Petroleum Federation of India

Survey of Industry Suggestions and International Practices on Gas Regulations

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Assisted by:

PRICEWATERHOUSECOOPERS

1 Survey of Industry Suggestions and International Practices on Gas Regulations

1.1 Background to this Paper

1.1.1 To provide a platform for stakeholders to discuss the road ahead for building gas infrastructure to meet the galloping demand in India, Petroleum Federation of India (PetroFed) organised a roundtable on April 28, 2006 at New Delhi. The roundtable was attended by representatives of Industry, MoPNG, Planning Commission, and other associated organisations.

1.1.2 The background of the roundtable was the passage of the Petroleum and Natural Gas Regulatory Board Act, 2006 (PNGRB Act) which mandates the establishment of a Regulatory Board for regulating the downstream oil & gas industry. The Board, under the said Act, has been empowered to make "regulations" on specified matters.

1.1.3 At the roundtable, industry members desired that PetroFed should seek views of all industry stakeholders on the "regulations" to be made by the proposed Regulator for the gas sector and submit suggestions to Government. PetroFed requested PricewaterhouseCoopers (PwC), its member company, to assist it in carrying out this survey as a Knowledge Partner along with a survey and research, based on secondary resources, of the international policies and practices being followed around the subjects mandated for making regulations by the Regulator.

1.2 Methodology

1.2.1 As a first step towards soliciting company views on regulations to be made by the proposed Regulator on some select specific issues related to the gas industry development, a survey questionnaire was sent to the industry stakeholders by PetroFed on May 05, 2006.

1.2.2 The survey questionnaire was designed to solicit views of respondent companies on six specific issues including regulations relating to open access to transportation and distribution pipelines; transportation rate for both transportation and distribution pipelines; criteria and procedure for selection of entity for laying and operating transportation and local gas distribution pipelines; principles for determining number of years for which a local gas distribution network should be accorded exclusivity. Companies were requested to forward their comments on these issues for both transportation and distribution businesses.

1.2.3 A total of 16 company responses were received by PetroFed. As a policy announced before commencing this exercise, PetroFed maintained identity of companies strictly confidential with all respondents as well as PwC throughout the process of this survey.

1.2.4 Through secondary sources, regulatory policies and practices followed internationally were surveyed with respect to the issues on which company responses were solicited. The learnings from international practices followed surrounding these issues, as put forth by agencies like the World Bank, the Asian Development Bank, and the International Energy Agency were also brought in.

1.2.5 Based on the analysis of responses received from the sixteen responses on the issues included in the survey questionnaire and the findings of the survey and research, using secondary resources, on the internationally followed policies and practices around those six issues, PwC prepared and submitted to PetroFed a draft report on June 05, 2006.

1.2.6 The draft report comprised of two annexures. While Annexure 1 listed the various views emanating out of the responses received from companies, the Annexure 2 contained the unadulterated views of the respondents. Annexure 1 also elaborated the inferences that could be drawn on the various policies and practices being followed internationally on the issues relating to gas infrastructure development under study. The inferences drawn from the 17 countries were tabulated, namely, the USA, China, Philippines, Australia, Mexico, Ireland, Belgium, France, Azerbaijan, Kazakhstan, Thailand, the UK, Japan, Argentina, Canada, Colombia and Spain.

1.2.7 This draft report was circulated by PetroFed to the industry on the same date i.e. June 05, 2006, with a request to the companies to go through the report and put forth its views/comments thereon in the meeting scheduled for June 13, 2006 at PetroFed's Office in New Delhi.

1.2.8 In the meeting held on the 13th June, which was attended by 17 companies, discussions were held on various views emanating from the responses. Suggestions for consideration are attached.

1.3 Draft Pipeline Policy – Way ahead for PetroFed

1.3.1 Industry members were in discussion with the MoPNG on the subject of draft prepared by MoPNG of Gas Pipeline Policy. On June 2, 2006, the Secretary

Petroleum chaired a meeting of industry in which PetroFed was requested to bring on table comments of the industry.

1.3.2 In the meeting held on June 13, 2006, the industry agreed that PetroFed should put across views on the Draft Pipeline Policy and that their views will be sent to PetroFed by June 19, 2006. PetroFed proposes to prepare a paper on the basis of Industry views on the Draft Pipeline Policy and submit to Government before the MoP&NG's next meeting scheduled for June 28, 2006. Industry informs us that they are in dialogue with Government and that their views individually and / or through the Gas Industry Group (GIG) have already been submitted.

Annexure 1 Survey of Companies' Responses and International Practices	
Subject	**Issue No. 1(a) (i) : Regulations on "open access" to transportation pipelines**
Suggested "Regulations" – Derived from the Survey	**Summary of suggestions** 1) The access to un-contracted capacity in the transportation pipelines should be on a non discriminatory basis 2) The procedure for determination of capacity should be transparent taking into account actual long term commitments of the shipper and/or transporter. 3) Regulator to establish pipeline access code providing Level playing field and non-discriminatory open access to all Parties 4) New Pipeline capacities to be allocated on open season policy. 5) Available capacity in a particular existing pipeline needs to be notified by the regulator. All the interested parties may be requested to register their capacity requirements. 6) There should be an objective/fair & equitable/transparent & non-discriminatory methodology for allocation of capacity in existing pipelines.
	Divergent issues 7) Allow Open Access with tariff fixation by the parties involved on mutually agreed terms within overall cap fixed by the Regulator. *Some industry members do not agree with this.* 8) There should be a precondition that the parties should have source tie-up as well as customer tie-up for the required capacity. *Some industry members do not desire that this precondition be laid for allowing access.*

Annexure 1 Survey of Companies' Responses and International Practices	
Subject	**Issue No. 1(a) (i) : Regulations on "open access" to transportation pipelines**
Inferences from International Regulatory Regimes	Third Party Access (TPA) or Open Access is the right of a third party (either a producer, a consumer, a shipper or a trader) to access/make use of the transportation and/or distribution related services of a pipeline company for a charge (tariff) to move gas owned by the third party. In 1992, the European Commission defined it as "a regime providing for an obligation, to the extent that there is capacity available, on companies operating transmission and distribution networks to offer terms for the use of their grid, in particular to individual consumers or to distribution companies, in return for payment". It evokes a right for any third party to buy the transportation service of a pipeline company and an obligation for the latter to offer such services, although the extent of such right and obligation may be limited by relevant legislation. It therefore differs significantly from voluntary access, which can take place freely without public intervention. In practice, essentially two kinds of TPA exist: a regulated regime and a negotiated one. In a **Regulated TPA**, the public authorities set the rules and access conditions, on the basis of published tariffs and/or other terms and obligations for the use of the system. **Negotiated TPA** requires the pipeline company to publish its basic conditions for access and related services, but leaves the parties concerned the freedom to define access terms and conditions.

Annexure 1 Survey of Companies' Responses and International Practices	
Subject	**Issue No. 1(a) (i) : Regulations on "open access" to transportation pipelines**
	Regardless of whether TPA is regulated or negotiated, there are certain conditions for the application of such a regime: ▪ There should be a sufficiently well developed gas market with excess pipeline transmission capacity; ▪ There should be a sufficiently large number of gas producers and consumers who seek to have access to the spare capacity rather than building their own pipelines; and ▪ Physical links exist or are feasible with the existing pipelines. In addition, to ensure access to all network users (or a defined class of customers, known as "eligible" customers), be they customers or companies, on equal conditions, impartiality and neutrality, a number of other issues have to be considered before the introduction of TPA in a country. They include: ▪ Eligibility for participation: it has to be decided which category of companies should be able to benefit from TPA and, for instance, whether they should be of a certain minimum size (if gas consumers) or have to meet technical and financial standards (if shippers). ▪ Definition of facilities to which access is to be granted: e.g. transmission and distribution pipelines both

Subject	Issue No. 1(a) (i) : Regulations on "open access" to transportation pipelines
	onshore and offshore; gathering, storage, treatment and blending facilities. ▪ Definition of the services that may be involved apart from the transmission: e.g. metering, pressure balancing, quality management, load balancing, storage, back-up and stand-by services. ▪ Determination of the extent to which the pipeline company is obliged to provide these services separately; i.e. to what degree these services should be unbundled, which also raises the question of whether the pipeline company has to split its activities into separate companies. ▪ Definition of available capacity and the procedures to be followed when capacity is not sufficient (queuing procedures, requirements to build capacity). ▪ How to calculate the tariffs for transportation and related services. ▪ How much information the pipeline company will be required to disclose regarding availability of, and calculation of charges for, services. ▪ The relationship (degree of discrimination) between the pipeline company's own customers and third parties requesting access.

Annexure 1 Survey of Companies' Responses and International Practices	
Subject	**Issue No. 1(a) (i) : Regulations on "open access" to transportation pipelines**
	▪ The regulatory framework (regulatory bodies involved, instances of appeal, etc.) ▪ Legislation dealing with transitional problems caused by the introduction of TPA. ▪ Dispute settlement mechanisms to ensure expeditious resolution. ▪ Mechanisms to avoid abuse of dominant positions. ▪ The obligation to unbundle accounts. ▪ Technical rules to ensure inter-operability between gases of different quality. *Source:* IEA, PwC analysis.
International Experiences	**The United States of America** Interstate gas pipelines are required to operate as open-access contract carriers. Capacity on the pipeline is offered and allocated based upon long-established FERC regulations and precedence. Access to pipeline capacity needs to be viewed in four contexts: 1. Initial access to a proposed new pipeline

Annexure 1 Survey of Companies' Responses and International Practices	
Subject	**Issue No. 1(a) (i) : Regulations on "open access" to transportation pipelines**
	2. Initial access to pipeline expansions 3. Access to pipeline capacity that may become available because of contract termination or exploration and 4. Access as a result of temporary or permanent capacity release In each of these contexts, any credit-worthy party that is willing to make the necessary long-term shipping commitment has an equal opportunity to acquire pipeline capacity. On gas pipelines, gas is allocated through an open season process that allows all perspective shippers to review the preliminary rates, terms and conditions and to bid for capacity on the pipeline. The open season process is instrumental to the pipeline's ability to establish the economic viability for the project and to determine the optimum size of the pipeline. The open season process is designed to insure nondiscriminatory allocation of pipeline capacity and significant case law and precedent exists to insure that no shipper that is prepared to make the long-term shipping commitment has any advantage in taking pipeline capacity from another similarly situated shipper. In the United States, the FERC oversees this process, which must be open and transparent. Although the FERC allows reasonable flexibility in the design of open seasons, significant precedent defines the open season process. Typically, open season processes are conducted as follows:

Annexure 1 Survey of Companies' Responses and International Practices	
Subject	**Issue No. 1(a) (i) : Regulations on "open access" to transportation pipelines**
	1. The pipeline will often engage in preliminary discussions with the marketplace and will sometimes use non-binding open seasons or solicitations of interest. This process helps the pipeline to judge the extent of the market support and to insure that the pipeline is neither too large nor too small for the apparent demand for the transportation services. 2. The pipeline then issues a public notice to announce its open season. The open season must be of sufficient duration to allow all interested shippers an opportunity to respond. The open season documentation will also outline the rules under which the pipeline will evaluate its bids. The pipeline's open season package typically includes significant information about the project including receipt and delivery points, route, timing, services, pro-forma agreements, a proposed precedent agreement and estimated rates. 3. If there's insufficient capacity to satisfy all the bids, the pipeline's open season package will specify the type of tie-breaker that will be employed to allocate the available capacity. 4. Once capacity has been allocated through the open season process, the shippers will normally enter into binding precedent agreements with the pipeline, which demonstrate the need and support for the project. The pipeline company uses these agreements to justify the project at the FERC and to underpin the financing of the

Subject	Issue No. 1(a) (i) : Regulations on "open access" to transportation pipelines
	construction of the pipeline. Pipeline owners and financial lenders require these long-term contracts for firm capacity to ensure repayment of the capital cost of building the pipeline. without these commitments, gas pipeline projects, which by their nature involve a longer payout than typical oil pipeline projects, could not be financed. Shippers need a contractual commitment from the pipeline to ensure capacity is available to support their own needs. Once capacity is awarded through the open season and binding precedent agreements are executed, a shipper's contractual right to the reserved capacity is protected. A shipper's economics are founded on the availability of this contracted capacity. In exchange for the pipeline's commitment to reserve a specified quantity of capacity for a shipper, the shipper agrees to pay a monthly reservation charge that is due regardless of whether gas is actually shipped. A pipeline must have sufficient binding precedent agreements or executed transportation contracts prior to filing its FERC application. If the pipeline overbuilds, it is at risk for all unsubscribed capacity and cannot recover those costs from the contracted shippers. The open season process is critical to determining the ultimate capacity of the pipeline. When additional gas is committed to the project, a larger physical pipeline may be justified (if operationally feasible), which may yield

Subject	Issue No. 1(a) (i) : Regulations on "open access" to transportation pipelines
	economies of scale that benefit all shippers. In some unique cases in the offshore Gulf of Mexico, pipelines have offered a pre-subscription open season to attract sufficient base volumes to underpin the pipeline. In these cases, the anchor shippers were pre-assured access to some of the pipeline's capacity in the open season consistent with the risk associated with their large capital investments in related production facilities. It should be noted, however, that in all of these distinctive cases any party meeting the base requirements could be an anchor shipper and a meaningful portion of the total pipeline capacity was still made available to any interested shipper in a non-discriminatory open season. FERC has approved this anchor shipper concept in order to facilitate types of unusual project development requirements. The current process for the allocation of expansion capacity is very similar to that described earlier for the allocation of initial pipeline capacity. However, prior to the expansion open season, FERC policy requires that the pipeline poll current shippers regarding their willingness to turn back their own capacity prior to the binding open season. An existing shipper does not have priority or right of first refusal for expansion capacity, but is treated the same as anyone else trying to obtain expansion capacity. All potential shippers must bid on expansion capacity during the open season and similarly situated shippers must be afforded the same rates, terms and conditions. When a project is economically and technically viable, this process allows a pipeline to efficiently identify customer requirements and

Subject	Issue No. 1(a) (i) : Regulations on "open access" to transportation pipelines
	to implement cost-effective expansions. It should also be noted that the FERC has very specific regulations that deal with the relationship between interstate pipelines and all of their energy related affiliates. Under these regulations, known as Order 2004, pipelines may not treat their affiliates in a preferential manner. These regulations include strict limitations on information flow, shared employees and corporate structure. Virtually every pipeline employee must now be specifically trained in these affiliate regulations. The penalties for violation are severe. If a pipeline is expanded, the resulting rate treatment is dictated by established FERC policy. The expansion rates are determined based upon the incremental costs of the expansion. If the resulting expansion results in a lower overall rate, then the cost is rolled in or basically included in the rate base of the pre-expansion pipeline. In this case, the existing shippers and the expansion shippers all pay a lower rate. If the expansion would result in an increase in rates to the existing shippers who hold the initial capacity, then the expansion rate will be incrementally priced. In this case, the existing shipper continues to pay their previous rate and the expansion shippers pay a rate based on the higher incremental costs to expand the system. The actual costs of an expansion will depend upon the design of the pre existing facilities and the specifics of the proposed expansion.

Annexure 1 Survey of Companies' Responses and International Practices	
Subject	**Issue No. 1(a) (i) : Regulations on "open access" to transportation pipelines**
	It should also be noted that the proposed federal enabling legislation has unique and unprecedented language allowing FERC to require an expansion upon request if the shipper requesting this service meets the requirement outlined in the legislation. These requirements include: 1. No subsidization of expansion shippers by existing shippers; 2. No adverse effect on the financial viability, economic viability or operations of the pipeline and 3. No diminution of the contract rights of existing shippers to previously subscribed certificated capacity. There are other methods of allocating capacity. Any shipper who is paying the pipeline's maximum rate under a firm transportation contract that is 12 months or longer is granted a conditional right to extend its contract at the expiration of the primary terms. As a matter of FERC policy, this right of first refusal (ROFR) exists only at the end of the primary contract term and allows the shipper the ability to retain all or a portion of its contract subject to the expiring capacity if he is willing to pay the pipeline's maximum filed rate for the greater of one year or the term offered by a third party. This contract right of first refusal is not a right to obtain capacity in either an initial open season or an expansion open season. The pipeline is also required to allocate capacity that comes available as a result of contract expiration on a

Subject	Issue No. 1(a) (i) : Regulations on "open access" to transportation pipelines
	nondiscriminatory basis. This can be done through an open season or by posting the capacity on the pipeline's public bulletin board. In any event, the FERC approved tariff will provide the procedures consistent with FERC precedent and regulations for the nondiscriminatory allocation of such available pipeline capacity. Any method by which a shipper can obtain firm capacity is by obtaining capacity released by a firm shipper. This release can be for a temporary term or can be a permanent release. The FERC has established criteria that ensure such capacity is allocated to the party who values the capacity the most (subject to the FERC approved maximum recourse rate). *Source:* Legislative Budget and Audit Committee, AK, USA and PwC analysis.

Annexure 1 Survey of Companies' Responses and International Practices	
Subject	**Issue No. 1(a) (i) : Regulations on "open access" to transportation pipelines**
	CHINA (Recommendation by IEA – DEVELOPING CHINA'S NATURAL GAS MARKET : The Energy Policy Challenges, IEA 2002) In view of international experience and the need to provide strong incentives to investors, it is appropriate for the Chinese government to offer a degree of protection to investors in high pressure transmission pipeline and LNG projects and local distribution networks. In the near term, no transmission, LNG or distribution company should be legally obliged to offer transportation or regasification services to third parties (at least for a given period), although the companies would be free to negotiate such a service if they so wish. In practice, this would mean that each producer would in most cases have no choice over which transmission company to sell its gas to, unless there happened to be more than one transmission line within the vicinity. Similarly, there would be a single buyer of gas for local distribution for each supply area, although there could eventually be more than one transmission company supplying a single distribution area with gas from different fields and basins. The introduction of a third-party access regime to encourage gas-to-gas competition should nonetheless remain a longer-term objective, and the government should make its intention and timetable for introducing TPA clear to investors.
	Philippines **Open Access Obligation** Operators of National Infrastructure Pipelines and Transmission- and/or Distributionrelated Facilities excluding

Subject	Issue No. 1(a) (i) : Regulations on "open access" to transportation pipelines
	those constructed and operated for the sole use of the owner are obligated under these Rules to provide open and non-discriminatory access to third party users which may include Service Contractors, Suppliers and Gas End Users, with due regard to the economic viability of the operation of such facilities. Such operators shall negotiate in good faith with third-party users the provision and terms of access in accordance with Annex 2. **Modification of Open Access Obligation.** As a condition of a Pipeline Permit for a National Infrastructure Pipeline or Transmission Related Facility, the DOE may determine that implementation of Open Access may be deferred where: (a) It can be demonstrated that such deferment is necessary to enable the efficient planning of the infrastructure and aggregation of the initial demand necessary to justify investments in the Pipeline or Transmission- and/or Distribution-related Facilities. (b) It is in the interest of the Gas End-users served by the National Infrastructure Pipeline or Transmission Related Facility to ensure stability of supply. In either case, the DOE shall not defer implementation of Open Access for a period longer than three (3) years for Transmission Pipelines and five (5) years for Distribution Pipelines from the date the Permit was issued. The DOE may determine that implementation of Open Access should be accelerated in

Subject	Issue No. 1(a) (i) : Regulations on "open access" to transportation pipelines
	the interest of competition. *Source: DOE Philippines - Draft Rules and Regulations Governing the Transmission, Distribution and Supply of Natural Gas- 18/01/02.*
	Australia National Third Party Access Code establishes a national access regime for natural gas pipeline systems. The definition of Pipeline includes gas transmission pipelines and distribution networks and related facilities, but excludes upstream facilities. This process involves setting terms and conditions, including reference tariffs, which requires determination of a range of measures including asset valuation, a fair allocation of justified costs, a reasonable rate of return and an acceptable depreciation methodology. Regulator may approve a proposed Access Arrangement only if it is satisfied that the proposed Access Arrangement contains the elements and satisfies the principles set out in National Third party Access Code. The Gas Code allows for the outcome of a competitive tender to set the tariff for a new pipeline which is to be covered under the Code. This is a two stage process. First, a party seeking a pipeline to be constructed is required to lodge a Tender Approval Request, which sets out the terms and conditions of the proposed tender, with the Regulator. After this is approved, the applicant runs the tender. A Final Approval Request may then be lodged with

Subject	Issue No. 1(a) (i) : Regulations on "open access" to transportation pipelines
	the Regulator seeking approval of the outcome of the tender. If approval is granted the proposed pipeline becomes a Covered Pipeline under the Code and the successful tenderer, now the service provider, is required to submit a proposed access arrangement. This access arrangement must retain the specified outcomes, such as reference tariffs, from the tender for the duration of the initial access arrangement period. *Source: ACCC, PwC Analysis*.

Annexure 1 Survey of Companies' Responses and International Practices	
Subject	**Issue No. 1(a) (ii) : Regulations on "open access" to Distribution pipelines**
Suggested "Regulations" – Derived from the Survey	**Summary of suggestions** 1) CGD license may be awarded on exclusive basis for a single party for a particular city (in case of big city, it may be split into two to three exclusive areas/ regions). The party may be selected through bidding process. 2) Users/consumers of gas should be classified in an order of priority (as is the case with the power sector where high priority consumers like hospitals, water supply, etc. are the last to be denied power). This priority should be adhered to when there is limited capacity of the pipeline 3) Regulator or the entity authorized to lay pipelines would seek requests from shippers/consumers about their capacity requirement.
	Divergent issues *4)* Local/City Gas Distribution network should be on common carrier principle. *Some industry members do not agree with this and one of them commented that Open access in city gas distribution network is not viable as infrastructure cost is very high.* 5) Pipelines should be conceived as infrastructure and hence should not belong to the marketing companies. *As perceived from the responses, some industry members do not agree with this.*

Subject	Issue No. 1(a) (ii) : Regulations on "open access" to Distribution pipelines
	Other comments 6) Liberal use of common carrier as a substitute for open access in the PNGRB Act and in subsequent documents has caused avoidable concerns and raised many issues. MoPNG needs to address to this.
Inferences from International Regulatory Regimes	Natural gas distribution consists of the operations necessary to deliver natural gas to the end users, including low-pressure pipeline transportation, supply of natural gas, metering, and construction of customer sites. Distribution is characterized by natural monopoly because of economies of scale in transportation operations. Additionally, there are economies of scope among various operations of a distribution company, because they are performed by the same distribution pipeline system. It is still unclear whether the economies of scope are large enough to prevent efficient unbundling of transportation and supply operations at the distribution level. But open access to distribution does seem to generate sufficient competition in supply to large end users. Introduction of open access in distribution had positive results in Argentina, the United Kingdom, and the United States, where end users benefited from lower prices and greater choice. But pilot programs in retail competition showed that a local distribution utility can exercise market power through its control of system operation, metering, or billing. So the benefits of unbundling distribution must be weighed against the costs of potential exercise of market power and of regulation of distribution.

Annexure 1 Survey of Companies' Responses and International Practices	
Subject	**Issue No. 1(a) (ii) : Regulations on "open access" to Distribution pipelines**
	Distribution companies typically enjoy exclusivity in natural gas supply in their region, but an increasing number of countries have instituted open access in distribution. *Source* : The World Bank, WPS 1895
International Experiences	**Mexico** *Marketing Activities.* Gas marketing can be highly competitive. Sunk costs in this business are low since the main assets are working capital and contracts with producers and consumers. Experiences in several countries, such as the United States and Canada, confirm that marketing activities are important in promoting competition through price arbitrage. Mexican policymakers sought to encourage vigorous competition in gas marketing activities. Marketers need no permit to operate and may carry out such commercial transactions as: • Buying gas, transporting it through the transportation network, and selling it to distributors or to consumers directly connected to the transportation system. • Selling gas to consumers within a distribution franchise area (commercial bypass). • Buying and selling transport pipeline capacity. *Open Access.* Open access for consumers to transportation and distribution capacity can limit market power and create

Subject	Issue No. 1(a) (ii) : Regulations on "open access" to Distribution pipelines
	competitive conditions for providing goods and services in the natural gas industry. For example, a consumer in a distribution area may wish to bypass the local distribution company to buy gas in the gas field or storage facility and transport it through the pipelines, paying the transport and distribution charges. This action restricts the market power of both transporters and distributors in their gas marketing activities. But for this to work both the transporter and distributor must provide access to their networks. The open access policy becomes more complex in light of preexisting contracted capacity and real-time congestion. Usually the company that owns the pipeline network is required to provide open access when there is enough available capacity and in a "not-unduly discriminatory manner. The value of open access in creating competition is confirmed by experience in Argentina, Canada, and the United States. This prompted Mexican policy makers and distributors to insist on open access to the transportation and storage systems when there is enough capacity (Comisi6n Reguladora de Energia 1995, articles 63-69). Likewise, distributors must allow open access to their distribution network (commercial bypass) starting from the first day of operation. *Source* : The World Bank 2001- Regulatory Reform in Mexico s Natural Gas lnaustry
	The Northern Ireland The Northern Ireland authorities had been eager to develop a natural gas market, both for environmental reasons and

Subject	Issue No. 1(a) (ii) : Regulations on "open access" to Distribution pipelines
	to make the province more attractive to foreign investors. Their effort was triggered by the conversion to natural gas of a power plant in Northern Ireland, which was commissioned in 1996 with gas transported from Britain by a sub-sea pipeline, which provided an opportunity to develop urban gas distribution. To seize this opportunity, the authorities granted the Pheonix Natural Gas Company a license to supply gas to the greater Belfast area, which accounted for 40% of the total population in the province. The license gives Pheonix exclusive rights over transportation for 20 years, and over supply for up to eight years. These exclusive rights are accompanied with obligations. In particular, the license requires Pheonix to complete its pipeline network in Belfast within 12 years, and to perform the work in each of Belfast's 12 districts in a specific order, within a specific timeframe. Moreover, a pipeline must run within 50 metres of 90% of the homes in each district. If Pheonix does not meet its obligations, it will lose its exclusive right in the districts where it fails so that other companies could be granted the license. For the first five years, there was no regulation of gas prices to consumers, other than the rules barring discrimination. This is because strong competition exists between gas and alternative fuels. However, the license provides that after the initial period, the authorities can introduce a price formula if it is judged that consumers' interests are not

Subject	Issue No. 1(a) (ii) : Regulations on "open access" to Distribution pipelines
	adequately protected by competition between fuels or with the gas market. The regulatory process was also rather simple. As both the regulator and the gas company shared the same goal of rapid gas market development, the authorities tried not to burden small and medium-sized companies with unnecessarily high costs of funding the regulator's office, staffing a big regulatory affairs team, or funding inquiries from the Monopolies and Mergers Commission. *Source:* Peter Lehmann, 1999. *Regulation in New Natural Gas Markets – The Northern Ireland Experience. Viewpoint*, World Bank.
	Belgium The local municipalities have an exclusive concession for the distribution of gas to smaller customers, though they are not obliged to supply gas to power stations or large industrial customers. *Source* : World Energy Council

Annexure 1 Survey of Companies' Responses and International Practices	
Subject	**Issue No. 1(a) (ii) : Regulations on "open access" to Distribution pipelines**
	France Gaz de France has a monopoly on the gas distribution network and accounts for around 80% of gas sold to the final consumer. A few small private companies and some companies owned by local public authorities, which were already distributing gas before the Nationalisation Act of 1946, are still entitled to distribute gas, provided they do not extend beyond a certain volume and geographical area. These small private and public companies account for 20% of gas distributed to the consumer *Source* : World Energy Council
	Azerbaijan The downstream gas industry is state-owned and controlled by Azerigas, the natural gas distribution company. *Source* : World Energy Council
	Kazakhstan The downstream gas industry is controlled directly and indirectly by the government. Kazakstan basically has two gas distribution systems. One in the west of the country - Kazakhgaz - and one responsible for gas distribution in the south east of the country - Alaugaz. *Source* : World Energy Council

Annexure 1

Survey of Companies' Responses and International Practices

Subject	Issue No. 1(b) (i) : Regulations on Transportation Rate for transportation
Suggested "Regulations" – Derived from the Survey	**Summary of suggestions** 1) Two part tariff base on capex and opex based on volumes transported with provision for incentives 2) Tariff to ensure fair return on capital investment and market volume fluctuations. *Industry clarified that market fluctuations mean that due to market conditions, if capacity goes unutilized, during tariff revisions, Regulator should consider making up for loss of revenue in the future period.* 3) A provision for suitably indexing the opex for escalation on three / five year basis, considering factors such as Govt. of India consumer index, & weighted average on increase in self consumed gas / fuel. 4) Transportation Tariff determined by Regulator should act as cap. Parties should be free to negotiate tariff below the cap. 5) Tariff could be reviewed periodically. However, first tariff review after period of loan payment in order to make the project bankable. 6) The market-determined rates may be a good principle subject to certain regulatory limits that could be derived taking stock of investments involved, operating costs , financing cost, etc.

Subject	Issue No. 1(b) (i) : Regulations on Transportation Rate for transportation
	7) Tariff has to be uniform to all shippers. In any case the tariff charged should not be higher than the approved tariff. If discounts are given on tariff basis volume/distance/pressure, the same needs to be offered to other players with similar volumes/distance/pressure. 8) Tariff recovery to be for the actual volumes transported / capacity booked, which ever is higher. 9) Review of tariff may also be permitted by the regulator in case of change in the capacity requiring incremental investments, taxation, rates/policy, and Other circumstances in over all interest of the consumer. 9) Transportation rate to consider the prevailing tariffs applicable for various existing pipelines and accordingly benchmark against them.
	Divergent issues 10) The transportation charges should be distance related and there should be transparent mechanism for tariff determination. Some industry members disagreed to this and suggested that this be fixed for "cluster" than distance.
from International Regulatory	There is an increasing emphasis (largely deriving from experience in the United Kingdom) on the control of the level of tariffs for a specified period into the future combined with an incentive mechanism to generate increased efficiency.

Subject	Issue No. 1(b) (i) : Regulations on Transportation Rate for transportation
	This is commonly referred to as the "price cap" or "RPI-X" approach. Regulation, however, involves a tradeoff between eliminating excess profits earned by the monopolist while simultaneously providing incentives to efficiency. There is a spectrum of regulatory approaches that reflects a different balancing of this tradeoff. At the two extremes are rate-of-return regulation and permanent price caps. **The Spectrum of Regulatory Approaches** **Rate-of-return regulation** is the preferred approach of regulatory commissions in the United States. It aims to eliminate excess profits by equating revenue with actual costs. The regulated business is allowed to charge tariffs that will cover its operating costs and give it a reasonable rate of return on the value of the capital employed in the business. When tariffs move out of line with costs, the business (or customers, when costs fall) makes an application for a new set of tariffs. Rate-of-return regulation thus eliminates all prospects of excess profit. This has the advantage of keeping the cost of capital low, but it does not give the regulated business a strong incentive to reduce costs. Under certain conditions, rate-of-return regulation can also encourage unnecessary and inefficient investment, because the business is generally assured of being able to recover the costs of that investment and earn a given rate of return. In an attempt to encourage efficiency, some regulatory commissions in the United States have now adopted the

Subject	Issue No. 1(b) (i) : Regulations on Transportation Rate for transportation
	practice of prudential reviews. These reviews are designed to assess whether past investment was necessary. If the regulatory commission decides that such investment is not "used and useful," it will not be added to the asset base. Although this approach looks attractive in principle, it could result in a regulatory commission "micromanaging" the business by controlling individual investment and operating decisions. **Permanent price caps** were the starting point of the development of so-called incentive regulation. Permanent price caps involve a one-time setting of tariffs, beyond which all efficiency gains are retained by the business. They mimic the desirable incentives for cost minimization found in competitive markets, where prices are generally set without reference to the costs of individual producers, but by reference, in principle, to conditions in the market as a whole. The regulated business has a strong incentive to reduce costs, but the regulatory commission must define comprehensive output standards (to counteract incentives to economize by cutting the quality of service) and may have to tolerate permanently higher-than-expected profits. Permanent price cap regulation is not a credible or sustainable mechanism, since prices will sooner or later diverge from costs (in one direction or another). Demands for renegotiation of the cap— either from customers or the regulated businesses—will be impossible to resist. Between these extremes is a range of regulatory approaches that combine incentives for efficiency with some form of profit control. They are all profit control regimes designed to reset prices

Subject	Issue No. 1(b) (i) : Regulations on Transportation Rate for transportation
	periodically so that they are equal to costs. E.g. Banded rate of returns, Sliding scale regulation, price caps with periodic reviews, permanent price caps and total revenue caps etc. **a) Profit Controls— Banded Rates of Return:** Typically, profit-sharing rules are invoked if a business' rate of return or its costs fall outside a set of specified limits, often referred to as a "dead band." Banded rate-of-return regulation is an improvement over straight rate-of-return regulation, since it provides businesses with some incentive to cut costs. However, although the problem is not as severe as in pure rate-of-return regulation, there is still an incentive to overinvest. **b) Profit controls— Sliding-Scale Regulation:** Sliding-scale regulation works by setting limits on the prices charged by the business, above which a mechanism is triggered that shares out with customers, in a specified proportion, the business' cost savings. The way in which the savings are measured depends on the particular scheme: examples are dividends ("dividend sharing") and profits ("price-related profits levy"). The key to the schemes is that there is some sharing of profits between the business and the customer, but that the business is free to determine the level of sharing by its choice of price behavior. **Dividend Sharing:** Under dividend sharing, the regulatory commission allows a company's dividends to rise above a

Subject	Issue No. 1(b) (i) : Regulations on Transportation Rate for transportation
	predetermined level as long as prices remain below a predetermined level. If prices rise above that level, the company is required to reduce its dividends. Companies can therefore affect their dividends through their choice of prices. The scheme effectively shares out between customers and shareholders the benefits (losses) from a reduction (increase) in costs. The regulatory commission's task is to determine the standard price, the standard dividend, and the rate of dividend share that is invoked at different price levels. • **Dividend sharing:** offers incentives for businesses to reduce prices by reducing costs, and does not suffer from the inefficient allocation of resources associated with rate-of-return regulation. It requires, however, that all additional equity capital be raised through the auctioning of new shares to prevent dividends to shareholders effectively being made through discounts on the price of new shares. This restricts the company's options for financing. The main problem for the regulatory commission is guarding against businesses trying to disguise dividend payments to shareholders by buying back shares or by making distributions to shareholders in other ways • **Price-Related Profits Levy:** Under a price-related profits levy, the regulatory commission sets a benchmark level of prices. If this benchmark price is exceeded, a proportion of the excess profits earned by the company is

Subject	Issue No. 1(b) (i) : Regulations on Transportation Rate for transportation

returned to the customer, for example, as an immediate rebate or as a tariff reduction for the following year. The regulatory commission's task is to set the benchmark price, the standard profit, and the rate of profit sharing at each price level.

Price-related profit levies provide strong incentives to efficiency and encourage regulated businesses to select an efficient combination of inputs. Businesses may, however, manipulate profits by changing accounting rules on non-cash items (for example, depreciation and bad debts). This puts a considerable burden on regulatory commission accounting procedures.

Price Caps with Periodic Reviews

The approach to regulatory mechanisms adopted to date for the gas and electricity sectors in Argentina, Australia, Spain, and the United Kingdom is that of price caps with periodic reviews— or so-called CPI-X regulation (where CPI is the consumer price index). Price capping with periodic reviews is a form of incentive regulation with profit sharing.

Under this form of regulation, the regulated business is required to keep the increase in its prices to less than (or equal to) the increase in a specified general price index (for example, the CPI), less x percent. If x is positive, this means that prices will fall by x percent in real terms. The level of the cap on prices reflects the anticipated levels of future operating

Subject	Issue No. 1(b) (i) : Regulations on Transportation Rate for transportation
	costs and investment that might be incurred by the business and are set to provide a reasonable rate of return on assets, consistent with efficient performance. The price cap is therefore set at a cost-reflective level. The distinguishing feature of this form of regulation is that the price cap applies for a predetermined period. Hence, the regulated business keeps all the profits associated with unanticipated cost reductions in the period between regulatory reviews. Customers, however, benefit in the subsequent regulatory period when the regulatory commission reduces prices to capture those cost savings. The shorter the interval between reviews, the more there is a tendency for price cap regulation to approximate rate-of-return regulation, with frequent assessments of the asset base and the appropriate rate of return on investment. The CPI-X mechanism provides incentives to efficiency on the part of the regulated business, while providing an assurance to customers that the benefits of efficiency gains will be reflected in lower prices in the longer term. This combination of qualities may explain why CPI-X regulation has become popular with governments and regulatory commissions, as well as with regulated businesses and their customers. This forward-looking control of the level of transmission tariffs is combined with the exercise of a measure of discretion by the transmission business in determining the structure of tariffs. The regulatory commission, however, continues to

Subject	Issue No. 1(b) (i) : Regulations on Transportation Rate for transportation
	monitor the structure of tariffs and is empowered to issue direction, where necessary. *Source* : The World Bank, China: Economic Regulation Of Long - Distance Transmission And Urban Gas Distribution, 33285
International Experience	**USA & Thailand** Rate of Return Control or "Cost-Plus" model. *Source* : The World Bank
	UK & Australia Price Caps or "Market-Minus" model: Generally use CPI-X factor, where X factor often relates to expected efficiency gains. *Source* : The World Bank

Subject	Issue No. 1(b) (ii) : Regulations on Transportation Rate for Distribution
Suggested "Regulations" – Derived from the Survey	**Summary of suggestions** 1) If tariff is charged on category of consumers on the basis of in city gas distribution network, it should be non-discriminatory 2) Average Revenue Yield control including discounts is recommended in emerging market like India where the forecast mix of customer segments or the volume of growth is difficult to forecast because there is limited historical evidence. In this form of control, revenue is calculated as an average, i.e. the ratio of the net present value of revenue to the net present value of volume over a given period. 3) In case of distribution, single rate as awarded to the party through the bidding process may be followed. However, different rates may be worked out for residential, commercial and small industrial customers.

Subject	Issue No. 1(b) (ii) : Regulations on Transportation Rate for Distribution
	Other Comments 4) Entry Exit Tariffs would be inappropriate for India. 5) Postalized tariffs do not give efficient signals for usage/investment.
Inferences from International Regulatory Regimes	Decisions on how to regulate distribution tariffs are generally influenced by the Greenfield nature of natural gas distribution. The choice is between cost-of-service regulation and price caps to regulate price level, and between tariff basket and average revenue to regulate price structure. The main features of these types of regulation are shown below. **Cost of Service** Main features 1) Price equal to average cost. 2) Price setting is the result of equating total revenues to total costs. 3) It imposes a restriction on the rate of return on capital. 4) Prices remain fixed until one of the parties involved asks for a modification of prices.

Subject	Issue No. 1(b) (ii) : Regulations on Transportation Rate for Distribution
	5) Each set of tariffs must be established according to a prediction of revenues and costs consistent the regulated level of the rate of return. **Pros** 1) Provides investors with certainty. 2) Makes the long run commitment of the governing authority credible. 3) Since investors face lower risk, may reduce cost of capital. 4) May stimulate system expansion. 5) Regulator can monitor and constrain cross subsidies. 6) Opportunity for manipulation is likely to be small in practice. **Cons** 1) Weak incentives for investors to reduce costs and operate efficiently. 2) Perverse incentives to over invest in capital. 3) Cross subsidization is a common practice.

Subject	Issue No. 1(b) (ii) : Regulations on Transportation Rate for Distribution
	4) Determination of a "fair" rate of return is inherently subjective. 5) Rate of return usually exceeds cost of capital. 6) Company produces more than an unregulated monopoly but with inefficient input combinations 7) Ad-hoc mechanism, lacking a theoretical framework. 9) Administratively demanding; huge data requirements. **Price Cap** Main features 1) Authority sets ceiling prices. 2) Usually combined with cost of service exercises at the end of pre-determined periods. 3) Usually incorporates adjustments for inflation and efficiency. 4) Rate of return on capital can take any value as long as the price cap is met. 5). When combined with cost-of service regulation, revisions are carried out at the end of pre-determined periods

Subject	Issue No. 1(b) (ii) : Regulations on Transportation Rate for Distribution
	(usually 4 or 5 years). **Pros** 1) Incentives for cost minimization and efficient operation. 2) Benefits due to productivity improvements higher than anticipated can be kept by firms. 3) More forward-looking philosophy than cost of service regulation. **Cons** 1) Too low a cap could elicit a disincentive for firms to participate. 2) Too high a cap could permit a monopolist to enjoy excessive profits at the consumers' expense. 3) Investors face greater risks under this system which could increase costs of capital. 4) It may not stimulate system expansion. **Tariff Basket** Main features

Subject	Issue No. 1(b) (ii) : Regulations on Transportation Rate for Distribution
	1) The price cap is set over the weighted sum of the prices of different products or services offered by the monopolist. 2) Weights are usually set according to previous period's output composition. 3) Example: British Telecomm. **Pros** 1) Under stable cost and demand conditions: a) The firm chooses a price vector that will converge to Ramsey prices, b) It has a positive effect on welfare. 2) Productive efficiency is enhanced. 3) There is very small opportunity for manipulation. 4) Simple to define and monitor. 5) It does not require a correction factor. **Cons** 1) Tariff rebalancing is less flexible than in average-revenue regulation.

Subject	Issue No. 1(b) (ii) : Regulations on Transportation Rate for Distribution
	2) Under cost and demand uncertainty, prices set do not converge to the Ramsey structure. 3) Cross subsidies have to be prevented through additional regulation. 4) Inclusion of a cost pass-through term is difficult. 5) Must define full list of tariffs for implementation. **Average Revenue** Main features 1) Cap set on the firm's revenue per unit output. 2) It is more appropriate for firms whose costs depend on total output. **Pros** 1) Less demanding in terms of information. 2) Greater flexibility in adjusting relative prices than in tariff-basket. 3) Represents a more lax constraint for the firm.

Subject	Issue No. 1(b) (ii) : Regulations on Transportation Rate for Distribution
	4) Simple to include cost pass-through terms in cap. **Cons** 1) When the products are not substitutes, pricing under will be inconsistent with Ramsey pricing. 2) Separate regulation required to constrain cross-subsidies. 3) Correction factor required. 4) Needs homogeneous output measures. Pure cost-of-service is generally not chosen to regulate the price level. Even though this regime is attractive to investors—it provides certainty and makes the long-run commitment of the governing authority credible—it does not give operators strong incentives to be more efficient, cut costs, innovate, and take appropriate risks. Additionally, this kind of regulation is usually quite burdensome to implement. Thus the international trend has been to substitute incentive mechanisms for cost-of-service regulation to regulate gas distribution. This is the case even in countries like the United States and Canada that have a long tradition of cost-of-service regulation. Countries may choose a combination of price cap and cost-of-service regulation. At the beginning of every five-

Subject	Issue No. 1(b) (ii) : Regulations on Transportation Rate for Distribution
	year period a price cap is determined on a cost-of-service basis. This initial value remains fixed and is adjusted during the period for inflation, efficiency, and other correction factors. The two usual methods of regulating price structure rely on weights (tariff basket regulation) or average revenue. Since the average revenue methodology does not fix weights for prices of distinct services, it grants more flexibility in tariff rebalancing than the tariff basket method. It is thus a looser constraint and provides the Company with the needed flexibility to set tariffs in a risky environment. In Mexico, average revenue regulation is used in the first five-year regulatory period because most natural gas distribution projects are greenfield and thus characterized by greater cost shocks—or unexpected changes in market conditions—at the beginning than in later phases of build-out and operation of the distribution network. After the first five years—when cost and demand conditions stabilize—tariff basket regulation might be used because it induces companys to set prices that imply redistribution of social surplus, which permits the company to recover its long-run fixed costs while facilitating intertemporal maximization of consumer surplus. Mexico's average revenue plan allows the company to choose its relative prices at the beginning of each year based on forecasts of the volume that will be demanded at the end of the year. *Source* : The World Bank, WPS 2537

Annexure 1

Survey of Companies' Responses and International Practices

Subject	Issue No. 1(b) (ii) : Regulations on Transportation Rate for Distribution			
International Experiences *Source* : Natural Gas Distribution Study, IEA 1998	**USA** Cost of Service	**Japan** Cost Plus	**France** Cost Plus	**United Kingdom** Cost of Service

Annexure 1

Survey of Companies' Responses and International Practices

Subject	Issue No. 2(a) : Criteria and Procedure for selection by Regulator of entity for laying and operating Transportation pipeline
Suggested "Regulations" – Derived from the Survey	**Summary of suggestions** 1) Procedure : All authorization to put up a transmission/city gas pipeline should be based on Competitive bidding. 2) Optimal cost advantage to the consumer (transportation rates) 3) Market participation and reputation in other hydrocarbon sectors 4) Minimum net worth 5) Authorization should be based on application by entity having ▪ Gas source tie-up and ▪ Downstream market tie-up 6) Owner of gas should be given first preference if everything else is same 7) If at any point of time existing pipeline is saturated and there is still demand for capacity, existing operator should not be automatically authorized to duplicate the pipeline. Instead, it should be made open to all interested entities

Subject	Issue No. 2(a) : Criteria and Procedure for selection by Regulator of entity for laying and operating Transportation pipeline
	8) Transporters should not be end users of the pipeline. The pipeline should constitute a separate business, may be integrated with other generic logistic business. 9) Build pipelines to aggregate demand arrived at pursuant to an open season 10) Provide for Fair expansion opportunities 11) Regulators should consider anticipated future exploration success as the driver of pipeline expansion as opposed to having expansion built-in: a "slack factor" for initial capacity will only dampen initial demand.
	Divergent issues 12)Such regulation should not apply to captive use transportation lines with 25% extra capacity being offered on commercial consideration. Some industry members considered this as a way of circumventing regulations and hence did not agree to this point.

Subject	Issue No. 2(a) : Criteria and Procedure for selection by Regulator of entity for laying and operating Transportation pipeline
Inferences from International Regulatory Regimes	The authorization process contains economic and non-economic components. Information requirements, technical, health and safety, and environmental standards comprise the non-economic components of the process. The economic component of the process allows for the exercise of some regulatory discretion. In general, a regulator will seek to prevent uneconomic duplication of existing pipelines and to ensure that economies of scale are exploited. The regulator will need an independent assessment of the viability of the project and a commitment to establish the procedures described in the previous section. In a developing market context it is reasonable to expect that a regulator will seek to avoid unnecessary duplication of pipelines and to encourage the construction of interconnects between previously separate pipelines as means of fostering increased competition in supply. *Source:* World Bank - Report on the Implementation of the Regulatory Framework for China's Downstream Gas Sector

Annexure 1

Survey of Companies' Responses and International Practices

Subject	Issue No. 2(b) : Criteria and Procedure for selection by Regulator of entity for laying and operating CGD Network
Suggested "Regulations" – Derived from the Survey	**Summary of suggestions** 1) Should be done through bidding process and awarded to the single party for a city 2) Number and nature of intended consumers targeted to be served 3) Networking with fallback options envisaged at the formulation stage, if any 4) Sustainability of operations on a long term basis 5) Authorization to an entity be provided based on a. Gas source tie-up b. Gas Transmission tie-up up to city gate station c. The quantity of gas tied-up should be enough to meet the existing demand and growth for replacement of LPG for domestic, replacement of LPG/FO/Diesel for commercial, replacement of FO/diesel/naphtha for small and medium industry on network and replacement of diesel/gasoline in the city transport system. 6) In case there are more than one applicants seeking authorization for same geographical area with

Subject	Issue No. 2(b) : Criteria and Procedure for selection by Regulator of entity for laying and operating CGD Network
	upstream and midstream tie-up, Board may grant authorization to an entity offering lowest quoting of cost of supply and network with the provision that in future if another entity offers supply at lower cost or supply gas to meet unfulfilled demand, access to local network would be provided on non-discriminatory basis 7) Infrastructure can be laid preferably independent of the distributors and should be available to any one wanting do business. Customers should have a choice to choose their distributor. 8) Prequalification of bidders to ensure: a. consideration of health safety and environmental hazards; b. demonstrable technical competence; c. financial capability 9) Do not include lowest tariff, as this will merely incentivize those intending to sell to large customers only. 10) Minimum service obligations that the Central Government/Regulator (as the license grantor)

Subject	Issue No. 2(b) : Criteria and Procedure for selection by Regulator of entity for laying and operating CGD Network
	identifies, after an assessment or market study, in the bid document. Regulator to provide incentives to the winning bidder for exceeding them.
	Divergent issues *11)* Retail networking experience and minimum net worth criteria. *Some industry members felt that most of the established players in CGD pipeline in India, had no experience. Past experience is a restrictive clause and hence general hydrocarbon industry experience should be counted. One more suggestion by another company that "Entity with existing network to be given greater weightage" did not find acceptance by some members.* 12) Specific weights be applied to a set of five bid selection criteria (1) a 20% weight to lowness of tariff; (2) a 10% weight to the present value of capital expense; (3) a 20% weight to IRR; (4) a 25% weight to present value of CNG volumes; and (5) a 25% weight to the present value of small commercial/industrial volumes. *The company which suggested this based on draft of PPAC, also commented that sl 4 and 5 are should be minimum service obligations and not bid criteria. Some other companies commented that such criteria should not be laid down for all CGD networks and could be case specific.*

Subject	Issue No. 2(b) : Criteria and Procedure for selection by Regulator of entity for laying and operating CGD Network
International Experiences	***Mexico*** *Procedure for award of CGD network* Regulatory Authority for City Gas Distribution: *Comisión Reguladora de Energía* (CRE) awards distribution permits by means of bidding processes. Natural gas distribution bid processes have two stages: the technical and the economic. In each stage, the CRE informs participants of the results of their evaluations, in order to clarify the procedure. The winning offer is defined as having the lowest average tariff (Po), if and when it differs more than 10% with respect to the Po of the next to lowest bid. All economic bids which present a Po that differs 10% or less with respect to that of the lowest bid are considered to be tied with it. In case of a tie, economic bids are listed according to the relation between their Po and the coverage (number of users) proposed in their offers. In this case, the economic bid which presents the lowest Po/coverage relation, that is, the lowest tariff per user, is considered the most favorable. *Source: CRE*
	Romania

Annexure 1 Survey of Companies' Responses and International Practices	
Subject	**Issue No. 2(b) : Criteria and Procedure for selection by Regulator of entity for laying and operating CGD Network**
	Regulatory Body for Gas Regulation in Romania: National Authority for Regulation in Natural Gas Sector (ANRGN) Natural gas distributor: *Natural gas distributor is* the legal person, Romanian or foreign, authorized and/or licensed, according to the present ordinance, that has as main activity natural gas distribution, as well as its commercialization to the captive consumers, in a limited area. *Authorization and licensing regime* (1) The authorization and licensing regime is foreseen in Regulation for granting authorizations and licenses in natural gas sector. (2) Regulation foreseen at para (1) shall be elaborated by ANRGN and adopted by Government decision. (3) The economic agents in natural gas sector are obliged to request license and authorization granting within no more that 3 months from the date of coming into force of the Government decision for approving the regulation foreseen at para. (1). (4) The petitioner must be legal person having its headquarters in Romania. (5) The petitioner that does not own a stable headquarters could, on the terms of the law, to establish and maintain a

Subject	Issue No. 2(b) : Criteria and Procedure for selection by Regulator of entity for laying and operating CGD Network
	secondary headquarters for the whole period of authorization and/or licensing. (6) Petitioners which are under legal reorganization procedure or bankruptcy or those whose authorization or license has been withdrawn within 5 years previous the date of registration of the request may not get a license or authorization. (7) The refusal for authorization or licensing, the lack of a justified answer and within the term and any other solution of ANRGN, considered by the petitioner illegal and prejudicial, could be attacked, under the law, at the administrative claim court. (8) The licensee could transfer the authorization to another legal person, with ANRGN's approval. *Source: Natural Gas Law, The Parliament of Romania* **Regulation for authorizing and verifying the companies developing designing, building and operating activities in natural gas sector** Romanian or foreign companies accomplish designing, building and/or operating the objectives related to ground technological installations for natural gas production and/or underground storage and for objectives related to natural gas transmission distribution and/or utilization installations, within competence limits offered by the obtained

Subject	Issue No. 2(b) : Criteria and Procedure for selection by Regulator of entity for laying and operating CGD Network
	authorization. Designing and execution of works in natural gas sector are accomplished according to technical norms in force, after obtaining the approvals and notifications foreseen by these. Documents for designing and accomplishing the works in natural gas sector, as they have been defined earlier in the Regulations must be set up and signed only by installers authorized by ANRGN, administrator/associate/employees of a company authorized according to the present regulation. *Source: Regulation for authorizing and verifying the companies developing designing, building and operating activities in natural gas sector, The President of National Regulatory Authority in natural Gas Sector* ***Procedure for granting the temporary license*** *Temporary license* – administrative individual document issued by ANRGN, which entitles the titular to attend a public auction for getting the concession of public services for natural gas distribution; **Art. 5. – (1)** For getting the temporary license, the applicant shall send ANRGN a written application. The application, together with the documents foreseen at art. 6, shall be set down with minimum 10 calendar days before the date established for the public auction.

Subject	Issue No. 2(b) : Criteria and Procedure for selection by Regulator of entity for laying and operating CGD Network
	(2) The application made according to the model foreseen in annex at the present regulation shall be filed in the authorizations and licenses register. **(3)** The applicant shall be a private law legal person, Romanian or foreign, having the headquarters in Romania. The applicant, foreign legal person, who does not own a stable headquarters in Romania, shall establish and maintain in Romania, under the law, a secondary headquarters, for the whole period of running the concession contract. **(4)** The applicants under judicial reorganization or bankruptcy, as well as those whose authorization or license in natural gas sector has been withdrawn within a period of 5 years previous filing the application, cannot be granted the temporary license. **Art. 6. – (1)** The applicant is obliged to present the following documents for getting the temporary license: a) The setting up document of the company, legal copy; b) Company's filing certificate at the commerce register, legal copy; c) Data concerning the financial situation of the applicant, according to annex 4 at the Regulation for granting authorizations and licenses in natural gas sector , approved by Government Decision no. 784/2000, republished;

Subject	Issue No. 2(b) : Criteria and Procedure for selection by Regulator of entity for laying and operating CGD Network
	d) Copy of the advertisement, published by the conceder in Monitorul Oficial of Romania, Part IV, on organizing the auction subject of the application; e) Technical specifications, including the concession contract model; f) Documents provided to the applicant for the temporary license by a licensed supplier, which to certify that the foreseen natural gas consumption is covered for minimum 15 years, specifying the sources; g) Statement upon own liability of the legal representative of the applicant, from which to arise that it is no t under one of the situation foreseen at art. 5 para. (4); h) Proof of paying the tariff for granting the temporary license, according to art. 11 para. (2). **(2)** For the documents foreseen at para. (1) a) and b), the applicant may present the original of the documents and their copy, the staff of ANRGN certifying the conformity. **(3)** The applicants who have already set down the documents related to authorizations/licenses at ANRGN, may, by exception from the provisions of para. (1), to set down a statement upon own liability from which to result that ANRGN, in case there are not modifications of the documents, to use them.

Subject	Issue No. 2(b) : Criteria and Procedure for selection by Regulator of entity for laying and operating CGD Network
	Art. 7 – (1) When receiving the application, ANRGN, by the Department authorizations, licenses, regulations and technical certifications, analyzes whether the documentation set down by the applicant corresponds to the provisions in the present regulations. If the documentation does not correspond to the provisions in the present regulation, ANRGN shall request the applicant to make it again. **(2)** After verification of the documentation, the Department authorizations, licenses, regulations and technical certifications makes a report through which it proposes, justified, granting or denial of granting of the temporary license. **(3)** The report shall be submitted to be analyzed by the Regulatory Committee of ANRGN. **Art. 8 – (1)** The granting or denial of granting of the temporary license is accomplished based on the report, by a decision of the President of ANRGN, which shall be communicated to the applicant within 5 days from its issuing. **(2)** The decision of the President of ANRGN regarding the granting or denial of granting of the temporary license could be brought to court, under the law. **Art. 9 – (1)** The temporary license comes into force on the date of issuing by ANRGN.

Subject	Issue No. 2(b) : Criteria and Procedure for selection by Regulator of entity for laying and operating CGD Network
	(2) The validity of the temporary license ends on the date of adjudication. **(3)** In case that the conceder decides to postpone the date of the public auction, the validity term of the granted temporary license is legally prolonged in compliance with the provisions in para. (2). **(4)** Within 30 days from the date of concluding the concession contract, the winner of the public auction shall address ANRGN for certifying it, and also for obtaining the correlative licenses and auctions, foreseen by the Regulation for granting authorizations and licenses in natural gas sector. **Art. 10** – The temporary license is not transferable. Any transfer is legally worthless. *Source: Regulation for granting the temporary license in natural gas sector, MONITORUL OFICIAL OF ROMANIA, PART I, no. 269/March 26, 2004*
	Turkey Distribution licenses are granted through a tender process. Prequalification is based on financial strength and experience of the companies Evaluation is based on the **unit service and depreciation charge** for supplying one kwh natural gas to consumers Licenses are granted for a minimum of 10 and for a maximum of 30 years. **Decision to conduct a tender and tender announcement**

Subject	Issue No. 2(b) : Criteria and Procedure for selection by Regulator of entity for laying and operating CGD Network
	Distribution license tender shall be conducted upon a Board Decision. The city subject to the tender (in the Board Decision): • license term • eligible consumer threshold • non-eligible consumer connection charge applicable throughout the license period • bid bond and performance bond amounts • other tender related issues pertaining to the city Announced in the Official Gazette. In the tender announcement shall state the application period, application place, question-answer method and duration, which information and documents are required and other issues. **Distribution Licensee** The ownership of the distribution network shall be transferred to the company which wins in the tender, taking into account issues such as; • the level of development and consumption capacity • the number of users in the city, • for the duration of the license term determined by the Authority in the tender announcement.

Subject	Issue No. 2(b) : Criteria and Procedure for selection by Regulator of entity for laying and operating CGD Network
	The Board may break the city into more than one distribution regions with defined boundaries, depending on the density of population, and tender each region separately Board has also a right to combine cities in order to create a optimal investment cost for cities close to each other. **Content of the tender documents** Tender file shall include the terms of reference setting forth the principles and procedures applicable at all stages of the tender process including; • Preparation, submission, opening, evaluation, finalization of the bids • The currency unit in which the bidders shall bid, • eligible consumer threshold • license term, • non-eligible consumer connection charge to be applied throughout the license term, • bid bond and performance bond amounts, • the period during which unit service and depreciation charge shall be applied as a fixed amount, • commencement date of the investment,

Subject	Issue No. 2(b) : Criteria and Procedure for selection by Regulator of entity for laying and operating CGD Network
	• all principles and procedures applicable to the design, construction and material required for the construction of the distribution network, • commissioning of the completed network and the basic technical criteria. Terms of reference shall be prepared in accordance with the characteristics of the city subject to the tender. **Evaluation of the bids** Based on the unit service and depreciation charge, which shall be proposed as a single charge for supplying one kWh natural gas to consumers. • the ranked three lowest bids shall be determined • the relevant bidders shall make discounts off their bids • the bidder with the lowest bid, who shall be the company which acquires the right to be granted a distribution license The unit service and depreciation charge, which shall be set in the tendering process, shall be in effect throughout the period set forth in the relevant tender documents. Following the completion of such period, the unit service and depreciation charge to be determined by the Board in accordance with the price cap method shall be used.

Subject	Issue No. 2(b) : Criteria and Procedure for selection by Regulator of entity for laying and operating CGD Network
	Partnership of the municipality The city distribution company obtaining the distribution license from the Authority must offer a partnership at a rate of 10% to the municipality or the municipal company within the city in which it is authorised without the need to provide any capital. Such capital rate may be increased at a rate of maximum 10% provided that the equivalence has been paid *Source; Energy Market Regulatory Authority of Turkey*
	Nova Scotia **Franchise evaluation** **5** Subject to Section 6, the Board shall not grant a franchise over an area unless **(a)** the applicant can demonstrate that the applicant has a reasonable likelihood of serving the proposed franchise area within a period of ten years; **(c)** the applicant has submitted to the Board a Socio-Economic Impact Statement that shall include (i) a benefits plan, together with a written undertaking that if the applicant is granted a franchise, the applicant will take all reasonable measures to implement the benefits plan, (ii) evidence that the applicant is fully aware of any significant socio-economic effects of the proposed franchise, has

Subject	Issue No. 2(b) : Criteria and Procedure for selection by Regulator of entity for laying and operating CGD Network
	measures in place to mitigate adverse socio-economic impacts and promote positive outcomes, and is committed to carrying out those measures in order to ensure that the franchise benefits the people directly affected by it with minimal disturbance to desirable aspects of their way of life, (iii) the probable benefits of the construction and operation of the delivery system, and (iv) the nature and extent of the impact of the sale and consumption of natural gas within the proposed franchise area; **(d)** the benefits plan has been approved by the Board; **(e)** the applicant has provided commitments satisfactory to the Board to encourage competition among agents, gas marketers and brokers in the sale of gas within the proposed franchise area by specifying, (i) in a code of conduct filed with the Board, the steps the applicant proposes to take to eliminate any undue competitive advantage as a result of its being a bundled service provider, (ii) the availability to all gas marketers of detailed market information including names, addresses and telephone numbers of customers and potential customers in the proposed franchise area, and (iii) information relating to the existing distribution system and such other information, including anticipated construction and build-out plans, as may be determined by the Board;

Subject	Issue No. 2(b) : Criteria and Procedure for selection by Regulator of entity for laying and operating CGD Network
	(ea) where the applicant is a public utility as defined]n the *Public Utilities Act*, the applicant can demonstrate to the Board how it shall promote competition with respect to the energy products it distributes; and **(f)** the applicant has provided such further information as the Board determines. **6** The Board may grant a franchise without the applicant submitting a Socio-Economic Impact Statement, a benefits plan, or both if **(a)** the gas delivery system to which the application relates is less than 5 km long; **(b)** the franchise to which the application relates belongs to a class of franchise exempted from the provisions of these regulations pursuant to Section 10; **(c)** the application is made pursuant to Section 10 of the Act; or **(d)** in the opinion of the Board, the application is for a minor amendment to a franchise. *Source:* Gas Distribution Regulations (Nova Scotia)

Annexure 1

Survey of Companies' Responses and International Practices

Subject	Issue No. 3 : Principles for determining number of years for which a CGD network should be accorded exclusivity
Suggested "Regulations" – Derived from the Survey	**Summary of suggestions** 1) Payback of the investment 2) Sustained availability of the gas from the contracted source 3) Alternative sources envisaged, if any 4) The number of years should be derived by economic returns on the investments one makes. 5) Allow an exclusivity period which reflects risk and longevity of the investment, as well as contractual commitments such as take or pay. 6) Apply exclusivity thresholds so that large industrial customers are part of the CGD customer mix. 7) Competition should be phased in order to ensure network build-out, protect residential customers and to prevent cherry picking. 8) Existing entities operating CGDs that are granted authorization should receive exclusivity periods comparable to those given to Greenfield licensees. International best practice has generally required gas-on-gas competition to occur at the same time so that there is a level playing field and the process is efficient.

Annexure 1 Survey of Companies' Responses and International Practices	
Subject	**Issue No. 3 : Principles for determining number of years for which a CGD network should be accorded exclusivity**
	Divergent issues *Industry views were divergent as regards no of years. They are as follows-* 9) Gas marketing exclusivity of between 15 and 20 years and conveyance exclusivity of between 20 and 30 years in accordance with international standards. 10) For marketing, there should not be any exclusivity for urban agglomerates (UA) with more than two million population. For UA of less than two million, exclusivity can be provided on basis of Reasonable pay back period of 7 years plus 3 years of development activity, totaling to 10 years. 11) There may be exclusivity for setting up infrastructure of NG pipelines & City gas grids, with a period of 10 years, with an additional period of 3 years for initial, developmental activities, totaling to 13 years. 12) As far as possible there should be scope for at least two players. Since the infrastructure in city gas distribution is not available, exclusivity may keep for maximum 5 years or no of consumers 13) As such exclusivity should not be provided for any activity as it would act as restrictive instrument for multi party participation in the particular activity. However for financing of the project, exclusivity may be accorded for distribution network for duration of loan payment. 14)Initially, it may be for a period of 10 years and subsequently based on the performances and customer satisfaction, it may be extended for another term.

Annexure 1 Survey of Companies' Responses and International Practices	
Subject	**Issue No. 3 : Principles for determining number of years for which a CGD network should be accorded exclusivity**
Inferences from International Regulatory Regimes	Distribution of natural gas has natural monopoly characteristics, so pricing of this service is regulated. Greenfield investments carry demand, financing, and operating risks that are typically not present in divestiture and acquisitions of existing assets. These considerations influence the design of distribution regulation. Generally, natural gas distribution networks are to be developed through temporary regional monopolies in defined geographic zones. Even though there are natural economic entry barriers to construction of distribution networks, regulators ensure that no city would be adversely affected by disorderly entry of distribution companies that could result in poor network design and construction and unreliable service. Deciding how long the regional monopolies should maintain exclusive rights to distribution, involves several trade-offs. In theory, duration should depend on implied tariffs for consumers and risks and amount of investments. A relatively short period of exclusivity implies a shorter period to recover investment costs and commensurately higher tariffs. In contrast, long periods of exclusivity might be unnecessary due to natural market barriers that arise after a distribution network is constructed. The optimal length of the distribution exclusivity period is influenced also by the extent to which consumers inside the distribution area are able to bypass the local distribution companies to purchase gas from other agents.

Subject	Issue No. 3 : Principles for determining number of years for which a CGD network should be accorded exclusivity

- If commercial (open access to network) and physical (alternate pipeline) bypass are not allowed, exclusivity gives the distributor de facto monopoly power over marketing and adjacent transportation. This is a powerful investment incentive through strong market power.
- If bypass is allowed, the distributor's exclusivity would be restricted to gas distribution services. This implies less market power for the distributor and greater uncertainty for investors.

The policy decision to grant exclusivity in conjunction with the initial distribution permit is an effort to reconcile different criteria, such as international experience on exclusivity periods and opinions from market players and government agencies.

Generally physical bypass are gradually implemented. During initial couple of years, only consumers inside local distribution zones with more than a threshold per day volume could construct their own connection to the transportation system. In few years this privilege would be extended to consumers within a lesser threshold and to all others after a pre-decided higher number of years. It must be pointed out that physical-bypass is meant for self consumption rather than to provide service to other consumers inside the exclusive distribution area. This system introduces gradual competition between transporter/shipper and the local distribution company, which would assure

Subject	Issue No. 3 : Principles for determining number of years for which a CGD network should be accorded exclusivity
	competitive contracts for consumers inside local distribution zones. Distribution zones are tendered through an open bidding process, and the winner is granted an exclusivity period. For each tender the regulator defines a distribution geographical zone and sets a minimum consumer-coverage target that the company must reach by the end of the first few years. Participants present technical and financial proposals, including a market demand study. Evaluation is carried out in two stages. In the first stage the technical quality of the project is evaluated. Those that pass this test are evaluated according to the lowest quoted value of the average revenue for the stipulated first few years. Distributors that had a distribution concession prior to introduction of regime are also incorporated into the license regime. *Source*: DEVELOPING CHINA'S NATURAL GAS MARKET : The Energy Policy Challenges, IEA 2002, PwC Analysis

Subject	Issue No. 3 : Principles for determining number of years for which a CGD network should be accorded exclusivity
International Experiences	**Argentina** ▪ The natural gas sector was reformed in 1992 and is now a competitive market with two pipeline companies and eight distributors operating within a regulated monopoly. ▪ The transmission companies are obliged to provide free access to their pipeline, but are not allowed to sell natural gas. ▪ Large users can freely choose between distribution companies or buy directly from the producers. *Source*: World Energy Council
	Canada ▪ In Alberta exclusive franchises are granted for 20 years and renewable for 10 or more years. ▪ Renewals require a public hearing. *Source*: World Bank – PRWP 2537

Subject	Issue No. 3 : Principles for determining number of years for which a CGD network should be accorded exclusivity
	Colombia ▪ Exclusive areas based on public interest. ▪ Low tariffs for poor consumers are necessary to obtain exclusive rights to serve economically attractive consumers. ▪ Duration of exclusivity is at most 20 years. *Source*: World Bank – PRWP 2537
	Mexico ▪ Regulated private regional monopolies have an exclusivity period of 12 years. ▪ Exclusivity only in the distribution of natural gas. ▪ Commercial bypass is allowed from the first day of operation. ▪ Physical bypass is phased in gradually over 5 years. *Source*: World Bank – PRWP 2537

Subject	Issue No. 3 : Principles for determining number of years for which a CGD network should be accorded exclusivity
	Spain ▪ Enagas (State owned company) has the exclusive right to serve large industrial customers. ▪ Concessions are granted to local distribution companies with an exclusivity period that may last up to 75 years. Exclusive rights include medium and small industrial consumers and residential and commercial consumers. *Source*: World Bank – PRWP 2537
	United Kingdom ▪ British Gas earlier had exclusive rights however, no longer are these exclusive rights given to serve consumers of less than 2500 therms per year. *Source*: World Bank – PRWP 2537

Subject	Issue No. 5 : Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct
Suggested "Regulations" – Derived from the Survey	**Divergent issues** *Industry views were divergent as separation of activity of gas marketing & transportation. They are as follows-* 1) One organization can participate in both the activities but it has to be ensured that these activities do not lead to monopolizing and taking unfair advantage. Accordingly the Code of conduct can be developed to maintain the distinction and segregation of two activities. 2) Transportation activities should be separate from gas distribution activities 3) Purpose of unbundling is to ensure that pipeline ownership does not provide any competitive advantage to any gas seller. However,, such separation may await development of multi-supplier and pipeline developer and therefore, over the period as gas market matures, ownership between the transmission and downstream activity should be separated 4) The infrastructure should be distributor independent. 5) The network should be transparent to the customers. 6) The company should not be a consumer of gas in the area where it is carrying out transportation or

Subject	Issue No. 5 : Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct
	marketing activity 7) The Gas marketing should be left to the individual NG producers / LNG suppliers to identify customers and sell their product to customers. 8) Ensure that the code of conduct stops operators of transmission facilities from disclosing information to affiliates engaged in production in order that the affiliate would gain an undue advantage. 9) Consider using the FERC's Affiliate Code of Conduct as a model or at a minimum, have provisions that result in comparable controls. 10) A well-developed affiliate code of conduct needs to meet certain requirements: ▪ A prohibition against a utility giving a preference for transportation services to its affiliate or the affiliate's customers over non-affiliates ▪ A requirement that requests for transportation services to be processed in the same manner and in a similar time period for all requests ▪ A prohibition against a utility disclosing information to an affiliate unless it is disclosed to all

Subject	Issue No. 5 : Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct
	non-affiliates at the same time ▪ A requirement that the operating employees responsible for transportation services for the utility be functionally independent from the portion responsible for supply and from any marketing affiliate ▪ Till the time un-bundling takes place Board to carry out periodic audits to ensure that an entity has not taken any undue advantage while being a pipeline operator/transporter as well as a marketer. 11) Importer/ Producer and the Marketing company is one and the same entity. The pipeline transport organization is a separate independent setup only working as infrastructure service provider. ▪ The transport company should not distinguish between a large volume user versus small volume player ▪ Provide the facility on first in first out basis. ▪ No discretion on bulk volume discounts, that is, should have predetermined / predefined volume

Subject	Issue No. 5 : Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct
	discounts. ▪ Maximum advance booking of transport space be for a month, ▪ Pipeline space, being a perishable commodity, booking only with predefined advance payment, that is, %age of expected transport cost. ▪ The advance be forfeited in case the requester fails to honor the commitment / schedule ▪ A formula can be devised as to up to how many days in advance, in the likely situation where in the said requester may not be in a position to honor his already committed schedule, the requester can request for waiver of the penalty amount ,in part or in full. ▪ Swapping of commitment should not be permitted, excepting incase where in immediately preceding or succeeding operators agree for a swap

Subject	Issue No. 5 : Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct
Inferences from International Regulatory Regimes	**The Code of Conduct** is the document that describes the procedures put in place by a transmission business to implement and enforce the separation of its transmission and supply activities. Each transmission entity that is subject to regulation will be required to prepare such a code. It is envisaged that these codes will be prepared as part of a process of consultation between the regulatory commission and the regulated transmission entity with provision for the participation of other interested parties (for example, producers, eligible consumers, and UGDs) in the consultation process. A typical Code of Conduct document will include the following elements: • An Explanatory Note: This will set out the requirement for the document with reference to the specific transmission entity. • Definitions: This will set out precise descriptions of the relevant parties and activities that will be referred to in the code. • Objectives and Principles: This section includes the transmission entity's commitment to provide nondiscriminatory access to all eligible and suitably qualified applicants. A key feature of this commitment will comprise the principles governing the management of information flows and the access to information.

Subject	Issue No. 5 : Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct
	• Management of information flows and the access to information: The transmission entity will receive commercially confidential information from applicants for a transmission-only service. The transmission activity has an incentive to pass this information on to its affiliated supply activity. For example, it will find out who, among its customers currently receiving a bundled service, is planning to contract for a gas supply from another supplier. This will allow its affiliated supply activity to target these customers and entice them to remain as customers. This would provide the affiliated supply activity with an unfair advantage relative to other suppliers. **Implementation of Code of Conduct:** This section addresses the implementation of the Code of Conduct and includes the following: The obligations of the transmission business. These obligations include the reorganization of procedures, policies, departmental structures, and job responsibilities to ensure compliance with the Code of Conduct. This section also includes commitments to establish employee communications and training programs to ensure that employees are informed and resourced to comply. A Complaints Procedure will also be established. The nature of the functional separation. This subsection deals with the following: • Sharing of facilities and resources. • Keeping of books and records.

Subject	Issue No. 5 : Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct
	• Prohibitions on engaging in restricted activities. • Provision of business support services. **The conduct of business:** This subsection addresses the application of tariffs, charges, and discounts and the notification that will be required to ensure nondiscriminatory service. **Procedure for dealing with system emergencies:** This subsection addresses the procedures for dealing with responses to system emergencies that violated the Code of Conduct. **The maintenance of accounts and records:** This addresses accounting Code and statutory requirements. **The role of the Compliance Officer:** This subsection presents the powers, duties, and responsibilities of the Compliance Officer who is responsible for monitoring and enforcing compliance with the Code of Operation, and outlines provisions for external audit. **SAMPLE CODE OF CONDUCT** **DEFINITIONS**

Subject	Issue No. 5 : Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct
	The emboldened terms in this Code of Conduct Implementation Procedures have the following meanings: **Affiliate** means a related undertaking of [Transmission Entity X]. **[Transmission Entity X]** means the business unit of Transmission Company Y that is the Transportation provider on Transmission System Z. **Transmission System User** means a person with whom the Transportation Enterprise carries out business [or may carry out business] in its role of providing a transmission or distribution function. A Transmission System User is a person, who in dealing with [Transmission Enterprise X] in regard to those functions, might provide commercially sensitive information. A Transmission System User may also be described as a Shipper. **Business Support Services (BSS)** means those Business Support Services, both technical and administrative, including, but not limited to, finance, accounting, human resources, and information systems whether provided by [Transmission Enterprise X] employees or third parties to one or more Business Units of [Transmission Enterprise X]/[to all business units], such as payroll, insurance, financial reporting, corporate accounting, corporate security, human resources (compensation, benefits, employment policies), employee records, pension management, and telecommunications and information systems.

Subject	Issue No. 5 : Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct
	Business Units means those divisions of [Transmission Company Y] that comprise Gas Supply and the Transportation Provider. **Compliance Officer** means such person or persons as may be appointed by [Transmission Enterprise X] from time to time to fulfill the obligations of Compliance Officer as contemplated by the Code of Conduct. **Corporate Support Services (CSS)** means those services provided to the Chief Executive Officer and the Board to facilitate the CEO and Board in carrying out their respective functions. **Business Support Services Function** means those [Transmission Company Y] departments including but not limited to Finance, IT, Human Resources and Secretariat and third parties, providing BSS to [Transmission Enterprise X] or any Business Unit thereof]. **Gas Supply Customer** means a person with whom the Gas Supply Unit carries out business in the normal course of the provision of [a [bundled] gas supply]. **Gas Supply Unit** means the business unit of [Transmission Company Y] engaged in the business of the sale for resale (or direct sale to final customers), or purchase for resale, of gas on the wholesale market, or the generation or sale of electricity including for avoidance of doubt acting in its capacity as supplier of natural gas to customers/end users at

Subject	Issue No. 5 : Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct
	any Off-take Point from the Transmission System. **Transportation Provider** means [Transmission Enterprise X] acting in its capacity as an owner/operator of [Transmission System Z]. **Gas Supply** means the business as conducted by the Gas Supply Unit. **Transportation Systems Operations** means the transmission of gas undertaken by the Transportation Provider. **Transportation Information** means transmission construction plans, transmission abandonment plans, planned transmission system upgrades, downgrades, or modifications, planned transfer or sale of transmission facilities, transmission maintenance or outage plans or schedules, availability of transmission capacity, forecasted or scheduled new customer interconnection information, planned customer disconnection information, and customer emergency curtailment information. **Supply Employee** means an employee of the [Transmission Company Y] or its Affiliates who works (solely or substantially) within Gas Supply. **Transportation System Employee** means an employee of [Transmission Enterprise X] or its Affiliates who works

Subject	Issue No. 5 : Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct
	(solely/substantially) within the Transportation Provider. **Board** means the Board of [Transmission Company Y]. The **Chief Executive Officer** means the Chief Executive Officer of [Company Y]. The **Executive Management** means the Chief Executive Officer, the Heads of Business Units, The Chief Information Officer, The Head of Finance and the Company Secretary. **Commercially Sensitive Information (CSI)** means any information compiled by [Transmission Company Y] or a Business Unit thereof on a customer in the normal course of providing, in the case of the Transportation Provider, gas transportation services, and in the case of Gas Supply a bundled gas supply and designated by a Transportation Customer or Gas Supply Customer respectively as Commercially Sensitive. Information relating to customers that is aggregated, redacted, or organized in such a way [for the purpose of proper business planning, forecasting, or otherwise and in a manner that does not reveal the identity of the customer to whom the information relates does not constitute Commercially Sensitive Information]. The **Regulatory Commission** means that person appointed by the State Council or such other person as may from time to time be designated with responsibility for regulatory commission matters within the gas industry.

Subject	Issue No. 5 : Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct
	The **Code of Operations** means the code of practice for the operation of the Transmission System Z. **Code of Conduct** means the Code of Conduct as revised from time to time. **Implementation Procedure** shall mean such procedures, policies, instructions or otherwise as may be prescribed by [Transmission Company Y] or any Business Unit thereof for the purpose of implementing the Code of Conduct. **OBJECTIVES AND PRINCIPLES OF CODE OF CONDUCT** This Code of Conduct relate to [Transmission Entity X] in its gas-related activities within the China. This Code of Conduct is adopted by [Transmission Company Y] for the purpose of • ◎establishing Code and conditions for interaction between the Business Units within [Transmission Company Y] and to ensure equality of treatment as between the Business Units within [Transmission Company Y] and third parties; • ensuring there is non-discriminatory access to the regulated products and services of the Business Units within [Transmission Company Y]; • promoting nondiscriminatory access to information while protecting the confidentiality of proprietary Customer

Subject	Issue No. 5 : Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct

information and

- [preventing cross-subsidization of competitive activities as between the Business Units all in accordance with statutory and regulatory commission obligations of the Board].

NONDISCRIMINATORY ACCESS

Unless otherwise authorized by the Code of Conduct, no Business Unit shall

1. Represent that as a result of the affiliation with [Transmission Enterprise X] or any other Business Unit thereof it will receive any different treatment from or by such other Business Unit than the treatment that Business Unit provides to unaffiliated entities or their customers in respect of regulated services; or

2. Provide other Business Units or their customers any preference (including but not limited to terms and conditions, pricing or timing) over unaffiliated entities or their customers in the provision or procurement of goods or services provided by that Business Unit.

If a Business Unit makes a service or product available to other Business Units or a customer thereof, the Business Unit shall contemporaneously make the same service or product available to all unaffiliated entities or their respective

Subject	Issue No. 5 : Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct
	customers on a nondiscriminatory basis. **NON-DISCRIMINATION IN PROCESSING REQUESTS** The Transportation Provider and Gas Supply shall process all requests for the same or similar services or product provided by the Transportation Provider and Gas Supply respectively in the same manner and within the same period irrespective of whether the request is from another Business Unit or an unaffiliated enterprise. **INFORMATION ACCESS** The Transporter shall establish a Transportation Information request procedure, which shall be a procedure whereby all Transportation Information from the Transportation Provider. Requests for Transportation System Information shall be made to the Transporter and dealt with under the Transportation System Information Request Procedure. [Transmission Enterprise X] will ensure that Gas Supply Employees and new Business Unit employees do not have access to, or obtain by any means, Transportation Information, except that which is available through the Transportation Systems Information Request Procedure. In the event that the Transporter receives any request for information the Transporter may seek the opinion of [The Compliance Officer/regulatory commission] with a view to ascertaining whether the provision thereof should or may constitute a breach of the Code of Conduct.

Subject	Issue No. 5 : Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct
	Gas Supply Employees shall not disclose confidential information to new Business Unit Employees and new Business Unit Employees shall not disclose confidential information to Gas Supply Employees. [Transmission Entity X] will ensure that: • Transportation System Employees do not disclose to Gas Supply Employees any Transportation Information, by any means other than as provided under a Transportation System Information Request. • Transportation System Employees do not disclose to Gas Supply Employees any information about the transportation system(s) of others except as provided under a Transportation System Information Request. • Transportation System Employees do not share any CSI related to nonaffiliated Transmission system Users or potential nonaffiliated Transmission system Users with any Gas Supply Employees [except as provided under Transportation System Information Requests]. • CSS Officers do not disclose to Trading Employees any information about [Transmission Enterprise X]'s Transportation System. • CSS Officers do not disclose to Trading Employees any information about the transportation system(s) of others.

Subject	Issue No. 5 : Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct
	• CSS Officers do not share any CSI related to nonaffiliated Transmission system Users or potential nonaffiliated Transmission system Users with any Trading Employees except to the extent that such information is publicly available. [Transmission Enterprise X] will ensure that CSI, insofar as possible, is not discussed at Executive Management Meetings. Members of the Executive not entitled to access to CSI will take no part in any deliberations of the Executive involving such matters. To the extent that CSI is discussed at executive management meetings such executive management meetings shall be structured to ensure in so far as practicable that members of the executive not entitled to access to CSI shall not participate in discussions involving such CSI or that such CSI. The Code of Conduct shall not be construed as limiting the entitlement of the CEO and or the Board or any others properly entitled thereto to CSI however, all persons to whom such information is properly released shall be obliged to comply with the Code of Conduct. CSI required by the CEO and Board will be kept confidential by the CSS officers. Where CSI is provided to the Board it shall be [labeled]/[identified] as such at the time of its provision. The Board

Subject	Issue No. 5 : Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct
	undertakes not to disclose CSI. [Transmission Entity X] will ensure (a.) that policies, procedures, organizational configuration, departmental structure and employee job responsibilities, (b.) physical and systemic restrictions, and (c.) communication, training and monitoring programs shall be structured to ensure compliance with the Code of Conduct. **IMPLEMENTATION OF CODE OF CONDUCT** *Obligations of [Transmission Entity X]:* **Communication:** [Transmission Enterprise X] will initiate and will maintain an employee communication program, consisting of a series of company-wide communications (print media) describing the ongoing changes within the gas utility industry and the resulting changes that have happened or will happen within [Transmission Enterprise X]. The focus of the communication program will include communication of the principals and objectives underlying the Code

Subject	Issue No. 5 : Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct
	of Conduct and their impact on the manner in which [Transmission Enterprise X], the Business Units, Affiliates and employees conduct business. **Training:** [Transmission Enterprise X] will design implement and maintain a program or programs to educate and train all [Transmission Enterprise X] employees in the requirements of the Code of Conduct. The training will be structured so that those employees in key areas (for example, employees engaged in Transmission System operations and Gas Supply Division, and others whose day-to-day responsibilities will be directly affected will receive the most comprehensive training. Documentation will be maintained detailing the training provided, including a listing of employees attending, dates held, locations, and specific subject matter covered. [Transmission Company Y] shall ensure (and to the extent necessary shall amend) its policies, procedures, organizational configuration, departmental structures and employee job responsibilities to enable [Transmission Enterprise X] and its constituent Business Units (and each of them) to conduct business in compliance with the Code of Conduct. [Transmission Enterprise X] will establish a Complaints Procedure to address and resolve complaints made regarding alleged violations of the Code of Conduct such procedure to be established within [120 days] of the adoption of these

Subject	Issue No. 5 : Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct
	Code of Conduct. The Complaints Procedure shall provide for inter alia • Those complaints shall be investigated and responses thereto made in writing within [_____] days of receipt of complaint or receipt of relevant information sought to enable [Transmission Enterprise X] to address a complaint. • For advice to complainants that if they are not satisfied with the resolution of their complaint, they have the option of complaining directly to the regulatory commission if they so desire [a question arises as to whether the regulatory commission will have any power or entitlement to entertain such complaints]. • A log will be kept listing all complaints received and indicating whether they are resolved or still pending. The log will contain the following information: (a) Date of complaint, (b) Identity of complainant, (c) Brief Description of the nature of the complaint including at a minimum the names of those involved and the facts and circumstances surrounding the allegation, forming the substance of the complaint. (d) The names and titles of those who investigated the allegation.

Subject	Issue No. 5 : Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct
	(e) Status of complaint, whether pending or resolved, (f) If resolved, a description of the resolution, and (g) Any action taken by [Transmission Enterprise X] (other than the investigation itself) as a result of the complaint. **ENFORCEMENT PROCEDURES** [What internal Enforcement Procedures can be contemplated or established in the absence of an independent regulatory commission]. **FUNCTIONAL SEPARATION** *Sharing of Facilities and Resources* Except as otherwise permitted [by the Code of Conduct] the Transportation Provider shall not share office space, office equipment services, and computer or information systems with other Business Units. Business Units shall not share inter se office space, equipment, services, and computer or information systems]. Where physical separation required is not accomplished by having office space in separate buildings, physical separation shall be accomplished by having office space and equipment in secure, controlled access areas within a

Subject	Issue No. 5 : Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct
	building. The Transportation Provider shall not allow its other Business Units to access its computer or information systems unless appropriate computer data management, data access protocols and contractual provisions regarding the breach of data access protocols have been put in place to ensure that such access will not result in access by a Business Unit to information in a manner contrary to or inconsistent with the Code of Conduct. Nothing in the last sub-section above shall prohibit a (Business Unit) from having unrestricted access to any computer or information system that is available to the public. Each Business Unit shall maintain books, accounts and records [in respect of its regulated products and services] separate from those of the other Business Units within [Transmission Company Y] such books, accounts and records shall be kept in accordance with generally accepted accounting principles and such guidelines or other system of accounts as may be prescribed from time to time, and shall be sufficient to allow for an audit of the transactions between the Business Units within [Transmission Enterprise X] [Transmission Company Y] prohibits Transportation System Employees from being involved in any way with the Gas Supply Division and requires that its Transportation System Employees operate independently of [Transmission

Subject	Issue No. 5 : Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct
	Company Y] employees, or employees, engaged in the Gas Supply Division. This is accomplished by: • Restricted access, both physical and systemic, to Gas Supply information and facilities; • Work procedure design and job responsibility assignment; • Communication, training and monitoring programs as described above; and • Such other methods as may be prescribed by the Board from time to time. [Transmission Company Y] prohibits its Gas Supply employees, from engaging in Transportation System operations, and does not permit them access to the system control center or similar facilities used for transportation operations or reliability that differs in any way from the access available to other Transmission system Users. This is accomplished by: • Restricted access, both physical and systemic, to Transportation System operations and system reliability information and facilities; Work procedure design and job responsibility assignment; • Communication, training and monitoring programs as described above; and • Such other methods as may be prescribed by the Board from time to time.

Subject	Issue No. 5 : Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct
	[Transmission Company Y] provides [and procures from third parties] Business Support Services (BSS). Business Support Services shall be priced, reported and conducted in accordance with the principles herein and with any applicable pricing and reporting requirements imposed from time to time by the [Compliance Officer/regulatory commission]. The provision of Business Support Services or Corporate Support Services shall not allow or provide a means for the transfer of information, including proprietary customer information in a manner contrary to or inconsistent with the Code of Conduct, create the opportunity for preferential treatment or/and confer competitive advantage, lead to customer confusion create significant opportunities for cross-subsidization or otherwise provide any means to circumvent the Code of Conduct. [Implementation procedures shall be prepared by Business Support Services and Corporate Services within 120 days of the Code of Conduct and submitted to and approved by the [Compliance Officer/regulatory commission]. **CONDUCT OF BUSINESS** The Transportation Provider shall strictly enforce all tariff provisions relating to the sale or purchase of regulated services or products and/or the utilization thereof that do not provide for the use of discretion. [Tariff

Subject	Issue No. 5 : Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct
	provisions shall include and be deemed to include all financial charges or penalties that may apply together with cost of connection to the Transportation System]. In situations in which tariff provisions relating to the sale or purchase of regulated services or products or the utilization thereof do provide for the use of discretion. The Transportation Provider shall apply those tariffs in a fair and impartial way, and to treat all customers in a nondiscriminatory manner. The Transportation Provider shall maintain a record of all instances in which discretion was used in applying tariff provisions. Any discounts offered, relating to transportation service or ancillary services, be offered to all Transmission system Users eligible for such discounts on a nondiscriminatory basis. [Transmission Company Y] shall: • Design and implement policies, procedures, organizational configuration, departmental structure and employee job responsibilities; • Design and implement physical and systemic restrictions; and

Subject	Issue No. 5 : Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct
	• Design and implement communication, training and monitoring programs to ensure compliance with these Code of Conduct. **SYSTEM EMERGENCIES** [Transmission Enterprise X] recognizes that during emergency situations [affecting system reliability], its employees, or those of an Affiliate, may take whatever steps are necessary to keep the system in operation. [Transmission Enterprise X] will report to the regulatory commission within twenty-four hours any deviations from the Code of Conduct that result from necessary steps taken to address a [system] emergency. To meet this obligation [Transmission Enterprise X] has implemented the following procedures]: • The [Transmission Enterprise X] Compliance Officer [has been assigned the responsibility for ensuring] [shall ensure] reports of any such deviations are notified and sent to the regulatory commission following an emergency. • Each report will contain a description of the deviation, the name(s), title(s) and job function(s) of those involved, and the name and phone number of a contact person within [Transmission Enterprise X], should additional information be desired. • To ensure that [system] emergencies are handled appropriately and to prevent, whenever possible, any deviations

Subject	Issue No. 5 : Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct

from the Code of Conduct that might occur as a result of having to contend with a [system] emergency, [Transmission Company Y] has established the following procedures that shall be implemented] by [Transmission Enterprise X];

[Transmission Enterprise X] shall procure;

- The system emergency assignments of Gas Supply Employees will be reviewed, and changed where possible, to areas of [Transmission Enterprise X] or its Affiliates where they should not be exposed to information that would likely result in a deviation from the Code of Conduct; and
- Communication, training and monitoring programs as described above.

ACCOUNTS AND RECORDS

[Transmission Enterprise X] currently maintains its accounts and records as prescribed by Generally Accepted Accounting Code and Procedures.

[Transmission Enterprise X] shall modify (to the extent necessary) its accounting systems to comply with the requirements of [INSERT NAME OF COMPANY ACCOUNTS LEGISLATION OR STATUTORY REGULATORY

Subject	Issue No. 5 : Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct
	BODY]. [Transmission Enterprise X] maintains a copy of its rules and allocations used in drawing up accounts as required by [INSERT NAME OF COMPANY ACCOUNTS LEGISLATION OR STATUTORY REGULATORY BODY]. These rules will be available for review by the regulatory commission. **COMPLIANCE OFFICER** The Compliance Officer shall monitor, facilitate and review compliance with the Code of Conduct and any implementation programs in relation thereto. The Compliance Officer shall make a quarterly [monthly?] report to the Company Secretary in relation to compliance with the Code of Conduct to include a review of the implementation of the Code of Conduct and identifying in particular any areas of compliance in respect of which in further Code or implementation procedures may be required. In addition the quarterly report may indicate areas in which changes to implementation procedures would, in the opinion of the Compliance Officer be beneficial. The Compliance Officer shall liaise with members of the executive management to ensure that all employees, within the area of the relevant member of the executive management are aware of the Code of Conduct and implementation

Subject	Issue No. 5 : Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct
	procedures in respect thereof. The Compliance Officer shall also review with executive management, instances of employee misconduct or alleged employee misconduct. Alleged violations of the Standard of Conduct will be immediately reported to the Compliance Officer and thereafter investigated by the Compliance Officer in consultation with the member of executive management charged with responsibility for the business unit in which the employee is engaged. The Compliance Officer will ensure that appropriate action according to [Transmission Enterprise X] disciplinary procedures is taken to: • deal appropriately with employees found to have violated the Code of Conduct, and • initiate whatever changes may be necessary to prevent a recurrence of any such violation. If it is determined that an employee of [Transmission Enterprise X] or one of its Affiliates has violated the disclosure stipulations of the Code of Conduct, the Compliance Officer will ensure that the wrongful disclosure is promptly reported to the regulatory commission in accordance with the procedures outlined above. The Compliance Officer and the Executive Management will receive training specifically designed to thoroughly familiarize them with the requirements of the Code of Conduct as defined herein. The requirements of the Code of

Subject	Issue No. 5 : Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct
	Conduct will also be incorporated into [Transmission Company Y]'s (including Affiliates) Corporate Code of Conduct and ongoing Compliance Program activities. The Corporate Code of Conduct will be distributed to all Company and Affiliate employees. Source: World Bank - China: Economic regulation of long - distance transmission and urban gas distribution, April 2002

Annexure 1

Survey of Companies' Responses and International Practices

Subject

Issue No. 5 : Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct

International Experiences

	Unbundling Method		Published Accounts		Separate Corporate Identity		Separate HQ Location	
Countries	TSO	DSO	TSO	DSO	TSO	DSO	TSO	DSO
Bangladesh	N	N	N	N	N	N	N	N
China	N	N	N	N	N	N	N	N
Hongkong	Financial	Financial	N	N	N	N	N	N
Malaysia	N	N	N	N	N	N	N	N
Singapore	Own	Own	Y	Y	Y	Y	Y	Y
Australia (Victoria)	Own	Own	Y	Y	Y	Y	Y	Y
Belgium	Legal	Legal	Y	N	Y	Y	N	N
Germany	Financial	Financial	N	N	N	N	N	N
France	Financial	Financial	N	N	N	N	N	N
Itlay	Legal	Legal	Y	Y	Y	N	Y	N
Sweden	Financial	Financial	Y	Y	N	N	N	N
UK	Own	Own	Y	Y	Y	Y	Y	Y
N- No, Y - Yes, TSO - Transmission System Operator, DSO - Distribution System Operator								
Source: The World Bank - Oil & Gas sector review workshop, 2003								

Annexure 1

Survey of Companies' Responses and International Practices

Subject	**Issue No. 4 : Guiding Principles to be followed for declaring and/or authorizing a Common Carrier or Contract Carrier or CGD Network**
Suggested "Regulations" – Derived from the Survey	**Summary of suggestions** 1) Best tariff available to the consumer ensuring reasonable return to the investing entity 2) As a matter of principles all pipeline network should be developed on a common carrier / contract carrier principles. 3) City gas distribution should be authorised by inviting various parties to offer gas distribution services and selection should be based on pre fixed criteria of better services offered by the prospective bidder. 4) Contract carriage involves a significant commitment on behalf of the shipper to a fixed quantity of capacity over a long period of time. 5) All city gas distribution networks should be on common carrier 6) New pipelines with surplus 25% capacity for open access 7) Guiding principles for transmission pipelines

Subject	Issue No. 4 : Guiding Principles to be followed for declaring and/or authorizing a Common Carrier or Contract Carrier or CGD Network
	▪ Pipeline shall have adequate excess capacity. ▪ Common carrier shall adopt a transparent mechanism inviting other interested parties before building the pipelines
	Divergent issues *Industry views were divergent as regards capacity available for common carrier. They are as follows-* 8) Except for dedicated pipelines, capacity on all pipelines beyond the contracted capacity should be on common carrier 9) True Common Carriage on natural gas pipelines is relatively unusual in that it does not require the shipper to book capacity. Rather the shipper simply notifies the pipeline operator on a periodic basis on the flows required and typically pays on a usage basis i.e. simply a commodity related charge. True common carriage occurs fairly rarely and generally as a result of the over-development of pipeline capacity. Under these circumstances, firm capacity becomes un-salable and holds no intrinsic value and the pipeline owner has to sell throughput at whatever price can be achieved.

Subject	**Issue No. 4 : Guiding Principles to be followed for declaring and/or authorizing a Common Carrier or Contract Carrier or CGD Network**
	10) In the Indian context, it is unlikely that pipelines will be developed by private companies, without a legally enforceable contract carriage regime. It seems unlikely that even the public sector would wish to develop open access pipelines on any other basis. The preference would be that the Common Carrier expression is dropped completely as it is confusing and carries a meaning that will create legal ambiguities. 11) Pipeline policy and associated legislation should seek to remove the underlying ambiguities caused by the use of mixed terminology, without in any way diminishing the ability of the Regulator to act. The regulator should be able to declare open access on any pipeline, based upon term based firm capacity reservation.
International Regulatory Regimes **Inferences from International Regulatory**	Pipelines operate on the basis either of *contract carriage* or *common carriage*. In a *contract carriage* pipeline, users contract to purchase an amount of space for a specific period of time ("firm capacity") and to pay for that space whether or not they use it. In return they are guaranteed access to the contracted space. If all the space in the pipeline is contracted, then a new potential customer for firm capacity will have to wait in

Subject	Issue No. 4 : Guiding Principles to be followed for declaring and/or authorizing a Common Carrier or Contract Carrier or CGD Network
	line either until an existing user gives up its space, until the pipeline expands or until someone builds a new pipeline. Facilities constructed under contract carriage are built to order – construction occurs only when users ("shippers") are willing to sign contracts obligating them to pay for the new capacity. In a *common carriage* pipeline there are no contracts and shippers have **no** right to a constant, predetermined, amount of space. In contrast to transmission pipelines, distribution companies sell their transportation services on this basis. Users of the system pay a fixed charge for transportation service that is related to the costs of providing the transportation. For example, large industrial users of urban distribution systems pay less, on a unit basis, than small residential users for whom much more extensive facilities are required. Pipelines offering common carriage – including urban distribution companies – construct new capacity on the basis of anticipated demand for service. Urban distribution companies may operate on common carriage principles, albeit with a much different and much more effective form of government oversight. The major issues relate to transmission pipelines. North American transmission systems are the best examples of contract carriage. In Europe major systems are a hybrid

Subject	Issue No. 4 : Guiding Principles to be followed for declaring and/or authorizing a Common Carrier or Contract Carrier or CGD Network
	of contract and common carriage but are in a process of transition to a more contractually oriented regime. **North America: Contract Carriage** In North America, when new transmission lines are constructed they are backed by longterm contractual commitments – up to fifteen years – on the part of shippers. As contracts expire they may be renewed, frequently for a much shorter term than in the original contract, or the associated capacity is released to the pipeline by the shipper. Released capacity will be resold by the pipeline, usually through an auction process called an open season. In an open season the space is awarded based on the offered contract term – winning bids being those offering the longest terms. If all of the contracted space is not being used during a particular period of time then the pipeline can sell it on an "interruptible" basis. Capacity would be sold on an *interruptible* basis if it were idle on a short-term, day-today, basis depending on shippers' use profiles. It is called interruptible service because the buyer of this type of service will be interrupted when the holder of the firm capacity wants it back. Where shippers know that they will not be using their contracted capacity for several months – or even years – say

Subject	Issue No. 4 : Guiding Principles to be followed for declaring and/or authorizing a Common Carrier or Contract Carrier or CGD Network

because of seasonal fluctuations in use or because of a downturn in the economy, they, or the pipeline on their behalf, may agree to sell it in a secondary market on a firm basis.

Such secondary markets have developed in North American gas transportation in recent years. They perform the extremely important function of providing information on the value of pipeline service to shippers and signal the need for and the economic feasibility of new pipeline capacity.

The split in rights and responsibilities between the transmission company and its customers is quite sharp:

- the transmission company operates the pipeline system and is entitled to the recovery of its costs for constructing, operating and maintaining the facilities;
- the customer holds the rights to the capacity, under long term financial obligations, and may use that capacity or sell it (temporarily or permanently) as it sees fit (so long as the capacity sale is consistent with pipeline operation).

Contract carriage with resale rights is therefore similar to renting commercial office space. Capacity (floor area) is purchased under a long-term contract (lease). The landlord sets the lease price at a level that will pay for the construction of the office space. The lease is a contract that gives the tenant specified rights over how to use or sell (sub-

Subject	Issue No. 4 : Guiding Principles to be followed for declaring and/or authorizing a Common Carrier or Contract Carrier or CGD Network
	let) that capacity. Assigning capacity rights on a contract carriage regime, for the purpose of allowing customers themselves to use or sell these rights as they wish, allows the value that different customers place on that transmission capacity to be determined. In other words, it is possible to ensure that those customers who are willing to pay the most for property rights on the pipeline are the ones who receive them without the pipeline having to place a value on those rights. It is also easy to compare the cost of acquiring existing capacity rights with the cost of constructing new capacity. This allows expansion projects to face a legitimate market-based test. Finally, and, perhaps, most importantly, assigning tradable, long-term property rights on a transmission system forces holders of existing capacity to continuously face the marginal cost of holding these rights. Those customers who seek increased capacity have two major choices: 1. commit to long term payments for newly-constructed capacity; or 2. purchase existing capacity rights from the holder of these rights. Effective capacity trading requires many buyers and sellers and an electronic bulletin board or alternative posting

Subject	Issue No. 4 : Guiding Principles to be followed for declaring and/or authorizing a Common Carrier or Contract Carrier or CGD Network
	mechanism to provide transparency. Otherwise it is unlikely that this secondary market in capacity will attract favorable prices. The ability to trade capacity rights is now effectively working in the US and Canada. Capacity trading is not yet functioning effectively in the UK; the system of annual tariffs and an inadequate definition of capacity are hampering the emergence of this market. The Australian transmission companies are planning to eventually introduce capacity trading. **Europe: Hybrid Common and Contract Carriage** Gas industries in most European countries were developed in a much more integrated fashion than in North America. Transmission companies provide a bundled transmission and gas supply service and are akin to common carriage utilities in that they build facilities in anticipation of demand and have a public service obligation to serve. In some countries, such as the UK, the transmission system has some of the characteristics of contract carriage in that there are short-term, annual, contracts between the transmission company and shippers for the provision of service. However, the concept of contracted capacity is not well defined – there is a looser connection between transmission

Subject	Issue No. 4 : Guiding Principles to be followed for declaring and/or authorizing a Common Carrier or Contract Carrier or CGD Network
	investment and the demand for service than in North America. As a consequence, in the transition to a contract-based regime, some of the assets of transmission companies are likely to be found to be redundant – i.e. not necessary for the effective operation of the business. This raises the difficult issue of how to deal with the so-called stranded costs – the undepreciated value of the unnecessary equipment: whether and the extent to which they should be born by the government, by the users of the transmission system or by the shareholders of the transmission company. *Source:* World Bank - Report on the Implementation of the Regulatory Framework for China's Downstream Gas Sector

Subject	Issue No. 6 : Recommendation on levels of pressures to be specified as "high pressure" and "medium pressure".
Suggested "Regulations" – Derived from the Survey	**Divergent issues** *Industry views were divergent as pressure specifications for high and medium pressure. They are as follows-* 1) All pipelines above #150 be classified as High pressure pipelines 2) All pipelines operating upto 7 bar be classified as Low pressure pipelines 3) The Transportation pipelines should be maintained either as High Pressure (> 70 Kg/cm" or Medium Pressure 40- 55 Kg/cm") to enable the maximum advantages in terms of volumes handled. 4) Low-pressure pipelines for transportation may not be a good idea as the capacity of the pipelines will be affected 5) CGD licenses should be granted for a geographic area defined by the concept of City Gate as opposed to any other measure, e.g. pressure. 6) If the goal here is to demarcate between transmission and distribution due to differing obligations and rules that apply, rather than base it on pressure, the demarcation should be based on function. 7) To be followed as per the grid code and connectivity depending on volume pressure and outage of gas at each point. ▪ High pressure – more than 45 Kg/cm² ▪ Medium Pressure – 20 to 45 Kg/cm² ▪ Low Pressure – upto 20 Kg/cm²

Subject	Issue No. 6 : Recommendation on levels of pressures to be specified as "high pressure" and "medium pressure".
	8) The distribution steel pipeline carrying natural gas in city should be designed for 300# system and pressure regulation will be designed accordingly. However all applicable codes and safety requirements as necessary for erection, operation & maintenance shall be followed. Medium Pressure would be in the range of 4 to 7 kg/cm². Low pressure is less than 4 kg/cm²
International Experiences	**Romania** Natural gas national transport system is the natural gas transport system under high pressure regime, over 6 Bars, made up of trunk pipelines, as well as of all the installation, equipment and due facilities, that ensure the taking over of natural gas extracted from operations perimeters or that from the import and its transport for to be delivered to the distributors, direct consumers, export and/or storage. Natural gas distribution activity consists of feeding a system of more final consumers in an area, connected by some distribution pipelines under pressure regime of no more than 6 Bars. *Source:* Law on Natural Gas Regulations, The Parliament of Romania **Western Australia** Gas distribution systems typically operating at a pressure of less than 1.9 megapascals. *Source:* Economic Regulation Authority

Annexure 2
Compendium of Companies' Responses

Subject	Issue No.1 (a): Recommendations on regulating Open access to pipelines (both transportation & distribution)
Company 1	1) Regulation for new pipelines intending to provide service to contracted consumers on long term contract basis 2) Allowing dedicated pipelines to be laid for self usage and any other consumer at a later date with or without augmenting capacity 3) Allowing tariff fixation by the parties involved on mutually agreed terms within overall cap fixed by the Regulator
Company 2	There should be open access to pipelines both for transportation and distribution
Company 3	The access to surplus capacity in the transportation pipelines should be on a non discriminatory basis and the procedure for determination of surplus capacity should be transparent taking into account actual long term commitments of the shipper and/or transporter.
Company 4	• For transmission pipeline, capacity left beyond the contracted capacity of the pipeline to be made available on common carrier principle. Owner of the pipeline to have "First Right of Refusal" for the capacity available on common carrier basis. The capacity under "common carrier" is to be on non-discriminatory basis • Local/City Gas Distribution network should be on common carrier principle • Regulator to establish pipeline access code providing Level playing field and non-discriminatory open access to all Parties • Open access on transmission pipelines and distribution networks would protect the interest of consumer by eliminating monopoly of supply and by promoting competitive markets and enable maximum utilization of infrastructure thereby avoiding infructuous investments • Multi-party participation to be encouraged to ultimately achieve the competitive environment where consumer can choose Supplier and Transporter/Local network operator

Annexure 2
Compendium of Companies' Responses

Subject	Issue No.1 (a): Recommendations on regulating Open access to pipelines (both transportation & distribution)
Company 5	Pipelines should be conceived as infrastructure and hence should not belong to the marketing companies. The idea behind Petronet India ltd. was well thought out through the Sundarrajan study group to r group. Unfortunately that idea is annulled by the govt. policy of November 2002. The pipeline business thereafter has been in a chaotic phase. There have been gross national waste in pipeline investment from partisan perspective by the oil companies and the most desired investments are just not forthcoming. The government could rethink the policy because India does need pil-like exclusive pipeline company. With little tinkering to the business model, Petronet can be made a vibrant company – a repository of petroleum pipeline expertise. Of course, there should be open access to pipeline. This open access can never be ensured if the pipeline are allowed to belong to the users. The new pipeline policy pretends to have open access by providing 25 % spare capacity. Fundamentally, such extra commercial dictates in investment makes the investments sub-optimal. In pipeline capacity is a function of the hp-input subject to the capacity of pipe material (msys). Unlike other industries, pipeline capacity is not sensitive to investment over the base line.
Company 6	Open access to the pipelines for transportation is required. However users/consumers of gas should be classified in an order of priority (as is the case with the power sector where high priority consumers like hospitals, water supply, etc. are the last to be denied power). This priority should be adhered to when there is limited capacity of the pipeline.
Company 7	We would recommend providing for open access to pipelines for both NG producers and Customers to enable the Gas produced to reach the customer at any point of time. Any restrictions to this would limit the Producer from accessing a new customer for his additional production, which might be starting at a later date or a new customer on expiry of a current contract. Pipeline owners can alongwith the Regulator decide, how much % of the Pipeline capacity can be kept on open access. The % of open access available and the charges for accessing them should be made public periodically.
Company 8	We discuss access to distribution in the section on exclusivity. **Transportation:** We have long advocated open access on transportation pipelines in India. Open access is a central policy for gas transportation in many countries. Open access encourages competition in the natural gas industry so that all natural gas suppliers, including the pipeline as merchant, will compete for gas purchasers on an equal footing. This promotion of competition among suppliers can benefit all consumers in India by ensuring a reliable supply of natural gas at a reasonable price. We believe that India needs to create a regulatory environment where no gas seller, especially those with control over transportation pipeline(s), a natural monopoly, has a competitive advantage

Subject	**Issue No.1 (a): Recommendations on regulating Open access to pipelines (both transportation & distribution)**
	over a non-affiliated gas seller by virtue of their control over transportation. Open access as a goal, while laudable, is not enough. Shippers need to have meaningful access to capacity and this can only be accomplished by a strong and fair Regulator. When authorizing pipelines, the Regulator needs to ensure that fair options exist for shippers that are not anchor shippers to avail of expansion capacity, because if that is not done, open access will have no meaning. While we support the principle of open access, we do have some concerns, however, with the liberal use of common carrier as a substitute for open access in the PNGRB Act and in subsequent documents. We believe that the Government intended that there be open access on a first come, first served basis for available capacity. But the Government also used the phrase "on a common carrier basis". Since natural gas pipelines are primarily financed with take-or-pay long-tem contracts, it is not appropriate to use the term "common carrier" as a substitute for open access. If any capacity were available on a pipeline, a customer would contract for that capacity but would only do so with the assurance that the capacity would not be subject to pro-rata reduction as a result of another customer's request (or multiple customers' requests). Assume that there was 10 mmcd capacity available and you requested the full amount. Under common carrier principles, another shipper could make a request for 10mmcd and you each would get 5 mmcd going forward. Alternatively, the second shipper could request 90 mmcd (knowing full well that 90 was not available) and would get 9 mmcd (with the original shipper reduced to 1 mmcd). We are certain that no shipper would consider such an outcome to be reasonable. We realize that this awkward outcome is not what the government had in mind and, therefore, we urge that this issue be clarified and corrected going forward so that open access can work on gas pipelines in the manner that the government intended.
Company 9	1) Authorization by the regulator to any entity should be basis open & non-discriminatory access to both owner & other players (non-owner shippers). 2) For this purpose regulator / entity authorized to lay pipelines to seek requests from shippers/consumers about their capacity requirement. 3) In case capacity is over subscribed, the regulator to allocate the capacities on prorata basis, (or) ask the entity to increase the capacity.
Company 10	Open access only for trunk pipelines and distribution lines needs to be based on mutual consent

Annexure 2

Compendium of Companies' Responses

Subject	**Issue No.1 (a): Recommendations on regulating Open access to pipelines (both transportation & distribution)**
Company 11	In case of transportation, the available capacity in a particular pipeline needs to be notified by the regulator. All the interested parties may be requested to register their capacity requirements. There should be a precondition that the parties should have source tie-up as well as customer tie-up for the required capacity. Based on the requirement, allotment may be made on pro-rata basis. In case of distribution, it may be done on exclusive basis for a single party for a particular city (in case of big city, it may be split into two to three exclusive areas/ regions). The party may be selected through bidding process.
Company 12	*Note : Comments specific to questionnaire not received.*
Company 13	This should be applicable only for cross-country pipelines and not for City Gas Distribution network. Open access shall be guided by principles of encouraging competition, eliminating duplication of investment and ensure adequate supplies into future through transmission pipelines. Open access in city gas distribution network is not viable as infrastructure cost is very high and in case additional volumes have to be included, the city gas projects will become unviable and uncertainty factor regarding usage is quite high
Company 14	Yes
Company 15	To enable access it would require that common carrier status be accorded all gas trunk pipelines Provision for spare capacity would be required to create option for open access. Providing at least a 25% spare capacity should be made mandatory in the trunk pipelines. All existing and new pipelines should be brought under open access or common carrier regime as this would provide uniform marketing opportunity to all players. Common carrier principles should also cover compressors
Company 16	*Note : No comments*

Annexure 2

Compendium of Companies' Responses

Subject	Issue No. 1 (b): Recommendations on regulating Transportation Rate (both transportation & distribution)
Company 1	1) Two part tariff base on capex and opex based on volumes transported with provision for incentives 2) Tariff to ensure fair return on capital investment and market fluctuations. 3) A provision for suitably indexing the opex for escalation on three / five year basis, considering factors such as Govt. of India consumer index, & weighted average on increase in self consumed gas / fuel.
Company 2	Reasonable rates based on cost plus basis.
Company 3	The transportation charges should be distance related and there should be transparent mechanism for tariff determination
Company 4	1) Transportation Tariff determined by Regulator should act as cap. Parties should be free to negotiate tariff below the cap 2) Tariff could be reviewed periodically. However, first tariff review after period of loan payment in order to make the project bankable 3) Third party access may be offered at uniform tariff, however there may be a minimum volume for which such access to be provided. If tariff is charged on category of consumers basis in city gas distribution network, it should be non-discriminatory 4) Methodology for determination of tariff should be based on the principle of reasonable rate of return on investment, encourage competition, efficiency, economic use of resources and at the same time safeguard the consumer interest
Company 5	Transportation and distribution rates should be remunerative for any operator. The market-determined rates may be a good principle subject to certain regulatory limits that could be derived taking stock of investments involved, operating costs , financing cost, etc.
Company 6	*Note : No comments received*

Annexure 2

Compendium of Companies' Responses

Subject	Issue No. 1 (b): Recommendations on regulating Transportation Rate (both transportation & distribution)
Company 7	An uniform published "Transportation Rate" should be available w.r.t a standard acceptable unit. This rate can preferably be on a volume basis.
Company 8	**Transportation:** We premise our comments on the basis that the predominant source of gas supply will be KG basin gas. Entry Exit Tariffs would be inappropriate for India. They are appropriate for meshed systems, not for long distance unidirectional flow systems. Entry Exit tariffs are not transparent - they would require transfer of funds between different pipeline systems. Given the shifting of risk, such a system would provide improper incentives for investment (as would a system where all pipelines were postalized with the same tariff). Entry Exit tariffs do not give signals for efficient investment, which is a key requirement in the Indian system. Transparency and inefficient investment signals alone is enough for Entry Exit tariffs not to be used in India. Distance-based tariffs are more appropriate for long distance unidirectional flow systems (as in India, the US and Australia) however, if the predominant gas supplies are on the east coast of India, they will result in higher prices on the west coast. Distance-based tariffs give efficient investment signals and avoid physical bypass incentives in demand areas that are close to supply sources. Moreover, distance-based tariffs provide cost reflectivity which is a key reason why a distance-based tariffs are considered to be non-discriminatory. Postalized tariffs would provide incentives to bypass the pipeline in areas close to the KG basin. As a result, one of the key goals of the PNGRB Act, avoiding infructuous investment, would be jeopardized. Postalized tariffs do not give efficient signals for usage/investment. In India, if the areas close to the KG basin need developing, they need tariffs that reflect the cost of transport better. For this reason, efficient signals for investment, the market (and its players) as a whole would not benefit from purely postalized tariffs. **Distribution:** Average Revenue Yield control is used in emerging markets where the forecast mix of customer segments or the volume of growth is difficult to forecast because there is limited historical evidence. It is also the only tariff methodology that will provide an incentive for efficient network growth and is typically used for green field sites or where network expansion is material. The average revenue yield control method is currently in place in the Brazilian CGD market. In this form of control, revenue is calculated as an average, i.e. the ratio of the

Subject	Issue No. 1 (b): Recommendations on regulating Transportation Rate (both transportation & distribution)
	net present value of revenue to the net present value of volume over a given period. This means that there is no restriction to network expansion, as for every additional volume the regulated entity earns given regulated revenue. Therefore, it is the regulated entity that will need to ensure that its network expansion delivers the revenue assumed by the Regulator and the market risk of expansion is assumed by the investor. Under this methodology, the regulated entity can react to the needs of the market and market expansion. This control therefore incentivizes the investor to pursue integrated network expansion and so ensures development of the residential sector alongside the industrial customers. This is the most economically efficient approach to network expansion. The approach also minimizes the need for regulatory intervention since the operator self-corrects expansion to stay within the defined controls. In addition, average revenue yield control as opposed to tariff controls or total revenue control, allows an operator to compete against alternate fuels as necessary to maintain its customer base which in turn permits the maintenance of tariff levels. However, this is only possible if discounts are included within the average revenue control. Therefore we recommend the use of average revenue yield control including discounts.
Company 9	1) Tariff of transportation will be approved by the regulator 2) Tariff has to be uniform to all shippers. In any case the tariff charged should not be higher than the approved tariff. If discounts are given on tariff basis volume/distance/pressure, the same needs to be offered to other players with similar volumes/distance/pressure. 3) The methodology of tariff recovery determination to be basis volumes, investments and reasonable rate of returns. 4) Tariff type such as postalised / Zonal etc. to be as specified by the regulator. 4) Tariff recovery to be for the actual volumes transported / capacity booked, which ever is higher. 5) Tariff review should be after every 3 years 6) The volumes considered for tariff review shall be actual volumes/ Projected volumes in the bid, which ever is higher. 7) Review of tariff may also be permitted by the regulator in case of change in the capacity requiring incremental investments, taxation, rates/policy, and Other circumstances in over all interest of the consumer.

Annexure 2

Compendium of Companies' Responses

Subject	Issue No. 1 (b): Recommendations on regulating Transportation Rate (both transportation & distribution)
Company 10	No comments
Company 11	Uniform model of transportation rate to be developed based on gas quantity and distance for long distance pipelines. In case of distribution, single rate as awarded to the party through the bidding process may be followed. However, different rates may be worked out for residential, commercial and small industrial customers. Open access too many players in city gas distribution network in a city may lead to operational difficulties.
Company 12	*Note : Comments specific to questionnaire not received.*
Company 13	Transportation rate shall be based on optimum investment, efficiency, economic use of resources, cost of service and shall provide reasonable return on investment. Shall also consider the prevailing tariffs applicable for various existing pipelines and accordingly benchmark against them.
Company 14	Yes
Company 15	1) Transmission rates should be distance based. May be we can fix up a transmission rate in different slabs of distance 2) Transmission tariff should fetch a reasonable rate of return 3) Transmission tariff should have a capacity charge and a commodity charge. Capacity charge to take care of investments. 4) While calculating Transmission Tariff due weightage to be given to pipeline design capacity

Annexure 2

Compendium of Companies' Responses

Subject	**Issue No. 1 (b): Recommendations on regulating Transportation Rate (both transportation & distribution)**
Company 16	Since tariff would be an important criterion for Grant of Authorisation, there must be a set of uniform norms/models spelling out the methodology/formula for tariff calculation. Therefore, it is necessary for the Government to develop a Transmission Tariff Policy in time.

Annexure 2

Compendium of Companies' Responses

Subject	**Issue No 2 (a): Criteria and procedure for selection by regulator of entity for laying and operating Transportation Pipelines**
Company 1	1) Optimal cost advantage to the consumer 2) Sustainability 3) Market participation and reputation in other hydrocarbon sectors 4) Merit of Marketing Company getting affected due to laying of the pipeline by displacement of existing consumers due to change of fuel.
Company 2	Open access, transportation rates and minimum net worth criteria. Such regulation should not apply to captive use transportation lines with 25% extra capacity being offered on commercial consideration.
Company 3	*Note : No comments received*
Company 4	1. Authorization should be based on application by entity having o Gas source tie-up and o Downstream market tie-up 2. In case, more than one entity applies for laying pipeline along the same route, authorization may be granted to the entities subject to their meeting above mentioned criteria. However, owner of gas should be given first preference if everything else is same 3. If at any point of time existing pipeline is saturated and there is still demand for capacity, existing operator should not be automatically authorized to duplicate the pipeline. Instead, it should be made open to all interested entities
Company 5	1. They should not themselves be end users of the pipeline. The pipeline should constitute a separate business, may be integrated with other generic logistic business. By default, in order to satisfy this fundamental criterion, some xyz company will have to be mandated because such investments cannot be easily undertaken in a free market mode. 2. Other criteria are not so important.
Company 6	Like in the power sector, lowest tariff per KM and other conditions like open access should form part of the criterion. Selection of the entity should be made through competitive bidding.

Annexure 2

Compendium of Companies' Responses

Subject	**Issue No 2 (a): Criteria and procedure for selection by regulator of entity for laying and operating Transportation Pipelines**
Company 7	*Note : No comments received*

Annexure 2

Compendium of Companies' Responses

Subject	**Issue No 2 (a): Criteria and procedure for selection by regulator of entity for laying and operating Transportation Pipelines**
Company 8	**Recommendation:** ▪ Build to aggregate demand arrived at pursuant to an open season ▪ Fair expansion opportunities In our opinion this may just be the most important issue faced by India in developing its natural gas industry. The key energy challenge facing India today is to prevent bottlenecks in energy supply from constraining economic growth. This is why properly sized gas transportation infrastructure is so important: it will stop a transportation bottleneck from preventing supply from meeting demand. An extremely important phase to promoting competition in the exploration, development and production of a large gas fields around the world, such as the KG Basin, is to get the transportation projects that will take out the gas, constructed. The additional revenues to governments from new exploration, development and production will exceed the royalties and taxes collected over the life of the project from the initial gas volumes if the transmission pipelines are constructed with fair expansion and tariff methodologies. There are a number of beneficial examples of fair and proper pipeline expansion methodologies in various parts of the world for a gas pipeline to be constructed into a new basin. The most recent and perhaps quite appropriate example is the proposed Alaska (USA) Pipeline that will greatly affect the US's gas supply needs. Transmission pipelines that are constructed with non-discriminatory expansion and tariff methodologies provide benefits to all stakeholders including especially, the public. The natural gas industry uses pipelines to form the main link from supply to demand. As such, a pipeline's economics are crucial to the viability of gas development projects and, in the case of India which is a price-sensitive market, crucial to getting discovered gas to market so that the public can benefit. The benefits, as seen in a number of developed nations, include general national prosperity through the ability of natural gas to underpin energy intensive industries and provide reliable energy to power plants, industry, businesses and households. Infrastructure investment in pipelines has been seen as a critical long-term need in developed nations and should be seen that way in India as well. Getting the correct pipeline capacity built and appropriate expansion as required keeps costs low and that is important as the natural process of resource depletion (requiring development of higher cost reserves) makes maintaining competitive prices harder over time.

Annexure 2

Compendium of Companies' Responses

Subject	**Issue No 2 (a): Criteria and procedure for selection by regulator of entity for laying and operating Transportation Pipelines**
Company 8	Determining the optimal capacity needs for a new-build pipeline and expansion options to serve capacity needs down the road invariably show that there are complex issues that need to be examined and considered. Producers would contend that it is in a pipeline owner's interest to build a pipeline designed to carry all the gas that shippers are willing to pay to transport to markets, i.e. build the pipeline to aggregate demand. Similarly, when a pipeline owner has to carry unused or excess initial capacity for a period of time, it affects the viability of the pipeline project. Since excess capacity costs are passed on to the end user, they can have a detrimental impact on demand and thus, industry development will be less than optimal. This would lead to investment bottlenecks with the result that gas could be stranded. Therefore, a properly-sized transportation system with economic expansion options will serve market needs both initially and in the future and will result in the most economic delivery of upstream resources to downstream demand. Setting the Stage for Expansion: Determining the Appropriate Size of a Pipeline Project Determining the appropriate initial capacity of a pipeline project is a very important matter because it directly influences when expansion should come on line. Ideally, it would be acknowledged exploration success that will determine the initial capacity and anticipated exploration success that will influence the expansion route or options that would be chosen. For example, a 48-inch pipeline could evacuate an initial volume of 4.5 bcf/d and the pipe could provide an inexpensive expandability, primarily through additional compression facilities as opposed to pipeline loops, of 25%. If a basin had 40 tcf of proven reserves, a pipeline evacuating 4.5 bcf/day could do so for about 25 years. Using 40% of the initial volume (1.8 bcf/d) to supply gas-fired power plants (assuming no losses on either the gas or power side), there would be enough to supply about 11,000 MW of gas-fired power capacity. Why is this important? In the case of India, building additional generating capacity to meet the burgeoning electric power needs is a race. Construction of a gas-fired plant generally only requires about two years. As a result gas-fired generation will help to reduce the gap between electricity demand and supply but to do so, the generation is reliant on having adequate transmission capacity. Therefore, the capacity initially available on new-build pipeline(s) evacuating East-coast gas will have a direct impact on gas-fired capacity to be installed in the upcoming five years and an impact on the growth rates achieved by India over that same time period. Regulators should consider anticipated future exploration success as the driver of pipeline expansion as opposed to having expansion built-in: a "slack factor" for initial capacity will only dampen initial demand. Adoption of a policy to build to aggregate demand avoids adding risk

Subject	**Issue No 2 (a): Criteria and procedure for selection by regulator of entity for laying and operating Transportation Pipelines**
	of cost recovery for the pipeline owner and keeps costs lower to the benefit of the end user so that the nascent gas industry can develop to its optimal level. Such a policy also assures pipelines, shippers and the financial community that only capacity supported by the market and capacity that is economically viable will be constructed. Expansion Factors System planning for Impact on operations Impact on other customers Safety and environmental compliance Additional volumes relative to required facilities Tariff methodology There are a number of significant factors that influence access for future volumes to an initial pipeline system. These include: System planning for the initial pipeline – pipeline diameter, pressure, routing, and initial contracted capacity; Impact on pipeline operations and operational feasibility; Impact on services to other customers – both initial and future expansions; Ability to comply with safety and environmental laws and regulations; Suitability of arrangements for reimbursement of construction costs and/or adequacy of volumes to be transported to support the extra investment and operating expenses required for the new facilities; and Tariff methodology – incremental or rolled-in (average costs) for expansion volumes. The goal of system planning for the initial pipeline should be to use a pipe platform that provides a low long-term tariff with an efficient fuel ratio along with economic expansion ability. Fuel ratio will be a key factor in the overall cost of transportation of East-coast gas. Starting with an optimum platform enables increased expansion potential as the initial cost is relatively low. In other words, if the initial pipeline design resulted in a relatively higher cost, certain expansions may not be economic due to price pressures with the result that certain east-coast gas could be shut-in. This is a vital point if the Regulator were to implement a distance-based tariff because it may become uneconomic

Subject	**Issue No 2 (a): Criteria and procedure for selection by regulator of entity for laying and operating Transportation Pipelines**
	under certain conditions to transport gas long distances. The second factor to be considered is the impact expansion volumes could have on pipeline operations and operational feasibility. In most cases, this is not a concern as expansion volumes are incorporated into the pipeline at logical physical locations. Also operational measures taken by the pipeline company and its future shippers can ensure there are no negative impacts. The shipper should be required to provide its gas at the receipt point, or take delivery at the delivery point, at a suitable pressure, temperature, and gas quality that aligns with the pipeline's engineering and economic requirements. The Regulator has a responsibility to ensure that the impact of expansion volumes on existing customers is equitably balanced with the fair treatment of those new volumes. Gas pipelines are usually contract carriers that commit to provide a specified amount of firm capacity to its customers. Additional volumes injected in the pipeline should not result in a pro-rationing of the volumes for initial firm shippers (a result that would occur under common carriage). In other words, expansion facilities are normally needed in order to provide contracted capacity to new or additional firm uses on the pipeline. The specific location of the new requested receipt or delivery point can play a role in the impact on existing customers and the operational flows on the pipeline. Expansion volumes must comply with safety and environmental laws and regulations just as prior volumes. Generally, as confirmed by analysing pipeline systems in various countries, the pipeline company owns the facilities located on its right-of-way, including any incremental meter stations or compressor stations required to transport the expansion volumes. The pipeline company may construct the lateral to receive or deliver additional gas, but those laterals can be owned by other pipeline companies, gas producers, or other parties. If the pipeline company constructs additional facilities, it will calculate the additional potential revenues versus the costs for the new volumes, both operational and capital. A capital contribution may be required from the new shipper as an upfront payment to reimburse the pipeline for facilities such as a new meter station at a different location that does not provide service to the overall customer base. Throughout the world, new major natural gas pipeline systems are underpinned by long-term firm transportation contracts with the initial shippers. Historically, long-term firm service has often been the only type of service provided by the pipeline for existing or new customers in the early years of pipeline operation. New expansion volumes can affect, either positively or negatively, the availability of overrun or interruptible service to existing

Subject	**Issue No 2 (a): Criteria and procedure for selection by regulator of entity for laying and operating Transportation Pipelines**
	customers depending upon the stage of additional facilities constructed relative to the new firm volumes and the overall impact on pipeline system planning. Another significant factor when considering expansion volumes is the tariff methodology for the additional volumes. The regulatory model used by the US Regulator, FERC, has expansion volumes being charged a tariff that reflects their incremental costs, unless rolling in the incremental costs to existing customers would decrease their tariffs (with some modest exceptions). In Canada, the National Energy Board has applied a rolled-in methodology for many years as the primary model for expansion volumes whether or not this increases or decreases tariffs for existing customers. This philosophical difference has had significant implications for expansions of the Canadian pipeline systems over the past two decades. In summary, expansion policies that fairly balance the interests of initial and future shippers will lead to optimal long-term results for pipeline customers, owners and governments. Cost Responsibility In many ways the core issue that needs to be confronted is: who pays for capacity under various circumstances. This question arises in a number of scenarios. Who pays for the additional costs associated with building a pipeline with initial excess capacity? How do you induce expansion yet make sure that current shippers are not disadvantaged by those future expansions in a contract carriage regime? How do you ensure that existing and new pipeline tariffs are broadly equivalent in order to avoid skewed incentives (e.g., if the tariff on a new pipeline is too high versus a rate on an existing pipeline, a shipper will seek to obtain capacity on the existing pipeline and exacerbate the difference between the existing and new pipeline if the cost allocation of the expansion is rolled-in)? Other issues include impacts on financing options and government participation. India needs to follow a pragmatic, business-like approach to draw investment into infrastructure so that optimal solutions are enabled. This includes, evaluating the current economic environment, defining economic and societal goals and allowing the market to find a fit without unnecessary prior constraints. The primary challenges faced by India include providing quick service to a wide area, opening up the mid-stream market so that upstream assets can get to market. The US is about to develop its largest single pipeline and the largest in the world (in terms of investment). It is anticipated that the cost of the Alaska

Annexure 2
Compendium of Companies' Responses

Subject	**Issue No 2 (a): Criteria and procedure for selection by regulator of entity for laying and operating Transportation Pipelines**
	Natural Gas Pipeline will be approximately $20 billion (or 89,000 Crores). Given that the investment in question is nearly five times that envisaged for the entire national pipeline grid planned for India, it would be quite useful to see how the US has handled the issues related to initial design and expansion and see if some of the findings there can be helpful or applicable to pipeline infrastructure development in India. In 2004, the US government passed a law, The Alaska Natural Gas Pipeline Act (the Act) which directed, in part, the Federal Energy Regulatory Commission of the US (FERC) to establish regulations governing the conduct of open seasons for Alaska natural gas transportation projects including procedures for allocation of capacity. The FERC stated that the regulations it implemented are designed to promote competition in the exploration, development and production of Alaska natural gas and for open seasons for capacity exceeding the initial capacity, the regulations provide an opportunity for transportation of natural gas other than from Prudhoe Bay and Point Thompson (Alaska).1 In the case of the Alaska natural gas transportation project, the complex, competitive conditions surrounding it have been intensified by the perceived reality that there will be only one such pipeline for the foreseeable future.2 In Alaska, North Slope Producers3 hold the proven reserves that would be able to support the construction of the project, and would initially be in a position to make long-term capacity commitments to the project. The North Slope Producers strongly argued before the FERC that it has no authority to mandate changes in the design of a pipeline, either to provide additional capacity or to enhance future expandability. Other producers and explorers, whose potential gas reserves are not yet commercially developed, would not necessarily be in a position to make long-term commitments as readily as the North Slope Producers. Instead, these producers anticipate a need for capacity some time in the future, and would be reluctant to make the large investment required to explore for and develop Alaska gas without being reasonably assured that they will have access to pipeline capacity when their gas is ready to move to market. Shippers seeking to move gas only within the State of Alaska for in-state uses would also seek pipeline capacity. While the North Slope Producers anticipated paying rates covering the costs of transportation through the entire project (postalized tariff), shippers planning to make deliveries in Alaska would likely seek distance-based

[1] Order No. 2005, 110 FERC ¶ 61,095 at P 1 (2005).
[2] Such a situation would be likely be the case for a pipeline built to extend from the KG Basin to the West coast of India.
[3] BP, ConocoPhillips and ExxonMobil.

Subject	**Issue No 2 (a): Criteria and procedure for selection by regulator of entity for laying and operating Transportation Pipelines**
	rates. So, how did FERC resolve the issue of these competing desires for capacity? In the case of the Alaska pipeline, the FERC stated that its intent was to balance the need to allow project sponsors the flexibility to develop and bring to market Alaska natural gas with the similarly undeniable need to ensure fair competition in the transportation and sale of natural gas, promote the development of natural gas resources in addition to those in the North Slope, and consider Alaskan in-state requirements.4 The FERC emphasized that it was well aware of the risks to competition imposed by a project that is owned or primarily sponsored by a small group. Thus, the FERC declared that it was imposing strict requirements on all proposals, and particularly on affiliate-owned projects, with respect to the public disclosure of information, to ensure that there would be a level playing-field. Applicants for an Alaska pipeline project would be required to provide detailed information as to project design, how capacity is to be allocated, and proposed rates, terms and conditions which would enable the FERC to be in a position to monitor whether competition for capacity is fair. In addition, while the FERC permitted pre-subscription for "anchor" shippers,5 it required that contracts with such shippers be made publicly available, and that all shippers seeking the same type of capacity be offered service on the same terms and conditions. Thus anchor shippers could not get an undue preference in their tariff.6 The FERC stated that it would bear in mind the concerns expressed by the non-North Slope producers in considering expansion issues. Thus, the FERC's evaluation would look to see whether a proposed pipeline was designed not only to meet immediate needs, but also to provide a reasonable opportunity foraccess to low-cost expansion capacity. The FERC assured that expansion capacity tariffs would be set at levels that would promote competition in exploration and development of Alaska natural gas, not just protect the interests of initial shippers. With regard to initial capacity, the FERC stated that it believed that it was in the best interests of the pipeline sponsor(s) and the shippers to build the pipeline to

[4] Order No. 2005 at P 11.
[5] Anchor shipper(s) as used in the natural gas industry means one or a very few shippers with very large, significant volumes of natural gas that will financially support the initial design and cost of a project.
[6] Order No. 2005.
[7] Ibid.
[8] See FERC Order No. 2004 for the standards.

Subject	**Issue No 2 (a): Criteria and procedure for selection by regulator of entity for laying and operating Transportation Pipelines**
	accommodate all qualified shippers who were ready to sign firm agreements: aggregate demand. Any expansion of initial capacity beyond aggregate demand would be based on substantial evidence and would need to be required on public interest grounds.7 On the subject of tariffs, the FERC believed it was appropriate to establish rate criteria that would assist potential shippers to make informed open season bids and which would promote competition. The criteria included projected tariffs for deliveries in-state as well as a rebuttal presumption for rolled-in rate treatment for future pipeline expansions. In adopting the rebuttal presumption for rolled-in rate treatment, the FERC asserted that it was balancing rate p redictability for initial shippers with the objective of reducing barriers to future exploration, development and production of Alaska natural gas. The FERC stated that it was concerned that the prospect of high incremental transportation rates might increase risks to Alaska gas producers and serve as a disincentive to future exploration and development of valuable natural gas resources. The FERC has an existing policy of not favoring rate subsidization of capacity expansions by existing shippers. In terms of defining subsidization, that policy principally considers whether the expansion will result in higher rates than the existing rate for transportation service for existing shippers but it does not necessarily presume that a rolled-in expansion rate higher than the original rate constitutes a subsidy. FERC declared that due to the likelihood of a single Alaska pipeline, it would consider alternatives to its current definition of subsidization in the context of a particular proposal before it. In essence, the FERC was signaling that it would reduce barriers with respect to pipeline tariffs to help spur natural gas exploration and development in Alaska. Another issue that the FERC addressed was that of late bids, i.e. bids by qualified bidders after the expiration of the open season. Under the FERC's open access policy and rules, all operating interstate pipelines, have an obligation to respond to new requests for service even if no capacity is available. Interstate pipelines, apart from an Alaska pipeline, cannot be required to expand their systems but they must respond to a valid request for service even if none is available. On these pipelines, when expansion is not available, capacity can still be available to prospective shippers through an interstate pipeline's capacity release or capacity turn-back provisions. In the several years between the time an open season for an Alaska pipeline ends and the pipeline goes into effect, there are no network code provisions to supply capacity. As a result, recognizing that a significant amount of time could pass between

Subject	**Issue No 2 (a): Criteria and procedure for selection by regulator of entity for laying and operating Transportation Pipelines**
	the close of an open season and a project sponsor(s)' completion of the proposed pipeline design and associated development costs, the FERC decided that a project sponsor would be required to consider a request for service beyond the conclusion of the open season to accommodate late developing producers who were not in a position to commit to long-term capacity commitments during the open season.. The FERC did provide that a project sponsor could reject a late request either before or after the pipeline design is finalized due to economic, engineering, design, capacity or operational constraints, or accommodating the request would adversely impact the timely development of the project. The project applicant would, of course, be required to provide a detailed explanation for its rejection which would be reviewed by the FERC. To balance the playing field, a late-bid shipper has to make a good-faith showing including the circumstance preventing a timely bid, and how those circumstances have changed so that a shipper cannot engage in gamesmanship. The FERC believes that the balance it has crafted will permit late-developing shippers to obtain capacity beyond expiration of the open season but also provide the pipeline developer assurance that the pipeline can be designed and developed on schedule. In terms of the actual procedures of the open season, the pipeline applicant provides a 30-day prior public notice containing extensive information intended to allow all interested parties to decide whether to participate in the open season followed by an actual open season period of at least 90 days. In addition to this, the applicant must file the open season plan with the FERC 90 days prior to the 30-day notice and the FERC would issue its decision within 60 days of the filing (i.e. prior to the 30-day notice). The extensive information would include a requirement for the applicants to state in detail the methodologies for determining the value of bids and for allocating capacity subject to a requirement that all capacity be awarded without undue discrimination or preference. The FERC's open season requirements also include that the applicant abide by standards of conduct8, identify affiliates involved in the production of natural gas in Alaska and any open season information disclosed to potential shippers be available to all shippers (transparency). Any pre-subscription agreements would need to be made public within ten days of execution and capacity offered on a pre-subscription basis must be available to all prospective qualifying shippers on the same terms, conditions and tariffs a the pre-subscription agreements. As seen above in the case of the Alaska Pipeline, the US federal regulator, FERC, drafted rules to ensure that while the initial pipeline was built to aggregate demand, a fair and reasonable opportunity existed for those shippers who could not commit until later at a tariff that would not deter future exploration. This equitable balancing of the needs of the initial shippers with those of future shippers should ensure that Alaska reserves will be optimally evacuated to the

Subject	**Issue No 2 (a): Criteria and procedure for selection by regulator of entity for laying and operating Transportation Pipelines**
	benefit of all stakeholders including the US public. Applying the precedent set forth by the FERC, the Regulator in India should authorize pipelines by following a procedure that resembles as closely as possible the international best practice that the FERC has created. We have attached a flowchart that depicts this process which we and the Gas Industry Group have advocated be used for authorization of new pipelines and for determination of available capacity and expansion capacity on existing pipelines. We believe that using open seasons with the Regulator having decision-making authority with respect to future expansions based on market expectations will result in the optimal transmission grid being built for India to the benefit of India's expected economic growth in the future.
Company 9	1. The entity or its affiliate or associate Company should be in the business of Hydro Carbons, or in the business of laying, operating and maintaining transmission and distribution pipelines of petroleum products. 2. Should have a net worth of Rs. 400 Crores and 3. Undertakes to form a corporate body in the event of award of license.
Company 10	*Note : No comments received*
Company 11	1. It should be done based on the experience / expertise and track record of the company in the construction, operation & maintenance of the transportation pipelines. 2. In addition, the financial strengths of the company may also be considered on case to case basis.
Company 12	*Note: Comments specific to questionnaire not received.*

Annexure 2

Compendium of Companies' Responses

Subject	Issue No 2 (a): Criteria and procedure for selection by regulator of entity for laying and operating Transportation Pipelines
Company 13	1. Shall have Technical/ Managerial experience in operating pipelines or in distribution/ marketing 2. Shall have adequate financial resources 3. Shall clearly state purpose of executing project and also allowing competition 4. Shall have adequate manpower and other resources to provide back-up support during exigencies 5. Shall not provide undue advantage to any particular company related to the said transportation company
Company 14	1. It being Capital Intensive infrastructure project of national priority and importance, it must be under regulators control. A holding company on lines of (Private Public Partnership) with possibly 51% GOI stakes and balance distributed among either potential players (BPCL, HPCL, IOCL,ONGC, PLL RIL,, Shell,…….) and or public at large on lines of Petronet LNG Ltd be promoted with mandate to promote 5-6 independent relatively small organizations with base in each of the location where they contemplate to set up Import, store, re-gasification facility or alternatively have plans to explore and produce Gas (Such as in RIL in KG basin) as lead or alternatively equal stake holder along with earlier stated holding organization with the right to use 60- 75% capacity for its own gas with first right of refusal for this capacity and balance capacity be available for 3rd party transportation belonging to the promoter club at differential price say 10 % premium over and above average transportation cost and to the paries out side the club be given the facility @ 25% premium on the average transportation cost. In case a potential promoter is not keen to invest on pipeline, the site be auctioned to promoter club members or even invite 3rd parties. In no case, a single promoter be allowed to hold rights to set up the pipeline and the said promoter does not implement it, Such a situation is nothing more than a potential threat, discourage others from entering the business. Most important, a country wide Pipeline network MAP should be the starting point for this mission critical project. The Infrastructure status be sought from MOF for the pipe lines projects being setup under above stated regulator guidelines, and not for an independent operator.

Annexure 2

Compendium of Companies' Responses

Subject	**Issue No 2 (a): Criteria and procedure for selection by regulator of entity for laying and operating Transportation Pipelines**
Company 15	1. All authorization to put up a transmission/city gas pipeline should be based on Competitive bidding. 2. Any interested entity can put up a proposal. 3. Regulator will look in to the proposal and take in to account other information for the next 15 years and make out required capacity/specification 4. Invite competitive bid from the Gas marketing companies 5. Select the most competitive bid and award the work. 6. Dedicated single user pipelines should also be approved, though not falling under common carrier. 7. The entity setting up such dedicated pipeline may not have full information on likely/exact demand in that area w.r.t up coming plants, planned expansions etc. 8. Regulator having such information would be in better position to decide on whether it will be single user dedicated pipeline or a common carrier. 9. Accordingly regulator can alter the specification to meet the requirement 10. The cases where the Gas producer enters in to transmission by way of distribution /city Gas network, it should be ensured that no undue advantage is availed as a transmission agency/city gas distribution agency in terms of transfer price, project IRR.
Company 16	*Note: Comments specific to questionnaire not received.*

Annexure 2

Compendium of Companies' Responses

Subject	**Issue No. 2 (b): Criteria and procedure for selection by regulator of entity for laying and operating City/local gas distribution network**
Company 1	1) Number and nature of intended consumers targeted to be served 2) Networking with fallback options envisaged at the formulation stage ,if any 3) Sustainability of operations on a long term basis
Company 2	Retail networking experience and minimum net worth criteria.
Company 3	*Note : No comments received*
Company 4	1) Authorization to an entity be provided based on • Gas source tie-up • Gas Transmission tie-up up to city gate station 2) The quantity of gas tied-up should be enough to meet the existing demand and growth for replacement of LPG for domestic, replacement of LPG/FO/Diesel for commercial, replacement of FO/diesel/naphtha for small and medium industry on network and replacement of diesel/gasoline in the city transport system. Percentage replacement can be firmed up with IGL/MGL experience 3) In case there are more than one applicant seeking authorization for same geographical area with upstream and midstream tie-up, Board may grant authorization to an entity offering lowest quoting of cost of supply and network with the provision that in future if another entity offers supply at lower cost or supply gas to meet unfulfilled demand, access to local network would be provided on non-discriminatory basis
Company 5	Infrastructure can be laid preferably independent of the distributors and should be available to any one wanting do business. the customers should have a choice to choose their distributor. it is like telephony or electricity supply .
Company 6	*Note : No comments received*

Annexure 2
Compendium of Companies' Responses

Subject	**Issue No. 2 (b): Criteria and procedure for selection by regulator of entity for laying and operating City/local gas distribution network**
Company 7	*Note : No comments received*
Company 8	**Recommendations:** Service requirements are a matter of public policy and should be stated in the concession of the bid. Prequalification to ensure: ▪ consideration of health safety and environmental hazards; ▪ demonstrable technical competence; ▪ financial capability Do not include lowest tariff, as this will merely incentivize those intending to sell to large customers only. In its presentation at the MoPNG on April 5, 2006, the PPAC proposed that specific weights be applied to a set of five bid selection criteria. PPAC proposed: (1) a 20% weight to lowness of tariff; (2) a 10% weight to the present value of capital expense; (3) a 20% weight to IRR; (4) a 25% weight to present value of CNG volumes; and (5) a 25% weight to the present value of small commercial/industrial volumes. We appreciate the PPAC's effort to produce an objective methodology to evaluate particular bids in order to select the best bid. However, we believe that the optimized methodology would have a slightly different set of criteria. In terms of bid criteria four and five, which are service requirements, we believe it is inappropriate to bid based on these criteria. Service obligations are just that; they are minimum service obligations that the Central Government/Regulator (as the license grantor) identifies, after an assessment or market study, in the bid document. They are minimum requirements that all bidders must meet. If the Central Government would like to see these targets exceeded, the Regulator should provide incentives, also identified in the bid document, to the winning bidder for exceeding them. Thus, the Central Government and public are assured that certain minimum service requirements will be met and the operator can judge the merit of exceeding the requirements to achieve the available incentives. When putting these minimum service criteria in the bid document, a minor modification we propose to the set of criteria is that instead of using volumes for CNG, small commercial and residential customers, it is better to use capacity as a measure for CNG and number of customers for small commercial and residential. This was debated at the meeting on April 5th and the primary reason to use capacity and number of customers was that any measure of

Subject	**Issue No. 2 (b): Criteria and procedure for selection by regulator of entity for laying and operating City/local gas distribution network**
	volume in a service requirement would be projected based on future expectations. These volume deliverables may or may not occur based on market conditions in the future (i.e. price of competing fuels). A service requirement based on a requirement of installing a certain amount of CNG capacity or of connecting a certain number of customers within specified timeframes is easy to assess and is not dependent on exogenous variables. Second, we believe that using lowness of tariff is not a reliable criterion to use in terms of bid selection. This criterion encourages a bidder to bid unrealistically low and subsequently seek redress with the Regulator at a later stage by maintaining that the allowed tariff (at the time of the bid) is insufficient to recover costs. Our understanding is that in India, such tactics have taken place in telecom license auctions. Additionally, lowness of tariff inherently incentivizes an operator to sell to large customers which directly contravenes Section 20(5) of the Act which states that one of the guiding objectives of the Board is equitable distribution. Therefore, we believe that lowness of tariff could lead to perverse development/expansion signals geared towards large customers in breach of the Act's objectives. Third, we believe that there needs to be a criterion that contains a minimum bid (or reserve price). This reserve price is the value that the Central Government places on the license. If the reserve price is met through competitive bidding, then the Central Government receives the reserve price as its fees for the license and by definition has received the value it ascribed to the license. If the minimum bid exceeds the price that was set as the minimum, the Central Government would receive a benefit above the value it set. We believe, this is the most transparent and objective method for evaluating a license bid. Combined with the minimum service requirements, it allows the Regulator to determine the minimum price of the concession as well as the public goals (service requirements) and allows potential bidders to compete for the license based on price. Fourth, we believe that the selection criteria needs to incorporate a filter which only allows operators found to possess best-in-class health, safety, security and environment (or HSSE) practices. This is a very important matter and should not be taken lightly. As an owner/operator or co-owner/operator of two existing distribution networks in India, We takes its responsibility of assuring safe operations seriously. We are committed to ensuring the safety of our customers and the public as well as assuming environmental responsibility for our businesses. Our commitment is directly based on the safety record of our parent company, Our Group, whose operations throughout the countries in which there are operations in are a testament to our commitment to health, safety and environmental obligations.

Annexure 2

Compendium of Companies' Responses

Subject	**Issue No. 2 (b): Criteria and procedure for selection by regulator of entity for laying and operating City/local gas distribution network**
	A bidder should be evaluated on its observed ability with respect to technical competence and safety management competence, with recognition accorded for proven ability. All bidders should be required to present a safety management plan identifying health, safety and environmental hazards resulting from planned operations. The plan should evaluate potential risks and set out how the CGD operator would manage those risks and include effective contingency plans. We believe that the set of selection criteria we are proposing will result in the best CGD operators being selected from a transparent and fair process.
Company 9	1) The entity or its affiliate or associate Company should have of laying/ operating / maintaining transmission and distribution pipelines of petroleum products/utility networks. 2) Entity with existing network to be greater weightage. 3) Net present value of existing customer relationship personnel should be an important criterion in granting license. 4) Should have a net worth of Rs. 100 Crores and 5) Undertakes to form a corporate body in the event of award of license.
Company 10	*Note : No comments received*
Company 11	As mentioned above, it should be done on bidding process and awarded to the single party for a city.
Company 12	*Note: Comments specific to questionnaire not received.*

Annexure 2

Compendium of Companies' Responses

Subject	**Issue No. 2 (b): Criteria and procedure for selection by regulator of entity for laying and operating City/local gas distribution network**
Company 13	1) Shall be based on prior experience in similar projects or based on experience in developing distribution network in other petroleum products or JV in which one of the company having experience in handling city gas distribution network. 2) Shall have enough internal resources based on balance sheet 3) Operational credibility/ efficiency in the past 4) Experienced Manpower 5) Effectiveness in responding to emergencies 6) Company's commitment to adhere to the milestones of the project
Company 14	It should be implemented under the aegis of the organizations who has already implemented such projects in any part of the World. Simply because they are expected to have perfected the system including safety norms. Also the guidelines should be clear on housekeeping such that citizens are not disturbed while digging or open trenches not being filled and clear rules for mending the trenches opened for laying the distribution pipelines.
Company 15	1) Any interested entity can put up a proposal. 2) Regulator will look in to the proposal and take in to account other information for the next 15 years and make out required capacity/specification 3) Invite competitive bid 4) Select the most competitive bid and award the work.
Company 16	*Note: Comments specific to questionnaire not received.*

Annexure 2

Compendium of Companies' Responses

Subject	**Issue No. 3: The principles for determining the number of years for which a city gas distribution network should be accorded exclusivity**
Company 1	1) Payback of the investment 2) Sustained availability of the gas from the contracted source 3) Alternative sources envisaged ,if any
Company 2	As far as possible there should be scope for at least two players. Since the infrastructure in city gas distribution is not available, exclusivity may keep for maximum 5 years or no of consumers
Company 3	*Note : No comments received*
Company 4	1) Market forces should determine the viability of network. Exclusivity prevents competition and promotes inefficiencies by denying opportunity for adoption of technological development. As such exclusivity should not be provided for any activity as it would act as restrictive instrument for multi party participation in the particular activity. However for financing of the project, exclusivity may be accorded for distribution network for duration of loan payment 2) What happens, if competition is not existing today, resulting in authorization to an entity but more parties develop interest later and offer better services in terms of technology and cost. Should entry of such party be denied? Regulation to encourage efficiency and cost improvement. Authorization should not become a permit for protection of inefficiency and higher cost.
Company 5	The number of years should be derived by economic returns on the investments one makes.
Company 6	*Note : No comments received*

Subject	**Issue No. 3: The principles for determining the number of years for which a city gas distribution network should be accorded exclusivity**
Company 7	*Note : No comments received*
Company 8C	Recommendation: (1) Allow an exclusivity period which reflects risk and longevity of the investment, as well as contractual commitments such as take or pay. (2) Gas marketing exclusivity of between 15 and 20 years and conveyance exclusivity of between 20 and 30 years in accordance with international standards. (3) Apply exclusivity thresholds so that large industrial customers are part of the CGD customer mix. (4) Competition should be phased in order to ensure network build-out, protect residential customers and to prevent cherry picking. (5) Existing entities operating CGDs that are granted authorization should receive exclusivity periods comparable to those given to Greenfield licensees. International best practice has generally required gas-on-gas competition to occur at the same time so that there is a level playing field and the process is efficient. Clause 9.1 of the CGD Guidelines states that an entity would normally be allowed an exclusivity period of 120 months (10 years) from the date of the grant of the authorization unless otherwise specified by the Central Government. We believe that a 10-year period for exclusivity is not adequate. Brazil provides complete conveyance and marketing exclusivity within the geographic license area without volume restrictions for 12 years. Additional exclusivity of 18 years is provided for residential and commercial customers. China provides for a 30-year period of exclusivity for conveyance and marketing without volume restrictions. Columbia and Portugal provide for 20 years of exclusivity in both conveyance and marketing. As can be seen from these international examples of developing countries, exclusivity periods are double or triple those provided for in the CGD Guidelines, with no volume threshold. The initial inclusion of all customers within the license is essential for ensuring efficient network growth. It also prevents the transfer of investment risk on to small customers (e.g. residential). We urge the Central Government to re-examine its position and incorporate a longer period of exclusivity, for both conveyance and for marketing, consistent with global

Subject	**Issue No. 3: The principles for determining the number of years for which a city gas distribution network should be accorded exclusivity**
	practices. This should be for all customers, with a phased introduction of competition to protect all customers' interests. A 10-year period for exclusivity will lead to under development of city or local natural gas distribution networks which by their nature are capital intensive projects. In our view, a short exclusivity period will ensure a sub-standard bid for the license as well as a limited build-out corresponding to the perceived value of the limited exclusivity that would be granted. A longer exclusivity period allows an operator to build a further reaching network which will result in lower tariffs since the customer base will be larger. Longer exclusivity periods are not detrimental to competition in developing markets. In fact, they lead to lower prices under regulation than the situation if exclusivity is for a short period. Experience indicates that a local distribution project generally takes five years to reach maturity. The key point here is that in order to get to that maturity stage, the exclusivity period offered must provide a firm with the opportunity to earn a return over a payback period at the maturity level. Thus, depending on the allowed rate of return, the exclusivity period beyond the maturity level of five years would be approximately 10 years. Thus, the Central Government should allow a total marketing exclusivity period of 15 years. We feel this is an optimized exclusivity period that balances the need of the investor(s) in a project with the need to develop a distribution grid that will have a balanced build-out so that all customer segments are served fairly. As can be seen from the international examples above, most countries provide conveyance exclusivity in accordance with the expected life of the distribution network. International conveyance exclusivity periods range from 20-35 years and in some countries there is an option for extension of conveyance exclusivity for up to 20 additional years. We believe that India should provide conveyance exclusivity in line with international standards which have worked well in those countries. As a result, we recommend that the Central Government adopt a conveyance exclusivity period of 20 to 30 years. A conveyance exclusivity period of 25 years with straight line depreciation will result in a low tariff impact and enable expansion to take place on a well-intentioned basis. Additionally, the language implies that while 10 years would be the norm, the exclusivity period could be adjusted to meet case-specific needs. We understand the rationale to tailor the exclusivity period to match local conditions, however, if that is to be done, there needs to be an objective methodology to do so. One caution we would add though is that it may be difficult to implement and again could lead to CGD developers flocking to those projects offering greater exclusivity periods. International experience has shown the importance of consistency across national gas markets in order to protect customers' best interests.

Annexure 2

Compendium of Companies' Responses

Subject	**Issue No. 3: The principles for determining the number of years for which a city gas distribution network should be accorded exclusivity**
	With respect to the volume level under which a licensee is granted exclusivity, we feel it is appropriate to set that level so that large industrial customers would be in the CGD operator's customer mix. A threshold level below that will not be adequate for Greenfield license awards because large industrial customers, the primary demand drivers in India's CGD businesses, will fall open to competition in the beginning. For example, applying a threshold level of 50,000 scmd as the cutoff for exclusivity would limit the CGD operator to serving high cost/low margin residential customers, commercial enterprises and small industrials. A customer mix such as this would end up requiring higher charges to the customers as the required investment would need to be recovered over smaller volumes. As a result, the feasibility of such CGD projects would be challenged. This is compounded by existing competition from alternative fuels and the associated burden of providing discounts. We believe the Central Government should not use a threshold level, otherwise barriers to distribution infrastructure expansion will be put in place. Competition in marketing should be phased in. Once the initial exclusivity period is over, large industrials should be open to alternate suppliers. Distribution customers should be allowed to access competitive suppliers on a segmented basis following the expiration of the marketing exclusivity period. Another issue that gets raised is if an existing entity is granted authorization by the Central Government, does that entity now get exclusive conveyance and marketing rights to the applicable city or local natural gas distribution network? Clause 9.2 of the CGD Guidelines proposes that the Central Government shall separately specify the exclusivity period for transition entities under Clause 11. Our position is that, if granted authorization, the existing entity should receive exclusivity in conveyance and marketing equivalent to Greenfield license awardees. The primary reason to award an identical exclusivity period is that it will encourage continued investment/build-out in existing networks due to the award of exclusivity. Another reason is that a license-holder of multiple authorizations would not be induced to cherry-pick where to invest based on differences in exclusivity periods in his portfolio. A third reason is that these entities made investments in their networks prior to the onset of regulation on the assumption that they would not face gas on gas competition but would face competition in the form of competing fuels. Gas on gas competition in these existing areas should be allowed on the same schedule afforded to Greenfield licenses so that current distribution network owners are not unduly disadvantaged compared to new peer networks. Using international practice as a cue, gas-on-gas competition should occur at the same time for Greenfield and existing networks in order to maintain a level playing field and ensure that the process does not create undue disadvantages to existing operators.

Subject	**Issue No. 3: The principles for determining the number of years for which a city gas distribution network should be accorded exclusivity**
	The new regulatory environment needs to recognize these facts and allow the existing operators the opportunity to adjust to the new regulatory environment. They should be afforded the opportunity to adjust over a period that is consistent with that granted to new entities.
Company 9	1) There may be exclusivity for setting up infrastructure of NG pipelines & City gas grids, with a period of 10 years, with an additional period of 3 years for initial, developmental activities, totaling to 13 years. 2) For marketing, there should not be any exclusivity for urban agglomerates (UA) with more than two million population. 3) For UA of less than two million exclusivity can be provided basis : 4) Reasonable pay back period of 7 years plus 3 years of development activity, totaling to 10 years.
Company 10	*Note : No comments received*
Company 11	Initially, it may be for a period of 10 years and subsequently based on the performances and customer satisfaction, it may be extended for another term.
Company 12	*Note: Comments specific to questionnaire not received.*
Company 13	1) City Gas Distribution projects are cost intensive and would take minimum of about 15~20 years to get reasonable IRR especially when CNG is not mandated for Public Transport Vehicles. Moreover City Gas Distribution Projects cater to the demand of retail segment and volumes are low in the initial years. Hence, considering various external risks and competitions from alternate fuels exclusivity should be given on permanent basis. 2) Other important parameters are: ▪ Project is not viable if two companies are granted permission as the demand is not very high to justify investment and this will also lead to duplication of infrastructure and related O&M issues.

Annexure 2

Compendium of Companies' Responses

Subject	**Issue No. 3: The principles for determining the number of years for which a city gas distribution network should be accorded exclusivity**
Company 14	Minimum 5 years after an organization has completed the network on pre defined schedule, fixed by the Regulator. Say, 5 years for implementation from the date of selection plus5 years for reaping the benefits, in any case not more than 10 years. This entire exercise be based on BOOT(Build Own Operate Transfer).Bidding for swap or additional network must start early on say by 9th year and by mid 10th year new/additional operator be in place.
Company 15	1) Investment made 2) A minimum return during the period of operation
Company 16	*Note: Comments specific to questionnaire not received.*

Annexure 2

Compendium of Companies' Responses

Subject	**Issue No 4: The guiding principles to be followed for declaring and/or authorizing a common carrier or contract carrier or city gas distribution network**
Company 1	1) Best tariff available to the consumer ensuring reasonable return to the investing entity
Company 2	1) As a matter of principles all pipeline network should be developed on a common carrier / contact carrier principles. 2) City gas distribution should be authorised by inviting various parties to offer gas distribution services and selection should be based on pre fixed criteria of better services offered by the prospective bidder.
Company 3	*Note : No comments received*
Company 4	1) Except for dedicated pipelines, capacity on all pipelines beyond the contracted capacity should be on common carrier 2) Similarly, all city gas distribution networks should be on common carrier 3) Concept of common carrier is for: ▪ Promoting competition among entities ▪ Maintaining or increasing supplies of petroleum, petroleum products and natural gas ▪ Avoiding infructuous investment incase of declaring a common carrier or contract carrier.
Company 5	Invite expression of interests from the desirous companies to invest in such a network. Evaluate their proposals. They should not be the distributors of the gas themselves.
Company 6	*Note : No comments received*
Company 7	*Note : No comments received*

Subject	**Issue No 4: The guiding principles to be followed for declaring and/or authorizing a common carrier or contract carrier or city gas distribution network**
Company 8	**Transmission:** It is unusual to use the term "carriers" for gas pipelines – the more accepted terminology in the industry is "carriage" - the former is a generic term used in networked utilities such as telecoms. Applying these concepts universally across the full range of gas and petroleum product pipelines without distinction between different operational parameters will create problems. Shared petroleum product pipelines tend to function on the basis of a shipper utilising 100% of the capacity, for a defined period of time, for transporting a quantity of product from one storage location to another. By contrast, gas pipelines operate on a co-mingled basis with shippers using a defined proportion of the capacity for 100% of the time. True Common Carriage on natural gas pipelines is relatively unusual in that it does not require the shipper to book capacity. Rather the shipper simply notifies the pipeline operator on a periodic basis on the flows required and typically pays on a usage basis i.e. simply a commodity related charge. True common carriage occurs fairly rarely and generally as a result of the over-development of pipeline capacity (a number of pipelines in the US suffer from this problem). Under these circumstances, firm capacity becomes un-salable and holds no intrinsic value and the pipeline owner has to sell throughput at whatever price can be achieved. Contract carriage involves a significant commitment on behalf of the shipper to a fixed quantity of capacity over a long period of time. This may be as a foundation shipper, i.e one who's capacity reservation forms the financial basis of the pipeline's construction. Alternatively, a shipper may purchase contract capacity from the pipeline once a foundation shippers reservation has expired...this typically being on a shorter term basis. Contract carriage regimes that mature will typically develop a sizeable secondary market in capacity between both the foundation shippers and new entrants as the market fragments. This is what has happened in the US market over the past 20 years. It is possible to see hybrid approaches such as in the UK where the pipeline operator provides firm capacity-based contract carriage, but on a short term basis. The market has evolved to combine tranches of long term capacity (typically used to guarantee rights at entry points into the network)and a much more fluid market of short term (less than one year) to allow shippers to flex their requirements. It is sometimes mistakenly described as a common carriage model. In reality it's a short term contract carriage model characterized by firm capacity payments and severe penalties for exceeding capacity reservations. It is worth stressing that it is the maturity of the infrastructure and its level of amortization that allows the pipeline operator to offer this degree of flexibility. In the Indian context, it is unlikely that pipelines will be developed by private companies, without a legally enforceable contract carriage regime. It seems

Subject	**Issue No 4: The guiding principles to be followed for declaring and/or authorizing a common carrier or contract carrier or city gas distribution network**
	unlikely that even the public sector would wish to develop open access pipelines on any other basis. The preference would be that the Common Carrier expression is dropped completely as it is confusing and carries a meaning that will create legal ambiguities. As an alternative, the regulator should be able to declare a pipeline as "Open Access", requiring the operator/developer to separate any transportation and shipping interests and to put in place a transparent mechanism for allocating capacity on the pipeline. (The only exceptions to this policy, as suggested in the draft pipelines policy document should be where social objectives outweigh economic considerations in the construction of a pipeline. In these circumstances, as in the case of the more marginally economic city gas networks, the Regulator should be prepared to grant a degree of operating exclusivity to offset the increased investment risks). In the case of an existing and well-depreciated pipeline such as the HBJ this could involve providing a mixture of short and long term firm capacity, more akin to the UK model, via an appropriate non-discriminatory mechanism. This would enable new entrants to serve consumers and provide a competitive dynamic within an established gas market. The degree of capital amortization would allow the pipeline owner to offer shorter-term firm capacity without any significant increase in financial risk. Indeed the evidence from elsewhere suggests that this approach benefits the operator by boosting the overall level of capacity booking at any time as the process allows shippers to profile their exposure. Alternatively, for new build pipelines, the preferred mechanism would involve an open season to establish credible, credit worthy shippers, capable of making the long-term financial commitment required. Any shorter-term capacity booking on new pipelines would be handled via a secondary trading mechanism, not by controlled capacity release. It is always important to remember that whilst the shippers do not own the pipeline, they do own the capacity and those ownership rights should not be infringed. In summary, it is suggested that the pipeline policy and associated legislation should seek to remove the underlying ambiguities caused by the use of mixed terminology, without in any way diminishing the ability of the Regulator to act. The regulator should be able to declare open access on any pipeline, based upon term based firm capacity reservation. This approach offers the best chance of turning the ambition of a vibrant Indian gas industry, bringing clean-burning energy to Indian consumers, a reality. Distribution:

Annexure 2

Compendium of Companies' Responses

Subject	**Issue No 4: The guiding principles to be followed for declaring and/or authorizing a common carrier or contract carrier or city gas distribution network**
	We discuss access to distribution in the section on exclusivity.
Company 9	1) Basis the objective and function of the pipeline 2) Pipeline traversing through 2 or more states 3) Has multiple /diverse end users involved in the economic development of the nation 4) Interest of the end consumer. 5) For existing pipelines, available capacity should be one of the guiding principles.
Company 10	New pipelines with surplus 25% capacity for open access
Company 11	It may be decided based on the number of shippers willing to use a particular pipeline.
Company 12	*Note : Comments specific to questionnaire not received.*

Annexure 2

Compendium of Companies' Responses

Subject	**Issue No 4: The guiding principles to be followed for declaring and/or authorizing a common carrier or contract carrier or city gas distribution network**
Company 13	1) The following is applicable for only transmission pipelines and not for city gas distribution network. ▪ Encourage Competition ▪ Award rights based on lowest Tariffs ▪ Tariff methodology shall be transparent ▪ Ensure supplies/ Supply Security ▪ Past Experience in building, operating and maintaining such facilities ▪ Availability of resources to promote such projects ▪ Clear demarcation of roles viz Transportation vis-à-vis distribution of products, in case any particular company is into both the segments ▪ Common carrier should charge uniform rates to all market players ▪ Pipeline shall have adequate excess capacity. ▪ Common carrier shall adopt a transparent mechanism inviting other interested parties before building the pipelines
Company 14	1) Not essential to have a single carrier (common or contract or city gas.) 2) Multiple carriers feasible depending upon the volume from a particular location and vastness of a city (city Gas) say Mumbai, Greater Mumbai city can absorb up to 4 distributors, similarly Delhi and New Delhi can be catered by 3-4 distributors. 3) Larger number of distributors can be connected at hub point such that in case of failure of supply from one other could cater the supply for short interim intervals. 4) At the end of the day, say by 2015 each user location should have min 2 supply sources, realistically work on 2nd supply source can be planned for implementation 5-7 year down the road. 5) By 2011-13, new players are likely to emerge, they could be the driving force for the 2nd set of pipelines. 6) This entire exercise being a mammoth task, none of the current potential players can justify taking the onus of situation and deliver the pipelines to cater the entire network, hence an equitable infrastructure distribution policy is a must.
Company 15	1) Competitive bidding 2) Capability of the bidder (Technical as well as Financial) 3) City gas distribution company wherever already allotted by Government, to continue with such allotted companies

Annexure 2

Compendium of Companies' Responses

Subject	**Issue No 4: The guiding principles to be followed for declaring and/or authorizing a common carrier or contract carrier or city gas distribution network**
Company 16	*Note : Comments specific to questionnaire not received* .

Annexure 2

Compendium of Companies' Responses

Subject	Issue No.5: Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct
Company 1	One organization can participate in both the activities but it has to be ensured that these activities do not lead to monopolizing and taking unfair advantage. Accordingly the Code of conduct can be developed to maintain the distinction and segregation of two activities.
Company 2	1) Transportation activities should be separate from gas distribution activities and 2) transportation activities should be developed on common carrier principles.
Company 3	*Note : No comments received*
Company 4	1. Ideally, Entity engaged in Transmission activity should maintain arm's length relationship with marketing entity and for this purpose, Regulator to frame the Affiliate code of conduct 2. Purpose of unbundling is to ensure that pipeline ownership does not provide any competitive advantage to any gas seller 3. However,, such separation may await development of multi-supplier and pipeline developer and therefore, over the period as gas market matures, ownership between the transmission and downstream activity should be separated
Company 5	1. The infrastructure should be distributor independent. 2. The customer should have a choice to choose his /her distributor. 3. The network should be transparent to the customers. 4. The transportation rates should be determined on marginality principle
Company 6	Separate legal entities (companies) should carry out the marketing and transportation activities. The company should not be a consumer of gas in the area where it is carrying out transportation or marketing activity

Subject	Issue No.5: Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct
Company 7	1. The Gas marketing and transportation should be kept separately. The Gas marketing should be left to the individual NG producers / LNG suppliers to identify customers and sell their product to customers. 2. The transporter should act as only a facilitator in the transaction of the Sales and gets paid for the purpose of carrying the Gas. 3. If the transporter wants to act like a trader, it should be left to their business decision.
Company 8	Recommendation: 1. Ensure that the code of conduct stops operators of transmission facilities from disclosing information to affiliates engaged in production in order that the affiliate would gain an undue advantage. 2. Consider using the FERC's Affiliate Code of Conduct as a model or at a minimum, have provisions that result in comparable controls. The proposed affiliate code of conduct applies to entities engaged in the following activities: storage, transmission, distribution, marketing and sale of natural gas. A well-developed affiliate code of conduct needs to meet certain requirements (we list a few below): ▪ A prohibition against a utility giving a preference for transportation services to its affiliate or the affiliate's customers over non-affiliates ▪ A requirement that requests for transportation services to be processed in the same manner and in a similar time period for all requests ▪ A prohibition against a utility disclosing information to an affiliate unless it is disclosed to all non-affiliates at the same time ▪ A requirement that the operating employees responsible for transportation services for the utility be functionally independent from the portion responsible for supply and from any marketing affiliate The problem with the affiliate code of conduct in The Act is that it does not apply to entities engaged in the production function. Transmission operators could have affiliates engaged in production. We believes that the affiliate code of conduct needs to encapsulate the production function. If that function is left out, it would permit a transmission provider to share information about transmission to unfairly benefit its affiliate(s) engaged in production to the

Subject	Issue No.5: Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct
	possible detriment of unaffiliated competitors. The United States' wholesale electricity and gas regulator, the Federal Energy Regulatory Commission (FERC), has an affiliate code of conduct that contains the following provisions which apply to both industries (in addition, many state regulators within the US have similar provisions): 18 C.F.R. § 358.5(a) (2005) (a) Information access. (1) The Transmission Provider must ensure that any employee of Marketing or Energy Affiliate may only have access to that information available to the Transmission Provider's transmission customers (i.e., the information posted on the OASIS or Internet website, as applicable), and must not have access to any information about the Transmission Provider's transmission system that is not available to all users of an OASIS or Internet website, as applicable. (2) The Transmission Provider must ensure that any employee of the Marketing or Energy Affiliate is prohibited from obtaining information about the Transmission Provider's transmission system (including, but not limited to, information about available transmission capability, price, curtailments, storage, ancillary services, balancing, maintenance activity, capacity expansion plans or similar information) through access to information not posted on the OASIS or Internet website or that is not otherwise also available to the general public without restriction. (b) Prohibited disclosure. (1) An employee of the Transmission Provider may not disclose to its Marketing or Energy Affiliates any information concerning the transmission system of the Transmission Provider or the transmission system of another (including, but not limited to, information received from non-affiliates or information about available transmission capability, price, curtailments, storage, ancillary services, balancing, maintenance activity, capacity expansion plans, or similar information) through non-public communications conducted off the OASIS or Internet website, through access to information not posted on the OASIS or Internet Website that is not contemporaneously available to the public, or through information on the OASIS or Internet website that is not at the same time publicly available. (2) A Transmission Provider may not share any information, acquired from nonaffiliated transmission customers or potential nonaffiliated transmission customers, or developed in the course of responding to requests for transmission or ancillary service on the OASIS or Internet website, with

Subject	Issue No.5: Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct
	employees of its Marketing or Energy Affiliates, except to the limited extent information is required to be posted on the OASIS or Internet website in response to a request for transmission service or ancillary services. (3) If an employee of the Transmission Provider discloses information in a manner contrary to the requirements of § 358.5(b)(1) and (2), the Transmission Provider must immediately post such information on the OASIS or Internet website. FERC's rationale for wording its affiliate code of conduct with this language was to ensure that information about available transmission capability, price, curtailments, storage, ancillary services, balancing, maintenance activity, capacity expansion plans or similar information was not provided to a transmission provider's affiliate to give that affiliate undue advantage with the effect that competition would be harmed. We feel that the FERC model for affiliate code of conduct is one that would work well in India because FERC has had to put such measures in place to ensure that a market participant engaged in supply does not have preferential access to information that would give it an unfair advantage and harm competitive markets. In a nascent natural gas market such as India, it is very important to have such controls in place to keep developing competition from being harmed. Therefore, we believe it is in the best interest of a competitive natural gas industry to have such controls in place and for it to include entities engaged in production as well as the other enumerated functions.
Company 9	1) Should be developed basis the best practices available in the world mature markets for example the US & UK. 2) There should not be any cross subsidy from the margins of Marketing to transportation tariff.
Company 10	International practices to be followed
Company 11	The activity of transportation needs to be unbundled from other activities of the company so that the transporter acts as a neutral agent to all parties willing to transport through the common carrier.

Annexure 2

Compendium of Companies' Responses

Subject	**Issue No.5: Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct**
Company 12	*Note : Comments specific to questionnaire not received.*
Company 13	1. This shall be applicable in case of cross country pipelines and not City Gas Distribution networks 2. It is preferable to have gas marketing and transportation under separate entities 3. Tariffs charged by Transportation Company shall be uniform across all players including their own group companies. 4. Companies shall not resort to cross subsidy on gas cost vis-à-vis transportation charges – especially applicable, in case both the entities are under one holding company

Annexure 2

Compendium of Companies' Responses

Subject	Issue No.5: Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct
Company 14	1. **Scenario I:** Assumption: Importer/ Producer and the Marketing company is one and the same entity. The pipeline transport organization is a separate independent setup only working as infrastructure service provider. • The transport company should not distinguish between a large volume user versus small volume player • provide the facility on first in first out basis. • No discretion on bulk volume discounts, that is, should have predetermined / predefined volume discounts. • Maximum advance booking of transport space be for a month, • Pipeline space, being a perishable commodity, booking only with predefined advance payment, that is, %age of expected transport cost. • The advance be forfeited in case the requester fails to honor the commitment / schedule • A formula can be devised as to up to how many days in advance, in the likely situation where in the said requester may not be in a position to honor his already committed schedule, the requester can request for waiver of the penalty amount ,in part or in full. • Swapping of commitment should not be permitted, excepting incase where in immediately preceding or succeeding operators agree for a swap, this approach can work wonders. 2. **Scenario II:** The transport pipeline is controlled by key bulk operator at a specific location: say PLL at Dahej: • The bulk operator be responsible to maximize the revenue on transport of gas • He must pay in advance a predefined percentage of transport cost along with the request for pipeline space commitment. IN case fail to honor the space commitment, the said advance be forfeited. • Question comes in why should PLL (in this case) take lead in setting up the infrastructure and pay penalty for failing to meet the commitment. Simply because the said space possibly could have been utilized by a potential 3rd party importer or marketer.
Company 15	1. Gas transportation and gas marketing to be strictly segregated and un bundled. 2. Till the time un bundling takes place Board to carry out periodic audits to ensure that an entity has not taken any undue advantage while being a pipeline operator/transporter as well as a marketer. 3. There has to be clear cut guidelines to ensure that no undue advantage is taken by such players

Annexure 2

Compendium of Companies' Responses

Subject	**Issue No.5: Suggestions on separation of activity of gas marketing and transportation to help GoI develop Code of conduct**
Company 16	*Note : Comments specific to questionnaire not received.*

Annexure 2

Compendium of Companies' Responses

Subject	**Issue No.6: Recommendation on levels of pressures to be specified as "high pressure" and "medium pressure". In some documents the term "low pressure" is also used. Please also give your views on the same.**
Company 1	As being defined in the PPAC working Group.
Company 2	*Note : No comments received*
Company 3	*Note : No comments received*
Company 4	1. All pipelines above #150 be classified as High pressure pipelines 2. All pipelines operating upto 7 bar be classified as Low pressure pipelines
Company 5	No views.
Company 6	*Note : No comments received*
Company 7	1. The Transportation pipelines should be maintained either as High Pressure (> 70 Kg/cm″ or Medium Pressure 40- 55 Kg/cm″) to enable the maximum advantages in terms of volumes handled. 2. Low-pressure pipelines for transportation may not be a good idea as the capacity of the pipelines will be affected.

Annexure 2

Compendium of Companies' Responses

Subject	**Issue No.6: Recommendation on levels of pressures to be specified as "high pressure" and "medium pressure". In some documents the term "low pressure" is also used. Please also give your views on the same.**
Company 8	1) CGD licenses should be granted for a geographic area defined by the concept of City Gate as opposed to any other measure, e.g. pressure. Using international precedent, city or local natural gas distribution network means an interconnected network of gas pipelines and the associated equipment used for transporting natural gas from a bulk supply high pressure transmission main to the medium pressure distribution grid and subsequently to the service pipes supplying natural gas to domestic, industrial, commercial, and CNG stations situated in a specified geographic areas. Demarcation using pressure would result in cherry picking of industrial customers and undermine residential network expansion. CGD licenses should be granted as being downstream of city gate station rather than having reference to pressure. 2) If the goal here is to demarcate between transmission and distribution due to differing obligations and rules that apply, rather than base it on pressure, the demarcation should be based on function.
Company 9	1) Should be basis the best engineering practices available in the world. 2) To be basis the scientific risk analysis. 3) Basis the function and end use. 4) In addition to the above, environmental / pollution angle should be considered.
Company 10	To be followed as per the grid code and connectivity depending on volume pressure and outage of gas at each point.
Company 11	High pressure – more than 45 Kg/cm2 Medium Pressure – 20 to 45 Kg/cm2 Low Pressure – upto 20 Kg/cm2
Company 12	*Note : Comments specific to questionnaire not received.*

Annexure 2

Compendium of Companies' Responses

Subject	**Issue No.6: Recommendation on levels of pressures to be specified as "high pressure" and "medium pressure". In some documents the term "low pressure" is also used. Please also give your views on the same.**
Company 13	The distribution steel pipeline carrying natural gas in city should be designed for 300# system and pressure regulation will be designed accordingly. However all applicable codes and safety requirements as necessary for erection, operation & maintenance shall be followed. Medium Pressure would be in the range of 4 to 7 kg/cm^2. Low pressure is less than 4 kg/cm^2.
Company 14	1) High pressure pipe line @ -------Kg/cm2 be good enough for high pressure rating, 2) In long term high pressure piping will definitely have quicker pay back.
Company 15	We do not see any necessity of classifying gas pipelines based on pressure rating
Company 16	*Note : Comments specific to questionnaire not received.*

Annexure 2
Compendium of Companies' Responses

Subject	**Issue No. 7: Suggestions on Technical standards, specifications and safety standards for gas pipeline and infrastructure**
Company 1	International standards can be followed and efforts to be made for development of BS or OISD Standards covering various aspects of safety and environ protection with suitable measures for hazard mitigation
Company 2	*Note : No comments received*
Company 3	*Note : No comments received*
Company 4	Globally, ASME B31.8 for Gas Transmission and Distribution Piping Systems is followed and may adopt the same
Company 5	*Note : No comments received*
Company 6	*Note : No comments received*
Company 7	*Note : No comments received*
Company 8	A CGD or pipeline developer should be evaluated on its observed ability with respect to technical competence and safety management competence, with recognition accorded for proven ability. All bidders should be required to present a safety management plan identifying health, safety and environmental hazards resulting from planned operations. The plan should evaluate potential risks and set out how the CGD operator would manage

Subject	**Issue No. 7: Suggestions on Technical standards, specifications and safety standards for gas pipeline and infrastructure**
	those risks and include effective contingency plans.
Company 9	1) Can be left to the choice of entity / technical consultant / statutory authorities like Petroleum & Explosives Safety Organisation based on the best standards available in the mature markets across the world. 2) Government may advice OISD to develop HSE standards for immediate implementation.
Company 10	*Note : No comments received*
Company 11	The applicable standards and specifications for gas pipeline needs to be followed. However, specification for the gas quality may be developed so that the gas being transported for different parties does not have wide variation in their quality. It will also help in protecting the pipeline infrastructure from corrosion.
Company 12	*Note : Comments specific to questionnaire not received.*
Company 13	Technical Standards and Specifications shall be evolved based on best Industry practice and adopt applicable ASME/ BS/ IS standards
Company 14	*Note : No comments received*

Annexure 2

Compendium of Companies' Responses

Subject	**Issue No. 7: Suggestions on Technical standards, specifications and safety standards for gas pipeline and infrastructure**
Company 15	1) Technical and safety standard should be guided by OISD. 2) The safety standard should cover technical parameters should cover design laying operation and maintenance of pipelines 3) The grid interconnectivity rules need to be clearly specified.
Company 16	*Note : Comments specific to questionnaire not received.*

Annexure 2

Compendium of Companies' Responses

Subject	Are there any important points, which you feel, have not been covered in this questionnaire? Please briefly describe those aspects including your views.
Company 1	1) Linkage between different entities in the National gas grid as well as entities involved in the transportation and city gas distribution including cost sharing in different sectors of the grid. 2) Regulations may call for development, by the PNGR-Board, of a "Vision for National Gas Grid" most optimally connecting present / future gas sources and consumption centres. It may be a ring main system analogous with power transmission systems making diversion of gas from multiple sources to the desired consumption point feasible. Analogy may also be drawn to the 'Golden Quadrilateral' vision for highways aiming at connecting various parts of the country. Spur lines may be later developed from this ring main National Gas Grid to specific consumer/consumption area. 3) On defining transmission / distribution gas pipelines, the geo-political state boundaries as a criteria may be dropped since it cannot be taken as a valid basis. Instead, a combination of length, diameter, capacity and purpose of the pipeline should be used for developing a criterion. 4) The necessity of forming a separate company for each transmission line may be reviewed to avoid formation of multiple pipeline companies under the same umbrella company.
Company 2	1) Regulator to fix maximum price for city gas which should be based on cost plus basis. 2) Regulator to prescribe the procedure to fix pricing of gas in domestic market.
Company 3	*Note : No comments received*
Company 4	1) Grid Code – Regulator to develop code for Gas Grid connectivity to ensure operational compatibility and inter-connectivity between different transmission pipelines – not an issue as Gas Grid development will evolve gradually 2) Marketing service obligations – Regulator to lay down marketing service obligations to protect the interest of consumers and entity engaged in Local Gas Distribution network so as to make natural gas available in the defined geographical area other than no gas zone areas 3) Regulations should be in line with Government's other Commitments and international practices particularly in line with EU where reforms have been/are being introduced in recent times.

Annexure 2

Compendium of Companies' Responses

Subject	Are there any important points, which you feel, have not been covered in this questionnaire? Please briefly describe those aspects including your views.
Company 5	*Note : No comments received*
Company 6	*Note : No comments received*
Company 7	*Note : No comments received*
Company 8	Issue No. 1: Reliance Industries' (Reliance) East-West Pipeline We have a number of questions that we seek clarification from the government on with respect to Reliance's planned pipeline from Kakinada. The questions are with respect to the existing capacity on that pipeline, the availability of existing capacity and the obligation to make expansion capacity available. Our understanding is that Reliance's pipeline has been approved with a certain amount of capacity and also a certain amount of expansion capacity. Our additional understanding is that after Reliance proposed to build the pipeline, the government stated that Reliance needed to request expressions of interest in capacity before the pipeline could be authorized. Reliance did so and no additional capacity requests came forth at the time. The questions we have are driven by the fact that the process for capacity determination was more fluid at that time than what is proposed going forward. More importantly, we feel that much has changed on the supply side since the Reliance project was proposed and that there may be public interest standards that should prompt a re-examination of whether or not the Reliance pipeline will meet the needs of India going forward. We would like the following questions to start that debate so that the public good is met by industry and so that an avoidable barrier to the liberated flow of gas is not put in place. Are the capacity amounts on the Reliance pipeline subject to the government's requirement that pipelines be built with an excess capacity requirement? If so, is that excess capacity available? If not, what assurances can the industry have that expansion capacity will be available on the Reliance pipeline on fair terms? We feel that this is a very significant issue because, if capacity is not available on the Reliance pipeline, it has the potential to strand gas in the K-G basin which is a result that would not be in India's interest. We would like to

Subject	Are there any important points, which you feel, have not been covered in this questionnaire? Please briefly describe those aspects including your views.
	reopen the debate regarding the Reliance pipeline's capacity provisions because we believe it will be the single most crucial gas infrastructure project and, as a result, will have significant ramifications going forward. Shippers both now and in the future will need to obtain firm long term capacity on terms which are non-discriminatory and which are cost reflective. We believe that our discussion above, where the example of the Alaska pipeline is given, provides helpful guidance on these issues since it involved a group of three producers anchoring a proposed pipeline. Issue No. 2: Deemed Authorization Clause 3.3 of the CGD Guidelines allows any existing entity already operating a city or local natural gas distribution network or has been already permitted/allowed to set up a city or local natural gas distribution network by the State/Central Government (based on a permit/NOC from State/Central Government) prior to the notification of the guidelines to make application to the CGD Committee under the transition period provisions of Clause 11. Clause 11 permits such entities to make a case to the CGD Committee for grant of authorization upon submission of certain information within 60 days of the notification of the CGD Guidelines. Upon review of the application, the CGD Committee can either recommend to the Central Government to grant or reject the authorization. The Petroleum and Natural Gas Regulatory Board Act (the Act) defines a city or local natural gas distribution network as an interconnected network of gas pipelines and the associated equipment used for transporting natural gas from a bulk supply high pressure transmission main to the medium pressure distribution grid and subsequently to service pipes supplying natural gas to domestic, industrial or commercial premises and CNG stations situated in a specified geographic area. Clause 16 of the Act states that any entity laying, building, operating or expanding a city or local gas distribution network must obtain prior authorization. The clause also provides that any entity engaged in these activities prior to the "Appointed Day" shall be deemed to have such authorizations (any change in purpose or usage would require separate authorization from the Board). These clauses raise a number of questions that should be answered. First, in order to apply for authorization, does the existing entity have to meet the condition imposed by the definition contained in the Act? Namely, does it have to meet the test of having an interconnected network of gas pipelines? If so, what is the level of interconnectivity required? Has the Central Government identified any particular level of operation? Is there an objective test or is it subjective? If it is to be handled on a case-by-case basis, do other

Subject	Are there any important points, which you feel, have not been covered in this questionnaire? Please briefly describe those aspects including your views.
	parties have an opportunity/means to comment on the record of a particular applicant's request for authorization? What if there are two existing entities engaged in laying, building, operating or expanding a city or local gas distribution network? We hope that the Central Government will propose clear and objective guidelines on transition period provisions to be applied to entities whose distribution efforts are in various stages of development. One possibility is to have a minimum sunk investment (e.g. 15 crores) to even seek authorization. If the sunk or existing investment is below that level, the rebuttal presumption should be that the existing entity would have to enter into a competitive bid process as per the CGD Guidelines in order to continue operations. If the existing entity won the competitive bid process, it would then be granted authorization and would develop its CGD business in conformance with the authorization. If it lost the competitive bid process to a new entrant, the issue then is what should the company receive (from the winning incoming license holder) for any investments already made? our position is that the outgoing entity should not be able to profit from its investment. At the same time, the entity should receive an appropriate level of compensation so that it does not incur a "taking". Therefore, we believe that compensation by a winning bidder to an existing permit/NOC holder should be cost-based and the compensation should remunerate the existing entity the net book value of its investment. In order that the issue of compensation does not skew the bidding process, an existing permit/NOC holder should be required to disclose audited accounts of its sunk costs prior to the bid process to permit all interested bidders to evaluate the cost-based payment that would need to be made to the permit/NOC holder. Thereafter, any disagreement over the actual level of payment could be adjudicated before the Regulator. One other situation that could possibly occur is if you have two deemed entities in a particular area competing for the license to be awarded. Our position is that the entity with the largest investment should be allowed to buy out the smaller operator. The primary reason we propose this is that it would be uneconomic to lay and expand multiple distribution networks to serve the same area. It is very unlikely that the volumes to support counterpart networks would be present. If one of the goals of the Central Government is to provide service on an efficient basis, i.e., avoid infructuous investment, then the Central Government needs to have a clear and objective means to enable a single operator to efficiently convey gas within his defined geographic license area. A single operator will be able to take advantage of allocating the cost of the network over a larger customer base and thereby producing a lower tariff which is a stated goal of the Act.

Annexure 2

Compendium of Companies' Responses

Subject	**Are there any important points, which you feel, have not been covered in this questionnaire? Please briefly describe those aspects including your views.**
	Issue No. 3: PNGRB Act exclusion of pipelines laid to supply a specific consumer The provisions in the PNGRB Act which provide that pipelines for a specific consumer be excluded are too broad. Under these provisions, any pipeline, including a trunk pipeline, could avoid jurisdiction under the PNGRB Act by virtue of claiming to serve a single customer. We don't believe that this is the intent of the government and we would like the government to hold a discussion to clarify the meaning of the provisions and issue regulations that specifically address the exclusion. Failure to address this significant loophole, that pipeline laying entities could use to avoid regulation, would have severe consequences on the development of a competitive natural gas industry. We would like to see this provision defined as clearly as possible so that the entire industry, including the Regulator will know what specific situations would fall under this category of pipelines. Additional procedural issue In the interests of transparency, we would like to know what ties, if any, PWC has with members of Petrofed. Also, we encourage Petrofed to report all views on issues where there is no consensus to the Ministry in unadulterated form so that the Ministry will have a complete record. In conclusion, we appreciate Petrofed's invitation to us to submit comments and look forward to working with the Ministry and with the organizations that it has empowered to look at both pipeline policy and city and local natural gas distribution networks.
Company 9	Oil industry network has been developed over the years to ensure uninterrupted supply of petroleum products not only in urban centres but also in remote/rural areas. Greater use of gas would make some of the existing network infructous with associated human costs of unemployment. In order to ensure that existing network does not become totally redundant and impact on livelihoods is minimised, extra weightage should be given to existing oil players while issuing license for city gas. Alternatively, a USO fund similar to that adopted in the telecom sector may be established to meet the expenditure on universal service that has been devolved on the PSU companies. Equity with efficiency is the policy of Government of India and the same should be followed in framing gas rules and regulations.

Annexure 2
Compendium of Companies' Responses

Subject	Are there any important points, which you feel, have not been covered in this questionnaire? Please briefly describe those aspects including your views.
Company 13	This questionnaire does not cover: 1) Obligations/ Commitments of the operators and applicable penalties if commitments are not honoured 2) Redressal mechanism for answering grievances. 3) Facilitating role of Regulatory Authorities with regard to taxation, weights and measures, directing states for necessary permissions and approvals in a time-bound manner
Company 14	***Response:*** 1) Have not stressed on long term quantity and price contracts. 2) Such contracts are key to get consistent supply for a longer duration without interruption. It importance increases over time as the consumer becomes a die hard user, in case of supply interruption his productivity suffers unless the consumer is assured of consistent supply, he would, very much against his desire, would prudently block the expensive capital to depend on two distinguished fuel sources/ types say Gas & Fuel Oil as well will have to install Multi fuel equipments. 3) The Regulator must pursue market oriented policies, as has been done in South East Asian counties such that consumption shoots up to economical levels in time, it will result in optimizing the infrastructure productivity, direct impact would be reduction in transport cost. 4) Classification of gas: Since Power, fertilizers, vehicles, industry and host of other user will depend on it, a minor interruption can bring down the nation to a grinding halt and hence, It must be declared as an essential commodity.
Company 15	1) Transporter must not get any undue advantage as distributor in the said pipeline fed area, industrial or Citigas both. 2) The entity having gas will be in an advantageous position to go ahead with Citigas Distribution project. Hence to bring in competition and to provide a level playing field the profit gas may be reserved for City Gas Distribution.
Company 16	*Note: Comments specific to questionnaire not received.*

Annexure 2

Compendium of Companies' Responses

Subject	Other Comments
Company 1	1. *Difference between "transportation rate" and "transportation tariff" need to be clarified. Yes/No? If No, your understanding of the two :* Yes
Company 2	1. *Rules to be framed under clause 60 for carrying out the provisions of the PNGRB Act 2006, are considered to be outside the purview of Industry. If disagreed, please comment* It is agreed that it is the govt/regulator's prerogative to prescribe rules but in order to take things in proper perspectives regulator may consult industry through PertoFed. 2. *Regulations to be framed under clause 61 (2) sub-clauses (a) to (d), (f), (g), (i) to (o) and (s) to (za) for carrying out the provisions of the PNGRB Act 2006, are considered to be outside the purview of industry. I f disagreed, please comment.* It is agreed that it is the govt/regulator's prerogative to prescribed rules but in order to take things in proper perspectives regulator may consult industry through PertoFed
Company 3	*Note : No comments received*

Annexure 2

Compendium of Companies' Responses

Subject	Other Comments
Company 4	1. *Rules to be framed under clause 60 for carrying out the provisions of the PNGRB Act 2006, are considered to be outside the purview of Industry. I f disagreed, please comment –* Rules to be formed by Government 2. *Likewise, Regulations to be framed under clause 61 (2) sub-clauses (a) to (d), (f), (g), (i) to (o) and (s) to (za) for carrying out the provisions of the PNGRB Act 2006, are considered to be outside the purview of industry. I f disagreed, please comment –* Regulation to be formed by Board 3. *Difference between "transportation rate" and "transportation tariff" need to be clarified – Yes/No? If No, your understanding of the two :* Yes 4. *With reference to the current debate in the industry around the subject of exclusivity for laying transportation and/or distribution pipelines, it is inferred from the PNGRB Act 2006 that this exclusivity is needed and the regulations are to be developed to specify the number of years for which this exclusivity deserves to be accorded. If your organization differs with this view, please elaborate your views :* Market forces should determine the viability of network. Exclusivity prevents competition and promotes inefficiencies by denying opportunity for adoption of technological development. As such exclusivity should not be provided for any activity as it would act as restrictive instrument for multi party participation in the particular activity. However for financing of the project, exclusivity may be accorded for distribution network for duration of loan payment
Company 5	*Note : No comments received*

Subject	Other Comments
Company 6	1. *Rules to be framed under clause 60 for carrying out the provisions of the PNGRB Act 2006, are considered to be outside the purview of Industry. I f disagreed, please comment –* Yes 2. *Likewise, Regulations to be framed under clause 61 (2) sub-clauses (a) to (d), (f), (g), (i) to (o) and (s) to (za) for carrying out the provisions of the PNGRB Act 2006, are considered to be outside the purview of industry. I f disagreed, please comment –* Yes 3. *Difference between "transportation rate" and "transportation tariff" need to be clarified – Yes/No? If No, your understanding of the two :* Yes 4. *With reference to the current debate in the industry around the subject of exclusivity for laying transportation and/or distribution pipelines, it is inferred from the PNGRB Act 2006 that this exclusivity is needed and the regulations are to be developed to specify the number of years for which this exclusivity deserves to be accorded. If your organization differs with this view, please elaborate your views :* Exclusivity for laying transportation and distribution pipelines leads to monopolistic operation. Recent experience in the country shows that it can lead to earning of rent in transportation of gas. However, if a monopoly can not be avoided, regulation of tariff and other charges like compression charges should be made mandatory.
Company 7	1. *Difference between "transportation rate" and "transportation tariff" need to be clarified – Yes/No? If No, your understanding of the two :* Yes, this requires clarification
Company 8	*Note : No comments received*

Annexure 2

Compendium of Companies' Responses

Subject	Other Comments
Company 9	1. *Difference between "transportation rate" and "transportation tariff" need to be clarified – Yes/No? If No, your understanding of the two :* As defined in Chapter 1, Section 2(zn) of the PNGRB Act 2006. 2. *With reference to the current debate in the industry around the subject of exclusivity for laying transportation and/or distribution pipelines, it is inferred from the PNGRB Act 2006 that this exclusivity is needed and the regulations are to be developed to specify the number of years for which this exclusivity deserves to be accorded. If your organization differs with this view, please elaborate your views :* Refer point 3 of questionnaire
Company 10	*Note : No comments received*
Company 11	*Note : No comments received*
Company 12	Quote: Our specific comments on latest draft Pipeline Policy are as under: 1. **Article 1 Objective:** We like the objectives in its present form and especially inclusion of the term in Section 1.2 ".....avoiding any abuse of a dominant market position by any entity". The one change we would propose is to move the "Miscellaneous" section from Article 17 on Pages 8 & 9 up into the Objective. First, there are some good words in Section 17.1 that should be kept in the document and second, Section 17.2 even mentions that the purpose of the sections is to help define the Objective of the overall Policy. They should be moved forward and Article 17, as such, be deleted. 2. **Article 2 Applicability:** The words ".....ensure selection of an entity...." do not convey intent fully and suggest rewording Section 2.2 as following: "The Petroleum & Natural Gas Regulatory Board established under the Petroleum & Natural Gas Regulatory Board Act (hereinafter referred to as the "Board") shall oversee in a transparent and objective manner

Subject	Other Comments
	the authorization of all entities who would lay, build, operate or expand a natural gas transmission pipeline or a city or local natural gas distribution network with a view to promoting investments in the sector and protecting the interests of the consumers." 3. **Article 3 Categorization of Pipelines:** We suggest rewording Sub-Section (iii) for clarity to the following: "Pipelines laid to supply natural gas to a specific consumer - Pipelines laid at any pressure to supply gas to only a single consumer, even though the consumer potentially has access to alternative fuels, is nonetheless captive to a single gas supplier." 4. **Article 4 Grant of Authorization:** We recommend to delete the first 4 lines of first paragraph on page 4, clause 4.1 and substitute as follows "Provided that such an authorization for transmission pipeline shall be granted to an entity only if the pipeline capacity for a new Transmission Pipeline would be finalized taking into consideration the aggregated demand and expansion possibilities keeping in view prospective demand through incorporation of design features that would allow phased expansion via compression or looping and this capacity is available....". Recommend that "suo moto" in Section 4.4 be clarified to explain the full intent. The current reading of this section would be that the Government of India, on its own motion, could alter the path of a new pipeline. Therefore recommend to add that the Government after consultation with industry or the parties involved, could change the direction of a gas pipeline or placement of a distribution network. 5. **Article 7 Unbundling of Operations:** The Section 7.1 is much improved. One potential suggestion: instead of the Board having the "right" to enquire about the managerial structure/ownership of a pipeline the Board could simply require that this information be published on the pipeline's Electronic Bulleting Board (website). This is the option taken by the FERC in the U.S. via its Order 2004 on Affiliate Code of Conduct. In summary, the greatest concern with the latest draft document, as currently written, is the mandatory 33% overbuild requirement in Section 4.1. This is clearly where efforts should be focused for the next iteration of the document. Unquote.

Annexure 2

Compendium of Companies' Responses

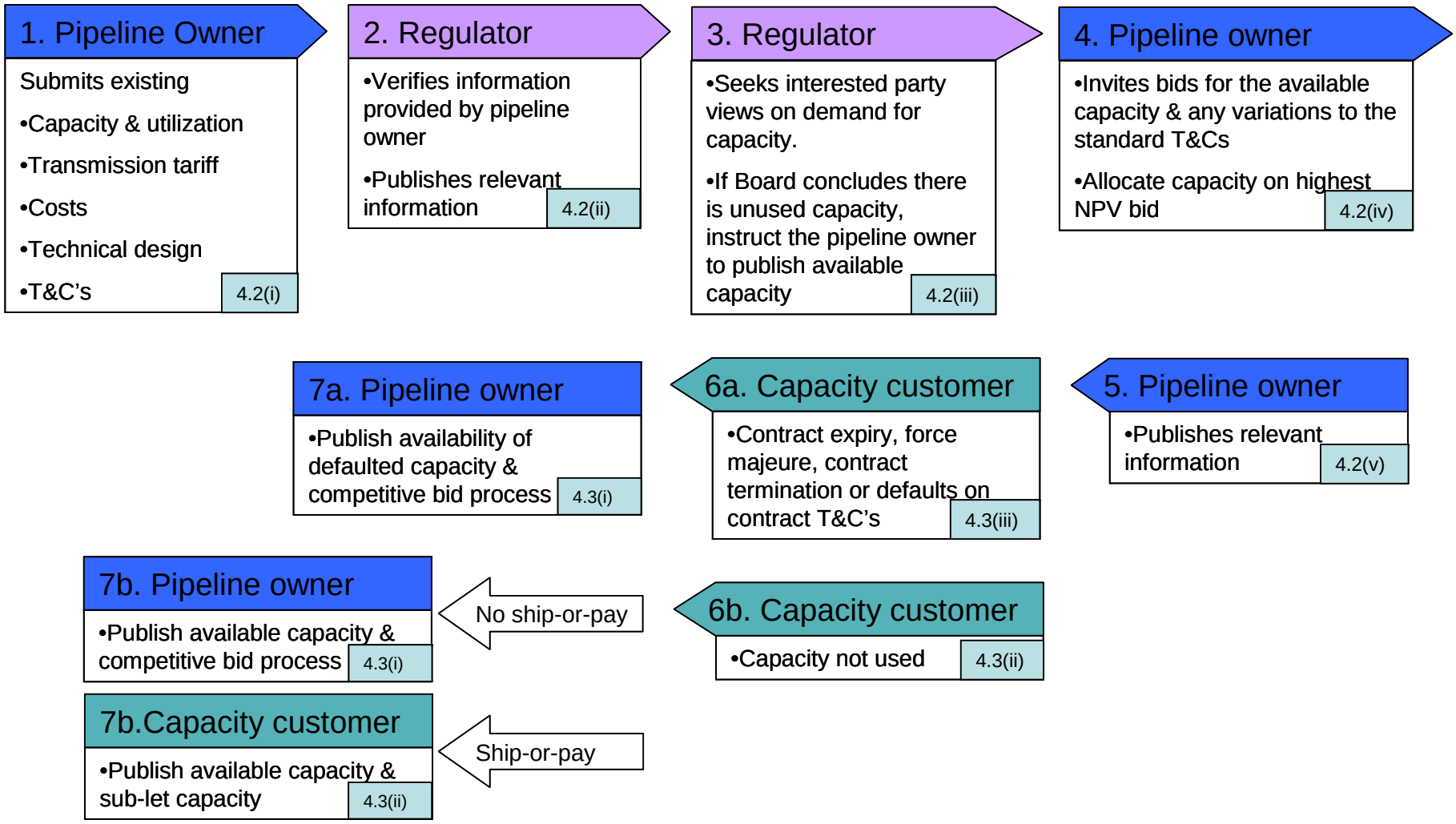
Subject	Other Comments
Company 13	1. *Rules to be framed under clause 60 for carrying out the provisions of the PNGRB Act 2006, are considered to be outside the purview of Industry. I f disagreed, please comment –* Agreed excepting the clause 60 – 2(e) which talks about eligibility conditions which an entity shall fulfill: Government should consider the views of Industry 2. *Likewise, Regulations to be framed under clause 61 (2) sub-clauses (a) to (d), (f), (g), (i) to (o) and (s) to (za) for carrying out the provisions of the PNGRB Act 2006, are considered to be outside the purview of industry. I f disagreed, please comment –* Clause 61 speaks of Power of Board to make regulations. Broadly, it is OK 3. *Difference between "transportation rate" and "transportation tariff" need to be clarified – Yes/No? If No, your understanding of the two :* Clarification required 4. *With reference to the current debate in the industry around the subject of exclusivity for laying transportation and/or distribution pipelines, it is inferred from the PNGRB Act 2006 that this exclusivity is needed and the regulations are to be developed to specify the number of years for which this exclusivity deserves to be accorded. If your organization differs with this view, please elaborate your views :* For City Gas Distribution Projects, exclusivity should be based on permanent basis.
Company 14	1. *Difference between "transportation rate" and "transportation tariff" need to be clarified – Yes/No? If No, your understanding of the two :* ▪ Transportation Rate: Million Cubic Meters gas transported a unit distance (at a specified pressure) /unit time , ▪ Alternatively : Unit quantity at specified pressure traveling unit distance per unit time ▪ Transportation Tariff: INR per Million Cubic Meter per kilometer (unit distance) at a specified pressure ▪ Alternatively: Indian Rupees per unit quantity per unit distance at a specified pressure

Annexure 2

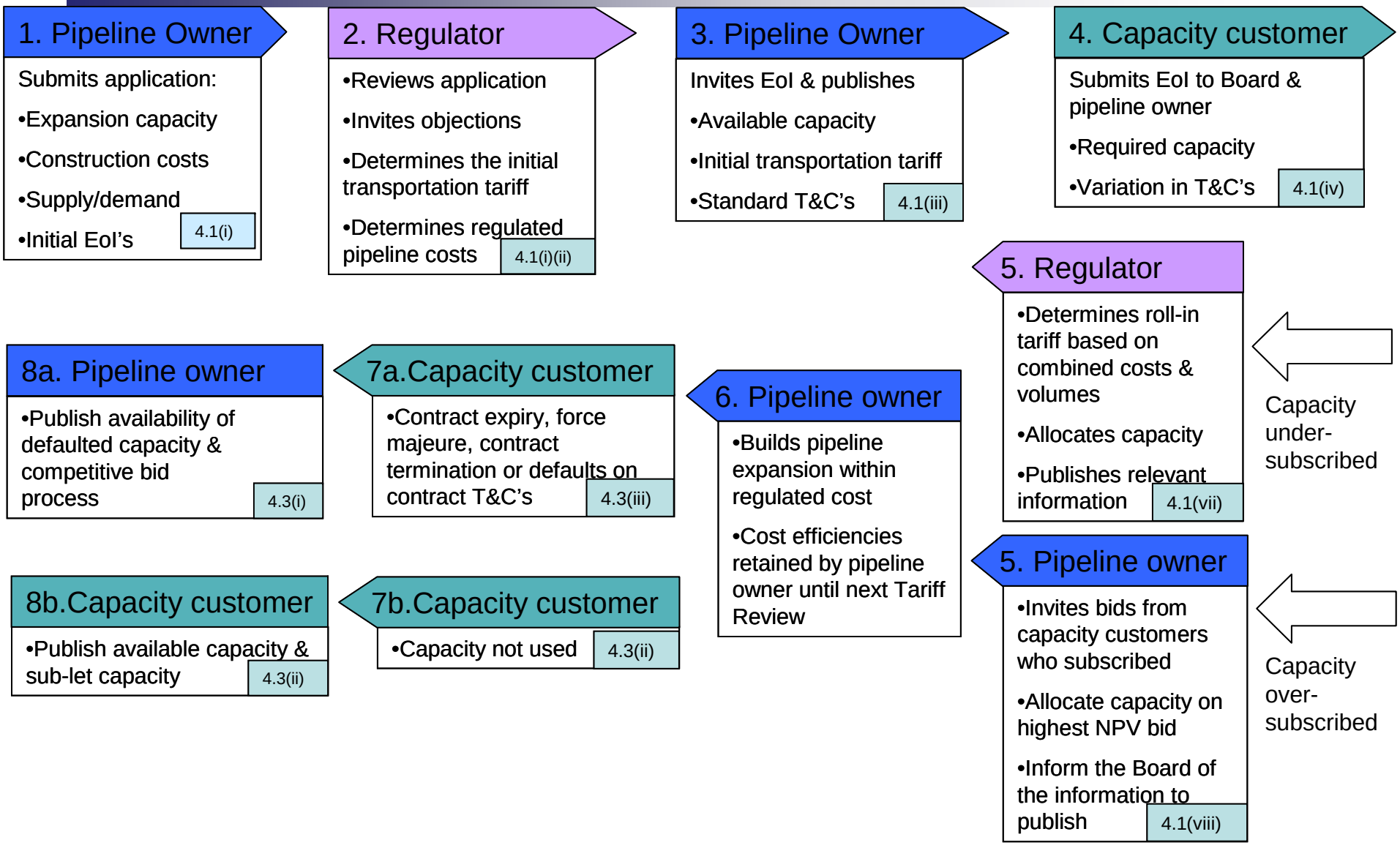
Compendium of Companies' Responses

Subject	Other Comments
Company 15	*Note : No comments received*
Company 16	1. **Grant of authorization for laying Natural Gas pipelines:** Enforcement on transmission companies to tie-up gas sources as well as markets as a precondition for grant of authorization has no precedence anywhere in the world. Securing source/ market tie-ups are essentially in the domain of gas trading activities, which is distinct from gas transmission activities. This provision puts pure transportation companies at a disadvantageous position for want of source tie-ups. This undermines the spirit of unbundling. The provision clearly favours Producers of gas, it will only lead to bundling of businesses by Gas Producers, an aspect that inherently conflicts with the policy's objective and its requirement of unbundling of transmission and trading businesses. 2. **Process of Authorisation:** We strongly feels that the grant of Authorisation for building a Transmission Pipeline must be based on a transparent competitive bidding process rather than on the basis of whether the transporter has secure source and market tie-ups. Grant of authorization based on transparent competitive bidding would promote competition and safeguard the interests of customers. 3. **25% open access:** The Pipeline policy allows up only 25% of the extra capacity for open access to others. It is apparent that the upstream Producer of gas would be using most of the pipeline capacity for its own use in its downstream facilities and this provision would only lead to total control of energy flow in the country by very large bundled enterprise, who would be the Producer, Transporter and User of Gas. This is not in line with the spirit of Unbundling of Gas Transmission and Trading activities. 4. **Transportation tariff:** Since tariff would be an important criterion for Grant of Authorisation, there must be a set of uniform norms/models spelling out the methodology/formula for tariff calculation. Therefore, it is necessary for the Government to develop a Transmission Tariff Policy in time.

Authorization for existing pipelines



Authorization for expansion pipelines



Authorization for new pipelines