



## **Public Consultation Document**

**(Ref: No. PNGRB/M(C)/04 dated 04.12.2014)**

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**Subject: Final initial unit natural gas pipeline tariff under the provisions of the Petroleum and Natural Gas Regulatory Board (Determination of Natural Gas Pipeline Tariff) Regulations, 2008.**

**Name of Entity: Reliance Gas Transportation Infrastructure Limited**

**Name of Pipeline: East West Natural Gas Pipeline (EWPL).**

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**1. Regulatory Framework and Details of Provisional Transportation Tariff Order**

1.1. In terms of Section 22 of the PNGRB Act, 2006, the Board is entrusted with the responsibility of determining the natural gas pipeline tariff to be charged by the entities laying, building, operating or expanding a natural gas pipeline before the appointed day.

1.2. The methodology for determination of pipeline tariff has been specified in the relevant provisions of the Petroleum and Natural Gas Regulatory Board (Determination of Natural Gas Pipeline Tariff) Regulations, 2008 (hereinafter referred to as “Tariff Regulations”) notified on 20.11.2008. Under the provisions of these regulations, PNGRB is to determine the initial unit natural gas pipeline tariff on a provisional basis first and then finalize the same considering the actual costs and data at the end of the financial year on the basis of audited accounts. The transportation tariff is determined using the Discounted Cash Flow (DCF) method using actual and projected pipeline capex and opex costs (in line with provisions of Tariff Regulations) over the entire economic life (25years) of the pipeline thus arriving at a single levelized transportation tariff. If the length of the pipeline is more than 300 Kms the recovery of the transportation tariff is apportioned across such zones of 300 Kms each resulting in zonal tariff where the zonal tariff of a later zone is higher than that of an earlier zone.

**2. Provisional Transportation Tariff Order**

2.1. PNGRB issued the provisional terms and conditions of acceptance to Central Government Authorization for Kakinada-Hyderabad-Uran-

Ahmedabad (EWPL) natural gas pipeline of Reliance Gas Transportation Infrastructure Limited (RGTIL) vide communication dated 19.04.2010 mentioning length of the pipeline as 1385 Kms and capacity of 80 MMSCMD including common carrier capacity of 20 MMSCMD for use on common carrier, open access and non-discriminatory basis by any third party.

- 2.2. PNGRB issued a tariff order dated 19.04.2010 determining the provisional initial unit natural gas pipeline tariff (provisional transportation tariff order) under the provisions of the Petroleum and Natural Gas Regulatory Board (Determination of Natural Gas Pipeline Tariff) Regulations, 2008 for East West Natural Gas Pipeline (EWPL) of Reliance Gas Transportation Infrastructure Limited (RGTIL). The provisional transportation tariff as proposed by RGTIL and as determined by PNGRB are as follows:

<b>Particulars</b>	<b>Tariff proposed by RGTIL (Rs. / MMBTU on GCV basis)</b>	<b>Tariff (Rs. / MMBTU on GCV basis)</b>
Levelized Provisional Transportation Tariff	55.91	52.23

- 2.3. As the length of the pipeline is more than 300 Kms, the zonal apportionment of the provisional levelized tariff has been determined vide order dated 09.06.2010 as under:

<b>Particulars</b>	<b>Tariff (Rs. / MMBTU on GCV basis)</b>
Zone-1	15
Zone-2	42
Zone-3	53.69
Zone-4	58.75
Zone-5	60.94

The relevant clauses of the provisional transportation tariff order have been referred to in this document under the respective paragraphs where the related issues have been discussed.

**2.4.** As explained at para 2.1, the provisional initial unit natural gas pipeline tariff (provisional transportation tariff) gets determined in the year of commissioning of the pipeline based on the estimated cost of operations for future years of the natural gas pipeline. Once the pipeline commences its operation, the transportation entity is required to submit its data related to actual operation of the pipeline in the prescribed format to PNGRB. Based on the data and information submitted, PNGRB finalizes the final tariff to be charged by the entity for the first five years. Thereafter this tariff is to be reviewed after expiry of the five year period and again finalized for the subsequent five year period. As per the proviso to regulation 9 (4) of schedule A of the Tariff Regulations, the entity shall adjust with the customers, the difference

between the natural gas pipeline tariff recovered based on provisional computation under sub clause (2) and that recoverable as per final computation under sub clause (3).

### **3. PNGRB orders on final acceptance of authorization and capacity of EWPL**

- 3.1.** Subsequent to provisional authorization dated 19.04.2010, PNGRB has issued the final acceptance to the Central Government authorization for the EWPL of RGTIL under Regulation 17(1) of PNGRB (Authorizing Entities to Lay, Build, Operate or Expand Natural Gas Pipelines) Regulations, 2008 (hereinafter referred to as “Authorization Regulations”) vide communication dated 19.03.2013. This authorization mentioned total system capacity of the pipeline as 85 MMSCMD determined under the provisions of PNGRB (Determining Capacity of Petroleum, Petroleum Products and Natural Gas Pipeline) (for 2009-10) including capacity of 21.25 MMSCMD for use on common carrier open access and non-discriminatory basis by any third party. The capacity assessment for the period beyond 2009-10 has since been completed as per PNGRB (Determining Capacity of Petroleum, Petroleum Products and Natural Gas Pipeline) Regulations 2010. The final capacity for the period 2010-11 and 2011-12 has been approved vide communication dated 10.07.2014 at 85 MMSCMD and 95 MMSCMD respectively. Accordingly, the capacity of EWPL which is being taken for the final transportation tariff computations is 85 MMSCMD for 2009-10 and 2010-11 and 95 MMSCMD for 2011-12. As the final transportation tariff is to be determined for 2009-10 to

2013-14, the capacity of 95 MMSCMD for 2011-12 is proposed to be projected as the capacity for 2012-13 to 2013-14 too.

**4. Details of tariff filing submitted by RGTIL for final initial unit natural gas pipeline tariff for EWPL.**

4.1. RGTIL filed its proposal for finalization of provisional transportation tariff for EWPL vide letter dated 22.07.2010. Subsequent clarifications/data have been filed by RGTIL and are ongoing vide its communications dated 09.05.2012, 25.12.2012, 18.02.2013, 09.11.2013, 21.11.2013 and 24.12.2013, 18.07.2014.

4.2. RGTIL, vide its communication dated 22.07.2010, proposed a final tariff for EWPL as Rs. 72.93 per MMBTU based on the provisionally assessed capacity (as on July 2010) of 80 MMSCMD. Subsequent to the finalization of capacity at 85 MMSCMD as per PNGRB's authorization date 19.03.2013 (refer para 3.1) RGTIL was asked to resubmit its proposal using the updated capacity figures. The revised transportation tariff proposed by RGTIL (vide communication dated 18.02.2013) based on a capacity of 85 MMSCMD for the EWPL is Rs. 68.64/MMBTU. Subsequent to this submission, RGTIL has made two more tariff submissions dated 21.11.2013 and 24.12.2013. In the submission dated 21.11.2013, RGTIL has proposed a tariff of Rs. 86.49/MMBTU. The proposed increase in tariff is mainly due to RGTIL considering total pipeline capacity of 85 MMSCMD in 2009-10, 70 MMSCMD in 2010-11, 52 MMSCMD in 2011-12 and 45 MMSCMD from 2012-13 onwards with nil common carrier volume. This is a departure from the capacity of 80 MMSCMD and 85 MMSCMD considered in its earlier submissions. RGTIL has stated that

this capacity has been taken considering the current and projected gas supply scenario as per RGTIL's assessment on the basis of which it has made submission to PNGRB capacity assessment group. In its submission dated 24.12.2013, RGTIL has proposed a tariff of Rs. 95.53/MMBTU. The proposed increase in the tariff is because according to RGTIL as the higher tariff as proposed by it will be collected from customers in the year of its approval (i.e. FY 2013-14) it has considered the incremental tariff recovery as cash flow in the year 2013-14 instead of spreading it over the past period thereby considering the time value of money for tariff recovery. Thus RGTIL has made multiple filings of tariff for EWPL. The tariffs proposed by RGTIL under its various submissions are

Sl. No.	Submission Date	Capacity Considered	Tariff Proposed Rs/MMBTU
1	22.07.2010	80 MMSCMD	72.93
2	18.02.2013	85 MMSCMD	68.64
3	21.11.2013	85 MMSCMD to 45 MMSCMD	86.49
4	24.12.2013	85 MMSCMD to 45 MMSCMD	95.53

The issues raised in RGTILs various submissions have been discussed under relevant paras.

## **5. Issues emanating from Tariff Filing**

The major issues emanating from the tariff filing submitted by RGTIL for the EWPL and the comments of the Board on each issue are as follows:

### **5.1. Economic Life of pipeline**

As per PNGRB acceptance of Central Government authorization, RGTIL has considered 01.04.2009 as the date of commissioning of EWPL and the economic life of the pipeline has been considered at 25 years from 01.04.2009 to 31.03.2034. These dates and periods are the same as in the provisional tariff order and are proposed to be taken for computation of final transportation tariff.

### **5.2. Capital Expenditure (Capex)**

Tariff Regulations for assessment of Capex: Capex for any natural gas pipelines needs to be evaluated on the parameters mentioned in the Tariff Regulations. Clause 9 (3) (a) of Schedule A defines the basis for evaluation of Capex. As per this clause, the actual capital and operating costs or that normatively assessed by the Board, whichever is lower, as specified under clause 4 and clause 5 has to be considered for the purpose of tariff determination. It has been further stated in clause 4(3) of schedule A of the Tariff Regulations that the gross fixed assets shall be equal to their actual historical cost of acquisition (including the cost of a 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 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, fire fighting 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.

Capex submission by RGTIL: The total length of the EWPL considered by RGTIL in the tariff proposal is approximately 1460 KMs. (Length of Trunk line 1375 KMs and length of spur lines 85 KMs). RGTIL has submitted its capex under the following three heads:

- A. Main Pipeline Capex
- B. Future Capex of pipeline
- C. Maintenance Capex of pipeline

The treatment of capex submitted under the three heads mentioned above has been discussed in following paragraphs.

A. Main Pipeline Capex:

Provisional tariff order regarding Capex: As per the provisional transportation tariff order (dated 19.04.2010) RGTIL had considered Rs 17,310 crore as the applicable Capex for computation of the capital employed and the tariff on DCF basis. It was stated in the provisional

transportation tariff order that on technical validation, the costs appeared to be higher by 5%, and the difference was broadly justified on the factors like coated pipe cost, laying cost for large diameter pipeline such as 48", sourcing aspects of huge quantity of steel material and difficult installing conditions. The provisional order further stated that the capex, as per the stated methodology in terms of cost-in-Rs-crore-per-km-per-mmcmd also comes to around Rs 0.15 which compares reasonably with international and domestic benchmarks. It was also stated in the provisional tariff order that the Board, after considering overall capex scenario and keeping in view the larger interests of the consumers, on a conservative basis, was normatively reducing the capex by around 5% amounting to Rs 862 crore, which translated to a reduction in tariff by Rs 2.14 per mmbtu coupled with some accounting adjustments.

RGTIL submission on Capex for finalization of tariff: In its submission (dated 22.7.10 and 28.02.2013) for determination of final initial unit natural gas pipeline tariff, RGTIL, has submitted the cost of EWPL excluding interest during construction (IDC).

Comments on determination of Capex:

(1) Capital costs in similar projects, if any, elsewhere in India benchmarked on a "like-to-like" basis.

PNGRB in its communication (dated 14.04.2012) to RGTIL compared the capex cost per KM per MMSCMD for the EWPL and other pipelines covered under the provisions of regulation 17 of the Authorisation Regulations vis-a-vis four recently bid out natural gas pipelines under regulation 18. RGTIL was asked as to

explain why the Capex of EWPL should not be benchmarked on the basis of capex cost (in Rs. Crore per KM per MMSCMD) emanating from bid out natural gas pipelines.

RGTEL, in its reply, stated the following:

- a. The Board has already completed the normative assessment of capex cost at the time of determination of provisional transportation tariff by appointing an independent consultant and comparing the capital cost Rs. Crore per KM per MMSCMD.
- b. Comparing the capex cost with bid out pipelines which are yet to built and which one does not even know at this present point of time whether these pipelines will be built at all.
- c. Any bench marking of capital cost has to be on a like to like basis meaning, any comparison should be with a project which:
  - a) Is built more or less during the same time period
  - b) Has more or less similar design basis, technical configuration
  - c) Has more or less the same topography and geographical terrain

Subsequent to this PNGRB carried out an exercise (during financial year 2013-14) in collaboration with natural gas transportation entities by forming a group to examine the feasibility of establishing a normative capex. As a part of this exercise details of capex figures of various pipelines operating in India were collected from natural gas transporting entities. From

among these pipelines, those which were commissioned after 2007-08 (i.e. after the PNGRB Act was promulgated) were segregated. These pipelines were then categorized into four categories, based on the length of the pipeline.

- i. Cross Country Pipeline > 1000 Kilometers (kms) in length [3 pipelines]
- ii. Cross Country Pipeline > 500 kms and < 1000 kms in length [2 pipelines]
- iii. Local/ Small length Pipeline < 500 kms in length [3 pipelines]
- iv. Regional Pipelines : Pipelines which operate within a region (state)

All natural gas transportation entities (who were represented on the committee conducting this exercise) provided capex and opex details of their pipelines. Capex details were collected under the following heads:

(A) Pipeline and Station Costs

I. Sectional Details – Length, Diameter, Thickness, Grade of Pipe, Details of Abnormal Terrain

II. Costs

- i. Material/ Equipment
- ii. Coating
- iii. Laying excluding ROU Compensation
- iv. Cathodic Protection
- v. SCADA and Telecom
- vi. Civil & Terminal Facilities
- vii. Land for SV Stations & Terminals

(B) Compressor Station (including equipment)

(C) Owner's Expenses

- (D) Designer Expenses.
- (E) Other Equipment(Not included in A & B)
- (F) Line Pack

On analyzing this data it was concluded that due to the insufficient number of pipelines and inadequate (head wise) statistical data under each category of pipeline, it was not possible to arrive at common normative figures for assessment of capex across all categories of pipelines.

PNGRBs view is that, it would however be possible in case of individual pipelines (within a category of pipelines) to attempt a “like to like comparison” (as stipulated in the regulations) in order to arrive at a benchmark if there is enough correspondence between two or more pipelines in that category. This is the criteria cited in the Tariff Regulations (refer para 5.2). In the case of cross country pipelines greater than 1000 kms in length, there are three pipelines (EWPL of RGTIL, DVPL-GREP Augmentation of GAIL and DBPL of GAIL) in this category. The physical details of these pipeline networks (as given in PNGRBs authorization / acceptance of authorization orders) are as follows:

<b>Description</b>	<b>EWPL</b>	<b>DVPL GREP</b>	<b>DBPL</b>
Length of Trunk Line	1375 KM	1115 KM	997
Trunk Pipeline Diameter	48”	48”	18”to 36”
Spur Line	85 KM	165 KM	417 KM
Spur Pipeline	8” to 30”	12”& 16”	8” to 18”

Diameter			
Date of Commissioning	01.04.2009	01.04.2010	18.02.2013

From the above table it is noted that EWPL and DVPL GREP have common trunk line diameter, have lengths which are comparable and have been commissioned within a period of one year of each other. Thus these pipelines have been commissioned at the same time, their lengths are similar and the diameters of the trunk lines are also the same. In view of similarity in terms of pipeline diameter, length of trunk pipeline and date of commissioning, the data and information regarding capex for EWPL and DVPL-GREP can be used for carrying out a “like to like comparison” of capex.

(2) Appropriateness of the pipeline design and the operating philosophy with regard to maximum allowable operating pressure.

Appropriateness of pipeline design and operating philosophy is one of the criteria for evaluation of capex in the Tariff Regulation (refer para 5.2).

RGTIL has submitted the following information/documents to PNGRB regarding the design of EWPL:-

- a. East-West Gas Pipeline project - Technical System Optimization study report – prepared by Bechtel dated 30.08.2005
- b. EWPL Gas pipeline project - Cost Estimates – prepared by Bechtel dated 1.9.2005

- c. “EWPL Hydraulics and Process report of the EWPL” prepared by Gulf Interstate Engineering (GIE) dated 25.09.2006.
- d. File named “Explanatory Paper - Bechtel report” containing note titled Cost Estimates of EWPL (undated);

In the explanatory note [mentioned at (d) above], M/s RGTIL has stated that M/s Bechtel USA (Bechtel) had carried out a Technical Optimization Study of EWPL and suggested the following design configuration for EWPL System.

- (i) *EWPL system should have a 48” single diameter pipeline with initially 1 and ultimately 7 mainline Compressor Stations. The proposed design considered 75% (i.e. 60 MMSCMD) of design capacity (80 MMSCMD) to be delivered to end of the pipeline. The key recommendations of Bechtel’s study viz. 48” uniform diameter trunk pipeline, API 5L grade X- 70, class #600 rating, HSAW / LSAW line pipes etc. were adopted for the project go-ahead.*

Subsequent to this pipeline design study by Bechtel, RGTIL has stated that it got the compressor facilities on the pipeline further re-worked by an Engineering Consultant, M/s Gulf Interstate Engineering (GIE) Houston. RGTIL has stated that this was done after considering the then emerging gas upstream and downstream potentials and considering that EWPL, due to its geographical location, will be an important part of the emerging concept of common carrier pipeline of a National Gas Grid. According to RGTIL, this design required delivery of entire design capacity of

80 MMSCMD to the end of pipeline, as against design of approximately 60 MMSCMD to the end of the pipeline considered in Bechtel Study.

Based on this new design re-worked requirement of the compression facilities and other factors of the then ongoing engineering so that the final Configuration of EWPL transmission system mainly comprised of:

- i. 1,375 km 48” diameter trunk pipeline,*
- ii. 9 mainline compressor stations (CS-01 to CS-09) for deliverability of 80 MMSCMD to the end of pipeline,*
- iii. 2 End-of-the-Pipeline compressor stations (CS-10A and CS-10B) for delivery of gas at required pressure to connected networks of GSPL and GAIL,*
- iv. 7 spurs and interconnects including Metering and Regulating (M&R) stations.*

Thus, the major difference between the first design (by Bechtel) and the second design (by GIE) adopted (within a space of 12 months) for EWPL is that the first (Bechtel) design can achieve delivery of 75% (60MMSCMD) of the design capacity (80 MMSCMD) to the end of the pipeline. while the second (GIE) design can achieve delivery of 100% (80MMSCMD) of the design capacity to the end of the pipeline. Consequently, the first (Bechtel) design considered 7 mainline compressors in the pipeline which were to be duly phased out over a number of years with only one compressor being installed on initial commissioning. The second (GIE) design considered installation

of 11 compressors, all at the time of initial commissioning. RGTILs explanation for this significant change in design is that the reconfiguration of design was necessitated due to emerging upstream and downstream gas potentials. This has resulted in additional cost of installing 4 compressors and also that all 11 compressors have been installed during initial commissioning of the pipeline instead of a phased manner as envisaged earlier. As per the information provided by RGTIL in the explanatory paper, the change in the design i.e. design reconfiguration resulted in additional cost. In light of the above, RGTIL was asked (vide its communication dated 25.09.2013) to clarify the following:

- (a) What changes happened in the emerging upstream and downstream gas potential between September'2005 and September'2006 which resulted in RGTIL decision to change the pipeline design.
- (b) How was this change in pipeline design appropriate in the context of creating and sustaining an efficient infrastructure as required under the provisions of Tariff Regulations.

RGTIL in its reply has stated that:

- a. RGTIL hired the services of Bechtel International, USA in 2005 to perform Conceptual and Optimization Study of the proposed East West gas pipeline (EWPL).
- b. The key objective of the study was to suggest an appropriate gas pipeline configuration for connecting large gas reserves on the east coast to a potentially deficit and rapidly growing gas

market in western and northern regions of India. That was the genesis of East West Pipeline.

- c. The overall gas demand in India at that time was estimated to be over 100 mmscmd. It was, therefore, decided that EWPL should be designed for at least 80 mmscmd, which was also the projection of ultimate production from KG D6, the sole source of domestic gas on the east coast. A large share of the gas demand was in the northern and western regions.
- d. While several scenarios were considered in Bechtel study from the point of view of sensitivity analysis, Scenario 3D which considered 75% (i.e. 60 mmscmd) of design capacity (80 mmscmd) to be delivered to end of the pipeline was recommended from long term sustainability point of view. The study recommended DN 1200 (48 inch) single diameter pipeline with initially 1 and ultimately 7 mainline compressor stations.
- e. Bechtel study, in its recommendation, did not consider the common carrier obligation i.e. building additional 33% capacity on open access beyond contracted / firm volumes. Hence its implications if any on the configuration were not part of Bechtel study. Since Bechtel study recommended that pipeline diameter greater than DN 1200 (48 inch) would not be feasible due to line pipe availability and other logistics constraints, it was decided that the common carrier obligations

should be optimally met by reworking of the compression facilities in the pipeline.

- f. The common carrier capacity of 20 mmscmd (i.e., 33% of 60 mmscmd) had to be made available anywhere across the pipeline. It was also well established at that time that the projected gas demand in western and northern regions was much more than 60 mmscmd. In order that EWPL design was able to meet the common carrier obligation across its entire length, it was logical that its design should be such that it is possible to deliver 80 mmscmd to the end of the pipeline.
- g. Accordingly, the design basis of final configuration was adopted to deliver 80 MMSCMD towards end of the pipeline. As stated above, keeping the pipeline diameter as DN 1200 (48 inch) as recommended by Bechtel, the compressor facilities were re-worked by Engineering Consultant M/s Gulf Interstate Engineering (GIE) Houston. The required compression at the end of the pipeline for feeding into existing networks of GAIL, GSPL etc. as well as requisite spurs / interconnects including associated M&R facilities were also not included in Bechtel study since necessary agreements with GAIL, GSPL etc. were entered into subsequently. The above stated design basis necessitated an incremental compression requirement. Due to resultant change in compression ratios and the related increase in gas temperature at the outlet of compressors, the gas after-coolers were provided to reduce the temperature of gas entering into the buried pipeline to acceptable levels.

- h. The EWPL, as installed, would be appropriate in the context of creating and sustaining an efficient infrastructure in view of:-
- i. Its strategic location to expand and branch out towards central, southern and northern parts of India to be a backbone of National Gas Grid;
  - ii. Its providing unconstrained and bidirectional flow capacity between east and west coasts / regions of India with meeting common carrier obligation anywhere along the trunk pipeline;
  - iii. Its connectivity to major existing gas networks (of GAIL, GSPL etc.) as well as its connectivity / nearness to existing / proposed RLNG terminals, thereby providing gas transport capability across India for long term sustenance.

RGTIL has contended that the reconfiguration of the pipeline design and installation of additional compressor stations has been necessitated to ensure deliverability of the entire volume to the end of the pipeline. RGTIL has justified the additional cost outlay for this reconfiguration on the ground that it is for seeking deliverability of the entire volume from its pipeline source (KG D6) to exit point at the end of the pipeline to meet the increasing demand in the western and northern region customers. RGTIL has therefore considered a pipeline design for EWPL where the capacity of the pipeline is 80 MMSCMD (as in the Bechtel study) but, unlike the Bechtel study, is based on the assumption of a single source (entry point) and full withdrawal of the entire volume of gas at the end based on flow of natural gas on a

unidirectional basis. The factual situation is that, EWPL's customers are spread over the length of the pipeline, in view of the demand centers located along the length of the pipeline. RGTIL has created exit point facilities at various places before the end of the pipeline to cater to these demand centers. Thus the actual operating philosophy of EWPL is based on multi-source and multi-exit point parameters. The technical details of the EWPL (based on reports provided to PNGRB by RGTIL) also show that a provision for reverse flow has been kept in compressor stations from CS-03 to CS-09; valves have been provided on the upstream and downstream bypass valve of each station from CS-02 to CS-09 to enable supply or intake of gas along the route of the EWPL. This suggests that the design philosophy, (as originally conceived in the Bechtel study), with a lesser number and phased installation was geared towards optimizing the pipeline configuration based on multi-source and bi-directional flow of gas which is in line with creating an efficient natural gas pipeline infrastructure and which is the actual situation on the ground for EWPL.

RGTIL, in its response, has also stated that the Bechtel study, in its recommendation, did not consider the common carrier obligation i.e. building additional 33% capacity on open access beyond the contracted / firm volumes. RGTIL has further stated that in order that EWPL design is able to meet the common carrier obligation across its entire length, it was logical that its design should be such that it is possible to deliver 80 mmscmd to the end of the pipeline for which purpose the reconfiguration is justifiable.

In this regard, the time when the common carrier obligation was in the knowledge of RGTIL is relevant. The EWPL pipeline was authorized by the Central Government (through MoP&NG) prior to the promulgation of the PNGRB Act. In this context some of the relevant portions of the communications issued by MOP&NG are as follows:-

- a. MoP&NG letter dated 04.08.2004 to RGTIL(then known as Gas Transportation & Infrastructure Co. Ltd), mentions that *“the capacity of the pipeline will be determined taking into account the total demand of the parties for pipeline booking, and the 25% extra capacity which will be available on principles of ‘open access’.”*
- b. MoP&NG letter dated 18.08.2004 to RGTIL(then known as Gas Transportation & Infrastructure Co. Ltd) mentions that *“the capacity of the pipeline will be determined taking into account the total demand for capacity booking plus 25% extra capacity.”*
- c. Notice inviting expression of interest issued by MoP&NG dated 18.08.2004 (which appeared in the press on 28.08.2004) mentions that *“the above pipelines would have 25% capacity to be offered on common carrier basis for use by any one other than the owner and those taking capacity as above.”*

Thus the government (through MoP&NG) has on three separate occasions in year 2004 stated that the transporter’s pipeline would be subject to the mandatory common carrier obligation of 33% of its own use capacity over and above the capacity for own use and contracted/firm capacity which comes to 25% of total capacity. RGTIL

was, therefore, right from the start, aware of its obligation for creating the mandated common carrier capacity (conveyed by MoP&NG as far back as August 2004) at the stage when the initial design for the pipeline was finalized in the Bechtel study conducted in the year 2005 (which is more than one year thereafter).

In view of the above, it is for consideration whether the earlier (Bechtel) design of EWPL should be considered as the appropriate design rather than the change in design adopted by RGTIL.

B. Future Capex of pipeline:

RGTIL Submission on future Capex for finalization of tariff: In its submission (dated 22.07.2010 and 18.02.2013) for determination of final initial unit natural gas pipeline tariff, RGTIL, has projected an additional future capital expenditure which has been phased over the period from 2010-11 to 2014-15. In its subsequent submissions (dated 21.11.2013 and 24.12.2013), RGTIL has proposed to consider actual capex upto 2012-13 and projected a revised estimate of future capex for the period beyond 2012-13.

Comments on RGTILs submission on future Capex: Since the actual capex details for the period 2010-11 to 2013-14 are available now, it is proposed to consider the same for the purpose of determination of transportation tariff. Capex for the subsequent period i.e. 2014-15 onwards would be evaluated based on the capex incurred in earlier years.

C. Maintenance Capex of pipeline :

Provisional Tariff Order on Maintenance Capex: It was stated in the provisional tariff order that while it was found appropriate to consider the maintenance capex in the tariff computations, conservatively, it was being restricted to 70% of the claimed amount on a conservative basis and a final view would be taken when details of actual expenditure are available at the time of tariff review.

RGTEL Submission on Maintenance Capex for finalization of tariff: In its submission (dated 22.07.2010 and 18.02.2013) for determination of final initial unit natural gas pipeline tariff, RGTEL, has projected maintenance capex over a 25 year period from 2013-14 to 2028-29. In its subsequent submissions (dated 21.11.2013 and 24.12.2013), RGTEL has proposed to consider actuals upto 2012-13 and has projected a revised estimate of future maintenance capex for the period beyond 2012-13 upto 2028-29.

Tariff Regulations on Maintenance Capex : The Tariff Regulations envisage consideration of the historical cost of acquisition, including the cost of any subsequent replacement or improvement or modification required in the natural gas pipeline project over its economic life based on the principle that this is required for creating and sustaining an efficient infrastructure.

Tariff Regulations (Attachment 2 to Schedule A) state the following for treatment of fixed assets.

*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.*

Comments on RGTILs submissions on Maintenance Capex: The Tariff regulations make no reference to Maintenance Capex being considered as cost of fixed assets. The expenditure proposed as maintenance capex needs to be examined in the light of clarification given in Tariff Regulations. From the details provided in support of this expenditure, “maintenance capital expenditure” is in the nature of periodic major overhauling/maintenance of the equipments. These expenses are not those which will result in enhancing the life of the equipment, rather they are for preserving the normal economic life of the assets. Hence it is proposed that these not be considered as part of capex but instead to evaluate these as part of opex (refer para 5.3 below which deals with opex).

### 5.3. Operating Expenses (Opex)

Provisional Tariff Order on opex : It was stated in the provisional transportation tariff order (dated 19.04.2010) that in the absence of audited data on actual operating costs in the first year of operation, the entity's estimated operating costs were being considered as these were in line with the normative assessment of 7 to 8% of the capex and were being accepted. It was further stated that the actual data shall be considered at the time of finalization of the initial unit natural gas pipeline tariff. Also annual opex inflation in the provisional tariff order was considered @ 4.5% keeping in view the concept of DCF as well as levelized tariff determination over the economic life of the pipeline. It was also stated that any risk projection on account of exchange fluctuation was being ignored given the strengthening of the rupee.

RGTIL's Submission on opex for finalization of tariff: RGTIL, in its submission, has made its opex claim in three parts.

- (i) System Use Gas (SUG)
- (ii) Other operating and administrative costs
- (iii) Annual inflation of opex.

These have been discussed below:

#### (i) System Use Gas as part of Opex:

RGTIL has stated that System Use Gas (SUG) includes natural gas required for the following, based on the normative requirement at various level of capacity utilization.

- Running of Gas Turbine driven Compressors
- Running of Gas Engine Generators

- Gas venting in atmosphere during maintenance activities

Subsequently, when RGTIL was asked to provide break up of actual consumption of SUG, it has provided the breakup under the following heads:

- Gas consumed in Gas Turbine Compressors and Gas Engine Generators
- Maintenance Gas Consumption
- Unaccounted Gas

RGTIL has, besides including gas consumed in Gas Turbine Compressors and Gas engine generators in SUG also included gas venting in atmosphere during maintenance activities (which later was referred to as “maintenance gas consumption”). In addition RGTIL has also shown unaccounted gas as part of system use gas.

For projecting the future cost of SUG, RGTIL, (in its submission dated 21.11.2013), has considered the price of gas at the rate of \$ 8.4/MMBTU plus marketing margin from 2014-15 onwards. RGTIL has also considered currency devaluation at the rate of 2.5% per annum, which, it claims is based on last 15 years actual currency variations while projecting the future cost of SUG.

Comments on RGTILs submission on SUG: Clause 5 (2) (b) of Schedule A of the Tariff Regulations which details the items to be considered as operating costs for calculation of tariff allows fuel used in running the pipeline and this fuel includes natural gas consumed in the pipeline system as fuel viz.:

*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);*

RGTIL has, besides including gas consumed in Gas Turbine Compressors and Gas engine generators in SUG also included gas venting in atmosphere during maintenance activities (which later was referred as “maintenance gas consumption”). In addition RGTIL has also shown unaccounted gas as part of system use gas.

As quoted above, the Tariff Regulations allow the cost of gas used in the pipeline as system use natural gas (SUG) allowable as opex. However, as per the regulations, this is only to the extent that this gas is consumed in the natural gas pipeline as a fuel to run the pipeline itself, e.g. for running the compressors in the pipeline. The Tariff Regulations do not provide for cost of any gas on account of “gas venting during maintenance operation” (maintenance gas consumption) or any “unaccounted gas” under the head SUG, as claimed by RGTIL. RGTIL has also not mentioned what it means by “Unaccounted Gas” under the head SUG. As regards “gas venting” it is also noted that there is no justification for building in the cost of “vented gas” in the transportation tariff as this gas is actually not being transported to or used by the end consumer. A natural gas pipeline, as per pipeline design, is to be totally welded and leak-proof. Loading “gas venting” cost to transportation tariff therefore results in placing a burden on the consumer for inefficiency of the pipeline operator. Gas venting would result in the release of methane which is a green house gas which causes atmospheric warming at a much higher rate than an equivalent amount of carbon dioxide discharge. Therefore as “gas venting” and “unaccounted gas” are

not allowed as part of opex as these are not allowed under the regulations and further for the other reasons cited above. It is proposed to allow only the gas consumed as a fuel for running the natural gas pipeline (i.e. compressors and engine generators) as allowable opex under SUG.

As regards the cost of the SUG, it is proposed to consider the prevailing price of gas as notified by the Government for computing actual and projected costs in future years. As regards projection of currency devaluation for computing future SUG cost, it was stated in the provisional tariff order that any risk projection on account of exchange fluctuation was being ignored given the strengthening of rupee. Since the risk of exchange fluctuation has to be considered for the period 2014-15 onwards, and in view of current scenario of stable/appreciating rupee, it is proposed not to project any exchange depreciation in future projections.

ii) Other operating and administrative costs as part of Opex:

RGTEL has, besides SUG, submitted its other opex claim on the basis of actual costs for the period 2009-10 to 2012-13. However, for opex projections for FY 2013-14, RGTEL has in its submission dated 21.11.2013, estimated opex under various heads of expenditure (such as Salaries & Wages, Logistics, Support Services, HR related expenses, Statutory expenses, Administrative expenses, Finance related expenses, Repairs & Maintenance, Insurance, projected legal expenses on ROU compensation, royalty demands and provision for cenvat credit not allowed by authorities) as part of opex, bifurcating them under variable and fixed/semi variable costs. RGTEL has claimed that these are its updated estimates” for 2013-14. These “updated estimates” for 2013-14 have then

been escalated at an annual rate of 8.97% for FY 2014-15 and at the rate of 5.86% for future years of the economic life of the pipeline.

Comments on other operating and administrative costs: The actual opex outgo for the period 2009-10 to 2013-14 is proposed to be considered for opex computation for EWPL instead of the higher “updated estimates” considered by RGTIL for 2013-14. As regards future projections of opex for 2014-15 onwards for future years of economic life of the pipeline, it is proposed that the actual opex incurred in the most recent year (2013-14) would be projected forward by using an annual rate of inflation. During the industry group exercise on normative capex and opex the norm proposed for opex for new natural gas pipelines (excluding gas consumed for running compressors in the pipeline) was a ceiling of 2.5% of capex. It is proposed to compare the proposed opex (excluding gas used for running the compressors in the pipeline) with the norm of 2.5% and allow whichever is less.

Annual Inflation of opex: RGTIL has considered inflation of opex at 8.97% for the period 2009-10 to 2014-15. For the subsequent economic life of the pipeline (i.e. the period 2015-16 to 2033-34), it has considered annual inflation of opex at the rate of 5.86%.

Comments on RGTILs submission on annual inflation of opex: RGTIL has considered the impact of annual inflation rate of opex at the rate of 8.97 per cent (which according to RGTIL is the WPI inflation rate for 2009-10) for the year 2013-14 to 2014-15 and at the rate of 5.86 percent for subsequent years. This as per RGTIL submission reflects the annual inflation (WPI) data for FY 2009-10 (8.97%) which has been taken to project the annual inflation of opex from 2013-14 to 2014-15) and the average of the annual

inflation (WPI) data for the fifteen year period up till 2012-13 (5.86%) which has been taken to project the annual inflation for the period 2014-15 to 2033-34.

The rate of 8.97% as annual inflation of opex for a single period between 2013-14 and 2014-15 based on the rate of annual inflation (WPI) prevalent in 2009-10 does not reflect a consistent projection of the annual opex inflation rate. As regards the rate of 5.86% which RGTIL claims is the average of the last 15 years inflation rate, this is a projection based on past period whereas a forward looking projection is put out by the central bank, i.e. Reserve Bank of India (RBI). The RBI has been conducting the Survey of Professional Forecasters on a quarterly basis since September 2007. The most recent survey [29<sup>th</sup> round (Third Bi-monthly: July 2014)] projects mean WPI inflation of 5.6% over the next 5 years and 5.3% over the next 10 years respectively. The minimum WPI for the same 5 and 10 year period is projected at 4.8% and 4.5% respectively. As can be seen from the data, the projected rate of inflation shows a declining trend as the period increases from 5 to 10 years. Over a horizon of 20 years, an average WPI @ of 4.5% is therefore a reasonable assumption. These projections would in any case get substituted with the actual figures as the regulation provides for the substitution of the projections made over the economic life of the pipeline with the actual capex/opex on a prospective basis at the time of periodic tariff review.

In view of the above and to maintain consistency and uniformity PNGRB has been following a uniform basis for estimating the annual opex inflation @ 4.5% (over a 20 year period) and this rate is proposed to be considered for EWPL also.

Maintenance capex as part of Opex: RGTIL, in its submission, has also considered under capex certain expenditure as maintenance capex. This was discussed in para 5.2 earlier (under the head Capex). The details provided in support of this expenditure, “maintenance capital expenditure” show that it is in the nature of periodic major overhauling/maintenance of the equipments. As these expenses are not those which will result in enhancing the life of the equipment, and are for preserving the normal economic life of the assets they are being evaluated as part of Opex. As regards opex, it is noted that the “maintenance capex” claim of RGTIL is based entirely on projection of expenditure over the next 20 years of the economic life of the pipeline. While no such “maintenance capex” has actually been incurred in the first five years of the economic life of the pipeline. These projections of future “maintenance capex” are therefore not being considered for computing the opex for pipeline tariff. Any such expenditure, when actually incurred would be evaluated and allowed during tariff review.

**5.4. Working Capital :**

Provisional Tariff Order on working capital:

It was stated (para 3.7) in the provisional transportation tariff order (dated 19.04.2010), that other items like working capital, number of operating days, economic life, rate of return on capital employed etc have been considered as per the provisions of the Regulations. It was also stated that residual value adjustment as envisaged under the Tariff Regulations at the end of economic life of the pipeline which was not considered by RGTIL in its provisional tariff proposal had been appropriately carried out.

RGTIL Submission for finalization of tariff:

RGTIL in its submission for finalization of tariff has submitted its total working capital requirement considering 345 working days for the pipeline to arrive at the working capital requirement.

Comments on RGTIL Submissions on working capital:

As per the provisions of the Tariff Regulations, the level of working capital for a year to be considered in the calculations is (a) 30 days of operating costs (excluding depreciation) and (b) 18 days tariff receivables on a normative basis. RGTIL has considered 345 days as operating days in a year. As per the Access Code regulations, the Board has taken 10 days as the period of operation and maintenance shutdown of a pipeline. On this basis, there would be 355 working days for a pipeline in one financial year. This would result in a minor adjustment on a year to year basis to ensure uniformity and consistency across all natural gas pipelines.

**5.5 Line Pack:**

Line pack is the value of gas which always remains in the pipeline and as per regulations it is to be considered as cash outflow in the initial year and to be considered as cash inflow in the last year of the economic life of the pipeline.

**5.6 Terminal Value:**

Provisional Tariff Order: It was stated (para 3.7) in the provisional transportation tariff order (dated 19.04.2010), that residual value adjustment as envisaged under the Tariff Regulations at the end of economic life of the pipeline which was not considered by RGTIL in its provisional tariff proposal had been appropriately carried out.

RGTIL, in its tariff submission, has considered terminal value of the assets as at the end of the economic life (to be considered as cash inflow at the

end of economic life of the pipeline as per the Tariff Regulations) after addition for working capital and line pack.

Any variation in the capex figures (as mentioned under the head Capex) would result in a consequent recalculation of the terminal value.

## **5.7 Volume Divisor:**

Provisional Tariff Order on Volume Divisor: As regards capacity of the EWPL, it was stated in the provisional transportation tariff order (para 3.5 of the order dated 19.04.2010) that the design capacity for EWPL has been provisionally taken at 80 MMSCMD as per submissions made by RGTIL and any adjustments between the capacity provisionally adopted and the capacity to be validated by the Board under the relevant regulations would be considered at the time of finalization of the initial unit natural gas pipeline tariff.

It was further stated in the provisional transportation tariff order (para 3.9), that as provided in the Regulations, the volume divisor figures for each of the first five years of operations of the EWPL work out to 36 mmscmd (for 2009-10), 42 mmscmd, 48 mmscmd, 54 mmscmd and 60 mmscmd (based on total pipeline capacity of 80 mmscmd and common carrier capacity of 20 mmscmd). It was further stated in the provisional tariff order that, however, RGTIL had (in their provisional tariff proposal), submitted the volume build up as 60 mmscmd for 2009-10 and 80 mmscmd thereafter which were much higher than the normative percentage to be taken as per regulations. While submitting these volumes, RGTIL had stated that these are the projected volumes which could change significantly based on capacity booking by shippers. Subsequently, the entity, (during provisional tariff proceedings), submitted that in the first year, volume flow in the

pipeline is around 40 mmscmd as against estimated 60 mmscmd and future volumes are also expected to be lower than that submitted during the initial filing. The entity, (in the provisional tariff proceedings), requested the Board to consider the revised volumes of 40 mmscmd for the first year (2009-10) and 60 mmscmd for the next four years. It was stated in the provisional tariff order that while the revised volumes (submitted by RGTIL) are higher than the normative level, it was decided to adjust the first year (2009-10) volumes based on actuals to 40 mmscmd (instead of earlier submission of 60 mmscmd) as it was still higher than the normative level. The volumes for the other four years were taken at 80 mmscmd. It was stated in the provisional tariff order that any modification of the estimated volumes for the subsequent years would be considered on the basis of actuals subject to final capacity determination.

RGTIL Submission on volume divisor for finalization of tariff: RGTIL has considered the following capacity of EWPL in their various submissions for finalization of provisional transportation tariff:

Sl. No.	Submission Date	Capacity Considered by RGTIL	Remarks
1	22.07.2010	80 MMSCMD	Capacity has been taken by RGTIL as mentioned in PNGRBs provisional pipeline authorization dated 19.04.2010.
2	18.02.2013	85 MMSCMD	Capacity has been taken by RGTIL as mentioned in PNGRBs final pipeline authorization dated 19.03.2013
3	21.11.2013	85 MMSCMD	Capacity of 85 mmscmd has been taken by RGTIL for 2009-10 as taken in PNGRBs final pipeline
4	24.12.2013	70 MMSCMD	

		for 2010-11 52 MMSCMD for 2011-12 45 MMSCMD from 2012-13 onwards	authorization dated 19.03.2013. For subsequent periods the capacity has been taken by RGTIL is based on its own assessment and submission to PNGRB for revising the pipeline system capacity.
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RGTIL in its submission has considered (as stated in row 4 of the above table) the pipeline system capacity of 85 MMSCMD for the year 2009-10, 70 MMSCMD for the year 2010-11, 52 MMSCMD for the year 2011-12 and 45 MMSCMD from 2012-13 onwards. Based on the system capacity, RGTIL has proposed, the following volume for computing the tariff as per Tariff Regulations.

Sl. No.	Particulars	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15 onwards
1.	Capacity (MMSCMD)	85	70	52	45	45	45
2.	Common Carrier Capacity*	21.3	17.5	13.0	11.2	11.2	11.2
3.	Own Capacity (Row1-Row2)	63.7	52.5	39.0	33.8	33.8	33.8
4.	Normative Volumes**	38.3	36.8	31.3	30.5	33.8	33.8
5.	Actual / Projected Volumes	40.7	58.6	51.1	34.5	21.4	20.0
6.	Volume Credit (Row 5 – Row 4)	2.3	21.8	19.8	4.1	-12.4	Not applicable

7.	Cumulative Volume Credit	2.3	24.1	43.9	48.0	35.6	Not applicable
8.	Volumes for Tariff computation after adjusting volume credit***	40.7	58.6	51.1	34.5	21.4	33.8

\*Common carrier capacity is 25% of total pipeline system capacity given in row 1

\*\* Normative volumes are 60%, 70%, 80%, 90% and 100% of own capacity given in row 3 in the first five years of the pipeline.

\*\*\* For computing volumes for tariff computation in a specific year in the first five years, first actuals (Row 5) or actuals as adjusted with cumulative volume credit (Row 5 adjusted with Row 7) are taken. If either of these is higher than the normative volumes (Row 4), then actual volume is to be considered. If both of these are lower than normative volumes (Row 4), then normative volumes is considered in the first five years of the pipeline operations. For 6<sup>th</sup> year onwards RGTIL has projected nil utilization of common carrier volume.

As regards projected volumes from the 6<sup>th</sup> year (2014-15) onwards, RGTIL has stated that its common carrier capacity will remain totally unutilized considering the current and projected gas supply scenario, hence it has projected nil common carrier volume for all future years.

Comments on RGTIL Submission on volume divisor: According to the provisions in the Tariff Regulations, common carrier capacity utilization is normatively projected as nil for the first five years of pipeline operations. Also, the system capacity (after excluding entire common carrier capacity) is to be considered as volume divisor to be ramped up over a 5 year period so that it is normatively taken at 60%, 70%, 80%, 90% and 100% of the

system capacity (after excluding entire common carrier capacity) in the first 5 years of operation of a natural gas pipeline.

The Board has determined the total system capacity of EWPL at 85 mmscmd in 2009-10 and 2010-11 and at 95 mmscmd for 2011-12. Therefore, the system capacity (excluding the common carrier capacity which is 25% of total system capacity) which would come to 63.75 mmscmd for the year 2009-10 and 2010-11 and 71.25 mmscmd for the year 2011-12 is proposed to be considered to arrive at the volume divisor for the first 3 years of operation of EWPL. As capacity for the subsequent years is yet to be determined, it is proposed that that latest available system capacity (after excluding entire common carrier capacity) i.e. the same volume divisor as for the year 2011-12 (71.25 mmscmd) be considered for the two years i.e. 2012-13 and 2013-14 for completing the first five year period. Also, as per Tariff Regulations, set off for excess volumes achieved over normative volumes [60%, 70%, 80%, 90% and 100% of the system capacity (after excluding entire common carrier capacity)] during any of the first five years of pipeline operations, is allowed as adjustment for shortfall in any other year of these five years. This means that a set-off of the volume credit (i.e. excess of actual volumes over normative volumes in previous years), if any, shall be permitted when actual volumes are lower than the normative volumes in any of these first five years of natural gas pipeline operations.

As regards projection of pipeline volumes, the contract carrier capacity (which is 75% of the total pipeline system capacity) is to be taken at full utilization. As regards the common carrier capacity actual volume utilization under common carrier capacity (which is 25% of the total

pipeline system capacity), while in the first five years of pipeline operations this is normatively taken as nil or actuals whichever is higher, for future years it needs to be projected. In the provisional tariff order (dated 19.04.2010), the common carrier capacity utilization beyond the first five years was projected at 100%. RGTIL, in its submission for final tariff determination has projected this at nil for all the future 20 years of pipeline operations. RGTIL has made this projection based on the reasoning that its common carrier capacity will remain totally unutilized considering the current and projected gas supply scenario. While the current utilization of common carrier capacity in the pipeline is nil including in the 6<sup>th</sup> year, it is projecting a scenario of nil utilization over next 20 years is a too conservative a projection given the dynamics of natural gas production and supply. Given that there would be further development of natural gas fields in the Cauvery basin area and setting up of LNG terminal/ FSRU on Andhra Coast in the medium term (2017-18 onwards), the natural gas supply scenario is likely to see substantial increase from 2018-19 onwards. It is therefore proposed to project common carrier capacity utilization of the pipeline as nil for the five year period from 2014-15 to 2018-18-19 as also projected by the pipeline entity. It is however proposed that, for the reasons given above, for the fifteen year period from 2019-20, the common carrier capacity utilization of the pipeline be projected at 100%.

Accordingly, year-wise numbers of volume divisor for each year of EWPL's operations is proposed to be considered as given in the table below:

Quantity in MMSCMD

Sl. No.	Year	1 (2009-10)	2 (2010-	3 (2011-	4 (2012-	5 (2013-

			11)	12)	13)	14)
1.	Capacity	85	85	95	95	95
2.	Common Carrier Capacity*	21.3	21.3	23.8	23.8	23.8
3.	Own Capacity (Row 1 – Row 2)	63.7	63.7	71.2	71.2	71.2
4.	Normative Volumes**	38.3	44.6	57	64.1	71.2
5.	Actual / Projected Volume	40.7	58.6	51.1	34.5	-
6.	Volume credit (Row 5 – Row 4)	2.4	14.0	(5.9)	(29.6)	-
7.	Cumulative Volume Credit	2.4	16.4	10.5	(19.1)	-
8.	Volumes for Tariff computation after adjusting volume credit***	40.7	58.6	51.1	53.6	71.2

\*Common carrier capacity is 25% of total pipeline system capacity given in row 1

\*\* Normative volumes are 60%, 70%, 80%, 90% and 100% of own capacity given in row 3 in the first five years of the pipeline.

\*\*\* For computing volumes for tariff computation in a specific year in the first five years, first actuals (Row 5) or actuals as adjusted with cumulative volume credit (Row 5 adjusted with Row 7) are taken. If either of these is higher than the normative volumes (Row 4), then actual volume is to be considered. If both of these are lower than normative volumes (Row 4), then normative volumes is considered in the first five years of the pipeline operations.

## 5.8 Return on Capital Employed

### RGTIL Submission for finalization of tariff:

- (i) Rate of Tax: The annual rate of return on the EWPL project has been computed by RGTIL using a rate of return of 12% and further grossing this up with the rates of corporate income tax applicable to each year. For this purpose, RGTIL has considered the basic corporate tax rate of 30% for the three years construction period prior to the commissioning of the pipeline in 2009-10 and for each subsequent year of the economic life 25 years from the year of commissioning of the pipeline and has further computed surcharge and education cess on the corporate tax rate as applicable for each of the years from 2007-08 to 2013-14. This translates to an allowable pre-tax rate of return of 18.09% for 2006-07, 18.18% for the year 2007-08 to 2009-10, 17.97% for the year 2010-11, 17.76% for the year 2011-12 to 2012-13 and 18.18% for 2013-14 onwards so as to arrive at a post tax rate of return of 12% for each year of the pipeline project.
- (ii) Cash inflow on account of tariff enhancement being applicable to prior periods : RGTIL, in its submission dated 24.12.2013, has stated that since the proposed final tariff is higher than provisional tariff, the annual revenues for the past period of FY2009-10 to FY 2012-13, appearing in the model will be higher than the actual revenues. According to RGTIL, since final tariff was not fixed upto 2012-13, the revenues for the past period in the DCF model would need to be based on the provisional tariff only while the additional one time revenue on account of charging the difference in final and provisional tariff for the

past period will be realized only during FY 2013-14. As per RGTIL, this represents a time lag in cash flows that cannot be ignored, therefore, in order to ensure correct application of DCF methodology, it would be appropriate to consider, while computing the tariff, this additional one time revenue for the past period as a cash inflow stream in FY 2013-14.

Comments on RGTIL Submission on Rate of Return:

- (i) Rate of Tax: Clause 2 of Schedule A of the Tariff Regulations mandates that natural gas pipeline tariff shall be calculated based on the DCF methodology after considering the reasonable rate of return (i.e. “twelve percent post tax” as per clause 3 to Schedule A) to be the projects internal rate of return.

This implies that the DCF methodology and the rate of return is to be applied to each separate pipeline project and not to the pipeline transportation entity as a whole. In the case of EWPL project, this is a new pipeline for which construction began in 2006-07 and was completed in 2008-09. The pipeline was commissioned in 2009-10. Therefore, during this 3 year period of construction (2006-07 to 2008-09) there is no income or revenue stream for the EWPL project, hence there is no tax applicable on the project during this 3 year period of construction. Accordingly to arrive at a “twelve percent post tax” as per clause 3 to Schedule A of the Tariff Regulations for the construction period 2006-07 to 2008-09, no grossing up for corporate tax rate is required. This translates to an allowable pre-tax rate of return of 12% for 2006-07 to 2008-09 for EWPL.

- (i) Cash inflow on account of tariff enhancement being applicable to prior periods : RGTILs submission is that since the final tariff for the prior periods will be recovered only post approval in a later year, hence the cash flow should also be considered as one time revenue in the actual year of receipt (i.e. FY 2014-15).

The Tariff regulations do not provide for discounting the cash flow based on actual realization of tariff of prior period in a later year. In fact, final tariffs can be determined at levels either above or below the provisional tariff, hence such an adjustment could be not just of one time revenue but could also be of refund of differential tariff. It may also be noted that as per provisional tariff order dated 19.04.2010 (refer para 3.9 of the provisional tariff order) RGTIL had initially proposed volume build-up of 60 MMSCMD in the first year and 80 MMSCMD for subsequent period and subsequently revised the proposed volume build up at actual volume of 40 MMSCMD achieved in the first year and projected 60 MMSCMD for subsequent years. These volumes were voluntarily offered by RGTIL for EWPL though as per the Tariff Regulations volume build up was allowable at lower levels (i.e. 36 MMSCMD for the first year and 42, 48, 54 and 60 MMSCMD for subsequent years) Thus the tariff determined in the provisional tariff exercise is attributable to RGTILs own submission that it would be achieving volumes higher than the normative volumes prescribed under the Regulations. Hence, besides the fact that such an adjustment is not allowable under the Tariff Regulations, in the case of RGTIL there is a further specific fact i.e. it had of its own volition computed and offered

projected higher volumes (and hence a lower tariff) in its provisional tariff submission.

## **5.9 Zonal Apportionment**

### RGTIL Submission:

RGTIL has submitted that zonal tariffs will be computed and provided after finalization of levelized tariff.

### Comments on RGTIL Submission:

EWPL is of length of 1375 kms (trunk line), hence the levelized transportation tariff is to be recovered based on a zonal recovery model (where each zone is of 300 kms). EWPL has two entry points i.e. the CS-1 at OT (Gadimoga) and Shell R-LNG terminal (Mora). In view of this, the zoning of the levelized tariff would be based on these two entry points. It is proposed to consider the zonal apportionment on the basis of the data [zonal volumes and percentage increment in tariffs between first and second zone (X%) and between second and third zone (Y%)] submitted by RGTIL at the time of zonal apportionment of provisional levelized tariff. For calculating the zonal tariffs, Zone-1 tariff would be adjusted so that NPV of the total revenue generation of all the tariff zones matches with the NPV generated by the levelized tariff as determined by the Board. Further, the increment in tariff for zone-2 over zone-1 (X%) and that of zone-3 over zone-2 (Y%) would be retained at the percentages submitted by RGTIL in its provisional submission.

6. RGTIL has filed a writ petition in Delhi High Court seeking to direct PNGRB to determine the final unit natural gas pipeline tariff for EWPL within a reasonable time frame laid down by the Hon'ble court. RGTIL has subsequently filed another appeal in Appellate Tribunal for Electricity

(APTEL) against the capacity determined by PNGRB for the year 2010-11 and 2011-12 and has sought an interim order from APTEL that the transportation tariff should not be determined based on the capacity determined by PNGRB and APTEL has accordingly granted this interim relief till the date of next hearing.. This public consultation document (PCD) is for seeking the views of stakeholders on various issues and parameters such as capex, opex, working capital, rate of return, line pack, terminal value, volume divisor (based on capacity) etc which may have impact on determination of tariff East West Pipeline (EWPL). The capacity of the pipeline has been discussed in para 2.1, 3.1 and 5.7 of the public consultation document. The purpose of the public consultation document is to provide an opportunity to stakeholders (including the entity concerned) to participate in the tariff determination process. The final initial unit natural gas pipeline tariff of the pipeline will, however, be subject to the orders of the Competent Tribunal / Court.

## **7. Views of stakeholders sought**

- 7.1 Determination of the final initial unit natural gas pipeline tariff is a time bound exercise. PNGRB solicits the views in writing of stakeholders on RGTIL's tariff filing for the EWPL within 21 days of the issue of this document at the following address.

*Secretary,  
Petroleum and Natural Gas Regulatory Board,  
1<sup>st</sup> Floor, World Trade Centre,  
Babar Road, New Delhi 110001.*

- 7.2 Stakeholders may forward their comments in the following format.

<b>Para No.</b>	<b>Comments</b>
Any other issue	

7.3 On the expiry of the period provided for stakeholder comments, the Board will forward the comments received to the entity concerned for it to submit comments within 15 days. The Board may, if required, also invite all stakeholders who have offered their comments and the entity concerned for discussions. The Board will after considering the tariff filings by the entity, the comments of stakeholders, the response of the entity concerned and discussions, if any, issue the tariff order.

(Upamanayu Chatterjee)

Secretary  
For and on behalf of the Board