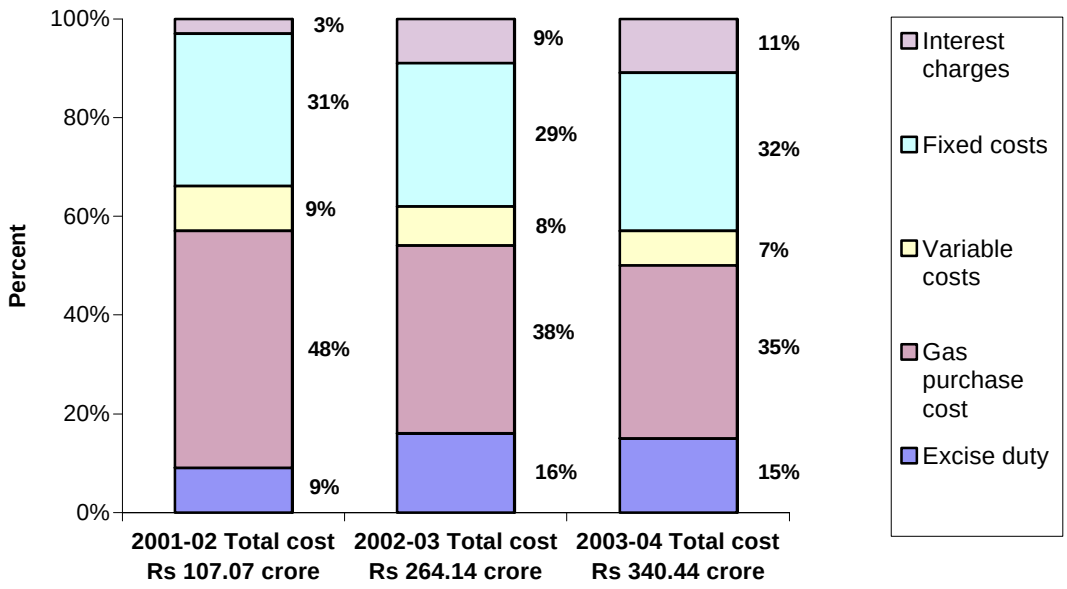
A.2 Review of cost components by EPCA

The analysis of trend in cost escalation shows that the increase in the cost components is primarily the result of:

a. Excise: increased by Central government from 8 per cent to 16 per cent in February 2002;

b. Fixed cost: is a major component of the gas price. It has to be noted that the fixed cost as a proportion of the total expenditure remains stagnant – at roughly 30 per cent of expenditure over the current and following year, even though in all comparable companies, with increased sales, the proportion of fixed cost to total expenditure should go down, increasing profitability. No one can contest that all efforts should be made to improve the efficiency of the operations. In a fixed cost of Rs 4.91 even a 10 per cent improvement in efficiency would save about 50 paise per kg of gas. At the same time in such operations real efficiency can be achieved only after the operations have stabilized.
c. Interest charges: Use of loans from Oil Industry Development Board and commercial rates is increasing the interest liability of the company.

Graph 1: IGL's cost components in percentage to the total cost



Source: 1. P S Bhargava 2002, director, Commercial Reply to chairman EPCA on CNG price, June 6
2. P S Bhargava 2002, director, Commercial Reply to chairman EPCA on CNG price, June 26

Table 3: Fixed cost to total expenditure over the years (Rs/Crore)

Fixed Cost	2001-02	2002-03	2003-04
Repairs and maintenance	5.11	18.32	28.33
Insurance premium	0.42	2.02	2.50
LCV Hire charges (fixed part)	2.27	2.79	3.49
Rent & land renewal charges	3.76	4.12	4.77
Salaries and wages	4.6	7.65	9.15
Other admin expenses	5.98	13.00	14.95

Depreciation	10.66	29.92	44.96
Total Fixed Costs	32.8	77.83	108.14

Source: 1. P S Bhargava 2002, director, Commercial Reply to chairman EPCA on CNG price, June 6
2. P S Bhargava 2002, director, Commercial Reply to chairman EPCA on CNG price, June 26

In view of this the cost accountants consulted by EPCA observed that in many cost items examined, the costs needed rationalisation and further scrutiny.

A.3 Interest burden

However, we would like to make one observation regarding the high interest rate. It can be seen from the table that the interest burden on IGL is expected to increase substantially in the coming years: from 3 per cent of the expenditure to roughly 11 per cent of the expenditure by 2003-04.

IGL has got the loan from the Oil Industry Development Board (OIDB), under the Ministry of Petroleum and Natural Gas. As of June 2000, the OIDB, has reduced the interest rate from 12 per cent per annum to 11.25 per cent per annum. IGL has asked OIDB for a lower interest rate but its response is still awaited[iv]. This is an important consideration. If IGL is treated as an infrastructure project for meeting the social, environmental and development needs of a critically polluted city like Delhi, it could be given loans on lower interest rates, which would help to bring down its interest burden.

The Cost Accountants from the Institute of Public Auditors of India observed in their report, “OIDB is funding exploration projects at interest rate of 5 per cent to 10 per cent. If IGL has recourse to such low cost funding from OIDB, it will substantially reduce the interest costs. For example, if IGL can get all its funding requirements from OIDB at 5 per cent interest, it will reduce the cost reduction by roughly Rs 0.80 per kg.”

Table 4: Increase in interest burden of IGL

	2001-02	**2002-03**	**2003-04**
Rs/Crore	3.6	24.62	36.72
Percentage of Expenditure	3 per cent	9 percent	11 percent

Source: 1. P S Bhargava 2002, director, Commercial Reply to chairman EPCA on CNG price, June 6
2. P S Bhargava 2002, director, Commercial Reply to chairman EPCA on CNG price, June 26

Table 5: The loan withdrawal schedule of IGL:

	Date	**Amount withdrawn (Rs in crore)**	**Amount to be withdrawn (Rs in crore)**
1.	As of March 31, 2002	57.00	
2.	From April-June 2002	6.00	
3.	July-Sept 2002		160.00
4.	Oct-Dec 2002		70.00
5.	Jan-March 2003		57.00
		63.00	**287.00**

Source: P S Bhargava 2002, director, Commercial Reply to chairman EPCA on CNG price, June 26

A.4 Debt verses equity: is IGL's financial health in question?

As of March 2002, IGL has made investments of Rs 197 crore. Of which, Rs 140 crore is equity and Rs 57 crore is debt (loan). In the coming financial year, IGL is planning to increase its loan withdrawal by Rs 293 crore and therefore, by the end of the year, it will have a total loan burden of Rs 350 crore, verses equity of Rs 140 crore. (Table 6).

Table 6: The shareholders with their holdings and investment are:

Shareholders	**Equity**	**Investment**
GAIL	22.5%	31.50 crore
BPCL	22.5%	31.50 crore
IDFC	20.0%	28.00 crore
IL&FS	20.0%	28.00 crore
UTI	10.0%	14.00 crore
Delhi government	5.0%	07.00 crore
Total		**140 crore**

Source: IGL 2002, presentation to EPCA, CNG price in Delhi, June 22, *mimeo*
Note: As of date IGL has 6 shareholders with Rs 140 crore equity invested in the company.

In its clarification, IGL has said that debt is a cheaper option due to income tax deduction on the interest paid on debt. 10% return on equity (post tax) would be equivalent to 15.82 % return on equity (pre tax). This would be costlier than cost of debt (11.25%). The public sector companies like GAIL or BPCL hold 45 per cent of the shares.

If the company is healthy and is planning such huge investments, increasing its interest burdens and liability why is it then making such a pessimistic projection of sales?

A.5 Revenue from sales: an underestimate

EPCA would like to make certain observations that have emerged from the broad analysis of the cost details provided by the IGL. IGL is mandated by the Honorable Supreme Court to set up a dispensing capacity of 16.1 lakh kg per day in order to meet the estimated demand of the 10,000 strong bus fleet is implemented along with estimated number of other vehicles. This was estimated by the Ministry of Petroleum and Natural Gas in its affidavit to the Supreme Court on April 24, 2001, which stated:

> *"The initial allocation of 0.15 million standard cubic meter per day of gas only was made to IGL whereas the total requirement by August 2001 is estimated to be around 0.52 MMSCMD. In case the trend of conversion of private vehicles also to CNG continues, the total requirement of CNG by June 2002 may be as high as 2 MMSCMD per day. To be able to met this demand, the gas allocation for CNG supply in Delhi will have to be increased by over 12 times from original allocation."*

On that basis the Supreme Court while upholding its original order of moving the entire bus fleet to CNG gave this direction on April 5, 2002. The investment plan of IGL is therefore, geared towards achieving this dispensing target of 16.1 lakh kg per day by June 2003.

In this regard we would like to make the following observations:

In contrast to the demand projection of MoPNG, which is the basis of the Supreme Court order, IGL does not expect the sales to increase to that extent. For example, the difference between the realistic and optimistic scenario for the years 2002-03 and 2003-04 is the total sale of CNG expected. IGL has calculated costs for the year 2002-03 on the basis of sale of 5.01 lakh kg per day in realistic scenario and 5.53 in optimistic scenario. For 2003-04, realistic sales are 6.04 lakh kg per day and in optimistically 7.17 lakh kg per day.

The explanation given by IGL is that they have calculated sales on the basis of the low induction of buses in the months of May and June at the rate of 300 buses per month. They believe that they cannot even reach the optimistic scenarios projected by them because of low sale of gas.[v] IGL states that the reason for depressed demand is on account of the following:

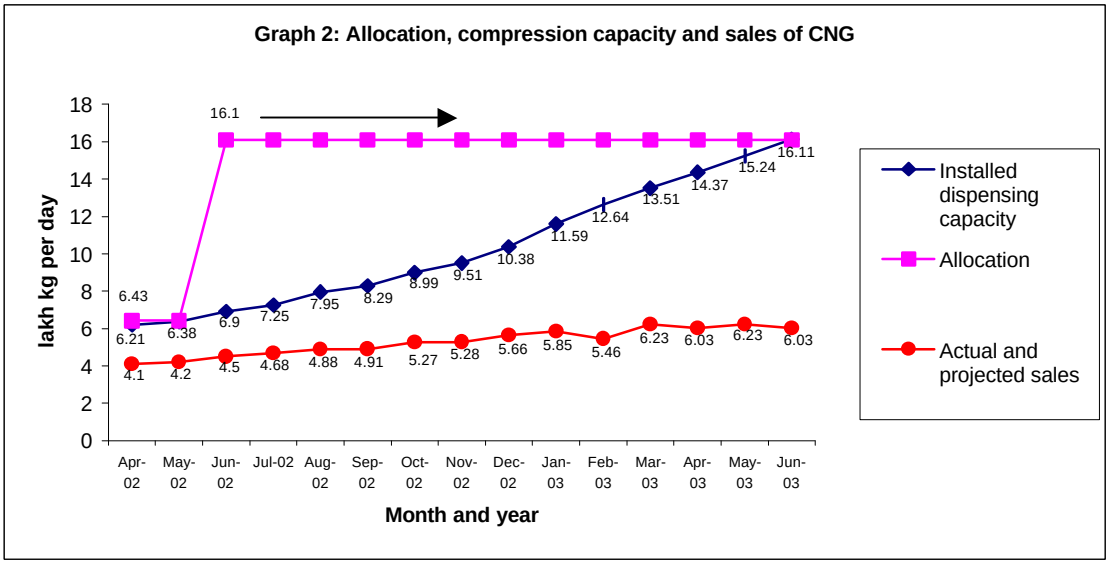
- Shorter lead for obtaining CNG filling with wider spread and increased number of stations (currently dead mileage is 18-20 km per day for buses);
- Lower distance of travel per bus with increased number of buses;
- Impact of commissioning of first phase of metro railway;
- Increased number of RTVs would affect number of full buses in operation."

It does not expect the 10,000 buses mandated by the court to be on the roads and so its expected sales is below what is required to meet the needs of the city's bus fleet of 10,000 (as ordered by the court) in June 2003. IGL in its presentation to the EPCA in July 2001, estimated that at a level of 70 kg per bus per day demand from only 10,000 buses will be 7 lakh kg per day. As of June 2002, IGL was already selling 4.5 lakh kg per day. By end of the year it projects to increase sale to only 6.03 lakh kg per day as against the increased dispensing capacity to 13.51 lakh kg per day planned. Already, there are over 60,000 vehicles on the road. With varying needs, these vehicles, as per IGL's estimates would need over 7 lakh kg of gas per day by July 2002. But IGL is able to sell only 4.5 lakh kg per day. The gap is not because of a lack of demand, but a lack of efficient supply.

IGL had commissioned ORG-Marg to do a demand survey it stated, "the market survey report further suggests that the requirements of CNG shall increase manifold from the current requirements by March 2002, for which IGL has to gear up in terms of filling stations." IGL has also pointed out correctly, that to increase consumer confidence, "an awareness needs to be created among consumers in terms of consistent availability of CNG so as to avoid long unending queues and panic."[vi]

IGL needs to focus on an aggressive sales strategy to realize the full potential of the demand in the future. One expects that better sales and efficiency in operations in future should help in keeping further price increase in check.

A.6 Increasing gap between dispensing capacity and sales increasing



Source: IGL affidavit of May 2002, and letter to EPCA

The gap between installed dispensing capacity and actual sales is increasing over time. As of June 2002, the current capacity utilisation is 65 per cent as per IGL itself. Therefore, instead of increasing utilisation, by June 2003, IGL will be utilising only 37 per cent of the installed capacity as per their sales projection presented to EPCA for estimation of their profits and losses.

It could be argued by some that low capacity utilisation is the norm in such an industry. In which case, profits would result from increasing sales and building an infrastructure capable of efficient delivery.

Table 7: Impact of increase in of CNG sale in the revenue generation– 2002-03
**Average sale figures projected for the FY 2002-03 by IGL (realistic projections)*
*** Average sale figures projected for the FY 2002-03 by IGL (Optimistic projections)*

Avg Daily Sales (lakh kg per day)	**5.01***	**5.02**	**5.11**	**5.21**	**5.30**	**5.39**	**5.48**	**5.53****	**5.57**
Revenue in Rs/Cr	303.6	304.3	309.8	315.9	321.5	327.0	332.6	335.65	338.1
Excise duty	41.9	42.0	42.7	43.6	44.3	45.1	45.9	46.30	46.6
Provision for tax	14.6	14.8	15.8	16.9	17.9	18.9	20.0	20.61	21.0
Profit after tax	25.1	25.4	27.1	29.0	30.7	32.5	34.3	35.40	36.1

Source: Computed on the basis of data provided by IGL in its reply to Chairman, EPCA, dated june 6 and July 26.

Table 8: Impact of increase in sale of CNG in the revenue generation – 2003-04
 # Average sale figures projected for the FY 2003-04 by IGL (realistic projections)
Average sale figures projected for the FY 2003-04 by IGL (Optimistic projections)

Avg Daily Sales (lakh kg per day)	**6.04#**	**6.20**	**6.36**	**6.52**	**6.68**	**6.85**	**7.01**	**7.17##**	**7.33**
Revenue Rs/Cr	370.8	380.9	390.7	400.5	410.3	420.8	430.6	440.42	450.3
Excise duty	51.1	52.5	53.9	55.2	56.6	58.0	59.4	60.75	62.1
Provision for tax	11.2	13.1	14.9	16.8	18.6	20.6	22.5	24.3	26.1
Profit after tax	19.3	22.5	25.7	28.8	32.0	35.4	38.6	41.7	44.9

Source: Computed on the basis of data provided by IGL in its reply to Chairman, EPCA, dated June 6 and July 26.

A.7 The cost of poor planning

The more serious problem is that the project has been conceived under tremendous time pressures, without adequate political and government support. Therefore, IGL has never been able to carefully plan and execute its business. Keeping the reality of the Delhi CNG market, the capacity expansion should have been properly planned and the infrastructure development to increase capacity should have been in line with the anticipated increase in demand and the addition of equipment should have been designed to speed up the gas filling capacity with suitable compressors and appropriate dispensers. This issue is critical for the future development. It is important for IGL to now take stock of its opportunities and plan carefully to ensure that it is able to dispense gas to the growing market in Delhi. Otherwise, EPCA fears, that consumer will have to pay for inefficient planning.

Queues because of poor compression capacity: It could be argued that the queues are because of the low pressure at the pumps and the poor infrastructure so that there are only a few high compressors in the city. And, that these pumps are concentrated in a few parts of the city.

As of March 2002, IGL had 94 stations, of which as many as 29 stations were daughter stations -- as much as 30 per cent of the total stations. But as per the data provided by IGL itself, these 30 per cent of the stations, sold only 6 per cent of the total gas sales in 2001-02. This is dead investment and part of the infrastructure problem of IGL.

By March 31, 2002, IGL had a total of 26 daughter booster stations, 28 per cent of its infrastructure. But sales of daughter booster in 2001-02, were a mere 8.5 per cent. ***Therefore, roughly, 60 per cent of IGL's built infrastructure sold a mere 14.5 per cent of its gas.*** Clearly, this speaks of the problem.[vii] [viii]

Moreover, in the 55 odd compressors, installed by March 2002, IGL had invested Rs 65 crore, roughly 32 per cent of its total investment of Rs 203 crore.[ix] Most of the compressors are in the daughter booster stations are on wet lease selling only 8.5 p4er cent. But the compressors in the mother and online stations, 32 per cent of its investment is earning 85 per cent of its revenue.

Table 9: Built infrastructure and gas sales: March 31, 2002

S No	Stations	Number[1]	% of stations	% of total gas sold in 2001-02[2]
1.	DTC mother stations	9	9.6	23.5
2.	Mother stations	17	18.0	44.4
3.	Online stations	13	13.8	17.0
4.	Daughter booster	26	27.7	8.5
5.	Daughter	29	31.0	6.1
	Total	**94**		

1. IGL 2002, CNG price, letter to the chairman, EPCA, dated June 26, *mimeo*
2. IGL 2002, presentation to EPCA, CNG price in Delhi, June 22, *mimeo*; p.7.

In view of this EPCA would like to point out that there is scope of improvement in operational efficiency and investment planning.

A.8 "Reasonable profits"

In its affidavit to the Honorable Supreme Court, IGL has states that its return on equity is at the rate of 10 per cent. But in its justification for the price hike to EPCA, IGL has stated a return on equity of 14 per cent calculated on the basis of net worth in 2002-03 – its fourth year of operation. It has argued that without this return, it will not have adequate funds for investment and expansion.

But on inquiry we have found this is a high rate of return for a new infrastructure based company. IGL has been breaking even – and making profits – from its very first year of operation. It will be wrong to compare IGL with commercially established giants including Bharat Petroleum Corporation Ltd, Indian Oil Corporation Ltd, Bajaj Auto Ltd as has been done in the presentations made to EPCA[x]. Projects like IGL are infrastructure projects and shareholders see the advantage over the long term.

In a related business of electricity distribution, it has been accepted by law that a reasonable rate of return would be calculated at the rate of 5 per cent above the existing Reserve Bank of India (RBI) rates. The principle is that returns must be linked to the cost of money. The current RBI rates are 6.5 per cent and this would mean a rate of return of 11.5 per cent would be considered good. It must be noted that even though IGL is a commercial venture and it should be profitable, it's purpose is also developmental.

As in Metrorail yet another city infrastructure project, being built for society and developmental purposes with a strong environmental advantage has long gestation period. Metrorail's planned financial rate of return is 7.4 per cent in the year 2006. Metrorail will begin to go operational in 2003, but the first return is expected in 2006.

It is well established in business practice and accounting norms that the profits made during the implementation phase are used to reduce the cost of the project and not to give higher returns to shareholders. IGL states that in the current year the returns must be computed on the net worth and not on equity. If surplus and reserves are added to the equity the return to the shareholders will work out to be higher.

A.9 High taxes and duties

Taxes, duties and profit to IGL add up to 24 per cent of the final consumer price of CNG. The excise duty charged by the government is almost 14 per cent of the price paid by consumers. This provides the opportunity for fiscal correction so that CNG can replace a dirty fuel in the transport sector. (This issue has been dealt with in greater detail in the second part of the report on the proposal for favourable taxation to encourage environmentally fuels like CNG).

Table 10: Gas pricing, tax and excise components along the gas supply chain: 2002-03 (Projected)

Sl. No		Sale price (Rs/Kg)	Percentage of price paid by consumer
1.	**Natural gas ceiling price**	**3.05**	18.12
	Gujarat Tax	0.11	0.65
	Royalty	0.23	1.37
	Transportation costs (HBJ)	1.45	8.62
	Additional transportation costs	0.57	3.39
2.	**GAIL sells to IGL**	**5.41**	
	Excise duty	2.32	13.78
	Total variable cost	1.14	6.77
	Total fixed cost	4.91	29.17
	Interest	1.67	9.92
	Provision for tax	0.51	3.03
	Margin	0.87	5.17
3.	**IGL sells CNG to consumers**	**16.83**	

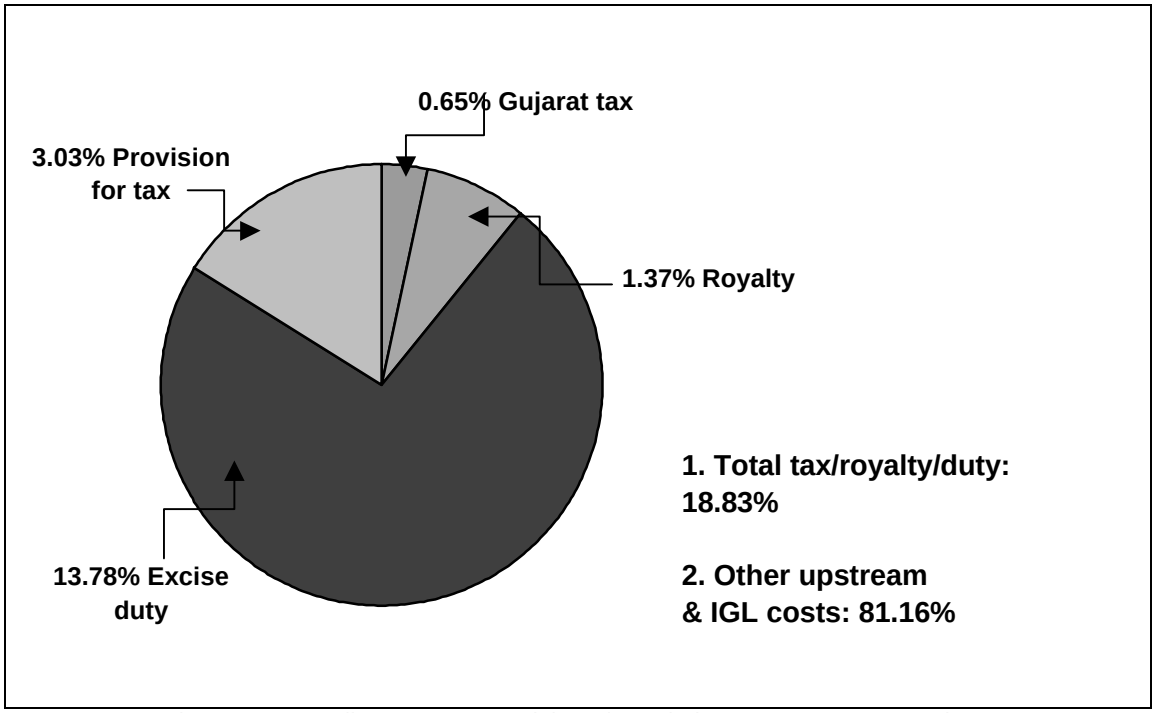
Source: 1. P S Bhargava 2002, director, Commercial Reply to chairman EPCA on CNG price, June 6
2. P S Bhargava 2002, director, Commercial Reply to chairman EPCA on CNG price, June 26
3. J S Sekhon 2002, DGM-Head, Planning & Projects, ONGC, Reply to Chairman, EPCA, June 6.
4. J K Jain 2002, Director, Finance, GAIL, Reply to Chairman, EPCA, June 6.
Note: Conversion factor: 1 kg of CNG = 1.26 SCM

Table 11: Gas production, transportation, delivery costs and taxes and margins as a percentage of total consumer price

	Component	**Per cent of consumer price**
1	Taxes/duties/margins	24.00
2.	Gas production (purchase price)	18.12
3.	Gas transportation	12.01
4.	Gas delivery operational costs	45.76

Source: 1. P S Bhargava 2002, director, Commercial Reply to chairman EPCA on CNG price, June 6
2. P S Bhargava 2002, director, Commercial Reply to chairman EPCA on CNG price, June 26
3. J S Sekhon 2002, DGM-Head, Planning & Projects, ONGC, Reply to Chairman, EPCA, June 6.
4. J K Jain 2002, Director, Finance, GAIL, Reply to Chairman, EPCA, June 6.

Graph 3: Components of taxes, duties and royalty in the present CNG price



Source: 1. P S Bhargava 2002, director, Commercial Reply to chairman EPCA on CNG price, June 6
2. P S Bhargava 2002, director, Commercial Reply to chairman EPCA on CNG price, June 26
3. J S Sekhon 2002, DGM-Head, Planning & Projects, ONGC, Reply to Chairman, EPCA, June 6.
4. J K Jain 2002, Director, Finance, GAIL, Reply to Chairman, EPCA, June 6.

A.10 Summary and recommendations

1. Auditors' report: The cost accountants consulted by the EPCA from the Institute of Public Auditors of India have examined the cost data provided by the IGL and have made the following observations:

a. Need for rationalisation of costs and detailed scrutiny.

b. IGL should scrutinise its expenditure to bring in more efficiency and further reduction in operating costs and fixed costs. In particular, IGL must work to economise its expenditure on administration, salaries and repairs and maintenance.

c. Cost implication of the agreements with respect to annual maintenance would need review, as in the current agreements the savings cannot be quantified.

The Auditor's report therefore emphasises on the scope of further improvement in operational efficiency of the company.

2. No one can contest that all efforts should be made to improve the efficiency of the operations. However, in a fixed cost of Rs 4.91 a 10 per cent improvement in efficiency would save about 50 paise per kg of gas. At the same time in such operations real efficiency can be achieved only after the operations have stabilized.

3. IGL has justified the price hike from Rs 13.11 to Rs 16.83 arguing that sales revenue would not increase adequately to cover up increased costs of operation and infrastructure development. But it could be argued that the target of 16.1 lakh kg per day dispensing capacity has been mandated by the Hon'ble Supreme Court in its order of April 5, 2002 based on the projection made by the Ministry of Petroleum and Natural Gas in their earlier affidavit of April 24, 2001. Since this is the expected level of demand even a marginal increase in actual sales would improve revenue and obviate pressure for price hike. For instance, calculations at 40 per cent capacity utilization – a little over 37 per cent as anticipated by IGL in 2003-04 can increase profits to Rs 28.82 crores as against Rs 19.25 crore at 37 percent utilization. Return on equity on a net worth basis will increase to 14.53 per cent as against 9.7 per cent. Therefore, optimised utilisation of infrastructure, better capital planning and increased sales should be the focus.

EPCA would like to point out that the unique feature of the Delhi CNG market is that it is a Court mandated market and conversion of 10,000 buses to CNG is mandatory. More cars and autos are also expected to switch over to CNG in the years to come especially if the government comes up with appropriate incentives for such conversion in the interest of the environment. The gas should be made available and for this necessary infrastructure should be provided for convenient filling of vehicles. Already, there are over 60,000 vehicles on the road. With varying needs, these vehicles, as per IGL's own estimates need over 7 lakh kg of gas per day in July 2002. IGL is able to sell only 4.5 lakh kg per day.

In fact, IGL had commissioned ORG-Marg to do a demand survey which states, "the market survey report further suggests that the requirements of CNG shall increase manifold from the current requirements by March 2002, for which IGL has to gear up in terms of filling stations." IGL has also pointed out correctly, that to increase consumer confidence, "an awareness needs to be created among consumers in terms of consistent availability of CNG so as to avoid long unending queues and panic."

Therefore, in EPCA's view better sales and efficiency in operations in future should help in keeping further price increase in check.

4. Need for higher return on equity is yet another justification given by IGL. In its affidavit to the Hon'ble Supreme Court, IGL has claimed that its return on equity is 10 per cent. The estimates provided by IGL to EPCA, calculated on a net worth basis, which as explained later is not the normal practice in a new company, the returns on equity work out to be 14 per cent, in its fourth year of operation, at an estimated sales. In the following year 2003-04, returns are lower, only because of the projected low sales. As mentioned earlier with even marginal increases in sales, the returns on equity climb to 40 per cent (on a net worth basis) and as much as 60 per cent otherwise. Therefore, the provision for profits provided in the cost sheet point to opportunities to reduce the cost of gas to consumers.

5. Towards this objective, it is important for government to recognize the developmental imperative of IGL and that investments in creating a gas infrastructure will earn long term gains – both in terms of high returns as well as high developmental, economic and societal rates of return. Therefore, appropriate fiscal policies and the use of economic instruments are needed to support this objective.

Given that the excise duty itself is as much as 14 per cent of the total price that the consumer pays. If any cost hike was necessary, the first effort should have been to do a fiscal correction, by adjusting the excise duty. This use of this economic instrument is a key to ensuring that the price of an environment "good" product, is kept below that of an environmental "bad" product, which it seeks to replace.

Therefore, EPCA would recommend that the government should provide a tax break on CNG for a certain period of time and subsequently, maintain an effective differential vis a vis other conventional fuels. The excise duty, which has been increased from 8 per cent to 16 per cent should be totally waived. This will not affect revenue generation of the government from this small niche market to any appreciable level. But this will amount to a decrease in the price of CNG by Rs. 2.32 per kg. This move should be subsequently supported by a favourable taxation policy. This should be further complimented with vehicles based incentive programmes.

6. The more serious problem is that the project has been conceived under tremendous time pressures, without adequate political and government support. Therefore, IGL has never been able to carefully plan and execute its business. Keeping the reality of the Delhi CNG market, the capacity expansion should have been properly planned and the infrastructure development to increase capacity should have been in line with the anticipated increase in demand and the addition of equipment should have been designed to speed up the gas filling capacity with suitable compressors and appropriate dispensers. As of date supply is chasing demand. It is important for IGL to now take stock of its opportunities and plan carefully to ensure that it is able to dispense gas to the growing market in Delhi. This is critical for the implementation of the CNG project in Delhi.

7.From the above EPCA concludes that there is scope for improvement both in terms of increased sale and in improving operational efficiencies to keep the price stable in the future. If the cost of present investments had to be cushioned then the government should have intervened with tax incentives and low interest loan package for IGL. As mentioned above, a major component of the price is excise duty. In addition to this, the interest burden as evident from the cost details provided by IGL is expected to increase substantially in the coming years: from 3 per cent of the expenditure to roughly 11 per cent of the expenditure by 2003-04. If IGL has recourse to low cost funding from Oil Industry Development Board (OIDB), under the Ministry of Petroleum and Natural Gas, it will substantially reduce the financial costs and obviate pressure to increase prices. In addition to this the government should implement tax break, phase in differential taxation and provide other tax incentives to IGL to make CNG more competitive with fuels it is replacing like diesel.

B. Fiscal policy for promoting environmentally acceptable fuels

The Supreme Court ruling came in May when CNG prices had exceeded diesel prices in Delhi. Two factors were responsible for increase in CNG prices. Central excise duty was raised from 8 per cent to 16 per cent in February 2002 that increased prices from Rs 12.21 per kg to Rs 13.11 per kg. On April 28, Indraprastha Gas Ltd (IGL) raised the prices further by Rs 3.72 per kg taking it upto Rs 16.83 per kg. As a result, CNG prices were higher than diesel prices at Rs 16.59 per litre. This meant that CNG that was introduced to control deadly particulate pollution in Delhi was more expensive than a polluting fuel diesel. Furthermore, these developments coincided with the Supreme Court order of April 5, 2002, which had laid down a firm schedule for the implementation of its order to convert public buses to CNG.

It should be noted that the CNG price hike coincided with the dismantling of the Administrative Price Mechanism (APM) for other petroleum fuels in April. But even after deregulation diesel prices were not allowed to float with international price trends. As a result, diesel prices remained low and got an advantage over CNG prices after the CNG price hike. Only in June 2002, diesel prices were revised and increased to Rs 17.99 per litre. But to cushion the price shock the excise duty on diesel was adjusted and reduced from 16 per cent to 14 per cent and on petrol from 32 per cent to 30 per cent. As of date though the diesel prices are yet again higher than the CNG prices, the tax on CNG is still higher in Delhi (but not if you add Re 1 cess on diesel).

The CNG programme in Delhi has been implemented because of the Supreme Court order to address the environmental and public health concern over very high particulate pollution in the city. Regulatory support is, therefore, critical for its success to help the technology remain competitive. Incremental cost of any new technology is higher than the cost of the established technology. And our review of the fiscal and regulatory policies around the world shows that incentive policies are designed to reduce such costs. In view of this the Honorable Supreme Court has already directed the government of Delhi to reduce the capital cost of the CNG programme by giving fiscal incentives to a segment of commercial vehicle owners.

- The original order of July 1998, directed that fiscal incentives be designed for replacement of post 1990 three wheelers and taxis with CNG models.

- The order of April 5, 2002 recommended extension of such financing schemes to the bus owners belonging to the schedule caste and schedule tribe.

B.1 Existing taxes and duties on transportation fuels in India

It is generally accepted that CNG prices would remain lower compared to other fuels to give cost advantage to the owner of the natural gas vehicle as this can help to offset the higher capital cost of the natural gas vehicles. But till date, the Indian government does not have a fuel taxation policy that considers tax incentive programme for alternative fuels in this country. The only move made so far in this direction is the proposal in the Union Budget of 2002 to reduce excise duty by 0.75 paise for every litre of ethanol-blended petrol sold. But this has not been notified yet.

The way taxation on alternative fuels like CNG has evolved in India typically seeks to augment revenue without considering a strategy of favourable taxation to meet environmental and public health objectives of the programme. Until 2001 there was no central excise duty on CNG. In 2001 for the first time excise duty of 8 per cent was levied on CNG and subsequently it was raised to 16 per cent in 2002 as a part of the larger effort to bring in uniformity in taxes for all transport fuels. It is therefore very important that the government now comes up with a clear policy on taxes for clean fuels.

Taxes on fuels are levied both by the central and state governments. Local taxes on fuels vary from state to state. In Delhi the state government has decided not to impose sales tax on CNG. The Central government has imposed a 16 percent excise duty. But as far as the central excise is concerned CNG is at a disadvantage. In its representation to EPCA, MoPNG has submitted the details of taxes and duties on different fuels. (see table 12).

Table 12: Taxes and duties on transportation fuels in India

Fuels	Custom duty	Excise duty	Sales Tax
Subsidised fuels			
Kerosene	10%	16%	0 to 10%
LPG	10%	16%	8 to 20%
Other fuels			
Diesel (normal rate)	20%	16% + Rs1/litre	12 to 40%
Diesel (present rate due to high oil prices)	20%	14% + Rs1/litre = 22%	12 to 40%
Petrol (normal rate)	20%	32% + Rs7/litre	19 to 34%
Petrol (present rate due to high oil prices)	20%	30% + Rs7/litre = 85%	19 to 34%
Natural gas			
NG	Na	Na	Nil to 22%
CNG	Na	16%	Nil to 15.83%
LNG	5%	Not decided	Nil to 22%

Source: Shivraj Singh 2002, joint secretary, Ministry of Petroleum and Natural Gas, Letter to EPCA dated, June 8.

The overriding concern of the government today is to control volatility of petroleum prices in the post APM scenario due to continuous fluctuation in international fuel and crude oil prices. The Petroleum Regulatory Bill, 2002 is on the anvil to consider some independent mechanism of price regulations as a fence against volatility. The government is discussing the need for tax adjustment, improving productivity and internal cost reduction by the oil companies so that only the minimum increase in liquid fuel prices is passed on to the consumers to avoid economic shocks in the post APM era.

But there is no clear focus for pricing of environmentally acceptable transportation fuels like CNG. This could largely be due to the fact that gas provided for transport and small commercial activities in cities is currently less than 5 percent of the gas supply in the country. But it is important to note that in light of the worsening air pollution in Indian cities the Honorable Supreme Court in its order of April 5 has further directed the government to prioritise allocation to the transport sector to address this problem.

Therefore, cost advantage and competitiveness of new fuels will emerge as a serious issue. But as of date there is no effort to design fiscal policies to reflect environmental externalities and this is responsible for creating market distortion in which cleaner fuels are at a disadvantage compared to dirtier fuels.

In many other countries fuel taxation is regulated to meet environmental objectives. This allows for differentiated fuel pricing that maintains a differential in favour of cleaner fuels. The government needs to look into this issue seriously now and build this principle into the fiscal and budgetary process.

B.2 Favorable taxation policy for cleaner auto fuels around the world

The impact of the favorable taxation on fuel prices in other countries is evident. We have obtained current fuel prices in different markets of the world, which confirms that generally CNG prices are lower than diesel and petrol prices.

In their submissions to the EPCA ministry of petroleum and natural gas (MoPNG) has tried to justify the higher CNG prices by citing fuel prices in different cities of the world to show that CNG prices are higher than diesel and petrol in those cities. Price data provided by MoPNG for other cities shows that prices of CNG is higher compared to diesel and petrol in Los Angeles, New York, Beijing, Karachi, and France (See Annexure 3.)

EPCA has verified the fuel prices in other cities and compiled data that clearly shows that CNG prices are generally lower than diesel and petrol. Only in some specific situations natural gas prices have shot up as in the winter of 2000 in the US.

It is to be noted however that in very few cities CNG is sold purely in weight terms as is being done in Delhi i.e. in Rs per kg. In the US and the cities of Europe CNG is sold in energy equivalent terms. This makes direct comparison with most cities difficult. Only in rare cases such as in New York we have found an exception (see table 13 and Table 14). (More price data are included in the Annexure 3).

Table 13: Fuel tax rates of 2nd quarter 2002 in United States

States	Diesel (US $)	CNG (US$)	Percentage difference between taxes on Diesel and CNG
Maine	0.2300	0.0191	92
Pennsylvania	0.3180	0.0670	79
Arkansas	0.2250	0.0500	78
California	0.2820	0.0700	75
Montana	0.2775	0.0700	75
South Dakota	0.2200	0.1000	55
Massachusetts	0.2100	0.1040	50
New Jersey	0.1750	0.0925	47
Iowa	0.2250	0.1600	29
Wisconsin	0.3110	0.2250	28
Texas	0.2000	0.1500	25
Nevada	0.2700	0.2100	22

Idaho	0.2500	0.1970	21
Louisiana	0.2000	0.1600	20
Kansas	0.2300	0.2000	13
Illinois	0.2940	0.2610	11
Maryland	0.2425	0.2350	3
New York	0.2905	0.2990	-3

Source: International Fuel Tax Association, Inc., website: www.iftach.org
Note: The International Fuel Tax Agreement (IFTA) is an agreement between member jurisdictions to simplify the reporting of motor fuel use taxes. One tax return is filed for fuel consumed in all member jurisdictions,

Table 14: Comparative prices of fuels in different cities of the world

	Beijing		**Karachi**	
	Data provided by MoPNG (In Indian Rs)[1]	Data from independent sources[2] (In Indian Rs)	Data provided by MoPNG[1] (In Indian Rs)	Data from independent sources[3] (In Indian Rs)
Diesel	13.52	16.35 /Ltr	12.74 /ltr	16.59/Ltr
CNG	18.87	12.40/ m^3	20.58/kg	14.89/Ltr
Petrol	13.77	16.29/Ltr	27.93/ltr	28.76 ltr

Sources: 1. Submission from ministry of petroleum and natural gas to EPCA June 8, 2002
2. Current price data provided by Research Institute of Petroleum, Beijing, July 5, 2002 (current prices)
3. Current prices collated from local dispensing stations by Arif Hassan, Architect, Karachi, July 2, 2002

A review of the price trend in the Los Angeles market shows that CNG prices are lower than diesel prices. Only on some occasions CNG prices have gone up as during the winter of 2000 when demand for natural gas had increased manifold (Annexure 3).

Though the reversal in the price trend between CNG and diesel in Delhi was temporary, it has indicated the need for a stated official fiscal policy to avoid such distortions in the future. In the post APM scenario diesel and petrol prices will become comparatively more volatile and it is likely that we may witness more such trends when market forces will push diesel prices lower than CNG. Gas prices will remain comparatively more stable as this is still regulated. A policy of differential taxation and pricing will give cleaner fuels advantage over conventional fuels. To get this message out and in the light of the Supreme Court direction EPCA has reviewed the international fuel taxation policy to show how cleaner fuels are taxed lower compared to the conventional fuels.

B.3 International Review

This review of fuel taxes worldwide shows that taxes on cleaner fuels like CNG are lower compared to conventional fuels and taxes are important instrument for maintaining price difference between fuels. Overall the trend in taxation policy is moving away from direct subsidy to a method of differentiated pricing based on environmental principles that cleaner fuels will be taxed favorably in contrast to higher taxes on dirty fuels.

Germany

Fuel tax advantages have been planned for environmental benefits. Fuel tax policy in Germany is focussed on maintaining a tax differential that will ensure fast payback period. Starting 1996 and lasting through the end of the year 2009, the tax on gas will be reduced. The price difference between petrol and CNG which is around 15 per cent, is the tax rebate given to CNG and the German government plans to maintain till 2009. The tax benefit for using CNG will be even more attractive from 2003, when a new ecological tax is going to be levied on liquid fuels like diesel and petrol. Germany also follows a policy of tax break as now granted to 10 ppm sulphur diesel and petrol. [xi]

Table 15: The impact of the favourable taxation is showing up in the prices of fuels

Fuels	Price	Tax
Petrol	1.70 DM per litre	1.25 DM per litre
Diesel	1.25 DM per litre	1.10 DM per litre
CNG	0.90 DM per KG	0.20 DM per kg

Source: Website of European Natural Gas Vehicle Association, Summary of favourable taxation for NGVs in Europe, 16.7.2002

Table 16: Cost savings due to lower tax levels on CNG in Germany, 2002-2003 (€, V.A.T. included)

Year	Petrol	GGE price	Saving	Diesel	DGE price	Saving
2002	0.803	0.130	0.673	0.510	0.148	0.362
2003	0.839	0.137	0.699	0.546	0.155	0.391

Source: Mats Ekelund, 2002, Getting the prices right!, Motor Test Centre, Sweden for Centre for Science and Environment, New Delhi, *Mimeo*
Note: GGE: gasoline gallon equivalent, DGE: diesel gallon equivalent

France

In France the government reimburses tax paid on CNG to natural gas vehicles owners on the basis of the proof that they own natural gas vehicles and have driven them on natural gas. Usually, a logbook is kept on CNG mileage as a basis to claim this reimbursement. The policy allows reimbursement of interior tax for natural gas consumption up to a volume of 40,000 litres per year and per bus and up to 9000 litres per year per car or taxi[xii]. Moreover, CNG sold at bus depot is priced 22 to 24 per cent less than diesel to compensate the premium cost.[xiii]

UK

In UK on the other hand, while fuel excise duty on both petrol and diesel has been increasing steadily by 6 per cent per year in real terms, the actual duty on CNG has been frozen or reduced each year since 1993[xiv]. In 1999, the excise duty on natural gas was reduced by 29 per cent while increasing duty on diesel and petrol by 14 percent and 9 per cent respectively.

Italy

Italian government has recently announced fuel taxes to enable growth of the natural gas vehicle market and improve market confidence in NGVs. In order to support CNG conversion, the Italian government has indicated that the tax on natural gas will rise by only 2 -7 per cent by 2004, while the tax on oil will rise 33 - 61 per cent. At the same time the tax on natural gas for natural gas vehicles will decrease by 23 per cent.[xv]

Table 17: Fuel prices and taxes in Italy 2001

In Euro (€)	CNG (litre diesel equiv)	Gasoline	Diesel
Price of fuel	0.391	0.295	0.292
Excise tax	0.053	0.542	0.403
Value Added Tax	0.008	0.167	0.139
Total	0.452	1.004	0.835

Source: Mats Ekelund, 2002, Getting the prices right!, Motor Test Centre, Sweden for Centre for Science and Environment, New Delhi, *Mimeo*

Sweden

In Sweden, natural gas was exempted from `ordinary tax level' from 1995 to 1999. After 1999 the tax levels on natural gas has been kept lower than that on diesel and petrol.[xvi]

Argentina

In Argentina the government did not offer any subsidy but high taxes on petrol made CNG very attractive.

Fuel prices in Argentina in December 1999 (US dollars)

Premium gasoline	1.04 per litre
Diesel	0.33 per litre
CNG	0.41 per kg

Source; Masami Kojima, 2001, International Experience with CNG vehicles, South Asia Urban Air quality Management Briefing Note no 2, World Bank, Washington.

Some 800,000 out of 6.6 million vehicles operate on CNG in Argentina and are growing at the rate of 12 per cent annually. Government controls fuel prices in Argentina

Table 18: Current prices of fuels in Argentina (in $US)

Fuels	Price	Component of tax	Of which is fuel
Petrol	1.08	0.71	0.37
Diesel	0.60	0.31	0.29
CNG	0.35	0.08	0.27

Source: Mats Ekelund, 2002, Getting the prices right!, Motor Test Centre, Sweden for Centre for Science and Environment, New Delhi, *Mimeo*

United States

In the US the government has designed a variety of fiscal incentive packages to promote alternative fuel vehicles. Fuel tax is not the main instrument. In some states tax credits are applied. However, the most firm policy on federal tax incentive programme for alternative fuel vehicles has come through in the form of Clear Act – Energy Policy Act of 2002/EPACT. It involves major tax reductions on investments in vehicles and refuelling stations as follows:

- 40-70 % tax cut on dedicated alternative fuels, depending on size of vehicle
- 30 % tax cut on CNG compared to gasoline
- $US 100,000 + 30,000 in tax cuts for installing a refuelling station for AFVs
- 50 % tax cut when installing a home refuelling device priced up to $ 1,000
- M$ 300 in a “Clean Green School Bus” programme

Generally, tax levels on fuels in the US are lower compared to Europe and therefore can make little impact.

In the US the Energy Tax incentives Act of 2002 proposed by the Senate Finance Committee provides for credit for retail sale of alternative fuels: The proposal will permit tax payers to claim the credit equal to the gasoline equivalent of 30 cents per gallon of alternative fuel sold in 2003, 40 cents per gallon, 50 cents per gallon thereafter. Qualifying alternative fuels are CNG LPG, hydrogen, etc. The gallon equivalency of any alternative fuels is determined by reference to the British thermal content of the alternative fuel compared to a gallon of gasoline. Credit may be claimed as per sales prior to January 2007[xvii].

General trend in fuel taxes show that diesel is taxed highest in the US. In 1998, state and federal taxes added an additional US$ 0.38 per gallon to the pump price of gasoline and US$0.43 per gallon to the pump price of diesel. So diesel was taxed more[xviii].

Pakistan

CNG consumption is increasing in the transportation sector in Pakistan, the third largest user of CNG in the world[xix]. The Pakistan government has encouraged use of CNG through petroleum policies of 1991, 1994 and 1997. By practice CNG prices are kept lower than other fuels even though CNG prices are market based.[xx]

Beijing, China

Although the Chinese government has no firm policy to give incentives to encourage use of clean fuels, taxes on CNG are definitely lower, making it a viable option. While the excise duty is lower on CNG than for conventional fuels, it is totally exempt from a consumption tax. There is differential pricing of natural gas for the transportation, heating and cooking purposes. State Environmental Protection Administration, China (SEPA) is also in the process of developing a research project on economic incentive policy for reducing vehicle emissions.[xxi].

Table 19: Current prices and taxes of fuels in China

Type of fuel	Price (Yuan)	Value added tax	Consumption tax (Yuan)
Petrol	2.94 per litre	17 per cent	0.2 per litre
Diesel	2.76per litre	17 per cent	0.1 per litre
Natural gas			
CNG (transportation)	2.4 per cubic metre	13 per cent	Exempted
Natural Gas for heating	1.8 per cubic metre	13 per cent	Exempted
Natural gas for cooking	1.7 per cubic metre	13 per cent	Exempted

Source: Li Tiejun 2002, State Environmental Protection Administration, China.

B.4 Need for a fiscal policy for promoting cleaner fuels

EPCA would like to draw attention to an issue that is unique to Delhi's CNG programme and should be addressed while framing a policy to promote cleaner fuels in the transportation sector.

It is important to note the importance of the price differential needed between CNG and diesel. CNG has been introduced in Delhi primarily to convert public transport and commercial vehicles fleet of buses, three wheelers and taxis. Therefore, for most part CNG is directly competing with diesel. Any pricing policy therefore will have to aim at maintaining appropriate and effective differential between CNG and diesel to achieve the desired objective of the programme i.e. cutting down on harmful diesel emissions. In Europe, and USA, CNG vehicles have largely replaced petrol vehicles and therefore a wide gap between petrol and CNG has been critical to act as an incentive. In these countries therefore, prices are commonly expressed in gasoline gallon equivalent terms and is the acceptable unit of comparison. In very few places diesel gallon equivalent is used.

The implication of this is that any taxation policy must not end up widening the gap between CNG and petrol further. That is likely to happen if the gap is already very narrow between CNG and diesel and further lowering of only CNG taxes without touching the diesel taxes will make CNG more attractive vis a vis petrol. This may lead to unprecedented conversion of petrol vehicles to CNG, and almost no diesel conversion. Therefore, in order to address CNG taxation it is also important to address diesel taxation. In Delhi today the percentage difference between petrol and CNG prices is as high as 42 per cent in contrast to a meagre difference of 6 per cent between diesel and CNG. While tax on CNG should be lowered, tax on city diesel should be increased simultaneously.

This recommendation comes from our understanding of the Argentina experience. According to a World Bank study[xxii], when Argentina launched its CNG programme in 1984 the incentive came primarily from high tax on petrol that made CNG very cheap in comparison. At such low prices for CNG the payback period for natural gas vehicle owners could be a matter of months depending on the kilometerage. As a result, most petrol vehicles converted to CNG. In contrast there was very little conversion from diesel to CNG because, as the World Bank study found, the price difference between

diesel and CNG was not sufficient to recover the incremental cost of natural gas vehicles within a reasonable period. As a result there are very few CNG buses in regular operation today, and diesel is now actively competing with CNG to capture the taxi market away from CNG.

We have observed a similar pattern in Delhi as well. There is greater incentive for petrol three wheelers and cars to convert to CNG than for diesel taxis. Conversion of diesel taxis in Delhi has been quite negligible. All buses are converting under the Court mandate. On the contrary, in Mumbai, more taxis have converted to CNG because these vehicles were originally running on petrol.

Taxing city diesel should not pose a serious problem under the present condition as public transport buses are moving to CNG and most trucks are moving out of the city under the direction of the Hon'ble Supreme Court order of December 6, 2001 and July 15, 2002. Only luxury diesel cars remain. This move will also have the additional benefit of checking the ongoing dieselisation of the private vehicle fleet.

B.5 Current fiscal approaches to fuel subsidy in India

The Honb'le Supreme Court has asked EPCA to review the current fuel subsidy policy of the government of India. EPCA has discussed the matter with MoPNG and asked the Ministry to give it in writing the stated policy, if any to promote environmentally acceptable fuels, through fiscal measures. In its written submission, the Ministry has said. "The ministry of petroleum and natural gas reviews the prices of various transportation fuels on a regular basis. Depending upon the international prices of fuel oils we would recommend to the ministry of Finance to have such a fiscal regime as may be necessary to keep the prices of all environmental friendly fuels competitive." (Annexure 4: Ministry of Petroleum and Natural Gas Letter to EPCA, dated July 5, 2002)

Table 20: Present price buildup in petrol, diesel and kerosene in Delhi

Particulars	Diesel	Petrol	Kerosene
Depot price Rs per ltr	13.30	13.39	11.49
Excise duty Rs per ltr	2.80	10.82	1.11
Sales tax Rs per ltr	1.89	4.72	0.32
Total Rs per litre	**17.99**	**28.94**	**12.92**
Subsidy	**Nil**	**Nil**	**- 3.00**
Retail price in Delhi	**Rs 17.99 ltr**	**Rs 28.94 / ltr**	**Rs 8.92 / ltr**

Source: Shivraj Singh, Joint Secretary, Ministry of Petroleum and Natural Gas, Submission To EPCA dated June 13, 2002.

The current fuel subsidy policy of the government of India as submitted by MoPNG to EPCA is as follows:

As per the Government Resolution of November 1997, the government has now decided to dismantle the APM in the hydrocarbon sector with effect from April 1, 2002. MoPNG

has furnished the following details to the EPCA with regards to prices and subsidy on petrol, diesel and kerosene:

- Consumer prices of motor sprit and high-speed diesel are market determined with effect from April 1, 2002. Prices of PDS kerosene and domestic LPG are still controlled.

- The subsidies on PDS kerosene and domestic LPG will be borne by the consolidated fund of India from April 1, 2002. These subsidies will be of a specified flat rate basis, scheme for which will be notified separately. These subsidies will be phased out in next 3-5 years. .

- Freight subsidy will continue to be provided for supplies of PDS Kerosene and domestic LPG to far-flung areas, scheme for which will be notified separately. The freight subsidy will be borne by the Consolidated Fund of India from April 2002

- The price of indigenous crude oil of ONGC will be market determined with effect from April 1, 2002.

- The oil pool account and Oil Coordination Committee will be wound up from April 1, 2002.

- It has also stated since April 1, 2002, there is no subsidy or cross subsidy either on petrol or diesel.

In the case of natural gas MoPNG submits that there is no budgetary subsidy but an inbuilt (indirect) subsidy in the consumer price which is borne by Oil and Natural Gas Corporation (ONGC). According to the ministry there are two elements of subsidies:

- Cross subsidization of the fuel oil parity price to the joint venture companies and private producers from the gas produced by ONGC

- A ceiling of Rs 2850 per thousand standards cubic meter (SCM) on the basic price to the consumer, GAIL.

It is therefore estimated by the ministry that as against the basic consumer price of gas is being kept at the ceiling rate of Rs 2850 per thousand cubic meter ONGC is getting Rs 2116 per thousand SCM as in April-June 2002. This deficit cost is being absorbed by ONGC. MoPNG submits, “joint venture and private producers get price for their gas linked to fuel oil parity and above. The present gas pricing mechanism operates in a manner that ONGC gets only a residuary price, which presently is lower by Rs 634 per thousand SCM than the cost plus price and Rs 4396 per thousand SCM lower than the fuel oil parity price. Thus the ministry claims that ONGC is subsidising natural gas consumers from its other business revenues. This subsidy is supposed to be the margin of profit lost for not pegging the gas prices to 100 per cent parity with international fuel oil price and also on account of concession on transportation tariff to inland consumers flowing from the equated freight of the HBJ pipeline. The ministry has calculated the subsidy on CNG on that basis.

Table 21: Net subsidies on CNG and Kerosene as estimated by the Ministry of Petroleum and Natural Gas

	CNG (Rs/kg)	Kerosene (Rs/Ltr)
Subsidy with duties/taxes	4.20	3.00
Duties+taxes	2.32	2.47
Net subsidy	1.88	0.53

Source: Ministry of Petroleum and Natural Gas, 2002, Presentation on Gas production, distribution and pricing, Presentation to Environment Pollution (Prevention and Control) Authority, June, 2002.
Note: In addition to the above CNG in Delhi carries in built freight subsidy flowing from postal transportation tariff for HBJ pipeline.

MoPNG therefore, states that "Presently, gas price is administered by the government. This provides for cross subsidization of the fuel oil parity price paid to the non PSU producers from the gas produced by ONGC and a ceiling price of Rs 2850 per thousand standard cubic meter on the basic gas price to the consumer. The ceiling price of Rs 2850 per thousand SCM will continue till such a time a long term gas pricing policy for future is finalized by the government." (Ministry of petroleum and natural gas Letter to EPCA, dated July 5, 2002)

B.6 What happens when gas price is deregulated?

It is evident from the submission from the ministry that there is no direct subsidy burden to the government on account of the current administered price regime. It may be true that ONGC has earned less Rs 2116 per MCM which is less than the ceiling price of Rs 2850 per MCM during the quarter April –June, 2002 and that their earning has been lower than their stated cost plus of Rs 2750 per MCM (this includes 15 per cent post tax return on capital). So in that sense it can be said that ONGC has absorbed the loss.

The other element of the subsidy is based on the opportunity cost. It assumes that if the government were to increase the price to 100 import parity, the price would have increased. By not doing so, it has notionally provided for a subsidy. But this "subsidy" cannot be taken as a cost incurred by the government or its agencies.

If full parity price is achieved under the current pricing regime prices of gas will go up dramatically, and this would further enhance the impact of excise duty on CNG prices. Full parity price will result in higher than reasonable returns to ONGC and OIL. The downstream impact of this move on the industrial uses of natural gas, where it is competing with fuel oil and naphtha, and on CNG for vehicles competing with diesel and petrol will be drastic.

This will have serious implications for end user price of CNG.

For example, MoPNG has informed EPCA that the gas prices at full parity as sold by the private gas producers currently in India is Rs 8,250/MCM (10,000 KCAL)[xxiii]. If we add all upstream charges summed up as Rs 1872 per MCM, the gas procurement cost to IGL would be Rs 10,122/MCM. If 1 kg of gas is 1.26 SCM, this gives the prices at Rs 12.75/kg, or nearly Rs 7.3/kg higher than the current purchase cost of natural gas to IGL. We would have something comparable to this level of price if price caps were lifted today. But this would have a negative impact on CNG prices.

We will not go into the details of the gas pricing policy but only indicate that any taxation policy will have to consider the pricing policy in a broad synergy. As of date gas prices are linked to import parity prices of international fuel oil prices at 75 per cent along with a ceiling price of Rs 2850 per thousand cubic metre whichever is lower. There is a proposal to gradually increase the linkage to 100 per cent with continuous upward revision of the ceiling prices and achieve 100 per cent parity by April 2004 and then become totally market determined. In view of this proposal it is therefore, very important to understand the implication of this for gas prices in India in the future and for maintaining differential taxation system on that basis. (Annexure 5**:** Gas pricing policy in India and the future road map).

We also understand that along with price deregulation gas sector reforms are also on the anvil. The report of the ministerial group on India's Hydrocarbon Vision – 2025, states the future road map as follows, "The government is expected to continue the deregulation of the sector to allow private sector participation at all levels of the gas value chain. With the entry of the private parties the government need to acquire statutory powers. It is likely that an independent regulator will be set up under the Gas Act, which is under discussion. The regulator is likely to allow gas prices to set by the market while regulating the pipeline tariff and stimulate investments in the necessary pipeline structure. "[xxiv] It further states that the natural gas industry is in transition as it attempts to move from a highly centralized government controlled business to one that relies increasingly upon reduced regulation, and a more market responsive pricing climate to encourage foreign and private sector investment.

Initiatives have already been taken under the New Exploration Licensing Policy (NELP) to invite bids for various exploration blocks in the upstream sector. NELP offers more attractive fiscal terms to bring in more investments in gas exploration and promote participation. The income tax terms are supposedly more attractive, import of machinery, plant, equipment, materials and supplies are exempt from customs duty, no excise duty or cess levied on production and so on. Under the more recent bidding rounds as well as under the New Exploration Licensing Policy natural gas produced under the production sharing contracts can be marketed freely[xxv].

As a result of these changes already underway currently in India we have both the system of regulated and unregulated gas prices. The current administered price regime is restricted only to production from ONGC and OIL fields. But gas production from gas fields of Joint Venture Companies (JVC) and New Exploration Licensing Policy (NELP) blocks are fully deregulated and these companies are free to sell the gas at market determined prices. As of date GAIL markets all gas produced by ONGC and by the joint ventures under the production sharing contracts. Since GAIL is governed by the administered prices it is compensated for the higher prices it pays to the Joint Venture Companies (JVCs) from the gas pool account. Unless the complete deregulations happens the present arrangement of marketing through GAIL and the system of gas pool account will continue.

If there is a mismatch between price deregulation and gas sector reform then price deregulation may lead to unreasonable returns to only two gas exploration companies. Speedy market reforms will have to match price deregulations so that healthy competition can help to make gas prices competitive in a deregulated scenario. Our concern is that if prices remain too high it will create pressure on the government if differential taxation is to be maintained vis a vis other fuels. The government would

therefore need to review the situation and take necessary action. It is clear that to encourage investments and promote competition both at the level of exploration and at the level of supply and distribution to end users supportive fiscal regime is required.

It is too early in India to follow uniform taxation policy for both natural gas sector and petroleum sector. Even though it is still at nascent stage of development natural gas attracts high sales tax rate in other states. Sales tax on CNG is as high as 22 per cent and 15.8 per cent in Gujarat and Maharashtra respectively in addition to the central excise duty of 16 per cent at par with other established fuels in the market. Clearly, rationalisation of taxes along the supply chain is very important.

However, in the case of CNG we would like to make a few points. It must be noted that the government is already using fiscal measures, such as tax adjustment in the excise duty, to manage the volatility in the diesel and petrol markets. For instance, given the high current prices of diesel and petrol, it has reduced the excise duty from 16 per cent to 14 per cent, to reduce the burden on the consumers.

As discussed in the report on the pricing of gas in the city, EPCA would recommend that the government should also provide a tax break on CNG for a certain period of time. Amount of gas that is coming in for transport and city distribution is a very small fraction of the total gas market in the country – less than 2 per cent. The excise duty, which has been increased from 8 per cent to 16 percent, will earn a mere Rs 42 crore from the Delhi CNG market during 2002-2003 and can therefore be waived off till the time the market is established. This will not affect revenue generation of the government to any appreciable level. But this will amount to a decrease in the price of CNG by Rs. 2.32 per kg. In the meantime, policy should be firmed up to subsequently phase in a differential taxation policy to encourage cleaner fuels.

Tax incentive for CNG should be higher as the market share of CNG is still very small. But as learnt from the New Zealand experience incentives should not be ended at once. If incentives are withdrawn suddenly the market may collapse as it happened in New Zealand[xxvi].

The government will have to look into this matter and see how it would implement favourable taxation policy under this pricing regime even if there were full deregulation. Fiscal policy should allow for higher price competitiveness and a level playing field with competing fuels. It is not within the purview of our investigation to look into these issues though we understand that there is need for an appropriate fiscal instrument that will enable natural gas and CNG to remain competitive in a market driven scenario. It is important that the government reviews the gas pricing system and regulations in other countries and market structure to find how would it implement favourable taxation policy.

Table 22: Pricing methodology followed in other countries

Country	Pricing system
Germany, Spain, Netherlands, Denmark, Sweden, Switzerland	Market value pricing
North America	Cost based approach
Japan (LNG)	Linked to price of crude oil
UK and Italy	Mix market value and cost based approach
India	Linked to international prices of high

	sulphur and low sulphur fuel oils

Source: Anon 1999, Report of the group on India: Hydrocarbon Vision – 2025, Group pf Minister, New Delhi

B.7 Recommendations

1. It is clear from the review of the fuel taxation policies around the world that "favourable" taxation is an important instrument to maintain the price differential to encourage environmentally acceptable fuels. EPCA recommends that the Indian government must also frame a fiscal policy to allow for higher price competitiveness for environmentally acceptable fuels with competing conventional fuels.

2. In the context of Delhi and other critically polluted cities of India it is important to remember that CNG will directly compete with diesel more than petrol. As a result, the taxation policy should be designed in a manner that an appropriate and effective price differential is maintained with diesel. Therefore, in order to address the CNG taxation it is also important to address diesel taxation. In Delhi today the percentage difference between petrol and CNG prices is as high as 42 per cent in contrast to a meagre difference of 6 per cent between diesel and CNG. While tax on CNG should be lowered, tax on city diesel should be increased simultaneously.

3. It must be noted that the government is already using fiscal measures, such as tax adjustment in the excise duty, to manage the volatility in the diesel and petrol prices. For instance, given the high current prices of diesel and petrol, it has reduced the excise duty from 16 per cent to 14 per cent on diesel and 32 percent to 30 percent on petrol, to reduce the burden on the consumers.

EPCA would recommend that the government should also provide a tax break on CNG for a certain period of time. Amount of gas that is coming in for transport and city distribution is a very small fraction of the total gas market in the country – less than 2 per cent. The excise duty, which has been increased from 8 per cent to 16 percent, will earn a mere Rs 42 crore from the Delhi CNG market during 2002-2003 and can therefore be waived off till the time the market is established. This will not affect revenue generation of the government to any appreciable level. But this will amount to a decrease in the price of CNG by Rs. 2.32 per kg. Subsequently, differential taxation should be phased in. This should be further complimented with vehicles based incentive programme in line with the earlier directions of the Honorable Supreme Court as mentioned earlier.

5. The government is already poised towards deregulating the gas prices and gas sector reforms. But such moves will have to be examined carefully in the context of CNG as an autofuel. It is not within the purview of our report to look into these issues though we understand that there is need for an appropriate fiscal instrument that will enable natural gas and CNG to remain competitive in a market driven scenario. It is important that the government reviews the gas pricing system, status of gas sector reforms and practices in other countries to implement favourable taxation policy to promote environmentally acceptable fuels.

6. EPCA has noted, however, that with deregulation and reforms underway, there is little elaboration of the issue of CNG as an autofuel in official policies. The current focus of the pricing system is on industrial and power uses of gas, where it is competing with fuel oil and naphtha. But there is no discussion on policy intervention needed to make CNG

competitive vis a vis its competing fuels especially when price deregulation happens. If pricing and market reforms are not synchronized with appropriate regulatory support it may lead to steep escalation in gas prices after deregulation and may make it difficult to sustain favourable taxation policy especially vis a vis competing fuels like diesel that are likely to remain cheaper. This requires immediate scrutiny.

7. The government must urgently formulate a policy for CNG and other environmental acceptable fuels for the transportation sector. The issue is not the price *per se*, but the comparative price of the fuel it is replacing. In the deregulated scenario if the price of diesel keeps fluctuating and remains too close or even lower than CNG it will have a negative impact on the CNG programme. Therefore, the government must urgently formulate a policy to promote environmentally acceptable fuels like CNG by using economic instruments to maintain the critical differential between clean and dirty fuels.

Annexure 1: Summary of presentations made by different agencies

Gas Authority of India Limited (GAIL)
Maps explaining the following:

- The route of the HBJ pipeline
- The tappings of IGL from GAIL pipeline

GAIL's presentation clearly shows that allocation of gas is in excess of supply.

Allocation: 96.47 MMSCMD
Supply: 56.90 MMSCMD
Deficit: 39.57 MMSCMD

GAIL has presented the region-wise allocation and availability of natural gas and thus deficit in each region. The maximum amount of gas has been allocated to the the industries along the HBJ pipeline and ex-Hazira amounting to 43.58 MMSCMD followed by Krishna-Godavari basin at 16.42 and Uran at 16.15 MMSCMD respectively. GAIL has then summarised the history of gas pricing in India and how it has evolved. The main points covered were:

Pre 1987 – Negotiated Pricing Mechanism
1987-1992 – Cost plus pricing mechanism
1992-1997 – Kelkar committee recommendations
1997 onwards – Shankar committee recommendations

They have also detailed out the mechanism of pricing of gas based on Fuel Oil parity, fixing tariff for transportation of gas and the price buildup till it is delivered to the end user company. GAIL has then made a comparison of the average producer gas prices, consisting of ONGC, OIL and Joint Venture companies from Tapti and Panna-Mukta, Ravva Fields and Ravva satellite fields. In conclusion, GAIL has shown how the revenue generated form the gas sector allocated to the various players.

Ministry of Petroleum and Natural Gas (MoPNG)

i) Natural gas – infrastructure and costs

The MoPNG has begun its presentation with the various fields in India from where natural gas is obtained, various stages in the findings and production of gas. They have then stated the facilities required for the production of gas with details on the process of gas evacuation from the field to the gas processing complex at Hazira. Observations have been made on the procedures used at Hazira to process natural gas. The cost of gas production has then been discussed – from finding cost to actual transportation and pressure boosting. In this ONGC's gas production cost has been presented as Rs 2,750 per 1000 cubic metres for the year 2000-01, while the current price that ONGC gets is Rs 2,116 per 1000 cubic metres.

Like GAIL, MoPNG has also stated the region-wise allocation and availability of natural gas and thus deficit in each region, history of gas pricing in India and how it has evolved.

They have then explained fixing tariff for transportation of gas and the price build-up till it is delivered to the end user company.

ii) Taxes and subsidies

MoPNG has presented gas price comparison between the transport sector and the industrial sector when delivered to the city distribution company. They have drawn examples from Los Angeles, New York, Beijing and Karachi. According to MoPNG, petrol cross-subsidised LPG and kerosene upto March 31, 2002. But from April 1, 2002 there is no cross subsidy on petrol or diesel.

MPNG then gets into the issue of taxation and subsidy of liquid fuels in India and elucidates the customs duty, excise duty and sales tax on various liquid and gaseous fuels. MoPNG also shows how the excise duty on diesel when international prices of diesel either rose or decreased.

The various taxes on fuels in Delhi and Mumbai has also been compared. It then gives price comparisons of CNG, diesel and petrol in various parts of the world like Los Angeles, New York, Beijing, Karachi and France trying to justify that CNG prices in these places is higher than diesel and petrol.

iii) Conclusions

Natural gas and CNG are different products as CNG needs to be pressurised at 250 bars

Natural gas for industries and CNG are equally priced all over the world and in Europe, industries get natural gas at a lower price.

In India, all natural gas consumers pay the same price.

The ceiling price of Rs 2,850 is low thus acts as an inbuilt subsidy and has remained unchanged since October 1999.

ONGC is subsidising gas consumers from its other business'.

The difference between the present ceiling price of gas and actual price of gas is Rs 4.20 per kg.

The combined impact duties and tariffs on CNG is 16 per cent, 50 per cent on diesel and 140 per cent on petrol.

The price of CNG has been increased by 49 per cent between 1993 and 2002 while the increase of diesel price is 194 per cent and kerosene is 254 per cent.

The pricing policy in India is in favour of CNG as compared to other countries where CNG is dispensed on a large scale such as US, France, China and Pakistan.
Oil and Natural Gas Corporation Limited (ONGC)

ONGC has not made any presentation to the Environment Pollution (Prevention and Control) Authority. The point below emerges from their reply to Charperson, EPCA dated June 6, 2002.

While the more gas has been allocated in the country that what is being presently supplied, data provided by ONGC shows that they have been selling less than what they produce. For example at Mumbai offshore, the production for the year 2000-01 was 18465.27 MMSCM but sales or utilisation for the same year was 14859.62 MMSCM. In the year 2001-02 also shows the same trend.

Indraprastha Gas Limited (IGL)

At the outset, IGL states that it is a private company with some part of the company belonging to GAIL, Bharat Petroleum Corporation Ltd and Delhi government. After briefing the committee members about the process of pressuring natural gas to make compressed natural gas and the various types of CNG stations and their functions, IGL delves into the infrastructure for dispensing natural gas that it has set up in Delhi and it compression capacity. It then forecasts that by June 2003 it will have installed 110 stations in the capital and will be in a position to dispense 16.2 lakh kg per day with an investment of Rs 522 crores.

IGL then moves on to the various cost components adding up to the final price of CNG at which a vehicle user buys it. The financials of the company are then made explicit regarding return on equity, return on investment and so on. IGL states in its presentation that they have hired AMC Research and Organisation Dynamics to do a survey on future demand for gas. IGL also makes the point that its sale for the period January-April 2002 was 91 per cent of the gross demand. While estimating future demand, IGL has worked with two scenarios – 1. realistic scenario (based on past experience 2. Optimistic scenario (when Supreme Court order is implanted). The difference between sale of gas in the optimistic and realistic scenarios is more than 1 lakh kg per day.

IGL then explains the various parts of the variable and fixed costs what costs it predicts to incur in the coming years – 2002-03 and 2003-04. IGL explains the break-up of these components and makes projections of the variable and fixed costs under two scenarios:

Realistic
Optimistic (when the Supreme court order is implemented)

They then try to justify their price of Rs 16.83 by saying that they have to invest huge amounts in the future in terms of both these types of costs. IGL has also analysed the profit/loss they would be making under both scenarios if they had sold CNG at the older price of Rs 13.11 and then increasing it to Rs 16.83. This analysis shows that if IGL sells CNG at Rs 13.11 then it would incur a loss of Rs 40.21crores in 2003-04 under scenario 1 and Rs 17.79 crores under scenario 2 in the same year. By increasing this to Rs 16.83, IGL will be making a profit of 19.25 crores under scenario 1 and 41.79 under scenario 2.

Annexure 2: Institute of Public Auditors of India

Report on costing of CNG done by IGL

Documents related to costing were examined and salient facts are given below:

- Out of final price of Rs.16.61 per kg for 2002-03 (realistic scenario), (average price for 2002-03 considering price of Rs.13.11 per kg till 27th April 2002 and current price of Rs.16.83 per kg for rate of the year), variable costs are Rs.1.14 per kg and fixed costs are Rs.4.25 per kg.
- Company has shown interest cost of Rs.1.21 per kg, tax liability of Rs.0.85 per kg and margin of Rs.1.46 per kg, which translates into return on equity @ 14 per cent.
- The purchase of raw material is @ Rs.5.41 per kg.
- There is an excise duty of Rs.2.29 per kg.

All aspects of costing were examined and our comments are as follows:

A reference was invited to the observations of Supreme Court on the justification of price of Rs.16.83 per kg of CNG. Break up of CNG price was as under as considered by Court;

- Cost of Natural Gas (per kg) Rs.5.41
- Fixed operating cost (per kg) Rs.4.70
- Other cost (per kg) Rs.6.72

(including variable operating cost, return on equity @ 10 per cent and statutory levies)

Hon'ble Supreme Court had observed in the decision that IGL was receiving Rs.1 crore per day over and above purchase price of gas (Rs.5.41 per kg) on a sale of 9.50 lakh kg per day. However, as per realistic scenario for 2002-03 from IGL, only 5.01 lakh kg per day of gas is to be sold. Therefore, it would result in cash flow of Rs.57.21 lakh per day.

Observations on costs adopted by IGL for 2002-03 (realistic scenario)

1. Gas Purchase Cost. No reduction is possible.

2. Dealer charges

It is company's policy to expand the number of CNG stations. Discount on sales, which was Rs.79.65 lakh in 2000-01 has increased to Rs.114.38 in the year 2001-02 and is estimated at Rs.406.00 lakh for 2002-03.

These changes require rationalisation in view of increasing sales.

3. LCV charges

Cost per kg has come down from 0.26 paise per kg in 2001-02 to 0.20 paise in 2002-03. However, the decrease in per kg is not sufficient taking into consideration the increase in sale volume. But in absolute terms, the expenses on this account have increased for hire charges for vehicle from Rs.297.12 lakh in 2001-02 to Rs.373.00 lakh

in 2002-03. Since higher utilisation of vehicles should reduce the per kg cost, whether the reduction is adequate requires a detailed scrutiny.

4. Wet lease for compressor

The charges on account of wet lease of compressors was only Rs.0.10 per kg for 2001-02. It is estimated to go up to Rs.0.31 per kg in the year 2002-03. Hence the payment of wet lease charges needs attention and calls for reduction in agreement price for future agreement. However, in view of current agreement savings cannot be quantified.

5. Repairs and maintenance

These cost include power and fuel stores, spares consumed and repairs cost. It has been pointed out that the most of cost is fixed in nature by virtue of annual maintenance agreements with the suppliers of compressors. The behaviour of the cost is as under:

	(Rs. in lakhs)
2000-01	38.36
2001-02	305.58 (Rs.299.44 for CNG 6.14 apportioned common cost)
2002-03	1832.00

Such an increase calls for the review of maintenance agreement with suppliers of compressors. However, in view of current agreement savings can not be quantified.

6. Salaries and wages

Under this head it has been mentioned that 50 CNG stations are given on contract to ex-defence service personnel. IGL reimburses Rs.20000 per month or 15 per cent wages paid whichever is higher. No specific expenses on this account can be confirmed with the available data. If these are Rs.42.49 lakh shown as operation expenses at CNG stations, these may be compared with the alternative of dealer charges expenses. In this light, the clause of Rs.20000 per month or 15 per cent wages paid whichever is higher, requires detailed scrutiny.

7. Other administrative expenses

In selling price of Rs.13.11 per kg of CNG, expenses on this account were provided at Re.0.83 per kg totaling to Rs.8.13 crores whereas in the selling price of Rs.16.83 for 2002-03 it has been provided at Re.0.71 per kg totaling to Rs.13 crores. With the increase in sale volume of CNG the cost per unit on this account should have been reduced largely which has not been done.

For other administrative expenses, only 10 per cent increase should be allowed in absolute terms as these expenses are not volume sensitive. Thus maximum expenditure permissible under this head would be Rs.8.95 crores for 2002-03.

Therefore, a cushion of Rs.4.05 crore has been provided under this head in costing for 2002-03.

8. Return on equity

IGL in its communication dated 5.7.2002 has stated that it requires a post tax return of 10 per cent p.a. on its equity. However, since the company is having PNG business also, which by company's admission accounts for 10 per cent its turnover. Therefore, out of 10 per cent return on equity, on prorata basis only 9 per cent should come from CNG business.

On this basis, return on equity required by IGL comes to only Rs.16.17 crore as against Rs.25.16 crore provided by IGL in cost sheet of 2002-03 for realistic scenario.

Therefore, there is an excess provision of Rs.9 crore under the head 'Margins'.

Further reduction in margin will reduce provision for taxes (as there would be reduced profit) by Rs.5.24 crore on prorata basis.

9. Reduction in prices

On the basis of observations at Sl.No. 7 and 8 above, total excess provisions are Rs.18.29 crore. Since annual sales for 2002-03 (realistic scenario) are 5.01 lakh kg per day which translates in to 18.29 crore kg per annum, the reduction in price comes to Re.1.00 per kg.

Further the reduction in base price will also decrease incidence of excise duty @ Re.0.16 per kg.

Thus there will be an overall reduction of Rs.1.16 per kg.

There can be further reduction if aspects detailed from Sl.No. 2 to 6 are examined in detail.

10. Further options for reduction of cost at the level of IGL

OIDB has agreed to give loan to IGL at an interest rate of 11.5 per cent per annum, OIDB is funding exploration projects at interest rates of 5 per cent to 10 per cent. If IGL has recourse to such low cost fundings from OIDB, it will substantially reduce the interest costs. For example, if IGL can get its all funding requirements from OIDB at 5 per cent interest, it will result in cost reduction by approx. Rs.0.80 per kg, which will translate into overall cost reduction of Rs.0.93 per kg taking into account lower excise duty.

Annexure 3: Price data of CNG in the US

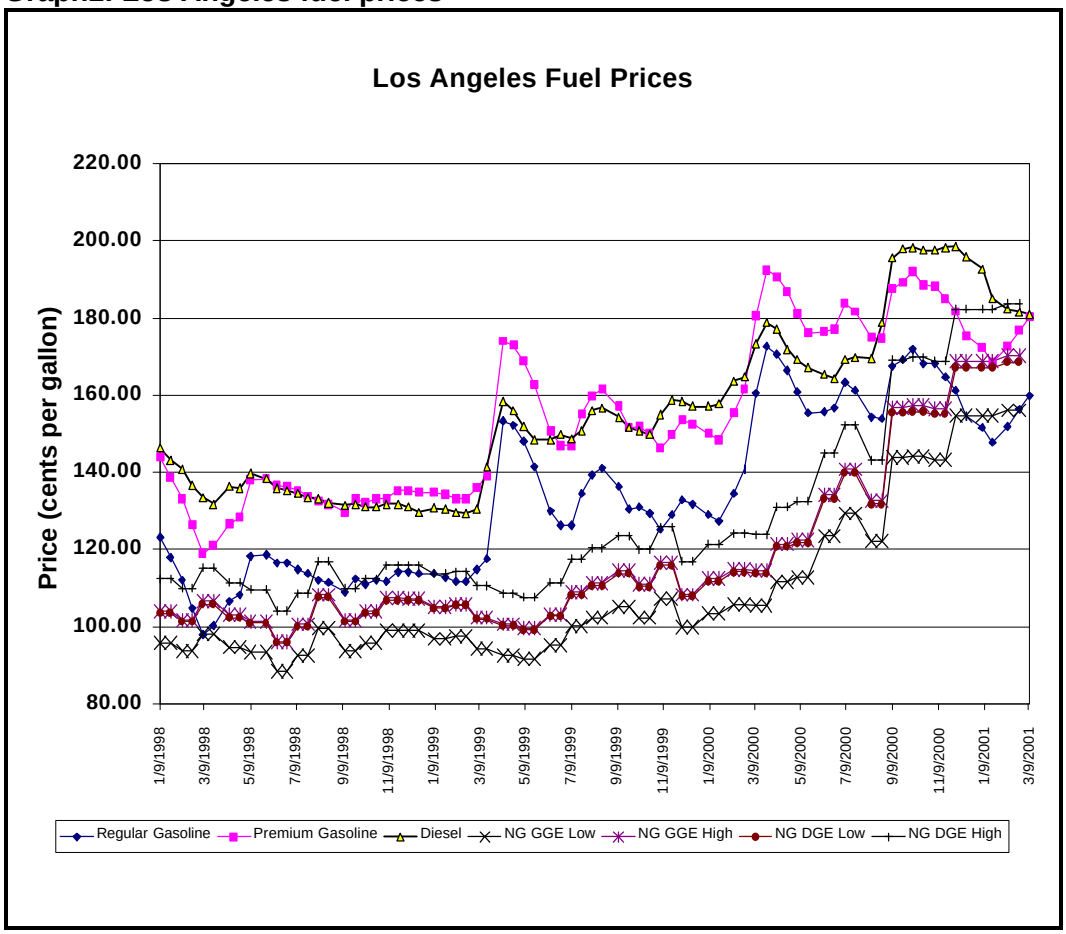
Table1: Prices of diesel, petrol and CNG in different cities of the world submitted to EPCA by the Ministry of Petroleum and Natural Gas

Particulars	CNG (Rs/kg)	Period	Diesel (Rs/lt)	Period	Petrol (Rs/lt)	Period
Los Angeles	28.42	Q1 2002	18.62	Week of April 15, 02	20.58	Week of April 15, 02
New York	22.54	Q1 2002	17.15	Week of April 15, 02	18.62	Week of April 15, 02
Beijing	18.87	May 2002	13.52	March 2002	13.77	March 2002
Karachi	20.58	2001	12.74	May 2002	27.93	May 2002
France	41.26	Apr 02 – June 02	36.26	Q1 2002	47.53	Q1 2002
Delhi	16.83	Current	17.99	Current	28.94	Current

Source: MoPNG submission to EPCA, June 8, 2002, CNG, diesel and petrol in different cities of the world

Worldwide fuel price data collated by EPCA

Graph1: Los Angeles fuel prices



Source: Reza Mahdavi 2002, California Air Resources Board, 10 July

Table2: CNG prices in $ per gasoline gallon equivalent in Unites States

Week	10-Apr-00	9-Oct-00	6-Apr-01	22-Oct-01	11-Feb-02	15-Apr-02
New England						
Gasoline	$1.556	$1.628	$1.751	$1.336	$1.149	$1.409
Diesel	$1.480	$1.678	$1.531	$1.420	$1.285	$1.387
CNG	$1.000	$1.140	$1.130	no info	$1.430	$1.210
diesel equivalent - CNG	$0.380	$0.424	$0.288		-$0.288	$0.056
gasoline equivalent – CNG	$0.556	$0.488	$0.621		-$0.281	$0.199
Central Atlantic						
Gasoline	$1.554	$1.596	$1.708	$1.298	$1.131	$1.407
Diesel	$1.514	$1.665	$1.532	$1.377	$1.267	$1.405
CNG	$0.930	$1.360	$1.290	$1.340	$1.370	$1.100
diesel equivalent - CNG	$0.491	$0.169	$0.113	-$0.097	-$0.240	$0.195
gasoline equivalent – CNG	$0.624	$0.236	$0.418	-$0.042	-$0.239	$0.307
Lower Atlantic						
Gasoline	$1.479	$1.481	$1.534	$1.163	$1.048	$1.358
Diesel	$1.381	$1.560	$1.402	$1.239	$1.131	$1.278
CNG	$0.790	no info	$1.160	$0.940	no info	$1.070
diesel equivalent - CNG	$0.512		$0.126	$0.205		$0.101
gasoline equivalent – CNG	$0.689		$0.374	$0.223		$0.288
Midwest						
Gasoline	$1.439	$1.466	$1.739	$1.184	$1.085	$1.379
Diesel	$1.440	$1.572	$1.561	$1.329	$1.128	$1.309
CNG	$0.800	$0.890	$1.140	$1.260	$1.090	$1.050
diesel equivalent - CNG	$0.560	$0.593	$0.307	-$0.057	-$0.071	$0.154
gasoline equivalent – CNG	$0.639	$0.576	$0.599	-$0.076	-$0.005	$0.329
Gulf Coast						
Gasoline	$1.479	$1.465	$1.557	$1.179	$1.045	$1.345
Diesel	$1.371	$1.551	$1.450	$1.255	$1.122	$1.278
CNG	$0.920	$1.240	no info	$1.080	no info	$0.880
diesel equivalent - CNG	$0.359	$0.187		$0.067		$0.310
gasoline equivalent – CNG	$0.559	$0.225		$0.099		$0.465
Rocky Mountain						
Gasoline	$1.576	$1.639	$1.680	$1.418	$1.104	$1.390
Diesel	$1.452	$1.743	$1.622	$1.408	$1.132	$1.357
CNG	no info	$0.730	$1.110	$1.190	$1.000	$0.950
diesel equivalent - CNG		$0.940	$0.401	$0.099	$0.032	$0.312
gasoline equivalent – CNG		$0.909	$0.570	$0.228	$0.104	$0.440

West Coast						
Gasoline	$1.752	$1.816	$1.795	$1.505	$1.228	$1.542
Diesel	$1.482	$1.843	$1.580	$1.417	$1.232	$1.405
CNG	$1.100	$1.190	$1.800	$1.180	no info	$1.320
diesel equivalent - CNG	$0.272	$0.534	-$0.400	$0.119		-$0.047
gasoline equivalent – CNG	$0.652	$0.626	-$0.005	$0.325		$0.222
Nationwide average						
Gasoline	$1.516	$1.541	$1.679	$1.265	$1.107	$1.404
Diesel	$1.482	$1.614	$1.514	$1.318	$1.153	$1.320
CNG	$0.890	$1.020	$1.300			

Source: Masami Kojima, 2002, The World Bank, 8 July

Table 3: Fuel prices and taxes comparisons in cities of Canada, USA, and UK

Cities of Canada, USA and UK	CNG in Diesel Equivalent Energy/US Gal	Diesel Fuel (128,980 BTU/US Gal)	CNG in Gasoline Equivalent Energy/US Gal	Gasoline (115,400 BTU/US Gal)
Toronto, Ontario Price	$1.38[1]	$1.62	$1.24[1]	$1.58
Tax rate	7%	29%	7%	46%
Phoenix, Arizona Price	$1.35[2]	$1.57	$1.21[2]	$1.49
Tax rate	4%	28%	5%	25%
London, England Prices	$2.44[3]	$4.21	$2.19[3]	$4.21
Tax rate	30%	81%	30%	74%

Notes:

(1) Actual price = CAD$0.7448 per kilogram assuming that U.S. $1 = CAD$1.5203. (2) Actual price = USD$0.47 per kilogram (3) Actual price = £0.6119 per kilogram assuming that U.S. $1 = £ 0.7102.

The prices are all expressed in U.S. dollars per U.S. gallon, or (for natural gas) the energy-equivalent of a U.S. gallon of the comparable fuel.

Source: www.westport.com

Fiscal policies worldwide that supports CNG as a fuel and natural gas vehicles

Table 4: Incentives and tax cuts given to CNG in various countries

Country	Incentive
Argentina	Tax incentives, abundant government funding, strict standards, mandates, and a long-term outlook have made Argentina's NGV program one of the most successful in the world.
Australia	Tax cuts and several subsidies make it attractive for consumers to follow the good example set by the Australian Government and its many municipalities that use NGVs.
Belgium	Belgium's primary incentive is an exemption from excise duty on natural gas as a vehicle fuel.
Colombia	Colombia seeks economic and social benefits from the use of natural gas. Pricing mandates for CNG to be a maximum 60% *of* the price of gasoline to help promote the use of NGVs.
Europian Union	The European Commission has set minimum tax prices for fuels and has funded several European development and demonstration projects. Policies for sustainable energy and urban transport are developing.
Germany	Germany primarily promotes the use of NGVs with financial incentives in the form of rebates and tax incentives. The German government's new program, with government and gas industry support, is one of the strongest in Europe.
Ireland	Ireland provides tax incentive of excise duty exemption for natural gas as a vehicle fuel
Malaysia	Tax and price incentives help encourage the use of NGVs while individual programs focus on the development of natural gas for public transport.
Portugal	There are no taxes used on natural gas for purposes of public transport.
Russia	Mandates for lower pricing of natural gas and rising taxes on petrol encourage the use of natural gas

Source

Table 5: Federal fuel taxation policies in US

Fuel	Current fuel tax rates in cents per gallon
Gasoline	18.4
Diesel and kerosene	24.4
LPG	13.6
LNG	11.9
Other alternative (special) fuels	18.4
Neat alcohol (85% alcohol) neat alcohol derived from petroleum products (M85) is taxed as special fuel	9.25
CNG CNG is taxed 48.54 cents per thousand cubic feet, this value has been translated to cents per gasoline gallon (GGE) for this table (source: US department of transportation, Federal Highway Administration, Highway Statistics 2000, Table FE-21B)	4.3

Source: Office of transportation technologies, United States, department of energy www.ott.doe.gov/facts/archives/fotw203.shtml

Annexure 4: Ministry of Petroleum and Natural Gas Letter to EPCA

No.R-29011/11/2002-OR.I (Pt.)
Government of India
Ministry of Petroleum and Natural Gas

Shastri Bhavan, New Delhi-110 001,
Dated : the 5th July 2002

OFFICE MEMORANDUM

EPCA may refer to the discussion the undersigned had with the Authority at its meeting dated 29-06-2002.

2. Government of India's current policy in regard to environmental-friendly fuels is as follows:-

- Improve in stages, the quality of liquid auto fuels based on the European Auto Fuel Quality norms; and
- Introduce/supply alternative auto fuels like CNG/LPG along with liquid auto fuels in cities where special measures are required to be taken to contain vehicular pollution.

The broad strategy to achieve the above mentioned objectives which has been outlined in India Hydrocarbon Vision-2025 is as follows:-

- progressively improve petroleum products standards;
- provide incentives for cleaner and greener fuels;
- encourage use of natural gas which is relatively a clean fuel;
- phase out existing subsidies and cross-subsidies as early as possible;
- increase linkage price of natural gas from the current level of 75% fuel oil (FO) parity to near 100%.

4. In terms of the above mentioned policy, the following actions have been taken by the Government:-

- removal of lead from petrol throughout the country from January 2000;
- improvement in the quality of liquid auto fuels matching Euro-I equivalent fuel specifications from 1st April 2000;
- supply of liquid auto fuels matching Euro-II equivalent specifications in the four metropolitan cities from the year 2000-2001, and extending these specifications in phases to the entire country by April 2005;
- further upgrading of liquid auto fuel quality matching Euro-III equivalent specifications in the NCT/NCR and other major cities from April 2005; and
- supplying CNG in the cities of Delhi and Mumbai.

EPCA

CHAIRMAN D. No. 53 5 JUL 2002 CORPORATION OF INDIA

5. In so far as the natural gas pricing policy is concerned, presently gas price is administered by the Government. The extant gas pricing regime provides for:-

(i) cross-subsidization of the FO parity price paid to the non-PSU producers from the gas produced by ONGC; and

(ii) a ceiling of Rs.2,850/- per thousand standard cubic metre on the basic gas price to the consumer.

Accordingly, the basic consumer price of gas is being kept at the ceiling rate of Rs.2,850/- per thousand SCM, as against the price of Rs.2,116/- per thousand SCM paid to ONGC during the quarter April-June 2002 and of Rs.2,074/- per thousand SCM being paid for the quarter July-September 2002. The ceiling price of Rs.2,850 per thousand SCM will continue till such time a long-term gas pricing policy for future is finalized by the Government. The present CNG prices in Delhi are competitive with other auto fuels.

6. The existing policy for natural gas prices is to attain fuel oil parity over a period of time. Considering that fiscal regime and taxation rates are decided by the Ministry of Finance, the Ministry of Petroleum and Natural Gas would review the prices of various transportation fuels on a regular basis. Depending upon the international prices of fuel oils, we would recommend to the Ministry of Finance to have such fiscal regime as may be necessary to keep the prices of all environmental friendly fuels competitive.

7. It is not within the competence of the Ministry of Petroleum and Natural Gas to notify a long-term fiscal regime. However, the Ministry would take special initiative, mentioned above, in this regard.

(SHIVRAJ SINGH) 5/7
Joint Secretary to the Government of India
TELE:338 6935/FAX: 338 3682

To

Shri Bhure Lal
Chairman,
Environment Pollution (Prevention & Control) Authority
Central Pollution Control Board,
Parivesh Bhawan,
East Arjun Nagar,
DELHI-110 032.

Annexure 5**:** Gas pricing policy in India and the future road map

Gas pricing system in India

It is time to revisit the gas pricing system in India especially to address the concerns emerging from the increasing use of natural gas in the transportation sector in India. Till date gas-pricing system has undergone many changes. The current system of pricing is based on the recommendations made by the T L Shankar Committee set up in 1996. This committee has recommended the current gas pricing policy for the period 1997 to 2002[xxvii]. At the time of this committee's deliberation CNG market had not developed adequately and was a miniscule fraction of the overall gas market in India. Even today it is less than 2 per cent of the natural gas sold in the market. Therefore, the focus of all discussions on pricing systems has been to consider only the industrial users mainly power and the fertilizer sectors. Clearly, the dynamics and issues in the transportation sector are different and would need special focus.

Current gas pricing system in India

Shankar Committee's recommendations came at a critical juncture, when the government was considering import of natural gas either through pipelines or as LNG and it was expected then that imported gas would come to India by 2002. It was then anticipated that the imported gas would be priced at international rate that would be substantially higher than the domestic prices. In order to attract private investment to exploration and production it was decided to allow private producers to charge prices indexed to a combination of fuel oil prices. The committee decided to increase the consumer prices gradually from the current levels towards the import price to make the transition to market driven prices smooth.

Import parity price: Under the present pricing policy natural gas prices are therefore fixed on the basis of import parity price (IPP) of a basket of fuel oils. The basic price of natural gas to the customers is benchmarked with international prices of a basket of fuel oils.

Table: Consumer price and present parity linkage

Period	General Price Percentage of FO international price (other than NE)	Concession price for Northeastern states
1997-1998	55%	30%
1998-1999	65%	40%
1999-2000	75%	45%
April-June 2002 (at ceiling)	51% (Rs 2850/MCM)	31% (Rs1700/MCM)
July-September 2002 (at ceiling)	41% (Rs 2850/MCM)	25% (Rs1700/MCM)

Source: ONGC & MoPNG submission to EPCA

In addition to the parity price the government simultaneously administers the prices by fixing a ceiling and floor price for natural gas. Irrespective of the parity the natural gas prices are not allowed to increase beyond a rate fixed by the government. This means as of today the price of natural gas can vary only within a range of Rs 2150 (floor price) to Rs 2850 (ceiling price) per thousand cubic meters. If the import price parity is lower than the floor price of Rs 2150 then it has to be raised, but if it is more than the ceiling

price of Rs 2850 per thousand cubic meters then it has to be truncated to this level. These prices are fixed for natural gas having a calorific value of 10,000 keal per standard cubic meter and are adjusted for the actual calorific value of delivered gas.

Gas pool account:

The T L Shankar committee had proposed that difference between the consumer price and producer price should be considered as rent accruing to the government on account of its near monopoly over production and transportation of natural gas. This rent constitutes the gas pool account to be used for gas development projects and administered pricing.

This was created on the basis of following considerations. As the price fixed by the committee is substantially below the import parity price there is need to gradually step up the price within India so as to reach the import parity price at the end of five years. This will be used to cover up the difference between the producer price and gradually increasing consumer price. Any additional amount available could be used for appropriate gas development projects and other such purposes. The pool will also provide for concessional prices in the north eastern region of India.

Producer price: The price that is paid to the gas exploration companies is the producer price and is paid on the netback basis from the revenue generated from the consumer price that is charged by GAIL to different users. The committee aimed at adopting a pricing system for the producer price, which compensates the producer at the cost of production including a rate of return on investment which is large enough to act as an incentive.

Consumer price: Consumer price is designed to gradually increase every year and approach the import prices. Shankar committee considered the fact that in the next 5 years India would have to make arrangement to import significant quantities of natural gas in addition to the indigenous production to meet the increasing demand. In view of this the government of India had supposedly given assurances to multilateral agencies that the natural gas price regime would move towards a market driven pricing system. So the committee aimed at ensuring smoother transition from cost of production based prices to market driven prices. The committee recommended that the consumer price would have to be gradually de-linked from cost of production and should autonomously move towards import parity price. The difference between the consumer price and the producer price is a rent, which should be impounded by the government in a fund for the development of gas industry. So it recommended that in addition to the producer price, the consumer must pay a contribution, which could be called the contribution to the gas pool account.

Transportation charges

The transportation cost is calculated separately for each pipeline so that the viability of each pipeline can be assessed separately. Distance related charges along new pipeline systems were proposed. Transportation charges will be fixed by GAIL adopting the same principle of 12 per cent post tax return on equity as applied to HBJ pipeline. The committee further recommended that gas prices and transportation charges be denominated in terms of calories. As of date uniform transportation charges as per postal tariff system Rs 1150 per MCM at 8500 kcal per SCM is imposed.

Other than the basic price of gas and freight charges along the HBJ and additional pipeline charges from the distance from the HBJ the delivered price of natural gas includes the royalty at the rate of 10 per cent of the producer price of gas. Inter-state transport tax called 'Gujarat tax' at the rate of 4.6 per cent, turnover tax, if applicable and entry tax/Octroi wherever applicable are added to it. Gas is priced according to the calorific value of gas delivered.

Pricing of domestic gas vs imported gas:

The Committee considered whether it would be appropriate to continue the price of indigenous gas on a cost plus basis while the imported gas as and when it comes is sold at market determined prices i.e. whether a dual price regime should be allowed. At that stage the committee was not inclined to consider such a proposal in light of the fact that the government had already planned to move towards market driven prices, that consumers are slowly prepared to get used to higher prices of imported gas especially LNG, and that the government was already poised towards dismantling the administrative pricing mechanism.

Pricing of gas from private fields

The government has been offering small fields for development by private parties and bigger ones through joint ventures. About 14 per cent of the gas is currently produced by Joint Ventures and private sector[xxviii]. Developers have the right to sell gas at negotiated prices. GAIL has the first right of refusal for gas from these private fields. If GAIL does not buy the gas the private producers will be required to pay to GAIL only for the use of the use of the later's infrastructure. If GAIL buys gas from them then private parties are paid the full market rate linked to international fuel oil prices. But GAIL sells gas at a price fixed by the government. So the government compensates the incremental cost from the gas pool account. The share of private sector in the gas exploration sector is expected to increase following the New Exploration Licensing Policy (NELP).

Need for the review of the current system

Driven by phased price deregulation and an increasing share of free priced gas from NLEP fields, and the anticipated import, gas prices are expected to increase to reflect market levels over the coming years. Under these circumstances if market reforms do not keep pace then further distortions are expected. Supportive regulations are required to promote conditions to attract more investments in infrastructure development, optimize current usage of infrastructure, and promote competition. This will also have positive impact on natural gas prices.

In this context it is important to emphasise that any official review would need a special focus on CNG pricing to address the need for fiscal measures to promote CNG in the transportation sector to meet the environmental objectives.

Since improvement in tax regime is essential to obviate the price increase, taxation and pricing will have to be assessed in a synergy.

Box: Gas pricing system prior to Shankar committee recommendations[xxix]:

Supply of natural gas started in February 1959, in Assam, and by ONGC in Gujarat in December 1964. The price of natural gas of OIL was around Rs 9 per MCM in upper Assam region, the prices were exclusive of royalties, duties, etc. prices charged by ONGC was governed by the V K R Rao 'award' exclusive of sales tax, royalty.

In the early 1970s ONGC started supplying gas to new consumers at mutually negotiated prices. Thus prices varied from consumer to consumer.

1974: ONGC decided to charge on the basis of thermal equivalence based on coal. Since the gas price was then linked to the price of coal the price of natural gas kept rising as the price of coal increased over time.

1978: Following commissioning of new off shore fields ONGC adopted the principle of charging consumer on the basis of opportunity costs. The prices thus varied from consumer to consumer and use to use. So consumers paid prices at replacement value -- either as a replacement price for coal, or for liquid fuels.

1986: Decision was taken that the government would fix the prices of gas.

1988: Vijay Kelkar Committee on gas pricing was set up. The committee gave its report in 1990. The committee fixed gas prices with effect from January 1, 1992. The prices were exclusive of royalty, taxes, duties etc. The producer price was fixed at Rs 1500 per MCM and the difference between the producer price and consumer price was credited to the Gas Pool Account.

!996: T L Shankar Committee gave its recommendations which became the basis of the current pricing system.

[i] IGL 2002, presentation to EPCA, CNG price in Delhi, June 22, mimeo; p.19
[ii] IGL 2002, Reply to chairman EPCA on CNG price; letter by P.S.Bhargava, director, Commercial, annexure 2, cost-sheet 2002-03 (realistic scenario) June 6, New Delhi, *mimeo; p 6.*
[iii] IGL 2002, presentation to EPCA, CNG price in Delhi, June 22, mimeo; p 19
[iv] IGL 2002, CNG price, letter to P.M.Ansari, CPCB, July 16, 2002
[v] IGL 2002, CNG price, letter to the chairman, EPCA, dated June 26, mimeo, p. 5;
[vi] IGL 2002, CNG price, letter to P.M.Ansari, CPCB, July 16, 2002
[vii] IGL 2002, CNG price, letter to the chairman, EPCA, dated June 26, mimeo, annexure III,
[viii] IGL 2002, presentation to EPCA, CNG price in Delhi, June 22, mimeo; p.7
[ix] IGL 2002, CNG price, letter to chairman EPCA, dated June 6, mimeo, annexure VII,
[x] Indraprastha Gas Ltd (IGL), 2002, Presentation to EPCA dated June 22, 2002, Slide No 49.
[xi] Website of Kompass Newsletter – De Portaalsite van de Bedrjven
[xii] The website of The French Natural Gas Vehicles Association (www.afgnv.com/HomeGB/Taxes/body_taxes.html 18.7.2002
[xiii] Mats Ekelund, 2002, Getting the prices right!, Motor Test Centre, Sweden for Centre for Science and Environment, New Delhi, *Mimeo*
[xiv] Website of the International Association of natural Gas Vehice Association, www.natural-gas-vehciles.co.uk/Home/Infor/FuelDuty.html
[xv] Website of Energy Information Administration, Italy, www.eia.doe.gov/cabs/itenv.html June 2000, 16.7.2002
[xvi] Website of European Natural Gas Vehicle Association, Summary of favourable taxation for NGVs in Europe, 16.7.2002
[xvii] Energy Tax incentives Act of 2002, Senate Finance Committee, February, Joint Committee on Taxation 13
[xviii] www.eia.doe.gov/oiaf/archive/issue98/gastax.html
[xix] Anon 2001, Latest International NGV Statistics, http://statistics.iangv.org, as of July 20, 2002
[xx] S. Naushab Sarwar, 2001, Development of CNG industry in Pakistan, Hydrocarbon development Institute of Pakistan, Regional Workshop on reducing vehicle emissions: Fuel Quality and Alternative fuels, May 2-4, Asian development Bank, New Delhi, *Mimeo*
[xxi] Li Tiejun 2002, State Environmental Protection Administration, China
[xxii] Masami Kojima, 2001, International Experience with CNG vehicles, South Asia Urban Air Quality Management Briefing Note No 2, World Bank, *Mime,* Washington
[xxiii] Shivraj Singh, Joint Secretary, Ministry of Petroleum and Natural Gas, 2002, Submission to EPCA, June 13, New Delhi
[xxiv] Report of the Group on India: Hydrocarbon Vision – 2025, 1999, Group of Minister, Government of India, New Delhi p 22.
[xxv] British Gas
[xxvi] Jeffrey Seisler, Executive Director, European Natural Gas Vehicle Association, 2002, July 20
Masami Kojima, 2001, International Experience with CNG vehicles, South Asia Urban Air Quality Management Briefing Note No 2, World Bank, *Mime,* Washington

[xxvii] T L Shankar et al, 1996, Report of the Committee on Natural Gas Pricing, December, Mimeo, New Delhi
[xxviii] Data provided by British Gas, July 2002

[xxix] T L Shankar et al, 1996, Report of the Committee on Natural Gas Pricing, December, Mimeo, New Delhi

[xxix] Data provided by British Gas, July 2002