

# PETROLEUM AND NATURAL GAS REGULATORY BOARD

## NOTIFICATION

New Delhi, the 20<sup>th</sup> November, 2008

**G.S.R. 807(E).**--- In exercise of the powers conferred by Section 61 of the Petroleum and Natural Gas Regulatory Board Act, 2006 (19 of 2006), the Petroleum and Natural Gas Regulatory Board hereby makes the following regulations, namely:-

### 1. Short title and commencement.

- (1) These regulations may be called the Petroleum and Natural Gas Regulatory Board (Determination of Natural Gas Pipeline Tariff) Regulations, 2008.
- (2) They shall come into force on the date of their publication in the Official Gazette.

### 2. Definitions.

- (1) In these regulations, unless the context otherwise requires,-
  - (a) “Act” means the Petroleum and Natural Gas Regulatory Board Act, 2006;
  - (b) “appointed day” means the date of October 1, 2007;
  - (c) “Board” means the Petroleum and Natural Gas Regulatory Board established under sub-section (1) of section 3 of the Act;
  - (d) “capacity of natural gas pipeline” means the capacity of natural gas pipeline as specified under the Petroleum and Natural Gas Regulatory Board (Authorizing Entities for Laying, Building, Operating or Expanding Natural Gas Pipelines) Regulations, 2008;  
  
Provided that the capacity of natural gas pipeline is respect of entity authorized by the Central Government for laying, building, operating or expanding natural gas pipelines before the appointed day shall be as approved by the Board as per the basis specified in the relevant regulations for determining the capacity of natural gas pipeline;
  - (e) “initial unit natural gas pipeline tariff” means the unit natural gas pipeline tariff determined for a period commencing from-
    - (i) the date of commissioning of the natural gas pipeline in any financial year and ending on the last day of that financial year in case the natural gas pipeline is commissioned on or after the notification of these regulations; or
    - (ii) the date of coming of the natural gas pipeline within the purview of these regulations in any financial year and ending on the last day of

that financial year in case the natural gas pipeline is commissioned before the notification of these regulations;

Provided that in case the period between the date of commissioning of the natural gas pipeline or the date of coming of the natural gas pipeline within the purview of these regulations in any financial year, as the case may be, and the last day of the financial year is less than one hundred and eighty three days, the initial unit natural gas pipeline tariff shall be a for period commencing from the date of commissioning of the natural gas pipeline or the date of coming of the natural gas pipeline within the purview of these regulations in the financial year and extend up to the last day of the immediately succeeding financial year:

Provided further that the initial unit natural gas pipelines tariff shall be fixed on a provisional basis first and then finalized as per the basis and in the time frame specified under clause 9 of Schedule A.

- (f) “natural gas pipeline” means any pipeline including spur lines for transport of natural gas and includes all connected equipments and facilities, such as, compressors, storage facilities, metering units but excludes-
- (i) dedicated pipeline laid to transport natural gas to a specific customer to meet his requirement and not for resale;
  - (ii) pipelines in a city or local natural gas distribution network which are regulated by the Petroleum and Natural Gas Regulatory Board (Authorizing Entities to Lay, Build, Operate or Expand City or Local Natural Gas Distribution Networks) Regulations, 2008;
- (g) “natural gas pipeline tariff” means the unit rate of tariff for a natural gas pipeline (excluding statutory taxes and levies) in rupees per million British Thermal Units (Rs. /MMBTU) for transport of natural gas;
- (h) “tariff review” means the review of the unit natural gas pipeline tariff after every five consecutive years by the Board with the first tariff review to be done after the end of five consecutive years after the end of the initial unit natural gas pipeline tariff period as specified under sub-section (e):

Provided that the unit natural gas pipeline tariff so determined at the time of any tariff review shall apply for the period up to the next tariff review;

- (i) “tariff zone” means the zone –
- (i) of a length of three hundred kilometers each along the route of the natural gas pipeline from the point of origin till the end point:

Provided that the last zone of the natural gas pipeline may be of a length of three hundred kilometers or less:

Provided further that any natural gas pipeline of a length less than three hundred kilometers shall be counted as a zone; and

- (ii) a corridor along the natural gas pipeline with a width of up to ten percent of the total length of the natural gas pipeline without including the length of the spur lines of fifty kilometers measured from the nearest point on the surface of the natural gas pipeline on both sides, and including the point of origin and the end point of the natural gas pipelines, whichever is less, and-
  - (a) the first tariff zone shall be counted with reference to any zone in which the point of injection of natural gas into the natural gas pipeline falls; and
  - (b) the subsequent tariff zone or tariff zones, as the case may be, shall be counted separately on either side along the contractual path for delivery of natural gas in the natural gas pipeline;

Provided that natural gas pipeline tariff for transport of natural gas from the same source shall be uniform for all the customers located within the zone:

Provided further that the entity shall supply natural gas to any customer located in the zone subject to the techno-commercial feasibility of laying, building, operating or expanding a new spur line from the natural gas pipeline.

**Explanation:-**

For the purposes of this clause, the point of origin and the end point in the natural gas pipeline as also the sequential numbering of the tariff zone or tariff zones, as the case may be, shall be as indicated in the letter of authorization or fixation of the natural gas pipeline tariff by the Board.

- (2) Words and expression used and not defined in these regulations, but defined in the Act or in the rules or regulations made thereunder, shall have the meanings respectively assigned to them in the Act or in the rules or regulations, as the case may be.

**3. Application.**

These regulations shall apply to an entity-

- (1) authorized by the Central Government under regulation 17 of the Petroleum and Natural Gas Regulatory Board (Authorizing Entities to Lay, Build Operate or Expand Natural Gas Pipelines) Regulations, 2008 for laying, building, operating or expanding a natural gas pipeline before the appointed day;
- (2) laying, building, operating or expanding a natural gas pipeline before the appointed day and authorized by the Board for such activities under regulation 18 of the

Petroleum and Natural Gas Regulatory Board (Authorizing Entities to Lay, Build, Operate or Expand Natural Gas Pipelines) Regulations, 2008; and

- (3) laying, building, operating or expanding a dedicated pipeline which is converted into a natural gas pipeline under the provisions of sub-regulation (1) or (2) of regulation 19 of Petroleum and Natural Gas Regulatory Board (Authorizing Entities to Lay, Build, Operate or Expand Natural Gas Pipelines) Regulations, 2008.

#### **4. Determination of natural gas pipeline tariff.**

The natural gas pipeline tariff in respect of an entity covered under clause (1), clause (2) or clause (3) of regulation 3 shall be determined as per the procedure at Schedule A.

#### **5. Form for data submission by entity for determination of natural gas pipeline tariff.**

Every entity shall submit to the Board the financial costs and other data in the form at Attachment 1 of Schedule A, if, as on the day of the notification of these regulations, the natural gas pipeline –

- (1) is not in operation, then at least six months before the likely date of commissioning of the natural gas pipeline, or within ninety days of the date of notification of these regulations, whichever is later; or
- (2) is already in operation, then, in relation to an entity referred to in –
  - (a) clause (1) of regulation 3, within ninety days of the notification of these regulations;
  - (b) clause (2) of regulation 3 within ninety days of the grant of authorization by the Board; or
  - (c) clause (3), within ninety days of the date of authorization by the Board:

Provided that the entity shall charge initial unit natural gas pipeline tariff “on account basis” based on these regulations from the date of commissioning of natural gas pipeline referred to in clause (1) of regulation 3 or the date of authorization by the Board of natural gas pipeline referred to in clause (2) or clause (3) of regulation 3, as the case may be, till the date the Board provisionally fixes the initial unit natural gas pipeline tariff:

<sup>1</sup>[Provided further that the initial unit natural gas pipeline tariff shall be provisionally fixed by the Board within six months of receipt of the relevant tariff data from the entity after which the entity shall carry out adjustments with a retrospective effect with the customers for the difference between the initial unit natural gas pipeline tariff that the entity had so charged and that provisionally fixed.]

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<sup>1</sup> Subs. by Reg. 2, the Petroleum and Natural Gas Regulatory Board (Determination of Natural Gas Pipeline Tariff) Second Amendment Regulations, 2012, for ‘Second Proviso in sub-reg. (2) of Reg. 5’ (w.e.f. 13.09.2012).

## <sup>1</sup>[6. Miscellaneous

- (1) The Board may make guidelines from time to time relating to determination of natural gas pipeline tariff.
- (2) If any dispute arises with regards to the interpretation of any of the provisions of these regulations, the decision of the Board shall be final.]

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<sup>1</sup> Subs. by Reg.2, the Petroleum and Natural Gas Regulatory Board (Determination of Natural Gas Pipeline Tariff) Amendment Regulations, 2012, for reg.6, (w.e.f. 30.05.2012).

## Schedule A

[see regulations 4 and 5]

### **Procedure for determination of natural gas pipeline tariff.**

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The natural gas pipeline tariff shall be determined by considering a reasonable rate of return on normative level of capital employed plus a normative level of operating expenses in the natural gas pipeline.

#### **Explanation:**

The expression “normative level” shall be with reference to a level, which is both reasonable and justifiable in terms of incurrence of capital and operating expenditure required for laying, building, operating or expanding an efficient natural gas pipeline over its economic life.

#### **1. Financial Feasibility.**

The entity to which these regulations apply shall submit all technical, operating, financial and cost data of the natural gas pipeline project that may be required by the Board in determination of the natural gas pipeline tariff.

#### **2. Methodology for determination of natural gas pipeline tariff.**

The unit rate of natural gas pipeline tariff to be charged for a period shall be the calculated based on the “Discounted Cash flow” (DCF) methodology considering the reasonable rate of return as specified in clause 3 to be the project’s internal rate of return. The parameters relevant to the applicability of the DCF methodology<sup>1</sup> considering the reasonable rate of return as specified in clause 3 to be the project’s internal rate of return. The parameters relevant to the applicability of the DCF methodology have been described in detail in clauses 4 to 6 below.

#### **3. Reasonable rate of return.**

The rate of return on capital employed shall be the rate of return on capital employed equal to twelve percent post-tax. The rate of return on capital employed once applied to a natural gas pipeline project shall remain fixed for the entire economic life of the project.

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<sup>1</sup> Discounted Cash Flow methodology refers to equating the inflows from the projected revenue earnings out of natural gas pipeline tariff with the outflows of capital and operating expenditures over the economic life of the project by discounting these flows at the project’s reasonable rate of return. The volumes and outflows are estimated over the economic life which results in the determination of the natural gas pipeline tariff required to be earned by the project to achieve the internal rate of return.

**Note:**

The pre-tax rate of return on capital employed shall be computed by grossing-up twelve percent by the nominal rate of income tax applicable for corporate assesses as per the provisions of the income Tax Act, 1961, as amended from time to time.

**4. Return on total capital employed.**

- (1) The reasonable rate of return shall be applied on the total capital employed to determine the return on capital employed in the project over its economic life and the authorized entity is free to leverage the financing of the project in any suitable manner.
- (2) The total capital employed shall be equal to the gross fixed assets in the project less accumulated depreciation<sup>2</sup> plus normative working capital (equal to thirty days of operating costs excluding depreciation and eighteen days natural gas pipeline tariff receivables).
- (3) The gross fixed assets shall be equal to their actual historical cost of acquisition (including the cost of an subsequent replacement or improvement or modification) or that normatively assessed by the Board, whichever is lesser and required in the natural gas pipeline project over its economic life based on the principles<sup>3</sup> to create and sustain an efficient infrastructure, namely:-
  - (a) treatment of an investment in the fixed asset in determination of total capital employed shall be as per the basis indicated in Attachment 2;
  - (b) capital costs in similar projects, if any, elsewhere in India benchmarked on a “like-to-like” basis;
  - (c) appropriateness of the pipeline design and the operating philosophy with regards to maximum allowable operating pressure;
  - (d) optimization of the equipments and facilities such as, compressors, metering systems, SCADA, firefighting required, based on an assessment of the appropriate available technology;
  - (e) spur lines;
  - (f) design parameters for compressors; and
  - (g) assessment of the costs of major equipments and facilities in the natural gas pipeline, laying or building costs, project management consultancy and pre-operative expenditure.

**5. Operating costs.**

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<sup>2</sup> Depreciation shall be calculated by applying the rates of depreciation as specified in Schedule VI to the Companies Act, 1956 on the value of gross fixed assets on a straight line basis.

<sup>3</sup> The basis and parameters identified here are not exhaustive and may vary depending upon the specific natural gas pipeline project under consideration which the Board may apply in a transparent manner.

Operating costs<sup>4</sup> required in the operation and maintenance of the natural gas pipeline over its economic life shall be computed, on an actual basis or based on a normative assessment by the Board, whichever is lower, over the following functional cost heads, namely:-

- (1) consumables;
- (2) utilities;
  - (a) power;
  - (b) fuel (including the cost of natural gas and the natural gas pipeline tariff not recovered on the volume of system-use natural gas consumed in the natural gas pipeline);
  - (c) water;
- (3) salaries and wages;
- (4) repairs and maintenance;
- (5) insurance premia on assets (excluding the value of loss of profit) and on line-pack volumes;
- (6) administrative overheads [to the extent not classifiable under sub-clause (1) to sub-clause (5)], related and also commensurate to the level of operations in the natural gas pipelines;
- (7) depreciation on fixed assets on straight line basis based on rates as per Schedule VI to the Companies Act, 1956); and
- <sup>1</sup>[(8) Miscellaneous income realizable from a fixed asset included in the return on total capital employed or out of an expense considered as an operating cost, but not including income from imbalance management services under relevant regulations of the Board, interest income, profit or loss on sale or transfer of any fixed or other asset, shall be netted from the operating cost.]

**6. Volumes to be considered in determination of the unit natural gas pipeline tariff.**

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<sup>4</sup> Operating costs are those which are necessary for a proper upkeep and maintenance of a tangible asset created for operation of the natural gas pipeline and does not include any financial cost, like, interest on loans, bad debts, sales promotion, advertisement expenses (except for tenders), expenditure incurred in raising or servicing of capital or debenture or bond or any debt, exchange variation on revenue account, but includes normal bank charges, bank guarantee charges, LC charges and bank charges for bid and performance bonds required as per the terms of authorization.

<sup>1</sup> Subs. by Reg.2, the Petroleum and Natural Gas Regulatory Board (Determination of Natural Gas Pipeline Tariff) Amendment Regulations, 2014, for 'sub-para (8) of para 5 of the Schedule A' (w.e.f. 17.02.2014).



(1) The volumes of natural gas to be considered as divisor in the determination of the unit natural gas pipeline tariff over the economic life of the project shall be computed on a normative basis as indicated below:-

(a) the divisor for each of the first five years of operations of the natural gas pipeline shall be arrived by multiplying the applicable percentage utilization for the year, as per the basis indicated below, with the sum of the capacity requirement of the entity and the firm-up contracted capacity with other entities as specified under the Petroleum and Natural Gas Regulatory Board (Authorizing Entities to Lay, Build, Operate or Expand Natural Gas Pipelines) Regulations, 2008:-

<b>Year of natural gas pipeline operations</b>	<b>Percentage utilization</b>
First	60%
Second	70%
Third	80%
Fourth	90%
Fifth	100%

(b) the divisor for the sixth and the subsequent years of operation of the natural gas pipeline shall be equal to:

(i) one hundred percent of the sum of the capacity requirements of the entity and the firm-up contracted capacity with other entities as specified under the Petroleum and Natural Gas Regulatory Board (Authorizing Entities to Lay, Build, Operate or Expand Natural Gas Pipelines) Regulations, 2008; and

(ii) The actual volume of natural gas transported on common carrier basis against the extra capacity as specified under the Petroleum and Natural Gas Regulatory Board (Authorizing Entities to Lay, Build, Operate or Expand Natural Gas Pipelines) Regulations, 2008 during the immediately preceding year of operation of the natural gas pipeline.

**Explanation:-**

The adjustment for the difference between the actual volume transported on common carrier basis in any year and that included in the divisor under sub-item (ii) to item (b) of sub-clause (1) shall be carried out on a prospective basis in the DCF calculations for unit natural gas pipeline tariff.

(2) The volume of natural gas determined under sub-clause (1) shall be converted into its energy equivalence in MMBTU terms for the purpose of-

(a) determination of the provisional unit natural gas pipeline tariff by considering the weighted average of heat value of different natural gases which are likely to be transported by the entity during this period;

- (b) determination of the final initial unit natural gas pipeline tariff by considering the weighted average heat value of the natural gas delivered to customers during the initial unit natural gas pipeline tariff period;
- (c) first tariff review by considering the weighted average heat value of natural gas delivered to customers between the period from the end of the initial unit natural gas pipeline tariff period and the due date of the first tariff review;
- (d) any subsequent tariff review by considering the weighted average heat value of the natural gas delivered to the customers during the period between that tariff review and the immediate previous tariff review.

**7. Economic life.**

The economic life of the natural gas pipeline shall be as specified in the Petroleum and Natural Gas Regulatory Board (Authorizing Entities to Lay, Build, Operate or Expand Natural Gas Pipeline) Regulations, 2008.

**8. Procedure for apportioning of unit natural gas pipeline tariff over the tariff zones.**

- (1) The entity shall submit for the Board's approval, the calculations in respect of apportioning of the unit natural gas pipeline tariff over all the tariff zones during the economic life of the project in the form specified under regulation 5, by following the methodology as specified under sub-regulations (a), (b) and (c) regulation 7 of the Petroleum and Natural Gas Regulatory Board (Authorizing Entities to Laying, Building, Operating or Expanding Natural Gas Pipelines) Regulations, 2008 except that:-
  - (a) there shall be no requirement of bidding while following such methodology;
  - (b) no weightage shall apply to such apportionment of the unit natural gas pipeline tariff over different tariff zones; and
  - (c) the entity shall use its own numbers in determining such appointment.
- (2) No adjustment shall be made by the entity with the customers for any over-achievement or under-achievement in the recovery of the natural gas pipeline tariff by the entity due to the volumes actually transported in different tariff zones being different than the volumes considered by the entity for apportioning the unit natural gas pipeline tariff for each of the tariff for zones during-
  - (a) the period of initial unit natural gas pipeline tariff;
  - (b) the first five and consecutive years after the end of the initial unit natural gas pipeline tariff; and
  - (c) the period between any two consecutive tariff reviews.

**9. Determination of initial unit natural gas pipeline tariff and review of unit natural gas pipeline tariff.**

- (1) The unit natural gas pipeline tariff shall be determined for the natural gas pipeline over its economic life and levelized during-
  - (a) the period applicable for the initial unit natural gas pipeline tariff;
  - (b) the period of five consecutive years after the end of the initial unit natural gas pipeline tariff; and
  - (c) the period between any two consecutive tariff reviews.
- (2) The initial unit natural gas pipeline tariff including its apportioning over all tariff zones shall be determined based on provisional computations.
- (3) The final computations in respect of the initial unit natural gas pipeline tariff shall be made considering the adjustments required for –
  - (a) the actual capital and operating costs or that normatively assessed by the Board, whichever is lower as specified under clause 4 and clause 5;
  - (b) volume consideration as per item (a) of sub-clause (1) of clause 6; and
  - (c) volume conversion into its energy equivalence as per item (b) of sub-clause (2) of clause 6.
- (4) The entity shall adjust with the customers, the difference between the natural gas pipeline tariff recovered based on the provisional computation under sub-clause (2) and that recoverable as per the final computation under sub-clause (3);
- (5) The final unit natural gas pipeline tariff as specified under sub-clause (3) shall apply for the period upto the first tariff review until the time the same is revised by the Board;
- (6) The entity shall submit for Board's approval the data for determination of the unit natural gas pipeline tariff after the notification of these regulations in the form and time frame specified under regulation 5 alongwith the provisional computations of the initial unit natural gas pipeline tariff including the apportioning of the same over all tariff zones;

Provided that the final computations of the initial unit natural gas pipeline tariff including apportioning of the same over all tariff zones shall be submitted three months before the last date of the period applicable for the initial unit natural gas pipeline tariff.

- (7) The entity shall submit computation of the unit natural gas pipeline tariff including apportioning of the same over all tariff zones in the form specified under regulation 5 at the time of each tariff review within three months of the –

(a) end of the last year of the five consecutive years after the initial unit natural gas pipeline tariff; or

(b) end of the preceding tariff review period:

Provided that the computation shall consider the actual cost, financial and operational data or that normatively assessed by the Board, whichever is lesser as per clauses 4 and 5 in respect of the period specified under sub-clause (a) or (b) as the case may be.

(8) Adjustments on account of the following variations during the five consecutive years after the initial unit natural gas pipeline tariff or any tariff review shall be made in the DCF calculations on a prospective basis by considering the remaining period of the economic life of the project, namely:-

(a) the variations on account of the actual performance with respect to the capital and operating costs which when compared with the normative parameters identified under clauses 4 and 5;

(b) the variations in respect of the volumes under Explanation to sub-item (ii) of sub-clause (1) of clause 6 and;

(c) the variations in the energy equivalence under sub-clause (2) to clause 6.

(9) The Board may, either on its own or on the entity's request, carry out a review of the unit natural gas pipeline tariff any time between two tariff reviews, as the case may be, considering-

(i) applicable nominal rate of income tax used for grossing-up the rate of return on capital employed;

(ii) sudden change in any parameter used in the determination of the unit natural gas pipeline tariff.

(10) The provisional and final initial unit natural gas pipeline tariff, unit natural gas pipeline tariff for the period of five consecutive financial years after the initial unit natural gas pipeline tariff and the unit natural gas pipeline tariff fixed after any tariff review thereafter shall continue to apply till the time the same is revised by the Board.

**<sup>1</sup>[10. Adjustment of volume variation Tariff computation after final computations of initial unit natural gas pipeline tariff.**

(1) Adjustment shall be carried out in the final unit natural gas pipeline tariff determined under sub-clause (5) of clause 9 on a year-to-year basis by the entity with the customers considering actual volumes in any of the first five years of natural gas pipeline operation when-

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<sup>1</sup> Ins. by Reg.2, the Petroleum and Natural Gas Regulatory Board (Determination of Natural Gas Pipeline Tariff) Amendment Regulations, 2010, (w.e.f. 20.12.2010).

- (a) the actual volumes are higher than the normative volume considered as divisors for determination of final unit natural gas pipeline tariff on the basis specified in item (a) of sub-clause (1) of clause 6; or
  - (b) the actual volumes are higher than the normative volume considered as divisors for determination of the final unit natural gas pipeline tariff on the basis specified in item (a) of sub-clause (1) of clause 6 but are lower than that considered for determination of final unit natural gas pipeline tariff.
- (2) When the actual volumes are lower than the normative volumes in any of the first five years of natural gas pipeline operations, a set-off of the impact of such lower volumes shall be permitted. Such set-off shall be allowed only to the extent of impact of higher actual volumes passed on in any of the first five years and the balance set-off, if any, shall be carried over to subsequent years, but not beyond the first five years of natural gas pipeline operation, to be allowed for adjustment only in case there are higher actual volumes.
  - (3) An audited statement showing actual volume shall be submitted by the entity to Board after the conclusion of each year of the first five years of natural gas pipeline operations to enable the Board to advise the necessary adjustments.
  - (4) A pro-rata adjustment in apportionment of the unit natural gas pipeline tariff over all the tariff zone determined by Board under clause 8 of Schedule A to the Petroleum and Natural Gas Regulatory Board (Determination of Natural Gas Pipeline Tariff) Regulations, 2008 shall also be made with customers to the extent of adjustment in the final unit natural gas pipeline tariff determined by the Board under this clause.
  - (5) The tariff so adjusted shall also be applicable for the subsequent period till the same is modified, adjusted or reviewed.]

<b>Attachment 1</b>				
[see regulation 5]				
<b>Project capital cost summary (Capex outflows)</b>				
<b>Sr. No.</b>	<b>Description</b>	<b>INR</b>	<b>FE</b>	
		Indian Rupees	Foreign Exchange	Total (*)
<b>A</b>	<b>Plant and machinery</b>			
1	Receiving terminal [see attachment 1 (a)]			
2	Compressor station [see attachment 1 (b)]			
3	Intermediate terminal [see attachment 1 (c)]			
4	Delivery terminal [see attachment 1 (d)]			
5	Pipeline [see attachment 1 (e)]			
	<b>Subtotal (A)</b>			
<b>B</b>	<b>Engineering costs</b>			
1	Detailed engineering, procurement, construction, supervision and project management			
2	Service Ta on above			
	<b>Subtotal (B)</b>			
<b>C</b>	<b>Site related costs</b>			
1	Land			
2	Any other (details to be given)			
	<b>Subtotal (C)</b>			
<b>D</b>	<b>Owner's cost, start- up expenses</b>			

1	Start-up and commissioning expenses			
2	Owner's management expenses			
	<b>Subtotal (D)</b>			
<b>E</b>	<b>Other Costs</b>			
1	Contingencies and escalation			
2	Preliminary and pre-operative expenses			
3	Interest during construction period and financing charges			
4	Margin money for working capital			
	<b>Subtotal (D)</b>			
	<b>Total (A+B+C+D+E)</b>			
	<b>(* INR + FE converted to INR.</b>			
	<b>Note: Detailed assumption / calculations to be given for item E.</b>			

**Attachment 1 (a)**  
[see regulation 5]

**Capital cost of receiving terminal**

<b>Sr. No.</b>	<b>Description</b>	<b>INR</b>	<b>FE</b>	<b>Total (*)</b>	<b>Technical specifications</b>
		Indian Rupees	Foreign Exchange		
<b>A</b>	<b>Major Items</b>				
1	Scrapper traps and pig signaler				Rated capacity as per supplier
2	Metering system				
3	Cartridge filters				
4	Fire protection system				
5	Power supply arrangement				
6	Compressors				Rated capacity as per supplier
7	Any other item (details to be given)				
	<b>Subtotal</b>				
<b>B</b>	<b>Bulk Materials</b>				
1	Piping				
2	Electrical				
3	Instrumentation				
4	Any other item (details to be given)				
	<b>Subtotal</b>				
<b>C</b>	<b>Spares (details to be given)</b>				
<b>D</b>	<b>Erection</b>				
1	Mechanical				
2	Electrical				
3	Instrumentation				
4	Civil works				
5	Land				
6	Any other item (details to be given)				
	<b>Subtotal</b>				
<b>E</b>	<b>Taxes and duties</b>				
1	Ocean freight				
2	Customs duty				
3	Port handling				



4	Inland freight				
5	Excise & CST				
6	Works contract tax				
7	Insurance				
8	Any other applicable fax and duty (give details)				
	<b>Subtotal</b>				
	<b>Total ( to E)</b>				

(\* INR + FE converted to INR.

**Attachment 1 (b)**

[see regulation 5]

**Capital cost of compressors**

<b>Sr. No.</b>	<b>Description</b>	<b>INR</b>	<b>FE</b>	<b>Total (*)</b>	<b>Technical specifications</b>
		Indian Rupees	Foreign Exchange		
<b>A</b>	<b>Major Items</b>				
1	Compressors				Rated Capacity as per Supplier
2	Scraper traps and pig signaler				
3	Metering system				
4	Cartridge filters				
5	Fire protection system				
6	Power supply arrangement				
7	Any other item (details to be given)				
	<b>Subtotal</b>				
<b>B</b>	<b>Bulk materials</b>				
1	Piping				
2	Electrical				
3	Instrumentation				
4	Any other item (details to be given)				
	<b>Subtotal</b>				
<b>C</b>	<b>Spares</b> (details to be given)				
<b>D</b>	<b>Erection</b>				
1	Mechanical				
2	Electrical				
3	Instrumentation				
4	Civil Works				
5	Land				
6	Any other item (details to be given)				
	<b>Subtotal</b>				
<b>E</b>	<b>Taxes and duties</b>				
1	Ocean freight				
2	Customs duty				
3	Port handling				

4	Inland freight				
5	Excise & CST				
6	Works contract tax				
7	Insurance				
8	Any other applicable fax and duty (give details)				
	<b>Subtotal</b>				
	<b>Total (A to E)</b>				

(\* INR + FE converted to INR

**Attachment 1 (c)**  
[see regulation 5]

**Capital cost of intermediate terminal**

<b>Sr. No.</b>	<b>Description</b>	<b>INR</b>	<b>FE</b>	<b>Total (*)</b>	<b>Technical specifications</b>
		Indian Rupees	Foreign Exchange		
<b>A</b>	<b>Major Items</b>				
1	Compressors				Rated Capacity as per Supplier
2	Scrapper traps and pig signaler				
3	Metering system				
4	Cartridge filters				
5	Fire protection system				
6	Power supply arrangement				
7	Any other item (details to be given)				
	<b>Subtotal</b>				
<b>B</b>	<b>Bulk materials</b>				
1	Piping				
2	Electrical				
3	Instrumentation				
4	Any other item (details to be given)				
	<b>Subtotal</b>				
<b>C</b>	<b>Spares</b> (details to be given)				
<b>D</b>	<b>Erection</b>				
1	Mechanical				
2	Electrical				
3	Instrumentation				
4	Civil Works				
5	Land				
6	Any other item (details to be given)				
	<b>Subtotal</b>				
<b>E</b>	<b>Taxes and duties</b>				
1	Ocean freight				
2	Customs duty				
3	Port handling				

4	Inland freight				
5	Excise & CST				
6	Works contract tax				
7	Insurance				
8	Any other applicable fax and duty (give details)				
	<b>Subtotal</b>				
	<b>Total (A to E)</b>				

(\* INR + FE converted to INR

**Attachment 1 (d)**

[see regulation 5]

**Capital cost of delivery terminal**

<b>Sr. No.</b>	<b>Description</b>	<b>INR</b>	<b>FE</b>	<b>Total (*)</b>	<b>Technical specifications</b>
		Indian Rupees	Foreign Exchange		
<b>A</b>	<b>Major Items</b>				
1	Scrapper traps and pig signaler				Rated Capacity as per supplier
2	Metering system				
3	Cartridge filters				
4	Fire protection system				
5	Power supply arrangement				
6	Any other item (details to be given)				
	<b>Subtotal</b>				
<b>B</b>	<b>Bulk materials</b>				
1	Piping				
2	Electrical				
3	Instrumentation				
4	Any other item (details to be given)				
	<b>Subtotal</b>				
<b>C</b>	<b>Spares (details to be given)</b>				
<b>D</b>	<b>Erection</b>				
1	Mechanical				
2	Electrical				
3	Instrumentation				
4	Civil Works				
5	Land				
6	Any other item (details to be given)				
	<b>Subtotal</b>				
<b>E</b>	<b>Taxes and duties</b>				
1	Ocean freight				
2	Customs duty				
3	Port handling				
4	Inland freight				
5	Excise & CST				
6	Works contract tax				
7	Insurance				

8	Any other applicable fax and duty (give details)				
	<b>Subtotal</b>				
	<b>Total (A to E)</b>				

(\*) INR + FE converted to INR

**Attachment 1 (e)**  
[see regulation 5]

**Capital cost of pipelines**

<b>Sr. No.</b>	<b>Description</b>	<b>INR</b>	<b>FE</b>	<b>Total (*)</b>	<b>Technical specifications</b>
		Indian Rupees	Foreign Exchange		
<b>A</b>	<b>Major Items</b>				
1	Survey and soil investigation				
2	Land, ROU and crop compensation				
3	Line pipes				Outer diameter and wall thickness
4	Line materials				
5	Coating and pipe transportation				
6	Pipeline Laying				
7	Cathodic protection				
8	OFC, telecom and telesupervisory system				
9	SCADA & APPC system				
11	Power source				
12	Any other item (details to be given)				
	<b>Subtotal</b>				
<b>B</b>	<b>Minor items</b>				
1	Ocean freight				
2	Customs duty				
3	Port handling				
4	Inland freight				
5	Excise & CST				
6	Works contract tax				
7	Insurance				
8	Any other applicable fax and duty (give details)				
	<b>Subtotal</b>				
	<b>Total (A +B)</b>				

(\*) INR + FE converted to INR



**Attachment 1 (f)**

[see regulation 5]

**Profit and Loss Account (\$)**

**Rs.**

Sr. No.	Description	Year 1	Year 2	Year 3	Year 4	----	Year 25
<b>1</b>	<b>Total inflows</b>						
a	Revenue from natural gas pipeline tariff						
<b>2</b>	<b>Total operating cost outflows</b>						
a	Consumables and chemicals						
b	Utilities – (Power fuel and water)						
c	Salaries						
d	Repair and maintenance						
e	Gen. administrative expenses (including bank charges on bid bond and performance bond as per grant of authorization)						
f	Any other expenses (to be detailed)						
g	Insurance (including on line-pack volumes)						
<b>3</b>	<b>Profit before depreciation interest and tax (PBDIT) (1 - 2)</b>						
4	Interest on working capital borrowings to the extent utilized in working capital requirement for above expenses (with rates)						
5	Interest on term loan (with rates)						
<b>6</b>	<b>Profit before depreciation and tax (PBDT) (3-4-5)</b>						
7	Depreciation on SLM basis and miscellaneous expenses written off (give details of each)						
<b>8</b>	<b>Profit before tax (PBT) (6-7)</b>						
9	Tax provision (provide as per income tax rules in force)						
<b>10</b>	<b>Profit after tax (PAT) (8-9)</b>						
	Cash from operation (CFO) (10+7) – To be transferred to cash flow sheet						

(\$) Actual or estimates, wherever applicable

(\*) Excluding all direct, indirect and allocated common cost beyond transportation of natural gas pipeline. Financial costs and selling expenses to be excluded.

Note :

1. The natural gas pipeline tariff shall be based on the actual volumes of natural gas transported in natural gas pipeline as determined by DCF methodology adopted by considering a PIRR, at which level the net inflows equal the net outflows over the economic life of the project.

2. For expansion or extension of natural gas pipeline – data in the above format as applicable for project post expansion or extension.
3. Non-operating income (such as, Interest on interest-free refundable security deposit from PNG domestic customers) not to be considered as project inflows.
4. Modvat benefit, if available is to be reflected separately alongwith the calculations
5. Copy of Audited Profit and Loss Account to be attached wherever applicable.

**Attachment 1 (g)**  
[see regulation 5]

**Cash flow statement**

**Rs.**

Sr. No.	Year	Construction period			Economic Life			
		Year- 3	Year- 2	Year- 1	Year- 1	Year- 2	Year- 3	----- Year 25
<b>1</b>	<b>Sources of funds</b>							
a	Equity or Preference Equity (*)							
b	Term Loans and short term loans							
c	Cash from operations							
d	Bank borrowings for working capital							
e	Others (please specify)							
<b>2</b>	<b>Uses of funds</b>							
a	Capital expenditure							
b	Normal/additional capital expenditure							
c	Increase or (decrease) in net working capital							
d	Repayment of loans							
e	Dividends to equity holders							
f	Tax on distributable profits							
g	Others (please specify)							
<b>3</b>	<b>Cash surplus or (deficit)</b>							
a	Opening cash balance							
B	Closing cash balance							

**(\*) Redemption details to be given.**

**Attachment 1 (h)**

[see regulation 5]

**Balance Sheet (\$)****Rs.**

Year	Construction period			Economic Life				
	Year 3	Year 2	Year 1	Year 1	Year 2	Year 3	Year 4	-----
<b>Assets</b>								
Gross fixed assets								
Less: Accumulated depreciation (*)								
<b>Net Fixed assets</b>								
Net current assets								
Cash and bank balance								
Investments								
Miscellaneous fixed assets								
Deferred revenue expenditure								
Others (please specify)								
<b>Liabilities</b>								
New worth								
Equity capital								
Preference share capital (**)								
Reserves								
<b>Debt</b>								
Rupee term loans								
FC term loans								
Bank borrowings for working capital								
Others								

(\$) Actuals or estimates, wherever applicable

(\*) Asset head-wise depreciation calculations to be provided

(\*\*) To the extent non-redeemable. Redeemable preference capital to be shown under debt.

**Note :**

- a) Copy of audited Balance Sheet to be attached, wherever applicable

**Attachment 1 (i)**

[see regulation 5 and clause 8 and clause 9 of Schedule A]

**Part 1: Computations for natural gas pipeline tariff based on project IRR**

Year	Construction period			Economic Life						
	Year (-3)	Year (-2)	Year (-1)	Year 1	Year 2	Year 3	Year 4	...	Year 25	
a ) Capital and operating cost outflows (including margin money)										
B ) Inflows 9profit before depreciation, interest and income tax as per item 3 of estimated profit and loss account in Attachment 1(f)										
Net Inflows/(outflows)										
Cumulative Inflows/(outflows)										
Levelized unit natural gas pipeline tariff calculated based on the reasonable rate of return as specified in clause 2 and 3 of Schedule A for:										
A ) the period of initial unit natural gas pipeline tariff (T1)				T1:For Year 1						
B ) the period of five consecutive years after the initial unit natural gas pipeline tariff (T2)					T2: For Year 2 to Year 6					
C ) the period of each of the tariff period (T3 and onwards) calculated based on reasonable rate of return as project's internal rate of return as specified in clause 2 of schedule A.										T 3: F or Y 7 to Y 1 1

Notes:

1. The calculations for natural gas pipeline tariff alongwith the data are required to be submitted by the entity to the Board each time the same is due for fixation or review.
2. The adjustments required in the DCF calculations for the variations in capital cost, operating cost and volumes as per the basis specified under 9 of Schedule A shall be clearly specified at the time of submission of such computations to the Board.
  3. Capital outflows includes outflows on account of capital work-in-progress.

**Attachment 1(i) (Contd..)**

**Part II: Apportionment of unit natural gas pipeline tariff over natural gas pipeline tariff Zones.**

[See regulation 5 and clause 8 and clause 9 of Schedule A]

(in rs./MMBTU)

	Period applicable for initial unit natural gas pipeline tariff/Review period	Unit natural gas pipeline tariff	Tariff zone 1	Tariff zone 2	Tariff zone 3	Tariff zone 4	Tariff zone 5	.....till last tariff zone..
				X%=[indicate one number towards % age increase over Tariff zone 1]	Y%=[indicate % age increase(lower than 100%) over preceding tariff zone]			
			TZ1=[one number to be indicated for the period applicable to initial unit natural gas pipeline tariff]	Incremental increase over TZ1= [TZ1xX%/100]	Incremental increase over TZ1= =[Y%xX%xTZ1]	Incremental increase over TZ1= [Y%xY%xX%xTZ1]	Incremental increase over T1= [Y%xY%xY%xX]	...and so on...
Unit natural gas pipeline tariff as per Pert	For the period applicable to initial unit natural gas pipeline tariff			TZ2= TZ1+ Above incremental increase over TZ1	TZ3= TZ2+ Above incremental increase over TZ1	TZ4= TZ3+ Above incremental increase over TZ1	TZ5= TZ4+ Above incremental increase over TZ1	...and so on...
Unit natural gas pipeline tariff as per Pert 1	Second (*)							
Unit natural gas pipeline tariff as per Pert 1	Third (*)							
	:							
	:							
Unit natural gas pipeline tariff as per Pert 1	Last(*)							

(\*) The process shall be followed on the same basis as described for the initial natural gas pipeline tariff period.

(in MMBTU)

	Period	Tariff zone 1	Tariff zone 2	Tariff zone 3	Tariff zone 4	Tariff zone 5	Last tariff zone	Total
Volumes considered in each tariff zone	Initial period							
Volumes considered in each tariff zone	First Review Period							
Volumes considered in each tariff zone	Second Review Period							
	:							
	:							

Volumes considered in each tariff zone	Last Review Period							
--	--------------------	--	--	--	--	--	--	--

Note:

1. The Calculations for apportionment of natural gas pipeline tariff over natural gas pipeline tariff zones are required to be submitted for every tariff review period.
2. The basis followed in bifurcating the unit natural gas pipeline tariff over each of the natural gas pipeline tariff zone to be specified.
3. The basis for considering the volumes in each natural gas pipeline tariff zone to be provided ( including copies of contracts to be enclosed).
4. Volumes in MMSCM to be provided in respect of above and the basis for conversion of volume of natural gas into its energy equivalence in MMBTU to be indicated.

## Attachment 1 (j)

[see regulation 5]

### Assumptions

1. Exchange rate used for determining the capital costs in Indian currency to be indicated.
2. Format for providing annual operating cost by the entity.

	Description of cost elements	Rs.
<b>A.</b>	<b>Variable cost</b>	
1.	Consumables	
2.	Fuel (quantity and rates)	
	Utilities (quantity and rates)	
a)	Power (*)	
b)	Water	
c)	Any other expenses(to be specified)	
<b>B.</b>	<b>Fixed and semi variable cost</b>	
1	Salary and wages	
2	General administration	
3	Repairs and maintenance	
4	Any other expenses ( to be specified) (£)	
<b>C.</b>	<b>Insurance</b> (%)	
	<b>Total (A+B+C)</b>	

(\*) Break-up of purchased power (over fixed charge & variable charge) & and own generation to be provided.

(\$) Break –up over routine & turn around as well as function-wise over electrical, civil, mechanical, etc. to be provided.

(£) Basis of direct & indirect administrative expenses (along with basis of allocation to be provided).

(%) Break-up of premium on loss of profit policy, facilities & line-fill quantity to be provided.

#### Note:

- a. For each items of operating cost, detailed assumptions and working to be attached.
- b. For common overheads, complete basis of appointment and allocation of costs to be provided.



3. Project implementation schedule to be given along with break up of expenditure for each year.
4. Loan schedule to be provided for each type of loan interest rates, repayments etc.
5. Depreciation schedule as per the Companies Act and Income Tax Act should be provided.
6. Section-wise capacity of the natural gas pipeline along with length of each section.
7. Pipeline design capacity and rated capacity of compressors to be provided.
8. Capacity utilization proposed and the basis to be provided.
9. Implementation period of project in phases to be provided.
10. Economic life of the project.
11. Applicable income tax rates and the exemption, if any available under the income Tax Act, 1961 to be provided.
12. Details of volumes of natural gas estimated to be transported in the natural gas pipeline over the economic life along with copies of the contracts for booking pipeline capacity to be provided in following format:

**(MMSCMD)**

Own Requirement	Year 1	Year 2	Year 3	Year 4	----- -	Year 25
Firm Contracted						
Extra capacity (*)						
<b>Total</b>						

(\*) to be made available on common carrier open access and non-discriminatory basis.

13. Basis for conversation of natural gas volumes into its energy equivalence in MMBTU to be provided.
14. All assumptions with reference to the estimates of capital or operating costs and nay other assumption which has a material impact on the determination of the until natural gas pipeline tariff are to be separately indicated along with the financial impact of the same.

## Attachment 2 to Schedule A

[see clause 4 (3) (a) of the Schedule]

Treatment of a fixed asset in the determination of return on total capital employed for natural gas pipeline tariff.

The basis of considering fixed assets in a natural gas pipeline in the determination of the return on total capital employed shall be as per the following norms:-

- (1) A fixed asset in a natural gas pipeline is a tangible asset having a useful operating life of more than one year and is integral to the generation of revenues through natural gas pipeline tariff. Investment in securities, goodwill, current assets, accumulated loss not written –off, work-in-progress, etc. are not fixed assets.
- (2) Any change in the historical cost of the fixed asset due to revaluation or capitalization of losses shall not be considered. However, cost incurred in improvements, modification, expansion or replacement of any fixed asset shall be considered in line with the treatment prescribed in the mandatory accounting standards of The Institute of Chartered Accountants of India.
- (3) Only the cost of land purchased and used for the putting the facilities essential to the natural gas pipeline shall be considered. Land purchased for any future use (such as for putting-up facilities required for expansion of capacity in natural gas pipeline for its extension) shall be considered only when used.
- (4) Any change in the value of fixed asset due to capitalization of interest on loan (including foreign exchange variation in case of any loan in any foreign currency) during the pre-commissioning phase of the fixed asset shall be considered provided such loan was utilized for creation of the said fixed asset only.
- (5) A fixed asset shall be considered for return on capital employed on a “rolling basis” till the end of the economic life of the natural gas pipeline project, provided it is not de-commissioned. On de-commissioning of the fixed asset, the value realized on its sale or scrapping should be considered as a project inflow in the DCF calculations. In the terminal year of the economic life, the residual value of the fixed asset, which is the difference between the original cost less the amount of accumulated depreciation shall be treated as a project inflow in the DCF calculations for natural gas pipeline tariff.
- (6) Treatment of line-pack volume in natural gas pipeline shall be as per the procedure indicated below:-
  - (a) Assessment of the volume of natural gas required as line pack in the natural gas pipeline as and when commissioned shall as be specified in the relevant regulations for the technical standards and specifications, including safety standards.
  - (b) The line-pack value of natural gas in natural gas pipeline and included in the total capital employed for determination of the unit natural gas pipeline tariff shall be considered as a non-depreciating fixed asset and the value to remain fixed over the economic life of the project.
  - (c) The value of the line-pack volume shall be derived by multiplying the volume of line-pack by the average cost of natural gas at the point on injection of natural gas into the natural gas pipeline at the time of commissioning of the natural gas pipeline.

(d) The salvage value of the line-pack volume at the end of the economic life of the project shall be equal to its value assessed at the time of its capitalization specified under sub-clause (b) and shall be considered as a project inflow.

[F. No. S-Admn/II/8/2008-Vol.-1]  
RATAN P. WATAL, Secy.

**Foot Note:** Principal regulation were published in the Gazette of India (Extraordinary) under No. G.S.R.807(E), dated the 20<sup>th</sup> November, 2008 and amended *vide* G.S.R. 986(E), dated 20<sup>th</sup> December, 2010 and, F. No. PNGRB/M(C)/11/Final Tariff Filing, dated 30<sup>th</sup> May, 2012 and, PS/Secy./M(C)/2012, dated 13<sup>th</sup> September, 2012. and, F. No. PNGRB/M(C)/48, dated 17<sup>th</sup> February, 2014.

SSSS