Petroleum Federation of India

Compendium of Industry Views on City Gas Distribution Regulatory Issues

December 19, 2007

Issue	Reference in PNGRB Regulation	PNGRB Regulation Clause	Reference as per PetroFed Report	Industry suggestion
Regulations on "open access" to Distribution pipelines	Annexure A of Regulation on Exclusivity for City or Local Natural Gas Distribution Networks	**Rationale for allowing exclusivity to lay, build, operate or expand a CGD network** **(as per Clause 4 of the Regulations for Exclusivity for City or Local Natural Gas** **Distribution Networks)** 1 Exclusivity, a) for laying, building or expansion of the CGD network during the economic life of the project, and b) in terms of an exemption from the purview of the contract carriage or common carrier for a limited period of time is envisaged with a view to facilitate the development of a planned and integrated CGD network with appropriate priorities for end-use of natural gas as also the network spread besides providing incentive to the entity for investing in such project. 2 Exclusivity as per 1 a) above may be necessary to facilitate the development and operation of an integrated network by a single entity as per the prescribed technical standards, specifications including safety standards. This would also obviate multiple digging-up of lanes, roads, etc. in the municipal/ geographical area of authorization. 3 Exclusivity as stated at 1 b) above may be necessary due to the following reasons a) During the initial phase of the development of city or local natural gas distribution network, there would be a	**Issue No. 1(a) (ii)**	**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.* **Other comments**

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Regulations on "open access" to Distribution pipelines	Annexure A of Regulation on Exclusivity for City or Local Natural Gas Distribution Networks	need to have a close synchronization between the development of requisite infrastructure and the ramp-up in the natural gas volumes for different end-consumers in different areas. It is expected that the development of the city or local natural gas distribution network would be quicker, if the same is guided by entity's own plan (who is responsible for meeting various service obligations) rather than the expectation of other potential marketers of natural gas in the network. Also, it would be more practical for the Board to deal with one entity (rather than multiple entities) for the strict compliance of the stipulated service obligations for the entity in the initial period. b) During such limited period of exclusivity, the authorized entity could be made directly responsible for meeting the desired service obligations, viz., achieving maximum PNG domestic connections, etc. c) Besides such an approach is also likely to incentivize investments in this capital intensive business. 4 Ideally, while the exclusivity as per 1 a) above should be for the economic life of the project, the exclusivity as per 1 b) would depend upon various factors, viz., the projected natural gas demand build-up in the city or local area (which in turn would depend upon the key drivers for demand in that city or local area, such as, level of industrial/ commercial activity, vehicular population and conversion of vehicles in to CNG,	**Issue No. 1(a) (ii)**	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

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Regulations on "open access" to Distribution pipelines	Annexure A of Regulation on Exclusivity for City or Local Natural Gas Distribution Networks	potential domestic PNG customers, consumer preferences, price of alternative fuels, etc.), geographical spread & population, projected capital cost of the project, investment climate, etc. However, considering that these factors would vary from city to city, a credible assessment of exclusivity period based on these factors may not be always practical. Thus, it is proposed that the period of exclusivity at 1 b) above may be limited to five years for cases where an entity proposes to lay, build, operate or expand a CGD network. However, where an entity is laying, building, operating or expanding a CGD Network before the appointed day and has been authorized by the Central Government or is authorized by the Board under the Regulations for Authorizing Development of CGD Networks, the period of exclusivity shall be for three years (if the entity has been operating for three years or more before the appointed day) or five years (if the entity has been operating for less than three years before the appointed day).	**Issue No. 1(a) (ii)**	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. Distribution companies typically enjoy exclusivity in natural gas supply in their region, but an increasing number of countries have instituted open access in distribution.

Issue	Reference in PNGRB Regulation	PNGRB Regulation Clause	Reference as per PetroFed Report	Industry suggestion
Regulations on Transportation Rate for Distribution	Clauses 4.6, 4.7 of Regulation for Authorizing Development of City or Local Natural Gas Distribution Networks	4.6 Network Tariff The network tariff for transportation of natural gas (including natural gas supplied to CNG station before compression) for all categories of consumers within the CGD network shall be as per the network tariff bid. However, in case of a single bid, the network tariff shall be as per the bid or as normatively determined by the Board, whichever is lower. The procedure for determination of normative network tariff by the Board shall be as per the provisions in **Regulations for Determination of Tariff for City or Local Natural Gas Distribution Network.** 4.7 Network Tariff Recovery, CNG Compression charge & transportation cost of CNG cascade mounted system 4.7.1 The entity shall recover the network tariff, CNG compression charge and transportation cost of cascade mounted system per the following procedure- 4.7.1.1 The entity shall charge network tariff through an invoice as determined under clause 4.6 above on a non-discriminatory basis (i.e., without any premium or discount) to all consumers of PNG and for supply of natural gas to CNG stations before compression in the CGD network. 4.7.1.2 The entity may separately charge compression charge for compression of natural gas into CNG and transportation cost of CNG in a cascade mounted	**Issue No. 1(b) (ii)**	**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. **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 Regime** Decisions on how to regulate distribution tariffs are generally influenced by the Greenfield nature of natural gas distribution. The choice is between cost-

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Regulations on Transportati on Rate for Distribution	Clauses 4.6, 4.7 of Regulation for Authorizing Development of City or Local Natural Gas Distribution Networks Annexure A of Regulation for Determination of Network Tariff for City or Local Natural Gas Distribution Netwoks	system to CNG station, if any through an invoice on a non-discriminatory basis (i.e., without any premium or discount) from CNG consumers only. 4.7.1.3 Recovery of the unit network tariff, CNG compression charge and the transportation cost of CNG in a cascade mounted system, if any shall be linked to the actual volume of PNG or CNG supplied to the consumers. 1 The transportation tariff of City or Local Natural Gas Distribution Network shall be determined in accordance with the following principles: a) A reasonable rate of return on investments; b) Investments resulting in creation of an efficient & safe infrastructure; and c) Normative level of operating expenses required for efficient operation (including quality of service) of city or local natural gas distribution network. 2 Financial Feasibility The entity to which these Regulations apply is obligated to submit all financial details of the CGD Network/ CGD Network project that may be required by the Board in determination of the Network Tariff. 3 Methodology for determination of tariff The tariff to be charged for a period shall be the	**Issue No. 1(b) (ii)**	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. 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

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Regulations on Transportation Rate for Distribution	Annexure A of Regulation for Determination of Network Tariff for City or Local Natural Gas Distribution Netwoks Annexure A of	calculated based on "Discounted Cash Flow" (DCF) methodology 1 considering reasonable rate of return determined as per clause 4 below. The parameters relevant to the applicability of the DCF methodology have been described in detail in clauses 4 to 6 below. 4 Reasonable Rate of Return 4.1 The rate of return on capital employed shall not be higher than the average rate of long-term Government Securities issued by the RBI during the period of 12 months prior to submission of application + X%. The X% shall provide incentive to entities for making investment in the development of CGD Networks in the country. The X% shall normally be fixed for a period of at least one year taking inter alia into account the weighted average cost of capital (WACC) for such projects. However, considering the economic scenario in the country and the area / region to be served, the Board may review this X%, even before the completion of one year period. 4.2 The rate determined as per clause 4.1 shall be grossed up for the nominal applicable rate of income tax and the rate so derived shall be referred to as reasonable rate of return. This grossing-up shall be restricted to the first 10 years of the operations of the city or local natural gas distribution networks 2 and or the remaining period up to the	**Issue No. 1(b) (ii)**	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. 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 (usually 4 or 5 years).

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Regulations on Transportation Rate for Distribution	Regulation for Determination of Network Tariff for City or Local Natural Gas Distribution Netwoks	economic life of the project, grossing-up at the actual income tax rate of the entity 3 shall be allowed. The grossing-up for the first 10 years of city or local natural gas distribution networks shall be allowed irrespective of any exemption or waiver of income tax allowed to the entity during this period, under the provisions of the Income Tax Act, 1961. 5 Return on Total Capital Employed 5.1 The reasonable rate of return shall be used to determine the return on total capital employed in the project over its economic life and the authorized entity is free to leverage the project financing in any suitable manner. 5.2 The total capital employed shall be equal to the Gross Fixed Assets in the project less Depreciation (as per the rates allowed under Schedule VI to the Companies Act, 1956) plus Normative Working Capital (Equal to 30 days of operating cost excluding depreciation). 5.3 The Gross Fixed Assets shall be equal to the actual or that normatively assessed by the Board, whichever is lower, as required in the project over its economic life as per the following principles4 that may be considered as required to create an efficient and robust infrastructure: a. Capital costs in similar projects elsewhere in India	**Issue No. 1(b) (ii)**	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 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

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Regulations on Transportation Rate for Distribution	Annexure A of Regulation for Determination of Network Tariff for City or Local Natural Gas Distribution Networks	benchmarked on a "like-to-like" basis. b. Appropriateness of the pipeline design and the operating philosophy with regards to maximum allowable operating pressure. c. Optimization of the equipments and facilities (CNG compressors, metering systems, SCADA, fire fighting, etc.) required based on an assessment of the appropriate available technology. d. Pipelines and Piping beyond the District Regulatory System (DRS) and other equipments (including meters) required to reach the appliance in case of an individual domestic PNG connection based on the principle of "Last Mile Connectivity" e. Design parameters & fuel consumption norms of the equipments, like, compressors. f. Assessment of the latest costs (excluding the financing cost) of major equipments in the pipeline system – Steel/ PE pipelines, compressors, laying/ building costs, project management consultancy, pre-operative expenditure, etc. 6 Operating costs Operating costs 6 required in the operation and maintenance of the natural gas pipeline over its economic life shall be allowed, on an actual basis or that assessed	**Issue No. 1(b) (ii)**	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. 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. 4) Simple to include cost pass-through terms in cap. **Cons**

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Regulations on Transportation Rate for Distribution	Annexure A of Regulation for Determination of Network Tariff for City or Local Natural Gas Distribution Networks	by the Board, whichever is lower, over the following heads: a) Consumables b) Utilities (Power, Fuel and Water) c) Salaries & Wages d) Repairs & Maintenance e) Insurance premia on assets (excluding the value of loss of profit) and on pipe line-fill quantity (in case the shipping of natural gas is also undertaken by the entity laying, building, operating or expanding the CGD network as a bundled operation) f) Administrative Overheads g) Depreciation (based on rates as per Schedule VI to the Companies Act, 1956) h) Miscellaneous income, if any, shall be netted from the operating cost	**Issue No. 1(b) (ii)**	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 year period a price cap is determined on a cost-of-service basis. This initial value remains fixed and is adjusted

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Regulations on Transportation Rate for Distribution	Annexure A of Regulation for Determination of Network Tariff for City or Local Natural Gas Distribution Networks		**Issue No. 1(b) (ii)**	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

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Regulations on Transportation Rate for Distribution	Annexure A of Regulation for Determination of Network Tariff for City or Local Natural Gas Distribution Networks		**Issue No. 1(b) (ii)**	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.
Criteria and Procedure for selection by Regulator of entity for laying and operating CGD Network	Clause 4.2 of Regulations for Authorizing Development of City or Local Natural Gas Distribution Networks	4.2 **Criteria for selection of entity** 4.2.1 For Expression of Interest (EOI) route 4.2.1.1 The Board shall carry out a preliminary assessment of the EOI with respect to the following- 4.2.1.1.1 Natural Gas availability position. 4.2.1.1.2 Possible connectivity with an existing or proposed natural gas pipeline for supply of natural gas to the city gate of the proposed CGD network, including LNG supplies by tank trucks/ tank wagons & CNG by cascades. 4.2.1.1.4 Any other relevant issue 4.2.1.2 The Board shall, within 15 days of the receipt of EOI and based on its preliminary assessment, either issue an open	**Issue No. 2(b)**	**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

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Criteria and Procedure for selection by Regulator of entity for laying and operating CGD Network	Clause 4.2 of Regulations for Authorizing Development of City or Local Natural Gas Distribution Networks	advertisement in at least one national and one vernacular daily newspaper (including webhosting) notifying receipt of an EOI and commencement of "Open Season" period of 30 days or reject the proposal. In the latter case, the Board shall inform the entity of the decision immediately along with the reasons for rejecting the proposal. 4.2.1.3 During the period of "Open Season", any person, entity, body, organization, etc. may submit, in writing, to the board, its views, suggestions and comments, if any on the EOI. 4.2.1.4 The Board may, based on the views and suggestions received, firmup the geographical spread for the proposed CGD network, i.e., whether it should be different from that expressed in the EOI. In case the geographical spread is more than the municipal area, the area outside the municipal limits may be appropriately sub-divided by the Board into charge-areas. 4.2.1.5 The Board may, within a period of 15 days of the	**Issue No. 2(b)**	the city transport system. 6) In case there are more than one applicants 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 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) identifies, after an assessment or market study, in the bid document. Regulator to provide incentives to the winning bidder for exceeding them.

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Criteria and Procedure for selection by Regulator of entity for laying and operating CGD Network	Clause 4.2 of Regulations for Authorizing Development of City or Local Natural Gas Distribution Networks	end of the "open season" period, notify through an open advertisement in at least one national and one vernacular daily newspaper (including webhosting), the proposal for the development of CGD network and invite bids for the same. 4.2.1.6 Minimum Eligibility Criteria The Board shall scrutinize the bids received in response to the advertisement in respect of only those entities, which fulfill the following minimum eligibility criteria: 4.2.1.6.1 Entity should be technically capable of laying and building CGD network as per the following qualifying criteriaa) Entity has on its own in the past laid and built either a hydrocarbon pipeline of a length not less than 300 kilometers or a CGD network; or b) Entity has a joint venture with another entity (with at least 11% equity holding by that entity) which in the past has laid and built either a hydrocarbon pipeline of a length not less than 300 kilometers or a CGD network; or c) Entity intends to lay and build proposed city or local gas	**Issue No. 2(b)**	**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.*

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Criteria and Procedure for selection by Regulator of entity for laying and operating CGD Network	Clause 4.2 of Regulations for Authorizing Development of City or Local Natural Gas Distribution Networks	distribution network on Lump Sum Turnkey/ Project Management Consultancy basis through one or more technically competent firms, which in the past have laid and built either a hydrocarbon pipeline of a length not less than 300 kilometers or a CGD network. The entity may also enclose a list of such firms along with aforesaid proof of their technical competence, along with their financial bid proposal. The entity will have the freedom to choose from amongst such firms at the time of execution of the project. The Board reserves the right to cross verify the credential of the party (ies) included in the list and seek clarifications, if any; or d)Entity has an adequate number of technically qualified personnel with experience in construction, precommissioning & commissioning of hydrocarbon pipelines and also has a credible plan to independently undertake and execute the CGD project on a standalone basis. 4.2.1.6.2 Entity should be technically capable of operating and maintaining a city or local gas distribution network as per the following qualifying criteriaa) Entity on its own has an experience of at least one year	**Issue No. 2(b)**	

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Criteria and Procedure for selection by Regulator of entity for laying and operating CGD Network	Clause 4.2 of Regulations for Authorizing Development of City or Local Natural Gas Distribution Networks	in operations and maintenance of a CGD network; or b) Entity has a Joint Venture with another entity (with 11% holding of that entity) which has an experience of at least one year in operations and maintenance of a city or local gas distribution network; or c) Entity intends to operate and maintain the proposed CGD network through an appropriate firm technical assistance agreement for a period of at least one year, with another party having experience of at least one year in operations and maintenance of a CGD network; or d) Entity has an adequate number of technically qualified personnel with experience in commissioning & operation & maintenance (O&M) of hydrocarbon pipeline(s) and also has a credible plan to independently undertake the O&M activities for a CGD project on a standalone basis. Note: i) In case of c) above, the entity shall submit in its application-cum-bid, a list of proposed parties with whom it desires to have a firm technical assistance agreement, along with the proof of relevant and credible experience of such parties. The list may be exhaustive and the entity may choose party (ies) from amongst the parties in this list for operation and	**Issue No. 2(b)**	

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Criteria and Procedure for selection by Regulator of entity for laying and operating CGD Network	Clause 4.2 of Regulations for Authorizing Development of City or Local Natural Gas Distribution Networks	maintenance of the proposed CGD network. ii) The entity should also submit a credible plan along with the bid to develop an in-house O&M team for city or local gas distribution network. iii) The Board reserves the right to cross verify the credential of the party (ies) included in the list and seek clarifications, if any. 4.2.1.6.3 The applicant has agreed to abide by such technical standards and specifications including safety standards, as may be prescribed by the Board from time to time for the development of CGD network. 4.2.1.6.4 The applicant has adequate financial strength to execute the proposed project, operate & maintain the same in the city or local area besides meeting the following financial criterion:- Tier (city or local area) Population as per Census of India in 2001 Combined Net worth (*) along	**Issue No. 2(b)**	

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Criteria and Procedure for selection by Regulator of entity for laying and operating CGD Network	Clause 4.2 of Regulations for Authorizing Development of City or Local Natural Gas Distribution Networks	with co-promoters (Equity share capital + Free (excluding revaluation) reserves I 5 million and above >Rs.150 crore II Between 1 million and 5 million >Rs.100 crore III Less than 1 million >Rs.50 crore (*) As per Chartered Accountant's certificate on the latest financial position of the entity and its co-promoters. 4.2.1.6.5 The applicant is a body corporate or else undertakes to become a company registered under the Companies Act, 1956 on being declared a successful bidder. 4.2.1.6.6 The entity should have a credible plan for sourcing natural gas for supply in the proposed CGD network and submit along with the application, a copy of the Memorandum of Understanding (MOU) or Heads of Agreement (HOA) with the entity from whom it intends sourcing natural gas (hereinafter referred to as other entity). The other entity	**Issue No. 2(b)**	

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Criteria and Procedure for selection by Regulator of entity for laying and operating CGD Network	Clause 4.2 of Regulations for Authorizing Development of City or Local Natural Gas Distribution Networks	Should a) either be the owner of natural gas or have a firm natural gas supply arrangement with a supply source, and b) must be willing to supply the same to the entity at the time of commissioning of the project subject to the two entities agreeing to the commercial terms. The Board reserves the right to directly approach the other entity to ascertain the credibility of the MOU/ HOA and also assess the ability and willingness of the other entity to supply natural gas to the applicant entity in case the latter were to get authorization for city or natural gas distribution network project. 4.2.1.6.7 The applicant furnishes a bid bond for an amount equal to: a) Rs.5 crore for Tier I city or local area. b) Rs.3 crore for Tier II city or local area. c) Rs.2 crore for Tier III city or local area. This bid bond is prescribed with a view to ensure that only serious and committed bidders participate in the financial bidding. The bid bond will be encashed if a bidder wins	**Issue No. 2(b)**	

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Criteria and Procedure for selection by Regulator of entity for laying and operating CGD Network	Clause 4.2 of Regulations for Authorizing Development of City or Local Natural Gas Distribution Networks	the bid and walks out. The Bid bond in respect of the unsuccessful bidders shall be released immediately while that of the successful bidder retained till the prescribed performance bid is furnished at the time of authorization. 4.2.1.6.8 In case the bidder does not fulfill the requirements of any criteria under clauses 4.2.1.6.1 to 4.2.1.6.7 above, the application shall be summarily rejected and a communication in this regard shall be sent to the applicant. In such a case, the financial bid shall not be opened for that bidder. 4.2.1.7 Application-cum-Bid Format The application-cum-bid, to be submitted in two separate, properly earmarked and sealed envelopes, shall be in two parts – a) Part I (Technical bid) covering general particulars of the applicant and technical details of the project (including minimum eligibility criteria) under clause 4.2.1.6. b) Part II (Financial bid) covering the financial details under clause 4.2.3. The format of the Application-cum-bid is specified in **Annexure – B**.	**Issue No. 2(b)**	

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Criteria and Procedure for selection by Regulator of entity for laying and operating CGD Network	Clause 4.2 of Regulations for Authorizing Development of City or Local Natural Gas Distribution Networks	4.2.1.8 A time period of 45 days shall be allowed for submission of the application-cum-bid for grant of authorization for laying, building, operating and expanding the CGD network. Application-cum-bid received after the notified date shall not be considered. 4.2.1.9 The Board may, if required, extend the date of submission of bids through an advertisement in the same manner as under clause 4.2.1.5, including a situation where only a single application-cum-bid is received in response to the original advertisement. 4.2.2 Invitation by Board for laying, building, operating or expanding of CGD network The Board may, suo-motu, through an open advertisement in at least three national and two vernacular daily newspapers (including hosting on its website) invite application-cum-bids from entities interested in laying, building, operating and expansion of city or local gas distribution network in a specific city or a geographic area and the provisions in clauses 4.2.1 (except that the details of the EOI shall be replaced by Project details as perceived by the Board) shall apply.	**Issue No. 2(b)**	

Issue	Reference in PNGRB Regulation	PNGRB Regulation Clause	Reference as per PetroFed Report	Industry suggestion
Criteria and Procedure for selection by Regulator of entity for laying and operating CGD Network	Clause 4.2 of Regulations for Authorizing Development of City or Local Natural Gas Distribution Networks	4.2.3 **Bidding Criteria** 4.2.3.1 The Board, while considering a proposal for authorization, shall tabulate and compare all financial bids meeting the minimum eligibility criteria by applying suitable weights against the bidding criteria given below: 4.2.3.1.1 Overall unit Network Tariff Lowness of the present value of the overall unit network tariff charge for usage of the proposed CGD network by all categories of customers of natural gas (including supply of natural gas to CNG station before compression) over the economic life of the project (25 years). The entity is required to bid for the tariff charge for each year of the economic life of the project. This shall have a weightage of 40%. 4.2.3.1.2 Inch-Kilometer of Steel Pipelines in CGD network Highness of the present value of the inch-kilometer of steel pipelines proposed to be laid in the CGD network during the period of exclusivity in terms of an exemption from the purview of the contract carriage or common carrier. This shall have a weightage of 30%. 4.2.3.1.3 Number of PNG domestic connections Highness of the present value of the number of domestic customers proposed to be connected by Piped Natural Gas by the entity during the period of exclusivity in terms of an exemption from the purview	**Issue No. 2(b)**	

Issue	Reference in PNGRB Regulation	PNGRB Regulation Clause	Reference as per PetroFed Report	Industry suggestion
Criteria and Procedure for selection by Regulator of entity for laying and operating CGD Network	Clause 4.2 of Regulations for Authorizing Development of City or Local Natural Gas Distribution Networks	of common carrier or contract carriage in the proposed CGD network. The entity is required to bid for the number of domestic customers to be connected by PNG for each of the year of the exclusivity period. This shall have a weightage of 30%. 4.2.3.2 The present value in the criteria at clauses 4.2.3.1.1, 4.2.3.1.2 & 4.2.3.1.3 above shall be calculated by the entity using a discount rate not exceeding the Reasonable Rate of Return (RoR). The RoR shall be fixed as equal to the average rate of long-term Government securities issued by the RBI during the period of 12 months prior to the last date for obtaining the application-cum-financial bid documents + X%. 4.2.3.3 Entity with the highest composite score considering the criteria under clauses 4.2.3.1.1 to 4.2.3.1.3 above shall be declared as successful in the bid subject to the provision under clause 4.2.3.4 below. 4.2.3.4 In case of a single bid, the Board may scrutinize the Detailed Feasibility Report (DFR) of the project and assess the reasonability of the proposed plan to develop the CGD network. In case the same is found to be suboptimal, the Board reserves the right to reject the bid.	**Issue No. 2(b)**	

Issue	Reference in PNGRB Regulation	PNGRB Regulation Clause	Reference as per PetroFed Report	Industry suggestion
Principles for determining number of years for which a CGD network should be accorded exclusivity	Clauses 5.2 & 6 of Regulations for Exclusivity for City or Local Natural Gas Distribution Networks	5.2.1 The Board may consider providing exclusivity to an entity proposing to lay, build, operate or expand a CGD network for a period of five years subject to the conditions that the entity meets the service obligations as stipulated under clause 6 below. 5.2.2 In case an entity is laying, building, operating or expanding a CGD Network before the appointed day and has been authorized by the Central Government or is authorized by the Board under the **Regulations for Authorizing Development of CGD Networks**, the period of exclusivity shall be – a) Three years in case the entity has been operating for three years or more before the appointed day. b) Five years in case the entity has been operating for less than three years before the appointed day. 6. Service Obligations 6.1 The entity allowed exclusivity under clause 5.2 shall have to comply with the following service obligations during the exclusivity period- 6.1.1 In respect of an entity proposing to lay, build, operate or expand a CGD Network after the appointed day and which has been authorized by the Board as per the Regulations Authorizing Development of City or Local Natural Gas	**Issue No. 3**	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. Divergent issues *Industry views were divergent as regards no of years. They are as follows-* 9) Gas marketing exclusivity of between 15 and 20

Issue	Reference in PNGRB Regulation	PNGRB Regulation Clause	Reference as per PetroFed Report	Industry suggestion
Principles for determining number of years for which a CGD network should be accorded exclusivity	Clauses 5.2 & 6 of Regulations for Exclusivity for City or Local Natural Gas Distribution Networks	Distribution Networks, the entity shall be obligated to - a) provide domestic PNG connections as per the bid, and b) lay/ build steel pipeline as per the inch-kilometer bid The physical achievement shall be monitored by the Board on a half-yearly basis against the targets at 6.1.1 a) and 6.1.1 b) above by prorating the same over the exclusivity period allowed1. c) Reach all charge areas or wards through pipelines of adequate size to meet the demand of the consumers in these charge areas or wards. d) Provide PNG domestic connectivity on demand to any consumer within a distance of 25 meters of the steel belting pipeline or the PE pipeline at no extra charge. 6.1.2 In respect an entity laying, building, operating or expanding a CGD Network before the appointed day and which has been either authorized by the Central Government or by the Board under the Regulations for Authorizing development of City or Local Natural Gas Distribution Network, the entity shall be obligated to) achieve the targets in respect of providing PNG domestic connections and laying/ building steel pipeline inch kilometer as per clause 6.1.1 a) & b) above as set by the Board at the levels derived based on the successful bids of similar placed cities or local areas in	**Issue No. 3**	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.

Issue	Reference in PNGRB Regulation	PNGRB Regulation Clause	Reference as per PetroFed Report	Industry suggestion
Principles for determining number of years for which a CGD network should be accorded exclusivity	Clauses 5.2 & 6 of Regulations for Exclusivity for City or Local Natural Gas Distribution Networks	terms of the population as per the census of India 2001 or in the absence of such similarly placed cities or areas, the cities which come closest to these cities or areas in terms of population by suitable extrapolation or interpolation. The physical achievement shall be monitored by the Board on a halfyearly basis against the targets at 6.1.1 a) and 6.1.1 b) above by prorating the same over the exclusivity period allowed b) Reach all charge areas or wards through pipelines of adequate size to meet the demand of the consumers in these charge areas or wards. c) Provide PNG domestic connectivity on demand to any consumer within a distance of 25 meters of the steel belting pipeline or the PE pipeline at no extra charge. 6.1.3 Post-exclusivity period (i.e. beyond the period of exclusivity allowed under clause 5.2) The entity shall be obligated to a)continue to expand the network of pipelines by increasing the penetration within all charge areas based on the demand for PNG domestic, besides laying requisite infrastructure for adequate availability of CNG and at adequate pressure in the CGD network. The requirement could emerge out of entity's own requirement or that of other entities, which may use the	**Issue No. 3**	**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 defned 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

Issue	Reference in PNGRB Regulation	PNGRB Regulation Clause	Reference as per PetroFed Report	Industry suggestion
Principles for determining number of years for which a CGD network should be accorded exclusivity	Clauses 5.2 & 6 of Regulations for Exclusivity for City or Local Natural Gas Distribution Networks	CGD network post-exclusivity. b) allow the use of the CGD network either as a common carrier or as a contract carriage to any entity on a non-discriminatory basis as per the provisions in the Regulations for Declaring a CGD Network as a Common Carrier or Contract carriage, subject to) i) payment of network tariff; ii) availability of capacity in the pipeline network; iii) injection/ removal of natural gas does not adversely alter the composition of natural gas in the CGD network beyond permissible specifications; iv) technical feasibility of granting access with respect to pressure, temperature & composition of the natural gas to be injected / removed; v) hydraulics of the pipeline system in the network is not adversely affected; vi) safety of pipeline operation in the network is not adversely affected; c) Provide PNG connectivity on demand to a domestic consumer of any entity within any charge area, at no extra cost, provided the distance from the metering unit in case of an individual residence or the metering units in case of a cluster of residences in a housing block or a group housing society to the nearest point in the network is/ are not more than 25 meters.	**Issue No. 3**	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. ◎ 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

Issue	Reference in PNGRB Regulation	PNGRB Regulation Clause	Reference as per PetroFed Report	Industry suggestion
Principles for determining number of years for which a CGD network should be accorded exclusivity	Clauses 5.2 & 6 of Regulations for Exclusivity for City or Local Natural Gas Distribution Networks	d) Provide PNG connectivity on demand to non-domestic consumers of other entity, at no extra cost, provided the distance to the nearest point of connectivity is not more than 25 meters. e) Provide PNG connectivity on demand to consumer of any entity beyond 25 meters of the pipeline at a reasonable cost. The Board may intervene on a specific complaint from any domestic consumeron the proposal of the entity for levy of higher than a reasonable charge for providing pipeline connectivity and if the proposed charge is found to be not reasonable, the Board may direct the entity to provide connectivity at the charge decided by it..	**Issue No. 3**	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 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

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Principles for determining number of years for which a CGD network should be accorded exclusivity	Clauses 5.2 & 6 of Regulations for Exclusivity for City or Local Natural Gas Distribution Networks		**Issue No. 3**	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.
Guiding Principles to be followed for declaring and/or authorizing a Common Carrier or Contract Carrier or CGD Network	Clause 6.1.3 of Regulations for Exclusivity for City or Local Natural Gas Distribution Networks	6.1.3 Post-exclusivity period (i.e. beyond the period of exclusivity allowed under clause 5.2) The entity shall be obligated toa) continue to expand the network of pipelines by increasing the penetration within all charge areas based on the demand for PNG domestic, besides laying requisite infrastructure for adequate availability of CNG and at adequate pressure in the CGD network. The requirement could emerge out of entity's own requirement or that of other entities, which may use the CGD network post-exclusivity. b) allow the use of the CGD network either as a	**Issue No. 4**	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

Issue	Reference in PNGRB Regulation	PNGRB Regulation Clause	Reference as per PetroFed Report	Industry suggestion
Guiding Principles to be followed for declaring and/or authorizing a Common Carrier or Contract Carrier or CGD Network	Clause 6.1.3 of Regulations for Exclusivity for City or Local Natural Gas Distribution Networks	common carrier or as a contract carriage to any entity on a non-discriminatory basis as per the provisions in the Regulations for Declaring a CGD Network as a Common Carrier or Contract carriage*, subject to i) payment of network tariff; ii) availability of capacity in the pipeline network; iii) injection/ removal of natural gas does not adversely alter the composition of natural gas in the CGD network beyond permissible specifications; iv) technical feasibility of granting access with respect to pressure, temperature & composition of the natural gas to be injected / removed; v) hydraulics of the pipeline system in the network is not adversely affected; vi) safety of pipeline operation in the network is not adversely affected; c) provide PNG connectivity on demand to a domestic consumer of any entity within any charge area, at no extra cost, provided the distance from the metering unit in case of an individual residence or the metering units in case of a cluster of residences in a housing block or a group housing society to the nearest point in the network is/ are not more than 25 meters. d) provide PNG connectivity on demand to non-domestic consumers of other entity, at no extra cost,	**Issue No. 4**	common carrier 6) New pipelines with surplus 25% capacity for open access 7) Guiding principles for transmission pipelines ◎ 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.

Issue	Reference in PNGRB Regulation	PNGRB Regulation Clause	Reference as per PetroFed Report	Industry suggestion
Guiding Principles to be followed for declaring and/or authorizing a Common Carrier or Contract Carrier or CGD Network	Clause 6.1.3 of Regulations for Exclusivity for City or Local Natural Gas Distribution Networks	provided the distance to the nearest point of connectivity is not more than 25 meters. e) Provide PNG connectivity on demand to consumer of any entity beyond 25 meters of the pipeline at a reasonable cost. The Board may intervene on a specific complaint from any domestic consumer on the proposal of the entity for levy of higher than a reasonable charge for providing pipeline connectivity and if the proposed charge is found to be not reasonable, the Board may direct the entity to provide connectivity at the charge decided by it. **not yet notified*	**Issue No. 4**	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. **Inferences from** **International Regulatory Regimes** 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

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Guiding Principles to be followed for declaring and/or authorizing a Common Carrier or Contract Carrier or CGD Network	Clause 6.1.3 of Regulations for Exclusivity for City or Local Natural Gas Distribution Networks		**Issue No. 4**	space in the pipeline is contracted, then a new potential customer for firm capacity will have to wait in 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

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Guiding Principles to be followed for declaring and/or authorizing a Common Carrier or Contract Carrier or CGD Network	Clause 6.1.3 of Regulations for Exclusivity for City or Local Natural Gas Distribution Networks		**Issue No. 4**	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 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

Issue	Reference in PNGRB Regulation	PNGRB Regulation Clause	Reference as per PetroFed Report	Industry suggestion
Guiding Principles to be followed for declaring and/or authorizing a Common Carrier or Contract Carrier or CGD Network	Clause 6.1.3 of Regulations for Exclusivity for City or Local Natural Gas Distribution Networks		**Issue No. 4**	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 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).

Issue	Reference in PNGRB Regulation	PNGRB Regulation Clause	Reference as per PetroFed Report	Industry suggestion
Guiding Principles to be followed for declaring and/or authorizing a Common Carrier or Contract Carrier or CGD Network	Clause 6.1.3 of Regulations for Exclusivity for City or Local Natural Gas Distribution Networks		**Issue No. 4**	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 (sublet) 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

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Guiding Principles to be followed for declaring and/or authorizing a Common Carrier or Contract Carrier or CGD Network	Clause 6.1.3 of Regulations for Exclusivity for City or Local Natural Gas Distribution Networks		**Issue No. 4**	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 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

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Guiding Principles to be followed for declaring and/or authorizing a Common Carrier or Contract Carrier or CGD Network	Clause 6.1.3 of Regulations for Exclusivity for City or Local Natural Gas Distribution Networks		**Issue No. 4**	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 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.