KPMG

# Annexure

# Annexure A - Notice to the Reader

**Limitations**

- This engagement was carried out from 22 April 2016 to 17 August 2016 and the data and information relevant for this report was gathered during that period. We have not sought to update the data, information or report for events or circumstances after that date.
- We have relied on the documents, MIS reports, extracts and information provided to us by the management of Sui companies and the Authority and have not verified these from independent sources except wherever deemed necessary.
- The information gathering generally included meetings with key management personnel of the Sui companies and the Authority and desk-based research. Our fieldwork was conducted at the premises of SSGC and SNGPL and desktop searches and data analytics were made at KPMG Karachi office.
- Our study is also based on the information and studies available publicly at research portals, specialized institutes and KPMG knowledge base.
- In preparing our report, our primary source has been the information provided to us by the Sui companies and the Authority, local internal management information and representations made to us by management of the Sui companies. Details of our principal information sources are set out in Bibliography.
- The views expressed in this document are based on our understanding of current laws and regulations and the best practice followed by the companies. Whilst every effort has been made to ensure reasonable accuracy of the views and information provided in this report, no responsibility for any loss sustained to any institution acting or refraining from action as a result of the above views, can be accepted by KPMG.
- The report should not be considered as absolute assessment of UFG related practices of the Sui companies and is subject to the guidelines, instructions and regulations issued by the Authority from time-to-time and/or any other regulatory/competent authority.
- We have not conducted any audit, review or assurance engagement, thus have not provided any opinion on the performance or operational efficacy of the Sui companies and/or the Authority or any other organization associated to them. The recommendations provided in this document are based on our understanding of the current regulatory environment and the operations of the Sui Companies.
- Our analysis on theft by both registered and non-registered consumers does not consider the implication of IFRS 15 on financial statements of both the Sui companies.
- Our conclusions are based on the completeness and accuracy of the facts, assumptions and representations provided to us. If any of the information provided to us is not entirely complete or accurate, it is imperative that we be informed immediately, as this could have a material affect on conclusions.
- Our interpretation of the regulations and comments are not binding on the authorities and hence there can be no assurance that the authorities will not take a position contrary to our comments.
- We have relied upon the relevant information provided by the Sui companies and the administrative interpretations thereof. These practices may be subject to change, retroactively and prospectively, and any such changes could affect the validity of our conclusions. We are not responsible for updating our advice for changes in law or interpretation after the date hereof. We are not acting in the capacity of legal advisors of the Authority and Sui Companies. The comments provided herewith, therefore, do not constitute any legal opinion.
- Any advice in this document is not intended or written by KPMG to be used, and cannot be used, by a client or any other person or entity for the purpose of (i) avoiding penalties that may be imposed by any competent authority or (ii) promoting, marketing or recommending to another party any matters addressed herein.
- The limitations and constraints as to the availability of the information on the quantification and relating to the measurement of UFG contributing factors viz. gas theft, pipelines leakages together with and including incapability of Sui Companies regarding measurement metering plausibly limits us to propose a single benchmark UFG. Hence, we have studied and provided with UFG Allowance formula for the Sui companies in our study.
- We have considered UFG allowance rates applied internationally by developing and developed countries' regulatory authorities. Since there is no direct comparability of Sui Companies with any other company due to size and unbundling of company operations, we have proposed a relaxed allowances to reflect and translate demographical challenges and constraints of the country.
- We believe that the maintenance of adequacy and completeness of the information and related controls is the responsibility of the management of Sui companies. Due to inherent limitations in information management and internal controls, errors or fraud may occur and not be detected.
- Also, information and controls found to be accurate and functioning at a point in time, may later be found deficient because of the performance of those responsible and maintain them, and there can be no assurance that information and controls currently in existence will prove to be adequate and complete in the future as changes take place in the companies.
- The findings in our report are the result of performing the scope of work as defined in our Contract for Services "UFG Study", and based on information made available to us. We might have become aware of further information that could be relevant to the present report should additional work have been included in the scope of our terms of references, or additional information was made available to us.

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# Annexure A - Notice to the Reader (cont.)

- Where our report makes reference to statements of any individual, those statements are clearly indicated as such.
- Our work has not taken into consideration any tax, legal, civil or criminal law implication arising from the assessment carried out and reported in this document.
- The content of our report has not been reviewed by Sui Companies employees/ BOD / other officials.
- We have satisfied ourselves, so far as possible, that the information presented in our report is consistent with other information which was made available to us in the course of our work in accordance with the terms of our contract for services "UFG Study" and have relied on the documents and information provided to us by the management of the Sui companies and the Authority. We have not, however, sought to establish the reliability of the sources by reference to other evidence and have not verified these from independent sources except wherever deemed necessary.
- This document has been prepared specifically to provide an independent study of the UFG and TORs as described in our Contract; and accordingly should not be used for any other purpose.
- This document is confidential and for the internal use of the Authority. Accordingly, the circulation of this document should be restricted and should not to be distributed to any person other than the management of the Authority or referred to or quoted, in whole or in part, without our prior written consent except as specifically provided in terms and conditions annexed to our contract.
- In the event KPMG is requested pursuant to subpoena or other legal process to produce its documents relating to this engagement for the Company in judicial or administrative proceedings to which KPMG is not a party, the Authority shall reimburse reasonable expense incurred in responding to such requests.
- Limitations exist regarding availability of demographical information for the comparable countries and UFG related information relating to Pakistan and comparable countries which inter alia include YoY increase in gas pipelines, per capita consumptions, historical trends of gas consumer, change in networks from urbanized to rural network, etc. Had such additional information been available to us, our recommendations to the study might have differed from the one provided in the report.

### Confidentiality

- This report addresses factual issues and does not consider legal issues. We have undertaken the work described in accordance with the objectives of this report. In light of this, the report should therefore not be regarded as suitable for any other purpose and, to the extent that other persons choose to rely on the report, they do so at their own risk. We will accordingly accept no responsibility or liability in respect of it to persons other than OGRA.
- This report, is private and confidential, is for your information only, and has been prepared solely in connection with TORs set out in our Contract for services on "UFG Study" dated 21 April 2016. For the avoidance of doubt our report may not be disclosed, copied, quoted or referred to in whole or in part to anyone as permitted above without our prior written consent.
- Such consent, if given, may be on conditions, including without limitation an indemnity against any claims by third parties (and/or the signing of "hold harmless" letters by those 3rd parties) arising from the release of any part of our report.
- In addition, we have no obligation to update our report or to revise the information contained herein because of events or transactions occurring subsequent to the date of the completion of our fieldwork up to 17 August 2016.

### Legal Advice

- Although our report may contain references to relevant laws and legislation, we do not provide legal opinion on the compliance with such laws and our findings in this report are not to be construed as providing legal advice. Our discussion of the relevant laws is intended solely to facilitate the determination of applicable facts which may be relevant to the interpretation and/ or application of such laws. Should such interpretation require legal advice, we recommend that independent legal advice be obtained.
- We have not assessed legal and other risks which might arise for the Authority and / or Sui companies as a consequence of the events and facts described in this report.

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# Annexure B - Key Terminologies Used

| | |
|---|---|
| Access Arrangement | An arrangement between transporter and shipper or between transporter and other connected system operator as approved by the Authority. |
| AHA | [A homogenous area which means a part of the gas pipeline transportation system within which the same quality of gas is received or delivered, over a specified time period. |
| Available capacity | The difference between the technical capacity and contracted capacity. |
| Base Conditions | [Volume and gross calorific value which shall be measured at base conditions of 14,65 PSIA and 60 degree Fahrenheit, however, calorific value calculation shall be as defined in Gas processing Association (GPA), American Society for Testing Materials (ASTM) or ISO relevant standard. |
| Bulk / wholesale consumer | A consumer who purchases natural gas for resale |
| Capacity allocation | Maximum daily quantity (MO) in MMCFD of gas which can be delivered at a certain entry point and exit point, in accordance with relevant access arrangement |
| Common Carrier | Facility declared to be available by transporter to provide service to all shippers which discrimination. |
| Connected System | A natural gas transmission or distribution system or a natural gas production facility or a LNG terminal or a natural gas storage facility that is interconnected with transporter's gas pipeline transportation system. |
| Consumer | means and includes a person who receives a supply of gas under contract with a Gas Utility Company for the specific purpose of consumption and a premises that is connected to a gas pipeline for the purposes of obtaining supply of gas and includes a successor in- interest of a consumer and includes Compressed Natural Gas (CNG) Stations which receive gas for their own consumption and resale for vehicular use. |
| Contracted Capacity | Firm capacity that the transporter committed with gas producers, its consumers, aggregated volume contracted with other shippers for transportation or connected system operator at the time of capacity declaration in volumetric terms on daily, monthly or yearly basis under an access arrangement. |
| Custody transfer measuring facility | A facility which measures the quantity (in terms of volume and energy) and quality of natural gas for transfer of custody from one shipper to transporter. |

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# Annexure B - Key Terminologies Used (cont.)

| | |
|---|---|
| Entry Point | The flange at downstream of the meter at which the gas delivered by shipper or by connected system operator, is injected into the gas pipeline transportation system of the transporter. |
| EVC | An Electronic Volume Corrector, which corrects gas volume registered by the meter at line conditions to the base or contracted pressure and temperature values as stipulated in a gas supply contract between a Gas Utility Company and a consumer. |
| Exit Point | The flange at downstream of the meter at which the gas is withdrawn from the gas pipeline transportation system of the transporter. |
| Gas main | A distribution line that serves as a common source of supply of natural gas for more than one service line. |
| Gas pipeline transportation system | All transmission and distribution pipeline, spur pipelines, associated facilities downstream of gas producer's processing plant or shipper's delivery point, re-gasification terminal which are used for transportation of natural gas from one point to another, but shall not include the gas processing plant and re-gasification terminal pipeline within the battery limit of isolation valves of the plant or terminal. |
| Houseline | Pipes and fittings, approved and tested by the Gas Utility Company, on and located within any property boundary wall for which gas sale and purchase agreement has been executed or perimeter used for the purposes of receiving the supply or the consumption of gas. |
| Line pack | The volume of gas in segment of gas pipeline transportation system at a certain point of time at a defined gas specification, temperature and pressure. |
| Natural Gas | Hydrocarbons or mixture of hydrocarbons and other gases which at 60 degrees Fahrenheit and atmospheric pressure are in the gaseous state (including gas from gas wells, gas produced with crude oil and residue gas and products resulting from the processing of gas) consisting primarily of methane, together with any other substance produced with such hydrocarbons. |
| Negative Imbalance | The imbalance created by the shipper if the shipper off-takes more quantity of gas from the gas pipeline transportation system than injected into it. Shipper shall be allowed a negative imbalance of one percentage of contracted capacity as tolerance limit. Any negative imbalance over the tolerance limit shall be liable to charges as agreed in access arrangement, in addition to transportation charges. |
| Nomination | Notification process between the shippers and the transporter to schedule shipper's daily delivery and off-take quantities relating to each entry point and exit point, agreed in the access arrangement. |

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# Annexure B - Key Terminologies Used (cont.)

| | |
|---|---|
| Positive Imbalance | Imbalance created by the shipper if he off-takes less quantity of gas from the gas pipeline transportation system than injected into it. Shipper shall be allowed a positive imbalance of two percent of contracted capacity as tolerance limit and any positive imbalance over the tolerance limit shall be liable to charge as agreed in access arrangement, in addition to transportation charges. |
| RLNG | Natural gas obtained after gasification of liquefied natural gas (LNG) conforming to RLNG specifications as set out in Schedule III. |
| Sale | Sale of gas to consumers of gas including gas internally consumed by a Gas Utility Company in connection with its regulated activity. |
| Transportation Loss | The quantity of gas, which is unaccounted for by reasonable and prudent operator including but not limited to measurement uncertainty, blow downs, venting or releases during regular operation and maintenance of the gas pipeline transportation system used as common carrier. The volume of such gas would be calculated on the basis of past three years historical data of actual losses in defined transmission pipeline network distribution or supply main network or segment. In case the historical data is not available the same shall be agreed upon by transporter and shipper through the access arrangement and shall be approved by the authority. |
| Transportation Tariff | The charges payable by shipper to transporter, as approved by the authority from time to time, for transporting unit volume of gas including fixed charges under the access arrangement. |
| Unaccounted For Gas | In respect of a financial year, the difference between the total volume of metered gas received by a licensee during that financial year and the volume of natural gas metered as having been delivered by the licensee to its consumers excluding therefrom metered natural gas used for self consumption by the licensee for the purpose of its regulated activity; and such other quantity as may be allowed by the Authority for use by the licensee in the operation and maintenance of its regulated activity. |
| Unauthorized use of gas | Means and includes the acts of receiving, consuming or providing a supply of gas from a pipeline or a meter of a Gas Utility Company other than that contracted for by any person, the unauthorized receipt of more gas than is registered by the meter or other measurement device, tampering to increase metering pressure, unauthorized enhancement of gas loads other than contracted for, consuming gas through by-passing of a meter or other measurement device and gas usage by direct tapping to the gas supply of a Gas Utility Company. |
| Theft | Theft of natural gas means use / consumption of gas in unauthorized / un-lawful manner for which the user / consumer has neither been billed nor he/she has paid for such consumption. |

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# Annexure C - Chronology of Events

Over the course of the UFG study exercise, without compromising our independence, we have been actively involved in consultations with all the relevant stakeholders including both the Sui Companies and OGRA at multiple intervals in order to get their viewpoints and observations on our report and findings. Further to our meetings and comments thereof provided by OGRA and the Utilities, where necessary, we have reflected and made changed to our second draft report. Details of the meetings/consultative sessions is as follows

| Date | Location | Event | Attendees |
|---|---|---|---|
| 31 Dec 2015 | OGRA Office Islamabad | ▪ Proposal Submitted by KPMG provision of advisory services related to UFG benchmarking. | |
| 2 Feb 2016 | OGRA Office Islamabad | ▪ KPMG presented its proposal for UFG Benchmarking to the Authority involving its approach, methodologies and relevant credentials. | ▪ KPMG Team<br>▪ OGRA Representatives |
| 19 April 2016 | SSGC Karachi Office | ▪ SSGC presented its stance/ position to KPMG | ▪ SSGC Management<br>▪ KPMG Team |
| 21 April 2016 | OGRA Office Islamabad | ▪ Project Kickoff meeting. | ▪ KPMG Team<br>▪ OGRA Representatives<br>▪ SNGPL Management<br>▪ SSGC Management |
| 21 April 2016 to 30 Sep 2016 | SSGC Karachi Office | ▪ On- Field Project Execution | ▪ KPMG Team<br>▪ SSGC Management |
| 17 July 2016 To 21 July 2016 | SNGPL Lahore Office | ▪ On- Field Project Execution | ▪ KPMG Team<br>▪ SNGPL Management |
| 27-Jul-16 | SNGPL Lahore Office | ▪ Meeting on the stance/ position of the Sui Companies on the UFG issue. | ▪ KPMG Team<br>▪ Mirza Mahmood Baig |

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# Annexure C - Chronology of Events (Cont.)

| Date | Location | Event | Attendees |
|---|---|---|---|
| 11 Aug 2016 | OGRA Office Islamabad | ▪ Meeting on Project progress and way forward | ▪ KPMG Team<br>▪ OGRA Representatives<br>▪ SNGPL Management<br>▪ SSGC Management |
| 16 Aug 2016 | Karachi | ▪ KPMG Team attended OGRA Public Hearing. | ▪ OGRA Representatives<br>▪ Public<br>▪ KPMG Team |
| 08 sept 2016 | OGRA Office Islamabad | ▪ Meeting on Project progress and way forward | ▪ KPMG Team<br>▪ OGRA Representatives |
| 20 sept 2016 | OGRA Office Islamabad | ▪ KPMG submitted the 1st draft of the UFG study report | |
| | OGRA Office Islamabad | ▪ KPMG presented the 1st draft of the UFG study report to the Authority. | ▪ KPMG Team<br>▪ OGRA Representatives |
| 29 Dec 2016 | OGRA Office Islamabad | ▪ KPMG discussion with Sui Companies and the Authority on the 1st draft of the UFG study report. | ▪ KPMG Team<br>▪ OGRA Representatives<br>▪ SNGPL Management<br>▪ SSGC Management |

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# Annexure D - Key Persons Interviewed

| Key person Interviewed | | | | |
|---|---|---|---|---|
| **No.** | **Name** | **Designation** | **Department** | **Company** |
| 1 | Amin Rajput | Acting Managing Director | - | SSGCL |
| 2 | Board UFG Committee | - | Board Committee | SSGCL |
| 3 | Fasih Uddin Fawad | Acting Chief Financial Officer | Regulatory Affairs | SSGCL |
| 4 | Muhammad Kamran | Deputy General Manager | Research and Development | SSGCL |
| 5 | Samad Lakhani | Head of UFG department | UFG | SSGCL |
| 6 | Abdul Wadood | Chief Engineer | UFG | SSGCL |
| 7 | Nisar Ahmed Shaikh | Acting SGM | Distribution – North | SSGCL |
| 8 | Nadeem Qayoom | Deputy General Manager | Distribution – South (Central) | SSGCL |
| 9 | Hussain Qazi | | | SSGCL |
| 10 | Mahmood Jilani | Deputy General Manager | Transmission | SSGCL |
| 11 | Sheharyar Kazmi | General Manager | Billing | SSGCL |
| 12 | Haneef Ghazi | DCM | Billing | SSGCL |
| 13 | Nawab Ali Shah | Manager | Customer Relationship | SSGCL |
| 14 | Kashif Qadeer | Deputy General Manager | Customer Relationship | SSGCL |
| 15 | Muhammad Taj | Deputy General Manager | Measurement | SSGCL |
| 16 | Qadir Bux | Chief Engineer | Measurement | SSGCL |

| Key person Interviewed | | | | |
|---|---|---|---|---|
| **No.** | **Name** | **Designation** | **Department** | **Company** |
| 17 | Arshad Qazi | Deputy General Manager | Meter Repair Shop | SSGCL |
| 18 | Muhammad Zubair | | Measurement | SSGCL |
| 19 | Khuram Nayar | Engineer - Gas Quality | Measurement | SSGCL |
| 20 | Amjad Lateef | Managing Director | - | SNGPL |
| 21 | Mirza Mehmoood Ahmed | Board Member | Director | SNGPL |
| 22 | Muhammad Kamran Akram | Chief Accountant | Finance department | SNGPL |
| 23 | Abdul Aziz | General Manager | UFG department | |
| 24 | Qaiser Masood Khan | Chief Engineer | UFG department | SNGPL |
| 25 | Jamshed Riaz | Engineer | UFG department | SNGPL |
| 26 | Kahif Javed | Deputy Chief Accountant | Regulatory Affairs | SNGPL |

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# Annexure E - Key information/documents reviewed

Following are key documents/information that came to our consideration during our study:

| S.No. | Documents |
|---|---|
| 1 | National Gas Tariff Rules, 2002 |
| 2 | OGRA Ordinance, 2002 |
| 3 | Natural Gas Regulatory Authority (Licensing) Rules, 2002 |
| 4 | Sui companies Licenses |
| 5 | Criminal Law Amendment Act, 2011 |
| 6 | Theft Control Ordinance 2014 |
| 7 | Procedure for dealing with theft, 2005 |
| 8 | Natural Gas Third Party Gas Access Rules 2012 |
| 9 | Low BTU Gas Pricing Policy, 2012 |
| 10 | Natural gas Allocation & Management Policy, 2005 |
| 11 | Natural Gas Consumer Price Notifications |
| 12 | Standard technical Specification for Equipment and Material used in Transmission & Distribution. |
| 13 | Audited Financial Statements of the Sui Companies |
| 14 | Annual Reports of the Oil and Gas Regulatory Authority |
| 15 | Estimated Revenue Requirement of the Sui companies from 2003 to 2015 |

| S.No. | Documents |
|---|---|
| 16 | SSGC's UFG Committee presentations |
| 17 | Revised Estimated Revenue Requirement of the Sui companies from 2003 to 2015 |
| 18 | Final Revenue Requirement of the Sui companies from 2003 to 2015 |
| 19 | Economic Coordination Committee Decisions |
| 20 | Petitions filed by the Sui companies |
| 21 | International UFG studies |
| 22 | Judgments / Decisions by the Civil Courts |

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# Annexure F - Revision of Method for calculating UFG

Annex - 2

## Revision of Method for Calculating UFG

- Following formula is presently being used by OGRA for calculation of %age UFG:

$$\%\text{age UFG} = \frac{\text{Gas Available for Sale} - \text{Gas Sold}}{\textbf{Gas available for Sale}} \times 100$$

whereas 'Gas Available for Sale' is arrived at by deducting from Gas Input, the volume of gas used by the company for operation and maintenance of its regulated activity.

i.e

Gas available for Sale =

{*Gas Purchased from Sources*} – {*Volume of gas used by the Company for operation and maintenance of its regulated activities*}

- The above formula is not in line with the definition of UFG given in the **Rule (2) (1)(m) of 'Natural Gas Tariff Rules, 2002'**:

*"Unaccounted for natural gas" means, in respect of a financial year, the difference between the total volume of metered gas as received by a licensee during that financial year and the volume of natural gas metered as having been delivered by the licensee to its consumers excluding there from metered natural gas used for self consumption by the licensee for the purposes of its regulated activity; and such other quantity as may be allowed by the Authority for use by the licensee in the operation and maintenance of its regulated activity."*

- Based on above definition given in Rule No. **Rule (2) (1)(m) of' Natural Gas Tariff Rules, 2002'**, the UFG must be calculated by considering:

*Unaccounted for natural gas i.e. UFG* = **(A – B) – C**

*Where:*

**A = Receipts = Total volume of metered gas as received by a licensee during that financial year** = *Gas received by the company during that financial year*

**B = Deliveries** = *Volume of natural gas metered as having been delivered by the licensee to its consumers/customers*

**C =** *Metered natural gas used for self consumption by the licensee for the purposes of its regulated activity and such other quantity as may be allowed by the Authority for use by the licensee in the operation and maintenance of its regulated activity*

***Unaccounted for natural gas i.e. UFG*** = **(A – B) – C**
= **A – B – C**
= **A – (B +C)**

$$\%\textit{Age UFG} = \frac{A - (B + C)}{A} \times 100$$

The above formula for UFG Calculation is in exact accordance with the definition of UFG given in the **Rule (2) (1)(m) of' Natural Gas Tariff Rules, 2002'** so %AGE UFG must be calculated on the basis of 'Gas Input' from sources as Denominator , instead of 'Gas Available for Sale'.

The above formula for UFG Calculation is also in conformity to the international practices, as is evident from the following examples:

1. UFG calculation methodology adopted by AGA (American Gas Association), which is as under:

   *"**LAUF i.e. Loss-and-Unaccounted for gas** (also called LUAF, L&U, LUG, LUF, UFG) is the difference between the gas measured into a system and the gas measured out of a system or otherwise accounted for, including the change in volume of gas contained by the system (also known as 'System pack' or 'Line Pack')"*

2. Formula used by M/s Chevron, USA for UFG calculation is as under:

$$UFG = \frac{(\text{Deliveries} - \text{Receipts} + \text{Closing inventory} - \text{Opening inventory})}{\textbf{Receipts}}$$

*where*

| | | |
|---|---|---|
| ***Receipts*** | = | *Gas received in the system* |
| *Deliveries* | = | *Volumes Sold + Volume Consumed* |
| *Inventory* | = | *Line fill adjusted to standard conditions* |

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# Annexure G -Revenue Requirement

**A. Final Revenue Requirement for FY 2011-12**

*Rs. in Million*

| | Particulars | The Petition | Adjustment | Determined by the Authority |
|---|---|---|---|---|
| | Gas sales volume BBTU | 343,761 | | 343,761 |
| "A" | Net Operating Revenues | | | |
| | Net sales at current prescribed price | 127,835 | - | 127,835 |
| | Meter rentals | 643 | - | 643 |
| | Amortization of deferred credit | 387 | - | 387 |
| | *Sale of gas condensate | 57 | - | 57 |
| | Gas transportation charges | 10 | - | 10 |
| | Revenue from JJVL | 1,742 | - | 1,742 |
| | Other operating income | 907 | - | 907 |
| | *Late payment surcharge (LPS) | - | - | - |
| | *Meter manufacturing profit (MMP) | - | - | - |
| | *Royalty income from JJVL | - | - | - |
| | Total Operating Revenue "A" | 131,581 | - | 131,581 |
| "B" | Less: Operating Expenses | | | |
| | Cost of gas | 117,885 | - | 117,885 |
| | UFG Adjustment | (2,084) | (2,385) | (4,469) |
| | UFG Adjustment pertaining to FY 2007-08 | - | (98) | (98) |
| | Transmission and distribution cost | 9,789 | (451) | 9,338 |
| | Gas internally consumed | 233 | - | 233 |
| | Depreciation | 3,578 | - | 3,578 |
| | Other charges including (W.P.P.F) | 1,457 | (154) | 1,303 |
| | Total Operating Expenses "B" | 130,859 | (3,088) | 127,771 |
| "C" | Operating profit (A-B) | 723 | 3,088 | 3,811 |
| | Return required on net operating fixed assets: | | | |
| | Net operating fixed assets at beginning | 44,785 | - | 44,785 |
| | Net operating fixed assets at ending | 48,071 | - | 48,071 |
| | | 92,856 | | 92,856 |
| | Average net assets (I) | 46,428 | | 46,428 |
| | Meter manu. Plant asset at beginning | 37 | - | 37 |
| | Meter manu. Plant asset at ending | 34 | - | 34 |
| | | 72 | | 72 |
| | Average net assets (II) | 36 | - | 36 |
| | LPG air mix project asset at beginning | 479 | - | 479 |
| | LPG air mix project asset at ending | 507 | - | 507 |
| | | 986 | | 986 |
| | Average net assets (III) | 493 | | 493 |
| | Deferred credit at beginning | 5,519 | - | 5,519 |
| | Deferred credit at ending | 5,336 | - | 5,336 |
| | | 10,855 | | 10,855 |
| | Average net deferred credit (IV) | 5,428 | | 5,428 |
| | "D" Average (I-II-III-IV) | 40,472 | - | 40,472 |
| | "E" 17% return required | 6,880 | - | 6,880 |
| | "F" Shortfall in return required (C-E) (Gas Operations) | 6,158 | (3,088) | 3,070 |
| "G" | Additional revenue requirement for Air-Mix LPG Project | 275 | (24) | 251 |
| | Total Shortfall (F+G+H) | 6,433 | (3,112) | 3,321 |
| | Increase in average prescribed price effective (Rs. / MMBTU) w.e.f July 01, 2011 | 18.71 | (9.04) | 9.66 |
| | Estimated revenue requirement (B+E+G) | 138,014 | (3,112) | 134,902 |
| | Average Prescribed Price (Rs. per MMBTU) | 390.58 | (9.05) | 381.53 |
| | Increase allowed in avg. PP to the extent of shortfall of Rs. 1,663 million (Rs. / MMBTU) | | | 4.84 |
| | Remaining shortfall to be adjusted in FRR for FY 2012-13 | | | 1,658 |

* Sale of gas condensate, LPS, MMP and Royalty from JJVL has been treated as non-operating income in line with the decision of Sindh High Court.

**Table 15: Calculation of UFG**

MMCF

| Particulars | The Petition | Determined by the Authority |
|---|---|---|
| **Gross Purchases** | 406,551 | 406,551 |
| Gas Consumed Internally - metered | 549 | 549 |
| (Inc.)/ Dec. Gas in pipeline | 32 | 32 |
| Loss due to sabotage activity / ruptures - unmetered | 233 | 233 |
| *Sub-total* | *814* | *814* |
| **Gas Available for Sale (A)** | 405,737 | 405,737 |
| Gas billed volumes | 353,834 | 353,834 |
| Minimum Billing (Domestic) | 9,803 | 5,816 |
| Gas Theft claims - disconnected registered consumers | 773 | - |
| **Gas Sales (Total)** | *364,409* | *359,649* |
| **Add:** | | |
| Unbilled pilferred volume in law & order affected areas | 1,286 | - |
| Pilfered volume detected against non-consumer | 2,059 | - |
| Un-acknowledged gas theft claims - registered consumer | 126 | - |
| Gas Shrinkage at LPG Plant (JJVL) | 2,164 | 2,164 |
| Gas Shrinkage at LHF & Others | 103 | 103 |
| **Total Gas Sales (B)** | 370,146 | 361,916 |
| **Gas Unaccounted For (A - B)** | 35,591 | 43,821 |
| Gas Unaccounted For (%) | 8.77% | 10.80% |
| UFG at 7% | 28,402 | 28,402 |
| Disallowed volumes - MMCF | 7,189 | 15,420 |
| Disallowed volumes - MMMBTU | 6,780 | 14,541 |
| WACOG - Rs per MMBTU | 307.34 | 307.34 |
| **Disallowed value over & above UFG targets - Rs Million** | 2,084 | 4,469 |

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# Annexure H - Procedure for Dealing with Theft of Gas Cases

## PROCEDURE FOR DEALING WITH THEFT OF GAS CASES

**Definition: Theft of natural gas: -**

Theft of natural gas means use / consumption of gas in unauthorized / un-lawful manner for which the user / consumer has neither been billed nor he/she has paid for such consumption.

A. FOLLOWING ARE POSSIBLE INSTANCES OF ACTS WHICH TENTAMOUNT TO THEFT: -

- Tempering with the meter, volume corrector and recording instruments (flow, pressure and temperature recorders).
- Reverse installation of meter by the consumer i.e. inlet at outlet and vice versa.
- Securing gas by removing meter and connecting inlet/ outlet by rubber pipe or other tubing or using unmeasured gas through by pass point before meter.
- Using gas without obtaining gas connection or reconnection of a disconnected gas supply connection by the consumer.
- Suction of gas from disconnected gas service lines by mechanical device or illegally restoring the service.
- Increasing pressure of gas from pre-set setting / value by tampering with the pressure regulator or securing gas online pressure by removing regulator.
- Taking un-authorized "off-take" from the distribution supply main.
- Reversing of meter reading by back flow of air using a blower / tempering index of meter or by other mechanical means.
- Using un-metered gas by taking off-take before meter inlet coupling/spud.
- Tempering / blocking of sensing elements of volume correctors for less registration of corrected volume.
- Increase in load by the consumer resulting in meter becoming under capacity and consequential under /short billing. Tempering of meter's / regulator's seals to secure more gas than registered by the meter /Tempering of meters / regulators seals to secure more gas than registered by the meter.
- Installation of stolen / unauthorized meter by a disconnected consumer or an unregistered consumer.
- Using un-metered gas by removing meter index.
- Illegally restoring gas supply by damaging / breaking of company's installed disconnection lock.
- Using gas in category of tariff not allowed by the utility.



- Cutting cage of CMS for any kind of tampering and then re-welding.
- Any other mode not specified herein above.

B. INFORMATION: -

Any information from company's own sources, outside sources, consumers, members of the public, telephone calls regarding theft, unauthorized and unlawful use of gas by any consumer, person or premises shall be duly registered by designated officials of the company as an important information, which shall be maintained confidentially and will not be ignored and appropriate action for detection, confirmation and recovery shall immediately be initiated.

C. BASIS OF SUSPICION: -

One or more of the following events and / or circumstances shall form the basis for suspicion of theft: -

- Index of meter found stuck-up for movement or recording slow and / or meter bearing evidence of such tempering which may allow the meter to pass gas without being registered on the index counter. Seals of the meter found tampered or broken.
- "Gas Pressure regulator" bearing such indication and / or evidence of tampering which may cause flow of gas at higher pressure than pre-set value or that contracted for /Seals of regulators found tempered or broken.
- Unauthorized connection from main/ upstream of meter.
- Gas flowing to the consumption units without being registered on the meter.
- Deliberately taking more than contracted volume over and above rated meter capacity causing wear and tear and consequential slowing/ stoppage of meter.
- Gas flowing to a premises where existence of a legitimate metered connection is not observed / evident.
- Any other reasonable cause not mentioned herein above.

D. ACTION OF THE COMPANY: -

- The company may in association with local and provincial government, acquire services of Magistrate or a judicial officer and police and / or personnel from the Army/ Paramilitary establishment (as an alternative to police force) for conducting raids on suspected consumers.
- Meter testing workshops/mobile-testing workshops shall be established at all regional head quarters as far as possible keeping in view operational requirement, but not later than two years with effect from July 01, 2005.
- In case of strong evidences leading to confirmation of the act of theft, the company will disconnect the gas supply of the consumer /



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# Annexure H - Procedure for Dealing with Theft of Gas Cases (cont.)

defaulter immediately and will remove all devices which can facilitate the consumer/ defaulter in illegal restoration of gas supply.

Following procedure shall be adopted while undertaking disconnection: -

- Physical / visual appearance of the meter and / or pressure regulator shall be documented preferably in the presence of a representative of the defaulter consumer.
- The disconnected meter and / or regulator shall be taken into personal custody by a responsible designated official of the company who shall place the equipment in a bag / container which shall be sealed at the site. Time and date shall be logged.
- The observations made at the time of disconnection shall be logged / documented and signed by all the members of the disconnection team. The document on which the said observations are recorded will be enclosed in the box / container in duplicate with copies to Head of department and local Regional General Manager. The company shall send a quarterly report to OGRA giving addresses of premises where acts of theft are confirmed, as well as brief description of mode of theft.
- The suspected equipment shall be dispatched to the "Local / nearest Testing Workshop/ Laboratory" within two working days of disconnection.
- Safe and secure handling of the equipment shall be ensured during transportation / transit to protect against possible damage.
- The official taking charge of the equipment in testing workshop / laboratory shall break open the seal of the bag in the presence of the person delivering the equipment. Moreover, out of two, one copy of the document accompanying the meter in the container shall be endorsed by the official receiving it and returned to the one delivering it for handling over the same to General Manager / Incharge of the Region to which the meter pertains and would also confirm the physical / visual condition of the equipment as recorded by the inspection/raiding team. ***Testing of internal parts / operation of meter and flow proving shall be carried out in the laboratory and reported to the G.M of the region within five working days, in case of industrial category and ten working days, in case of commercial / domestic category after the receipt of meter.***
- The meter will be tested if desired by the customer in his presence or otherwise the absence of the customer will be noted.

E. DETECTION AGAINST DIRECT TAPPING / UNAUTHORIZED PRESSURE ENHANCEMENT: -

- The direct tapping including 'Self-reconnection / connection' cases shall be checked by company's vigilance team on receipt of any information, preferably in association with a Magistrate or judicial officer and Police/ Army / Paramilitary Personnel.



- The physical evidence shall be documented and photographs of means of direct tapping or ' Self-reconnection / connection' of disconnected premises shall be taken.
- As far as possible the evidence shall be witnessed by the accompanying Magistrate or judicial officer and police contingent / Army /Paramilitary Personnel.
- The cases of un-authorized enhancement in pressure over and above pre-set approved metering / billing pressure shall be substantiated with available evidences , authenticated in the site reports.
- Disconnect the consumer/person / premises using gas un-authorizedly and removed devices /installations used for the purpose.
- Take appropriate action including invoking of Section 27 of Chapter V of OGRA Ordinance, 2002.

F. ASSESMENT OF VALUE OF GAS STOLEN AND RECOVERY: -

**Meter Tempering Cases: -**

When any consumer is established to be involve in a gas theft using gas through tampering with the meter or instruments installed / mounted on or along the meter (i.e. volume corrector, or pressure- temperature recorder), or any act mentioned in clauses "A", "C" or "G" the volume of gas stolen by consumer shall be assessed taking into consideration the following: -

1. Period / duration of suspected theft will be assessed on direct and circumstantial evidence taking into accounts the reports of previous checking / inspection of site by company's technical staff / officer, checking of meter by metering workshop officials. Unless the circumstances specifically necessitate, the period of suspicion shall be counted from the period the consumption behavior of the consumer has shown decline over the normal / connected load or consumption pattern of the past period till the date of raid / confirmation of pilferage. The assessed volume / BTUs shall be compatible with highest consumption of corresponding months in previous three years or on subsequent replaced meter's consumption, provided that the suspected period shall not exceed 12 months.
2. Connected load (connected load shall be based on appliances actually installed and taking load of each in comparison to predetermined load of each appliance). The connected load will be assessed by three members committee comprising of one representative each from Engineering, Sales and Billing Sections.
3. Working hours (the assessed working hours shall be based on type of business. Reference of sales survey report specifying number of hours may be made). The working hours will also be assessed by a three members committee comprising of one representative each from Engineering, Sales and Billing Sections.



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# Annexure H - Procedure for Dealing with Theft of Gas Cases (cont.)

4. The Gas flow rate shall be recorded as registered by the installed meter which will latter be flow proved at Metering Workshop to determine the accuracy of measurement, within two weeks.
5. Assessed period of consumption through tempered meter (the assessment will be made taking into consideration the prominent "dips" in billed volume / BTUs, the period of claim will be last three / five years. In case the period of pilferage is determine more than 12 months, the period of claim will be restricted up to 12 months.)
6. The amount to be charged for previous period shall be based on the prevalent sale prices.
7. Flow proving report / meter inspection report in meter testing shop
8. The reconnection of a registered consumer shall be carried out when recovery of at least 25% of the amount levied has been made along with "reconnection charges" as well as written agreement between the company and consumer on the amount agreed upon and mode of payment.
9. An in-house committee headed by a Senior General Manager and comprising Senior level representatives from Finance / Billing, Audit, Distribution, Measurement and Theft Control Department shall be constituted to review the appeals of the consumers charged for theft of gas. The alleged consumer shall have the right to be present before the review committee for presentation of his case.

In case of domestic consumers, the available record alone shall not form basis of recovery because in domestic consumption weather / seasonal affects have significant bearing, therefore consumption of the corresponding months too shall be considered for assessing charges to be claimed for the period as is determinable, however, not exceeding 12 months.

**G. TAMPERING OF METERS NOT DETECTED AT SITE BUT LATER DETECTED/PROVED AT COMPANY'S METER SHOP.**

Where tampering of meter is not detected at site but later proved in the Central Meter Shop / Regional Meter Shop which inspection shall be carried out within time limit i.e. for industrial 3 weeks, for commercial 6 weeks and for domestic consumers 12 weeks, the basis of assessment of value of gas stolen and recovery of amount from defaulting consumer shall be the same as per clause 'F'. However, the company shall not claim such charges later than six months after removal / replacement of meter at the site. The recoveries shall have to be evaluated and finalized by the in-house committees within stipulated time frame of 06 months.

- LPS/GST will also be recovered as applicable.

Page 5 of 6

- The cost of meter and other damaged or affected ancillaries / equipment may also be recovered from the consumer.

**H. PROCEDURE FOR RECOVERY OF GAS THEFT CHARGES FROM NON-CONSUMERS**

Gas theft charges shall be determined as per procedure, and legal notice will be served to the defaulter for depositing the gas theft charges to the company, as per provisions of OGRA Ordinance and Rules / Regulations made there under.

Page 6 of 6

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# Annexure I - Amendment in Procedure for Dealing with Theft

OIL & GAS REGULATORY AUTHORITY

OGRA-6(10)-3/2013

*IN THE MATTER OF*

SUI NORTHERN GAS PIPELINES LIMITED (SNGPL)

&

SUI SOUTHERN GAS COMPANY LIMITED (SSGCL)'s

REQUESTS FOR AMENDMENT IN PROCEDURE FOR DEALING WITH THEFT OF GAS CASES

UNDER

OIL AND GAS REGULATORY AUTHORITY ORDINANCE, 2002

AND

OIL AND GAS REGULATORY AUTHORITY NATURAL GAS TARIFF RULES, 2002

DECISION

JULY 03, 2014

Saeed Ahmad Khan, Chairman
Sabar Hussain, Member (Oil)/Vice Chairman
Aamir Naseem, Member (Gas).

1

54-B, Fazal-e-Haq Road, Blue Area, Islamabad, Pakistan
Tel: +92-51-9221715-18, Fax: +92-51-9221714
Website: www.ogra.org.pk

## DECISION

1. Oil and Gas Regulatory Authority established under the OGRA Ordinance, 2002 and in exercise of its powers conferred by Section 22 of the Ordinance and Rule 3(3) of the Natural Gas Regulatory Authority (Licencing) Rules, 2002 granted the licences to Sui Northern Gas Pipelines Limited (SNGPL) and Sui Southern Gas Company Limited (SSGCL) for Transmission, Distribution and Sale of Natural Gas on 03-09-2003. Both licencees, under their Licence Condition No.20 are obligated to submit and seek approval of the Authority regarding policies and procedures for dealing with Theft of Gas cases. The Authority has approved the "Procedure for Dealing with theft of Gas" for both the licencees in 2005 and conveyed the same to both licencees on 16-08-2005.

2. Sui Northern Gas Pipelines Limited (SNGPL) vide its request dated 15-07-2013 submitted that a large number of theft / pilfered cases are being detected which are more than a year old while the company remains constrained in the booking recovery of theft cases only upto a maximum of 12 months as per said Procedure. Accordingly the company can only book theft volumes for the period not exceeding one year which is contributing towards lesser recovery of revenues as well as contributing to higher UFG volume. SNGPL has requested the Authority to amend the relevant clause of the said procedure allowing the actual recovery of theft volumes regardless of time period involved, in order to discourage large scale theft of gas by the various categories of gas consumers while the gas companies are unduly being penalized in respect of higher UFG.

3. SSGCL also agreed with the proposal given by SNGPL in the subject matter and suggested that "cut off" period (say for 36 months) may be provided so as to avoid any controversy.

4. The Authority, keeping in view the request of the petitioner, admitted the petition and decided to conduct Public Hearing u/s 10 of OGRA Ordinance, 2002.

5. The Authority invited all consumers, interveners, general public and interested / affected persons and parties to furnish their comments / interventions / views, if any, on the petition filed by the petitioner through publication of the notice in the leading newspapers on 28-12-2013 within 14 days from the date of publication of the same.

6. In response thereto, the Authority received following intervention requests:-

   a) *All Pakistan Textile Processing Mills Association, Faisalabad*
   b) *Mr. Muhammad Aslam Chaudhry, Lahore*
   c) *All Pakistan CNG Association*
   d) *Mr. Ayub Hameed, Faisalabad*
   e) *Mr. Muhammad Arif Bilvani, Karachi*
   f) *Energy Department, Govt. of Sindh*
   g) *CNG Owners Association*
   h) *Karachi Chamber of Commerce & Industry, Karachi*
   i) *Mr. Abdul Sami Khan, Chairman, CNG Dealers Association*

2

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# Annexure I - Amendment in Procedure for Dealing with Theft (cont.)

7. The Authority held Public Hearing on 15-01-2014 at Lahore and 23-01-2014 at Karachi in which representatives of the petitioner made presentation and interveners / participants presented their arguments.

8. The following participants also made participation in the Public Hearing and submitted their valuable comments:-

   a) *Engr. S.T Hussain, Chairman, Consumer Awareness & Welfare Association*
   b) *Mr. Ghulam Qadir Awan, Lahore*

9. The Authority, after detailed scrutiny of the petition and hearing valuable comments / viewpoints of the interveners and participants concludes that the interveners and the participants had strongly objected the petitioners' request and submitted that enhancement in the period for booking theft charges against consumer by both petitioners would amount to arbitrary booking of pilferage charges and unduly condemning the consumers. Most of the interveners and participants were of the view that existing 12 months may be reduced to six months in order to curb the theft of gas.

10. In view of the petitioner's request and taking into account the comments of the interveners during the public hearing the Authority decides as under:-

    10.1 There are approximately 7000 Nos. industrial consumers in the franchise area of SNGPL and are monitored by the regional staff on regular basis, the suspected industrial consumers are visited / monitored at fixed intervals and in some cases even on weekly / daily basis. Modern technologies like remote meter reading, bypass detection equipment, Electronic Volume Correctors etc. are employed / installed at majority of the industrial CMSs. Moreover, various clauses of the industrial, commercial and domestic contracts, between the gas companies and the gas consumers, approved by OGRA, empower gas companies for vigilant inspection of consumer premises and disconnection of gas supply in case of meter tempering or direct use of gas. As per the contracts, the gas companies also have the right to cross check the connected load of the consumers and to inspect the houseline when ever deemed necessary. The relevant provisions of Ordinance, distribution standards and contracts empowering gas companies for vigilant inspection of consumer premises is reproduced hereunder:-

    a) ***Section-31 of OGRA Ordinance, 2002***

    *"**Right of access.**—Subject to the terms of its licence, licensees shall have the right upon not less than twenty-four hours notice and at reasonable times, to enter premises or property for the purposes of inspection, repair and maintenance of all facilities, equipment and apparatus relating to the regulated activities, the collection of payments, lawful disconnection, and the examination of the suitability of property for construction or the installation of facilities, equipment or apparatus relating to the regulated activities:*



*Provided that no such notice will be required to be given if such entry is necessary to respond to, and remedy, a situation endangering public safety caused by a regulated activity."*

b) ***Clause 7.2 of distribution standard leakage survey***

*"In addition to all above requirements, every service line must be visually inspected for signs of leakage, such as dead vegetation and gas smell in the air from buried pipe or above ground piping at the meter, at the time of every meter reading by the Meter Reader. All suspected leaks shall be reported to the Company the same day."*

c) ***Clause -9 of all Contracts***

*"The Company's authorized representative(s) shall have free access at all reasonable times to **inspect**, adjust, or exchange the meters or other fittings or appurtenances without let or hindrance."*

d) ***Clause -18 (v) of domestic and clause 17 (d) of industrial and commercial Contract***

*"This Contract shall be subject to cancellation by the Company at any time for any Violation of or default in compliance* with any of the terms and conditions of this contract."

10.2 Abundant manpower is available for inspection of the consumers, particularly industrial and commercial. In case of domestic consumers, each premises is visited by a meter reader once a month and by technical staff whenever required. In view of the above, the company's stance is not sustainable. Theft of gas is criminal act and limitation laws/ rules provide that limitation is foreign to the administrative to the Criminal justice. Notwithstanding, right under the Limitation Act should be claimed in a reasonable time and onus of right is always upon who claims it, and delay of willful negligence lashes the limitation. In view thereof, prima facie time period of twelve months in clause under reference is more realistic, however to ascertain any further long period may led it to the criminal negligence thereby fixing responsibility against those who failed to indicate the report of such pilferage in time.

10.3 However, in the cases of theft of gas by direct bypass, sub clause (i) &( ii) shall be added to clause F(1) of the Procedure for Dealing with Theft of Gas Cases, 2005 shall be added as under:

**F (1) ASSESSMENT OF VALUE OF GAS STOLEN AND RECOVERY**
**Meter Tempering Cases / Direct Bypass**

***F(1)(i)***

*'The period of theft in the cases of direct bypass shall be assessed only subject to the provision of concrete physical / circumstantial and documentary evidence which may authenticate the actual period of theft of gas. The company will be*



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# Annexure I - Amendment in Procedure for Dealing with Theft (cont.)

*responsible for correct assessment of the theft period through a Head Office Detection Evaluation Committee headed by an officer of DMD level of the concerned Gas Utility Company. However, impugned period may not exceed more than three (03) years, in accordance with the spirit of Limitation Act, 1908.*

*F(1)(ii)*

*In the cases, where actual period of theft of gas through direct bypass could not be assessed due to non-provision of any credible documentary / physical / circumstantial evidences by the licencees, then the period of claim shall be restricted to (12) twelve months only.*

11. Keeping in view above, the Authority hereby rejects the requests of the petitioners and disposes off the case to the extent of addition in Procedure for Dealing with Theft of Gas Cases, 2005 as given at Para 10.3 above, accordingly.

Dated: July 03, 2014

(Aamir Naseem)
Member (Gas)

(Sabar Hussain)
Member (Oil)/Vice Chairman

(Saeed Ahmad Khan)
Chairman

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# Annexure J - Theft Raid

## Gas Theft Raid - SSGC | Mehran Town

- The UFG Project team along with SSGC's Customer Relationship Department (CRD) task force headed by Mr. Nawab Ali Shah (CRD), conducted a raid being as part of continued operations against illegal usage of gas. The operation was conducted in May 2016 at Merhan Town situated in Korangi with the support of designated Sindh Police task force further to information received that the area residents have illegally plugged the distribution main.
- The gas theft was skilfully planned as the underground line was plugged and connections were spread through out the area through under/over ground pipes leading to a vast amount of Gas theft.

CRD Team **accounted** for the **Gas Theft** and **Disconnected illegal Gas Supplies** by removing **Rubber Pipes and Underground Connections.**

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# Annexure J - Theft Raid (cont.)

## Gas Theft Raid - SSGC | Mehran Town

- The team found around multiple houses using gas illegally by injecting rubber pipes in SSGC's main distribution pipeline network. SSGC crew immediately removed all clamps, accessories and rubber pipes and took all these goods in its custody. The officers and staff of SSGC police station, Utilization and Distribution Maintenance Departments and UFG Consultants were also present at operation site.
- It must be noted that SSGC's crew had already disconnected these illegal connections in the same area couple of times during the current year, however, the culprits usually re-install their illegal connections some time after SSGC's operations. The involvement of internal contractor was highlighted by resident of the area.

Team Cutting illegal Pipes

Resident during interrogation

Underground Pipelines removed

Household with illegal Gas Pipes

Team inspecting Underground leaks

Team cutting Underground Pipes

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# Annexure K - ECC decision

No DGO(AC)5(426/2012-13 Vol II Pt
Government of Pakistan
Ministry of Petroleum and Natural Resources
(Policy Wing)
Directorate General of Gas,
21-F, Huma Plaza Blue Area,
***

Managing Director
SNGPL No.
Date 11/12

7148

Islamabad, the 11th December, 2014

The Chairman,
Oil & Gas Regulatory Authority,
Fazal-e-Haq Road
Blue Area,
**Islamabad**

**Managing Director,**
Sui Northern Gas Pipelines Ltd.
21-Kashmir Road
**Lahore**

**Managing Director,**
Sui Southern Gas Company Ltd.
Street No. 4/B, Block 14,
Sir Shah Suleman Road,
Gulshan-e-Iqbal, **Karachi**

Subject - POLICY GUIDELINES UNDER SECTION 21 OF OGRA ORDINANCE 2002 (DETERMINATION OF REVENUE REQUIREMENTS OF GAS UTILITY COMPANIES)

Dear Sir,

I am directed to enclose herewith a decision of the ECC of the Cabinet vide Case No. ECC 154/25/2014, dated 20.11.2014, on the above subject for your information and further necessary action.

Yours Sincerely,

(Muhammad Ashiq)
Deputy Director(F&P)
Ph# 9204587

Copy to:

(Mr. Sana Ullah)
Joint Secretary (Committees),
Cabinet Secretariat, Cabinet Division
Government of Pakistan
**Islamabad**

(with reference to above referred letter dated 26.11.2014)

**SECRET**

Case No. ECC-154/25/2014
Dated: 20th November 2014

**POLICY GUIDELINES UNDER SECTION 21 OF OGRA ORDINANCE, 2002 (DETERMINATION OF REVENUE REQUIREMENTS OF GAS UTILITY COMPANIES).**

**DECISION**

The Economic Coordination Committee of the Cabinet considered the Summary, dated 15th November, 2014 submitted by the Ministry of Petroleum and Natural Resources on **"Policy Guidelines Under Section 21 Of OGRA Ordinance, 2002 (Determination Of Revenue Requirements Of Gas Utility Companies"** and decided as under:

i. To provisionally allow following volumes as deemed gas sales volumes for the purpose of revenue requirements of gas companies:

a. Volume pilfered by non consumers but detected and determined by the companies in accordance with OGRA procedure as provided in Rule 30 of Natural Gas Licensing Rules 2002;

b. Volume consumed in law and order affected areas; and

c. Impact of change in Bulk Retail Ratio on UFG using the base year as 2003-04

ii. Approved that 'provision for doubtful debts' may also be determined at a minimum of 1% of the sales

iii. Approved that the issue of treatment of incomes from non-core activities (LPS, Meter Manufacturing Plant, Royalty from JJVL and Sale of Condensate/LPG) may be dealt with at the time of finalization of new tariff regime.

iv. UFG study should be completed at soon as possible. The above provisional arrangement must not contravene judgment of the Lahore High Court in the matter nor it should adversely affect the on-going investigations in OGRA scandal in pursuance of the directions of the Supreme Court.

***

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# Annexure K - ECC decision (cont.)

SUI NORTHERN GAS PIPELINES LIMITED
GAS HOUSE, 21 KASHMIR ROAD, P.O. BOX 56, LAHORE (PAKISTAN)

RECEIVED 18-3-16 Diary No. 439 UFG CONTROL DEPARTMENT

**Reference:** RA-TAR-14-15(F)-021 **Date: March 16, 2016**

Director General (Gas),
Ministry of Petroleum & Natural Resources,
Government of Pakistan,
First Floor, Petroleum House,
Sector G-5/2, Attaturk Avenue,
**Islamabad.**

CE(UFGC-S)

Subject: **IMPLEMENTATION OF ECC POLICY GUIDELINES DATED NOVEMBER 20, 2014 IN RESPECT OF LAW AND ORDER AFFECTED AREAS**

Dear Sir,

Please refer to the Oil and Gas Regulatory Authority's (OGRA) determinations of Final Revenue Requirements (FRR) for FY 2012-13, FY 2013-14 and FY 2014-15 dated November 5, 2015, November 6, 2015 and November 27, 2015 respectively. It is submitted that OGRA has only allowed 75 % of the volume claimed in respect of Law and Order affected areas while it has been stated that the remaining claimed volumes/amounts be paid by the Federal Government as subsidy or from the Royalty of concerned Province. This alone has already adversely affected Sui Northern Gas Pipelines Limited (SNGPL) to the tune of Rs. 2,454 million over a period of 3 years (i.e from FY 2012-13 to FY 2014-15).

It is submitted that Chief Minister, Khyber Pakhtunkhawa vide letter No. PSCM/SNGPL/KPK/1-1/2013/9390 dated December 19, 2013 (copy enclosed) has already acknowledged that the gas losses in Oil & Gas producing areas of KPK are not due to inefficiency of SNGPL but due to prevailing worst law and order situation of the area.

In view of the above narrated situation and dilapidated financial position of the Company, it is requested to advice OGRA to allow entire Law & Order related claimed volumes / amounts in totality in respect of the period FY 2012-13 to FY 2014-15 onwards, since Law & Order is a Provincial and not a Federal Government subject.

Your immediate intervention in the said matter is solicited which will go a long way in resolution of this long standing issue.

Yours Sincerely
Sui Northern Gas Pipelines Ltd.

**(SYED JAWAD NASEEM)**
General Manager (RA)
*for* Managing Director

*Encl: As above.*
*Cc: Executive Director (Gas), OGRA*
*Cc: Registrar, OGRA*

Telephones Exch: +(92-42) 99201451-60 +(92-42) 99301490-99 | Telephones: +(92-42) 99201339 | Fax: +(92-42) 99201229 +(92-42) 99203537 | www.sngpl.com.pk

Sr. General Manager D-South
30 MAR 2016
Entry No. 2540
Sui Northern Gas Pipe Lines Ltd

No. DGO (AC)-5(26)/14-15-Vol-I-Pt
Government of Pakistan
Ministry of Petroleum & Natural Resources
(Policy Wing)
Directorate General of Gas
First Floor, Petroleum House, G-5/2

Managing Director
SNGPL No.
Date 30/3

RA DEPARTMENT
30 MAR 2016
Diary No. 1079

Islamabad, the 30th March, 2016

**The Chairman,**
Oil & Gas Regulatory Authority,
Islamabad.

Subject: **IMPLEMENTATION OF ECC POLICY GUIDELINES DATED NOVEMBER 20, 2014 IN RESPECT OF LAW AND ORDER AFFECTED AREAS**

Dear Sir,

Further to this Ministry's letter of even number dated 25.03.2016 on the above subject, I am directed to state that there is no such mechanism nor subsidy head available with the Federal Government to fund claims made by the gas utility companies in the respect of Law and Order affected areas. Further utilization of the Royalty post disbursement is the prerogative of the Provincial Government(s) under the respective Petroleum Policy and hence Federal Government may not be in a position to advise the concerned province to subsidize the aforesaid claim of gas utilities through Royalty.

2. In view of above, OGRA is kindly requested to consider the request of M/s SNGPL regarding claim of remaining gas volume in Law & Order affected in pursuance of subject ECC decision already conveyed vide this Office's letter No. DGO(AC)-5(26)/2012-13-Vol-II-Pt dated 11.12.2014.

GM(UFG) GM(S) Pl. deal further. CE(UFGC-S)

Yours truly,

(Abdul Rasheed Jokhio)
Director (Tech.)

c.c:
i. The Managing Director, SNGPL, Lahore
ii. The Managing Director, SSGCL, Karachi
iii. SPS to Secretary Petroleum & NR
iv. SPS to Addl. Secretary (A&D) Petroleum & NR
v. PA to DG (Gas) Petroleum & NR

cc: MD. DMD(S) SGM(CS) SGM(T) CFO CA(RA) SGM(D-MIS) | GM&UFG-C(MIS)

For your kind information Pl.

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# Annexure L - Gas price notification

## OIL AND GAS REGULATORY AUTHORITY

******************

Islamabad, the 1st September, 2015

**N O T I F I C A T I O N**

S.R.O. (I)/2015. - In exercise of the powers conferred by sub-section (3) of Section 8 of Oil and Gas Regulatory Authority Ordinance, 2002 (XVII of 2002), and in supersession of Oil and Gas Regulatory Authority's notification No. S.R.O. 876(I)/2015, dated 31st August, 2015 to the extent of natural gas sold to Bulk Domestic consumers, Commercial consumers, Special Commercial (Roti Tandoors) and Ice Factories, by Sui Northern Gas Pipelines Limited and Sui Southern Gas Company Limited, the Authority is pleased to notify the following sale price and minimum charges, for purposes of the said Ordinance, with immediate effect, as under:-

**I. Domestic Sector:**

a) Standalone meters

b) Mosques, churches, temples, madrassas, other Religious Places and Hostels attached thereto;

| **Sale price:** | **Rs./MMBTU** |
|---|---|
| Upto 100 $M^3$ per month | |
| All off-takes at flat rate of | 110.00 |
| Upto 300 $M^3$ per month | |
| All off-takes at flat rate of | 220.00 |
| Over 300 $M^3$ per month | |
| All off-takes at flat rate of | 600.00 |

**Minimum charges** Rs. 148.50 per month

c) Government and Semi-Government Offices, Hospitals, Clinics, Maternity Homes, Government Guest Houses, Armed Forces Messes, Langars, Universities, Colleges, Schools and Private Educational Institutions, Orphanages and other Charitable Institutions along-with Hostels and Residential Colonies to whom gas is supplied through bulk meters including Captive Power.

Sale price:

All off-takes at flat rate of Rs. 600.00 per MMBTU

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# Annexure M -Minimum Consumption

**DEPARTMENT OF CHEMICAL ENGINEERING**
University of Engineering and Technology, G.T Road, Lahore, 54890 (PAKISTAN)

Ref. No. Chem.Engg 1231
Dated: 25-09-2012

The Senior General Manager
Distribution (North & South)
Sui Northern Gas Pipelines Ltd.
21-Kashmir Road
Lahore

Subject: **Gas Consumption by Standard Domestic Burner**

The test to calculate gas consumption by standard domestic burner has been carried out for one hour operation at outlet pressure of 6.0 inch w.c.

The gas consumption for one hour operation was found 12 $ft^3$.

(Fayyaz A. Kirmani)
Supervisor

(Prof. Dr.Ing Naveed Ramzan)
Testing Incharge

(Prof. Dr. Nadeem Feroze)
Chairman

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# Annexure N - Leaks per KM

## SNGPL

**Underground Leakages per Km**

**Netwokr Surveved during July 12 to May 16**

| Region | Length of network surveved (Km) | Leak Detected (No) | No of Leaks per Km |
|---|---|---|---|
| Gujranwala | 6016 | 12091 | 2.01 |
| Gujrat | 3177 | 8549 | 2.69 |
| Islamabad | 7428 | 10044 | 1.35 |
| Rawalpindi | 3797 | 5976 | 1.57 |
| Peshawar | 9209 | 36541 | 3.97 |
| Abbottabad | 2608 | 4723 | 1.81 |
| Sargodha | 3489 | 4876 | 1.40 |
| Faisalabad | 6934 | 11402 | 1.64 |
| Sheikhupura | 6092 | 16406 | 2.69 |
| Lahore | 15226 | 26216 | 1.72 |
| Sahiwal | 4523 | 5059 | 1.12 |
| Multan | 8491 | 25911 | 3.05 |
| Bahawalpur | 3380 | 9062 | 2.68 |
| **Overall Company** | **80370** | **176856** | **2.20** |

## SSGCL

Underground Leak Survey Statistic FY 2011-12 to 2015-16

| FY | Length (KMs) | Leak Spots | Average Spots/KM |
|---|---|---|---|
| South | | | |
| 2011 - 12 | 991 | 5,946 | 6.00 |
| 2012- 13 | 1,103 | 8,608 | 7.80 |
| 2013 - 14 | 1,266 | 11,654 | 9.21 |
| 2014 - 15 | 2,290 | 16,548 | 7.23 |
| 2015 - 16 (11 M) | 2,644 | 11,591 | 4.38 |
| | 8,294 | 54,347 | 6.55 |
| North | | | |
| 2011 - 12 | 1,462 | 3,005 | 2.06 |
| 2012- 13 | 1,947 | 4,684 | 2.41 |
| 2013 - 14 | 1,090 | 2,662 | 2.44 |
| 2014 - 15 | 1,704 | 3,914 | 2.30 |
| 2015 - 16 (11 M) | 1,653 | 3,975 | 2.40 |
| | 7,856 | 18,240 | 2.32 |
| Total | 16,150 | 72,587 | 4.49 |

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# Annexure O - Measurement Errors

The key parameters that effect the calculated gas volume are provided below. These parameters are measured with standard equipment and adjusted accordingly for calculation purposes.

1) Temperature
2) Pressure
3) Compressibility Factor
4) Natural gas Components (Gas Quality)

**Affect of Temperature on Volume of Natural Gas:**
In different geographical locations temperature significantly varies and must be accounted for adjustment factor in measuring natural gas transmission.

In accordance with Charles Law for temperature, gas expands as the temperature increases and contracts as decrease in temperature occurs (Refer Annexure A).

**Simple Correction Factor:**
We can calculate simple correction factor (Ft):

$$Ft = (Base\ Temp + 460)/(Flow\ Temp + 460)$$

As per contract agreements utility companies always agree on a base temperature to either sell or purchase gas. Whenever there is a slight deviation from base temperature, the change should be accounted as per agreement. The following example reflects the correction factor calculation:

Calculation at 40 °F :

Ft = (60 + 460) / (40 + 460) = 1.040

For this example we have used 40 °F temperature as our flow temperature. As per calculations, our answer is 1.0400. So to correct our volume for temperature we would multiply our Actual cubic foot (Acf) volume by this factor. Since the temperature has caused the gas to contract we can fit more gas into the same space.

Calculation at 80 °F:

For calculation at 80 °F hold everything constant except change the flowing temperature to 80 deg F.

Ft = (60 + 460) / (80 + 460) = .9629

For this example our answer would be .9629. So to correct our volume for temperature we would multiply our Acf volume by this factor. Since the temperature has caused the gas to expand we can fit less gas into the same space.

**Affect of Pressure on Volume of Natural Gas:**
Due to varying compressor capacities and geographical conditions atmospheric pressure significantly varies from transmission lines to distribution end system.

As per Boyle's Law, for a fixed amount of ideal gas for a fixed temperature, pressure and volume are inversely proportional. This means that pressure is doubled the volume is halved.

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# Annexure O - Measurement Errors (Cont)

**Simple Pressure Factor**

Using the basic principle of Boyles Law we can easily calculate a simple pressure factor (Fp) to be used for calculating changes in volume caused by increase or decrease in pressure.

$$Fp = \frac{\text{Gauge Pressure + Atmospheric Pressure}}{\text{Base Pressure}}$$

Before performing calculation we should understand the basic difference between gauge pressure, atmospheric pressure and base pressure.

***Base Pressure (Pb):***

It refers to the pressure that we have agreed to base all purchases and sales on for the contract area. For our example, we will use 14.65 psi as our base pressure.

***Atmospheric Pressure:***

It refers to the standard atmospheric pressure for the region. In gas sale/purchase contracts, atmospheric pressure is part of the basic condition. For calculation purposes, we will use 14.7 atmospheric pressure.

***Gauge Pressure: (psig):***

Gauge pressure refers to the reading obtained from meter with an accurate gauge. We will use .25 psi in our example.

Calculation at .25 psi:

Fp = (.25 gauge + 14.7 atm) / 14.65 base = 1.020

For this example we would multiply our Acf volume by 1.020 to know the approximate affect on volume of gas.

Calculation at 3 psi:

Fp = (3 gauge + 14.7 atm) / 14.65 base = 1.20

Net impact: From our calculations with two different pressures the net impact on gas volume can be derived. For deriving net impact we are taking 100 cubic feet as exemplary volume.

@.25 psi: 100*1.020=102 cubic feet
@3 psi: 100*1.20=120 cubic feet
Net impact on volume = 120-102=18 cubic feet or approx. 18%

**Compressibility Factor:**

Practically all gases deviate slightly from Boyles Law. Theoretically, the standard volume of gas varies with standard change in pressure. However, the volume of gas changes significantly at higher pressures as compared to theoretical pressure. This factor is important at high pressures and low temperatures. For gas volume measurement, this factor is addressed and adjusted in the adjusted volume calculations.

**Natural Gas Components (Gas Quality):**

Natural gas consist of nine basic components with methane the largest volume based component. Natural gas is extracted from different fields which impacts gas composition. Gas components determine gas quality (the heating capacity) therefore it is essential to measure the components. Further, market sales of natural gas require some specifications already set by the authority in its licensing condition no. 15 of SNGPL and SSGC regarding natural gas quality, this impacts billing mechanism to the consumer.

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# Annexure P - Metering Technology

| Annexure (Source: Study by US Department of Energy "Metering Best Practices" | | | | | | | |
|---|---|---|---|---|---|---|---|
| Goal | Positive Displacement | Orifice | Venturi | Annubar | Turbine | Vortex Shedding | Fluid Oscillation |
| Accuracy | Good | Moderate | Good | Good | Good | Good | Good |
| Turndown Ratio | 10:1 | <5:1 | <5:1 | 10:1 | 10:1 | 20:1 | 100:1 |
| Repeatability | Good | Good | Good | Very Good | Low | Very Good | Good |
| Installation Ease | Easy | Easy | Moderate | Easy | Challenging | Moderate | Easy |
| Pressure loss | Moderate | Moderate | Low | Low | Moderate | Low | Low |
| Recalibration needs | Infrequent | Frequent | Infrequent | Infrequent | Frequent | Infrequent | Infrequent |
| Capital cost | Low | Low | Moderate | Low | Moderate | Moderate | High |
| Installed Cost | Moderate | Low | Moderate | Low | Moderate | Moderate | Low |
| Maintenance Cost | Low | High | Moderate | Low | Moderate | Low | Low |

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# Annexure Q.1 - List of Bulk Customers

## SSGC – Bulk Customers

| Sr. No. | Sector | Customer | | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|
| | | | | MMCF | MMCF | MMCF | MMCF | MMCF |
| 1 | FERTILIZER | FFBQL | Feed | 19,607 | 15,770 | 14,776 | 12,932 | 13,227 |
| | | **Fertilizer Total** | | **19,607** | **15,770** | **14,776** | **12,932** | **13,227** |
| 2 | STEEL | Pakistan Steel | | 11,951 | 10,125 | 9,826 | 8,420 | 7,623 |
| | | **Steel Total** | | **11,951** | **10,125** | **9,826** | **8,420** | **7,623** |
| | POWER | **WAPDA** | | | | | | |
| 3 | | WAPDA Guddu | | 323 | 1,126 | - | - | - |
| 4 | | WAPDA Kotri | | 5,530 | 3,228 | 3,320 | 2,145 | 3,702 |
| 5 | | WAPDA Sukkur | | - | - | - | - | - |
| 6 | | WAPDA Jamshoro | | 7,226 | 881 | 2,105 | 623 | 5,009 |
| 7 | | WAPDA Quetta | | 1,558 | 1,765 | 1,744 | 1,556 | 1,692 |
| | | **Sub Total** | | **14,638** | **7,000** | **7,169** | **4,324** | **10,403** |
| | | **OTHERS** | | | | | | |
| 8 | | Habibullah Coastel Total | | 6,843 | 5,957 | 5,950 | 5,950 | 6,296 |
| 9 | | KE Total | | 57,186 | 61,883 | 59,946 | 62,275 | 62,523 |
| 10 | | FFBQL | Power | 4,493 | 4,187 | 4,008 | 4,015 | 4,037 |
| | | **Sub Total** | | **68,522** | **72,026** | **69,904** | **72,240** | **72,856** |
| | | **Total Power** | | **83,160** | **79,027** | **77,073** | **76,563** | **83,259** |
| 11 | CEMENT | Attock Cement | | 67 | 75 | 109 | 76 | 58 |
| 12 | | Dewan Cement | | 426 | 178 | 235 | 232 | 444 |
| 13 | | Javedan Cement | | - | - | - | - | - |
| 14 | | Thatta Cement | | 265 | 119 | 13 | 13 | 8 |
| 15 | | Lucky Cement | | 1,482 | 1,568 | 2,547 | 2,334 | 2,111 |
| 16 | | Lucky Cement | | 1,195 | 1,244 | 2,215 | 2,095 | 2,110 |
| 17 | | Anwar Zaib Cement | | 42 | - | - | - | - |
| | | **Cement Total** | | **3,477** | **3,184** | **5,119** | **4,752** | **4,731** |
| | | **GRAND TOTAL** | | **118,195** | **108,106** | **106,794** | **102,667** | **108,841** |

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# Annexure Q.2 - List of Bulk Customers

## SNGPL – Bulk Customers

| Sr. No. | Sector | Customer | | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|
| | | | | MMCF | MMCF | MMCF | MMCF | MMCF |
| 1 | FERTILIZER | PAK-ARAB | Feed | 10,372 | 7,880 | 1,298 | 3,194 | 616 |
| | | | Fuel | 3,122 | 2,557 | 843 | 1,669 | 487 |
| 2 | | DHCL | Feed | 9,171 | 4,286 | 1,629 | 1,523 | 1,094 |
| | | | Fuel | 1,782 | 845 | 365 | 392 | 312 |
| 3 | | PAK-AMR | Feed | 5,894 | 4,184 | 3,019 | 3,544 | 2,082 |
| | | | Fuel | 791 | 726 | 605 | 571 | 820 |
| 4 | | PAK-CHINA | Feed | - | - | - | - | - |
| | | | Fuel | - | - | 2 | - | - |
| 5 | | H/PHOSPHATE | | 69 | 62 | 52 | 52 | 32 |
| 6 | | ENGRO CHEMICALS | Feed | 7,377 | 9,142 | 4,886 | 3,927 | 11,461 |
| | | | Fuel | 3,749 | 3,780 | 1,049 | 1,880 | 920 |
| | | **Fertilizer Total** | | **42,327** | **33,462** | **13,748** | **16,752** | **17,824** |
| | POWER | **WAPDA** | | | | | | |
| 7 | | NGPS MULTAN | | 12 | 4 | - | - | - |
| 8 | | TPS-M/GARH | | 381 | 312 | 334 | 316 | 186 |
| 9 | | MESCO | | - | - | - | - | - |
| 10 | | GUDDU POWER | | 20,267 | 36,400 | 45,835 | 33,499 | 31,558 |
| 11 | | SPS-FSD | | 38 | 61 | | 814 | 140 |
| 12 | | GTPS-FSD | | 2,038 | 441 | 408 | 1,798 | 394 |
| | | | F/CHG | - | - | - | - | - |
| 13 | | GTPS-LHR | | - | - | - | - | - |
| 14 | | RENTED POWER - SKP | | - | - | - | - | - |
| 15 | | RENTED POWER - BHIKKI | | - | - | - | - | - |
| | | **Sub Total** | | **22,736** | **37,218** | **46,577** | **36,427** | **32,278** |

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# Annexure Q.2 - List of Bulk Customers (Cont.)

## SNGPL – Bulk Customers

| Sr. No. | Sector | Customer | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|
| | | | MMCF | MMCF | MMCF | MMCF | MMCF |
| | | **OTHERS** | | | | | |
| 16 | POWER | KAPCO | 4,656 | 4,576 | 1,805 | 3,398 | 2,661 |
| 17 | | RPL | 26,483 | 24,007 | 22,156 | 24,125 | 21,426 |
| 18 | | OGDCL-FKPCL | 6,337 | 5,617 | 5,307 | 6,118 | 4,743 |
| 19 | | ORIENT POWER | 8,035 | 3,462 | 2,963 | 2,280 | 709 |
| 20 | | SAIF POWER CO. (PVT) LTD | 8,405 | 3,353 | 3,265 | 2,249 | 725 |
| 21 | | SAPPHIRE ELECTRIC CO LTD | 6,110 | 3,392 | 3,084 | 2,264 | 752 |
| 22 | | Hallmore Power | 1,883 | 3,312 | 2,572 | 2,182 | 814 |
| 23 | | LIBERTY POWER | 12,814 | 14,205 | 8,635 | 9,041 | 11,842 |
| 24 | | ENGRO ENERGY | 18,045 | 20,309 | 20,355 | 17,498 | 17,681 |
| 25 | | ALTERN ENERGY | 1,722 | 1,724 | 1,863 | 1,889 | 1,664 |
| 26 | | Davis Energen | | | 4 | 598 | 703 |
| | | **Sub Total** | **94,490** | **83,957** | **72,009** | **71,642** | **63,720** |
| | | **Total Power** | **117,226** | **121,175** | **118,586** | **108,069** | **95,998** |
| 27 | CEMENT | KOHAT CEMENT | | 188 | 157 | 154 | 223 |
| 28 | | LUCKY CEMENT | 1,988 | 1,728 | 1,830 | 2,260 | 2,078 |
| 29 | | MUSTEHKAM CEMENT | 161 | 290 | 5 | 5 | 12 |
| 30 | | BESTWAY CEMENT | 413 | 521 | 61 | 36 | 86 |
| 31 | | Garib Wal Cement | 3 | | | | |
| | | **Cement Total** | **2,565** | **2,727** | **2,053** | **2,455** | **2,399** |
| | | **GRAND TOTAL** | **162,118** | **157,364** | **134,387** | **127,276** | **116,221** |

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# Annexure R - KPK Letter

Pakhtunkhwa House
S.A.Q. Road,
Peshawar Cantt

CHIEF MINISTER

NO.PSCM/SNGPL/KPK/1-1/2013/9390.
Dated: 19.12.2013

Subject: GAS LOSSES IN OIL AND GAS PRODUCING AREA OF KHYBER PAKHTUNKHWA AND HEAVY REVENUE LOSSES TO SNGPL

It has been reported that approximately 1000 MMCF/month, gas is being lost at various locations of Khyber Pakhtunkhwa, which is adversely affecting the profit of the SNGPL.The loss in quantum of gas is continuously on the rise due to illegal extensions by locals through unconventional means. SNGPL has been warning off and on the locals of gas producing districts that leaking gas lines not only cause loss to the Company but has a huge potential risk to life and property.

2. As a part of strategy to reduce these losses, SNGPL tried to insert the block valves at the downstream of SMSs Jahangiri and Chakora from where more than 55 villages had taken illegal off-shoots. Consequently, flows from both the SMSs has been considerably brought down. But the villagers threatened the district administration with processions and protests by blocking the Indus Highway. They even took out the blanking plates from the specially installed block valves. Due to these actions of SNGPL the law and order situation suddenly went out of control. The Government of Khyber Pakhtunkhwa is extending all out support to SNGPL through Local Administration to curb continuous increase in gas losses but due to prevailing worst law and order situation in the Province. The situation has become very complex which is badly hampering all administrative measures. The Provincial Government through its Local Administration is trying its level best to convince the locals to get gas connections as per set procedure.

Pakhtunkhwa House
S.A.Q. Road,
Peshawar Cantt.

CHIEF MINISTER

3. The locals feel that since their areas are producing oil and gas, as such it is their right to consume free gas. The Provincial Government is in close contact with SNGPL in curbing the menace because it is fully cognizant of the fact that the country is not only facing severe energy crises but at the other end this wastage has a huge negative impact on National Exchequer. Furthermore, a road map and possible amicable solutions have been discussed with Managing Director SNGPL in a recently convened meeting held on 04-12-2013.

4. In the meeting, another issue of OGRA's disallowance of lost volumes was highlighted by the Management of SNGPL, to which the Provincial Government is in agrement that the gas losses in oil & gas producing areas of KPK are not due to inefficiency of SNGPL but due to prevailing worst law and order situation of the area it could not be controlled even through administrative measures of Provincial Government. But Government is fully committed to make all out efforts to improve this situation. It has also been transpired that SNGPL is losing its profit due to factors beyond their control.

5. In order to deliberate on this complex issue and to find amicable solution, a meeting of all stake holders is to be convened shortly You are requested to make it convenient to attend this meeting for which date & time will be intimated accordingly.

Profound regards.

(Pervez Khattak)

Mr. Saeed Ahmad Khan,
Chairman,
Oil & Gas Regulatory Authority,
Blue Area, Islamabad

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# Annexure S.1 - SNGPL Comments

**SUI NORTHERN GAS PIPELINES LIMITED**
(GAS HOUSE, 21 KASHMIR ROAD, P.O. BOX 66 LAHORE (PAKISTAN)

Ref: RA-UFG-003-17 January 16, 2017

**Mr. Rana Nadeem Akhtar,**
Partner Advisory, KPMG Taseer Hadi & Co.
Chartered Accountants,
Sheikh Sultan Trust Building No. 2,
Beaumont Road,
Karachi.

*Thru: Fax / Courier*
021-35685095

Subject: **UFG BENCHMARK STUDY REPORT - CONSULTATIVE SESSION WITH M/s SSGC ON KMIs**

Dear Sir,
السلام علیکم

This refers to meeting held at OGRA Office on 29-12-2016 and letters No. OGRA-9(379)/2015 dated 03-01-2017 and 06-01-2017 (copies attached) whereby the Authority directed SNGPL and SSGC to jointly discuss the KMIs and arrive at a conclusion so that KMIs of both Sui Companies are same. In this regard, team comprising of Senior Officers of M/s SSGC visited SNGPL Head Office on 12-01-17 to 13-01-2017 and detailed discussions were held on the issue of KMIs.

The basic objective of the KMIs should be to facilitate the downward trend of UFG, keeping in view all the technical, financial and logistical hurdles being faced by SNGPL. The Company is of the firm opinion that execution of KMIs cannot be a time specific activity as experience has revealed that efforts to control UFG require continuous efforts on annual basis to curtail the menace. The Company is already successfully executing 'UFG Reduction Plan', duly approved by the Authority, which includes crucial UFG control activities, envisaged in view to target the key UFG contributing factors.

We understand that the gas companies, having vast experience in the natural gas sector, are in a better position to identify their core issues affecting UFG and accordingly plan the corrective actions. Moreover, since UFG reduction is the job of gas companies, so the gas companies should be authorized to select the UFG control activities to be incorporated as KMIs along with appropriate weightage for more productive results.

It is again highlighted that the execution of activities defined in the KMIs will require specific budgetary provisions on an annual basis, along with additional provisions in HR benchmark to be allowed by OGRA, leading to a consequential rise in tariff which will have to be borne by the gas consumers.

The gas companies after considering the relevant UFG contributing factors and thorough mutual discussions have finalized the KMIs which are given in table below:

| KMI No. | | Description of KMI | | % Age Weightage |
|---|---|---|---|---|
| 1 | Gas Theft | Inspection of each industrial consumer once every month | Industry | 8% |
| | | Inspection of each commercial consumer on quarterly basis | Commercial | 7% |
| | | Inspection of 20% of total domestic consumers (all consumers will be inspected in 5 years period) | Domestic | 5% |
| | | **Sub Total** | | **20%** |
| 2 | | Number of connections disconnected as a % age of connections due for disconnection in respect of gas theft | | 4% |
| 3 | | Inspection of disconnected consumers as follows: **Industry** = 100% , **Commercial** = 25% & **Domestic** = 10% | Industry | 2% |
| | | | Commercial | 2% |
| | | | Domestic | 1% |
| | | **Sub Total** | | **5%** |
| | | **Total Gas Theft Control** | | **29%** |
| 4 | Measurement Errors Resolution | Number of Defective Industrial meters replaced as a % age of total defective Industrial meters reported/notified | Industry | 8% |
| | | Number of Defective Commercial meters replaced as a % age of total defective Commercial meters reported/notified | Commercial | 7% |
| | | Number of Defective Domestic meters replaced as a % age of total defective Domestic meters reported/notified | Domestic | 5% |
| | | **Sub Total** | | **20%** |
| 5 | | Industrial meters replaced as a % age of total Industrial meters qualifying Schedule Replacement Criteria | Industry | 7% |
| | | Commercial meters replaced as a % age of total Commercial meters qualifying Schedule Replacement Criteria | Commercial | 5% |
| | | Domestic meters replaced as a % age of total Domestic meters qualifying Schedule Replacement Criteria | Domestic | 3% |
| | | **Sub Total** | | **15%** |
| | | **Total Measurement Errors Resolution** | | **35%** |
| 6 | Gas Leakages | Underground network replaced as a %age of total annual network replacement target as recommended by Corrosion Control Department | | **8%** |
| 7 | | Present level of 2.2 underground leaks/Km is to be reduced gradually | | **8%** |
| 8 | | Survey of 15% of total domestic connections annually and rectification of detected aboveground leak connections | | **5%** |
| 9 | | Number of CP stations installed/renovated as a %age of CP stations selected for installation/renovation | | **5%** |
| 12 | | Number of gas leakage complaints resolved as a % age of actual number of such complaints received by company | | **5%** |
| | | **Total Gas Leakage Control** | | **31%** |
| 13 | Misc | Trainings , knowledge Sharing, Meetings etc) | | **5%** |
| | | **Grand Total** | | **100%** |

**SUI NORTHERN GAS PIPELINES LIMITED**
(GAS HOUSE, 21 KASHMIR ROAD, P.O. BOX 66 LAHORE (PAKISTAN)

SNGPL would like to highlight that the above KMIs have been proposed, keeping in view the current situation. However, it will be appropriate and prudent to review these KMIs as well as their weightage annually through more consultative process between OGRA and SNGPL at start of each financial year and necessary amendments, where required, may be made accordingly. It is so because, one activity may be important and necessary during the current year but may be less productive during next coming years and there might a need to include an altogether new activity, keeping in view the prevailing business dynamics.

We would also like to further augment earlier response/comments of the Company on following issues regarding 1st Draft of "UFG Study Report" furnished through earlier letter No. RA-UFG-11-16 dated 04-11-2016:

**1.Volumetric impact against Bulk Retail ratio, considering 2003-04 as base year:**
The consultant while calculating the volumetric impact of Bulk Retail ratio has used Retail UFG % age of FY 2003-04 instead of using the Retail % age UFG of respective year, pertaining to which volumetric impact is being calculated (e.g. if volumetric impact of bulk retail of FY 2014-15 is to be calculated, the Retail % age UFG of
FY 2014-15 should be used, instead of Retail % age UFG of FY 2003-04) because the Retail % age of current year (in this example i.e. FY 2014-15) is the actual representative of current behavior of losses in Retail sector.

**2. Allowance against the β factor:**
The Company's performance against the KMIs should be incentivized through introduction of another fixed parameters. It is proposed that fixed UFG allowance may be revised upward or beta (β) should be considered from 0.5 to 1.5 instead of 0 to 1. e.g. If the consolidated performance of Company against KMIs works out 0.4, then effective β should be 0.5+0.4 = 0.9. It is necessary to safeguard the interest of the company by providing due advantage to Company against changes in Bulk to Retail, which is due to pursuance of socio-economic agenda of GoP, in line with guidelines of ECC of Cabinet to OGRA, which have been ratified by the Federal Cabinet in its meeting held in September, 2016.

We would also like to refer to requisition of Consultant M/s KPMG to provide the copies of correspondence referred by our Mr. Saqib Arbab, General Manager (Peshawar) during the consultative session held at OGRA Office on 29-12-2016. In this regard, the requisite documents are attached as ***Annex-I*** (containing 472 pages) for ready reference.

This is for your information and further necessary action.

Yours Sincerely,
Sui Northern Gas Pipelines Ltd

**(KAMRAN AKRAM)**
GENERAL MANAGER (RA)
*for* MANAGING DIRECTOR

***Encl: As above***
CC: **Mr. Shahzad Iqbal,**
Executive Director (Gas),
Oil and Gas Regulatory Authority, **Islamabad.**

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# Annexure S.2 - SSGC Comments

Sui Southern Gas Company Limited

Ref: RA/53
January 16, 2017

Mr. Rana Nadeem Akhtar,
Partner Advisory, KPMG Taseer Hadi & Co.,
Chartered Accountants, Sheikh Sultan Trust Building No.2,
Beaumont Road,
Karachi

**CONSULTANT FIRST DRAFT UFG BENCHMARK STUDY REPORT**

Dear Sir,

This refers to OGRA Letter No.OGRA-9(379)/2015, dated 6 January 2017 and joint meeting in OGRA Office dated 29 December 2016 regarding response of the Sui Companies on "First Draft UFG Benchmark Study".

As advised by OGRA, both Sui Companies after detailed deliberations have finalized unified KMIs with same weightages on each KMI that are enclosed for your kind consideration.

Please feel free to contact us if you need any clarifications in this regard.

Regards,

Shoaib Ahmed
GM (Regulatory Affairs)
For Managing Director

cc : Mr. Shahzad Iqbal,
Executive Director (Gas)
OGRA, Islamabad

**Sui Southern Gas Company Limited**

**Key Monitoring Indicators**

1. The Report has recommended Key Monitoring Indicators spread over a period of 5 Years, after which UFG rate of 5% is to be achieved by FY 2021.

   UFG factors and its weightages are kept changing based on various policies and economic conditions. It is suggested that these KMIs should be reviewed annually with UFG reduction Targets under Annual Estimated Revenue Requirement of the Company. Both Sui Companies worked out similar KMIs after detail discussion on each KMI as given below:

| | Act | Rev |
|---|---|---|
| **Network Visibility:** Segmentation, Metering on TBS/ Area wise, Meter Inspection, Replacement of Defective Meters, Reduction in Minimum Billing | 54% | 55% |
| **Network Improvement:** Rehabilitation, Underground/ Overhead Leak Repairs, CP Coverage | 23% | 26% |
| **Theft Control:** Detection, Disconnection & Complains | 18% | 14% |
| **Research & Development:** Training, Capability Enhancement, HSE, Data Quality, Knowledge Sharing | 5% | 5% |
| **Total** | 100% | 100% |

2. The weightages allotted to these KMIs are proposed as follows:

**SSGC's Observations on Key Monitoring Indicator (β Working)**

| | | Beta (β) | |
|---|---|---|---|
| | **Network Visibility** | **Act** | **Rev** |
| | Number of TBSs Metered with EVCs/Modems Installed as a % of total TBSs. | | |
| 1 | The purpose of installing TBS is to reduce the pipeline pressure required in system and most of TBS are located in remote areas where there is no provision of a measurement facility. For network visibility, Segment wise Gas Volume Reconciliation is suggested where one segment covers 100% customers.<br><br>The Company has already developed a segmentation plan for large cities where network is interconnected and small towns where cluster of TBS and PRS would be treated as one segment under SMSs.<br><br>The Company realize its importance and segmentation efforts have been expedited to identify high UFG areas and strategize UFG reduction activities accordingly. However, it is proposed that these segmentation should not be part of KMIs as there will be many difficulties in creating additional segments and its reconciliation of Gas Purchase and Sales Figures. This is only be required for internal controls. | 20% | 0% |

Page 2 of 8

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# Annexure S.2 - SSGC Comments

**Sui Southern Gas Company Limited**

| | | | Beta (β) | |
|---|---|---|---|---|
| 2 | Number of Meters Inspected (Consumer Wise) annually as a % of total metered connections.<br><br>Vigilance of all categories of consumers is integral part of UFG Reduction Plan. The performance should be measured separately for each customer class based on following schedule:<br><br>a) 100% Industrial Consumers on Quarterly Basis 5%<br>b) 100% Commercial Consumes on Semi-Annually Basis 7%<br>c) 20% of Domestic Consumers (around 600,000) annually 8% | | 5% | 20% |
| 3 | Number of Bulk Meters Installed annually area wise.<br><br>The precise quantification of losses at SMSs feeding these areas prone to gas pilferage is available on month wise as well as year wise basis and in no case involves any estimation. Moreover, it may not be possible for the company to install bulk meters feeding different pockets in these areas.<br><br>This KMI should not be made part of KMIs. | | 3% | 0% |
| 4 | Number of total defected (Slow & PUG/Sticky) meters replaced as a % of total meters.<br><br>Replacement of meters is a continuous ongoing activity and it cannot be ensured that after 5 years and no further meters will become defective or require replacement.<br>The performance should be measured against identified defective meters (instead of Total Meters) separately for each customer class based on following schedule:<br>a) Industrial Meters 5%<br>b) Commercial Meters 7%<br>c) Domestic Meters 8% | | 3% | 20% |
| 5 | Number of TBSs segmented as a % of total no. of TBSs.<br><br>TBS wise Segmentation may be difficult to achieve in big Cities, this KMI should not be made part of KMIs. | | 10% | 0% |
| 6 | Number of Minimum billed consumer as a % of total number of domestic consumers.<br><br>The minimum billed consumers fall due to actual low consumption or measurement issues in meters. The consumers cannot be forced to increase their consumption.<br><br>The minimum billed customer %age varies between 22% to 35% depending on the seasonal consumption that are surveyed on selected criteria and it is observed that only 13 % meters are identified as slow/ PUG. | | 3% | 0% |

Page 3 of 8

**Sui Southern Gas Company Limited**

| | | | Beta (β) | |
|---|---|---|---|---|
| | This KMI should be measured against survey as % of Minimum billing customers and merged with KMI 2. | | | |
| 7 | Number of total defected meters identified as a % of total meters.<br><br>The performance should be measured against identified defective meters.<br><br>This KMI should be merged under KMI 4. | | 5% | 0% |
| 8 | Number of meters replaced as a % of total number of meter eligible for replacement.<br><br>This is a continuous ongoing activity to be carried out annually. The performance should be measured separately for each customer class based on following schedule:<br><br>a) Industrial Meters after 3 Years* 4%<br>b) Commercial Meters after 7 Years 5%<br>c) Domestic Meters after 16 Years 6%<br><br>* Instead of Industrial Meter replacement, SSGC carries out meter proving/ testing at field (Field Proving at meter installation site) and at workshop. Any meter found outside accuracy limits is replaced immediately. | | 5% | 15% |
| **Network Improvement** | | | | |
| 9 | Length of the distribution network rehabilitated (KMs) as a % of total length of distribution network.<br><br>This is a continuous ongoing activity to be carried out annually based on extreme requirement to avoid unnecessary wastage of funds.<br><br>The Target of Rehabilitation is around 300 KMs per annum (based on previous actual results).<br><br>The performance may be compared against Targets in revised UFG Reduction Plan (instead of total length of network). | | 10% | 8% |
| 10 | Number of underground Leaks rectified per KM as % of the total leakage rate per KM.<br><br>This is a continuous ongoing activity to be carried out annually and rate of average leaks per KM varies area to area, it is difficult to reduce the per km leakages drastically because new leakages develop in the network because of damages and soil conditions, it will be very difficult to reduce the per km leakages drastically.<br><br>The performance may be compared against Targets in revised UFG Reduction Plan (instead of total leakage rate per KM). | | 5% | 8% |

Page 4 of 8

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# Annexure S.2 - SSGC Comments

**Sui Southern Gas Company Limited**

| | | Beta (β) | |
|---|---|---|---|
| | Number of overhead leak rectified as a % total number of domestic consumers.<br><br>This is a continuous ongoing activity to be carried out annually, the performance may be based on both surveyed and rectified of 15% of total domestic connection annually.<br><br>The performance may be compared against Targets in revised UFG Reduction Plan (instead of total number of domestic consumers). | | |
| 11 | | 4% | 5% |
| | Number of KMs with Cathodic protection coverage as a % of total No. of KMs of distribution network.<br><br>At present, Out of 85% Steel Pipelines Network consists of 28% Supply Mains (SMS to TBS) that are almost protected (around 90%) and remaining 72% Distribution Mains and Services that are not well protected (around 50%).<br><br>Overall Steel Pipelines is surveyed on quarterly basis and magnesium anodes are installed on small Dia Pipelines where CP Stations are not feasible, Battery Backup Systems are installed at CP Stations to ensure pipeline protection level in absence of electricity.<br><br>It is practically impossible to ensure 100% cathodic protection of distribution network due to various constraints such as Power outage, Third party damage, no right of ways, pipeline coating service life / pipeline aging, soil condition and difficulties to carryout operational work in large cities.<br><br>This is very important aspect and it is proposed that the performance may be measured as % of steel larger Dia Pipeline instead of total distribution network. The proposed KMI will as follow:<br><br>Number of CP stations installed/renovated as a %age of total target CP stations selected for installation/renovation. | | |
| 12 | | 4% | 5% |
| **Theft Control** | | | |
| | Number of theft cases detected-against registered consumers.<br><br>CR Department received around 50,000 theft cases p.a. from following sources:<br>a) Billing Department<br>b) Surveillance &Monitoring<br>c) CRD Field Staff<br>d) SSGC complaint center (1199)<br>e) Media | | |
| 13 | | 4% | 0% |



**Sui Southern Gas Company Limited**

| | | Beta (β) | |
|---|---|---|---|
| | The company will explore new sources to increase reporting of number of theft cases, however, this KMI should be measured against performance i.e; disconnections of reported cases.<br><br>It is proposed to merge under KMI 15. | | |
| | Number of theft cases detected against non-registered consumers.<br><br>The companies, through constant vigilance, identify and disconnect as many instances of theft by non-consumer that they can. The theft of gas by non-consumers (i.e. persons not registered on the company's network) is difficult to identify, quantify and approach.<br><br>New Gas Theft Act deals with instances of gas theft only, the companies are not provided with the security to recover the amounts lost.<br><br>CR Department detected around 125,000 theft cases against non- registered customers in FY 2015-16.<br><br>These efforts may further be increased if OGRA appreciate and reward allowance against this particular factor. This KMI may be included subject to its treatment. | | |
| 14 | | 4% | 0% |
| | Number of disconnections in respect of theft as a % of total consumer base of the period.<br><br>These illegal connections are disconnected wherever detected despite resistance of people, however, these connections are immediately reconnected by rapturing pipeline from another point. As a result, pipeline is deteriorated with high rate of leakages and corrosion.<br><br>CR Department will attempt/ disconnects around 100% theft cases against non-registered customers detected in Karachi Region whereas the theft cases in Interior Sindh and Baluchistan cannot be attempted/ disconnected due to resource constraints in managing large scattered areas as well as reluctance of lodging FIRs by the local police stations at all regions.<br><br>The performance may be measure against detected cases (instead of total customers) | | |
| 15 | | 4% | 4% |
| | Number of gas theft/ leakages complaints received per 100,000 consumers annually. | | |
| 16 | CR Department receives around 45,000 leakage complaints during FY 2015-16. Complaint resolved against received may be utilized as performance indicator. This KMI should be merged under KMI 17. | 3% | 0% |



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# Annexure S.2 - SSGC Comments

**Sui Southern Gas Company Limited**

| | | | Beta (β) | |
|---|---|---|---|---|
| 17 | Number of gas theft/Leakages complaints resolved per 100,000 consumers annually. CR Department resolves 100% leak complaints received. This KMI should be based on Complaint resolved against received as performance indicator (instead of 100,000 customers) | | 3% | 5% |
| * | It is proposed to add survey of disconnected customers as it is experienced that most of theft cases are reported at locations where gas supply was disconnected.<br><br>The performance should be measured separately for each customer class based on following schedule:<br>a) 100% Industrial Disconnected Consumers annually 2%<br>b) 50% Commercial Disconnected Consumes annually 1%<br>c) 20% Domestic Disconnected Consumers annually 2% | | 0% | 5% |
| **Research & Development** | | | | |
| 18 | Number of training hours per employee per year. | | 1% | 1% |
| 19 | Improved capability of cost effective construction. Maintenance and emergency repairs | | 1% | 1% |
| 20 | Number of environmental issues rectified during the year / Amount of penalties paid as a result of violation of environment laws. | | 1% | 1% |
| 21 | Volume of data quality issues identified during the year. | | 1% | 1% |
| 22 | Number of knowledge sharing meetings / joint sessions attended / organized during the period. | | 1% | 1% |
| **Total** | | | **100%** | **100%** |



**Sui Southern Gas Company Limited**

**Summary of Proposed Key Monitoring Indicators (KMIs)**

| | # | Description of KMI | | %age |
|---|---|---|---|---|
| Gas Theft Resolution | 1 | Vigilance of all categories of consumers.<br>a) 100% Industrial Consumers on Quarterly Basis<br>b) 100% Commercial Consumes on Semi-Annually Basis<br>c) 20% of Domestic Consumers (around 600,000) annually | <br>5%<br>7%<br>8% | 20% |
| | 2 | Number of disconnections in respect of theft cases identified for the period. | | 4% |
| | 3 | Survey of disconnected customers<br>a) 100% Industrial Disconnected Consumers annually<br>b) 50% Commercial Disconnected Consumes annually<br>c) 20% Domestic Disconnected Consumers annually | <br>2%<br>1%<br>2% | 5% |
| Measurement Errors Resolution | 4 | Number of total defected (Slow & PUG/Sticky) meters replaced as a % of identified defective meters.<br>a) Industrial Meters<br>b) Commercial Meters<br>c) Domestic Meters | <br>5%<br>7%<br>8% | 20% |
| | 5 | Number of meters replaced as a % of total number of meter eligible for replacement.<br>a) Industrial Meters after 3 Years<br>b) Commercial Meters after 7 Years<br>c) Domestic Meters after 16 Years | <br>4%<br>5%<br>6% | 15% |
| Gas Leakages Rectifications | 6 | Length of the distribution network rehabilitated (KMs) as a % of Targets in UFG Reduction Plan | | 8% |
| | 7 | Number of underground Leaks rectified per KM as % of Targets in UFG Reduction Plan | | 8% |
| | 8 | Number of overhead leak rectified as a % of Targets in UFG Reduction Plan | | 5% |
| | 9 | Number of CP stations installed/ renovated as a %age of total target CP stations selected for installation/ renovation. | | 5% |
| | 10 | Number of gas leakage complaints resolved as a % age of actual number of such complaints received by company | | 5% |
| Misc. | 11 | Training, Capability Enhancement, HSE, Data Quality, Knowledge Sharing | | 5% |
| | | **Total** | | **100%** |



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# Annexure T(1) - Response to the Comments on 1st Draft | UFG

In response to our 1st draft of UFG study report dated 21 September 2016 submitted, the Authority circulated the report to the Sui Companies for necessary consultation and feedback. Thereafter, Sui Companies have provided their comments as annexed to this report (Refer Annexure T.1 - SNGPL response on 1st draft and Annexure U - SSGC response on 1st draft).

We have considered the observations raised by Sui Companies and the Authority and have incorporated the required changes / observations in the 2nd draft report.

The major comments are relating to the factual accuracy of the data presented in the report, the UFG formula, comparison made with International practices, impact of bulk to retail shift and Key Monitoring Indicators.

We understand that the formula proposed in our 1st draft needs simplification and accordingly we have simplified the UFG Benchmark Formula.

Our study recognizes that Sui Companies have to operate under adverse operating conditions as compared to other similar utility companies across the globe. Accordingly, additional allowance factor is suggested to cover impact of gas losses. This factor is suggested to cover impact of gas losses due to shift in the sales mix from bulk towards retail consumers expanding the network and making it more prone to theft, leakages and data/meter errors. Similarly, impact of factors like non-recovery of gas bills from law and order affected areas is included.

Allowance for these challenging conditions was suggested to be 4.05% based on the past 4 years UFG claims made by the Sui Companies against above mentioned factors.

We updated KMIs and their scores based on the proposed KMIs of the Sui Companies. Also, we attempted to incorporate the affect of the Contributing factors that are uncontrollable.

Sui Companies have requested to rearticulate a range of the Incentive factor i.e. "Beta" to 0.5 – 1.5. However, we believe that Beta is an incentive factor as well as a driving tool for the Sui Companies to keep them motivated to execute their pre-agreed plans to control UFG. The success of achievement of KPIs will guide OGRA in providing a UFG allowance top-up which is the sprit of this formula and should remain within the range of 0.0 – 1.0.

We have also suggested OGRA a modus operandi relating to UFG allowance for the previous and current years along with the frequency and timing of annual review to evaluate and monitor KMIs.

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# Annexure T(2) - Response to the Comments on 2nd Draft | UFG

In order to determine UFG benchmarks based on international best practices, local environment and keeping in view the operating conditions of the Sui Companies, OGRA initiated a comprehensive UFG study. In response to our 2nd draft of UFG study report dated 3 February 2017 submitted, the Authority through a public notice invited all stakeholders to furnish their comments/ views on the 2nd draft report to the Authority.

To make the report finalization process meaningful Stakeholders Awareness Sessions UFG Study were held in five (5) major cites of Pakistan viz Karachi, Lahore, Islamabad, Peshawar and Quetta during 3 Mar 2017 to 22 Mar 2017 where we presented to the stakeholders and general comments / views were sought and addressed.

We have considered the observations raised by Sui Companies, the Authority and other stakeholders and have incorporated the required changes / observations in the final report.

The major comments are relating factual accuracy of the data presented in the report, the UFG formula, Key Monitoring Indicators, the improvement in the law and order conditions in KPK, comparison made with international practices, impact on the change in sales mix and Key Monitoring Indicators.

The Rate 2 of the suggested UFG Benchmark Formula is modified after deliberation of the comments and feedback of various stakeholder.

Considering ground realities of Sui Companies operating conditions as compared to other similar utility companies across the globe, additional allowance "Rate 2" is suggested for local challenging conditions as compared to the world at large. This factor is suggested to cover impact of gas losses due to shift in the sales mix because of expanding gas supply network in retail sector and making it more prone to theft, leakages, data/meter errors, and non-recovery of gas bills from law and order affected areas.

Allowance for these challenging conditions is suggested to be 2.6%, calculated on the average claimed volumes of law and order situations and theft by non-consumers.

We have updated KMIs and their scores based on the proposed KMIs after the consultative sessions with Sui Companies.

We have also suggested OGRA a modus operandi relating to UFG allowance for the previous and current years along with the frequency and timing of annual review to evaluate and monitor KMIs.

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# Annexure T.1 - SNGPL response on 1st draft

**DRAFT COMMENTS/RESPONSE REGARDING**

**1ST DRAFT OF "UFG STUDY REPORT" BY M/s KPMG**

## 1 EXECUTIVE SUMMARY

1. The company has gone through the draft of the 'UFG Benchmark Study Report' (the "Report"), prepared by the consultants M/s KPMG (the "Consultants"). While we sincerely appreciate the efforts of the Consultants in preparation of the Report, we believe that certain aspects have been missed out in the Report. The Consultants have made comparisons of SNGPL with some of the international best practices in certain cases, but it should be acknowledged that it may not be realistic due to dissimilar operating conditions. Such a comparison would only have been relevant if those companies had similar dynamics as SNGPL with respect to:
   a. Working/operating conditions, especially with respect to supply & demand gap
   b. Consumer base
   c. Gas Sales Mix
   d. Size of network
   e. Law and order situation
   f. Tendency of gas theft both by registered and unregistered consumers
   g. Impact of power outages on integrity of distribution network
   h. Impact of increased load curtailment
   i. Gas Allocation & Management Policy of the Government in pursuance of Socio- Economic agenda of Government of Pakistan etc.

   None of above highlighted issues are dominant in case of international gas companies which operate on the basis of commercial viability whereas for SNGPL such operating conditions are not available. Furthermore, financial implications of added requirements/steps to be taken by the Company appear to have been ignored in the UFG Study Report since it fails to consider the fact that the operating cost per consumer of SNGPL, which is currently considerably low as compared to companies operating on commercial considerations, will significantly increase.
2. Furthermore, it appears that the Report has misunderstood certain issues, such as the issue of measured loss in law and order affected areas of KPK Province, and the same needs review as maintenance of law and order is a provincial subject, in line with the 18th amendment to the Constitution whereas recommendations/conclusions of the Report on this particular issue are contrary to the provisions of the Constitution. Therefore, the Provinces would be the appropriate authority to declare an area as law and order affected and in this particular case, the Report does not appreciate that the Chief Minister of KPK himself has written to the Authority accepting inability of Provincial Government to control the law and order situation. The interference of the locals in these areas has increased to such an extent that now with political support, they increase the delivery pressures of SMSs at their own, which may not only result in increase of losses at these SMSs but may also cause any untoward situation. This bleak law and order situation has also been reported in the print media and its evidences were provided to the Consultants. Similar issues are being faced by Oil and Gas, Exploration and Production (E&P) Company M/s MOL, Pakistan working in these areas, whereby its production was suspended due to protests by locals. Instances have also been reported by M/s

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# Annexure T.1 - SNGPL response on 1st draft (Cont.)

MOL Pakistan in which the locals attempted to sabotage/pilfer their 'gathering system' in TAL, block area. So this particular factor is beyond the company's control.

3. The Report, despite recognizing on Page No. 57 thereof that ***"...owing to factors listed above and other complexities in retail supply of gas, argument for non controllability of theft by company carries weight and needs to be addressed"***, concludes the issue of theft by non- consumers in a manner contrary to established facts and against the provisions of OGRA Ordinance and applicable laws. Therefore, the same needs to be reviewed and allowances have to be made by the Authority in gas losses in this regard.
4. The technical, financial and logistical hurdles being faced by the Company have not been given due weightage, especially while giving KMIs to be achieved by the Company in the Report. Execution of activities defined in the KMIs will require specific budgetary provisions on an annual basis, along with additional provisions in HR benchmark, leading to a consequential rise in tariff which will have to be borne by the gas consumers. The Report presumes that execution of certain KMIs in next five years will permanently bring down UFG to 5 %, whereas, in reality, the execution of different UFG control activities is a continuous ongoing activity which has to be carried out regularly irrespective of any specified time period.
5. The ECC of Cabinet was cognizant of the situation and has issued policy guidelines to Authority, considering complexity of the issue, to allow the volumes claimed by the company against following factors beyond its control:
   a. Gas Volume pilfered by Non-consumers
   b. Gas Losses in Law & Order affected areas
   c. Impact of change in Bulk Retail Ratio on UFG, using the base year 2003-04
6. The Report has recommended replacing the underground network, without giving reference of international practices in this respect, which needs to be elaborated. On the contrary the company has adopted very scientific approach to reduce the impact of underground leakage loss.
7. The factor as given in the TOR i.e.. *"Measurement Errors"* has not been understood in its true perspective and the Report has misconstrued metering at TBSs/DRSs. Measurement at TBSs/DRSs is contrary to the international practices. Measurement is carried out whenever there is custody transfer and all the custody transfer points on SNGPL network i.e.. Gas Sources, SMSs and CMSs are accurately metered. So it needs to be reviewed.
8. The conclusion arrived at by the Report on Page No. 60 thereof that ***"Sui companies do not have implemented sufficient measures/control that can help companies deal with the UFG issue in a sustainable manner..."*** is incorrect as the successful execution of UFG Reduction Plan of SNGPL, duly approved by OGRA and the results achieved thereon by SNGPL with regard to reduction in UFG, are sufficient to speak itself.

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# Annexure T.1 - SNGPL response on 1st draft (Cont.)

**9.** The Report has not recommended any allowance in overall UFG benchmark with regard to losses in Transmission network, which needs to be reviewed in line with international practices.

**10.** While recommending the UFG Benchmark, the Report states on Page No. 68 thereof that ***"UFG allowances are commonly set in correlation with gas consumption and network lengths"***. Considering this recommendation, the countries referred by the Report for the purpose of UFG benchmark, i.e.. Turkey and Bangladesh, **are incomparable as they have only 15,641 km and 20,804 Km network (15% and 20% respectively), as compared to an over 100,000 km network in case of SNGPL**. In case of Bangladesh, a model of appliance based billing for domestic consumers i.e.. 87 $M^3$ is used (it is consumption of 2 domestic burners per customer and for single burner, it works out 43 $M^3$ which is consistent with the minimum billing volume of 40 $M^3$ in case of SNGPL), irrespective of their consumption that results in lower UFG rate. **Moreover, approximately 65% of gas is allocated to bulk sector, based on available information pertaining to their Gas Sales Mix. Similarly, in case of Turkey, 48% of gas is allocated to bulk sector**.

**11.** ***If countries like USA (Texas), Russia and Australia (Multinet) have benchmark in range of 5%, the typical circumstances being faced by the SNGPL warrant for reasonable UFG benchmark commensurate with the very UFG factors beyond its control, ground realities, operational constraints and unfavourable operating conditions. The Company strongly feels that the Report needs a review in light of the UFG Benchmark data of different countries, particularly with reference to all the UFG contributing factors mentioned in the TOR's finalized by OGRA and the UFG benchmark of each country needs be evaluated for all these UFG contributing factors. Only in that case comparison of UFG benchmark can be relevant and rational.***

**12.** The Report was required to study the relevant UFG contributing factors. The Company reiterates the need for revisiting the relevant UFG contributing factors annually by OGRA to make the UFG benchmark reasonable and realistic

**13.** That, in light of the above submissions, the Company provides its detailed comments on the Report, section by section, herein below:

**2 <u>SECTION NO. 1</u>**

**1. <u>BACKGROUND</u>**

Some of the figures quoted in this section of the report are incorrect and need attention.

- On page No. 17 it has been stated that UFG of the company has reached up to 15% in Year 2015 which it totally incorrect. In line with OGRA determination of FRR of FY 2014-15, UFG of SNGPL is 10.97%.

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# Annexure T.1 - SNGPL response on 1st draft (Cont.)

- On page No. 18 the data table showing UFG figures of SNGPL are not in line with OGRA's Determinations of respective years.
- On Page No. 19, the data table containing network length and consumer base pertaining to SNGPL is incorrect.

**2. UFG DEFINITION, CALCULATION AND METHODOLOGY**

Stance of SNGPL has been reproduced regarding UFG calculation formula.

**3. UFG CONTRIBUTING FACTORS**

**2.3.1 GAS THEFT**

**2.3.1.1 Theft-Causes and Concern of Sui Companies:**

On Page No. 27 of the Report, the stance of the people living in Baluchistan has been mentioned but similar stance of people in oil and gas producing, law affected areas of KPK province have been missed out, which needs to be made part of report.

**2. OGRA Procedure for Dealing with Theft of Gas Cases**

On Page No. 28 of the Report, it is stated that the Company requested for revision in OGRA 'Procedure for Dealing with Theft of Gas Cases' on the premise that *"...recovery claims stay pending in court of law for longer of time and no special courts…"*, which is incorrect. In fact, the Company requested OGRA for revision in this Procedure because the Company had presented certain cases to OGRA in which admissible evidences were available which were sufficient to prove that consumers were involved in gas theft for a period exceeding 12 months. Keeping in view the presented cases, OGRA has partially amended the said procedure and has allowed charging of "direct by pass" cases up to a recoverable period of 36 months.

**3. Table TT-4 (Consumer wise analysis of theft volume and recoveries :**

The comparison of detected gas theft cases with the total consumer base is irrational. Detailed response in this regard, is given in para No. 2.5.1.1 of this document

**2.3.2 LAW AND ORDER AFFECTED AREAS:**

On Page No. 33 of the report, it has been stated that OGRA allows claims pertaining to law affected areas on basis of gas supplied to these areas through 13 SMS's. This perception reflected in the Report is incorrect. The claim of SNGPL is not based on gas supplied to these areas, but, in fact, it is based on measured loss. Detailed response in this regard is given in Para No. 3.11 of this document.

**2.3.3 LEAKAGES**

On Page No. 37 of the report, it has been stated that company needs to consider the thickness of its pipeline to protect its network from being corroded. The Company uses steel pipe conforming to the specification defined in Standard *'API-5L: Specification for Line Pipe'* and for design of distribution piping, follows Code *'ASME B 31.8: Gas Transmission and Distribution Piping System'* so the thickness of pipe cannot be altered beyond provisions of Standard/Code.

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# Annexure T.1 - SNGPL response on 1st draft (Cont.)

**2.3.3.1 Overhead Leakages:**

On Page No. 40 of the report, a figure of 1.8 leak/connection in the case of aboveground leakages from domestic connections has been worked out, which is incorrect and as such cannot be presented in this way. It was informed that there are around 9 No. threaded joints in each domestic connection above the surface and on the basis of different studies, contribution of 15 to 20% in total losses has been worked out due to aboveground leakages.

**4. MEASUREMENT ERRORS:**

On Page No. 41 of the report it has been stated that since transmission network is fully metered, so there is negligible UFG in transmission system. The Report has been unable to differentiate those very factors which differ in case of transmission and distribution network which contribute to losses. Losses in Transmission network are comparatively on lower side due to following:

a. No gas theft.
b. Smaller length of Transmission Network (less than 8,000 Km) as against distribution network which is over 100,000 Km. The Transmission network has been laid in Company's owned 'Right of Way' so there are no significant instances of gas leakages, except ruptures due to sabotage activities.
c. Precise measuring gadgets, with high accuracy and close monitoring of Transmission network through SCADA (Supervisory Control and Data Acquisition) system. There are ONLY 390 Sales Meter Stations as against consumer base on distribution network, which have crossed a figure of 5.2 Million.

**1. Table ME-1 (Page No.42):**

Only 73% of total consumers have been shown as metered, which is totally incorrect. In fact 100% of the consumers connected to SNGPL are measured. The consultant has considered all the minimum billed cases as sticky, which is not logical.

**2. Table ME-6a (Page No. 46)**

It has been stated that useful life of 14.5% of total industrial meters has lapsed, which is incorrect. Company is following the criteria for replacement of meters against 'Schedule Replacement Program' prescribed by OGRA. Details are given in Para No. 4.2.8 of this document.

**4. EFFECT OF UFG DISALLOWANCE**

Effect of UFG disallowance is attached as Annexure-A .

**5. CONCLUSION TO THE SITUATIONAL ASSESSMENT**

**1. GAS THEFT**

The Report lists the following as significant impediments with regard to gas theft:

- Continuous growth of the gas distribution network

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# Annexure T.1 - SNGPL response on 1st draft (Cont.)

- insufficient and delayed legislative support for recovery of detected cases
- inadequate monitoring and maintenance efforts of sui companies
- expectation of free gas supply in gas producing areas

However, the following important factors have been ignored/considered insignificant by the Report, which are reiterated by the Company since the same are beyond its control:

- Increase in gas price, tempting consumers to use unfair means
- Shortage of gas supplies, tempting consumers to use it illegally
- Moratorium on new gas connections of industrial and commercial category and provision of limited number of domestic gas connections as against huge number of applications pending for new gas connections.

**2.5.1.1 Theft By Consumers:**

The Report makes comparisons of a number of detected gas theft cases with the total number of consumers, which is irrational and has worked out an incorrect figure to show that Company has detected gas theft cases which are only 1% of total consumer base. The efforts of SNGPL against gas theft cannot be gauged by such a comparison, as the Company is executing its UFG Reduction Plan, duly approved by OGRA and vigilance of industrial, commercial and domestic consumers are its most important components. The following are targets defined in this plan:

| Activity | Target |
|---|---|
| Industrial CMS inspection | Vigilance of each Industrial consumer on monthly basis |
| Commercial CMS inspection | Vigilance of each Commercial consumer on quarterly basis |
| Domestic CMS inspection | 1.5 million domestic consumers |

As a result of hectic efforts by the Company and support provided by law enforcement agencies and FIA, it has been able to detect a large number of gas theft cases involving substantial gas theft volume despite facing serious issues at site, only some of which are limited to brutal torture and manhandling of our field staff at site by gas pilferers. Summary pertaining to achievements against UFG Reduction Plan era i.e.. February, 2013 to June, 2016 is given in table below:

| Category | Cases (No) | Volume (MMCF) | Amount (Rs. Million) |
|---|---|---|---|
| Industry | 526 | 12,236 | 7,548 |
| Commercial & Spl. Domestic | 22,142 | 4,469 | 3,087 |
| Domestic | 107,141 | 4,936 | 1,948 |
| **Total** | **129,809** | **21,641** | **12,583** |

The above data shows that company is already making best possible efforts on its part which has created deterrence against gas theft, so the conclusion arrived at in the Report regarding *"inadequate monitoring"* with regard to gas theft is contrary to the facts.

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**2.5.1.2 Theft by Non Consumers:**

The Report concludes that calculations of gas theft volume pertaining to non consumers are based on *'judgments and hypotheses'*, which is incorrect. The Company had apprised the Consultants that theft charges against Non Consumers are established in line with OGRA's 'Procedure for Dealing with Theft of Gas Cases' and such a conclusion without thorough study of calculation mechanism is merely a statement. Volumes pilfered by non- consumers are not out of the blue and are calculated using a scientific basis in accordance with OGRA procedures. Company detects, works out gas theft volumes and forwards the cases to the Authority for arranging recoveries in line with sections 26 & 27 of OGRA Ordinance, 2002 and Rule 30 of Natural Gas Regulatory Authority (Licensing) Rules, 2002 since the Authority is the only body which has jurisdiction under the OGRA Ordinance.

The recently promulgated Gas (Theft Control & Recovery) Act, 2016 only applies to the extent of criminal liability. It does not take care of recovery issues, which is a civil matter. Therefore the new law may not adequately address this issue either.

The Report on page No. 57 thereof notes that ***"…owing to factors listed above and other complexities in retail supply of gas, argument for non controllability of theft by company carries weight and needs to be addressed"***. **Despite the above understanding, the conclusions reached in the Report on the issue of theft by non-consumers are contrary to established facts and against the provisions of OGRA Ordinance and applicable laws and need to be reviewed. Allowances have to be made by the Authority in gas losses in this regard.**

**2.5.2 LAW AND ORDER AFFECTED AREAS:**

The Report fails to appreciate the crux of the issue regarding law & order affected areas, despite the fact detailed documents were provided in this regard. The Company reiterates its contentions on this issue below:

- The KPK Provincial Government was requested to advise law enforcement agencies for providing necessary support to take action against illegal usage of gas, due to prevailing law & order situation in these areas
- The Provincial Government has shown its inability to take action against the gas pilferers. The Chief Minister of KPK himself has written to the Authority stating "***Provincial Government is in agreement that the gas losses in oil & gas producing areas of KPK are not due to inefficiency of SNGPL but due to prevailing worst law and order situation of the area it could not be controlled even through administrative measures of Provincial Government …….***
- Local people are interfering with operations of the company and this interference has increased to such an extent that now, with political support, they increase the delivery pressures of SMSs at their own. These events have been reported in print media and its evidences were provided.

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# Annexure T.1 - SNGPL response on 1st draft (Cont.)

- Similar issues are being faced by Oil and Gas, Exploration and Production (E&P) Company M/s MOL, Pakistan working in these areas, whereby its production was suspended due to protests by locals. Instances have also been reported by M/s MOL Pakistan in which the locals attempted to sabotage/pilfer their 'gathering system' in TAL, block area. So this particular factor is beyond the company's control. Relevant supporting evidences were provided to the consultant. It is evident that the issue is beyond Company's control and on this basis the Company has claimed 100% allowance against losses in these areas from OGRA for UFG calculation.

- The Economic Coordination Committee of the Cabinet, while considering socio- economic conditions and complexity of the UFG issue, has given policy guidelines to Authority on this very factor also.

- The OGRA while giving Determination of Final Revenue Requirement of SNGPL pertaining to FY 2012-13, FY 2013-14 & FY 2014-15 has only partially implemented the above stated decision of ECC of Cabinet and has:
  - ❖ allowed only 75% of actual losses in these areas and
  - ❖ for the remaining volume it has decided that the Federal Government should arrange funding from its own resources or from Royalty of concerned province and all such amounts in future to meet the shortfall

- The Ministry of Petroleum and Natural Resources has informed the Authority that no such mechanism nor subsidy head is available with the Federal Government to claims made by SNGPL in respect of Law and Order affected areas. The Authority has therefore been requested by the Ministry of Petroleum and Natural Resources to consider the request of SNGPL regarding claim of remaining gas volume with respect to Law and Order affected areas in pursuance of ECC decision.

- The company also submitted proposal for laying and rehabilitation of network in these areas at an estimated cost of Rs. 6,666 Million on cost sharing basis.

- On desire of KPK Government matter was taken up with the Bank of Khyber but the said bank has shown inability to provide soft term loan for this purpose.

- The Federal and Provincial Government of KPK have difference in opinion on the issue so the issue is still unresolved.

The above stated events clearly indicate the commitment of Company to address the issue while highlighting factors beyond its control hindering the process.

Moreover, recently the Federal Cabinet during its meeting held on 06-09-2016 has ratified the decisions taken by Economic Coordination Committee of Cabinet during the period Year 2013 to 2016 which also includes the decision taken in Year 2014 regarding UFG contributing factors beyond the Company's control. In this regard, Press Release No. 66 is available on website of Press Information Department (PID).

**The issue of measured loss in law and order affected areas of KPK Province needs review as maintenance of law and order is a provincial subject, in line with the 18th amendment to the Constitution whereas recommendations/conclusions of the Report**

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# Annexure T.1 - SNGPL response on 1st draft (Cont.)

**on this particular issue are contrary to the provisions of the constitution. Therefore, the Provinces would be the appropriate authority to declare an area as law and order affected and in this particular case, the Chief Minister of KPK himself has written to the Authority which has been ratified by the ECC as well as the Federal Cabinet.**

The Report assumes that other utilities are not facing similar losses in law affected areas. Such an assumption should perhaps have been made after a thorough comparative study and analysis between the losses faced by the company and other utilities operating in these areas. As for instance, if we consider losses, being faced PESCO in these areas, they are also on higher side, as given in table below:

| Description | Losses of PESCO Feeder* |
|---|---|
| Siraj Baba | 84% |
| Warana | 90% |
| New Ghoriwala | 93.5% |
| Kakki | 97.2% |
| Zargiri | 82% |

*http://www.express.com.pk/epaper/index.aspx?Issue=NP_PEW&Page=Back_Page008&Date=20150625&Pageno=8&View=1

**Therefore, in view of the above explained complexity of situation and uncontrollability associated with it, maximum protection needs to be given to the Company by the Authority since it is mandated under the law to protect the interests of the licensee as well.**

**2.5.3 MINIMUM BILLING:**

The conclusion arrived at by the Report in this regard is incorrect. The 40 $M^3$ per month gas usage by single domestic user is not based on any assumption, but in fact is based upon research carried out UET, Lahore, through which it is concluded that the most households, which are billed the minimum are using at least 40$M^3$ regardless of the actual volume registered by domestic meters. It is pertinent to mention here that the issue of minimum billing arises due to un-favourable operating parameters, i.e.., operation of network below its design pressure due to supply and demand gap, resultantly the carbon dust/condensate and debris present in pipeline travel into the meter body. This increases rate of wear and tear of meter internal parts, affecting its measurement accuracy. Even if the Company replaces all domestic meters in one year (without prejudice to the prohibitive cost associated there with), the newly installed meters with have similar issues due to prevailing huge gap between supply and demand. The working pertaining to minimum billed cases of FY 2014-15 is given in table below:

| A | B | C | D | E | F=E/(12*30) | G=(0.4-D)*B |
|---|---|---|---|---|---|---|
| Monthly Consumption Bracket ($Hm^3$) | TotalCases during the FY 2014-15 (Nos.) | Total Actual Annual Consumption ($Hm^3$) | Average Monthly Consumption per consumer | | Average Daily usage, Based on Average Consumption (Hours) | Unbilled Estimation ($Hm^3$) |
| | | | ($Hm^3$) | $ft^3$ | | |
| Zero | 1,589,929 | - | - | - | - | - |
| 0.01 - 0.20 | 5,860,802 | 656,537 | 0.11202 | 395.30 | 1.1 | 1,687,784 |
| 0.21 - 0.30 | 4,771,921 | 1,210,783 | 0.25373 | 895.35 | 2.49 | 697,986 |

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# Annexure T.1 - SNGPL response on 1st draft (Cont.)

| | | | | | | |
|---|---|---|---|---|---|---|
| 0.31 - 0.40 | 5,202,377 | 1,838,917 | 0.35348 | 1,247.33 | 3.46 | 242,034 |
| **Total** (excluding zero consumption cases) | **15,835,100** | **3,706,236** | **0.23405** | **825.91** | **2.29** | **2,627,804** |
| | | | | | | **9,327 MMCF** |

As for instance, if we consider monthly consumption bracket of 0.01 $Hm^3$ to 0.20 $Hm^3$, it translates into ONLY 1.1 hours daily usage by domestic consumers, which is practically not possible. In Bangladesh, a model of appliance based billing for domestic consumers, i.e.., 87 $M^3$ is used which is consumption of 2 domestic burners and for single burner, it works out 43 $M^3$ which commensurate with the minimum billing volume of 40 $M^3$ in case of SNGPL).

Moreover, the bona fides of the Company in this matter can be gauged from the fact that the Company is not claiming any allowance against minimum billed volume on account of those consumers which have a 'zero consumption' reading. Therefore, the Company requests that this issue needs to be revisited in its true perspective.

### 2.5.4 LEAKAGES:

The Report concludes that non-replacement of underground network and low Cathodic protection level reflect weakness of the Company, which is true only to the extent that low Cathodic protection level is causing deterioration of underground network, BUT owing to repeated power outages, which is certainly not in control of the company.

**As regards the replacement of underground network, the Report has not referred to any international practice or Code applicable to distribution piping network, which recommends replacement of network ONLY on the basis of its aging and without its assessment/evaluation. The Company has adopted a highly scientific approach in this respect as explained in detail in Para No. 3.12 of this document. This shows that there is a need to thoroughly explore this particular issue in view of international practices.**

### 2.5 MEASUREMENT

The Report's approach towards this very factor i.e.. 'Measurement Errors' is misdirected and has been confused/perceived as metering on TBSs/DRSs. The conclusions that following will address the 'Measurement Errors' in the system is far from the reality:

- Metering at TBSs
- Segmentation of network

Whereas the company's as well as the Authority's intentions with regard to 'Measurement Errors' was with reference to various issues related to measurement faults associated with already INSTALLED meters. These defects/faults arise due to mechanical moving parts of meters which are further aggravated due to following issues:

**a. Network Operating Parameters**:

Due to considerable decrease in gas supplies from indigenous sources, the Company's distribution network is experiencing a huge gap between demand and supply of natural gas, which is resulting in continuous low pressure in the distribution network. This factor is beyond Company's control.

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Reduction in operating pressures of network caused due to huge Demand Supply gap, increases the velocity of gas, resultantly the carbon dust/condensate and debris present in pipeline travel in to the meter body. This increases rate of wear and tear of meter internal parts, affecting its measurement. ***Study conducted by the company was also furnished to the consultant and it was found that 37.11% of total checked meters were found recording on minus side beyond permissible limit (i.e.. -2%) and the average extent of minus recording is 7.4%.***

**b. Quality of Locally Manufactured Domestic Meters:**

The quality of locally manufactured domestic meters is another factor affecting the measurement accuracy in domestic sector. The Company as per instructions of the Ministry of Petroleum and Natural Resources vide letter No. DGO(NG)-12(29)/81 dated 04-04-1982 (copy already provided to the consultant) was bound to procure locally manufactured meters from its sister concern M/s SSGC. The company raised concerns on quality and performance of meters supplied by M/s SSGC due to which the bar was withdrawn by the Ministry of Petroleum and Natural Resources vide letter No. NG(II)-15(27)/12.GC dated12- 03-2013 (copy already provided to the consultant) and the Company was allowed to procure domestic meters from international market through International Competitive Bidding process. However, even if and when the Company replaces all meters, the newly installed meters are also prone to similar defects due to continuous low pressure problems mentioned above.

The Report has not given any conclusion regarding the above highlighted issues and has tried to divert it to a new dimension i.e.. measurement at TBSs and segmentation, therefore, there is a need to review the effect of "Measurement Error" on UFG.

### 2.5.6 BULK-RETAIL:

Although the Report acknowledges the particular reasons due to which the Company is claiming allowance against this very factor, however, the stance that the Company has not made efforts for corrective measures is simply not true. It is reiterated that shift of gas from Bulk to Retail is beyond Company's control. The Company has put in best possible efforts to curb the menace of gas theft, keeping in view the specific operating conditions, budgetary provisions and HR benchmark allowed by OGRA on an annual basis.

**The results achieved by the Company as a result of executing its UFG Reduction Plan duly approved by OGRA against core UFG contributing factors i.e.. leakages, gas theft and measurement errors are on record and need due recognition in the Report as well as by the Authority. Moreover, the KMIs proposed need to be reviewed. Detailed comments on the KMIs are given in section No. 4.2 of this document.**

### 2.5.7 OVERALL CONCLUSION:

We agree that there is always room for further improvement, but the overall conclusion of the Report that the Company does not take ownership of the UFG issue and plan to curb, is without any detailed analysis and thorough study. The successful execution of the Company's UFG Reduction Plan speaks about the efforts put in by the Company in this regard. The Report also fails to reflect the genuineness of the Company's claims against

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**cognizant of the situation and has issued policy guidelines to Authority, considering complexity of the issue, to allow the volumes claimed by the company against following factors beyond its control:**

1. **Gas Volume pilfered by Non-consumers**
2. **Gas Losses in Law & Order affected areas**
3. **Impact of change in Bulk Retail Ratio on UFG, using the base year 2003-04**

**The execution of different UFG control activities is a continuous ongoing process irrespective of any specific time period. The constitution of proposed objectives and recommendations of the Report for short term and long term measures lacks thorough understanding of technical issues and financial constraints associated with these. The detailed comments/response of the Company against KMIs recommended by the Report are given in para No. 4.2 of this document.**

## 3 SECTION NO. 2: "OUR RECOMMENDATIONS"

### 3.1 100% METERING:

Installation of measurement facility at TBSs is not a standard practice. Although from an administrative point of view, it is a better option to split the area of operation into smaller units, but the Report has recommended it as a tool of measurement. The peculiar circumstances of the Company do not support this concept.

In line with international practices, the gas on the Company's network is measured whenever there is a custody transfer and the custody transfer points on company's network are:

| Description | Remarks |
|---|---|
| Gas Sources | Custody is transferred from gas producer to Transmission Department |
| Sales Meter Stations (SMS) | Custody is transferred from Transmission Department to Distribution Department |
| Consumer Meter Stations (CMS) | Custody is transferred from Distribution Department to Individual Consumers |

All the above mentioned Custody Transfer points are precisely metered and reconciliation of following is made in monthly accounts of SNGPL:

- UFG in Transmission Network (which is difference of gas received in Transmission System from the Gas Sources and passed to Distribution Network through SMSs)
- UFG in Distribution of Network (which is difference of gas received in Distribution System through SMSs and passed to Individual Consumers through CMSs)

Further, the UFG of distribution network is a composite of UFG in different distribution regions which is also prepared on a monthly basis. In addition to the above, the Company also prepares "SMS Wise Gas Reconciliation" through which UFG of regions is further subdivided at SMS level and such reports are available on a monthly basis as well. UFG

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# Annexure T.1 - SNGPL response on 1st draft (Cont.)

control activities are carried out accordingly at SMS level. All above highlighted instances indicate that Company's system is precisely measured and reconciled at all necessary points.

The concept of metering at TBSs/DRSs envisaged by the Report points to a parallel setup to the existing arrangements, which is not feasible. There are certain technical issues which stem from the fact that the primary purpose of TBSs/DRSs installed by SNGPL is pressure regulation to reduce gas pressures to desired level, as per operational requirements of a particular locality/area. The EVCs have been installed on selected TBSs/DRSs to get data of pressure and flow and to supervise the performance of field staff remotely with regard to effective load management and monitoring of system parameters etc.

Presently more than 4,200 TBSs/DRSs exist on the distribution network of SNGPL with different sizes depending upon load requirements. Most importantly, 45% of the total consumer base is under the looped TBSs/DRSs. As a consequence, the following technical constraints exist in installation of measurement meters at ALL the TBSs/DRSs:

a. **International Practices:**

As explained above, in international practices, gas is measured wherever there is custody transfer. In case of SNGPL, no custody transfer of gas occurs at TBSs. However, all the following custody transfer points are precisely measured:

- Gas Sources
- Sales Meter Stations (SMS)
- Consumer Meter Stations (CMS)

b. **Looping of Distribution Network:**

i. **Under-sizing of Network:** Distribution network was designed on single feed basis and over the years, the consumer density on the network has increased due to induced developmental works on directives of Government of Pakistan which has resulted in undersizing of SNGPL's network. To overcome the issue, network at downstream of TBSs has been looped to meet pressure and flow for different segments/areas.

ii. **Supply and Demand Gap:** The increasing gap between demand and supply of gas has further aggravated the situation and despite looping, the Company is unable to provide gas to all its consumers at desired pressures. De-looping of these TBSs will further aggravate the low pressure problems in areas and lead to a situation where consumers and the general public will, in all likelihood, be further deprived of natural gas during winter months. All major cities such are Multan, Faisalabad, Lahore, Islamabad, Rawalpindi, and Peshawar have looped network which covers more than 40% of the consumer base.

iii. **Possible Solution - Network Augmentation:** The isolation of network downstream of TBS's is only possible through an extensive augmentation of SNGPL's network by laying larger diameter lines, which involves a huge finance/capital budget and will require detailed surveys and can only be undertaken once the demand and supply gap of natural gas in the country improves.

c. **Space Constraint:**

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# Annexure T.1 - SNGPL response on 1st draft (Cont.)

i. **Existing Design of TBSs**: Since a measurement facility was not part of the design of TBS/DRSs in line with international practice. However, if we consider installation of measurement facility for the time being, additional significant space will be required to execute the recommendations of consultant. The network in major cities is located in densely populated and congested areas, this would require support from Provincial Governments, TMAs, City Government, private land owners etc.

ii. **TBS Facility Located at Corners of Streets**: At a considerable number of locations, TBSs/DRSs have been installed at corners of congested road/streets and modification is practically not possible. Therefore, addition of a measurement facility at existing TBSs/DRSs will require acquisition of additional space from concerned outside agencies.

iii. **Land Acquisition:** The land acquisition is an extremely cumbersome task in settled areas and might take years. It should also be noted that modifications at such locations may lead to third part damages and may result in leakage loss at high gas pressure, causing threat to human life and property. Even, otherwise, at certain locations, space is available only to the extent that the Company has no other option but to adopt "Poll Mounted Design". The design was opted at certain locations only due to the reason of non availability of appropriate space.

At present, approximately more than 2,200 Nos TBSs/DRSs have critical issues related to additional space acquisition and non availability of additional space at site.

d. **Experience So Far**:

i. **Damaging of Installed Meters**: It also appears that the experience of the Company so far in this regard has not been considered by the Report. Although the Company has equipped some of its TBSs/DRSs with measurement meters where such equipment was practicable, yet desired results could not be achieved. This is so because 'Turbine Type' meters will be suitable for measurement at TBSs but such meters are unable to accurately measure at the low operating pressures faced by SNGPL due to the demand and supply gap. Therefore, the company opted to install 'Rotary Type' meters. Experiences have revealed that frequency of meter damage in these types of meters is very high due to network operation at low pressures and issue of debris/condensate which increase rate of wear and tear.

ii. **Bypass Operation:** During peak hours, the TBSs are operated in 'bypass' mode due to supply & demand gap, during which gas remains unmetered.

e. **Audit Observations**:

The installation of measurement facility at TBSs will invite the Audit observations by Commercial Auditors, as it involves huge financial impact and the Company will not be able to achieve intended benefits due to impediments explained above.

f. **Alternative**:

i. **SMS wise Reconciliation Reports**: The Report has assumed measurement at TBSs/DRSs the only possible solution to the menace of UFG, whereas alternatives already exist. The basic objective of measurement at TBSs/DRSs is identification of losses. A mechanism is already in place for measurement of losses through 'SMS wise Gas Reconciliation Reports'. For the purpose of identification of losses, the

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company after carrying out hectic exercise over past 2-3 years has mapped all consumers with respective Sales Meter Stations (SMSs). All 390 SMSs of SNGPL are accurately metered and the UFG losses are calculated at each SMS on a monthly basis by comparing the gas passed through respective SMS with gas consumption of individual consumers.

ii. **Benefits Achieved from Available Alternatives**: Through this exercise, abnormal behaviours are detected both in consumption trend of consumers, gas theft as well as leakages. Moreover, analysis of consumption of industrial and commercial & zone wise consumption analysis of domestic consumers at different SMSs helps identify abnormal behaviours

**The Company is therefore of the firm opinion that 'SMS Wise Gas Reconciliation Reports' are an effective tool already being used by the Company successfully. The effectiveness of these reports is evident from the fact that UFG losses of the Company have shown visible reduction during past 1-2 years. In the presence of an already available tool, it will not be advisable to experiment and shift the focus altogether to a new dimension, just on the basis of this Report, which will halt the ongoing efforts of the Company.**

**2. NETWORK SEGMENTATION:**

The concept of network segmentation is good suggestion, but it is not workable in the case of SNGPL due to following practical constraints:

**a. Existing Network Design:**

Detailed comments with regard to existing network design and looping have already been given in para No. 3.1.b.

**b. Supply and Demand Gap:**

Network segmentation is not practicable till such time supply and demand situation is balanced as explained in para No. 3.1.b

**c. Financial Issues:**

As already explained, the isolation of network downstream of TBS's is only possible through an extensive augmentation of network by laying larger diameter lines, which involves a huge finance/capital budget and will require detailed surveys and can only be undertaken once the demand and supply gas of natural gas in the country improves.

**So network segmentation in the present circumstance is not practicable.**

**3. CYLINDER MODEL:**

The Company in principle agrees with the recommended 'cylinder model' for provision of gas to new domestic users, however, only the Government of Pakistan and OGRA can take policy decisions in this respect.

**4. KEY MONITORING INDICATORS:**

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# Annexure T.1 - SNGPL response on 1st draft (Cont.)

The Report has specified KMIs for a period of 5 years only and that too with the intent to treat impact of Bulk-Retail ratio. This is contrary to the facts. As the Company understands, execution of UFG control activities is a continuously ongoing activity. The Company is already successfully executing 'UFG Reduction Plan', duly approved by the Regulatory Authority. This plan includes crucial UFG control activities, envisaged in view of key UFG contributing factors. The KMIs must be brought in line with the key UFG contributing factors and the Company, having vast experience in this particular field, should be authorized to select the UFG control activities to be incorporated in the KMIs along with appropriate weightage. Detailed response on KMIs is given in Para No. 4.2 of this document

**5. REGIONAL UFG MANAGEMENT:**

The recommendations of the Report for assigning targets to Regional Managers are in line with the system already in place, whereby Regional Heads are assigned annual targets for UFG Reduction by carrying out different UFG control activities.

**6. TWO YEARLY METER INSPECTION:**

The Report has recommended inspection of all meters installed on SNGPL's network for detection of gas theft and tampering etc. Contrary to the recommendations of the Report, SNGPL has already adopted a highly technical approach in this regard, which includes the following steps:

- Physical checking of Consumer Meter Stations
- Identification of suspected tampered meters/ measurement error cases.
- Identification of violation cases
- Flow proving of removed meters in Metering Workshop to confirm working of meters in line with OGRA 'Procedure for Dealing with Theft of Gas Cases'
- Detection of 'Meter Tampering' and 'Measurement Error' cases
- Charging to the consumers on account of gas pilferage or under measurement etc.

For the purpose of checking, the following criteria is being followed against UFG Reduction Plan:

- Industrial meters = once every month
- Commercial meters = once on quarterly basis
- Domestic meters = 15% of the total consumers annually

The above details show that industrial and commercial consumers are being inspected multiple times already on a yearly basis, whereas all removed domestic meters are inspected in Metering Workshops. The Report has presumed that inspection activity will not be required beyond two years, whereas it is in fact an ongoing CONTINUOUS activity.

**7. TECHNOLOGICAL ADVANCEMENT:**

The Company is cognizant of the fact of using latest available technologies to keep itself at par with new developments in the natural gas industry. The following measures have already been adopted in this regard:

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# Annexure T.1 - SNGPL response on 1st draft (Cont.)

- Use of G-6 meters for high consumption domestic connections to ensure measurement accuracy.
- Use of G-4 domestic meters, having anti reverse features
- Installation of Class-900 meters with EVC for detection of gas theft by commercial consumers
- Use of Electronic Volume Correctors (EVC), with improved anti theft features particularly with regard to detection of influence of external magnetic force
- GPRS based remote monitoring system for industrial connections for detection of 'Gas Theft', 'Measurement Error' and 'Load Management Violation' cases.
- All Material Locator (AML) to detect underground illegal tapping of distribution network.
- Laser based 'Leak Detectors' to identify underground leakages points
- 'Hi Flow Sampler' for detection of leakage flow rates
- 'Vehicle Mounted' gas leak detectors
- Pilot Project for 'Cyber Locks' has been initiated

**8. COST OF SERVICE STUDY**

OGRA being the statuary body can comment on the pricing mechanism for different categories of consumers.

**9. DETECT, MONITOR AND CONTROL:**

The finding of the Report that the Company has a reactive approach, instead of a proactive approach, for gas theft control is not based on detailed study of existing practices of SNGPL. The Company already has vigilance programs in place, as explained in para No.

3.6 for monitoring, detection and control of gas theft and, as a result of vigilance activities, the Company has been able to detect and establish gas theft volumes in line with OGRA 'Procedure for Dealing with Theft of Gas Cases' during Feb, 13 to June, 16.

| Category | Cases (No) | Volume (MMCF) | Amount (Rs. Million) |
|---|---|---|---|
| Industry | 526 | 12,236 | 7,548 |
| Commercial & Special Domestic | 22,142 | 4,469 | 3,087 |
| Domestic | 107,141 | 4,936 | 1,948 |
| **Total** | **129,809** | **21,641** | **12,583** |

As regards the recommendation of independent verification of gas theft volumes claimed against consumers, it seems that the Report has failed to appreciate the procedures and practices in place. Contrary to the understanding reflected in the Report, fact of matter is that a number of consumers to whom gas pilferage charges are booked, approach OGRA to get relief against established gas theft charges, which shows that validation mechanism is already in place in line with provisions of OGRA Ordinance and complaint resolution procedure of OGRA.

**3.10 RING FENCING:**

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# Annexure T.1 - SNGPL response on 1st draft (Cont.)

The Report has recommended installing bulk meters in areas which are prone to gas pilferage. It is a misconception that theft is localized in any specific area/locality. It is categorically stated that except for the law & order affected areas, gas theft is not localized, and rather it is spread across the Company's distribution network.

**3.11 USE OF BULK METERS**

The Report has recommended installing bulk meters to detect the losses in law and order affected areas. It is clarified that SNGPL's claim pertaining to law and order affected areas is based on accurate measurement of losses on the basis of following:

- Metered gas passed through SMSs feeding these areas.
- Metered gas billed to individual consumers at downstream of these SMSs

Loss at individual SMSs is calculated as follows:

$$\text{Volumetric Loss} = \left\{ \text{Metered gas passed through SMS} \right\} - \left\{ \text{Metered gas billed to individual consumers at downstream of SMSs} \right\}$$

The above precise quantification of losses is available on SMS wise, month wise and year wise basis. Moreover, it is not feasible to install additional 'bulk' meters in these areas due to similar law and order situation.

**3.12 LEAKAGE MANAGEMENT PLAN:**

The company has already put in place a comprehensive leakage management plan, which covers the following key activities:

- Aboveground leakage rectification
- Underground leakage rectification
- Underground network replacement

All these activities are carried out after thorough assessment and analysis whereas the Reports seems to focus ONLY on replacement of underground network. This has been done without a thorough study, referencing of international practices and working of its financial impact. The Company on its part has adopted a highly technical approach. SOPs have been devised through which segments of distribution network are assessed/evaluated and are recommended for replacement based on the following:

- Pipe to Soil Potential (PSP) survey
- Direct Current Voltage Gradient (DCVG) survey
- Close Interval Potential (CIP) survey
- Cathodic Protection level of network
- Underground Leak detection survey to identify leak points
- Assessment of Pipeline coating conditions
- Physical inspection of pipeline through bell holes

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The Company also understands that replacement of the network involves huge finances and in order to avoid unnecessary expenditures, the Company has adopted this scientific approach. The underground network is surveyed using 'Leak Detectors' to identify leak points. Through use of these equipments, localized leakage detection and its repair is possible against old conventional strategy of replacing network without assessment of its integrity. **The replacement of network ONLY on the basis of its aging without its through assessment and referencing of international practices, as recommended in the Report will lead to a wastage of funds for which requisite budget will have to be allowed by OGRA, to be borne by consumers through price increase.**

## 3.13 RECOMMENDATIONS ON UFG CALCULATION AND TREATMENT:

The company appreciates that the consultant has acknowledged the long outstanding issue of UFG calculation methodology and stance of SNGPL has been acceded.

## 3.14 RECOMMENDATIONS RELATING TO UFG ALLOWANCE:

The Report has stated that since TBSs/DRSs are unmeasured, therefore the Company is

- Unable to measure actual different between volume received and dispatched
- Present UFG volume in terms of contributing factors

This perception is incorrect as has already been explained in detail in Para No. 3.1 above.
If for the time being, it is assumed, that all TBSs/DRSs are equipped with measurement facility, even then quantification/splitting of total volumetric losses in different contributing factors will not be possible. The Company on the basis of vast experience and various studies has estimated the share of different contributing factors in total volumetric losses. **The Report, though concludes that estimation of the Company with regard to share of different UFG contributing factors in overall losses is incorrect, it fails to suggest any methodology for splitting the total UFG in different contributing factors, nor has it referred to any international practice in this respect.**

## 3.15 STREAM 1 MID TERM PLAN:

### 3.15.1 UFG Calculation Formula:

We appreciate that the Report has recognized that, in addition to the UFG rate, appropriate allowance has to be given to the Company which firms our stance that there are certain extraordinary circumstances in which the Company is operating which are not prevalent in any other country. The following formula has been proposed in the Report:

$$\mathbf{UFG_{Allowed} = Gas_{AFS} \times Rate_{Fixed} + \Delta Volume_{UFG} \times \beta}$$

where;

$\mathbf{\Delta Volume_{UFG}}$ is volumetric 'Impact of change in Bulk Retail Ratio on UFG'

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# Annexure T.1 - SNGPL response on 1st draft (Cont.)

Although the Report has recommended allowance against bulk-retail ratio in line with guidelines of ECC of Cabinet, it is surprising that allowance of Bulk–Retail has been recommended through above formula, subject to completion of certain tasks defined as Key Monitoring Indicators (KMIs). Contribution of these KMIs will be incorporated in the UFG calculation formula through the factor β calculated on the basis of weightage of individual KMIs. Detailed comments against proposed KMIs is given in Para No. 4.2 of this document. However, as it stands, the linkage between factor β and the KMIs as proposed is not acceptable to the Company. **Moreover, the formula negates the guidelines of the Federal Cabinet which allowed due recognition against the following :**

1. **Gas Volume pilfered by Non-consumers**
2. **Gas Losses in Law & Order affected areas**

**2. <u>UFG Rate</u>:**

The Company strongly contetsts the fixation of 5% UFG benchmark in the Report owing to following:

a. According to the figures quoted in Table R-1 of the Report, even in countries like the USA (Texas), Russia and Australia (Multinet), UFG benchmarks go up to 4-5% despite the fact that there is minimum impact of gas theft and other operational constraints as heighted in this document. If developed countries like USA, Russia and Australia have UFG rate around 5%, it is surprising that the same figure has been proposed for a company such as SNGPL which operates on wholly different considerations. **Most importantly, the Report has not stated specific reasons which resulted in UFG benchmark of around 5% in those countries, which needs to be elaborated to check consistency with SNGPL.**

**b. While recommending the UFG Benchmark, the Report states that *"..UFG allowances are commonly set in correlation with gas consumption and network length..".* Considering this recommendation, Bangladesh and Turkey have been made reference for the purpose of fixed UFG Rate to be applied for SNGPL. While looking at the reported figures in Table R-1, it is important to highlight that these countries have network length of 15,641 Km and 20,804 Km ONLY respectively as against SNGPL, which is above 100,000 Km (15% and 20% respectively in comparison to SNGPL).**

c. In case of Bangladesh*, a model of appliance based billing for domestic consumers i.e.. 87 $M^3$ is used (which is consumption of 2 domestic burners and for single burner, it works out 43 $M^3$ which commensurate with the minimum billing volume of 40 $M^3$ in case of SNGPL), irrespective of their consumption that results in lower UFG rate. Moreover, approximately 65% of gas is allocated to bulk sector based on available information pertaining to Gas Sales Mix.

** "Clean Fuel Sector Development Program" prepared by 'Technoconsult International Limited' under Technical Assistance Study program of Asian Development Bank"*

d. Similarly in case of Turkey**, 48% of gas is allocated to bulk sector based on available information pertaining to Gas Sales Mix.

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**https://www.oxfordenergy.org/wpcms/wp-content/uploads/2014/02/NG-82.pdf

e. The Report fails to refer to the following important factors, while referring the UFG Benchmark of the different countries, which have a direct link with UFG and thus UFG benchmark:

- Consumer base
- Gas sales mix
- Law & order situation
- Supply and demand situation/operating parameters

Fields such as "population", "urban population" "area", "density" etc pertaining to different countries have been reported in the Tables R-1 and Table R-2 of the Report which has no relevance with the UFG benchmark.

**The typical circumstances being faced by the Company warrant for a reasonable UFG benchmark commensurate with facts, ground realities, operational constraints and operating conditions of SNGPL. The Company strongly feels that the Report needs to be reviewed in light of the UFG Benchmark data of different countries, particularly with reference to all the UFG contributing factors mentioned in TORs finalized by OGRA and the UFG benchmark of each country needs to be evaluated for all these UFG contributing factors. Only in that case comparison of UFG benchmark can be relevant.**

## 4 SECTION No. 3: "WAY FORWARD"

### 4.1 LONG TERM PLAN:

The Report has recommended Key Monitoring Indicators spread over a period of 5 Years, after which UFG rate of 5% is to be achieved by FY 2021. The corrective actions proposed by the Report, and the comments thereon by SNGPL are as under::

#### 4.1.1 Reduce Data & Metering Errors

| Description | Target | Comments of SNGPL |
|---|---|---|
| Ensure installation of measurement facility at all TBSs/DRSs | FY 2018 | Installation of measurement facility at all TBSs is not practicable due to issues discussed in detail in Para No. 3.1 of this document in detail |
| Install EVC/Modem meters at facilities on all TBSs/DRSs | FY 2020 | |
| Inspect all meters domestic, commercial, special domestic and industrial within a 5 year cycle for identification of malfunctioning meters at least 20% meters inspection annually. | FY 2021 | Inspection criteria defined in UFG Reduction Plan, already duly approved by OGRA for industrial, commercial and domestic consumers will be followed in future as well. |
| Identify and replace defected (slow/pug/sticky) meters and bring it to an acceptable level of <5% of total consumers | FY 2020 | Comparison of replaced sticky meters with total consumer base is incorrect as consumer base will continuously increase. |

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# Annexure T.1 - SNGPL response on 1st draft (Cont.)

| | | |
|---|---|---|
| Segment/isolate all TBSs to identify, measure and control supply of gas to areas susceptible to pilferage and losses | FY 2018 | Isolation of network is not possible due to constraints stated in Para No. 3.1 of this document |
| Identify consumers being minimum billed and ensue it is brought to an acceptable limit of <5% of the total domestic connections. | FY 2020 | Minimum billing result from following:<br>1. Actual low consumption of the consumer<br>2. Measurement issues in meters<br>Both the above issues will remain persistent hence does not appear possible. |
| Incorporate in the existing system relevant features or acquire a system with built in feature of analyzing the system data and identifying malfunctioning meters on the basis of anomalies identified.<br>During the transition period establish separate data cell for manual analysis of the billing data. This can be done at the regional level or the head office level. | FY 2019 | Company already has Customer Care and Billing (CC&B) system in place, through which customized reports can be extracted. |
| Replace student meter readers with permanent meter readers | FY 2019 | Company is ready to hire permanent meter readers on career term basis, subject to additional provisions in HR benchmark to be allowed by OGRA |
| Identify areas with gas pilferage and install bulk meters for such areas to enable monitoring of UFG in that particular area. | n/a | Not practicable in view of already explained situation in Para No. 3.11 of this document |

### 4.1.2 Reduce Leakage and Gas Loss:

| Description | Target | Comments of SNGPL |
|---|---|---|
| Replace at least 5,000 Km of average underground distribution network | FY 2021 | Replacement will be carried out through assessment of relevant parameters so length of network to be replaced cannot be specified. Detailed discussion given in 3.12 |
| Acquire tools with improved features for underground leakage detection and reduce underground leak per Km to less than 1 leak/km | FY 2021 | Detection of leakage is only one component. In fact rectification of detected leakages is actual solution to the problem. Low Cathodic protection level due to repeated power outages, continuous deterioration of network takes place hence new leakage will develop over period of time. |

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# Annexure T.1 - SNGPL response on 1st draft (Cont.)

| | | |
|---|---|---|
| Carry out survey for leak identification and extensive leak rectification of the overhead leakage and reduce it to less than 1 leak/connection | FY 2020 | It is a continuous ongoing activity. however, the term 1 leak/connection in case of aboveground leakages is not understandable and require clarification at explained in Para No. 2.3.3.1 of this document |
| Establish additional Cathodic protection stations to ensure 100% cathodic protection over the network to control corrosion.<br>Ensure availability of alternative source power supply at CP stations | FY 2021 | 100% protection level and availability of alternative power cannot be achieved due to issues explained in Para No. 4.2.12 of this document |
| Establish separate data cell for analysis of the EVC data. | FY 2019 | System is already in place of EVC data analysis. |

### 4.1.3 Detect, Monitor and Control:

| Description | Target | Comments of SNGPL |
|---|---|---|
| Enhance develop system capabilities to enable automated analysis of billing data and identification of gas pilferage on the basis of anomalies.<br>During transaction period establish special cell units to manually analyze CC&B data to detect abnormal consumer behavior for identification of gas theft. | FY 2019 | System is already in place to analyze the billing data through CC&B. |
| Acquire and install cyber locks at all industrial connections/CNG stations | FY 2018 | Pilot Project is already being considered for installation of cyber locks at selected industrial connections. |
| Improve /increase the channels for theft complaints registration system etc.<br><br>Advertisement campaign should be conducted to increase awareness during the public in this regard. | FY 2019 | System is already in place to register gas theft complaints.<br><br>Media campaigns against gas pilferage are also launched |
| Increase the turnaround time of the resolution of gas theft complaint applications received during the year | n/a | Gas theft complaints are already promptly addressed for corrective measures. |

### 4.1.4 Increase and Ensure Capacity:

| Description | Target | Comments of SNGPL |
|---|---|---|
| Conduct mandatory technical training program for employees of all levels Ensure the attendance of employees in seminars/workshops pertaining the gas industry, both national and internal | n/a | Company already has its dedicated training institute in which various technical trainings are conducted. In addition foreign training of employees is also arranged in relevant fields. |

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# Annexure T.1 - SNGPL response on 1st draft (Cont.)

| | | |
|---|---|---|
| Establish dedicated research and development cell with aim to identify /develop tools for increased efficiency cost reduction | FY 2019 | Services departments such as Metering and Corrosion Control carry out necessary R&D from time to time. |
| Conduct periodic environmental audits to identify and rectify issues in a timely manner. Hire environmental experts | FY 2019 | Company has fully established HSE department to look after such issues. |
| Improve data quality and timelines for system, operation, planning and regulatory acceptance.<br>Develop acquire system capable of managing company data and generating timely reports as and when needed. | FY 2019 | Best possible efforts are being made to meet timelines related to Regulatory Authority.<br><br>All departments are custodian of relevant data |
| Attend periodic meetings/joint sessions with other gas companies in and outside Pakistan for exchange of ideas/knowledge sharing | n/a | Already being done. |

**2. KEY MONITORING INDICATORS (KMIs):**

As already stated above, although the Report has proposed KMIs for the Company, certain aspects have been missed out in the Report. This is so because the said KMI's appear to have failed to consider the technical, financial and logistical hurdles faced by the Company. It is further highlighted that **execution of activities defined in the KMIs will require specific budgetary provisions on annual basis along with additional provisions in HR benchmark, leading to a consequential rise in tariff which will have to be borne by the gas consumers**. **The Report presumes that execution of certain KMIs in next five years will permanently bring down UFG to 5%, whereas, in reality, the execution of different UFG control activities is a continuous ongoing activity which has to be carried out regularly irrespective of any specified time period since**:

- A resurvey of underground distribution network for leakage detection and rectification is required every 5 years in line with international practices.
- Meters have a limited service life at site and required to be replaced periodically for maintenance
- Theft control is continuous activity as the gas users may again indulge in pilferage, regardless of vigilance activities of the Company.

**Therefore, it appears that KMIs have been suggested without consideration of the specific operational constraints being faced by the Company. These constraints are contrary to the international practices,** some of which include: a significant supply and demand gap, forcing the Company to operate its network beyond its design parameters; network operations at low pressures, causing measurement inaccuracies; looping of distribution network due to unprecedented growth and to facilitate the gas users in view of shortage of gas supplies and non availability of dedicated corridors for distribution network, to name a few.

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# Annexure T.1 - SNGPL response on 1st draft (Cont.)

**If KMIs are to be identified and targets for meeting the same have to be set, it would be more appropriate that the Company in consultation with OGRA finalize such task and targets based on practical, reasonable, technical and financial viabilities**. Without prejudice, specific issues that SNGPL has with regards to different KMIs defined by the Report are as follows:

### 4.2.1 Number of TBSs Metered with EVCs/Modems Installed as % Age of Total TBS

We disagree with the conceptual basis for this particular KMI, regarding measurement at TBSs/DRSs because the Report fails to appreciate the international practices and technical details of the issue which prevent the company from meeting the KMI target. The following related to installation of measurement facility at TBSs/DRSs has already been explained in a detail in Para No. 3.1 of this document:

- Internal Practices
- Looping of distribution network
- Space constraint
- Experience of company so far
- Alternative available

**Concluding to this, the fact of the matter is that measurement of losses at TBSs is only a small portion of solution to the actual problem, whereas the Report appears to assume the same as a whole solution to the menace of UFG so this KMI needs to be deleted.**

### 4.2.2 Number of Meters Inspected (Consumer wise) Annually as % of Total Metered Connections

Vigilance of all categories of consumers is part and parcel of the UFG Reduction Plan envisaged by the Company, duly approved by OGRA as already been explained in detail in par No. 2.5.1.1 of this document. Through the aforesaid vigilance activities, the Company has achieved very fruitful results. SNGPL acknowledges the effectiveness of vigilance activities and it is suggested that the above mentioned activities should be separately reflected in the KMIs with following targets to continue the ongoing efforts against gas theft:

| Description | KMI Proposed by SNGPL | Weightage |
|---|---|---|
| Industrial CMS inspection | Vigilance of each industrial consumer once every month | 10% |
| Commercial CMS inspection | Vigilance of each commercial consumer on quarterly basis | 10% |
| Domestic CMS inspection | Vigilance of 15% of total domestic consumers | 10% |

**These activities will require an approximate budget of Rs. 550-600 Million annually.**

### 4.2.3 Number of Bulk Meters Installed Annually Area Wise

Detailed comments has already been given in Para No. 3.11

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**Thus, in view of above explained situation, installation of separate bulk meters for law & order affected areas of KPK province is impracticable and unfeasible. This activity should be deleted from the KMIs of SNGPL.**

**4.2.4 Number of Total Defected Meters Replaced as % Age of Total Meters**

In line with the prevailing practices and procedure, duly approved by OGRA, the defected meters cases are detected by SNGPL through following:

- Visit to Consumer Meter Stations against Consumer's complaints
- Reports of meter readers.
- Periodic vigilance activities.

SNGPL understands the importance of replacing defective meters and therefore such meters are replaced on a priority basis in line with the 'Performance and Service Standards' given by OGRA against which periodic reports are also furnished to OGRA. However, the Report has linked the performance against meter replacement activity as a %age of total meters which is logically incorrect due to the fact that the consumer base of SNGPL is continuously increasing.

Replacement of meters is a continuous ongoing activity and it cannot be ensured that after 5 years no further meter will become defective or require replacement since meters contain mechanical moving parts, which are always prone to wear and tear. Moreover, the Company's peculiar operating conditions such as low pressure causes increased gas velocity and thus the carbon dust travel inside meter internal parts, increasing its rate of defect. Despite the above, the Company carries out replacement of approximately 8-9 % of total meters annually based on defects detected through above criteria, in line with OGRA guidelines. Therefore, so far as the question of KMI targets in this regard is concerned, such a target can only realistically be linked with the total defective meters required to be replaced. The KMI should be as follows:

| KMI Proposed by SNGPL | Weightage |
|---|---|
| Industrial defective meters replaced as a % age of total defective industrial meters reported/notified | 5% |
| Commercial defective meters replaced as a % age of total defective commercial meters reported/notified | 5% |
| Domestic defective meters replaced as a % age of total defective domestic meters reported/notified | 5% |

**This KMI will lead to an approximate budget of Rs. 2,500 Million annually which will have to borne by consumers in the shape of an appropriate price increase.**

**4.2.5 Number of TBSs Segmented as %Age of Total No of TBSs**

Segmentation of network at present in not practicable as already been explained in detail in Para No. 3.1 and 3.2. It will be similar to re-designing the existing distribution network, and to put matters into perspective, it is stated that existing length of distribution network is over 100,000 Km and in order to further highlight the issue for understanding, applicable unit construction rates for different diameter line pipes is given in table below:

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| Dia of pipe | Unit Cost (Rs/meter) |
|---|---|
| 2" dia | 2,030 |
| 4" dia | 3,824 |
| 6" dia | 5,199 |
| 8" dia | 7,555 |
| 10" dia | 10,742 |
| 12" dia | 11,252 |
| 16" dia | 16,991 |

**In view of above stated reasons, this activity should be altogether deleted from the KMIs, being impracticable.**

### 4.2.6 Number Minimum Billed Consumers as a %Age of Total Number of Domestic Consumers

As stated in the detailed submissions on UFG factors, it appears that the Report has failed to comprehend the actual issue with regard to minimum billed consumers. SNGPL has been asked to bring down the % age of total minimum billed consumers to less than 5%. Moreover, performance of Company has been linked with total number of meters, which is not correct. As submitted by the Company before the Consultants, the minimum billed consumers fall in two categories:

- Minimum billing due to actual low consumption of the consumer
- Minimum billing due to measurement issues in meters.

It is clear from these two reasons, both equally relevant, that the number of consumers to whom minimum amounts are billed is not a discretionary number which can be controlled by the Company. Those actually consuming less than the minimum billed amount cannot be forced by the Company to increase their consumption, and, the reasons contributing to metering errors are beyond the control of the Company. Therefore, as a matter of principle, this KMI should be deleted.

The consumption of domestic consumers is dependent upon seasonal variations and climate. For instance, annual consumption of regions falling in Northern parts of the country (Peshawar etc.) have higher consumption as compared to the regions falling in Southern parts (Bahawalpur, Multan, Sahiwal etc) of the country. The same can be assessed through per consumer consumption shown below:

| Region | Per Consumer monthly Average Consumption* ($Hm^3$) |
|---|---|
| Peshawar | 0.92 |
| Multan | 0.50 |
| Bahawalpur | 0.49 |
| Sahiwal | 0.54 |

**based on billing of July, 2016*

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# Annexure T.1 - SNGPL response on 1st draft (Cont.)

Furthermore, consumption in summer months is on lower side, therefore leading to a higher number of minimum billed cases in summers, whereas in winter months it is vice versa. The consumers cannot be forced to increase their consumption. Presently, approximately 30-35% consumers are billed as "minimum" in summers while 10-12% are billed as "minimum" in winter months. Thus, it is not practicable to bring down the minimum billed consumers to below 5% of the total consumer base.

**This activity should accordingly be deleted from the KMI's.**

**4.2.7 Number of Total Defected Meters Identified as % Age of Total Meters**

In light of the submissions made herein above with respect to KMI given at 4.2.4 of this document, since the Company is already following 'Performance and Service Standards' given by OGRA, **this KMI becomes irrelevant and should be deleted.**

**4.2.8 Number of Meters Replaced as % Age of Total Number of Meters Eligible for Replacement**

We appreciate the activity of replacement of meters against schedule programs as suggested by the Report. It is admitted that this is a continuous ongoing activity to be carried out annually. The Company already acknowledges the importance of this activity and is following a replacement criteria given by OGRA, which states:

| Description | Period |
|---|---|
| Schedule replacement of industrial meters | 1 Years |
| Schedule replacement of Commercial meters | 7 Years |
| Schedule replacement of Domestic meters | 16 Years |

In view of above separate criteria, it is suggested that the above activities needs to be reflected separately in KMIs as follows:

| KMI Proposed by SNGPL | Weightage |
|---|---|
| Industrial meters replaced as a % age of total industrial meters qualifying schedule replacement criteria | 5% |
| Commercial meters replaced as a % age of total commercial meters qualifying schedule replacement criteria | 5% |
| Domestic meters replaced as a % age of total domestic meters qualifying schedule replacement criteria | 2% |

**These activities will require an approximate budget of Rs. 1,500 Million annually and additional amount required for replacement of meters will have to be borne by consumers in shape of price increase.**

**4.2.9 Length of Distribution Network Rehabilitated (Km) as % of Total Length of Distribution Network**

While recommending this particular KMI, the Report has not referred any international practice which recommends replacement of network ONLY on the basis of its aging. The replacement of underground network is an uphill task due to following constraints:

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# Annexure T.1 - SNGPL response on 1st draft (Cont.)

- Major part of underground network is big cities under busy roads and requires road cut permissions from concerned departments (Provisional, District/Tehsil Administrations) to expose the network as it has not been laid in separate corridors unlike international practices, where separate corridors are available for different utilities.

- Majority of the funds allocated to Public Representatives for developmental schemes are for Sewerage, Water Supply, etc. so while executing the work, these utilities lay their installations on our network, causing coating defects, third party damages, thus corrosion and leakages.

- In old localities, pipeline depth has reached at a level more than 10 feet below the earth surface.

The methodology being used currently by the Company for replacement of its network has already been explained in Para No. 3.12 of this document. Presently, approximately 250-300 Km of network is replaced annually. However, the comparison of rehabilitated network as a %age of total network as made in the Report is perhaps superficial given the fact that the distribution network is constantly increasing. So, instead of a game of numbers, it would be more prudent to replace those segments of network where integrity is doubtful and replacement activity will actually serve the desired objective i.e.. leakage control based on relevant assessment parameters as already mentioned.

We would like to highlight that the Company is receiving government directives for laying of new network in different areas whereas availability of skilled manpower is limited since only qualified personnel can work on gas distribution lines in line with applicable Standards/Codes. Despite these factors, the Company will carry out underground network replacement activity on the basis of recommendation received by our Corrosion Control department, keeping in view the above relevant parameters as stated in Para No. 3.12 of this document so fixing annual replacement target will not be prudent. Furthermore, it should be noted that OGRA has never allowed requisite budgetary provisions for the activity and has been slashing the budget as evident from the table:

***Figures in Rs. Million***

| Period | Requested by SNGPL | Allowed by OGRA in ERRs |
|---|---|---|
| FY 2015-16 | 1,500 | 544 |
| FY 2016-17 | 1,000 | 548 |

The budget allowed by OGRA is sufficient to execute replacement of ONLY up to 250-300 Km of different diameter distribution network annually. In view of above, replacement of 1,000 km is practically not possible due to operational constraints stated above and non provision of funds by OGRA in ERRs. Most importantly, the requisite budget, if allowed by OGRA, will have to be borne by consumers in shape of price increase.

**The quantification of target for underground network replacement to be carried out annually cannot be fixed. It requires qualitative surveys and assessment as already explained in Para No. 3.12. Approximate budget of Rs. 1,000 Million annually will merely be sufficient to replace only 250 to 300 Km network, the cost of which will be**

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# Annexure T.1 - SNGPL response on 1st draft (Cont.)

**10. Number of Underground Leaks Rectified per Km as % of Total Leakage Rate per Km**

Underground Leakage Rectification (Laser Leak) is an integral part of the UFG Reduction Plan envisaged by the Company, duly approved by OGRA. SNGPL is accordingly carrying out survey of its underground distribution network using 'Leak Detectors' to identify leak points. According to available data, the leakages pertaining to 'UFG Reduction Plan' era stand at 2.2 leakages/Km. These leakages are contributed by:

- Non availability of dedicated corridors
- Third party damages
- Coating defects
- Inherent issues with coating materials
- Drop in network Cathodic protection levels
- Corrosive nature of soil
- Moisture content in soil, etc.

Due to above stated persistent factors, new leakages develop in the network and in the presence of above stated impediments, it will be very difficult to reduce the per km leakages drastically. The Company through execution of underground leakage rectification program will make efforts to gradually reduce the per Km leakages. The KMI should be reviewed as follows:

| Description | KMI Proposed by SNGPL | Weightage |
|---|---|---|
| Underground leakage rectification (laser leak) | Present level of 2.2 leaks/Km to be gradually reduced | 10% |

**This activity will require an approximate budget of Rs. 450-500 Million annually**

**4.2.11 Number of Overhead Leaks Rectified as % of Total Number of Domestic Consumers**

Aboveground leakage rectification is an integral part of UFG Reduction Plan envisaged by company, duly approved by OGRA. It is a continuous ongoing activity and SNGPL is carrying out survey of aboveground domestic connections and on the basis of surveys, leaks are identified and rectified. This KMI should realistically be reviewed as follows:

| Description | KMI Proposed by SNGPL | Weightage |
|---|---|---|
| Aboveground leakage rectification | Survey of 15% of total domestic connections annually and rectification of detected leak connections | 5% |

**This activity will require an approximate budget of Rs. 300 Million annually**

**4.2.12 Number of Km with Cathodic Protection Coverage as % Age of Total No of Km of Distribution Network**

The underground Mild Steel network is protected against corrosion by providing electric current to pipe through external power source (LESCO, FESCO, IESCO etc.). However, repeated power outages in the past years have caused threat to the distribution network since

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during the period of power outages, cathodic protection level of MS pipeline network drops, making it prone to corrosion and leakages. It is practically impossible to ensure 100% Cathodic protection of distribution network due to various constraints such as:

- Non availability of dedicated corridors
- Repeated periodic Power outage
- Inherent issues with coating material
- Corrosive environment surrounding the pipe (soil)
- Moisture content in soil
- Third party damage

At present, 1424 CP Stations are installed at Distribution Network. Company is arranging for installation of Thermoelectric Generator (TEGs), Solar Power System and Battery Backup Units as alternative power sources at limited number of locations for Cathodic Protection but they involve huge financial impact as given in table below:

| Description | Single Unit Installation Cost |
|---|---|
| Thermoelectric Generator (TEGs) | 10* Million |
| Solar Panel System and Battery Backup Units | 5** Million |

***4 TEG units are to be installed at each existing CP station.***

****excluding land acquisition cost***

**These alternative power supply systems have limitations w.r.t. space for installation, current output, security and operational constraints. These options can be installed on only selected locations and cannot be installed at every location. Even if we go for additional CP stations on the existing network, it will involve acquisition of additional land for which OGRA will have to facilitate SNGPL.**

**13. <u>Number of Theft Cases Detected Against Registered Consumers</u>**

Already been covered against para No. 4.2.2 of this document so **it should be deleted from KMIs**

**14. <u>Number of Theft Cases Detected Against Non Consumers</u>**

Vigilance activities are a part of SNGPL's UFG Reduction Plan and efforts of the company have already been reflected against Para No. 2.5.1.2 of this document. The detection of non consumer cases may be included in KMIs, subject to the condition that OGRA gives allowance against this particular factor but the weightage as recommended by the consultant cannot be applied in this particular case. Moreover, OGRA is requested to facilitate and expedite recoveries from non consumers.

**15. <u>Number of Disconnections in Respect of Theft as % Age of Total Consumer Base of the Period</u>**

Given the prevailing facts and circumstances, it would perhaps be counter-productive to link number of disconnections in respect of gas theft with consumer base.

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The number of disconnection can only be linked with cases due for disconnection on the basis of the established disconnection criteria already in vogue and weightage should be assigned accordingly to a ceiling of 4%.

**16. Number of Gas Theft /Leakage Complaints Received per 100,000 Consumers**

Company on its part is making effective media campaign in this regard but SNGPL has no control over general public forcing them to lodge complaints regarding gas leakage/theft. However, all the received complaints are attended/ rectified as per OGRA guidelines.

**In light of these facts, this KMI should be deleted.**

**17. Number of Gas Theft/Leakage Complaints Resolved per 100,000 Consumers**

The resolution of gas theft/leakage complaints is one of the top priorities of SNGPL and such cases are regularly being monitored by OGRA through its 'Performance and Service Standards'. The Company already makes best possible efforts to promptly rectify complaints. However, it should be linked with actual number of such complaints received by the Company and its weightage may not be more than 6% in the KMIs as per the opinion of the Company.

**18. Miscellaneous (Training, Knowledge Sharing, Meetings etc)**

The Company already has a training system in place through dedicated training institute where the work force and the executives are trained in relevant fields. Moreover, all concerned are familiarized with the new technologies being used the Company. Periodic meetings are also are part of assessment program which help in knowledge sharing. Its weightage in no case by more than 5%

**19. SUMMARY of KMIs Proposed By SNGPL:**

| Sr. No. | Description of KMIs proposed by SNGPL* | Weightage proposed by SNGPL |
|---|---|---|
| 1 | Vigilance of each industrial consumer once every month | 10% |
| 2 | Vigilance of each commercial consumer on quarterly basis | 10% |
| 3 | Vigilance of 15% of total domestic consumers | 10% |
| 4 | Industrial defective meters replaced as a % age of total defective industrial meters reported/notified | 5% |
| 5 | Commercial defective meters replaced as a % age of total defective commercial meters reported/notified | 5% |
| 6 | Domestic defective meters replaced as a % age of total defective domestic meters reported/notified | 5% |
| 7 | Industrial meters replaced as a % age of total industrial meters qualifying schedule replacement criteria | 5% |
| 8 | Commercial meters replaced as a % age of total commercial meters qualifying schedule replacement criteria | 5% |

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# Annexure T.1 - SNGPL response on 1st draft (Cont.)

| | | |
|---|---|---|
| 9 | Domestic meters replaced as a % age of total domestic meters qualifying schedule replacement criteria | 2% |
| 10 | Underground network replaced as a %age of total annual target, as recommended by Corrosion Control Dept. | 7% |
| 11 | Present level of 2.2 Underground leaks/Km to be reduced gradually | 10% |
| 12 | Survey of 15% of total domestic connections annually and rectification of detected leak connections | 5% |
| 13 | Installation/Renovation of 150 No. CP station annually | 6% |
| 14 | Number of theft cases detected against non consumers (Subject to condition that non consumer volume is allowed by OGRA) | Not applicable |
| 15 | Number of disconnection as a % age of consumers due for disconnection | 4% |
| 16 | Number of gas leakage complaints resolved as a % age of actual number of such complaints received by company | 6% |
| 17 | Misc (Trainings , Knowledge Sharing, Meetings, HSE) | 5% |
| **Total** | | **100** |

***Note:**

**All the above mentioned activities are of continuous nature, to be carried out regularly irrespective of any time period.**

The above comments are accordingly given.

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# Annexure U - SSGC response on 1st draft

**Sui Southern Gas Company Limited**

**SSGC'S COMMENTS/ RESPONSE REGARDING**
**CONSULTANT FIRST DRAFT UFG BENCHMARK STUDY REPORT**

1. The Company has gone through the first draft of the 'UFG Benchmark Study Report' (the "Report"), prepared by the consultant M/s. KPMG. While we sincerely appreciate the efforts of the Consultants in preparation of the Report, it is the opinion of the Company that the Report has made unrealistic comparisons of the Company with some international best practices in certain cases, without taking into account the dissimilar operating conditions. Furthermore, it appears that the Report has misunderstood certain issues, such as the issue of measurement of volume lost in the law and order affected areas.

1. Furthermore, the Report presumes that execution of certain KMIs in next five years will permanently bring down UFG to 5%, whereas, in reality, the execution of different UFG control activities is a continuous ongoing activity which has to be carried out regularly irrespective of any specified time period. The execution of activities defined in the KMIs will require specific budgetary provisions on an annual basis, along with additional provisions in HR benchmark which would translate into a significant increase in the Tariff applicable to consumers. It appears that this impact of the responsibilities spelt out in the proposed KMIs has not been perused in the Report and therefore the same needs revisiting.

1. It should be noted that the ECC of the Federal Cabinet was cognizant of the situation and has issued policy guidelines to Authority, considering the complexity of the issue, to allow volumes claimed by the Company against following factors beyond its control as deemed gas sales:

   a. Gas Volume pilfered by Non-consumers
   a. Gas Losses in Law & Order affected areas
   a. Impact of change in Bulk Retail Ratio on UFG, using the base year 2003-04

1. Some of the key observations in the Report which, in the opinion of the Company need to be revisited are as follows:
   a. The Report recommends replacing the underground network, without giving reference of international practices in this respect, which needs to be elaborated
   b. Measurement Errors has been correlated with metering at TBS. Measurement is carried out whenever there is custody transfer i.e.. Gas Sources, SMSs and CMSs that have already been metered, it needs to be reviewed.
   c. It has been observed that fixed rate of UFG allowance is proposed based on Countries that are more developed and advanced in technology and whose socio economic conditions are different from Pakistan. In most of countries there are no domestic customers (with gas supply priority) or having fixed billing mechanism for Domestic Customers.

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Turkey and Bangladesh, are incomparable as they have only 15,641 Km and 20,804 Km Network as compared to an around 45,000 km network in case of SSGC. Appliance based billing for domestic consumers i.e.. 87 CM used irrespective of their consumption that results in lower UFG rate in Bangladesh, with approximately 65% of gas is allocated to bulk sector. Similarly, 48% of gas is allocated to bulk sector in Turkey.

If countries like USA (Texas), Russia and Australia (Multinet) have benchmark in range of 5%, the typical circumstances being faced by the SSGC warrant for reasonable UFG benchmark commensurate with the very UFG factors beyond its control, ground realities, operational constraints and unfavorable operating conditions.

5. That, in light of the above submissions, the Company provides its detailed comments on the Report, herein below:

**Section 1: Background**

6. Under Table ME-1 (Page 42), only 67% of total consumers have been shown as metered assuming all Nil and Minimum category Meters as faulty. While it is a fact that most of faulty meters are found under this category, however, a blanket assumption cannot be made regarding all these meters as sticky/ PUG, and may need to be reviewed. It is ensured that 100% registered Customers connected to SSGC Network are metered.

6. Under Table ME-3 (Page 43), it is fact that in Karachi, 45% of TBSs are interconnected with each other covering more than 70% of customers. There is similar situation with all major cities of Sindh and Balochistan where major cities of Region have interconnected network showing only smaller %age as compared to surrounded areas, while TBSs supplying gas to small towns and villages are isolated which are shown under relevant Regions in referred Table.

**Section 2: Situational Assessment**

8. The Report lists the following as significant impediments with regard to gas theft:
   a. Continuous growth of the gas distribution network
   a. Insufficient and delayed legislative support for recovery of detected cases
   a. Inadequate monitoring and maintenance efforts of Sui Companies
   a. Expectation of free gas supply in gas producing areas

Following important factors should also be included which are reiterated by the Company since the same are beyond its control:
   a. Increase in gas price, tempting consumers to use unfair means
   a. Shortage of gas supplies, tempting consumers to use it illegally
   a. Moratorium on new gas connections of industrial and commercial category
   a. Frequent electricity outages, tempting domestic customers to use generators through tempering in pressure regulator that is difficult to identify.
   a. Pressure Theft by commercial Customers due to unlawful load enhancement.

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# Annexure U - SSGC response on 1st draft (Cont.)

**Sui Southern Gas Company Limited**

12. The Report highlighted Leakages as a major UFG contributing factor and suggested to replace network based on its ageing without referring to any international practice for replacement of underground distribution piping network, which recommends replacement of network ONLY on the basis of its aging without its assessment/ evaluation. This issue needs to be thoroughly explored in view of international practices.

12. The Report's approach towards Measurement Errors is associated with non availability of meters on TBS. UFG Contributing factor of Measurement Errors actually applies to measurement faults associated with point of delivery i.e..; SMS and CMS wherein meters are already installed. It is endorsed that the installation of meter at TBS will facilitate for monitoring and analysis of UFG at micro level.

12. The Report acknowledges that UFG volumes rise as a consequence of Sales Mix shifting from Bulk to Retail. However, the stance that the Company has not made efforts for corrective measures is simply not true. It is reiterated that shift of gas from Bulk to Retail and vice versa is beyond the Company's control.

SSGC's network has increased from 851 towns/ villages in 2004 to 3,727 towns/ villages in 2015. This induced development is responsible for shift of gas from low or zero UFG bulk sector to highly UFG prone retail sector. Retail gas supplies increased from 48% in FY 2003-04 to 75% in FY 2014-15.

The company has been obligated to gasify remotely located towns and villages to support socio political agenda of Government for which financial assistance covering the capital cost only is provided. However, operating these networks in an efficient manner is a real challenge.
The Company has put in best possible efforts to curb the menace of gas theft, keeping in view the specific operating conditions, budgetary provisions and HR benchmark allowed by OGRA on an annual basis. Therefore, the observation that the Company has not taken corrective measures in this regard is misplaced and this factor needs a review.

12. We agree that there is always room for further improvement, but the overall conclusion of the Report that the Company does not take ownership of the UFG issue and plan to curb, is without any detailed analysis. The Report also fails to reflect the genuineness of the Company's claims against compensation/ allowance against the factors beyond its control. The ECC of Cabinet was cognizant of the facts and has issued policy guidelines to Authority, considering complexity of the issue, to allow the volumes claimed by the Company against following factors beyond its control:
    a. Gas Volume pilfered by Non-consumers
    a. Gas Losses in Law & Order affected areas
    a. Impact of change in Bulk Retail Ratio on UFG, using the base year 2003-04

As stated above, the execution of different UFG control activities are a continuous ongoing process irrespective of any specific time period. The constitution of proposed objectives and recommendations of the Report for short term and long term measures lacks thorough understanding of technical issues and financial constraints associated with these.

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# Annexure U - SSGC response on 1st draft (Cont.)

**Sui Southern Gas Company Limited**

**Section 2: Recommendations**

100% metering at TBSs is not a standard practice. Although from an administrative point of view, it is a better option to split the area of operation into smaller units, but the Report has recommended it as a tool of measurement. The purpose of installing TBS is to reduce the pipeline pressure required in system and most of TBS located in remote areas where there is no provision of a measurement facility.

16. Network Segmentation is an admirable suggestion of the Report and SSGC is already working on possible segments within major cities for better network visibility. Segment wise Gas Volume Reconciliation is preferred where one segment covers 100% customers and gas should ideally be supplied through one source with following exceptions:
    a. Large Segments will be developed with multiple TBS where network is interconnected in big Cities i.e..; Karachi, Hyderabad, Nawabshah, Sukkur and Quetta. However, every TBS in big cities will be metered.

    a. Cluster of small towns TBS and villages PRS should be treated as one segment under one SMS to avoid unnecessary cost on modification, metering, and Maintenance and security arrangements of small TBS/ PRS. Gas Purchase and Sales Figures will be reconciled on SMS Basis.

It is expected that whole franchise area may be divided into around 500 segments, subject to the above, and can be reconciled after meter installation/ customers tagging.

17. Cylinder Model is also an interesting suggestion which may be considered for upcoming new gasification schemes for domestic and commercial consumers, however, the Government of Pakistan and OGRA can take policy decisions in this regard.

17. Key Monitoring Indicators are proposed for a period of 5 years and that too with the intent to discount the impact of Bulk-Retail ratio. This is contrary to the fact that execution of UFG control activities are an ongoing process and besides Bulk to Retail Ratio, other factors i.e..; theft by Non-Consumers, Law & Order, etc., need to be addressed.

The Company is already executing 'UFG Reduction Plan' that includes crucial UFG control activities, envisaged in view of key UFG contributing factors. The KMIs must be brought in line with the key UFG contributing factors and the Company, having vast experience in this particular field, should be authorized to select the UFG control activities to be incorporated in the KMIs along with appropriate weightage.

19. The Business Model to manage UFG at Regional Level is already in place duly supported by Management Information Tools and controls.

19. Two yearly Meter Inspection is proposed for all Customer's premises for detection of theft and tempering. At present the total customer base of SSGC is around 2.8 million customers. Instead of surveying 400,000 customers, we plan on surveying 1.2 Million domestic customers in two years by effective realignment of resources available.

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# Annexure U - SSGC response on 1st draft (Cont.)

**Sui Southern Gas Company Limited**

21. Technological Advancement is already in place. EVCs and Modems have been installed at all major industrial locations and are being monitored remotely at Head Office. Furthermore, meters, EVC and Modems are being installed in phased manner at all SMSs and TBSs/PRSs.

However, as suggested the company is evaluating the feasibility of installing of Smart Meters for high Domestic and commercial Customers.

21. Cost of Service Study is suggested if Companies have option to run business on commercial basis without any priority and subsidy, however, OGRA being the statutory body can comment on the pricing mechanism for different categories of consumers at this juncture.

21. Detect, Monitor and Control proposes a reactive rather than proactive approach on gas theft and proposes independent verification of gas theft volumes claimed against consumers.

It seems that the Report has failed to appreciate the procedures and practices already in place. Contrary to the understandings reflected in the Report, fact of the matter is that a number of consumers to whom gas pilferage charges are booked, approach OGRA to get relief against established gas theft charges, which shows that validation mechanism is already in place in line with provisions of OGRA Ordinance and complaint resolution procedure of OGRA.

The Report has recommended installing bulk meters in areas which are prone to gas pilferage. It is a misconception that theft is localized in any specific area/ locality. It is categorically stated that except for the law & order affected areas, gas theft is not localized, and rather it is spread across the Company's distribution network. However, Bulk Meters are already being installed at Flat Sites to determine the extent of gas losses.

**Section 2: Recommendations on UFG Calculation**

24. We appreciate that the Report has recognized that, in addition to the UFG rate, appropriate allowance has to be given to the Company which firms our stance that there are certain extraordinary circumstances in which the Company is operating which are not prevalent in any other country.

**UFG Allowed = 5% + (Δ Bulk to Retail Ratio x β)** **where Beta (β) is based on KMIs**

According to the figures quoted in Table R-1 of the Report, even in countries like the USA (Texas), Russia and Australia (Multinet), UFG benchmarks go up to 4-5% despite the fact that there is minimum impact of gas theft and other operational constraints as highlighted in this report. If developed countries like USA, Russia and Australia have UFG rate around 5%, it is surprising that the same figure has been proposed for a company such as SSGC which operates on wholly different environment and socio economic/ political conditions. Most importantly, the Report has not stated specific reasons which resulted in UFG benchmark of around 5% in those countries, which needs to be elaborated to check consistency with SSGC.

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# Annexure U - SSGC response on 1st draft (Cont.)

**Sui Southern Gas Company Limited**

The Report should correlate following important factors, while referring the UFG Benchmark of the different countries, which have a direct link with UFG and thus UFG benchmark:

a. Consumer base

a. Gas sales mix

a. Law & order situation

a. Supply and demand situation/operating parameters

It is proposed that fixed UFG allowance may be revised upward or Beta (β) should be considered from 0.5 to 1.5 instead of 0 to 1. i.e..; if performance against KMI is 50% then Beta (β) should be 0.5+0.5=1.

**UFG Allowed = 5% + (ΔB2R x β)** **where Beta (β) is based on KMIs Range 0.5 – 1.5**

25. Based on sample calculation (Template) recommended by Consultant, it is proposed to utilize relevant year Retail UFG% (20.23%) instead of Base Year Retail UFG% (13.62%) applied to work out Bulk to Retail Impact as worked out on actual figures as follow:

| | FY 2003-04 (MMCF) | | | FY 2014-15 (MMCF) | | |
|---|---|---|---|---|---|---|
| | **Bulk** | **Retail** | **Total** | **Bulk** | **Retail** | **Total** |
| Gas Available for Sales | **178,431** ❶ | **162,602** ❸ | 341,033 | **105,146** | **323,304** | 428,450 |
| Gas Sales | 177,539 | 140,459 | 317,998 | 104,620 | 257,890 | 362,510 |
| UFG | **892** ❷ | **22,143** ❹ | 23,035 | **526** | **65,414** | 65,940 |
| UFG % | 0.50% | **13.62%** ❺ | 6.75% | 0.50% | **20.23%** | 15.39% |
| **Bulk Retail Ratio** | **52.32%** | **47.68%** | **100.00%** | **24.54%** | **75.46%** | **100.00%** |

Numbers (❶ to ❺) are marked in order to complete above template.

| | | Recommended by Consultant | |
|---|---|---|---|
| Base Volumes (% B2R) | 224,165 | 204,282 | 428,447 |
| Transferred to Retail | (119,019) | 119,019 | - |
| **UFG Impact** | **(595)** | **16,208** | **15,613** |
| | | | **13.62%** |

Comparison of Impact - Change in UFG Benchmark of last five years is enclosed as Annexure-A.

It is appreciated that Gas supplies shifted from Bulk to Retail have been considered for allowable adjustment but the factors behind rising trend of UFG in %age from 13.62% in 2003-04 (Base Year) to 20.23% in FY 2014-15 has been ignored.

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# Annexure U - SSGC response on 1st draft (Cont.)

**Sui Southern Gas Company Limited**

| | SSGC's Observation | | |
|---|---|---|---|
| Base Volumes (% B2R) | 224,165 | 204,282 | 428,447 |
| Transferred to Retail | (119,019) | 119,019 | - |
| UFG Impact | **(595)** | **24,081** | **23,486** |
| | | | **20.23%** |

The approach adopted by the consultants ignored that the rising trend of UFG% is beyond Company's control i.e.. illegal connections, gas distribution in economically unfeasible areas (villages) owing to the state's socio-economic commitments, shift of sale from Bulk to Retail as per Government policy, frequent third party damages to gas pipeline and installations because of inexistence of utility corridors, theft and hampering of operational activities due to deteriorating law and order situation, and theft due to moratorium on new gas connections.

If volume of ΔB2R is considered at fixed Rate 13.62% (Base Year) and β factor (assuming 1), the differential UFG rate 6.62% will also be treated and disallowed directly from fixed UFG allowance and effective rate of remaining Retail UFG increased further from 20.23% to 24.09% as worked out below:

**MMCF in FY 2014-15**

| Category | Available for Sales | | UFG % | UFG | Effective UFG | |
|---|---|---|---|---|---|---|
| Bulk | 224,165 | 105,146 | 0.50% | 526 | 526 | 0.50% |
| Retail | 204,285 | 119,019 (ΔB2R) | 13.62% | 16,205 | 16,205 | 13.62% |
| | | | 6.62% | 7,876 | 49,209 | 24.09% |
| | | 204,285 | 20.23% | 41,333 | | |
| | **428,450** | **428,450** | | **65,939** | **65,939** | |

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# Annexure U - SSGC response on 1st draft (Cont.)

**Sui Southern Gas Company Limited**

**SSGC Recommendations:**

•It is suggested that adjustments i.e.. Pilfered Volume by Non Consumers, Unbilled Volume in Law & Order Areas Volume may be individually allowed as Deemed Sales or Retail UFG %age of said year i.e.. 20.23% in FY 2014-15 may be considered in Bulk to Retail Volume Shift, impact of both scenarios have been worked in Annexure-B. Further, volume pursuant to company's claim on account of Minimum Billing under UFG allowance may also be considered.

The revised Performance Based UFG Benchmark should be improved as follow:

**UFG Allowed = Fixed Rate 5% + B2R x Retail UFG% in Said Year x ( 0.5 + β ) where Beta (β) is based on KMIs**

Actual Retail UFG% of Said Year to be considered instead of Base Year UFG% because of multiple factors contributed in rising UFG% beyond Company's control during period.

Proposed Beta (β) = Fixed 0.5 + Actual Performance (0.5 - 1.5) to be considered in view of ground difficulties in carrying operation activities, network complexity, delay in Road cutting Permissions within budgeted amount, shortage of resources and skilled labour, lengthy Procurement timeline/ procedures/ approvals and role of agencies.

UFG Penalty should not be exceeded from ROA of said year for survival gas industry and overall economy, the punishment should not be more than one's bearing capacity.

**Section 3: Way Forward**

•The Report has recommended Key Monitoring Indicators spread over a period of 5 Years, after which UFG rate of 5% is to be achieved by FY 2021.

| | |
|---|---|
| **Network Visibility:**<br>Segmentation, Metering on TBS/ Area wise, Meter Inspection, Replacement of Defective Meters, Reduction in Minimum Billing | 54% |
| **Network Improvement:**<br>Rehabilitation, Underground/ Overhead Leak Repairs, CP Coverage | 23% |
| **Theft Control:**<br>Detection, Disconnection & Complains | 18% |
| **Research & Development:**<br>Training, Capability Enhancement, HSE, Data Quality, Knowledge Sharing | 5% |
| **Total** | **100%** |

•We welcome this proposal on Performance Based UFG Benchmark, however, it is suggested that the weightages allotted to these KMIs be revised as follows:

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# Annexure U - SSGC response on 1st draft (Cont.)

**Sui Southern Gas Company Limited**

SSGC's Observations on Key Monitoring Indicator (β Working)

| | **Network Visibility** | **Beta (β) Act** | **Rev** |
|---|---|---|---|
| 1 | Number of TBSs Metered with EVCs/Modems Installed as a % of total TBSs.<br>The purpose of installing TBS is to reduce the pipeline pressure required in system and most of TBS are located in remote areas where there is no provision of a measurement facility. For network visibility, Segment wise Gas Volume Reconciliation is suggested where one segment covers 100% customers and gas should ideally be supplied through one source with following exceptions:<br>a) Large Segments will be developed with multiple TBS where network is interconnected in big Cities i.e..; Karachi, Hyderabad, Nawabshah, Sukkur and Quetta. However, every TBS will be metered.<br>b) Cluster of small towns TBS and villages PRS should be treated as one segment under SMSs to avoid unnecessary cost on modification, metering, and Maintenance and security arrangements of small TBS and PRS. Gas Purchase and Sales Figures will be reconciled on SMS Basis.<br>It is expected that whole franchise area may be divided into around 500 segments with above exceptions and can be reconciled after meter installation/ customers tagging. It is proposed to update this KMI as follow:<br>Number of Segments reconciled per 100 Segments annually (Target FY 2020-21) | 20% | 20% |
| 2 | Number of Meters Inspected (Consumer Wise) annually as a % of total metered connections.<br><br>Vigilance of all categories of consumers is integral part of UFG Reduction Plan.<br>The performance should be measured separately for each customer class based on following schedule:<br>a) 100% Industrial Consumers on Quarterly Basis 2%<br>b) 100% Commercial Consumes on Semi-Annually Basis 3%<br>c) 20% of Domestic Consumers (around 600,000) annually 5% | 5% | 10% |
| 3 | Number of Bulk Meters Installed annually area wise.<br>The precise quantification of losses at SMSs feeding these areas prone to gas pilferage is available on month wise as well as year wise basis and in no case involves any estimation. Moreover, it may not be possible for the company to install bulk meters feeding different pockets in these areas.<br>This KMI should be merged under KMI 1. | 3% | 0% |

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# Annexure U - SSGC response on 1st draft (Cont.)

| | | Beta (β) | |
|---|---|---|---|
| 4 | Number of total defected (Slow & PUG/Sticky) meters replaced as a % of total meters.<br>Replacement of meters is a continuous ongoing activity and it cannot be ensured that after 5 years and no further meters will become defective or require replacement.<br>The performance should be measured against identified defective meters (instead of Total Meters). | 3% | 15% |
| 5 | Number of TBSs segmented as a % of total no. of TBSs.<br>TBS wise Segmentation may be difficult to achieve in big Cities as discussed under KMI 1, this KMI should be merged under KMI 1. | 10% | 0% |
| 6 | Number of Minimum billed consumer as a % of total number of domestic consumers.<br>The minimum billed consumers fall due to actual low consumption or measurement issues in meters. The consumers cannot be forced to increase their consumption.<br>The minimum billed customer %age varies between 22% to 35% depending on the seasonal consumption that are surveyed on selected criteria and it is observed that only 13 % meters are identified as slow/ PUG.<br>This KMI should be measured against survey as % of Minimum billing customers and merged with KMI 2. | 3% | 0% |
| 7 | Number of total defected meters identified as a % of total meters.<br>The performance should be measured against identified defective meters. | 5% | 0% |
| 8 | Number of meters replaced as a % of total number of meter eligible for replacement.<br>This is a continuous ongoing activity to be carried out annually. The performance should be measured separately for each customer class based on following schedule:<br>Industrial Meters<br>Commercial Meters<br>Domestic Meters<br>* Instead of Industrial Meter replacement, SSGC carries out meter proving/ testing at field (Field Proving at meter installation site) and at workshop. Any meter found outside accuracy limits is replaced immediately. | 3 Years* (Meter change/ Meter Proving)<br>7 Years<br>16 Years | 5%<br>10% |

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# Annexure U - SSGC response on 1st draft (Cont.)

## Sui Southern Gas Company Limited

| | Network Improvement | Beta (β) | |
|---|---|---|---|
| 9 | Length of the distribution network rehabilitated (KMs) as a % of total length of distribution network.<br>This is a continuous ongoing activity to be carried out annually based on extreme requirement to avoid unnecessary wastage of funds.<br>Overall Steel Pipelines is surveyed on quarterly basis and magnesium anodes are installed on small Dia Pipelines where CP Stations are not feasible, Battery Backup Systems are installed at CP Stations to ensure pipeline protection level in absence of electricity.<br>The Target of Rehabilitation is around 300 KMs per annum (based on previous actual results).<br>The performance may be compared against Targets in revised UFG Reduction Plan (instead of total length of network). | 10% | 10% |
| 10 | Number of underground Leaks rectified per KM as % of the total leakage rate per KM.<br>This is a continuous ongoing activity to be carried out annually and rate of average leaks per KM varies area to area, it is difficult to reduce the per km leakages drastically because new leakages develop in the network because of damages and soil conditions, it will be very difficult to reduce the per km leakages drastically.<br>The performance may be compared against Targets in revised UFG Reduction Plan (instead of total leakage rate per KM). | 5% | 5% |
| 11 | Number of overhead leak rectified as a % total number of domestic consumers.<br>This is a continuous ongoing activity to be carried out annually, the performance may be based on both surveyed and rectified of 15% of total domestic connection annually.<br>The performance may be compared against Targets in revised UFG Reduction Plan (instead of total number of domestic consumers). | 4% | 5% |
| 12 | Number of KMs with Cathodic protection coverage as a % of total No. of KMs of distribution network.<br>At present, Out of 85% Steel Pipelines Network consists of 28% Supply Mains (SMS to TBS) that are almost protected (around 90%) and remaining 72% Distribution Mains and Services that are not well protected (around 50%). | 4% | 5% |

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# Annexure U - SSGC response on 1st draft (Cont.)

## Sui Southern Gas Company Limited

| | | Beta (β) | |
|---|---|---|---|
| | It is practically impossible to ensure 100% cathodic protection of distribution network due to various constraints such as Power outage, Third party damage, no right of ways, pipeline coating service life / pipeline aging, soil condition and difficulties to carryout operational work in large cities.<br>This is very important aspect and it is proposed that the performance may be measured as % of steel larger Dia Pipeline instead of total distribution network. The proposed KMI will as follow:<br>Additional 4% Cathodic protection coverage of total steel distribution network as compare to CP coverage of last year. | | |
| **Theft Control** | | | |
| 13 | Number of theft cases detected-against registered consumers.<br>CR Department received around 50,000 theft cases p.a. from following sources:<br>•Billing Department<br>•Surveillance &Monitoring<br>•CRD Field Staff<br>•SSGC complaint center (1199)<br>e) Media 4%<br>The company will explore new sources to increase reporting of number of theft cases, however, this KMI should be measured against performance i.e.; disconnections of reported cases.<br>It is proposed to merge under KMI 15. | 4% | 0% |
| 14` | Number of theft cases detected against non-registered consumers.<br>The companies, through constant vigilance, identify and disconnect as many instances of theft by non-consumer that they can. The theft of gas by non-consumers (i.e.. persons not registered on the company's network) is difficult to identify, quantify and approach.<br>New Gas Theft Act deals with instances of gas theft only, the companies are not provided with the security to recover the amounts lost. 4% 0%<br><br>CR Department detected around 125,000 theft cases against non- registered customers in FY 2015-16.<br><br>These efforts may further be increased if OGRA appreciate and reward allowance against this particular factor. This KMI may be included subject to its treatment. | 4% | 0% |

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# Annexure U - SSGC response on 1st draft (Cont.)

## Sui Southern Gas Company Limited

| | | | Beta (β) | |
|---|---|---|---|---|
| 15 | Number of disconnections in respect of theft as a % of total consumer base of the period.<br>These illegal connections are disconnected wherever detected despite resistance of people, however, these connections are immediately reconnected by rapturing pipeline from another point. As a result, pipeline is deteriorated with high rate of leakages and corrosion.<br>CR Department will attempt/ disconnects around 100% theft cases against non-registered customers detected in Karachi Region whereas the theft cases in Interior Sindh and Baluchistan cannot be attempted/ disconnected due to resource constraints in managing large scattered areas as well as reluctance of lodging FIRs by the local police stations at all regions.<br>The performance may be measure against detected cases (instead of total customers) | | 4% | 5% |
| 16 | Number of gas theft/ leakages complaints received per 100,000 consumers annually.<br>CR Department receives around 45,000 leakage complaints during FY 2015-16. Complaint resolved against received may be utilized as performance indicator.<br>This KMI should be merged under KMI 17. | | 3% | 0% |
| 17 | Number of gas theft/Leakages complaints resolved per 100,000 consumers annually.<br>CR Department resolves 100% leak complaints received. This KMI should be based on Complaint resolved against received as performance indicator (instead of 100,000 customers) | | 3% | 5% |
| * | It is proposed to add survey of disconnected customers as it is experienced that most of theft cases are reported at locations where gas supply was disconnected.<br>The performance should be measured separately for each customer class based on following schedule: | | 0% | 5% |
| | a) 100% Industrial Disconnected Consumers annually | 2% | | |
| | b) 50% Commercial Disconnected Consumes annually | 1% | | |
| | c) 20% Domestic Disconnected Consumers annually | 2% | | |

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# Annexure U - SSGC response on 1st draft (Cont.)

## Sui Southern Gas Company Limited

| Research & Development | | Beta (β) | |
|---|---|---|---|
| 18 | Number of training hours per employee per year. | 1% | 1% |
| 19 | Improved capability of cost effective construction. Maintenance and emergency repairs | 1% | 1% |
| 20 | Number of environmental issues rectified during the year / Amount of penalties paid as a result of violation of environment laws. | 1% | 1% |
| 21 | Volume of data quality issues identified during the year. | 1% | 1% |
| 22 | Number of knowledge sharing meetings / joint sessions attended / organized during the period. | 1% | 1% |
| **Total** | | **100%** | **100%** |

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# Annexure U - SSGC response on 1st draft (Cont.)

**Sui Southern Gas Company Limited**

**Comparison of Impact - Change in UFG Benchmark**

Annexure-A

MMCF

| | | 2011-12 | 2012-13 | 2013-14 | 2014-15 | 2015-16E |
|---|---|---|---|---|---|---|
| Purchases | a | 403,470 | 415,472 | 419,113 | 428,450 | 456,168 |
| Shrinkage/ RLNG (BTUs) | b | 2,267 | 2,924 | 3,622 | 5,348 | 12,071 |
| **Total Purchases** | c | **405,737** | **418,396** | **422,735** | **433,798** | **468,239** |
| Bulk | d | 105,295 | 102,032 | 98,531 | 104,620 | 136,453 |
| Retail | e | 254,353 | 271,613 | 255,345 | 257,890 | 248,960 |
| **Sales to Customers** | f = d+e | **359,648** | **373,645** | **353,876** | **362,510** | **385,412** |
| Deemed Sales | g=b | 2,267 | 2,924 | 3,622 | 5,348 | 12,071 |
| Adjustments | h | 2,031 | 6,573 | 6,819 | 6,876 | 6,876 |
| **Total Sales** | i=f+g+h | **363,946** | **383,142** | **364,318** | **374,735** | **404,359** |
| UFG | j=c-i | **41,791** | **35,254** | **58,417** | **59,063** | **63,879** |
| UFG %age | k=j/c | **10.30%** | **8.43%** | **13.82%** | **13.62%** | **13.64%** |
| Allowed UFG | l=c x 7% | 28,402 | 29,288 | 29,591 | 30,366 | 32,777 |
| **Disallowed UFG** | m = j-l | **13,389** | **5,967** | **28,826** | **28,697** | **31,103** |
| **Revised Scenario** | | | | | | |
| **Available for Sales** | | | | | | |
| Bulk | n=d/(1-0.5%) | 105,824 | 102,545 | 99,027 | 105,146 | 137,139 |
| Retail | o=a-n | 297,646 | 312,927 | 320,086 | 323,304 | 319,029 |
| **Total** | p=n+o | **403,470** | **415,472** | **419,113** | **428,450** | **456,168** |
| Bulk %age | q=n/p | 26.23% | 24.68% | 23.63% | 24.54% | 30.06% |
| Short B2R% (Base 52.32%) | r=52%-q | 26.09% | 27.64% | 28.69% | 27.78% | 22.26% |
| **Bulk to Retail Shift** | s= p x r | **105,271** | **114,830** | **120,253** | **119,019** | **101,529** |
| Bulk UFG | t=s x 0.5% | (526) | (574) | (601) | (595) | (508) |
| Retail UFG | u=s x 13.62% | 14,336 | 15,638 | 16,376 | 16,208 | 13,826 |
| Proposed B2R Adj (Base 13.62%) | v = t + u | **13,810** | **15,063** | **15,775** | **15,613** | **13,319** |
| **Purchases** | a | **405,737** | **418,396** | **422,735** | **433,798** | **468,239** |
| Sales to Customers | f | 359,648 | 373,645 | 353,876 | 362,510 | 385,412 |
| Deemed Sales | g=b | 2,267 | 2,924 | 3,622 | 5,348 | 12,071 |
| Adjustments (β is 100%) | v | 13,810 | 15,063 | 15,775 | 15,613 | 13,319 |
| **Total Sales** | w = f+g+v | **375,725** | **391,632** | **373,273** | **383,472** | **410,802** |
| UFG | x = a -w | 30,012 | 26,764 | 49,462 | 50,326 | 57,437 |
| UFG % | | 7.40% | 6.40% | 11.70% | 11.60% | 12.27% |
| Allowed UFG | y = c x 5% | 20,287 | 20,920 | 21,137 | 21,690 | 23,412 |
| **Disallowed UFG** | z = x - y | **9,725** | **5,844** | **28,325** | **28,636** | **34,025** |
| **Net Benefit/ (Deficit)** | aa = m-z | **3,664** | **123** | **501** | **61** | **(2,922)** |
| **SSGC's Point of view** | | | | | | |
| Actual Retail UFG % | bb = e /o | 14.55% | 13.20% | 20.23% | 20.23% | 21.96% |
| Proposed B2R Adjustment | v = (s x bb)+t | 14,785 | 14,586 | 23,721 | 23,486 | 21,792 |
| UFG | x = a -(f+g+v) | 29,036 | 27,241 | 41,515 | 42,453 | 48,964 |
| UFG % | | 7.16% | 6.51% | 9.82% | 9.79% | 10.46% |
| Allowed UFG | y = a x 5% | 20,287 | 20,920 | 21,137 | 21,690 | 23,412 |
| **Disallowed UFG** | z = x - y | **8,750** | **6,321** | **20,378** | **20,763** | **25,552** |
| **Net Benefit/ (Deficit)** | aa = m-z | **4,640** | **(355)** | **8,448** | **7,934** | **5,551** |

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# Annexure U - SSGC response on 1st draft (Cont.)

**Sui Southern Gas Company Limited**

Annexure-B

**Comparison of Impact - Change in UFG Benchmark**

| | | 2011-12 | 2012-13 | 2013-14 | 2014-15 | 2015-16E |
|---|---|---|---|---|---|---|
| **Existing Scenario** | | | | | | |
| Adjustments | MMCF | 2,031 | 6,573 | 6,819 | 6,876 | 6,876 |
| UFG | MMCF | 41,791 | 35,254 | 58,417 | 59,063 | 63,879 |
| **UFG % (after Adj)** | **%age** | **10.30%** | **8.43%** | **13.82%** | **13.62%** | **13.64%** |
| Disallowed UFG | MMCF | 13,389 | 5,967 | 28,826 | 28,697 | 31,103 |
| AGCV | BTU/CF | 943 | 937 | 999 | 979 | 995 |
| WACOG | Rs. / MMBTU | 307 | 343 | 345 | 366 | 327 |
| UFG Penalty | Rs. Million | 3,881 | 1,920 | 9,944 | 10,282 | 10,130 |
| **Effective UFG Benchmark** | **%age** | **7.50%** | **8.57%** | **8.61%** | **8.59%** | **8.47%** |
| **Consultant Scenario :** B2R Δ @ 13.62% (Base Year) | | | | | | |
| Adjustments (ΔB2R x β 100%) | MMCF | 13,810 | 15,063 | 15,775 | 15,613 | 13,319 |
| UFG | MMCF | 30,012 | 26,764 | 49,462 | 50,326 | 57,437 |
| **UFG % (after Adj)** | **%age** | **7.40%** | **6.40%** | **11.70%** | **11.60%** | **12.27%** |
| Disallowed UFG | MMCF | 9,725 | 5,844 | 28,325 | 28,636 | 34,025 |
| UFG Penalty | Rs. Million | 2,819 | 1,881 | 9,771 | 10,260 | 11,082 |
| **Net Benefit/ (Deficit)** | Rs. Million | **1,062** | **39** | **173** | **22** | **(952)** |
| **Effective UFG Benchmark** | **%age** | **8.40%** | **8.60%** | **8.73%** | **8.60%** | **7.84%** |
| **Scenario 1 :** ΔB2R @ 13.62% (Base Year) + Previous Allowed Adjustments | | | | | | |
| Adjustments | MMCF | 15,841 | 21,636 | 22,594 | 22,489 | 20,195 |
| UFG | MMCF | 27,981 | 20,191 | 42,643 | 43,450 | 50,561 |
| **UFG % (after Adj)** | **%age** | **6.90%** | **4.83%** | **10.09%** | **10.02%** | **10.80%** |
| Disallowed UFG | MMCF | 7,694 | - | 21,506 | 21,760 | 27,149 |
| UFG Penalty | Rs. Million | 2,230 | - | 7,419 | 7,797 | 8,842 |
| **Net Benefit/ (Deficit)** | Rs. Million | **1,651** | **1,920** | **2,525** | **2,485** | **1,288** |
| **Effective UFG Benchmark** | **%age** | **8.90%** | **10.17%** | **10.34%** | **10.18%** | **9.31%** |
| **Scenario 2 :** ΔB2R @ Retail UFG (Said Year) only | | | | | | |
| Adjustments | MMCF | 14,785 | 14,586 | 23,721 | 23,486 | 21,792 |
| UFG | MMCF | 29,036 | 27,241 | 41,515 | 42,453 | 48,964 |
| **UFG % (after Adj)** | **%age** | **7.16%** | **6.51%** | **9.82%** | **9.79%** | **10.46%** |
| Disallowed UFG | MMCF | 8,750 | 6,321 | 20,378 | 20,763 | 25,552 |
| UFG Penalty | Rs. Million | 2,536 | 2,034 | 7,030 | 7,439 | 8,322 |
| **Net Benefit/ (Deficit)** | Rs. Million | **1,345** | **(114)** | **2,914** | **2,843** | **1,808** |
| **Effective UFG Benchmark** | **%age** | **8.64%** | **8.49%** | **10.61%** | **10.41%** | **9.65%** |

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# Annexure U - SSGC response on 1st draft (Cont.)

**Sui Southern Gas Company Limited**

Annexure-C

Comparison of Impact - Change in UFG Benchmark

**Existing (As per Actual: SHC Fixed 7% + Allowances)** — Actual Figures of FY 2014-15 in MMCF

| Customer Category | Available for Sales | | Proposed UFG Breakup | | Fixed UFG 7% Benchmark | | | Variable UFG Benchmark | | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Proposed | Actual | UFG % | UFG | UFG | Disallowed | Allowed | Claims* | Disallowed | Allowed | Disallowed | Allowed |
| Bulk | 105,146 | 105,146 | 0.50% | 526 | 28,859 | (1,507) | 30,366 | 37,080 | 30,204 | 6,876 | 28,697 | 37,242 |
| Retail | 323,304 | 323,304 | 20.23% | 65,413 | | | | | | | | |
| | 428,450 | 428,450 | 15.39% | 65,939 | 28,859 | (1,507) | 30,366 | 37,080 | 30,204 | 6,876 | 28,697 | 37,242 |
| | | | | | | | | | | UFG Penalty (Rs. M) | 10,282 | 8.59% |

**Consultant Proposal: Fixed Rate 5% + ΔB2R x Retail UFG% in Base Year x (β upto 1)**

| Customer Category | Available for Sales | | Proposed UFG Breakup | | Fixed UFG 5% Benchmark | | | Variable UFG Benchmark | | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Proposed | Actual | UFG % | UFG | UFG | Disallowed | Allowed | ΔB2R UFG | Beta (β) | Allowed | Disallowed | Allowed |
| Bulk | 224,165 | 105,146 | 0.50% | 526 | 526 | 0 | 526 | | | | 0 | 526 |
| | | ΔB2R (119,019) | (0.62%) | (10,302) | | | | (10,302) | 0.50 | 5,102 | (5,102) | 5,102 |
| | | | Revised UFG% (Base Year) | | | | | | | | | |
| Retail | 204,285 | | 6.62% | 7,876 | | | | | | | | |
| | | | Revised UFG% | | 49,209 | 28,044 | 21,164 | | | | 28,044 | 21,164 |
| | | 104,285 | 20.23% | 41,313 | | | | | | | | |
| | 428,450 | 428,450 | 15.39% | 65,939 | 49,734 | 28,044 | 21,690 | 16,205 | 8,102 | 8,102 | 36,147 | 29,792 |
| | | | | | | | | | | UFG Penalty (Rs. M) | 12,951 | 6.87% |

**SSGC Proposal: Fixed Rate 5% + ΔB2R x Retail UFG% in Said Year x ( 0.5+β)**

| Customer Category | Available for Sales | | Proposed UFG Breakup | | Fixed UFG 5% Benchmark | | | Variable UFG Benchmark | | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Proposed | Actual | UFG % | UFG | UFG | Disallowed | Allowed | ΔB2R UFG | Beta (β) | Allowed | Disallowed | Allowed |
| Bulk | 224,165 | 105,146 | 0.50% | 526 | 526 | 0 | 526 | | | | - | 526 |
| | | ΔB2R (119,019) | 20.23% | 24,081 | | | | 24,081 | 1.00 | 24,081 | - | 24,081 |
| | | | Revised UFG% (Said Year) | | | | | | (β = 0.5+β) | | | |
| Retail | 204,285 | | | | | | | | | | | |
| | | 104,285 | 20.23% | 41,313 | 41,313 | 20,168 | 21,164 | | | | 20,168 | 21,164 |
| | 428,450 | 428,450 | 15.39% | 65,939 | 41,838 | 20,168 | 21,690 | 24,081 | 0 | 24,081 | 20,168 | 45,771 |
| | | | | | | | | | | UFG Penalty (Rs. M) | 7,228 | 10.55% |

**Other Related Figures** Shrinkage/ Swapping (MMCF) 5,348 | WACOG (Rs. / MMBTU) 365.90 | GCV (BTUs/ CFT) 979.20 | ROA (Rs. B) 7.87

**Remarks:** 1. Actual Retail UFG% of Said Year to be considered instead of Base Year % because of multiple factors contributed in rising UFG% beyond Company's control during period.
2. Proposed Beta (β) = Fixed 0.5 + Actual Performance to be considered in view of ground difficulties in carrying operation activities, revised complexity, delay in Road cutting permissions with in Expected amount, shortage of manpower and skilled labour, lengthy Procurement (tender/ procedures) approvals and role of agencies.
3. UFG Penalty should not be exceeded from ROA of said year (in current year industry and overall economy, the punishment should not be more than one's bearing capacity.

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# Annexure V.1 - OGRA Request for Expression of Interest

(Annex - B

1107

**OIL AND GAS REGULATORY AUTHORITY**
**Request for**
**EXPRESSION OF INTEREST**
**Under Regulation 3(B) of The PPRA Regulations of Consultancy Services Regulation 2010**
**SELECTION OF CONSULTANT FIRMS FOR DETERMINING**
**UNACCOUNTED FOR GAS (UFG) LEVEL**

1. Oil & Gas Regulatory Authority (OGRA) intends to carry out a study to determine reasonable Unaccounted for Gas (UFG) benchmarks for natural gas sector, in Pakistan. Study shall include proposals for incremental improvements in all components of UFG control. Consultant firms shall complete the assignment within 90-days of the commencement of study.
2. OGRA invites reputable consultant firms having minimum of **ten years** experience in operational, technical and financial matters of natural gas utilities operations *inter alia* including experience and strong knowledge of the international as well as the local factors which have an impact on UFG, its control, monitoring, measurements, gas purchase-sales reconciliations etc.
3. Interested consultant(s) must provide detailed CV(s) of member(s) of core team highlighting relevant experience.
4. Consultant firms in the business of oil and gas sector may have option to associate to complement their respective areas of expertise, strengthening the technical responsiveness of their proposals and make available bigger pool of experts who shall have knowledge of the international as well as local prospective on the issue.
5. Existing auditors of SSGCL and SNGPL are not eligible to participate in this assignment.
6. The bids shall be submitted under regulation 3(B) of the PPRA Regulation of Consultancy Services Regulation 2010 (Quality & Cost Based Selection). The Financial Bid should contain a lumpsum figure, inclusive of all charges. Conditional bids will not be accepted.
7. The Technical and Financial Proposals shall be received in separate sealed envelopes **till 11:00 AM on 30th December, 2015** and only Technical Proposal will be opened in the first instance for technical evaluation on same date at **11:30 AM** in the presence of the bidders, or their authorized representatives, who may like to present bids to the Executive Director (Gas) in OGRA office. The financial proposals of the technically responsive or highest ranked proposals, under regulation 3(B) of the PPRA Regulation of Consultancy Services Regulation 2010, shall be opened in the presence of the bidders on a date and time to be communicated to them in advance. The financial bids should be valid for six months from date of opening of technical bids.
8. The envelopes containing the technical and financial proposals shall clearly mention that bids are to be opened at the specified date and time and by the competent forum only.
9. OGRA reserves the right in its sole discretion to accept or reject any bid without justifying any reason thereof.
10. Scope of work/TORs and evaluation criteria can be obtained from the OGRA website www.ogra.org.pk and PPRA website www.ppra.org.pk.
11. Experience of conducting similar assignments like natural gas purchase / sale reconciliation, UFG related studies, energy efficiency audits of prominent gas distribution and transmission companies, with supporting documents is essential.
12. In case bid opening date is falling on a holiday, the bid will be opened on next working day at same time.

Executive Director (Gas)
Oil & Gas Regulatory Authority
Plot No 54-B, Fazl-e-Haq Road,
Blue Area, Islamabad Pakistan.
Ph: +92-51-9244297, Fax:+92-51- 9244372
Email: siqbal@ogra.org.pk

1108

## SCOPE OF WORK/TERMS OF REFERENCE

**1. INTRODUCTION:**

Unaccounted for Natural Gas (UFG) means, in respect of financial year, the difference between the total volume of metered gas received by Gas Utility Companies during that financial year and the volume of natural gas metered as having been delivered by the licensees to their consumers excluding there from metered natural gas used for self consumption by the Gas Utility Companies for the purposes of their regulated activity; and such other quantity as may be allowed by the Authority for use by the licensees in the operation and maintenance of their regulated activity. UFG is one of the major operational elements and bench marking of UFG greatly determines the operational efficiency of a transmission and distribution company. The companies in their different petitions have been arguing that following factors contribute to the UFG:-

(i.) Leakages
(ii.) Measurement errors
(iii.) Size and Age of network
(iv.) Law and order situation in different areas
(v.) Increase in gas price
(vi.) Increase in gas theft by consumers and non-consumers
(vii.) Shift of gas sales from bulk to retail consumers
(viii.) Allowance for minimum billing
(ix.) Effect of Power outage on buried steel pipelines

Considering the importance of the issue, OGRA intends to carry out detailed evaluation in respect of its licensees i.e. Sui Northern Gas Pipelines (SNGPL) and Sui Southern Gas Company (SSGC) on various aspects of UFG components and its quantum through a Consultant firm of eminence repute in the field.

**2. OBJECTIVES:**

To assist Oil and Gas Regulatory Authority (hereafter referred the Authority) for determining and fixing the UFG benchmark (s) for the gas utility companies i.e. SNGPL and SSGCL for next five years and thereafter development of a formula to calculate UFG on yearly basis keeping in view all the relevant factors as well as international best practices.

**3. TASKS:**

i. Develop rationalized overall benchmark for UFG, in natural gas sector / development of a formula to calculate UFG on yearly basis, including fixed and variable parameters, as per relevant clauses of OGRA Ordinance and UFG definition given in NGTR and applicable law.
ii. The benchmark study must elaborate international best practices as well as appropriate discounts for local operating conditions, with specific reference to countries with similar operating environment along with details of company's network / consumers in respective countries. References on UFG Benchmarks prepared by other renowned regulators should be included along with their methodology adopted to calculate UFG disallowance if any.
iii. Brief of some of the issues mentioned at Para 1 above which are the contributing factors raised by the gas companies in the specific socio economic conditions of Pakistan, is as follows:-

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# Annexure V.1 - OGRA Request for Expression of Interest

1109

**a) SHIFT OF BULK SALES TO RETAIL SECTOR**

Bulk sector comprises of power, fertilizer, cement, steel mills and other corporate sector industries whereas retail sector constitutes sale to all remaining consumers.

**Task**

i. Identify the bulk consumers in both gas companies with their respective volumes, inline with the international practices.

ii. To establish a formula to calculate the impact of shift of volume from bulk to retail sector for calculation of UFG, inline with the international practices also indicate reference countries.

**b) THEFT**

Two type of theft exist:

i. Theft by registered consumers

ii. Theft by non registered consumers

Presently OGRA allows theft volume against registered consumers in the deemed gas sales upon its acknowledgement, whereas for non- registered consumers, companies are required to put all out efforts which includes vigilance, identification and removal of theft points, calculation of pilferage volume and have the same acknowledged by the court of law.

**Task**

i. International best practices adopted for treatment of theft by non registered consumers along with proper referencing vis-à-vis countries specific conditions.

ii. Preparation of methodology for treatment of theft volume in the UFG computation as well as what actions would be required by the companies to qualify for such volumes.

**c) LAW AND ORDER AFFECTED AREAS**

In view of the deteriorating law and order in certain areas of the country gas companies are pursuing to allow volumes in this account

**Task**

i. Suggest appropriate way forward for quantification and treatment of such volumes as part of UFG in line with the best international practices with specific references along with legal provisions vis-à-vis local conditions.

ii. Define prerequisites to qualify for law and order volumes.

**d) MINIMUM BILLING**

OGRA disallows the claims of the gas companies' against minimum billing on the rationale that the same is unmeasured and is not inline with the UFG definition provided in NGTR 2002 and arises due to petitioner's own equipment fault, which is not justified and that allowance for such metering errors has already been given in the allowable UFG vis-à-vis local conditions.

**Task**

i. Whether there is a justification to consider allowance in UFG for volume against minimum billing claimed by the gas companies, giving references, if any keeping in view applicable legal provisions.

**e) FORMULA FOR UFG CALCULATION**

SNGPL has contested the methodology of calculating UFG by OGRA in the light of the definition of UFG given in the NGTR 2002.

**Task**

1110

ii. To suggest methodology of calculating UFG in the light of present practice, definition as per rules and international practices applicable.

**f) BTU EQUIVALENCE ISSUE IN CASE OF THIRD PARTY ACCESS**

As per Third Party Access Rules, the transporter of gas i.e. the gas companies, shall be paid for transportation charges for the contracted capacity in terms of volume at the entry point and shall account for this gas in terms of equivalent energy value at exit point irrespective of volume. Due to lower GCV of the commingled gas in the integrated transmission and distribution network of the gas companies, the transporter of gas i.e. the gas companies have to deliver excess volume of gas to compensate the energy value at exit point which contribute to the UFG of the companies.

**Task**

i. To devise a mechanism to stream line the above anomaly inline with the best international practices vis-à-vis local conditions.

**g) TREATMENT OF THIRD PARTY GAS VOLUME FOR CALCULATION OF UFG**

**Task**

i. To suggest treatment of such gas volumes as per standard norm / best international practices.

v. A methodology / mechanism is to be devised for capping the volumes to be allowed (if any) as mentioned in Paras (a), (b), (c), (d) above, with a view to create a balance between consumers and the licensees and to maintain reasonable pressure on the licensees to put due efforts to control these losses.

vi. The benchmark must also cater for anticipated development in natural gas sector, which may include increase in gas input due to indigenous gas discoveries, import of natural gas through interstate pipelines /LNG, increase / decrease in gas sales volumes, load management, and other such factors as per international best practices.

vii. Develop framework for incremental improvement in all areas/components of UFG control.

**4. DELIVERABLES:**

i. Present study plans, highlighting critical milestones to the Authority, prior to the commencement of the study.

ii. Submit draft report to the Authority within 30 days of the commencement of the assignment.

iii. Submit 2nd draft report on UFG benchmark fixation to the Authority within 60 days of the commencement of the assignment.

iv. Submit final report on UFG benchmark fixation to the Authority by 90th day of the study period.

[redacted]

vi. The Consultant Firm shall be responsible to coordinate with the Sui Companies and other relevant stakeholders, for collection of relevant data required to carry out the said study under intimation to OGRA.

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# Annexure V.1 - OGRA Request for Expression of Interest

1111

vii. Any direction, order, judgment or guideline issued by any court of law relating to determination of UFG shall be binding on the consultant and shall be complied with in letter and spirit.

**5. QUALIFICATION OF THE CONSULTANT(S):**

The Consultant firms should comprise of technical personnel with a minimum of 20 years practical experience relating to UFG monitoring, gas measurements, gas purchase-sales reconciliations and strong knowledge of the international as well as the local factors which have an impact on UFG. Interested Consultant firm(s) must provide detailed resumes of their members.

**6. PRESENTATION**

All consultant firms participating in the tender may be required to give detailed presentation which as well covers the following:

i. Expertise
ii. Experience
iii. Any UFG benchmark studies done for renowned regulators.
iv. Practices adopted by the other renowned regulators
v. Resume of their experts
vi. Any other related information

**7. TERM/DURATION OF ASSIGNMENT:**

The study shall be completed within 90 days of the award of contract. Extension may given in special circumstances, subject to approval by the Authority.

**8. PROPRIETARY RIGHTS:**

All documents prepared by the consultant(s) shall become and remain the sole property of the Authority. Consultant(s) shall not, during the term of contract or after expiration, disclose any proprietary or confidential information relating to the services, or the Authority's business or operations.

**9. LOCATION:**

All relevant correspondence and meetings will be convened in the office of Oil and Gas Regulatory Authority, currently located at Plot No. 54-B, Fazl-e-Haq Road, Blue Area, Islamabad.

**10. COUNTER PARTS:**

Executive Director (Gas) and Executive Director (Finance & Accounts), OGRA will be the counter parts who will provide day-to-day coordination for the project.

1112

**TECHNICAL EVALUATION CRITERIA**

| Description | Points |
|---|---|
| **1.0 Work Protocol** | |
| 1.1 A comprehensive approach, strategy or methodology along with tools and techniques, which shall be adapted to carryout UFG study as per TOR's, highlighting critical path items. | 20 Points |
| **2.0 General Experience of the firm** | |
| 2.1 No. of years in business/ consultancy | 10 Points |
| 2.2 Areas of expertise(general experience, not specific experience) | 5 Points |
| | 5 Points |
| **3.0 Specific and relevant experience** | |
| 3.1 Total Work experience and competency of the consultant Firm(s) in undertaking jobs relating to similar assignments preferably in developing countries like natural gas purchase / sale reconciliation, UFG related studies, energy efficiency audits of prominent gas distribution and transmission companies, with supporting documents. | 40 Points |
| | 20 Points |
| 3.2 Experience of work with similar agencies, and in similar conditions. | 20 Points |
| **4.0 Key staff to be deployed on the assignment on permanent basis** | |
| 4.1 Qualification | 20 Points |
| 4.2 Experience | 10 Points |
| | 10 Points |
| **5.0 Financial/Technical Strength of the firm and presence in Islamabad** | 10 Points |
| 5.1 Organizational Structure, How they handle assignments/professional supervision | 5 Points |
| 5.2 Professional presence in Islamabad | 5 Points |
| TOTAL: | 100 |

**NOTE: Minimum requirements for technical pre-qualification shall be 70 points.**
**For overall evaluation following weightage will be given:-**
**Technical Proposal = 75 % weightage**
**Financial proposal = 25 % weightage**

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# Annexure V.2 - OGRA Notifications for Consultative Sessions

1105

آئل اینڈ گیس ریگولیٹری اتھارٹی
حکومت پاکستان

Oil & Gas Regulatory Authority
Government of Pakistan

## حساب کتاب میں نہ آنے والی گیس کے نقصان کی مقدار پر ایک مطالعہ
## سٹیک ہولڈرز کے لئے آگاہی سیشن

گیس کے شعبے میں حساب کتاب میں نہ آنے والی گیس سب سے زیادہ اہم عناصر میں سے ایک ہے جو کہ گیس ٹرانسمیشن اور ڈسٹری بیوشن کمپنیوں کے منافع میں ایک اہم کردار ادا کرتا ہے۔

سٹیک ہولڈرز کیلئے یو ایف جی کی اصطلاح اور اس میں کردار ادا کرنے والی وجوہات کو سمجھنا بہت اہم ہے۔ گیس کمپنیوں کے UFG کے نقصانات کی اعلیٰ سطح تشویش کا باعث ہے۔ اس لئے کہ یہ ایک کمیاب وسیلہ کا ضیاع ہے جسے بڑی حد تک روکا جا سکتا ہے۔

اوگرا نے ہمیشہ گیس کمپنیوں کو ان کے یو ایف جی کے نقصانات کو کنٹرول کرنے پر زور دیا ہے تاکہ صارفین پر غیر ضروری بوجھ نہ پڑے اور گیس کمپنیوں کی مالیاتی حالت کو بہتر بنایا جائے۔

یو ایف جی کے معیارات کا تعین بین الاقوامی کیلئے طریق کار، مقامی ماحول اور زمینی حقائق کے مطابق نظر ثانی کرنے کے لئے اوگرا نے آزاد مشیروں کے ذریعے ایک جامع یو ایف جی بنچ مارک مطالعہ کا آغاز کیا ہے۔ ڈرافٹ رپورٹ اوگرا کی ویب سائٹ www.ogra.org.pk پر دستیاب کر دی گئی ہے۔

اوگرا اس پبلک نوٹس کے ذریعے تمام سٹیک ہولڈرز کو ڈرافٹ رپورٹ پر اپنی آراء کی اشاعت کے 15 دن کے اندر اندر ان کے تبصرے / آراء جات (اگر کوئی ہیں) کی دعوت دیتا ہے۔ اس کے بعد رپورٹ کو حتمی شکل دی جائے گی۔

اس عمل کو بامقصد بنانے کیلئے سٹیک ہولڈرز کے مشاورتی سیشن چار بڑے شہروں کراچی، لاہور، اسلام آباد اور پشاور میں مندرجہ ذیل شیڈول کے مطابق منعقد کئے جائیں گے۔ کنسلٹنٹ رپورٹ پر مختصر پریزنٹیشن دیں گے۔ عام تبصروں / خیالات کو بھی شامل کیا جائے گا۔

شرکت کیلئے دلچسپی رکھنے والے اداروں سے سٹیک ہولڈرز کو شرکت کی دعوت دی جاتی ہے۔

| کراچی | | لاہور | |
|---|---|---|---|
| تاریخ: | 2017ء/03 | تاریخ: | 2017ء/06 |
| وقت: | 10:30 بجے صبح | وقت: | 10:30 بجے صبح |
| مقام: | پی سی ہوٹل کراچی | مقام: | پی سی ہوٹل لاہور |
| اسلام آباد | | پشاور | |
| تاریخ: | 2017ء/08 | تاریخ: | 2017ء/09 |
| وقت: | 10:30 بجے صبح | وقت: | 10:30 بجے صبح |
| مقام: | مریٹ ہوٹل اسلام آباد | مقام: | پی سی ہوٹل پشاور |

رجسٹرار

registrar@ogra.org.pk

1106

آئل اینڈ گیس ریگولیٹری اتھارٹی
حکومت پاکستان

Oil & Gas Regulatory Authority
Government of Pakistan

## STAKEHOLDERS AWARENESS SESSION ON UNACCOUNTED FOR GAS LOSS BENCHMARK STUDY

Unaccounted for Gas (UFG) being one of the most critical element in the gas sector, plays a vital role in the profitability of the Gas Transmission and Distribution Companies. It is important for stakeholders to understand the term 'UFG' and the reasons contributing to it.

High UFG levels of the Gas Companies have been a major area of concern for the reason that it is wastage of a scarce resource and to a great extent is avoidable. OGRA has always urged the Gas Companies to control its UFG losses so that unnecessary burden may not be passed on to the consumers and the financial health of the Gas Companies should improve.

In order to determine UFG Benchmarks based on the international best practices, local environment and keeping in view ground realities, OGRA has initiated a comprehensive UFG benchmark study through independent reputed consultants. The draft report has been placed on OGRA's website (www.ogra.org.pk).

OGRA through this public notice invites all stakeholders to furnish their comments / views (if any) on the draft report, within 15 days from the date of publication of this notice. Thereafter, the report shall be finalized.

In order to make the process meaningful, Stakeholders Engagement Sessions shall be held in four major cities i.e. Karachi, Lahore, Islamabad and Peshawar as scheduled below. The consultant will give a brief presentation on the report and general comments/ views shall be elicited. Interested stakeholders desirous of attending the same are cordially invited.

| Karachi | | Lahore | |
|---|---|---|---|
| Date : | March 03, 2017 | Date : | March 06, 2017 |
| Time : | 10:30 a.m. | Time : | 10:30 a.m. |
| Venue : | PC Hotel, Karachi | Venue : | PC Hotel, Lahore |
| **Islamabad** | | **Peshawar** | |
| Date : | March 08, 2017 | Date : | March 09, 2017 |
| Time : | 10:30 a.m. | Time : | 10:30 a.m. |
| Venue : | Marriot Hotel, Islamabad. | Venue : | PC Hotel, Peshawar |

Registrar,
Oil & Gas Regulatory Authority,
54-Fazal-e-Haq Road, Blue Area, Islamabad.
Phone: +92-51-9244298 Fax: +92-51-9244413
Email: registrar@ogra.org.pk

www.ogra.org.pk

25x4

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# Annexure V.2 - OGRA Notifications for Consultative Sessions

(Annex-

(آئل اینڈ گیس ریگولیٹری اتھارٹی) OIL & GAS REGULATORY AUTHORITY
"SAY NO TO CORRUPTION"

1104

No. OGRA-9(357)/2014
20th February, 2017

Secretary, Energy and Power Department,
Govt of Khyber Pakhtun Khwa
Civil Secretariat, *Peshawar.*

*Subject:* STAKEHOLDERS AWARENESS SESSION ON UN-ACCOUNTED FOR GAS (UFG) LOSS BENCHMARK STUDY.

Dear Sir,

A stakeholders awareness session will be held as per schedule given in the advertisement released in leading Urdu and English newspapers (copies attached) to seek the comments/ views on the 2nd draft of Un-accounted for Gas Study compiled by leading consultants to determine the UFG benchmarks for the next five financial years for both the gas utility companies.

In this regard your valuable comments in writing and participation in the sessions will be highly appreciated.

Regards,

(Raheela Mustafa)
Deputy Registrar
*(For & on behalf of the Authority)*

MG
CEO

702
21-2-17

21/02/2017
442

54-B, Fazal-e-Haq Road, Blue Area, Islamabad, Pakistan.
Tel: +92-51-9244090-98, Fax: +92-51-9244205
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# Annexure V.3 - OGRA Comments on 2nd Draft Report

**OIL & GAS REGULATORY AUTHORITY**

No. OGRA-9 (379)/2015
31st May, 2017

Mr. Rana Nadeem Akhtar,
Partner Advisory, KPMG Taseer Hadi & Co.
Chartered Accountants,
Sheikh Sultan Trust Building NO.2, Beaumont Road,
Karachi.

Subject: **UFG BENCHMARK STUDY**

Dear Sir,

Please refer to KPMG's 2nd draft report dated 03-02-2017 on the above subject. In this regard OGRA forwards the following comments:-

i. Since FRR 2015-16 has already been concluded therefore all relevant tables may be updated.
ii. Proposed legal amendments w.r.t term "Bulk consumer" if any may be provided along with worldwide treatment of bulk to retail and its effect / correlation with the UFG of the companies over the period starting from 2002-03. Data obtained from the gas companies w.r.t bulk to retail is attached which may be analysed and recommendation in the final report may be provided accordingly.
iii. Value of factor β for first year i.e. 2016-17 may be proposed.
iv. Consultant may provide categorical comments on the benchmarks given by the Authority for FY 2011-12, 2012-13, 2013-14, 2014-15 and 2015-16 w.r.t applicability of KMIs.
v. Consultant's report states that "Allowance for theft volumes by non-consumer claimed shall only be allowed in the form of allowable base/ fixed rate and no separate allowance as deemed sales shall be made". However, this has not been made part in the soft copy of report.
vi. Treatment of law and order in proposed UFG Benchmarks vis-à-vis letter of Energy & Power Department, Government of KPK.
vii. Any reference regarding allowance/ recognition given by Power regulator w.r.t local operating conditions to Discos.
viii. Separate benchmark for transmission may also be provided.
ix. International practices on TBS metering and segmentation be referred.
x. What treatment will be given in case actual UFG of the company is below the determined benchmark.

2. The aforesaid comments are being forwarded for your perusal / consideration, alongwith comments of stakeholders already forwarded, in the Final Report to be submitted within 10 days.

Yours faithfully,

**(Shahzad Iqbal)**
Executive Director (Gas)
For and on behalf of the Authority

*54-B, Fazal-e-Haq Road, Blue Area, Islamabad, Pakistan.*
*Tel: +92-51-9221715-18, Fax: +92-51-9221714*
*Website: www.ogra.org.pk*

**OIL & GAS REGULATORY AUTHORITY**

No. OGRA-9 (379)/2015
24th March 2017

Mr. Rana Nadeem Akhtar,
Partner Advisory, KPMG Taseer Hadi & Co.
Chartered Accountants, Sheikh Sultan Trust Building NO.2,
Beaumont Road
Karachi, Fax 021-35685095

*Subject:* **COMMENTS ON CONSULTANT'S 2ND DRAFT UFG STUDY REPORT DATED 03-02-2017**

Dear Sir,

Please refer to the above subject and find attached herewith further comments of the following stakeholders for consideration:-

(i) SNGPL letter No. RA-UFG-006-17 dated 22-03-2017.

Yours faithfully,

(Sajid Zahid Rauf)
Dy. Executive Director

*54-B, Fazal-e-Haq Road, Blue Area, Islamabad, Pakistan.*
*Tel: +92-51-9221715-18, Fax: +92-51-9221714*
*Website: www.ogra.org.pk*

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# Annexure V.4 - SNGPL Comments on 2nd Draft Report

**SUI NORTHERN GAS PIPELINES LIMITED**
GAS HOUSE, 21 KASHMIR ROAD, P.O. BOX 56, LAHORE (PAKISTAN)

Ref: RA-UFG-005-17

March 17, 2017

Registrar,
Oil and Gas Regulatory Authority,
54-Old ZTE Plaza, Fazal-e- Haq Road,
Near PIA Building, Blue Area,
**Islamabad.**

Thru: Fax / Courier

**SUBJECT: COMMENTS/RESPONSE ON CONSULTANT'S 2ND DRAFT OF "UFG STUDY REPORT"**

**Dear Sir,**
السلام علیکم

Further to our latter No. RA-UFG-004-17 dated 03.03.2017 on the subject matter (copy enclosed).

In this regard, we would like to highlight that the consultants have misunderstood the terminology **"Town Border Station"** in case of SNGPL gas supply network.

In the international practices, following three terminologies are used for the **Custody Transfer Points**, located at the terminal points of gas Transmission Network:

1. **City Gate Station**
2. **Town Border Station**
3. **Sales Meter Station**

OIL & GAS REGULATORY AUTHORITY
20 MAR 2017
Diary: 3181
ISLAMABAD

In this regard, we would like to refer to following:

1. Definition of **Town Border Station** given by **Pipeline and Hazardous Materials Safety Administration, US Department of Transportation:**

   **Quote:**
   *"Town Border Station: a location at which gas changes ownership from one party to another (usually from a transmission operator to a distribution operator), neither of which is the ultimate consumer of the gas. A Town Border Station is also referred to as a City Gate Station".* **Unquote:**

   From the above, it is clear that in line with international practices, the **Town Border Stations** are meant for **Custody Transfer,** where the ownership of gas changes from one party to another, which is not the ultimate consumer of gas.

2. Relevant clauses of ***"Petroleum and Natural Gas Regulatory Board (Technical Standards & Specifications Including Safety Standards for City or Local Natural Gas Distribution Network) Regulations, 2008"*** of India are reproduced below:

Telephones Exch: +(92-42) 99201451-60 +(92-42) 99201450-59 | Telephones: +(92-42) 99201339 | Fax: +(92-42) 99201229 +(92-42) 99203537 | www.sngpl.com.pk

**SUI NORTHERN GAS PIPELINES LIMITED**
GAS HOUSE, 21 KASHMIR ROAD, P.O. BOX 56, LAHORE (PAKISTAN)

**Quote:**

a. **Clause No. 2(1)(g)**
*City Gate Station (CGS) means the point where Custody Transfer of natural gas from natural gas pipeline to the CGD network takes place and this may also be referred as City Gas Measuring and Pressure Regulating Station.*

Whereas CGD means city or local natural gas distribution network.

b. **Clause No. 2(1)(i)**
*Distribution Pressure regulating Station or District Regulating Station (DPRS) means a station located within authorized area of CGD network having isolation, pressure regulating and overpressure protection devices.*

**Unquote:**

From the above two definitions, it is clear that in international practices, the measurement equipment facility is to be installed at Custody Transfer such as in case of **City Gate Stations, Sales Meter Stations** and **Town Border Stations** whereas the **Regulating Stations** installed within the Distribution network are meant for only pressure regulation only i.e. to provide gas to different localities at required pressure and overpressure protection in **Distribution Network**

In case of SNGPL, terminal point of Transmission network, which is the **Custody Transfer Point**, is termed as **Sales Meter Station (SMS)** and these **SMSs** are **100% metered** in line with international practices, whereas the terminology **Town Border Station (TBS)** used by SNGPL is for regulating stations installed within Distribution network for supply of regulated gas supply, i.e. after reducing the gas pressure to different localities at desired pressures. In case of **Town Border Station (TBS)** of SNGPL there is not **Custody Transfer** and hence not fully metered. The **Electronic Volume Correctors (EVCs)** installed at selected TBSs are meant only for operational requirement i.e. for monitoring the gas pressures and overpressure protection in **Distribution Network.**

Thus the consultants have misunderstood the terminology **Town Border Stations (TBSs)** in case of SNGPL as **Custody Transfer Points** and reported them as unmetered in the 2nd draft of UFG Study Report, which is incorrect. The same was explained during **"Stakeholders awareness session on UFG benchmark Study"** held at Lahore, Islamabad and Peshawar.

This is for your information and further necessary action, please.

Yours Si0ncerely,
Sui Northern Gas Pipelines Ltd

(KASHIF JAVED)
Dy. Chief Accountant (RA)
*for* MANAGING DIRECTOR

***Encl: As above***

Telephones Exch: +(92-42) 99201451-60 +(92-42) 99201450-59 | Telephones: +(92-42) 99201339 | Fax: +(92-42) 99201229 +(92-42) 99203537 | www.sngpl.com.pk

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# Annexure V.4 - SNGPL Comments on 2nd Draft Report

**asphyxiant**
A substance that depletes oxygen in the air, causing breathing difficulty for those persons in the vicinity.

**Christmas tree**
The stacking of control valves, pressure gauges, and chokes at the top of a well to control the flow of oil and gas after the well has been drilled and completed. The term Christmas tree is used to describe the pyramid-like shape of the stacked components.

**city gate**
A site at which a gas distribution company receives gas from a pipeline company or transmission system. A city gate is also known as a town border station.

**compressor**
A mechanical device for increasing the pressure of a gas. Compressors are usually reciprocating or turbine devices.

**compressor station**
Facility consisting of one or more compressors and associated equipment which supplies the energy to move gas in transmission lines by increasing the pressure of the gas.

**crude oil**
Unrefined liquid petroleum as it occurs naturally and is pumped to the surface.

**dehydrator**
Equipment used to remove entrained water vapor from produced natural gas.

**distribution**
The act or process of distributing natural gas from the city gate station to the ultimate consumers.

**distribution system**
The mains, services, and associated equipment which carry or control the supply of gas from the point of local supply to and including the sales meters of the consumers. Distribution systems may operate at various levels of pressure, typically 60 psig or less.

**drilling rig**
The derrick and other surface equipment that is used in drilling an oil or gas well. The rig is removed after the well has been completed.

**exploration**
The search for reservoirs of oil and gas, including aerial and geophysical surveys, geological studies, core testing, and the drilling of wildcat wells (wells in areas where no drilling has previously been done).

Nomenclature For Terminal Point of Transmission Network
→ city Gate station
→ Sales Meter station
→ Town Boarder station

SUI NORTHERN GAS PIPELINES LIMITED
GAS HOUSE, 21 KASHMIR ROAD, P.O. BOX 51, LAHORE (PAKISTAN)

Ref: RA-UFG-004-17

March 03, 2017

Thru: Fax / Courier

Registrar,
Oil and Gas Regulatory Authority,
54-Old ZTE Plaza, Fazal-e- Haq Road,
Near PIA Building, Blue Area,
Islamabad.

SUBJECT: STAKEHOLDERS AWARENESS SESSION ON UNACCOUNTED FOR GAS LOSS BENCHMARK STUDY

Dear Sir,
السلام علیکم

Please refer to OGRA's advertisement in the daily newspaper "Business Recorder" dated 17-02-2017 on the above cited subject.

In this regard, enclosed please find our comments on 2nd Draft UFG Report of M/s KPMG for your information and further necessary action.

Yours Sincerely,
Sui Northern Gas Pipelines Ltd

(KASHIF JAVED)
Dy. Chief Accountant (RA)
for MANAGING DIRECTOR

Encl: As above

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Document Classification: KPMG Confidential

# Annexure V.4 - SNGPL Comments on 2nd Draft Report

SUI NORTHERN GAS PIPELINES LIMITED

altogether to a new dimension. Though it will result in huge financial impact to be borne by the consumers, but it will not address the prime objective of UFG reduction.

Moreover, certain recommendations are operationally not feasible due to peculiar operating conditions and existing design of distribution network, as for instance, **'segmentation of distribution network'**. The distribution network of all major cities like **Multan, Faisalabad, Lahore, Gujranwala, Islamabad, Rawalpindi, Peshawar, etc** is looped due to operational reasons i.e. supply & demand gap and these cities cover more than **40%** of total network length. In order to put matters into perspective, it is stated that existing length of distribution network is over **100,000 Km.** In case SNGPL opts for segmentation of distribution network in different cities/regions, it will require laying of larger diameters lines to ensure uninterrupted gas supplies to the consumers, which will require huge budgetary provisions to be borne by consumers.

Similarly, **installation of measurement facility** on all **TBSs**, as recommended by the consultants, is operationally not feasible and also contrary to **international practices** and in this respect, detailed reply has already been submitted through above referred letter, followed by letter No. **RA-UFG-005-17 dated 17-03-2017 (Annex-2)**. However, in order to summarize this particular issue, it is again submitted that we have referred **international practices** according to which gas is measured whenever there is **Custody Transfer**. In **International Practices**, following terminologies are used for terminal points of Transmission Network, where **Custody Transfer** is taking place i.e. **City Gate Stations, Town Border Stations** and **Sale Meter Stations**. In case of SNGPL, terminal point of Transmission network, which is the **Custody Transfer Point**, is termed as **Sales Meter Station (SMS)** and these **SMSs** are **100% metered** in line with international practices, whereas the terminology **Town Border Station (TBS)** used by SNGPL is for regulating stations installed within Distribution network for supply of regulated gas supply, i.e. after reducing the gas pressure to different localities at desired pressures. In case of **Town Border Station (TBS)** of SNGPL there is not **Custody Transfer** and hence not fully metered. The **Electronic Volume Correctors (EVCs)** installed at selected TBSs are meant only for operational requirement i.e. for monitoring the gas pressures and overpressure protection in **Distribution Network**.

As stated above that implementation of recommendations of consultants, particularly certain **KMIs**, have financial implications and most importantly, execution of those **KMIs** may not reduce UFG subsequently and in that case responsibility needs to be defined, whereas the Consultants are not ready to take responsibly of such situation, as clearly stated by them in the **Annex-A**, attached with the **2nd draft of UFG Study Report**.

**Quote:**

- *".....No responsibility for any loss sustained to any institution acting or refraining from action as a result of above views, can be accepted by KPMG".*
- *We have not assessed legal and other risks which might arise for the Authority and/or Sui companies as a consequence of events and facts described in this report".*

**Unquote:**

SUI NORTHERN GAS PIPELINES LIMITED

From the contents of the **Annex-A** of **2nd Draft of UFG Study Report**, it is evident that the Consultants are not concerned with any financial loss to the Company, as a result of its recommendations.

The company has already raised its concerns about incorrect reporting/interpretation of certain facts by Consultant in **UFG Study Report** in the **1st Draft** but the same were not corrected/amended by the consultants in **2nd Draft of UFG Study Report**. As for instance, conclusion drawn by Consultants with regard to company's efforts against **Gas Theft** and **Underground Network Replacement** are contrary to the actual facts and seems attempt to undermine the efforts of the company. Moreover, reporting of only **73% of total consumer base as metered** is totally incorrect and needs to be reviewed as per actual facts. SNGPL categorically states that **100%** of the consumers connected to its network are metered. Similarly, quoting incorrect UFG figures of past **5 years**, contrary to **OGRA's Determinations** needs to be clarified. We understand that such representations by consultants, against the facts, may change direction of the report, which needs to be reviewed. It is quite unfortunate that **media** have picked up these incorrect figures, mentioned by Consultant in **2nd Draft of UFG Study Report** and reported them in **national media**, which has damaged the corporate image of the company. Some of the news items are attached as **Annex-3**.

We understand that it is the responsibly of OGRA to protect interest of all stake holders including SNGPL. It is therefore requested that **UFG Study Report** needs to be reviewed in line with our response/comments given through earlier letters along with the discussions held during **'Stakeholders Awareness Sessions on UFG Benchmark Study'** at **Lahore, Islamabad & Peshawar** and the comments contained in this letter.

This is for your information and further necessary action, please.

Yours Sincerely,
Sui Northern Gas Pipelines Ltd

(KASHIF JAVED)
Dy. Chief Accountant (RA)
for MANAGING DIRECTOR

*Encl: As above*

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# Annexure V.4 - SNGPL Comments on 2nd Draft Report

SUI NORTHERN GAS PIPELINES LIMITED

Ref: RA-UFG-006-17

March 22, 2017

*Thru: Fax / Courier*

**Registrar,**
**Oil and Gas Regulatory Authority,**
**54-Old ZTE Plaza, Fazal-e- Haq Road,**
**Near PIA Building, Blue Area,**
**Islamabad.**

**SUBJECT: COMMENTS/RESPONSE ON CONSULTANT'S 2nd DRAFT OF "UFG STUDY REPORT"**

**Dear Sir,**
السلام علیکم

Please refer to letter No. **OGRA-9(357)/2014 dated 17-03-2017 (Annex-1)**. Moreover, kindly refer to our earlier letter No. **RA-UFG-004-17 dated 03-03-2017** through which detailed response/comments were forwarded to OGRA. We appreciate that OGRA has conducted **'Stakeholders Awareness Sessions on UFG Benchmark Study'** whereby all stake holders, including SNGPL was provided opportunity to present its view point/comments on the **2nd Draft of UFG Study Report**.

Fixation of a reasonable **UFG benchmark** by OGRA is very crucial for the survival of the **SNGPL**, which will ultimately effect the gas consumers at large. Although the consultants M/s **KPMG** appointed by **OGRA**, have made efforts to understand the issue of UFG and factors associated with it at their level, but they have perceived, interpreted and concluded certain issues contrary to the facts, which need to be reviewed.

The issue of **losses in law affected areas** has been acknowledged by Consultants and have recommended relief to SNGPL, but its linking with performance against **KMIs** is unjustified. As losses in law affected area pertain to only specific areas of Peshawar Distribution Region, whereas execution of **KMIs** is to be carried out throughout the company on entire distribution network and consumer base. Hence company strongly opposes the capping of allowance against losses in law affected through linking it with Beta ( β ) factor, as company is handicapped on the issue and has already taken up matter with all the available forums, including the **Federal Government, OGRA, Provincial Government** and **Local Administration** of these areas. Hence, **100%** relief should be allowed against **losses in law affected of KPK Province** in respective year.

We understand that certain recommendations of **Consultants** will adversely affect the ongoing efforts of the company towards reduction in UFG. The Company after making efforts during past **3-4 years** has set direction for improvements through successful execution of **UFG Reduction Plan** and have achieved encouraging results. If company opts for the recommendations of the consultants, as given in certain **KMIs**, it will change the direction

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# Annexure V.4 - SNGPL Comments on 2nd Draft Report

SUI NORTHERN GAS PIPELINES LIMITED
GAS HOUSE, 21 KASHMIR ROAD, P.O. BOX 56, LAHORE (PAKISTAN)

Ref: RA-UFG-004-17

March 03, 2017

106

**Registrar,** (on Tour).
Oil and Gas Regulatory Authority,
54-Old ZTE Plaza, Fazal-e- Haq Road,
Near PIA Building, Blue Area,
**Islamabad.**

*Thru: Fax / Courier*

**SUBJECT:** **STAKEHOLDERS AWARENESS SESSION ON UNACCOUNTED FOR GAS LOSS BENCHMARK STUDY**

**Dear Sir,**
السلام علیکم

Please refer to OGRA's advertisement in the daily newspaper "Business Recorder" dated 17-02-2017 on the above cited subject.

In this regard, enclosed please find our comments on 2nd Draft UFG Report of M/s KPMG for your information and further necessary action.

Yours Sincerely,
Sui Northern Gas Pipelines Ltd

(KASHIF JAVED)
Dy. Chief Accountant (RA)
*for* MANAGING DIRECTOR

*Encl: As above*

06 MAR 2017
2686
ISLAMABAD

AED-II
copy to. ED (Gas)
ED (F&A)
7/3

Telephones Exch: +(92-42) 99391451-60 +(92-42) 99391456-69 | Telephone: +(92-42) 99201333 | Fax: +(92-42) 99201228 +(92-42) 99200537 | www.sngpl.com.pk

106

**DRAFT COMMENTS/RESPONSE REGARDING 2nd DRAFT OF "UFG STUDY REPORT" BY M/s KPMG**

**1 EXECUTIVE SUMMARY OF MAJOR ISSUES**

**1.1** The Company has gone through the **2nd draft** of the **'UFG Benchmark Study Report'** prepared by the consultants **M/s KPMG**. While we sincerely appreciate that the consultants, after the consultative session held at OGRA Office at Islamabad and subsequent advice by OGRA to gas companies (**SNGPL** and **SSGC**) to submit **KMIs** jointly to Consultants, have rationalized its views on some of the important issues, but still there are certain issues on which perception of Consultants is contrary to the ground facts and needs to be reviewed. The Consultants should have made comparisons of following while considering UFG benchmarks of international gas companies:

a. **Working/operating conditions, especially with respect to supply & demand gap**
b. **Consumer base**
c. **Gas Sales Mix**
d. **Size of network**
e. **Law and order situation**
f. **Tendency of gas theft both by registered and unregistered consumers**
g. **Impact of power outages on integrity of distribution network**
h. **Third party damage to gas network**
i. **Impact of increased load curtailment**
j. **Gas Allocation & Management Policy of the Government in pursuance of Socio-Economic agenda of Government of Pakistan etc.**

None of above highlighted issues are dominant in case of international gas companies which operate on the basis of commercial viability whereas for SNGPL such operating conditions are not available. Furthermore, financial implications of added requirements/steps to be taken by the Company appear to have been ignored in the UFG Study Report since it is unable to consider the fact that the operating cost per consumer of SNGPL, which is currently considerably low as compared to companies operating on commercial considerations, will significantly increase.

**1.2** We appreciate that the consultants have acknowledged the issue of **losses in law affected areas** and has recommended relief to SNGPL, but its linking with performance against **KMIs** is unjustified. As losses in law affected area pertain to only specific areas of Peshawar Distribution Region, whereas execution of KMIs is to be carried out throughout the company on entire distribution network and consumer base. Hence company strongly opposes the capping of allowance against losses in law affected through linking it with Beta ( β ) factor, as company is handicapped on the issue and has already taken up matter with all the available forums, including the **Federal Government, OGRA, Provincial Government** and **Local Administration** of these areas. Hence, **100%** relief should be allowed against **losses in law affected of KPK Province** in respective year.

**1.3** Both **SNGPL** and **SSGC** have submitted **KMIs** to Consultants and OGRA, after mutual discussion and agreement. Although the Consultants have changed the KMIs to some extent in the **2nd draft** of **UFG Study Report**, but still some KMIs incorporated in the report have

Page 1 of 35

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# Annexure V.4 - SNGPL Comments on 2nd Draft Report

42

106

been included without consideration of their technical, financial and logistical hurdles which will have to be faced by the SNGPL and the consumers at large due to price increase. Some of the activities have been included in the KMIs without giving reference to any applicable **Standard/Code** or international practice, broadly being followed. Although the consultants on **Page No 71** have stated that beta **( β )** factor will be based on **mutually agreed KMIs** but certain KMIs have been included which have not been proposed by SNGPL and SSGC jointly. While on the other hand, the Consultants are not ready to consider the financial implications of the some of the KMIs, and they are trying to flee from the ownership of their recommendations by simply including an **Annex A** at the end of the report. As for instance, installation of measurement facility at TBSs and network segmentation are such examples.

a) **Measurement at TBSs:** TBSs/DRSs in case of gas supply system are only for pressure regulation and not for measurement of gas. So installation of measurement facility at TBSs needs to reviewed keeping in view technical constraints and its financial implications, as its cost will have to be borne by the consumers.

b) **Segmentation of Distribution Network:** The distribution network of all major cities like **Multan, Faisalabad, Lahore, Gujranwala, Islamabad, Rawalpindi** and **Peshawar** is looped due to operational reasons i.e. supply and demand gap and these cities cover more than **40%** of total network base. In order to put matters into perspective, it is stated that existing length of distribution network is over **100,000 Km.** In case SNGPL opts for segmentation of distribution network in different cities/regions, it will require laying of larger diameters lines to ensure uninterrupted gas supplies to the consumers, which will require huge budgetary provisions to be borne by consumers.

Moreover, weightage allocated to certain KMIs is contrary to the joint submission of SNGPL and SSGC. Execution of activities defined in the KMIs will require specific budgetary provisions on annual basis, along with additional provisions in HR benchmark, leading to a consequential rise in tariff, which will have to be borne by the gas consumers. The Report presumes that execution of certain KMIs in next five years will permanently bring down UFG to **5 %**, whereas, in reality, the execution of different UFG control activities is a continuous ongoing activity which has to be carried out regularly irrespective of any specified time period.

**We suggest and request that prior to finalization of KMIs, the Authority may hold a joint session ONLY with gas companies to evaluate the pros and cons of including undesired KMIs. Moreover, KMIs be finalized on annual basis by OGRA in consultation with SNGPL.**

**1.4** Execution of KMIs will require specific provisions in HR benchmark and budget. It is pertinent to mention here that the work load has increased significantly which is evident from the comparison given below:

| Period | Length of Network per Employee (Km/employee) | Number of Consumers per Employee |
|---|---|---|
| FY 2001-02 | 5.2 | 272 |
| FY 2015-16 | 11.23 | 567 |
| %age increase | 116% | 108% |

Page 2 of 35

1067

**1.5** The factor as given in the TOR i.e. "*Measurement Errors*" has not been understood in its true perspective and the Report has misconstrued metering at TBSs/DRSs. Measurement at **TBSs/DRSs** is contrary to the international practices. Measurement is carried out whenever there is custody transfer and all the custody transfer points on SNGPL network i.e. Gas Sources, SMSs and CMSs are **100%** metered. So it needs to be reviewed.

**1.6** The Report, despite recognizing on **Page No. 63** thereof that "*...owing to factors listed above and other complexities in retail supply of gas, argument for non controllability of theft by company carries weight and needs to be addressed*", concludes the issue of gas theft by non-consumers in a manner contrary to established facts and against the provisions of OGRA **Ordinance** and applicable laws. Therefore, the same needs to be reviewed and allowances have to be made by the Authority in gas losses, in this regard.

**1.7** The conclusion arrived at by the consultants on **Page No. 65** thereof that "*Sui companies do not have implemented sufficient measures/control that can help companies deal with the UFG issue in a sustainable manner...*" is incorrect as the successful execution of UFG Reduction Plan of SNGPL, duly approved by OGRA and the results achieved thereon by SNGPL with regard to reduction in UFG, are sufficient to speak itself.

**1.8** While recommending the UFG Benchmark, the Report states on **Page No. 71** thereof that "*UFG allowances are commonly set in correlation with gas consumption and network lengths*". However, the Consultants could not find any appropriate match in this regard out of international gas companies, which is sufficient to prove that SNGPL is operating in typical conditions and dealing with UFG contributing factors that do not exist anywhere else in any other country and the same has been accepted by consultants by stating "*Finding comparable countries remained a challenge.....*".

**1.9** **If countries like USA (Texas), Russia and Australia (Multinet) have benchmark in range of 5%, the typical circumstances being faced by the SNGPL warrant for reasonable UFG benchmark commensurate with the very UFG factors beyond its control, ground realities, operational constraints and unfavourable operating conditions. The Company strongly feels that the Report needs a review in light of the UFG Benchmark data of different countries, particularly with reference to all the UFG contributing factors mentioned in the TOR's finalized by OGRA and the UFG benchmark of each country needs be evaluated for all these UFG contributing factors. Only in that case comparison of UFG benchmark can be relevant and rational.**

**1.10** We appreciate that the Report has recognized that, in addition to the **base UFG rate**, appropriate allowance has to be given to the Company, which firms Company's long standing stance that there are certain extraordinary circumstances in which the Company is operating which are not prevalent in any other country.

**1.11** Although the Report has recommended adopting revised formula for calculation of **UFG % age**, which is based on **"metered gas received"** instead of **"gas available for sale"**, however, in referred formula given in **Page No. 71**, again the term **"gas available for Sale"** has been included, which is incorrect and requires correction by the Consultants. We understand that the formula for calculation of UFG %Age and UFG allowance should be as follows:

Page 3 of 35

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# Annexure V.4 - SNGPL Comments on 2nd Draft Report

106

$$\%Age\ UFG = \frac{\text{Metered gas received} - (\text{Gas Sold} + \text{Adjustments})}{\text{Metered gas received}} \times 100$$

$$UFG_{Allowance} = Gas_{received} \times (Rate_1 + Rate_2 \times \beta)$$

**1.12 We request that Rate $_2$ should only include the impact of Bulk-Retail ratio whereas, the allowance against 'losses in law and order affected areas' should be given as adjustment in deemed gas sales as per practice of OGRA in vogue.**

1.13 While working out **UFG Rate$_2$** for **"Local Operating Condition Component"**, the Consultants have used an average figure of **4 years** pertaining to different factors (i.e. 'gas available for sale', 'losses in law affected areas' and 'impact of changed in gas sales mix'). We request that instead of averaging the 'gas available for sale' of past 4 years, the 'gas available for sale' of FY 2014-15 should be made base for calculations, as in case of SNGPL the 'gas available for sale' has drastically reduced from 674,868 MMCF in FY 2011-12 to 521,533 MMCF in FY 2014-15 (having reduction of **23%**) and according to the projected figures, further reduction of system gas supplies is expected in coming years.

1.14 The **ECC of Cabinet** was cognizant of the situation and has issued policy guidelines to Authority, considering complexity of the issue, to allow the volumes claimed by the company against following factors beyond its control:

a. **Gas Volume pilfered by Non-consumers**
b. **Gas Losses in Law & Order affected areas**
c. **Impact of change in Bulk Retail Ratio on UFG, using the base year 2003-04**

**The Federal Cabinet has also ratified the decision of ECC of Cabinet in its meeting held in September, 2016**

1.15 Some of the conclusions drawn by the Consultants with regard to company's efforts against gas theft and underground network replacement are contrary to the actual facts. The consultants on **Page No. 47** of 2nd draft of UFG Study report have stated that only **73%** of total consumer base is metered, which is totally incorrect and needs to be revitwed as per actual facts. SNGPL categorically states that **100%** of the consumers connected to SNGPL are metered. We understand that such a conclusion drawn by consultants, against the facts, may change direction of the report, which needs to be reviewed.

1.16 The Report has not recommended any allowance in overall UFG benchmark with regard to losses in Transmission network, which needs to be reviewed in line with international practices.

1.17 The Report was required to study the relevant UFG contributing factors. The Company reiterates the need for revisiting the relevant UFG contributing factors annually by OGRA to make the UFG benchmark reasonable and realistic

1.18 The consultants on Page No. 75 of the report have recommended that *"the Authority may review its earlier (provisional) UFG allowances in FRR, in line with proposed UFG control framework to help ensure appropriate relief is granted to Sui Companies"*. The Authority is

Page 4 of 35

106

requested to kindly advise the mechanism/formula through which OGRA intends to implement this recommendation of Consultants from FY 2012-13 to FY 2015-16 as no KMIs were introduced during these years.

1.19 It is imperative to mention here that through the Consultants have reached some of the conclusions in line with their understanding of the issue, they have also included **"Annex-A"** at the end of the report **"Notice to the Reader"** given at **Page No. 86** of the report. Some of the important points are summarized below:

**Quote:**

- *"....No responsibility for any loss sustained to any institution acting or refraining from action as a result of above views, can be accepted by KPMG".*
- *....there is no direct comparability of sui companies with any other company due to size and unbundling of company operations.....*
- *Our work has not taken into consideration any tax, legal, Civil or criminal law implication arising from the assessment carried out and reported in this documents*
- *Limitations exist regarding availability of demographical information for the comparable countries and UFG related information relating to Pakistan and comparable countries which inter alia include YoY increase in gas pipelines, per capita consumption, historical trends of gas consumer, change in network from urbanized to rural network.....*
- *We have not assessed legal and other risks which might arise for the Authority and/or Sui companies as a consequence of events and facts described in this report".*

**Unquote:**

From the above, following are our reservations:

1. The Consultants are not concerned with any financial loss to the Company, as a result of its recommendations. As for instance, inclusion of certain KMIs not proposed/ agreed by SNGPL, may have serious financial implications and in that case who will be responsible?
2. Comparison of SNPGL with any other gas company cannot be made due to dissimilar operating conditions and UFG contributing factors.
3. Consultants have not carried out any study with regard to typical UFG contributing factors existent in Pakistan.

Page 5 of 35

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# Annexure V.4 - SNGPL Comments on 2nd Draft Report

1070

That, in light of the above submissions, the Company submits its detailed comments on the Report, section by section, herein below:

2 **SECTION NO. 1**

2.1 **BACKGROUND**

On Page No. 22 and 23, the consultants have quoted incorrect UFG figures of SNGPL pertaining, as against **OGRA's Determinations** pertaining to FRR of respective year, as mentioned below:

| Period | UFG figures | |
|---|---|---|
| | Quoted by consultants | Actual UFG as Determined by OGRA |
| FY 2010-11 | 12.5% | 11.21% |
| FY 2011-12 | 11.5% | 10.35 % |
| FY 2012-13 | 13.4% | 11.17% |
| FY 2013-14 | 13.0% | 10.57% |
| FY 2014-15 | 13.5% | 10.97% |

2.2 **UFG DEFINITION, CALCULATION AND METHODOLOGY**

We agree with recommendations of consultants on UFG calculation formula for considering the "metered gas received" instead of "gas available for sale" for calculation of %age UFG as it is in line with the principle stance of SNGPL. **However, we would like to mention here that the consultants while suggesting UFG benchmark formula on Page No. 71 have again used the expression 'gas available for sale' which needs to be corrected.**

2.3 **UFG CONTRIBUTING FACTORS**

2.3.1 **GAS THEFT**

2.3.1.1 **Theft-Causes and Concern of Sui Companies:**
On **Page No. 32** of 2nd draft Report, the stance of the people living in Baluchistan has been stated that they own the gas extracted from their land and are not supposed to pay, but similar stance of people living in Oil and Gas producing, law affected areas of KPK Province have been missed out, which needs to be made part of report.

2.3.1.2 **OGRA Procedure for Dealing with Theft of Gas Cases**
On **Page No. 33** of the Report, it is stated that the Company requested for revision in OGRA 'Procedure for Dealing with Theft of Gas Cases' on the premise that "*...recovery claims stay pending in court of law for longer of time and no special courts...*", which is incorrect. In fact, the Company requested OGRA for revision in this Procedure because the Company had presented certain cases to OGRA in which admissible evidences were available which were sufficient to prove that consumers were involved in gas theft for a period exceeding **12 months**. Keeping in view the presented cases, OGRA has partially amended the said procedure and has allowed charging of "direct by pass" cases up to a recoverable period of **36 months**.

Page 6 of 15

2.3.1.3 **Table TT-4 (Consumer wise analysis of theft volume and recoveries:**
The comparison of number of detected gas theft cases with total consumer base on **Page No. 37** of 2nd draft report, made by consultants is irrational. The comparison is perhaps based on assumption that all the gas consumers are gas pilferers, which is illogical. Detailed response in this regard, is given in **Para No. 2.5.1.1** of this document

2.3.2 **LAW AND ORDER AFFECTED AREAS:**
On **Page No. 38** of the 2nd **draft report**, we appreciate that the consultants have acknowledged the issue of law and order affected areas, but due relief has not been recommended against this factor and it has been linked with performance against overall KMIs. We understand that linking of allowance against the losses in law affected areas is not justified. As losses in law affected area pertain to only specific areas of **Peshawar Distribution Region**, whereas execution of KMIs is to be carried out throughout the company on entire distribution network and consumer base.

2.3.3 **LEAKAGES**
On **Page No. 42** of the 2nd **draft report**, the consultants have worked out that SNGPL has replaced only **0.24%** of total distribution network. We understand that this working is perhaps based on assumption that entire underground gas distribution network is leaking and requires replacement on annual basis, which is illogical. Such comparison can only be made with the length of network requiring replacement, based on certain Cathodic Protection parameters/surveys.

2.3.3.1 **Overhead Leakages:**
On **Page No. 45** of the 2nd **draft report**, a figure of 1.8 leak/connection, in the case of aboveground leakages from domestic connections, have been worked out. The consultants were informed that there are minimum 9 Nos. threaded joints in a domestic connection. Moreover, it was apprised that accordingly to the estimates of SNGPL, **15%** to **20%** of the total volumetric loss is due to aboveground leakages in domestic connections. Based on these two data, the consultants might have worked out an incorrect figure by multiplying number of threaded joints of single domestic connection with % age share of aboveground leakages in overall volumetric loss, which is illogical and cannot be worked out/represented in this way.

2.3.4 **MEASUREMENT ERRORS:**

2.3.4.1 **Overview**
On **Page No. 46** of the 2nd **draft report**, it has been stated that since **Transmission Network** is fully metered, so there is negligible UFG in Transmission System. We understand that consultants were unable to differentiate those very factors which differ in case of **Transmission** and **Distribution** network which contribute to losses. Losses in Transmission network are comparatively on lower side due to following:

a) No gas theft.
b) Smaller length of **Transmission Network** (less than **8,000 Km**) as against distribution network which is over **100,000 Km**. The **Transmission Network** has been laid in Company's owned '**Right of Way**' so there are no significant instances of gas leakages, except ruptures due to sabotage activities.

Page 7 of 3

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# Annexure V.4 - SNGPL Comments on 2nd Draft Report

1073

## 2.5 CONCLUSION TO THE SITUATIONAL ASSESSMENT

### 2.5.1 GAS THEFT

The Report lists the following as significant impediments with regard to gas theft:

- Continuous growth of the gas distribution network
- insufficient and delayed legislative support for recovery of detected cases
- inadequate monitoring and maintenance efforts of sui companies
- expectation of free gas supply in gas producing areas

However, the following important factors have been ignored/considered insignificant by the Report, which are reiterated by the Company since the same are beyond its control:

- Increase in gas price, tempting consumers to use unfair means
- Shortage of gas supplies, tempting consumers to use it illegally
- Moratorium on new gas connections of industrial and commercial category since year 2011 and provision of limited number of domestic gas connections as against huge number of applications pending for new gas connections.

#### 2.5.1.1 Theft By Consumers:

The Report makes irrational comparisons of a number of detected gas theft cases with the total consumer base and has worked out an incorrect figure to show that the Company has detected gas theft cases, which are only 1% of total consumer base. The comparison is certainly based on assumption that all the gas consumers are gas pilferers, which is illogical. We understand the efforts of SNGPL against gas theft cannot be undermined and gauged by such an irrational comparison, as the Company is executing its **UFG Reduction Plan**, duly approved by OGRA and vigilance of industrial, commercial and domestic consumers are its most important components. The following are targets defined in the **3 years, UFG Reduction plan**:

| Activity | Target |
|---|---|
| Industrial CMS inspection | Vigilance of each **Industrial** consumer on monthly basis |
| Commercial CMS inspection | Vigilance of each **Commercial** consumer on quarterly basis |
| Domestic CMS inspection | 1.5 million **Domestic** consumers |

As a result of hectic efforts by the Company and support provided by law enforcement agencies and FIA, it has been able to detect a large number of gas theft cases involving substantial gas theft volume despite facing serious issues at site, only some of which are limited to brutal torture and manhandling of our field staff at site by gas pilferers. Summary pertaining to achievements against UFG Reduction Plan era i.e. **February, 2013 to June, 2016** is given in table below:



1074

| Category | Cases (No) | Volume (MMCF) | Amount (Rs. Million) |
|---|---|---|---|
| Industry | 526 | 12,236 | 7,548 |
| Commercial & Spl. Domestic | 22,142 | 4,469 | 3,087 |
| Domestic | 107,141 | 4,936 | 1,948 |
| **Total** | **129,809** | **21,641** | **12,583** |

The above data shows that company is already making best possible efforts on its part which has created deterrence against gas theft, so the conclusion arrived at in the Report regarding ***"inadequate monitoring"*** with regard to gas theft is contrary to the facts. The downward trend of UFG losses is also sufficient to speak itself.

#### 2.5.1.2 Theft by Non Consumers:

The Report concludes that calculations of gas theft volume pertaining to non consumers are based on *'judgments and hypotheses'*, which is incorrect. The Company had apprised the Consultants that theft charges against Non Consumers are established in line with OGRA's **'Procedure for Dealing with Theft of Gas Cases'** and such a conclusion without thorough study of calculation mechanism is merely a statement. Volumes pilfered by non-consumers are not out of the blue and are calculated using a scientific basis in accordance with OGRA procedures.

The Report on **Page No. 63** thereof notes that ***"...owing to factors listed above and other complexities in retail supply of gas, argument for non controllability of theft by Company carries weight and needs to be addressed"***. **Despite the above understanding of Consultants, the conclusions reached in the Report on the issue of gas theft by non-consumers are contrary to established facts and against the provisions of OGRA Ordinance and applicable laws and need to be reviewed. Allowances have to be made by the Authority in gas losses in this regard.** The recently promulgated **Gas (Theft Control & Recovery) Act, 2016** may not adequately address the issue of recoveries from non consumers also.

### 2.5.2 LAW AND ORDER AFFECTED AREAS:

We would like to once again summarize and reiterates our contentions on this issue below:

- The **KPK Provincial Government** was requested to advise law enforcement agencies for providing necessary support to take action against illegal usage of gas, due to prevailing law & order situation in these areas. The **Provincial Government** has shown its inability to take action against the gas pilferers. The **Chief Minister of KPK** himself has written to the **Authority** stating ***"Provincial Government is in agreement that the gas losses in oil & gas producing areas of KPK are not due to inefficiency of SNGPL but due to prevailing worst law and order situation of the area it could not be controlled even through administrative measures of Provincial Government ......"***



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# Annexure V.4 - SNGPL Comments on 2nd Draft Report

1075

- Local people are interfering with operations of the company and this interference has increased to such an extent that now, with political support, they increase the delivery pressures of SMSs at their own. These events have been reported in print media and its evidences were provided. Similar issues are being faced by Oil and Gas, Exploration and Production (E&P) Company **M/s MOL**, Pakistan working in these areas, whereby its production was suspended due to protests by locals. Instances have also been reported by **M/s MOL**, Pakistan in which the locals attempted to sabotage/pilfer their 'gathering system' in TAL, block area. So this particular factor is beyond the company's control. Relevant supporting evidences were provided to the consultants. It is evident that the issue is beyond Company's control and on this basis the Company has claimed **100%** allowance against losses in these areas from OGRA for UFG calculation.

- The **Economic Coordination Committee of the Cabinet**, while considering socio-economic conditions and complexity of the UFG issue, has given policy guidelines to Authority on this very factor also. The OGRA while giving **Determination of Final Revenue Requirement of SNGPL** pertaining to **FY 2012-13, FY 2013-14, FY 2014-15 & FY 2015-16** has only partially implemented the above stated decision of **ECC of Cabinet** and has:

  - allowed only **75%** of actual losses in these areas and
  - for the remaining volume it has decided that the **Federal Government** should arrange funding from its own resources or from **Royalty of concerned Province** and all such amounts in future to meet the shortfall

- The **Ministry of Petroleum and Natural Resources** has informed the Authority that no such mechanism nor subsidy head is available with the **Federal Government** to claims made by SNGPL in respect of Law and Order affected areas. The Authority has therefore been requested by the **Ministry of Petroleum and Natural Resources** to consider the request of SNGPL regarding claim of remaining gas volume with respect to Law and Order affected areas in pursuance of ECC decision. Moreover, the **Federal Cabinet** during its meeting held on **06-09-2016** has ratified the decisions taken by **Economic Coordination Committee of Cabinet** during the period Year **2013 to 2016** which also includes the decision taken in **Year 2014** regarding UFG contributing factors beyond the Company's control. In this regard, **Press Release No. 66** is available on website of **Press Information Department (PID)**.

**The issue of measured loss in law and order affected areas of KPK Province needs review as maintenance of law and order is a provincial subject, in line with the 18th amendment to the Constitution whereas recommendations/conclusions of the Report on this particular issue are contrary to the provisions of the constitution. Therefore, the Provinces would be the appropriate authority to declare an area as law and order affected and in this particular case, the Chief Minister of KPK himself has written to the Authority which has been ratified by the ECC as well as the Federal Cabinet.**

The Report assumes that other utilities are not facing similar losses in law affected areas. Such an assumption should perhaps have been made after a thorough comparative study and analysis between the losses faced by the company and other utilities operating in these areas. As for instance, if we consider losses, being faced PESCO in these areas, they are also on higher side, as given in table below:



1076

| Description | Losses of PESCO Feeder* |
|---|---|
| Siraj Baba | 84% |
| Warana | 90% |
| New Ghoriwala | 93.5% |
| Kakki | 97.2% |
| Zargiri | 82% |

*http://www.express.com.pk/epaper/index.aspx?Issue=NP_PEW&Page=Back_Page008&Date=20150625&Pageno=8&View=1

**Therefore, in view of the above explained complexity of situation and uncontrollability associated with it, maximum protection needs to be given to the Company by the Authority since it is mandated under the law to protect the interests of the licensee as well.**

We appreciate that the consultants, in later part of the **2nd Draft Report** have acknowledged the issue of **losses in law affected areas** and has recommended relief to SNGPL, but its linking with performance against **KMIs** is unjustified. We understand that linking of allowance against the losses in law affected areas, just to curtail its due relief to the Company, is not justified. As losses in law affected area pertain to only specific areas of Peshawar Distribution Region, whereas execution of KMIs is to be carried out throughout the company on entire distribution network and consumer base. Hence company strongly opposes the capping of allowance against losses in law affected through linking it with ( β ) factor, as company is handicapped on the issue and has already taken up matter with all the available forums, including the **Federal Government, OGRA, Provincial Government** and **Local Administration** of these areas. Hence, **100%** relief should be allowed against **losses in law affected of KPK Province.**

### 2.5.3 MINIMUM BILLING:

The conclusion arrived at by the Report in this regard is incorrect. The **40 M³** per month gas usage by single domestic user is not based on any assumption, but in fact is based upon research carried out **UET, Lahore**, through which it is concluded that the most households, which are billed the minimum are using at least **40M³** regardless of the actual volume registered by domestic meters. It is pertinent to mention here that the issue of minimum billing arises due to un-favourable operating parameters, i.e., operation of network below its design pressure due to supply and demand gap, resultantly the carbon dust/condensate and debris present in pipeline travel into the meter body. This increases rate of wear and tear of meter internal parts, affecting its measurement accuracy. Even if the Company replaces all domestic meters in one year (without prejudice to the prohibitive cost associated there with), the newly installed meters will have similar issues due to prevailing huge gap between supply and demand. The working pertaining to minimum billed cases of **FY 2014-15** is given in table below:



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# Annexure V.4 - SNGPL Comments on 2nd Draft Report

1077

| A | B | C | D | E | F=E/(12*30) | G=(0.4-D)*B |
|---|---|---|---|---|---|---|
| Monthly Consumption Bracket ($Hm^3$) | Total Cases during the FY 2014-15 (Nos.) | Total Actual Annual Consumption ($Hm^3$) | Average Monthly Consumption per consumer | | Average Daily usage, Based on Average Consumption (Hours) | Unbilled Estimation ($Hm^3$) |
| | | | ($Hm^3$) | $ft^3$ | | |
| Zero | 1,589,929 | - | - | - | - | - |
| 0.01 - 0.20 | 5,860,802 | 656,537 | 0.11202 | 395.30 | 1.1 | 1,687,784 |
| 0.21 - 0.30 | 4,771,921 | 1,210,783 | 0.25373 | 895.35 | 2.49 | 697,986 |
| 0.31 - 0.40 | 5,202,377 | 1,838,917 | 0.35348 | 1,247.33 | 3.46 | 242,034 |
| **Total** (excluding zero consumption cases) | **15,835,100** | **3,706,236** | **0.23405** | **825.91** | **2.29** | **2,627,804** |
| | | | | | | **9,327 MMCF** |

As for instance, if we consider monthly consumption bracket of **0.01 $Hm^3$ to 0.20 $Hm^3$**, it translates into ONLY **1.1 hours daily usage** by domestic consumers, which is practically not possible. In **Bangladesh**, a model of appliance based billing for domestic consumers, i.e., **87 $M^3$** is used which is consumption of 2 domestic burners and for single burner, it works out **43 $M^3$** which commensurate with the minimum billing volume of **40 $M^3$** in case of SNGPL).

Moreover, the bona fides of the Company in this matter can be gauged from the fact that the Company is not claiming any allowance against minimum billed volume on account of those consumers which have a '**zero consumption**' reading. Therefore, the Company requests that this issue needs to be revisited in its true perspective.

**2.5.4 LEAKAGES:**

The Report concludes that non-replacement of underground network and low Cathodic protection level reflect weakness of the Company, which is true only to the extent that low Cathodic protection level is causing deterioration of underground network, BUT owing to repeated power outages, which is certainly not in control of the company.

**As regards the replacement of underground network, the Report has not referred to any international practice Code/Standard applicable to distribution piping network, which recommends replacement of network ONLY on the basis of its aging and without its assessment/evaluation. The Company has adopted a highly scientific approach in this respect as explained in detail in Para No. 3.12 of this document. This shows that there is a need to thoroughly explore this particular issue in view of international practices.**

**2.5.5 MEASUREMENT**

The Report's approach towards this very factor i.e. '**Measurement Errors**' is misdirected and has been confused/perceived as metering on TBSs/DRSs. The conclusions that following will address the '**Measurement Errors**' in the system is far from the reality:

- **Metering at TBSs**
- **Segmentation of network**



154

1078

Whereas the company's as well as the **Authority's** intentions with regard to '**Measurement Errors**' was with reference to various issues related to measurement faults associated with already INSTALLED meters. These defects/faults arise due to mechanical moving parts of meters which are further aggravated due to following issues:

a. **Network Operating Parameters**:
Due to considerable decrease in gas supplies from indigenous sources, the Company's distribution network is experiencing a huge gap between supply and demand of natural gas, which is resulting in continuous low pressure in the distribution network. This factor is beyond Company's control.

Reduction in operating pressures of network caused due to huge Demand Supply gap, increases the velocity of gas, resultantly the carbon dust/condensate and debris present in pipeline travel in to the meter body. This increases rate of wear and tear of meter internal parts, affecting its measurement. ***Study conducted by the company was also furnished to the consultants and it was found that 37.11% of total checked meters were found recording on minus side beyond permissible limit (i.e. -2%) and the average extent of minus recording is 7.4%.***

b. **Quality of Locally Manufactured Domestic Meters:**
The quality of locally manufactured domestic meters is another factor affecting the measurement accuracy in domestic sector. The Company as per instructions of the **Ministry of Petroleum and Natural Resources** vide letter No. **DGO(NG)-12(29)/81 dated 04-04-1982** (copy already provided to the consultants) was bound to procure locally manufactured meters from its sister concern **M/s SSGC**. The company raised concerns on quality and performance of meters supplied by **M/s SSGC** due to which the bar was withdrawn by the Ministry of Petroleum and Natural Resources vide letter No. **NG(II)-15(27)/12.GC dated12-03-2013** (copy already provided to the consultant) and the Company was allowed to procure domestic meters from international market through International Competitive Bidding process. However, even if the Company replaces all meters, the newly installed meters are also prone to similar defects due to continuous low pressure problems mentioned above.

The Report has not given any conclusion regarding the above highlighted issues and has tried to divert it to a new dimension i.e. measurement at TBSs and segmentation, therefore, there is a need to review the effect of "**Measurement Error**" on UFG.

**2.5.6 BULK-RETAIL:**

Although the Report acknowledges the particular reasons due to which the Company is claiming allowance against this very factor, however, the stance that the Company has not made efforts for corrective measures is simply not true. It is reiterated that shift of gas from Bulk to Retail is beyond Company's control. The Company has put in best possible efforts to curb the menace of gas theft, keeping in view the specific operating conditions, **budgetary provisions** and **HR benchmark** allowed by OGRA on an annual basis.

**The results achieved by the Company as a result of executing its UFG Reduction Plan duly approved by OGRA against core UFG contributing factors i.e. leakages, gas theft and measurement errors are on record and need due recognition in the Report as well as by the Authority. Moreover, due relief against this factor has been linked up with**



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# Annexure V.4 - SNGPL Comments on 2nd Draft Report

156

1080

- UFG in Distribution of Network (which is difference of gas received in Distribution System through SMSs and passed to Individual Consumers through CMSs)

Further, the UFG of distribution network is a composite of UFG in different distribution regions which is also prepared on a monthly basis. In addition to the above, the Company also prepares **"SMS Wise Gas Reconciliation"** through which UFG of regions is further subdivided at SMS level and such reports are available on a monthly basis as well. UFG control activities are carried out accordingly at SMS level. All above highlighted instances indicate that Company's system is precisely measured and reconciled at all necessary points.

**The concept of metering at TBSs/DRSs envisaged by the Report points to a parallel setup to the existing arrangements, which is not feasible.** There are certain technical issues which stem from the fact that the primary purpose of 'TBSs/DRSs installed' by SNGPL is pressure regulation to reduce gas pressures to desired level, as per operational requirements of a particular locality/area. Company has installed EVCs on selected TBSs/DRSs to get data of pressure and flow and to supervise the performance of field staff remotely with regard to effective load management and monitoring of system parameters etc.

Presently, more than **4,200 TBSs/DRSs** exist on the distribution network of SNGPL with different sizes depending upon load requirements. As a consequence, the following technical constraints exist in installation of measurement meters at ALL the TBSs/DRSs:

a. **International Practices:**
As explained above, in international practices, gas is measured wherever there is custody transfer. In case of SNGPL, no **Custody Transfer** of gas occurs at TBSs. However, all the following **Custody Transfer** points are **100%** metered:

- Gas Sources
- Sales Meter Stations (SMS)
- Consumer Meter Stations (CMS)

b. **Looping of Distribution Network:**

i. **Under-sizing of Network:** Distribution network was designed on single feed basis and over the years, the consumer density on the network has increased due to induced developmental works on directives of Government of Pakistan which has resulted in under-sizing of SNGPL's network. To overcome the issue, network at downstream of TBSs has been looped to meet pressure and flow for different segments/areas.

ii. **Supply and Demand Gap:** The increasing gap between demand and supply of gas has further aggravated the situation and despite looping, the Company is unable to provide gas to all its consumers at desired pressures. De-looping of these TBSs will further aggravate the low pressure problems in areas and lead to a situation where consumers and the general public will, in all likelihood, be further deprived of natural gas during winter months. All major cities such as **Multan, Faisalabad, Lahore, Islamabad, Rawalpindi, and Peshawar** have looped network which covers more than **40%** of the consumer base.

Page 16 of 35

1081

iii. **Possible Solution - Network Augmentation:** The isolation of network downstream of TBS's is only possible through an extensive augmentation of SNGPL's network by laying larger diameter lines, which involves a huge finance/capital budget and will require detailed surveys and can only be undertaken once the demand and supply gap of natural gas in the country improves.

c. **Space Constraint:**

i. **Existing Design of TBSs:** Since a measurement facility was not part of the design of TBS/DRSs in line with international practice. However, if we consider installation of measurement facility for the time being, additional significant space will be required to execute the recommendations of consultants. The network in major cities is located in densely populated and congested areas, this would require support from Provincial Governments, TMAs, City Government, private land owners etc.

ii. **TBS Facility Located at Corners of Streets:** At a considerable number of locations, **TBSs/DRSs** have been installed at corners of congested road/streets and modification is practically not possible. Therefore, addition of a measurement facility at existing **TBSs/DRSs** will require acquisition of additional space from concerned outside agencies.

iii. **Land Acquisition:** The land acquisition is an extremely cumbersome task in settled areas and might take years. It should also be noted that modifications at such locations may lead to third part damages and may result in leakage loss at high gas pressure, causing threat to human life and property. Even, otherwise, at certain locations, space is available only to the extent that the Company has no other option but to adopt **"Poll Mounted Design"**. The design was opted at certain locations only due to the reason of non availability of appropriate space.

At present, approximately more than **2,200** Nos. **TBSs/DRSs** have critical issues related to additional space acquisition and non availability of additional space at site.

d. **Experience So Far:**

i. **Damaging of Installed Meters:** It also appears that the experience of the Company so far in this regard has not been considered by the Report, Although the Company has equipped some of its **TBSs/DRSs** with meters where such equipment was practicable, yet desired results could not be achieved. This is so because **'Turbine Type'** meters are suitable for measurement at TBSs but such meters are unable to accurately measure at the low operating pressures faced by SNGPL due to the demand and supply gap. Therefore, the company opted to install **'Rotary Type'** meters. Experiences have revealed that frequency of meter damage in these types of meters is very high due to network operation at low pressures and issue of debris/condensate which increase rate of wear and tear.

ii. **Bypass Operation:** During peak hours, the TBSs are operated in **'bypass'** mode due to supply & demand gap, during which gas remains unmetered.

e. **Audit Observations:**
The installation of measurement facility at TBSs will invite the Audit observations by Commercial Auditors, as it involves huge financial impact and the Company will not be able to achieve intended benefits due to impediments explained above.

Page 17 of 35

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# Annexure V.4 - SNGPL Comments on 2nd Draft Report

108

system so as to ensure uninterrupted gas supplies to consumers and its cost will have to be borne by consumers.

3.3 **CYLINDER MODEL:**

The Company in principle agrees with the recommended **'Cylinder Model'** for provision of gas to new domestic users, however, only the **Government of Pakistan** and **OGRA** can take policy decisions in this respect.

3.4 **KEY MONITORING INDICATORS:**

The Report has specified KMIs for a period of **5 years** only and that too with the intent to treat **impact of Bulk-Retail ratio** and **losses in law affected areas**. This is contrary to the facts. As the Company understands, execution of UFG control activities is a continuously ongoing activity. The Company is already successfully executing **'UFG Reduction Plan'**, duly approved by the Regulatory Authority. This plan includes crucial UFG control activities, envisaged in view of key UFG contributing factors. **The KMIs must be brought in line with the key UFG contributing factors and the Company, having vast experience in this particular field, should be authorized to select the UFG control activities to be incorporated in the KMIs along with appropriate weightage**. Detailed response on KMIs is given in **Para No. 4.2** of this document

3.5 **REGIONAL UFG MANAGEMENT:**

The recommendations of the Report for assigning targets to **Regional Managers** are in line with the system already in place, whereby **Regional Heads** are assigned annual targets for UFG Reduction by carrying out different UFG control activities.

3.6 **TWO YEARLY METER INSPECTION:**

The Report has recommended inspection of all meters installed on SNGPL's network for detection of gas theft and tampering etc. SNGPL has already adopted a highly technical approach in this regard, which includes the following steps:

- Physical checking of **Consumer Meter Stations**
- Identification of suspected tampered meters/ measurement error cases.
- Identification of violation cases
- Flow proving of removed meters in Metering Workshop to confirm working of meters in line with OGRA 'Procedure for Dealing with Theft of Gas Cases'
- Charging to the consumers on account of gas pilferage or under measurement etc.

For the purpose of checking, the following criteria are being followed against UFG Reduction Plan:

- Industrial meters = **once every month**
- Commercial meters = **once on quarterly basis**
- Domestic meters = **15% of the total consumers annually**

Page 19 of 35

1082

f. **Alternative:**

i. **SMS wise Reconciliation Reports:** The Report has assumed measurement at **TBSs/DRSs** the only possible solution to the menace of UFG, whereas alternatives already exist. The basic objective of measurement at **TBSs/DRSs** is identification of losses. A mechanism is already in place for measurement of losses through **'SMS wise Gas Reconciliation Reports'**. For the purpose of identification of losses, the company after carrying out hectic exercise over past 2-3 years has mapped all consumers with respective **Sales Meter Stations (SMSs)**. All **390 SMSs** of SNGPL are accurately metered and the UFG losses are calculated at each SMS on a monthly basis by comparing the gas passed through respective SMS with gas consumption of individual consumers.

ii. **Benefits Achieved from Available Alternatives:** Through this exercise, abnormal behaviours are detected both in consumption trend of consumers, gas theft as well as leakages. Moreover, analysis of consumption of industrial and commercial & zone wise consumption analysis of domestic consumers at different SMSs helps to identify abnormal behaviours

**The Company is therefore of the firm opinion that 'SMS Wise Gas Reconciliation Reports' are an effective tool already being used by the Company successfully. The effectiveness of these reports is evident from the fact that UFG losses of the Company have shown visible reduction during past 1-2 years. In the presence of an already available tool, it will not be advisable to experiment and shift the focus altogether to a new dimension, just on the basis of this Report, which will halt the ongoing efforts of the Company.**

**Moreover, SNGPL will strongly resist any recommendation against the code/standard or international practice, not being broadly followed.**

3.2 **NETWORK SEGMENTATION:**

The concept of network segmentation is good suggestion, but it is not workable in the case of **SNGPL** due to following practical constraints:

a. **Existing Network Design:**
Detailed comments with regard to existing network design and looping have already been given in **para No. 3.1.b.**

b. **Supply and Demand Gap:**
Network segmentation is not practicable till such time supply and demand situation is balanced as explained in **para No. 3.1.b**

c. **Financial Issues:**
As already explained, the isolation of network downstream of TBS's is only possible through an extensive augmentation of network by laying larger diameter lines, which involves a huge financc/capital budget and will require detailed surveys and can only be undertaken once the demand and supply gas of natural gas improves.

**So network segmentation in the present circumstance is not possible, as it will require laying of larger diameters line, which will be like redesigning of existing distribution**

Page 18 of 35

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Document Classification: KPMG Confidential

# Annexure V.4 - SNGPL Comments on 2nd Draft Report

160

1084

The above details show that industrial and commercial consumers are being inspected multiple times already on a yearly basis, whereas all removed domestic meters are inspected in Metering Workshops. The Report has presumed that inspection activity will not be required beyond two years, whereas it is in fact an ongoing CONTINUOUS activity.

### 3.7 TECHNOLOGICAL ADVANCEMENT:

The Company is cognizant of the fact of using latest available technologies to keep itself at par with new developments in the natural gas industry. The following measures have already been adopted in this regard:

- Installation of **Class-900 meters with EVC** for detection of gas theft by commercial consumers
- Use of **Electronic Volume Correctors (EVC)**, with improved anti theft features particularly with regard to detection of influence of external magnetic force
- **GPRS based remote monitoring system** for industrial connections for detection of 'Gas Theft', 'Measurement Error' and 'Load Management Violation' cases.
- Pilot Project for **'Cyber Locks'** has been initiated
- Use of **G-6 meters** for high consumption domestic connections to ensure measurement accuracy
- Use of **G-4 domestic meters**, having anti reverse features
- **All Material Locator (AML)** to detect underground illegal tapping of distribution network.
- **Laser based 'Leak Detectors'** to identify underground leakages points
- **'Hi Flow Sampler'** for detection of leakage flow rates
- **'Vehicle Mounted'** gas leak detectors

### 3.8 COST OF SERVICE STUDY

OGRA being the statuary body can comment on the pricing mechanism for different categories of consumers.

### 3.9 DETECT, MONITOR AND CONTROL:

The finding of the Report that the Company has a reactive approach, instead of a proactive approach, for gas theft control is not based on detailed study of existing practices of SNGPL. The Company already has vigilance programs in place, as explained in **para No. 3.6** for monitoring, detection and control of gas theft and, as a result of vigilance activities, the Company has been able to detect and establish gas theft volumes in line with OGRA 'Procedure for Dealing with Theft of Gas Cases' during **Feb, 13 to June, 16**.

| Category | Cases (No) | Volume (MMCF) | Amount (Rs. Million) |
|---|---|---|---|
| Industry | 526 | 12,236 | 7,548 |
| Commercial & Special Domestic | 22,142 | 4,469 | 3,087 |
| Domestic | 107,141 | 4,936 | 1,948 |
| **Total** | **129,809** | **21,641** | **12,583** |



1085

As regards the recommendation of independent verification of gas theft volumes claimed against consumers, it seems that the Report is unable to appreciate the procedures and practices in place. Contrary to the understanding reflected in the Report, fact of matter is that a number of consumers to whom gas pilferage charges are booked, approach OGRA to get relief against established gas theft charges, which shows that validation mechanism is already in place in line with provisions of **OGRA Ordinance** and complaint resolution procedure of OGRA.

### 3.10 RING FENCING:

The Report has recommended installing bulk meters in areas which are prone to gas pilferage. It is a misconception that theft is localized in any specific area/locality. It is categorically stated that except for the law & order affected areas, gas theft is not localized, and rather it is spread across the Company's distribution network.

### 3.11 USE OF BULK METERS

The Report has recommended installing bulk meters to detect the losses in **law and order affected areas**. It is clarified that SNGPL's claim pertaining to law and order affected areas is based on accurate measurement of losses on the basis of following:

- Metered gas passed through SMSs feeding these areas.
- Metered gas billed to individual consumers at downstream of these SMSs

Loss at individual SMSs is calculated as follows:

$$\text{Volumetric Loss} = \left\{\text{Metered gas passed through SMS}\right\} - \left\{\begin{array}{c}\text{Metered gas billed to}\\ \text{individual consumers}\\ \text{at downstream of SMSs}\end{array}\right\}$$

The above precise quantification of losses is available on **SMS wise, month wise** and **year wise basis**. Moreover, it is not feasible to install additional 'bulk' meters in these areas due to similar law and order situation.

### 3.12 LEAKAGE MANAGEMENT PLAN:

The company has already put in place a comprehensive leakage management plan, which covers the following key activities:

- **Aboveground leakage rectification**
- **Underground leakage rectification**
- **Underground network replacement**

All these activities are carried out after thorough assessment and analysis whereas the Reports seems to focus ONLY on replacement of underground network. This has been done without a thorough study, referencing of international practices and working of its financial impact. The Company on its part has adopted a highly technical approach. SOPs have been devised through which segments of distribution network are assessed/evaluated and are recommended for replacement based on the following:



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# Annexure V.4 - SNGPL Comments on 2nd Draft Report

1086

- Pipe to Soil Potential (PSP) survey
- Direct Current Voltage Gradient (DCVG) survey
- Close Interval Potential (CIP) survey
- Cathodic Protection level of network
- Underground Leak detection survey to identify leak points
- Assessment of Pipeline coating conditions
- Physical inspection of pipeline through bell holes

The Company also understands that replacement of the network involves huge finances and in order to avoid unnecessary expenditures, the Company has adopted this scientific approach. The underground network is surveyed using **'Leak Detectors'** to identify leak points. Through use of these equipments, localized leakage detection and its repair is possible against old conventional strategy of replacing network without assessment of its integrity. **The replacement of network ONLY on the basis of its aging without its through assessment and referencing of international practices, as recommended in the Report will lead to a wastage of funds for which requisite budget will have to be allowed by OGRA, to be borne by consumers through price increase.**

### 3.13 RECOMMENDATIONS ON UFG CALCULATION AND TREATMENT:

The company appreciates that the consultants has acknowledged the long outstanding issue of UFG calculation methodology to consider **"metered gas received"**, instead of **"gas available for sale"** for calculation of UFG % age and stance of SNGPL has been acceded. However, in referred formula given on **Page No. 71**, again the term **"gas available for sale"** has been included, which is incorrect and requires clarification from the Consultants. We understand that the formula should be as follows:

$$UFG_{Allowance} = Gas_{received} \times (Rate_1 + Rate_2 \times \beta)$$

### 3.14 RECOMMENDATIONS RELATING TO UFG ALLOWANCE:

The Report has stated that since **TBSs/DRSs** are unmeasured, therefore the Company is

- **Unable to measure actual different between volume received and dispatched**
- **Present UFG volume in terms of contributing factors**

The perception of consultants regarding measurement in case of SNGPL is incorrect as has already been explained in detail in **Para No. 3.1** above.

If for the time being, it is assumed, that all **TBSs/DRSs** are equipped with measurement facility, even then quantification/splitting of total volumetric losses in different contributing factors will not be possible. The Company on the basis of vast experience and various studies has estimated the share of different contributing factors in total volumetric losses. **The Report, though concludes that estimation of the Company with regard to share of different UFG contributing factors in overall losses is incorrect, it fails to suggest any methodology for splitting the total UFG in different contributing factors, nor has it referred to any international practice in this respect.**



1087

### 3.15 MODEL FOR INCREMENTAL IMPROVEMENT FOR UFG CONTROL:

#### 3.15.1 UFG Benchmark and Control Formula:

We appreciate that the Report has recognized that, in addition to the **base UFG rate (Technical Component)**, appropriate allowance has to be given to the Company, which firms our long standing stance that there are certain extraordinary circumstances in which the Company is operating, that are not prevalent in any other country. The following formula has been proposed in the 2nd draft of **UFG Study Report**:

$$UFG_{Allowance} = Gas_{AFS} \times (Rate_1 + Rate_2 \times \beta)$$

Although the Report has recommended adopting revised formula for calculation of **UFG % age**, which is based on **"metered gas received"** instead of **"gas available for sale"**, however, in above referred formula, again the term **"gas available for Sale"** has been included, which is incorrect and requires correction by the Consultants. We understand that formula should be revised as follows:

$$UFG_{Allowance} = Gas_{received} \times (Rate_1 + Rate_2 \times \beta)$$

Moreover, due allowance against following factors beyond company's control have been recommended through above formula, subject to completion of certain tasks defined as **Key Monitoring Indicators (KMIs)**:

a) **Impact of losses due to shift of gas sales mix**
b) **Losses in law affected area has been included**

Detailed comments against proposed KMIs are given in **Para No. 4.2** of this document. However, as it stands, the linkage between beta (β) factor and the KMIs as proposed is not acceptable to the Company, particularly the inclusion of the factor i.e. **"losses in law affected areas". We request that Rate 2 should only include the impact of 'Bulk-Retail ratio' whereas, the allowance against 'losses in law and order affected areas' should be given as adjustment in 'deemed gas sales' as per practice of OGRA in vogue. Moreover, the formula proposed by Consultants negates the guidelines of the ECC of Cabinet which have been ratified by Federal Cabinet during its meeting held on September, 2016 which allowed due recognition against Gas Volume pilfered by Non-Consumers as well.**

#### 3.15.2 Technical Component Based on International Benchmark:

The Company strongly contests the fixation of **Technical Component** of UFG benchmark at **5%** owing to following:

a. According to the figures quoted in **Table R-1 (page No. 72)** of the Report, even in countries like the **USA (Texas), Russia and Australia (Multinet)**, UFG benchmarks go up to **4-5%**, despite the fact that there is minimum impact of gas theft and other operational constraints as heighted in this document. If developed countries like **USA, Russia and Australia** have **UFG rate around 5%**, it is surprising that the same figure has been proposed for a company such as SNGPL which operates on wholly different considerations. **Most importantly, the Report has not stated specific reasons which**



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# Annexure V.4 - SNGPL Comments on 2nd Draft Report

1088

**resulted in UFG benchmark of around 5% in those countries, which needs to be elaborated to make comparison of operating conditions of SNGPL viz-a-viz those gas companies operating in developed countries.**

b. **While recommending the UFG Benchmark, the Report states that *"……UFG allowances are commonly set in correlation with gas consumption and network length……"*. However, none of the gas companies/countries as referred in the Table-R-1 of the report are comparable with SNGPL and the same fact has also been accepted by the consultants *"finding comparable countries remained a challenge…."***

c. The Report is unable to refer to the following important factors, while referring the UFG Benchmark of the different countries, which have a direct link with UFG and thus UFG benchmark:

- Consumer base
- Gas sales mix
- Law & order situation
- Supply and demand situation/operating parameters

Fields such as "population", "urban population" "area", "density" etc pertaining to different countries have been reported in the **Tables R-1** and **Table R-2** of the Report which has no relevance with the UFG benchmark.

**3.15.3 Local operating conditions components:**

The following two UFG contributing factors, beyond company's control, have been made part of **Local Operating Conditions Component**:

a) **Impact of losses due to shift of gas sales mix**
b) **Losses in law affected area has been included**

Allowances against these factors, beyond company's control, have been linked with execution of certain tasks defined in KMIs and their cumulative impact will be included in the UFG formula through beta ( β ) factor. We understand that linking of allowance against the losses in law affected areas, just to curtail/cap its due relief to the Company, is unjustified. As losses in law affected area pertain to only specific areas of **Peshawar Distribution Region**, whereas execution of KMIs is to be carried out throughout the company on entire distribution network and consumer base. Hence company strongly opposes the capping of allowance against losses in law affected through linking it with **beta ( β )** factor, as company is handicapped on the issue and has already taken up matter with all the available forums, including the **Federal Government, OGRA, Provincial Government** and **Local Administration** of these areas. Hence, **100%** relief should be allowed against **losses in law affected of KPK Province in respective year.**

Moreover, while working out **UFG Rate$_2$** for **"Local Operating Condition Component"**, the Consultants have used an average figure of **4 years** pertaining to different factors (i.e. 'gas available for sale', losses in law affected areas and impact of changed in gas sales mix). We request that instead of averaging the **'gas available for sale'** of past 4 years, the **'gas available for sale' of FY 2014-15** should be made base for



1089

calculations, as in case of SNGPL the **'gas available for sale'** has drastically reduced from **674,868 MMCF** in **FY 2011-12** to **521,533 MMCF** in **FY 2014-15** (having reduction of **23%**) and according to the projected figures, further reduction of 'system gas supplies' is expected in coming years, so this mechanism will have negative impact on company's UFG.

**3.15.4 Performance Factor:**

We agree with the concept of finalizing KMIs prior to **ERR** of each year but specific budgetary and HR provisions will have to be made by OGRA.

**The typical circumstances being faced by the Company warrant for a reasonable UFG benchmark commensurate with facts, ground realities, operational constraints and operating conditions of SNGPL. The Company strongly feels that the Report needs to be reviewed in light of the UFG Benchmark data of different countries, particularly with reference to all the UFG contributing factors mentioned in TORs finalized by OGRA and the UFG benchmark of each country needs to be evaluated for all these UFG contributing factors. Only in that case comparison of UFG benchmark can be relevant.**

**4 SECTION No. 3: "WAY FORWARD"**

**4.1 UFG Management and Control Strategy:**

The Report has recommended **Key Monitoring Indicators** spread over a period of **5 Years**, after which UFG rate of **5%** is to be achieved by **FY 2021**. We understand that execution of UFG control is a continuous ongoing activity to be carried out irrespective of any time period so this assumption will be incorrect that execution of KMIs will not be required after **FY 2021.** Hence allowance against local operating condition will be required on permanent basis. The corrective actions proposed by the Report, and the comments thereon by SNGPL are as under:

**4.1.1 Detailed Performance Indicators:**

**4.1.1.1 Reduce Data and Metering Errors**

| Description | Target | Comments of SNGPL |
|---|---|---|
| Ensure installation of measurement facility at all TBSs/DRSs | FY 2021 | Installation of measurement facility at all **TBSs** is not practicable due to issues discussed in detail in **Para No. 3.1** of this document in detail |
| Install EVC/Modem facilities on all meters at TBSs/DRSs | | |
| Segment/isolate all TBSs to identify, measure and control supply of gas to areas susceptible to pilferage and losses Identify areas with gas pilferage and install bulk meters for such areas to enable monitoring of UFG in that | FY 2022 | Isolation of network is not possible due to constraints stated in **Para No. 3.1** of this document |



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# Annexure V.4 - SNGPL Comments on 2nd Draft Report

1090

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| particular area. | | |
| Inspect all meters (domestic, commercial, special domestic and industrial within a 5 year cycle for identification of malfunctioning meters at least 20% meters inspection annually. Identify consumers being minimum billed and ensure it is brought to an acceptable limit of, 5% of the total domestic connections. | Ongoing | Inspection criteria defined in UFG Reduction Plan, already duly approved by OGRA for industrial and commercial consumers will be followed whereas for domestic consumers, **15% of total domestic consumers** will be checked annually. Minimum billed consumers cannot be reduced to below 5% as company cannot force the gas use to increase their monthly gas consumption. |
| Identify and replace defected (slow/pug/sticky) meters and bring it to an acceptable level of <5% of total consumers | Ongoing | Comparison of replaced sticky meters with total consumer base is incorrect, as consumer base will continuously increase. |
| Incorporate in the existing system relevant features or acquire a system with built in feature of analyzing the system data and identifying malfunctioning meters on the basis of anomalies identified. During the transition period establish separate data cell for manual analysis of the billing data. This can be done at the regional level or the head office level. | Ongoing | Company already has **Customer Care and Billing (CC&B)** system in place, through which customized reports can be extracted. |

**4.1.1.2 Reduce Leakage and Gas Loss:**

| Description | Target | Comments of SNGPL |
|---|---|---|
| Replace overage underground distribution network, increase annual rehabilitation of ageing pipelines to control leakages and corrosion | Ongoing | Replacement will be carried out through assessment of relevant parameters so length of network to be replaced cannot be specified. Detailed discussion given in **Para 3.12** |
| Acquire tools with improved features for underground leakage detection and reduce underground leak per Km to less than 1 leak/km | FY 2021 | Detection of leakage is only one component. In fact rectification of detected leakages is actual solution to the problem. Low Cathodic protection level due to repeated power outages, results in continuous deterioration of network, hence new leakage will develop over period of time. |
| Carry out survey for leak identification and extensive leak rectification of the | FY 2022 | It is a continuous ongoing activity. however, the term **1 leak/connection** |

Page 26 of 35

1091

| | | |
|---|---|---|
| overhead leakage and reduce it to less than 1 leak/connection | | in case of aboveground leakages is not understandable and require correction at explained in **Para No. 2.3.3.1** of this document |
| Establish additional Cathodic protection stations to ensure 100% cathodic protection over the network to control corrosion. Ensure availability of alternative source power supply at CP stations | Ongoing | **100%** protection level and availability of alternative power cannot be achieved due to issues explained in **Para No. 4.2.15** of this document |

**4.1.1.3 Detect, Monitor and Control:**

| Description | Target | Comments of SNGPL |
|---|---|---|
| Enhance develop system capabilities to enable automated analysis of billing data and identification of gas pilferage on the basis of anomalies identified During transaction period establish special cell units to manually analyze CC&B data to detect abnormal consumer behaviour for identification of gas theft. | FY 2019 | System is already in place to analyze the billing data through **CC&B**. |
| Re-inspect all meters disconnected to prevent gas pilferage through reconnections by the disconnected consumers | Ongoing | Already being done by SNGPL |
| Increase the Turn Around Time (TAT) of the resolution of gas theft complaints applications received during the year. Improve/increase the channels of theft complaints available to the general public such as online complaint registration system etc. | Ongoing | Complaints are already being resolved as per criteria defined by OGRA. Complaints registration system **(1199)** is already in place |

**4.1.1.4 Increase and Ensure Capacity:**

| Description | Target | Comments of SNGPL |
|---|---|---|
| Conduct mandatory technical training program for employees of all levels. Ensure the attendance of employees in seminars/workshops pertaining the gas industry, both national and internal | n/a | Company already has its dedicated Training Institute in which various technical trainings are conducted. In addition foreign training of employees is also arranged in relevant fields. |
| Establish dedicated research and development cell with aim to identify /develop tools for increased efficiency cost reduction | FY 2019 | Services Departments, such as **Metering** and **Corrosion Control** carry out necessary **R&D** from time to time. |
| Conduct periodic environmental audits to identify and rectify issues in a timely | FY 2019 | Company has fully established **HSE Department** to look after such |

Page 27 of 35

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# Annexure V.4 - SNGPL Comments on 2nd Draft Report

155

1092

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| manner. Hire environmental experts | | issues. The company hold certification of **ISO 14001** and **OHSAS 8001** |
| Improve data quality and timelines for system, operation, planning and regulatory acceptance.<br>Develop acquire system capable of managing company data and generating timely reports as and when needed. | FY 2019 | Best possible efforts are being made to meet timelines related to Regulatory Authority.<br><br>All departments are custodian of relevant data |
| Attend periodic meetings/joint sessions with other gas companies in and outside Pakistan for exchange of ideas/knowledge sharing | n/a | Already being done. |

4.2 **KEY MONITORING INDICATORS (KMIs):**

Both **SNGPL** and **SSGC** have submitted **KMIs** to Consultants and OGRA, after mutual discussion. Although the Consultants have changed the KMIs to some extent in the **2nd draft of UFG Study Report**, but still some KMIs incorporated in the report have been included without consideration of their technical, financial and logistical hurdles which will have to be faced by the SNGPL. Some of the activities have been included in the KMIs without giving reference to any applicable Standard/Code or international practice, broadly being followed. As for instance, installation of measurement facility at TBSs and network segmentation are such examples. **Although the consultants on Page No 71 has accepted that beta ( β ) factor will be based on mutually agreed KMIs, but certain KMIs have been included which have not been proposed by SNGPL.** While on the other hand, the Consultants are not ready to consider the financial implications of the some of the KMIs, and they are trying to flee from the ownership of their recommendations by simply including an **Annex-A** at the end of the report. Moreover, weighted allocated to certain KMIs is contrary to the joint submission of SNGPL and SSGC. Execution of activities defined in the KMIs will require specific budgetary provisions on an annual basis, along with additional provisions in HR benchmark, leading to a consequential rise in tariff, which will have to be borne by the gas consumers. The work load has increased significantly whereas the number of employees are not commensurate with the consumer and network base as given below:

| Period | Length of Network per Employee (Km/employee) | Number of Consumers per Employee |
|---|---|---|
| FY 2001-02 | 5.2 | 272 |
| FY 2015-16 | 11.23 | 567 |
| **%age increase** | **116%** | **108%** |

**The Report presumes that execution of certain KMIs in next five years will permanently bring down UFG to 5 %, whereas, in reality, the execution of different UFG control activities is a continuous ongoing activity which has to be carried out regularly irrespective of any specified time period since:**

- A resurvey of underground distribution network for leakage detection and rectification is required every 5 years in line with international practices.

Page 28 of 35

1093

- Meters have a limited service life at site and required to be replaced periodically for maintenance
- Theft control is continuous activity as the gas users may again indulge in pilferage, regardless of vigilance activities of the Company.

**Therefore, it appears that KMIs have been suggested without consideration of the specific operational constraints being faced by the Company. These constraints are contrary to the international practices,** some of which include: a significant supply and demand gap, forcing the Company to operate its network beyond its design parameters; network operations at low pressures, causing measurement inaccuracies; looping of distribution network due to unprecedented growth and to facilitate the gas users in view of shortage of gas supplies and non availability of dedicated corridors for distribution network, to name a few.

**If KMIs are to be identified and targets for meeting the same have to be set, it would be more appropriate that the Company in consultation with OGRA finalize such task and targets based on practical, reasonable, technical and financial viabilities on annual basis. The same has also been acknowledged by consultants on page No. 75 of 2nd draft report "*.....Beta ( β ) denotes the cumulative efficiency score as determined by OGRA of KMIs based on mutually agreed control program for a financial year*". We request that prior to finalization of KMIs, the Authority may hold a joint session ONLY with gas companies to evaluate the pros and corns of including undesired KMIs** as it will have a direct impact on consumer prices.

Without prejudice, specific issues that SNGPL has with regards to different KMIs defined by the Report are as follows:

4.2.1 **Twenty five percent of unmetered TBSs Metered along with EVCs/Modems (weightage 12%)**

We disagree with the conceptual basis for this particular **KMI**, regarding measurement at **TBSs/DRSs** because the Report fails to refer any Standard/Code or any international practices and technical details of the issue. The following related to installation of measurement facility at TBSs/DRSs has already been explained in a detail in **Para No. 3.1** of this document:

a) **Internal Practices**
b) **Looping of distribution network**
c) **Space constraint**
d) **Experience of company so far**
e) **Alternative available**

**Concluding to this, the fact of the matter is that measurement of losses at TBSs is only a small portion of solution to the actual problem, whereas the Report appears to assume the same as a whole solution to the menace of UFG so this KMI needs to be deleted.**

Page 29 of 35

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# Annexure V.4 - SNGPL Comments on 2nd Draft Report

155

1092

| | | |
|---|---|---|
| manner. Hire environmental experts | | issues. The company hold certification of **ISO 14001** and **OHSAS 8001** |
| Improve data quality and timelines for system, operation, planning and regulatory acceptance.<br>Develop acquire system capable of managing company data and generating timely reports as and when needed. | FY 2019 | Best possible efforts are being made to meet timelines related to Regulatory Authority.<br><br>All departments are custodian of relevant data |
| Attend periodic meetings/joint sessions with other gas companies in and outside Pakistan for exchange of ideas/knowledge sharing | n/a | Already being done. |

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Page 28 of 35

1093

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- Theft control is continuous activity as the gas users may again indulge in pilferage, regardless of vigilance activities of the Company.

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Page 29 of 35

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# Annexure V.4 - SNGPL Comments on 2nd Draft Report

1094

4.2.2 **Twenty percent of un segmented TBSs segmented/reconciled (weightage 8%)**

Segmentation of network at present in not practicable as already been explained in detail in **Para No. 3.1 and 3.2**. It will be similar to re-designing the existing distribution network. As for instance, the distribution network of all major cities like **Multan, Faisalabad, Lahore, Gujranwala, Islamabad, Rawalpindi** and **Peshawar** is looped and in case the company opts for segmentation of distribution network in different cities/regions, it will require layig of larger diameters lines to ensure uninterrupted gas supplies, which will require huge budgetary provisions to be borne by consumers. In order to put matters into perspective, it is stated that existing length of distribution network is over **100,000 Km** and in order to further highlight the issue for understanding, applicable unit construction rates for different diameter line pipes is given in table below:

| Dia of pipe | Unit Cost (Rs/meter) |
|---|---|
| 6" dia | 5,199 |
| 8" dia | 7,555 |
| 10" dia | 10,742 |
| 12" dia | 11,252 |
| 16" dia | 16,991 |

**In view of above stated reasons, this activity should be altogether deleted from the KMIs, being impracticable.**

4.2.3 **Inspection of all industrial consumer meters over the network once every month (weightage 3%)**

4.2.4 **Inspection of all commercial consumer meters over the network once every three month (weightage 4%)**

4.2.5 **Inspection of 20% of all domestic consumer meters over the network once every three month (weightage 6%)**

Vigilance of all category of consumers is part and parcel of the **UFG Reduction Plan** envisaged by the Company, duly approved by OGRA as already been explained in detail in par No. **2.5.1.1** of this document. Through the aforesaid vigilance, the Company has achieved very fruitful results. SNGPL acknowledges the effectiveness of vigilance however, the weightage allocated by consultants needs to be reviewed as **industrial sector** comprised major share in overall sale of company and so involves comparatively large volume of gas theft. The weightage should be allocated in KMI inline with the weightage recommended by both **SNGPL** and **SSGC** after joint discussion as follows:

| Category | Weightage |
|---|---|
| Industrial | 8% |
| Commercial | 7% |
| Domestic | 5% |

Moreover, in line with budgetary provisions company can only inspect 15% if total domestic consumers annually. **These activities will require an approximate budget of Rs. 550-600 Million annually.**

Page 30 of 35

1095

4.2.6 **Number of Defected Industrial Meters Replaced as % Age of Total defective Industrial Meters reported/notified (weightage 3%)**

4.2.7 **Number of Defected Commercial Meters Replaced as % Age of Total defective Commercial Meters reported/notified (weightage 4%)**

4.2.8 **Number of Defected Domestic Meters Replaced as % Age of Total defective Domestic Meters reported/notified (weightage 6%)**

In line with the prevailing practices and procedure, duly approved by OGRA, the defected meters cases are detected by SNGPL through following:

- **Visit to Consumer Meter Stations against Consumer's complaints**
- **Reports of meter readers.**
- **Periodic vigilance activities.**

SNGPL understands the importance of replacing defective meters and therefore such meters are replaced on a priority basis in line with the **'Performance and Service Standards'** given by OGRA against which periodic reports are also furnished to OGRA. Replacement of meters is a continuous ongoing activity and it cannot be ensured that after **5 years**, no further meter will become defective or require replacement since meters contain mechanical moving parts, which are always prone to wear and tear. Moreover, the Company's peculiar operating conditions such as low pressure causes increased gas velocity and thus the carbon dust travel inside meter internal parts, increasing its rate of defect. As industrial meters handle major gas volume supplied to consumers so weightage should be in line with the weightage recommended by both SNGPL and SSGC after joint discussion as follows:

| Category | Weightage |
|---|---|
| Industrial | 8% |
| Commercial | 7% |
| Domestic | 5% |

**This KMI will lead to an approximate budget of Rs. 2,500 Million annually, which will have to borne by consumers in the shape of an appropriate price increase.**

4.2.9 **Industrial meters replaced as %age of total industrial meters qualifying schedule replacement criteria (weightage 2%)**

4.2.10 **Commercial meters replaced as %age of total commercial meters qualifying schedule replacement criteria (weightage 3%)**

4.2.11 **Domestic meters replaced as %age of total domestic meters qualifying schedule replacement criteria (weightage 4%)**

We appreciate the activity of replacement of meters against schedule programs as suggested by the Report. It is submitted that this is a continuous ongoing activity to be carried out annually. The Company already acknowledges the importance of this activity and is following meter replacement criteria given by OGRA, which states:

| Description | Period |
|---|---|
| Schedule replacement of industrial meters | 1 Years |
| Schedule replacement of Commercial meters | 7 Years |
| Schedule replacement of Domestic meters | 16 Years |

Page 31 of 35

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# Annexure V.4 - SNGPL Comments on 2nd Draft Report

72

1096

As industrial meters handle major gas volume supplied to consumers so weightage should be in line with the weightage recommended by both **SNGPL** and **SSGC** after joint discussion as follows:

| Category | Weightage |
|---|---|
| Industrial | 7% |
| Commercial | 5% |
| Domestic | 3% |

**These activities will require an approximate budget of Rs. 1,500 Million annually and additional amount required for replacement of meters will have to be borne by consumers in shape of price increase.**

**4.2.12 Length of Underground Distribution Network Replaced (Km) as %age of Total company's annual network replacement target as advised by Corrosion Control Department. (weightage 8%)**

The methodology being used currently by the Company for replacement of its network has already been explained in detail in **Para No. 3.12** of this document. We agree with KMI and its proposed weightage.

**Approximate budget of Rs. 1,000 Million annually will merely be sufficient to replace only 250 to 300 Km network, the cost of which will be borne by consumers in shape of price increase**

**4.2.13 Reduce present level of 2.2 underground leaks/km gradually to less than 1 leak/km (weightage 8%)**

**Underground Leakage Rectification (Laser Leak)** is an integral part of the **UFG Reduction Plan** envisaged by the Company, duly approved by OGRA. SNGPL is accordingly carrying out survey of its underground distribution network using 'Leak Detectors' to identify leak points. These leakages are contributed by:

- **Non availability of dedicated corridors**
- **Third party damages**
- **Coating defects**
- **Inherent issues with coating materials**
- **Drop in network Cathodic protection levels**
- **Corrosive nature of soil**
- **Moisture content in soil, etc.**

Due to above stated persistent factors, new leakages develop in the network and in the presence of above stated impediments, it will be very difficult to reduce the per km leakages to **below 1 Leak/Km** so this KMI should be reviewed as *follows* **"Reduce present level of 2.2 underground leaks/km gradually"** . However, we agree with weightage of this KMI.

**This activity will require an approximate budget of Rs. 450-500 Million annually**

Page 32 of 35

1097

**4.2.14 Survey of twenty percent of total domestic connections annually and rectification of detected aboveground leakage connections (weightage 5%)**

**Aboveground Leakage Rectification** is an integral part of **UFG Reduction Plan** envisaged by company, duly approved by OGRA. It is a continuous ongoing activity and SNGPL is carrying out survey of aboveground domestic connections and on the basis of surveys, leaks are identified and rectified. With the present budgetary provisions allowed by OGRA company can carry out activity at only 15% of total domestic consumers. **Any increase in target will require additional budgetary prevision.**

**This activity will require an approximate budget of Rs. 300 Million annually**

**4.2.15 Number of CP stations installed/refurbished as a %age of CP stations selected for installation/renovation: (weightage 5%)**

We agree with the KMI and its weightage.

**4.2.16 Number of Disconnections in Respect of Theft as % Age of Total Consumer Base of the Period (weightage 4%)**

Given the prevailing facts and circumstances, it would perhaps be counter-productive to link number of disconnections in respect of gas theft with consumer base. The number of disconnection can only be linked with cases **'due for disconnection'** on the basis of the established disconnection criteria already in vogue. This KMI should be rationally reviewed and revised in line with joint submission of SNGPL and SSGC as follows ***"Number of connections disconnected as a % age of connections due for disconnection in respect of gas theft"***

**4.2.17 Re-inspection of 100% disconnected Industrial consumers annually (weightage 1%)**
**4.2.18 Re-inspection of 50% disconnected Commercial consumers annually (weightage 2%)**
**4.2.19 Re-inspection of 20% disconnected Domestic consumers annually (weightage 2%)**

Vigilance of disconnected consumers is a continuous ongoing activity. However, as **industrial consumers** involve large gas theft volume so description and weightage of KMI should be in line with the weightage recommended by both SNGPL and SSGC after joint discussion as follows:

| Description | | Weightage |
|---|---|---|
| Inspection of disconnected consumers | Industrial = 100% | 2% |
| | Commercial = 25% | 2% |
| | Domestic = 10% | 1% |

**4.2.20 Number of Gas Theft/Leakage Complaints Resolved as %age of actual complaints lodged in the same year (weightage 5%)**

The resolution of gas theft/leakage complaints is one of the top priorities of SNGPL and such cases are regularly being monitored by OGRA through its **'Performance and Service Standards'**. The Company already makes best possible efforts to promptly rectify complaints. We agree with the KMI and its weightage.

Page 33 of 35

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# Annexure V.4 - SNGPL Comments on 2nd Draft Report

74

1098

**4.2.21 Miscellaneous (Training, Knowledge Sharing, Meetings etc) (weightage 5%)**

The Company already has a training system in place through dedicated Training Institute where the work force and the executives are trained in relevant fields. Moreover, all concerned are familiarized with the new technologies being used the Company. Periodic meetings are also are part of assessment program which help in knowledge sharing. Its weightage in no case by more than 5%

**4.2.22 SUMMARY of KMIs Proposed By SNGPL & SSGC:**

The summary of KMIs jointly proposed by SNGPL and SSGC are as follows:

| KMI No. | | Description of KMI | | % Age Weightage |
|---|---|---|---|---|
| 1 | Gas Theft | Inspection of each industrial consumer once every month | Industry | 8% |
| | | Inspection of each commercial consumer on quarterly basis | Commercial | 7% |
| | | Inspection of 20% of total domestic consumers (all consumers will be inspected in 5 years period) | Domestic | 5% |
| | | **Sub Total** | | **20%** |
| 2 | | Number of connections disconnected as a % age of connections due for disconnection in respect of gas theft | | 4% |
| 3 | | Inspection of disconnected consumers as follows: **Industry** = 100% , **Commercial** = 25% & **Domestic** = 10% | Industry | 2% |
| | | | Commercial | 2% |
| | | | Domestic | 1% |
| | | **Sub Total** | | **5%** |
| | | **Total Gas Theft Control** | | **29%** |
| 4 | Measurement Errors Resolution | Number of Defective Industrial meters replaced as a % age of total defective Industrial meters reported/notified | Industry | 8% |
| | | Number of Defective Commercial meters replaced as a % age of total defective Commercial meters reported/notified | Commercial | 7% |
| | | Number of Defective Domestic meters replaced as a % age of total defective Domestic meters reported/notified | Domestic | 5% |
| | | **Sub Total** | | **20%** |
| 5 | | Industrial meters replaced as a % age of total Industrial meters qualifying Schedule Replacement Criteria | Industry | 7% |
| | | Commercial meters replaced as a % age of total Commercial meters qualifying Schedule Replacement Criteria | Commercial | 5% |
| | | Domestic meters replaced as a % age of total Domestic meters qualifying Schedule Replacement Criteria | Domestic | 3% |
| | | **Sub Total** | | **15%** |

Page 34 of 35

| | | | |
|---|---|---|---|
| | | **Total Measurement Errors Resolution** | |
| 6 | Gas Leakages | Underground network replaced as a %age of total annual network replacement target as recommended by Corrosion Control Department | |
| 7 | | Present level of 2.2 underground leaks/Km is to be reduced gradually | |
| 8 | | Survey of 15% of total domestic connections annually and rectification of detected aboveground leak connections | |
| 9 | | Number of CP stations installed/renovated as a %age of CP stations selected for installation/renovation | |
| 12 | | Number of gas leakage complaints resolved as a % age of actual number of such complaints received by company | |
| | | **Total Gas Leakage Control** | |
| 13 | Misc | Trainings , knowledge Sharing, Meetings etc) | |
| | | **Grand Total** | |

***Note:**
**All the above mentioned activities are of continuous nature, to be carried out regularly irrespective of any period.**

**Important Requests to Authority:**

1. The consultants on **Page No. 75** of the **2nd draft report** have recommended *Authority may review its earlier (provisional) UFG allowances in FRR, in proposed UFG control framework to help ensure appropriate relief is grante Companies".* **The Authority is requested to kindly advise the mechanism through which OGRA intends to implement this recommendation of Consulta FY 2012-13 to FY 2015-16 and FY 2016-17 as no KMIs were introduced dur years.**

2. **We request that prior to finalization of KMIs, the Authority may hold a join ONLY with gas companies to evaluate the pros and corns of including undesir and their financial impact on consumer pricing.**

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# Annexure V.4 - SNGPL Comments on 2nd Draft Report

Sui Northern Gas Pipelines Limited
Bulk Retail Ratio Without RLNG supplies

| | Jul-11 | Aug-11 | Sep-11 | Oct-11 | Nov-11 | Dec-11 | Jan-12 | Feb-12 | Mar-12 | Apr-12 | May-12 | Jun-12 | 2011-12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gas Available | 55,749 | 56,051 | 53,047 | 54,311 | 55,514 | 57,729 | 58,848 | 54,831 | 59,054 | 57,081 | 58,347 | 54,327 | 674,868 |
| Gas Sold - Total | 48,778 | 49,800 | 47,759 | 48,818 | 50,069 | 52,830 | 52,230 | 48,686 | 53,024 | 51,027 | 52,054 | 48,841 | 605,005 |
| UFG Volume | 6,972 | 6,251 | 5,288 | 5,493 | 5,445 | 4,899 | 6,617 | 6,125 | 5,979 | 6,054 | 6,293 | 4,487 | 69,863 |
| UFG %age | 12.51 | 11.12 | 9.97 | 10.11 | 9.75 | 8.48 | 11.24 | 11.19 | 10.13 | 10.61 | 10.79 | 8.26 | 10.35 |
| Gas Sold to Bulk | 15,099 | 15,867 | 14,549 | 12,745 | 13,013 | 11,283 | 10,029 | 8,660 | 14,566 | 14,546 | 13,943 | 11,242 | 157,963 |
| Gas Sold to Retail | 33,679 | 33,933 | 33,410 | 36,073 | 37,086 | 41,546 | 42,202 | 40,025 | 38,459 | 36,483 | 38,091 | 36,598 | 447,642 |
| Gas Available For Bulk | 15,275 | 15,947 | 14,421 | 12,810 | 13,078 | 11,340 | 10,079 | 8,764 | 14,639 | 14,618 | 14,013 | 11,309 | 158,154 |
| Gas Available For Retail | 40,474 | 40,104 | 38,626 | 41,502 | 42,435 | 46,389 | 48,769 | 46,067 | 44,415 | 42,463 | 44,334 | 41,018 | 516,715 |
| Total Gas Available | 55,749 | 56,051 | 53,047 | 54,311 | 55,514 | 57,729 | 58,848 | 54,831 | 59,054 | 57,081 | 58,347 | 54,327 | 674,868 |
| %age Bulk | 27.22 | 28.46 | 27.93 | 23.93 | 23.55 | 19.64 | 17.13 | 15.97 | 24.79 | 25.61 | 24.05 | 24.50 | 23.43 |
| %age Retail | 72.78 | 71.54 | 72.81 | 76.41 | 76.44 | 80.36 | 82.87 | 84.13 | 75.21 | 74.39 | 75.95 | 75.50 | 76.57 |

Sui Northern Gas Pipelines Limited
Bulk Retail Ratio Without RLNG supplies

| | Jul-12 | Aug-12 | Sep-12 | Oct-12 | Nov-12 | Dec-12 | Jan-13 | Feb-13 | Mar-13 | Apr-13 | May-13 | Jun-13 | 2012-13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gas Available | 55,677 | 56,200 | 51,146 | 53,485 | 54,677 | 56,322 | 55,174 | 50,196 | 54,890 | 48,369 | 52,158 | 48,782 | 638,076 |
| Gas Sold - Total | 49,363 | 50,058 | 45,732 | 48,013 | 49,209 | 50,347 | 47,651 | 44,144 | 47,492 | 44,322 | 46,634 | 43,860 | 566,824 |
| UFG Volume | 6,314 | 6,142 | 5,414 | 5,471 | 5,469 | 5,976 | 7,523 | 6,052 | 7,398 | 5,047 | 5,524 | 4,923 | 71,252 |
| UFG %age | 11.34 | 10.93 | 10.59 | 10.23 | 10.00 | 10.61 | 13.64 | 12.06 | 13.48 | 10.22 | 10.59 | 10.09 | 11.17 |
| Gas Sold to Bulk | 13,557 | 13,908 | 11,041 | 11,759 | 11,595 | 10,323 | 9,270 | 7,576 | 9,758 | 10,164 | 12,764 | 12,077 | 134,388 |
| Gas Sold to Retail | 35,806 | 36,155 | 34,690 | 36,254 | 37,614 | 40,024 | 38,381 | 36,568 | 37,734 | 34,959 | 33,870 | 31,782 | 432,436 |
| Gas Available for Bulk | 13,625 | 13,975 | 11,098 | 11,838 | 11,653 | 10,375 | 9,316 | 8,016 | 9,807 | 10,416 | 12,828 | 12,138 | 135,063 |
| Gas Available for Retail | 42,052 | 42,227 | 40,048 | 41,647 | 43,024 | 45,947 | 45,858 | 42,180 | 45,083 | 38,953 | 39,329 | 36,644 | 503,013 |
| Total Gas Available | 55,677 | 56,200 | 51,146 | 53,485 | 54,677 | 56,322 | 55,174 | 50,196 | 54,890 | 48,369 | 52,158 | 48,782 | 638,076 |
| %age Bulk | 24.47 | 24.86 | 21.70 | 22.10 | 21.31 | 18.42 | 16.89 | 15.97 | 17.87 | 21.10 | 24.60 | 24.88 | 21.17 |
| %age Retail | 75.53 | 75.14 | 78.30 | 77.90 | 78.69 | 81.58 | 83.11 | 84.03 | 82.13 | 78.90 | 75.40 | 75.12 | 78.83 |

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Sui Northern Gas Pipelines Limited

Bulk Retail Ratio Without RLNG supplies

| | Jul-13 | Aug-13 | Sep-13 | Oct-13 | Nov-13 | Dec-13 | Jan-14 | Feb-14 | Mar-14 | Apr-14 | May-14 | Jun-14 | 2013-14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gas Available | 53,540 | 52,144 | 50,539 | 50,909 | 48,487 | 50,381 | 49,843 | 43,296 | 48,548 | 44,747 | 45,327 | 44,099 | 581,961 |
| Gas Sold - Total | 48,156 | 45,834 | 46,087 | 46,226 | 43,300 | 44,022 | 44,780 | 38,332 | 43,465 | 40,138 | 41,071 | 41,045 | 520,451 |
| UFG Volume | 5,385 | 6,410 | 4,452 | 4,683 | 5,187 | 6,359 | 5,063 | 4,964 | 7,084 | 4,614 | 4,257 | 3,054 | 61,510 |
| UFG %age | 10.06 | 12.27 | 8.81 | 9.20 | 10.70 | 12.62 | 10.16 | 11.46 | 14.59 | 10.31 | 9.39 | 6.92 | 10.57 |
| Gas Sold to Bulk | 15,069 | 14,125 | 14,119 | 12,130 | 8,041 | 7,182 | 6,013 | 5,841 | 5,263 | 9,739 | 12,007 | 13,646 | 127,276 |
| Gas Sold to Retail | 33,087 | 31,608 | 31,969 | 34,096 | 35,260 | 36,840 | 38,766 | 32,491 | 32,202 | 30,394 | 29,063 | 27,399 | 393,175 |
| Gas Available for Bulk | 15,145 | 14,298 | 14,190 | 12,191 | 8,141 | 7,218 | 6,044 | 5,870 | 5,309 | 9,787 | 12,068 | 13,715 | 127,916 |
| Gas Available for Retail | 38,396 | 37,846 | 36,349 | 38,718 | 40,346 | 43,163 | 43,799 | 37,426 | 39,239 | 34,960 | 33,260 | 30,384 | 454,046 |
| Total Gas Available | 53,540 | 52,144 | 50,539 | 50,909 | 48,487 | 50,381 | 49,843 | 43,296 | 48,548 | 44,747 | 45,327 | 44,099 | 581,961 |
| %age Bulk | 28.29 | 27.37 | 28.08 | 23.95 | 16.67 | 14.33 | 12.13 | 13.56 | 10.93 | 21.87 | 26.62 | 31.10 | 21.98 |
| %age Retail | 71.71 | 72.63 | 71.92 | 76.05 | 83.33 | 85.67 | 87.87 | 86.44 | 80.82 | 78.13 | 73.38 | 68.90 | 78.02 |

1235

Sui Northern Gas Pipelines Limited

Bulk Retail Ratio Without RLNG supplies

| | Jul-14 | Aug-14 | Sep-14 | Oct-14 | Nov-14 | Dec-14 | Jan-15 | Feb-15 | Mar-15 | Apr-15 | May-15 | Jun-15 | 2014-15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gas Available | 46,340 | 44,428 | 41,691 | 43,081 | 43,565 | 44,656 | 45,077 | 39,984 | 45,616 | 41,515 | 44,313 | 42,868 | 521,533 |
| Gas Sold - Total | 40,443 | 40,178 | 37,514 | 36,268 | 39,651 | 39,863 | 40,164 | 35,841 | 38,678 | 36,910 | 39,530 | 38,964 | 464,304 |
| UFG Volume | 5,897 | 4,149 | 4,077 | 4,812 | 3,914 | 4,793 | 4,913 | 4,144 | 6,937 | 5,005 | 4,783 | 3,904 | 57,229 |
| UFG %age | 12.73 | 9.34 | 9.83 | 11.71 | 8.99 | 10.73 | 10.89 | 10.31 | 15.21 | 11.94 | 10.79 | 9.11 | 10.97 |
| Gas Sold to Bulk | 13,600 | 11,919 | 9,611 | 7,570 | 9,418 | 6,518 | 6,181 | 6,889 | 9,123 | 9,473 | 13,064 | 12,884 | 116,213 |
| Gas Sold to Retail | 26,842 | 28,260 | 27,903 | 28,698 | 30,233 | 33,216 | 34,982 | 28,952 | 29,555 | 27,437 | 26,466 | 26,079 | 348,093 |
| Gas Available for Bulk | 13,669 | 11,979 | 9,680 | 7,808 | 9,465 | 6,601 | 6,252 | 6,722 | 9,369 | 9,520 | 13,129 | 13,051 | 116,835 |
| Gas Available for Retail | 32,671 | 32,449 | 32,011 | 33,472 | 34,100 | 38,055 | 38,865 | 33,262 | 36,447 | 32,394 | 31,184 | 29,817 | 404,698 |
| Total Gas Available | 46,340 | 44,428 | 41,691 | 43,081 | 43,565 | 44,656 | 45,077 | 39,984 | 45,616 | 41,915 | 44,313 | 42,868 | 521,533 |
| %age Bulk | 29.50 | 26.96 | 23.22 | 18.52 | 21.73 | 14.78 | 13.78 | 16.81 | 20.10 | 22.71 | 29.63 | 30.45 | 22.40 |
| %age Retail | 70.50 | 73.04 | 76.78 | 81.48 | 78.27 | 85.22 | 86.22 | 83.19 | 79.90 | 77.29 | 70.37 | 69.55 | 77.60 |

1236

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# Annexure V.4 - SNGPL Comments on 2nd Draft Report

Sui Northern Gas Pipelines Limited
Bulk Retail Ratio Without RLNG supplies

| | Jul-15 | Aug-15 | Sep-15 | Oct-15 | Nov-15 | Dec-15 | Jan-16 | Feb-16 | Mar-16 | Apr-16 | May-16 | Jun-16 | 2015-16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gas Available | 44,843 | 44,712 | 43,224 | 43,355 | 42,458 | 43,192 | 42,766 | 38,161 | 41,283 | 40,555 | 40,809 | 41,085 | 506,444 |
| Gas Sold - Total | 39,784 | 39,700 | 38,930 | 38,977 | 38,741 | 39,580 | 39,143 | 33,872 | 37,037 | 37,833 | 37,798 | 38,397 | 459,792 |
| UFG Volume | 5,059 | 5,012 | 4,294 | 4,378 | 3,717 | 3,612 | 3,623 | 4,289 | 4,246 | 2,722 | 3,011 | 2,689 | 46,652 |
| UFG %age | 11.28 | 11.21 | 9.93 | 10.10 | 8.76 | 8.36 | 8.47 | 11.24 | 10.29 | 6.71 | 7.38 | 6.54 | 9.21 |
| Gas Sold to Bulk | 13,986 | 12,947 | 12,201 | 11,119 | 8,851 | 7,612 | 6,963 | 5,715 | 8,344 | 11,123 | 12,741 | 13,510 | 125,113 |
| Gas Sold to Retail | 25,798 | 26,753 | 26,729 | 27,858 | 29,889 | 31,968 | 32,180 | 28,157 | 28,693 | 26,710 | 25,056 | 24,886 | 334,679 |
| Gas Available for Bulk | 14,056 | 13,012 | 12,263 | 11,175 | 8,896 | 7,650 | 6,998 | 5,744 | 8,386 | 11,179 | 12,806 | 13,578 | 125,742 |
| Gas Available for Retail | 30,787 | 31,700 | 30,962 | 32,180 | 33,562 | 35,542 | 35,768 | 32,417 | 32,898 | 29,376 | 28,004 | 27,507 | 380,702 |
| Total Gas Available | 44,843 | 44,712 | 43,224 | 43,355 | 42,458 | 43,192 | 42,766 | 38,161 | 41,283 | 40,555 | 40,809 | 41,085 | 506,444 |
| %age Bulk | 31.35 | 29.10 | 28.37 | 25.78 | 20.95 | 17.71 | 16.36 | 15.05 | 20.31 | 27.57 | 31.38 | 33.05 | 24.83 |
| %age Retail | 68.65 | 70.90 | 71.63 | 74.22 | 79.05 | 82.29 | 83.64 | 84.95 | 79.69 | 72.43 | 68.62 | 66.95 | 75.17 |

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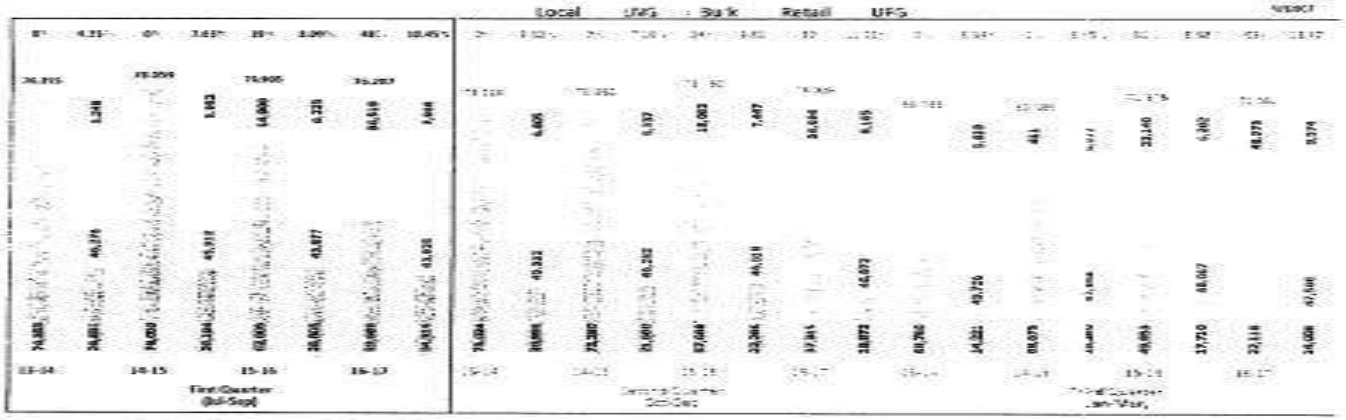
# Annexure V.5 - SSGC Comments on 2nd Draft Report

**Sui Southern Gas Company Limited**

indigenous gas are being diverted to northern areas under swap arrangements. The Authority allows the additional swapping volumes transmitted to SNGPL to fulfil BTU difference as Deemed Sales. However, this higher BTU gas reduces the gas consumption of Customers since it is more efficient and as a consequence, line pressures have been improved at pipeline tail ends. However, it has been noted that as a consequence of this high pressure gas, leakages in the Karachi area have also increased. There are many other factors as well which relate to improper LNG measurement because of different specific gravity, temperature and other properties that are not comparable with indigenous gas, due of different parameters. The graph below reflects the impact on Karachi's UFG since LNG was inducted into the system:

Breakup of Purchases (Local & LNG) with Breakup of Sales & UFG Volume of Karachi
Quartewise FY 2013-14 to FY 2016-17 (MMCF)




It can easily be observed that there is direct correlation between imported gas share and UFG %age. LNG was initially supplied in Mar 2015 (FY 2014-15 3Q) as 1% (411 MMCF) of Supplies with 200 MMCFD when UFG% was around 8.65% (5,977 MMCF) that remain same in FY 2015-16 with LNG supplies 400 MMCFD because this volume directly transferred to Bulk Customers. But UFG %age has been increased to 13.47% (9,574 MMCF) in FY 2016-17 (3Q) with LNG supplies 650 MMCFD comprising 80% of Karachi total gas requirement utilizing by all bulk and retail sectors, its real impact need to be worked out.

Page 2 of 11

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# Annexure V.5- SSGC Comments on 2nd Draft Report

**Sui Southern Gas Company Limited**

Therefore, as proposed by the Consultant, the Company also recommends that instead of Gas Available for Sales, Gas Received and Gas Delivered are more appropriate terms in existing circumstances.

**Proposed Local Conditions Factor**

The Consultants have referred to the standards in place for gas companies operating in more developed infrastructural climates for determining the Technical Losses amount for SSGC/ SNGPL which is erroneous since international gas companies operate on the basis of commercial viability, whereas for both the Sui companies, such operating conditions are not available since they operate on the basis of the socio-political and economic objectives of the State and the directives of the regulator rather than commercial viability. While the Consultant's note the peculiar circumstances applicable to these two companies, they have nonetheless recommended capped allowances up to 4.05% based on local conditions in addition to Technical Allowances @ 5%, reproduced as below:

**UFG Allowance = 5% Fixed for Technical Losses + 4.05% for Local Conditions x β**

**where Beta (β) is based on KMIs**

The basis of 4.05% against Local Conditions is reproduced as below:

| | 2011-12 | 2012-13 | 2013-14 | 2014-15 | Average |
|---|---|---|---|---|---|
| SSGC | 3.50% | 3.70% | 3.84% | 3.67% | 3.68% |
| SNGPL | 2.49% | 2.74% | 2.65% | 2.60% | 2.62% |
| **Estimated ΔB2R %** | **2.99%** | **3.22%** | **3.25%** | **3.13%** | **3.15%** |
| SSGC | 0.32% | 0.47% | 0.54% | 0.54% | 0.47% |
| SNGPL | 0.50% | 1.27% | 1.86% | 1.93% | 1.34% |
| **Law & Order Adjustments** | **0.41%** | **0.87%** | **1.20%** | **1.23%** | **0.90%** |
| | **3.40%** | **4.09%** | **4.44%** | **4.37%** | **4.05%** |

**Proposed ΔB2R Allowance**

Even though the Consultants have recognized multiple factors contributing in rising UFG because of shift in bulk to retail sales yet by proposing a cap on the local conditions allowance of 4.05%, they have negated the rationale behind introduction of a local condition factor. The percentage of local conditions allowances to be factored in will inevitably depend on local conditions, meaning thereby that regardless of the quantum of such percentage, it will have to be factored in at actual. The capping of UFG allowance for local conditions would again result in making the UFG formula redundant. The formula needs to remain flexible to accommodate ground realities/changes such as the company's supply to retail sector etc. Therefore the UFG benchmark should be adjusted relating to challenges accordingly and in consultation with the Sui companies. If any utility company is serving more in retail sector comparatively, UFG benchmark should be adjusted with related challenges accordingly.



**Sui Southern Gas Company Limited**

The company had highlighted ΔB2R% issue in detail with examples in response to the First Draft Report. It was highlighted that the consultant used incorrect basis to work out real ΔB2R impact. The Retail UFG% in relevant year under review should be utilized instead of using a fixed Retail UFG% (13.62%) from a Base Year (FY 2003-04) to work out actual Bulk to Retail impact, as shown below:

| | 2011-12 | 2012-13 | 2013-14 | 2014-15 | Average |
|---|---|---|---|---|---|
| Gas Purchases MMCF | 405,737 | 418,396 | 422,735 | 433,798 | 420,167 |
| Retail UFG % (Base Year) | 13.62% | 13.62% | 13.62% | 13.62% | |
| ΔB2R MMCF | 14,208 | 15,479 | 16,249 | 15,927 | 15,466 |
| **Proposed ΔB2R %** | **3.50%** | **3.70%** | **3.84%** | **3.67%** | **3.68%** |
| Retail UFG % (Relevant Year) | 13.96% | 12.43% | 19.25% | 18.74% | |
| ΔB2R MMCF | 14,320 | 13,874 | 22,886 | 22,205 | 18,321 |
| **Actual ΔB2R %** | **3.53%** | **3.32%** | **5.41%** | **5.12%** | **4.36%** |

As worked out above, the actual impact of shift in bulk retail cannot be fixed on a particular year. Therefore, it is proposed that actual UFG %age of said year under review without fixing/ capping on base year and any average for actual allowance be used.

**Proposed Law & Order Allowance**

It has been suggested by the Consultant that the average of law and order claimed volumes have been considered for determining the remaining variable UFG allowances. While the Company acknowledges the Consultant's view about 100% allowance against law and order claims. However, it is pointed out that these claimed volumes may not reflect true picture because most of the claimed volumes during previous years by the company pertain to a few areas of Balochistan only, whereas, the Company has actually been experiencing the same situation in overall Balochistan and partially in the province of Sindh. As a result, the less than 1% allowance proposed under this head by the Consultant has to be reconsidered and this factor has to be taken at actual claimed volumes of the Company.

Claims related to Law and Order affected areas cannot be linked with any targets/ KMIs, since the law and order situation prevalent at a time is clearly beyond the control of the Company as a consequence of which it is unable to perform their duties like meter reading, meter change activity, regular maintenance etc. These claims should therefore be reviewed separately instead of capping on basis of average of previous year claims as these factors have also been recognized by the ECC and the Federal Cabinet.



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# Annexure V.5- SSGC Comments on 2nd Draft Report

**Sui Southern Gas Company Limited**

**Separate Treatment for Balochistan**

The actual reason of rising UFG trend in Balochistan is related to customer's inability to pay huge bills, especially in Winter Seasons. Balochistan has historically been a neglected region in terms of economic development, business activities, education, employment and health comparatively in previous decades. Most of the poor people are living in this region and their per capita income is far below other provinces. As a consequence, meter tampering has consistently been witnessed in these areas, especially in winter conditions. The difference caused may even be to avoid bills under 2nd and 3rd Slabs. This issue was also highlighted during the OGRA Awareness Session for UFG Benchmark Study held in Quetta on 22-Mar-2017.

The retail UFG of Balochistan province is over 60% (more than 20 BCF per annum) (in some areas as high as 90%) eroding company's bottom-line by Rs. 6 Billion per annum (assuming recommended maximum benchmark 9.05%) against less than Rs. 1 Billion Return on Assets per annum. It must be noted that UFG is upto 90% in some areas of Balochistan. This would amount to imposing a penalty on the Company for a factor beyond its control.

The Authority already allows around 12 BCF losses against law and order claims of Karak in KPK given the prevalent circumstances. It is therefore requested that the same recognition be allowed in the case of Balochistan and around 20 BCF losses in Balochistan should also be reviewed by considering related facts. It would be unfair not to factor in this peculiar circumstance uniquely.

The Company is currently working on a special tariff proposal with different billing mechanism i.e;. fixed billing per connection or enlargement in first slab upto 500 CMs per month that will be submitted to Ministry for consideration for such affected areas. The Company would appreciate the Authority's to support in its implementation for benefit of people of Balochsitan.

Till such time the said proposals have been finalized, UFG Disallowance of Balochistan may not exceed their determined provincial Returns on assets of the province, or, in the alternative, a separate UFG benchmark should be allowed for Balochistan.

**Theft by Non-Consumers/ Customers**

Contrary to other countries, Pakistan faces high pilferage of natural gas by both consumers and non-consumers. The primary contributing factors for this have been the ongoing moratorium on new gas connections, increase in gas price, shortage of gas supplies in some regions, continuous growth of the gas distribution network and increasing demand in absence of electricity. As can be seen, none of these primary contributing factors are the responsibility or any fault on part of the Company. Gas Theft is no longer specific to any area/ locality and rather it is spread across the distribution network. The utility companies are facing these challenges in local circumstances.

Page 5 of 11

**Sui Southern Gas Company Limited**

The Company appreciates that the Consultant's have realized the adverse impact on UFG because of the moratorium on new gas connection since FY 2011. Karachi City is mostly affected in this aspect since:

1. Karachi is the major business Hub for commercial activities facing a constant influx of people from elsewhere in the country. This has led to increased commercial activities on domestic connections given the moratorium.
2. Shift on industries to Karachi due to gas shortages in other regions of Country.
3. Keeping in view of ongoing economic growth indicated by the current strong stock exchange performance, ongoing Government incentives for some sectors, improved Law and order situation comparatively during last 2-3 years, less electricity load shedding issues in Karachi, it is expected that new industries may likely be operational without legal connection.

Amongst the many factors peculiarly contributing to an increase in the UFG of Karachi, have been witnessed a drastic increase from 17 BCF to 35 BCF during last six years mainly because of Gas Theft by Non-Customers due to Government Moratorium on new connections of industrial, commercial and domestic housing schemes.

Moratorium on new connections stimulate Non-Customer for gas theft to fulfil their necessities. The Consultant should propose reasonable allowances to cater to this inevitable challenge for Companies until Government Moratorium on new connections is withdrawn.

**Proposed Beta (β)**

The proposed Beta (β) does not reflect ground difficulties in carrying out operational activities, network complexity, and encroachment and ageing, delay in road cutting permissions, shortage of resources and skilled labour, lengthy Procurement timeline (PPRA Requirement)/ procedures/ approvals and role of other agencies, faced by the Company.

While the Consultant has highlighted other factors such as gas theft and minimum billing issues without proposing any reasonable allowances. While major factors such as shift in Bulk to Retail Gas Sales and poor law & order situation have been recognized, instead of suggesting allowances for the same, these factors have been discounted in the form of proposed Beta.

It is suggested that the companies should be incentivized against KMI performance through Beta (β) ranges between 0.5 and 1.5. If the consolidated performance of Company against KMIs works out 0.6, then effective β should be floor rate 0.5 + KMI performance 0.6 = 1.1, so β above 1 that is 10%, incentive to be allowed against performance.

**KMI: Segmentation**

We appreciate that the Consultant has included two additional KMIs related to Segmentation as follows:

1. 25% of Un-Metered TBSs Metered along with EVCs/ Modems
2. 20% of Un Segmented TBSs segmented/ reconciled

Page 6 of 11

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# Annexure V.5- SSGC Comments on 2nd Draft Report

**Sui Southern Gas Company Limited**

The primary purpose of installing TBS is to reduce the pipeline operating pressures in pipelines so that supplies are made to customers as per system requirement. Therefore, there is persistently that most of the TBSs located in remote areas have no provision of a measurement facility.

However, it is our opinion that no UFG control strategy will be successful without more network visibility that will help to identifying high losses areas and appropriate measures will be taken with different strategies including load-shedding in high UFG areas to control the menace. SSGC is working on possible segments within major Cities.

This will require elaborate work of segregating the distribution network into smaller segments by installing bulk meters at Town Border Stations (TBS) or sub segments within TBS. It will help in measuring and monitoring gas sales and purchase within a segment for the purpose of UFG calculation.

As proposed earlier, the word 'segment' be used instead of TBS. It should be the Company's discretion whether any segment is based on SMS needs further network visibility. Gas Volume is suggested to be reconciled under one segment that covers 100% customers and gas should ideally be supplied through one source with following exceptions:

a) Large Segments will be developed with multiple TBSs where network is interconnected in big Cities i.e; Karachi, Hyderabad, Nawabshah, Sukkur and Quetta. However, every TBS will be metered.

b) Cluster of small towns TBS and villages PRS should be treated as one segment under SMSs to avoid unnecessary cost on modification, metering, and Maintenance and security arrangements of small TBS and PRS. Gas Purchase and Sales Figures will be reconciled on SMS Basis.

It is expected that whole franchise area may be divided into around 500 segments with above exceptions and can be reconciled after meter installation/ customers tagging. It is proposed to update this KMI as follow:

**Number of Segments reconciled per 100 Segments annually (Target FY 2020-21).**

It is also suggested that if gas losses are below technical benchmark standards i.e. 5% OR reasons of UFG are already known, sub-segments are not advisable in order to avoid unnecessary cost on Meter installation and maintenance.

**KMI: Meter Replacement**

Some advanced Auto Adjusting Turbine Meters at large industrial customers have auto correcting features that are not replaced after every 3 years, unless they develop faults. Similarly, Field Meter proving certifies Meters within prescribed tolerance limits and same meters are reinstalled as Meter Replaced. It is proposed that these operational and technical issues may be treated as Scheduled Meter Replacement especially for Industrial and High Pressure Commercial Customers.

Page 7 of 11

**Sui Southern Gas Company Limited**

**Amendments**

It has been observed that some figures reported by Consultant are not aligned with SSGC Record that may be corrected in final report as enclosed in Annexure-A.

**Conclusion**

The company propose to realign variable part of UFG Benchmark that should reflect realistic picture based on actual evidences without capping on previous averages of claimed volumes. Keeping in view these observations, the proposed UFG Benchmark is given as below:

**UFG Allowed = Technical Losses 5% + Provincial Factor + (Δ Bulk to Retail Ratio x β)**

Provincial Factor represent uncontrollable factors like Law and Order Situation and Theft by Non-Customers in a particular Province and realistic allowance may be allowed, such as 2.6% for Sindh & Punjab (as computed below) and some additional 1% for KPK & Balochistan keeping in view of ground realities.

BCF

| | 2011-12 | 2012-13 | 2013-14 | 2014-15 | Average |
|---|---|---|---|---|---|
| Gas Available for Sales | 1,081 | 1,056 | 1,005 | 955 | 1,024 |
| Toal Companies Claims | 18 | 27 | 29 | 32 | 26 |
| **Average Relief %** | **1.7%** | **2.5%** | **2.9%** | **3.3%** | **2.6%** |

Both Sui Companies Claimed Volumes in BCF against L&O & Theft by non-Customers

Δ Bulk to Retail Ratio should be computed with actual UFG in Retail Sector for the year under review in order to compensate required local challenging factors.

Beta (β) is based on KMIs to be agreed between Companies and Regulator with floor rate i.e. 0.5

The UFG Benchmark, UFG Reduction Plan along with KMI weightages should be finalized in consultation with Companies and to be reviewed periodically in light of developing local conditions to adjust accordingly.

During determination of RERR 2010-11 (Point 8.1.7) and ERR FY 2011-12 (Point 9.2.10), provisional decisions were given by Authority and final decision were deferred till final findings and recommendations of independent study. It was also mentioned in Lahore High Court Judgement on OGRA Petition 1068 of 2010 Point # 6: Secretary Petroleum in his statement made before this Court on 12.1.2011 stated about UFG impact assessment study that will be utilized to determine FRR FY 2009-10 vide dated 15-Oct-2010.

Keeping in view of above facts, the Authority may extend earlier (provisional) UFG Allowances in line with proposed UFG Control framework for appropriate relief for last six years since FY 2010-11 instead of FY 2012-13 as proposed by Consultant. Since Beta concept cannot be applied on closed years in absence of KMIs, it is proposed that entire Δ Bulk to Retail impact should be allowed, since the consultant has certified these volumes.

Page 8 of 11

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# Annexure V.5- SSGC Comments on 2nd Draft Report

**Sui Southern Gas Company Limited**

Moreover, this Benchmark should be applicable till final results of next study supposed to be carried out after every five years.

The authority should ensure balance between Customer protection and Company's survival, both are inter-dependent, the customer will suffer the most in case of company's failure. At present, penalty amount is twice than the average return of SSGC.

It should be realized that survival of these national assets are lifeline of the Country's economy. It is proposed that UFG disallowance should be capped upto actual province-wise returns provided to Companies, otherwise the overall gas industry will be collapsed and the economy will be affected.

**Alternative Mechanism in Developing Scenario**

The customer price has mainly three major components:

**Customer Price = Adjusted Cost of Gas + Return of Assets + Allowable Expenses**

At present, UFG Disallowance are adjusted from Cost of Gas. We believe that this reward and penalty mechanism cannot continue in future given the depleting indigenous gas supplies and rising WACOG rate.

Moreover, Ring-fencing of imported volume may also not continue since all sectors are demanding access to imported gas. Overall Gas Industry will be collapsed under existing mechanism if UFG penalty is worked out on actual WACOG with imported supplies.

It is proposed that a different reward and penalty mechanism be imposed which caters to upcoming challenges. One such proposed mechanism is given below:

**Customer Price = Cost of Gas + Adjusted Return of Assets + Allowable Expenses**

Using this formula, UFG Disallowance would be disassociated from WACOG and adjusted with respective province wise return on Average Operating Assets in Distribution System as given below:

**Adjusted Returns on Assets = (Total Losses - Additional Losses) * β**

Where Total Losses equals to Total Provincial Return on Avg. Distribution Assets

Additional Losses in excess of Technical Losses as per International practices i.e.; 5%

Beta (β) is based on KMIs to be agreed between Companies and Regulator

However, Return on Transmission System should be computed separately keeping in view required investment in Transmission Business under developing scenario.



**Sui Southern Gas Company Limited**

**Distribution Business: Adjusted Returns on Assets**

| Description | SSGC | | | SNGPL | | |
|---|---|---|---|---|---|---|
| | Sindh | Balochistan | Total | Punjab | KPK | Total |
| Avg. Returns on Assets (Rs. M) | 6,000 | 1,000 | 7,000 | 11,000 | 1,500 | 12,500 |
| Unadjusted Actual UFG %age | 12% | 55% | | 12% | 24% | |
| Allowed Tech Losses @ 5% (Rs. M) (6000 x 5% / 12%) | 2,500 | 91 | 2,591 | 4,583 | 313 | 4,896 |
| Performance Factor (β) | 60% | 40% | | 70% | 50% | |
| **Adj. Returns on Assets (Rs. M)** | **1,500** | **36** | **1,536** | **3,208** | **156** | **3,365** |

All above figures of Avg. Return on Distribution Assets are estimated for computation.

It will provide auto Cap on Disallowance upto respective Returns, company's bearing capacity. There will no need to evaluate different claims and Bulk Retail Ratios. The proposed performance factor (β) will stimulate Companies to improve their operations. It will continue to support Government Socio economic agenda, sector priorities, and moratorium orders along with network expansion program because of same Asset based Returns.

The above mechanism will not only provide some relief to sinking gas utility companies but also support the Government's long term plan for energy reforms in the Country.

We remain available to assist in case any further clarifications are required from us in this regard.

Regards

Shoaib Ahmed
GM (Regulatory Affairs)



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# Annexure V.5- SSGC Comments on 2nd Draft Report

**Sui Southern Gas Company Limited**

**Annexure - A**

**Amendments**

It has been observed that some figures reported by Consultant are not aligned with SSGC Record that may be corrected in final report.

**Table L-2: Rehabilitation of Main & Service (KMs) on Pg # 42**

| FY | Reported | Actual |
|---|---|---|
| 2010-11 | 219 | 483 |
| 2011-12 | 119 | 176 |
| 2012-13 | 162 | 219 |
| 2013-14 | 106 | 196 |
| 2014-15 | 95 | 170 |

**Table L-7: Number of Third Party Damages on Pg # 44**

| FY | Reported | Actual |
|---|---|---|
| 2015-16 | 20,697 | 2,697 |

**Table ME -1 Measurement Errors on Pg 47**

Assumption of all 33% Nil Minimum Customers fall under Sticky/ PUG Category and presenting it as Unmetered, is not true and may be misleading information for many stakeholders. The company assures that all customer connections are 100% metered that should be reflected in Table and any views and analysis about Nil Minimum category can be qualified in comments as Consultant view only.

**Annexure D –Key Persons Interviewed on Pg 93**

Some corrections in Name Designation and Department of personnel.

| No. | Name | Designation | Department |
|---|---|---|---|
| 4 | Muhammad Kamran | DGM | Research and Development |
| 6 | Abdul Wadood | Chief Engineer | UFG |
| 7 | Nisar Ahmed Shaikh | Acting SGM | Distribution - North |
| 8 | Nadeem Qayoom | DGM | Distribution - South (Central) |
| 11 | Shehrayar Kazmi | GM | Billing |
| 12 | Hanif Ghazi | DCM | Billing |
| 13 | Nawab Ali Shah | Manager | Customer Relationship |
| 14 | Kashif Qadeer | DGM | Customer Relationship |

**Annexure Q.1 SSGC Bulk Customers on Pg # 113**

Two PG connections of M/s. Lucky Cement are shown Under Bulk Customers erroneously.

Page 11 of 11

1192

SSGC Sui Southern Gas Company Limited

Ref : RA/53
Dated : 20 Mar 2017

**Mr. Muhammad Asif**
Deputy Executive Director (Gas)
*Oil & Gas Regulatory Authority*
Plot # 54, ZTE Plaza, Fazal-e-Haq Road
Near PIA Booking Office, Blue Area
Islamabad.

**Subject:** **Bulk Retail Ratio**

**Ref:** **OGRA -9(372)/2015 dated: 14 March 2017**

Dear Sir:

This is with reference to your above letter requiring the five years month wise details of bulk-retail sales and bulk-retail ratio.

Enclosed please find attached herewith as Annexure-A & B the required details.

Hope that the above data would fulfill your requirement.

**Yours faithfully,**

**Shoaib Ahmed**
**General Manager (RA)**
**(For Managing Director)**

OIL & GAS REGULATORY AUTHORITY
21 MAR 2017
Diary: 3888
ISLAMABAD

SSGC House, Sir Shah Suleman Road, Gulshan-e-Iqbal, P.O. Box 17589, Karachi-75300
PABX Telephone : 99021000, Fax : 92-21-99231550, Website : www.ssgc.com.pk

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# Annexure V.5- SSGC Comments on 2nd Draft Report

"Annexure-A"

1193

**Sui Southern Gas Company Limited**
**Monthwise Bulk to Retail Adjustment (BCF)**

| FY | Month | Purchases | Sales | | UFG | Bulk % | Total UFG % |
|---|---|---|---|---|---|---|---|
| | | | Bulk | Retail | | | |
| | | BCF | BCF | BCF | BCF | | |
| FY 2010-11 | Jul | 35.4 | 14.4 | 17.2 | 3.8 | 40.7% | 10.7% |
| | Aug | 34.9 | 14.1 | 17.9 | 2.9 | 40.4% | 8.3% |
| | Sep | 32.5 | 12.7 | 17.4 | 2.4 | 39.1% | 7.4% |
| | Oct | 32.7 | 10.8 | 18.8 | 3.1 | 33.0% | 9.5% |
| | Nov | 32.3 | 9.7 | 18.8 | 3.8 | 30.0% | 11.8% |
| | Dec | 34.9 | 7.7 | 22.1 | 5.1 | 22.1% | 14.6% |
| | Jan | 33.8 | 5.6 | 22.9 | 5.3 | 16.6% | 15.7% |
| | Feb | 30.4 | 6.5 | 21.3 | 2.6 | 21.4% | 8.6% |
| | Mar | 34.2 | 9.3 | 22.9 | 2.0 | 27.2% | 5.8% |
| | Apr | 30.9 | 8.3 | 19.5 | 3.1 | 26.9% | 10.0% |
| | May | 33.1 | 10.4 | 20.6 | 2.1 | 31.4% | 6.3% |
| | Jun | 31.1 | 9.8 | 20.1 | 1.2 | 31.5% | 3.9% |
| | Total | 396.2 | 119.3 | 239.5 | 37.4 | 30.1% | 9.4% |

| FY | Month | Purchases | Sales | | UFG | Bulk % | Total UFG % |
|---|---|---|---|---|---|---|---|
| | | | Bulk | Retail | | | |
| | | BCF | BCF | BCF | BCF | | |
| FY 2011-12 | Jul | 32.4 | 9.8 | 18.5 | 4.1 | 30.2% | 12.7% |
| | Aug | 33.7 | 10.7 | 21.2 | 1.8 | 31.8% | 5.3% |
| | Sep | 32.9 | 10.9 | 19.3 | 2.7 | 33.1% | 8.2% |
| | Oct | 33.7 | 9.6 | 18.1 | 6.0 | 28.5% | 17.8% |
| | Nov | 32.9 | 9.0 | 19.7 | 4.2 | 27.4% | 12.8% |
| | Dec | 34.0 | 6.3 | 21.3 | 6.4 | 18.5% | 18.8% |
| | Jan | 33.6 | 5.1 | 23.8 | 4.7 | 15.2% | 14.0% |
| | Feb | 33.0 | 4.8 | 23.7 | 4.5 | 14.5% | 13.6% |
| | Mar | 34.7 | 8.5 | 23.3 | 2.9 | 24.5% | 8.4% |
| | Apr | 34.0 | 10.3 | 22.3 | 1.4 | 30.3% | 4.1% |
| | May | 36.3 | 11.6 | 22.7 | 2.0 | 32.0% | 5.5% |
| | Jun | 34.6 | 11.1 | 22.5 | 1.0 | 32.1% | 2.9% |
| | Total | 405.8 | 107.7 | 256.4 | 41.7 | 26.5% | 10.3% |

| FY | Month | Purchases | Sales | | UFG | Bulk % | Total UFG % |
|---|---|---|---|---|---|---|---|
| | | | Bulk | Retail | | | |
| | | BCF | BCF | BCF | BCF | | |
| FY 2012-13 | Jul | 35.3 | 10.7 | 21.4 | 3.2 | 30.3% | 9.1% |
| | Aug | 34.5 | 10.7 | 20.6 | 3.2 | 31.0% | 9.3% |
| | Sep | 33.1 | 9.6 | 20.0 | 3.5 | 29.0% | 10.6% |
| | Oct | 34.9 | 9.7 | 20.8 | 4.4 | 27.8% | 12.6% |
| | Nov | 33.9 | 8.2 | 21.2 | 4.5 | 24.2% | 13.3% |
| | Dec | 36.4 | 7.3 | 22.4 | 6.7 | 20.1% | 18.4% |
| | Jan | 37.0 | 5.5 | 27.8 | 3.7 | 14.9% | 10.0% |
| | Feb | 34.1 | 6.4 | 25.7 | 2.0 | 18.8% | 5.9% |
| | Mar | 37.0 | 8.7 | 26.8 | 1.5 | 23.5% | 4.1% |
| | Apr | 33.7 | 8.4 | 24.3 | 1.0 | 24.9% | 3.0% |
| | May | 34.2 | 7.9 | 26.1 | 0.2 | 23.1% | 0.6% |
| | Jun | 34.2 | 11.2 | 21.6 | 1.4 | 32.7% | 4.1% |
| | Total | 418.3 | 104.3 | 278.7 | 35.3 | 24.9% | 8.4% |

"Annexure-A"

1194

**Sui Southern Gas Company Limited**
**Monthwise Bulk to Retail Adjustment (BCF)**

| FY | Month | Purchases | Sales | | UFG | Bulk % | Total UFG % |
|---|---|---|---|---|---|---|---|
| | | | Bulk | Retail | | | |
| | | BCF | BCF | BCF | BCF | | |
| FY 2013-14 | Jul | 35.4 | 10.5 | 21.6 | 3.3 | 29.7% | 9.3% |
| | Aug | 35.3 | 11.4 | 21.1 | 2.8 | 32.3% | 7.9% |
| | Sep | 32.8 | 8.7 | 21.2 | 2.9 | 26.5% | 8.8% |
| | Oct | 34.1 | 9.0 | 21.2 | 3.9 | 26.4% | 11.4% |
| | Nov | 35.0 | 8.4 | 21.4 | 5.2 | 24.0% | 14.9% |
| | Dec | 36.4 | 6.8 | 20.5 | 9.1 | 18.7% | 25.0% |
| | Jan | 36.1 | 4.0 | 25.4 | 6.7 | 11.1% | 18.6% |
| | Feb | 32.2 | 4.2 | 23.2 | 4.8 | 13.0% | 14.9% |
| | Mar | 37.0 | 8.1 | 23.2 | 5.7 | 21.9% | 15.4% |
| | Apr | 35.6 | 9.1 | 23.0 | 3.5 | 25.6% | 9.8% |
| | May | 37.1 | 11.0 | 21.6 | 4.5 | 29.6% | 12.1% |
| | Jun | 35.8 | 10.6 | 19.0 | 6.2 | 29.6% | 17.3% |
| | Total | 422.8 | 101.8 | 262.4 | 58.6 | 24.1% | 13.9% |

| FY | Month | Purchases | Sales | | UFG | Bulk % | Total UFG % |
|---|---|---|---|---|---|---|---|
| | | | Bulk | Retail | | | |
| | | BCF | BCF | BCF | BCF | | |
| FY 2014-15 | Jul | 36.5 | 10.8 | 20.6 | 5.1 | 29.6% | 14.0% |
| | Aug | 36.3 | 10.5 | 22.7 | 3.1 | 28.9% | 8.5% |
| | Sep | 34.7 | 9.4 | 20.9 | 4.4 | 27.1% | 12.7% |
| | Oct | 35.8 | 9.9 | 21.8 | 4.1 | 27.7% | 11.5% |
| | Nov | 34.7 | 8.0 | 21.8 | 4.9 | 23.1% | 14.1% |
| | Dec | 36.7 | 6.5 | 22.6 | 7.6 | 17.7% | 20.7% |
| | Jan | 37.1 | 5.7 | 24.5 | 6.9 | 15.4% | 18.6% |
| | Feb | 33.2 | 5.9 | 22.7 | 4.6 | 17.8% | 13.9% |
| | Mar | 36.1 | 7.0 | 22.8 | 6.3 | 19.4% | 17.5% |
| | Apr | 35.6 | 9.5 | 22.1 | 4.0 | 26.7% | 11.2% |
| | May | 39.3 | 13.0 | 21.3 | 5.0 | 33.1% | 12.7% |
| | Jun | 37.9 | 13.7 | 21.1 | 3.1 | 36.1% | 8.2% |
| | Total | 433.9 | 109.9 | 264.9 | 59.1 | 25.3% | 13.6% |

| FY | Month | Purchases | Sales | | UFG | Bulk % | Total UFG % |
|---|---|---|---|---|---|---|---|
| | | | Bulk | Retail | | | |
| | | BCF | BCF | BCF | BCF | | |
| FY 2015-16 | Jul | 40.0 | 15.7 | 19.9 | 4.4 | 39.3% | 11.0% |
| | Aug | 41.0 | 15.5 | 20.9 | 4.6 | 37.8% | 11.2% |
| | Sep | 38.6 | 14.3 | 19.5 | 4.8 | 37.0% | 12.4% |
| | Oct | 41.3 | 15.5 | 20.7 | 5.1 | 37.5% | 12.3% |
| | Nov | 39.8 | 12.1 | 21.1 | 6.6 | 30.4% | 16.6% |
| | Dec | 40.6 | 10.5 | 22.3 | 7.8 | 25.9% | 19.2% |
| | Jan | 40.2 | 9.7 | 23.1 | 7.4 | 24.1% | 18.4% |
| | Feb | 35.9 | 7.7 | 23.0 | 5.2 | 21.4% | 14.5% |
| | Mar | 38.7 | 10.9 | 22.5 | 5.3 | 28.2% | 13.7% |
| | Apr | 37.5 | 11.8 | 21.5 | 4.2 | 31.5% | 11.2% |
| | May | 38.3 | 13.0 | 21.0 | 4.3 | 33.9% | 11.2% |
| | Jun | 36.3 | 11.6 | 19.9 | 4.8 | 32.0% | 13.2% |
| | Total | 468.2 | 148.3 | 255.4 | 64.5 | 31.7% | 13.8% |

Swapping shown as Bulk Sales in above analysis

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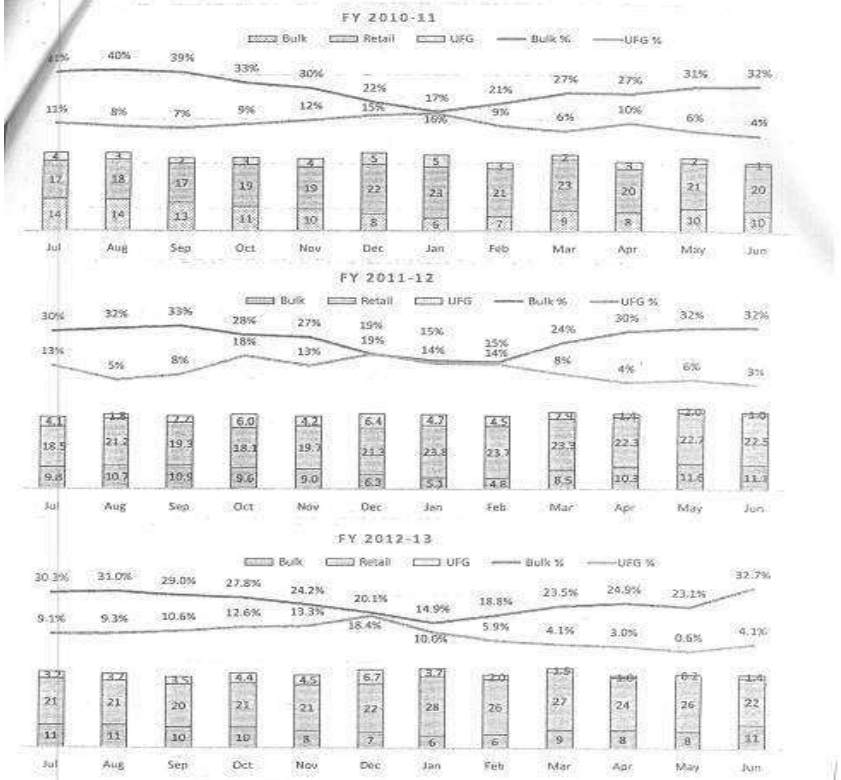
# Annexure V.5- SSGC Comments on 2nd Draft Report

Annexure-B'

1195

**Sui Southern Gas Company Limited**

**Monthwise Bulk & Retail Sales Comparison with UFG (BCF)**

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# Annexure V.6 - Government of Pakistan Finance Division

Government of Pakistan
Finance Division
(Regulations Wing)

No.F.3(24)R.10/04/1/2/05 Islamabad, the 16 June, 2005.

**Office Memorandum**

Subject: TERMS ADMISSIBLE TO CIVIL SERVANTS PROCEEDING ABROAD TO PARTICIPATE IN SEMINARS ETC.

The undersigned is directed to refer to Finance Division's O.M. No.3(24)R.10/1987, dated 18.10.1987 on the above subject. The matter has further been reviewed and it has been decided that only in cases of visits abroad, where host government/agency does not provide adequate facilities on account of boarding/lodging or cash payment GOP will bear the difference as under :

| Facility Offered | Government Subsidy |
|---|---|
| (1) Board plus lodging. | (1) 30% of the normal rate of daily allowance prescribed for the station concerned. |
| (2) Board plus lodging & cash payment. | (2) Nothing if cash payment is equal to 30% of normal rate of daily allowance or more. If cash payment offered is less than 30% of daily allowance, the difference between 30% and such cash payment |
| (3) If only Furnished accommodation is provided. | (3) 50% of the normal rate of daily allowance. |
| (4) Cash payment plus lodging but no board | (4) 50% of the normal rate of daily allowance less cash payment offered. |
| (5) Cash payment plus board but no lodging | (5) 80% of daily allowance less cash payment offered. |
| (6) No board, or lodging or cash payment. | (6) Full daily allowance (as at present). |
| (7) Cash payment but no board or lodging | (7) Full daily allowance less cash payment offered. |
| (8) Free transport (normally to be met out of cash payment) with or without any other facility. | (8) 10% to be deducted from the admissible amount (as above) of daily allowance. |

2. As a matter of policy Finance Division would not allow difference in air travel cost and 15% incidental charges whatsoever in such cases.

3. All previous instructions of Finance Division on the subject stand modified/amended to the extent of this O.M.

( M. Sikandar Iqbal )
Deputy Secretary (R.IV)

All Ministries / Divisions etc.

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# Annexure V.7 - World Bank Group Comments on 2nd Draft Report

1026

Chairperson

From: Richard Spencer <rspencer@worldbank.org>
Sent: Wednesday, February 22, 2017 11:14 AM
To: Uzma Adil Khan (chairperson@ogra.org.pk)
Cc: Noorul Haque; Imran.ghaznavi@ogra.org.pk; Shahzad Iqbal; Shahzad Iqbal; Anjum Ahmad; Defne Gencer; Mike Madden (mike@mjmenergy.com); raulegarcia@rg-consultores.com.ar; 'Khalid Rahman'; kazimsaeed@gmail.com
Subject: World Bank Comments on Second Draft of UFG Study
Attachments: image001.png; WB Comments on KPMG UFG Review February 22, 2017.docx; image001.png; WB Comments on KPMG UFG Review February 22, 2017.docx

Dear Madam Chairperson:

Please find attached World Bank comments on the KPMG UFG Study which I hope you will find of use. We will be happy to discuss them with your staff if that would be helpful; we are also available to attend one of the public consultations as well.

Kind regards

Richard

In Islamabad

Richard Spencer
Lead Energy Specialist

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WORLD BANK GROUP
Energy & Extractives

1029

## DISCUSSION PAPER ON THE KPMG UFG REPORT FOR OGRA

### 1.1 Introduction

The purpose of this paper is to provide a brief high-level summary of comments on the UFG Report for OGRA. The main body of comments on the UFG Report can be found in APPENDIX I.

### 2 Overview of the UFG Report

### 2.1 Comments on body of UFG Report

The UFG Report is robust piece of work gathering information, and analyzing the data in relation to the challenging problem of UFG in Pakistan. It sets out the basic issues clearly and correctly identifying the main sources of UFG in Pakistan, (as highlighted below). The report has produced a new formula for UFG which in theory is meant to be driven by key performance factors, and makes a series of recommendations for the Sui companies so that they can comply. Nevertheless two important questions remain unanswered:

- Why are the Sui companies not doing better now?
- What is stopping them doing the right thing, that the proposals in this report will change?

For example is it money, lack of expertise or both? Unless we can understand why the two Sui companies have failed to keep UFG under control over the last few years, the proposed KPI driven allowances will not change the dynamic.

In addition the report fails to provide any sort of analysis of the financial scope of the problem, or the relative sizes of the different sources of UFG. It seems to agree with the two Sui companies that some aspects of UFG are uncontrollable including, leaking pipes, minimum billing, theft and law and order. One might accept that law and order is beyond the control of the Suis, but n practice all of the rest can be controlled in one way or another.

### 2.2 Identification of the main scources of UFG in Pakistan

The UFG Report identifies and categorises the main sources of UFG in Pakistan. These have been reproduced here with a brief comment on each as follows:

- Key UFG contributing factors:
  - Bulk to Retail switch in loads – This switch from bulk to retail is more a function of gas being allocated to retail due to its scarcity than a change in market behavior. Whilst this does mean that the percentage of UFG might increase it is not an excuse for higher actual UFG.
  - Theft – This is clearly an on-going problem, rightly identified in the UFG Report
  - Law and Order – Again this is an on-going problem and is rightly identified
- Other UFG contributing factors – It is unclear why the following have been categorized as secondary isssues.
  - Leakages – Identified but not adequately quantified.

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# Annexure V.7 - World Bank Group Comments on 2nd Draft Report

1030

TECHNICAL NOTE
UFG Report for OGRA

- Minimum Billing – Identified but not quantified. This is one of many sources the Sui Companies claim to be uncontrollable, yet this is not correct. Possible solutions might include changing the meters or introducing a new demand algorithm. The consultants estimate that circa 7% of UFG is attributable to minimum billing issues.
- Measurement errors – Mechanical faults on meters.
- Other factors – includeing that UFG losses are measured in volume rather than energy.

## 2.3 Other issues

***Calculating UFG*** – There is also a good discussion on the formula used for calculating UFG, where changes to the formula are suggested in the context of the transporters' own consumption. Ideally all gas used even by the Sui companies and their successors should be billed and allocated to an appropriate user.

## 2.4 Summary of proposed solutions

For the sake of brevity this summary paper shall bullet the key areas of in the UFG Report Recommendations and briefly comment on them.

- ***100% metering*** – This is a good aspiration. It might be useful to have a staged program of introducing meters, starting with larger consumers. In addition and as an interim step, new demand algorithms.
- ***Network Segmentation*** – The concern with this approach is that it will reduce security of supply.
- ***Cylinder Model*** – A creative idea, but will not solve UFG.
- ***Key Monitoring Indicators*** – These are a good management practice which should be introduced if not already practised. KMIs in themselves will not change the Sui companies' behavior.
- ***Regional UFG Management*** – A good idea, might get picked up by the Disco restructuring, the report does not specify how small these regions might be.
- ***Two-yearly Meter Inspections*** – Good idea in principle but whether the Suis have the staff to do this is unclear.
- ***Technological Advancement*** – This is a possibility with Smart meters and mobile phone technology.
- ***Cost of service study*** – This may be needed but why is it here? It will not affect UFG
- ***Detect, Monitor, Control*** – The ideas here are all quite high level, and are good in principle but short on detail. The idea of ring fencing certain parts of the system is OK in theory but quite politically sensitive in practice.The idea of installing bulk meters in law and order affected areas is a good one that merits further exploration.
- ***Leakage Management Plan*** – This should already be in place, if not why not?
- ***Recommendation on UFG calculation and treatment*** – Agreed this seems the right way forward.

- 2 -

1031

TECHNICAL NOTE
UFG Report for OGRA

## 3 Conclusions

The UFG Report provides good coverage of UFG and the issues associated with UFG. However, what it does not do is propose any insightful and robust solutions. Key points to note are as follows:

- ***Focus on formula and allowances*** – It would appear that a great deal of discussion takes place in relation to the UFG formula and associated allowances. Whilst at one level this is understandable it also rather misses the point that reducing the physical losses will reduce arguments over the allowances.
- ***Focus on the financial implications of UFG*** – It would have been useful to have indication of the financial pain that the Sui companies are experiencing as a result of UFG, to scope the potential cost of possible solutions.
- ***What are the Sui companies doing now*** – The UFG Report fails to identify what the Sui companies are doing now, as well as what they should be doing now.

- 3 -

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# Annexure V.7 - World Bank Group Comments on 2nd Draft Report

1032

TECHNICAL NOTE
UFG Report for OGRA

## APPENDIX I – DETAILED COMMENTS ON THE UFG PAPER

| Comments on KPMG Unaccounted for Gas (UFG) Study | | | |
|---|---|---|---|
| Section: | Structure of report | Sub-section: | Report Sections (Pages 3 to 4) |
| No comments | | | |
| Section: | Executive Summary | Sub-section: | Background, History and Impact (Pages 7 to 12) |
| - *Page 7, bullet 2* – The report rightly highlights the potential damage that UFG could do to the two SuIs.<br>- *Page 7, bullet 3* – Mentioning leakages last in this list dilutes the importance of managing leakage properly.<br>- *Page 7, bullet 4* – The report rightly highlights the expansion of the system as an issue.<br>- *Page 7, bullet 5* – It might be useful to explain the context of these graphs highlighting that demand is decreasing due to a lack of gas.<br>- *Page 7, SSGC/UFG Analysis graph* – No explanation has been given for the significant jump in UFG from circa 11% to 18%, apart from the switch from bulk sales which seems unlikely. | | | |
| Section: | Executive Summary | Sub-section: | UFG Calculation (Pages 8 to 9) |
| - *Page 8, UFG Calculation* – The formula which reduces the denominator is misleading, this is because UFG should simply be any unmetered gas losses divided by total deliveries. To reduce the denominator by gas used by the TSO creates a perverse incentive not to manage own use. In addition, own use gas in compressors, water bath heaters and buildings should be metered.<br>- *Page 9, Figure ES-2 UFG* – This diagram is at best misleading and may be incorrect. There are no data to substantiate the ranking of contributing factors. It would have been useful if the report had tried to quantify the different contributing factors. | | | |
| Section: | Executive Summary | Sub-section: | Proposed way forward (Pages 10 to 13) |
| - *Page 11, UFG Formula* – The summary of the formula is a little confusing. Rate 1 = 4%, Rate 2 and Beta are unclear. | | | |
| Section: | Preamble | Sub-section: | Task 3: Factors Contributing UFG (Page 13) |
| - *Page 15, BTU equivalence* – BTU equivalence in case of third party access is highlighted here but is not covered elsewhere. Also, given the close proximity of market reform in Pakistan any changes to UFG should really take account of third party Access (TPA). This report does not. | | | |
| Section: | Background | Sub-section: | Historical perspectives of UFG Allowance (Pages 21 to 24) |
| - *Page 23, Tables on SSGC / SNGPL UFG Profile* – It is unclear from these tables if third party gas is included in the calculations. In fact it is unclear if TPA flows have been included in the analysis and / or the thinking. This is important because ultimately the TSO and Discos will still have to minimise UFG whether simply transporters or as merchant pipelines.<br>- *Page 24, Snapshot of SSGC and SNGPL* – Since 2013 the number of SNGPL commercial customers has dropped from 56,212 to 47,913 and industrial customers 6,561 to 4,648, with no corresponding drop in SSGC. | | | |

- 4 -

1033

TECHNICAL NOTE
UFG Report for OGRA

| Comments on KPMG Unaccounted for Gas (UFG) Study | | | |
|---|---|---|---|
| Section: | UFG Definition | Sub-section: | Unaccounted for Gas (Page 26) |
| - *Page 26, Bullet 4* – Highlights that quality is an issue but does not seem to explore this elsewhere. | | | |
| Section: | UFG Definition, Calculation and Methodology | Sub-section: | UFG Calculation (Page 26 to 28) |
| - *Page 27, bullet 1* – The point about needing good metering throughout the gas chain is a good one and is probably a precursor to alleviating the UFG problem.<br>- *Page 27, bullet 2* – In the light of Pakistan energy market reform it is recommended that this formula is changed to take account of all energy flows.<br>$\text{UFG \%} = \frac{\text{Gas Available for Sale} - \text{Gas Sold}}{\text{Gas Available for Sale}}$<br>- *Page 27, bullet 2* – The definition of 'Gas Available for Sale' is the total gas purchased less metered natural gas used for self-consumption – This issue here is that removing gas consumed by the transporter provides the wrong incentive to the transporter. In short all gas consumed in the provision of gas transportation services (compressor usage, water bath heaters, office heating) should be metered and included in the OPEX costs. | | | |
| Section: | UFG Definition, Calculation and Methodology | Sub-section: | Accounting treatment for UFG (Pages 28 to 29) |
| - *Page 28, bullet 4* – This section uses the phrase 'shrinkage' which does not appear to be defined in the report. In other jurisdictions the term shrinkage is sometimes used interchangeably with UFG.<br>- *Page 29, bullet 4* – This bullet states that pipeline leakages, measurement problems, and theft are uncontrollable. This cannot be correct: surely the whole point of the UFG benchmarks is that these areas are controllable. | | | |
| Section: | UFG Contributing Factors | Sub-section: | Contributing Factor 1 - Theft (Page 31 to 37) |
| - *Page 31, Shift of Bulk Sales to Retail Sector* – In the graphic it is noted that there is an increase in UFG due to shift in gas supply from Bulk to Retail over the period. In fact, what has happened is that the shortage of gas has focussed consumption in the retail sector. In case of SNGPL both annual gas demand and UFG has decreased, with UFG % staying roughly the same over the last three years 2013-15.3%, 2014-15.0% and 2015-15.7%. In the case of SSGC gas demand has begun to increase slowly with UFG varying 2013-12.0%, 2014-18.1% and 2015-17.9%.<br>- *Page 37, Table TT 4* – The large drop in volumes booked for SNGPL Industrial and Commercial customers would benefit from an explanation. | | | |
| Section: | UFG Contributing Factors | Sub-section: | Contributing Factor 2 – Law and Order Affected Areas (Page 38) |
| - *Page 38, bullet 7* – It would appear from the text that the issue of managing UFG in law and order affected areas is unresolved with OGRA and the Federal Government passing the issue between themselves. | | | |
| Section: | UFG Contributing Factors | Sub-section: | Contributing Factor 3 – Minimum |

- 5 -

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# Annexure V.7 - World Bank Group Comments on 2nd Draft Report

1034

TECHNICAL NOTE
UFG Report for OGRA

| Comments on KPMG Unaccounted for Gas (UFG) Study | | | |
|---|---|---|---|
| | | | Billing (Pages 39 to 40) |

- *Page 39, General comment* – The issue of minimum billing does seem to be rather large with 2.4 million customers subject to minimum billing, see Table MB-1. This results in circa 16,000 mmcf of minimum billing claims, see Table MB-2.
- *Page 39, A rough calculation* – If 2.4 million consumers are all assumed to consume 40m³ per month, the annual consumption of minimum bill consumers is as follows:
  (1) Convert 40m³ to scf by multiplying by 35.3 = 1,412 scf per month.
  (2) Annual use by min billers = 12 months x 1412 scf per month x 2.4 million customer
  (3) Annual usage = 40 bcf per year
  (4) If we assume a 25% error, UFG attributable to minimum billers = 10 bcf.
  (5) In 2015 UFG was estimate to be 137 bcf, so a 10% error in relation to minimum would account for circ 7% of UFG.
- *Page 39, A claim of Minimum billing* – The Sui companies argue that UFG in relation to minimum billing is uncontrollable and should therefore be deemed as sales for UFG calculation. This is simply not correct these bills can be fixed by installing new meters.

| Section: | UFG Contributing Factors | Sub-section: | Contributing Factor 4 – Leakages (Pages 40 to 45) |
|---|---|---|---|

- *Page 41, bullet 3, Causes of Pipeline leakage* – Apart from a very minor paragraph this section rather misses the point. The key issues in relation to leakage are pipeline type, construction method and age. The focus on age is rather misleading since age does not indicate that a pipeline will be leaky. For example, all cast iron pipes no matter how old have been deemed as unsafe by the HSE (UK) and are slowly being replaced. This is because they are subject to brittle failure. In general PE gas mains are having zero leakage in most jurisdictions. Although it is noted that PE pipe also appear to have failed due to brittle failure in Pakistan, this should not be their experience and warrants further examination.
- *Page 41, bullet 5* – The statement that the two Suis have pipelines more than twenty years old shows that network rehabilitation has not taken place, is perhaps too bold and unsubstantiated. For example, if a gas pipeline is constructed and maintained well, then twenty years is not old. The answer is not simply to keep replacing old and possibly leaking gas pipelines; it i is to ensure that they are better constructed and maintained in the first place.
- *Page 42, bullet 1* – Notwithstanding the above comment the report rightly highlights the low level of mains replacement.
- *Page 44, bullet 1* – The report rightly highlights the lack of cathodic protection as an issue.
- *Page 45, bullet 6, Overhead leakages* – This bullet which concludes with an estimate that each domestic consumer will experience 1.8 leaks is meaningless and should be better explained.
- *Page 45, bullet 9,* Underground leakages – The argument that the difference between 4.9 leaks / km for SSGC and 2.2 leaks / km for SNGPL can be attributed to the difference in sample sizes for SSGC (16,150 km out of 43,890 km) and for SNGPL (80,370 km out of 97,300 km) is weak since both samples should be sufficient to give a sensible result. It is suggested that the Consultants look for other reasons for the difference.

| Section: | UFG Contributing Factors | Sub-section: | Contributing Factor 5 – Measurement Errors (Pages 46 to 51) |
|---|---|---|---|

- *Page 46, General* – This section rightly highlights the importance of good accurate fiscal

- 6 -

1035

TECHNICAL NOTE
UFG Report for OGRA

Comments on KPMG Unaccounted for Gas (UFG) Study

metering. However, what it fails to address is the need for accurate meters of the right type and size. Simply, the presence of working meters will not be enough. For example, whilst accurate meters would, or at least should, have been installed at the custody points as gas enters the network it is quite likely that meters at SMS and CMS stages will simply be turbine meters to show a direction of flow and a rough order of magnitude rather than an accurate fiscal measurement.

- *Page 48, bullet 1, Network Segmentation* – The argument that because the gas networks are looped it is impossible to measure losses is a concern. In theory it is true that further segmentation with additional metering might allow the two Sui companies to more accurately assess leakage and theft. It will also come with a risk, since by reducing looping the two Sui companies will also be reducing security of supply. It is likely to be contentious to imply that the only way to reduce theft is to reduce security of supply.
- *Page 50, bullet 3* – The number of customers who receive minimum bills (1.3 million for SNGPL and 0.7 million for SSGC) disagrees with numbers in Table MB-1 on page 40 – Which one is correct?
- *Page 50, bullet 5, Replacement of industrial and commercial meters* – Whilst it is important to have accurate and size appropriate meters at industrial and commercial installations, the suggested timescales for replacement of 1 year (Industrial), 7 years (Commercial) and 16 years (domestic) seem quite short. (NB: Perhaps these are calibration periods)

| Section: | UFG Contributing Factors | Sub-section: | Contributing Factor 6 – Other Contributing Factors (Pages 52 to 55) |
|---|---|---|---|

- *Page 52, BTU equivalence and 3rd Party Access* – The current absence of BTU equivalence as used in other jurisdictions will complicate the accurate assessment of UFG.
- *Page 52, bullet 5* – The argument put forward by SSGC that the problem of CV difference in association with the RLNG TPA loads will go away because a dedicated pipeline will carry the gas might be true but it will not help. Once Pakistan's gas market reforms are in place all gas moving through the gas network will be TPA gas and therefore the need for BTU equivalence will be more acute.
- *Page 52, bullet 6* – The argument here is that as gas producers have increased their costs UFG has increased due to customers stealing more gas. However, in the paper it has been argued that UFG has risen due to the switch in gas consumption from bulk to retail, during a time when domestic gas consumers have continued to receive gas at relatively low prices.
- *Page 52, bullet 7, Shift from bulk to retail Sector* – Whilst it is clear that the ratio of gas consumed between bulk consumers and domestic consumers has increased in favour of the domestic consumer, this is because large industrial and commercial customers have experienced more curtailment. It is also true that the two Suis have been forced by the GoP to extend a gas network at a time when gas is in short supply. However, as gas becomes more available to Pakistan's industrial and commercial customers this ratio of bulk versus domestic will move back in favor of bulk consumers.

| Section: | Analysis of UFG Disallowance | Sub-section: | Effect of UFG Disallowance (Pages 57 to 60) |
|---|---|---|---|

- *Page 57, General comments* – This whole notion will need to be rethought in the light of TPA, when the transmission System operator is only a transporter but still responsible for gas. Clearly, the transporter who will be in a low rate of return low risk business cannot afford to

- 7 -

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# Annexure V.7 - World Bank Group Comments on 2nd Draft Report

103.

TECHNICAL NOTE
UFG Report for OGRA

Comments on KPMG Unaccounted for Gas (UFG) Study

take on a large UFG commitment. Fortunately, it is quite low. The issue will be, where does the 0.5% to 1.0% UFG for gas transmission come from?

| Section: | Conclusion to the Situational Assessment | Sub-section: | Conclusion to the situational assessment (Pages 62 to 65) |
|---|---|---|---|

- *Page 62, General* – This section highlights the key area of theft, law and order, minimum billing, leakages, measurement, and bulk to retail. It is noticeable that no reference has been made in relation to the lost BTUs because of only measuring volume.
- *Page 65, Conclusions* – These conclusions summarise the problem quite well. The Suis are not in control of the problem, they are reactive not proactive, the businesses are at risk, they put their efforts into arguing for increased allowances rather than developing systematic solutions.

| Section: | Our Recommendations | Sub-section: | Our Recommendations (Pages 67 to 76) |
|---|---|---|---|

- *Page 67, 100% meeting* – This is a good aspiration but it might be useful to have a staged programme of introducing meters, in addition as an interim step new demand algorithms might help.
- *Page 67, Network Segmentation* – The concern with this approach is that it will reduce security of supply.
- *Page 67, Cylinder Model* – A creative idea, but will not solve UFG.
- *Page 67, Key Monitoring Indicators* – Good Management practice which should be introduced if not already in place.
- *Page 68, Regional UFG Management* – A good idea, might get picked up by the Disco restructuring, the report does not specify how small these regions might be.
- *Page 68, Two-yearly Meter Inspections* – Good idea in principle although whether the Suis have the staff to do this is unclear.
- *Page 68, Technological Advancement* – This is a possibility with Smart meters and mobile phone technology.
- *Page 68, Cost of service study* – This may be needed but why is it here? It will not affect UFG.
- *Page 68, Detect, Monitor, Control* – The ideas here are all quite high level, and are good in principle but short on detail. The idea of ring fencing certain parts of the system is OK in theory but quite politically sensitive in practice.The idea of installing bulk meters in law and order affected areas is a good one that merits further exploration.
- *Page 69, Leakage Management Plan* – This should already be in place, if not why not?
- *Page 69, Recommendation on UFG calculation and treatment* – Agreed this seems the right way forward.

| Section: | Our Recommendations | Sub-section: | Recommendations relating to UFG Allowance (Page 79) |
|---|---|---|---|

- *Page 70, bullet 3* – The statement that the Sui companies do not have a full measurement mechanism installed is shocking if true but not necessarily an excuse for poor estimation of UFG figures. For example, whilst in the UK every home does have a gas meter (not a smart meter yet), because of TPA each customer type / location has a unique algorithm that calculates gas demand daily. Similarly, in the Ukraine in the absence of meters on small loads demand algorithms are also used –these algorithms are in the process of being updated.
- *Page 70, bullet 4* – This bullet highlights again the desire for segmentation. Whilst such an

- 8 -

1037

TECHNICAL NOTE
UFG Report for OGRA

Comments on KPMG Unaccounted for Gas (UFG) Study

approach may produce results it may be at the risk of reduced security of supply.

| Section: | Our Recommendations | Sub-section: | UFG Benchmark and Control Formula (Page 80) |
|---|---|---|---|

$$UFG_{Allowance} = Gas_{AFS} \times (Rate_1 + Rate_2 \times \beta)$$

Technical Component | Local Operating Conditions Component | Performance Factor

- $Gas_{AFS}$ = Gas available for sale.
- $Rate_1$ = Benchmark rate based on international best practice. It appears that the report is suggesting 5% initially.
- $Rate_2$ = Based on local operating conditions circa 4.8% over last few years.
- $\beta$ = Performance indicator – It would appear that $\beta$ is based on the results of KMIs / KPIs.
- However, what is not clear is the range of $\beta$ it might have a maximum of 1.0. If this is the case it would mean that the UFG allowance is initially set at 9.8%.

| Section: | Section III – The Way Forward | Sub-section: | UFG Management and Control Strategy |
|---|---|---|---|

- Please note pages 83 and 84 were missing from the scan.
- *Page 78, General Comments* – There is a bigger question that the report does not really answer, which is why are the Sui companies not doing all this now?
- *Page 78* – Graphic highlights the following areas:
- *Reduce Data and Metering Errors* – This is a good idea in principle.
- *Network rehabilitation* – Again a good idea in principle, however, care needs to be taken how it is done in practice. Not all leaking pipelines need to be replaced.
- *Theft control* – Detect, Monitor and Control – This involves tracking theft.
- Research and Development – This is capacity building.

| Section: | Section III – The Way Forward | Sub-section: | Reduce Leakages and gas losses (Page 80) |
|---|---|---|---|

- *Page 80, replace overage distribution network* – One assumes there is a program for doing this now, although the report shows no evidence of this.
- *Page 80, acquire leakage detection tools* – Again, why is this not happening now? If the Sui companies are not currently looking for leaks it is quite likely that if they are better resourced the number of leaks / km will go up. Perhaps a better measure could be considered.
- *Page 80, Carry out above ground leak surveys* – (NB: See previous comments about 1.8 leaks per customer). Reviewing 20% of domestic customers each year seems ambitious.
- *Page 80, Cathodic Protection* – Whilst increasing CP is clearly a good thing increasing CP coverage to 100% of the network is too broad brush, it needs to be targeted more effectively.

| Section: | Section III – The Way Forward | Sub-section: | Detect, Monitor and Control (Page 81) |
|---|---|---|---|

- 9 -

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# Annexure V.7 - World Bank Group Comments on 2nd Draft Report

1038

TECHNICAL NOTE
UFG Report for OGRA

| Comments on KPMG Unaccounted for Gas (UFG) Study | | | |
|---|---|---|---|
| - *Page 81, Develop systems to identify odd behaviour* – Yes this will be a good approach, although it is not clear why is it not already being done (and thus the barriers to its future adoption)<br>- *Page 81, Re-inspect all disconnected meters* – Yes agreed.<br>- *Page 81, Increase turnaround time for dealing with theft* – Yes agreed. | | | |
| Section: | Section III – The Way Forward | Sub-section: | Increase and enhance capacity (Page 82) |
| - *Page 82, General* – In general all the suggestions here are good practice but do not add value to the report.<br>- *Page 82, Mandatory Training* – Yes capacity building is a good idea, but in what?<br>- *Page 82, Establish Research and Develop Cells* – Again in principle a good idea but in practice what does this mean?<br>- *Page 82, Environmental Audits* – A good thing to do, but how does this help UFG?<br>- *Page 82, Improve systems* – A good thing to do but lacks focus. | | | |

- 10 -

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# Annexure V.8 - APTMA Comments on 2nd Draft Report

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ADM/SEC-15/0208
3rd. March 2017

On 03-03-2017 at Karachi

The Registrar,
Oil and Gas Regulatory Authority,
54, Fazal-e-Haq Road,
Islamabad.

Dear Sir,

**Submissions in respect of**

**Draft Report, UFG Benchmark Study by KPMG Taseer Hadi & Co.,**
**Commissioned by Oil and Gas Regulatory Authority**
**Ref: OGRA Press advertisement dated February 17, 2017.**

1. We make the following submissions on the above mentioned draft Study Report for kind consideration of the Hon'able Authority.
2. APTMA's stake in the matter is substantial being one of the largest gas consumer groups with long standing record of largest foreign exchange earnings for the country.
3. Over the years, the cost of doing business has been climbing up quite sharply for various reasons including increasing prices of utilities. As of today, energy cost is our top input cost after raw material. The price of gas is, therefore, of vital importance to keep us viable and operational.
4. We have studied the draft carefully and have serious reservations with regard to all the three elements of the recommended formula besides some of its other contents.
5. We begin our submissions by emphasizing complete independence of OGRA in decision making on all regulatory matters and its legal obligation to give primary importance to consumers' interest. In this regard we briefly quote hereunder from judgment dated 12.12.2012 of the Hon'able Supreme Court of Pakistan in Const. petitions No. 33, 34 of 2005 and HRC No. 5332/2006 & CMA No. 4567 of 2012, filed by three individuals against Federation of Pakistan, OGRA and others.

Received at ED (G&I) Office
Dt. 13/3/17
Time 12:20 pm

These are the comments which we have received from different participants in Karachi, Lahore & Peshawar. UFG consultative sessions for communal necessary action please.
ED(G&I)
Pl. forward a complete set to KPMG so that comments could be suitably addressed
13/3/17
DED-

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- "....the principal *raisons d'etre* of OGRA as clearly spelled out in its statute is protection of the consumer who ultimately is to bear the price of CNG." (applicable to natural gas by implication)
- "OGRA, it may be reiterated, has been envisaged as an independent body which is supposed to protect the public interest. Its failure to protect the ordinary consumers from oligopolistic and monopolistic activities cannot be condoned." (Consumers' interest is of primary importance.)
- "Section 21 and Rule 14 imply only that OGRA must include the policy guidelines of the Federal Government in its consideration and decision-making process; it is not, however, bound by the same."

6. It is pointed out that the consultants have prepared the draft of the study after extensive interaction with SSGCL, SNGPL and OGRA as can be seen from Annexure C – "Chronology of events" and Annexure – D "Key persons interviewed". The primary interested party-the consumer groups- were left out. Resultantly, their analysis and recommendations are overly and unjustifiably tilted in favour of the utility companies. If accepted, these would burden the consumers for the negative consequences of the acts of commission and omission of the utility companies.
7. The consultants have noted "the absence of a mindset that owns the problem and puts a cohesive and coordinated strategy in place" but have not gone on to investigate and discover the causes of the malaise before prescribing a formula for alleviation of the symptoms. To facilitate, we give below our views on this important aspect.
8. For almost a decade, OGRA has been fixing benchmarks demanding from the gas utilities to improve their operational efficiency and reduce UFG. For the year 2005-06 it fixed the benchmark for the first time at 06 %. Actual UFG achieved that year was 6.65 by SSGCL and 6.61by SNGPL. It was also made known to them that over the next five years the number would be brought down gradually to 4.5%. From 2011-12 onwards OGRA has kept the benchmark frozen at 4.5%. However, during last few years it has acceded to some of the utilities' requests and provided relief by allowing some other allowances. SSGCL and SNGPL, in the meantime, took the opposite route and are now hovering around 14-15%.

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# Annexure V.8 - APTMA Comments on 2nd Draft Report

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9. The annual loss to the nation based on substitution cost of the lost energy is 1.5 to 2.0 billion dollars varying with global oil prices. There also is indirect cost in terms of very significant environmental degradation caused by leaked gas.
10. Undeniably, it is the controlling shareholder (the Federal Government), and the BOD of the utilities who are responsible for this persistent downslide in operational efficiency of the petitioner, and not the consumers.
11. It is stressed that reducing UFG was not an impossible task. In roughly the same period, K Electric, operating in Karachi and suburbs, has achieved reversal in power losses. Its losses have come down from 35-36% to 23.7% and their target is to achieve 15% in next 5 years.
12. The reasons for the predicament of gas utilities appear to be outdated technology, poor quality of material, bad workmanship, lax supervision, sub-standard maintenance, lack of skill upgrading effort, lack of employee discipline, dwindling ethical environment, ever increasing involvement of company employees in helping the gas thieves, and increasing incidence of corrupt practices.
13. The prime cause of this unfortunate condition has been deficient human resource policies and practices (recruitment, training, performance evaluation, promotion, accountability etc.). Merit is believed to have been sacrificed on the altar of patronage, succumbing to pressures from various powerful quarters. The companies are also believed to be loaded with a sizable number of sub-par and not required employees who were known to be political appointees.
14. This being the position on ground of the human resource coupled with orthodox engineering practices and violation of engineering codes/standards in the distribution function, the overall capability and capacity of the companies suffered badly resulting in reverse progress in many areas of operation. Mounting UFG is only its reflection.

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15. Lack of capacity and willingness of the companies in dealing with the menace of UFG can be gauged from the way SSGCL let the opportunity of a major breakthrough slip, when they failed to deliver on the World Bank funded Natural Gas Efficiency Project during 2012-15. It was approved by the BOD at a cost of Rs. 5.4 billion including US $ 200 million from WB, aimed at reducing UFG significantly over a period of 5 years. It could not make headway due to SSGCL's lukewarm response in effective implementation and was abandoned by WB.
16. All through these years, the companies, instead of doing the required work with determination to bring UFG down, took the easy route and spent their energies in finding innovative ways to get the benchmark softened. They indulged in litigation and obtained FG support.
17. In all fairness, the impact of their poor performance should have been borne by their majority owner and controller, the FG, and not the honest and law abiding consumers. However, just the opposite has been happening for a few years. To help its companies, the FG issued policy guidelines encroaching upon the regulatory domain of OGRA, supporting unjustified, arbitrary and illegal increases to the UFG benchmark. OGRA partially accepted the governments view despite consumers' protestations.
18. In face of a lamentable record of the utilities' performance over the last decade and their grievous internal weaknesses, as brought out above, the key question is whether reducing pressure on them will bring the UFG down.
19. The consultants' recommendations are designed to soften the regulatory benchmarking. In our humble opinion, this approach will only embolden the regulated utilities. The regulator has not been not been able to move the utilities in the right direction and a softer regime cannot be expected to motivate them to brace up and put their house in order by working for reform in a big way and taking the needed hard decisions based on merit and objectivity. Their performance may, hopefully, improve only if their Boards and the FG feel increased pressure. Therefore, we vehemently oppose the benchmark formula recommended by the consultants.

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# Annexure V.8 - APTMA Comments on 2nd Draft Report

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20. As far as we could search, the three-element design of the consultants is an innovation without precedent. A single percentage is prescribed in almost all jurisdictions taking into account all relevant factors judiciously including unusual local challenges, if any. The consultants' loving care formula has inherent problems.
21. Regarding the first element of the formula i.e. Technical component, it may be noted that in a properly laid, well maintained and efficiently operated gas systems, the quantum of UFG is less than 1% which essentially covers uncontrollable gas loss arising from measurement errors and unavoidable loss of gas during operational work on gas lines. There is a large number of efficiently run gas companies in the world whose UFG says within 1%. The controllable loss arises from inefficient operational management and has three main sources. These are pipeline leaks, avoidable metering errors and theft. The percentage benchmark includes allowance for these controllable causes of UFG as well as any other unusual cause, goading the utility all the time to take timely corrective actions and the long term goal is to eliminate or minimize the same. There is no scope for creating an incremental benchmark by adding any adjustments whatsoever to the percentage benchmark. Therefore, our submission is to have one benchmark expressed as a percentage in accordance with international best practice and reject the proposal to introduce a local challenges component.
22. Introduction of Performance Factor too has some fundamental conceptual problems. It would involve the regulator in what have been called "Mutually agreed Key Performance Indicators" of "UFG Control Framework". The utility companies have ample technical resources and experience of operating the system. They make long term and short term UFG control plans all the time. The sparse technical human resource base of OGRA will not be a meaningful addition. Further, by signing the plan, OGRA will become a party to the plan design, which may be faulty. If at the end of the year, it is claimed to have been substantially implemented without reducing UFG appreciably, OGRA may find itself in an uncomfortable position. If past is a guide this is a more likely outcome. Even otherwise, the regulator should have an arms-length relationship
23. with the regulated maintaining separation of regulation from execution.

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24. What OGRA needs to do according to the international practice is to get technical audit of the utilities conducted on yearly basis from third party auditors to ensure that the technical standards, performance standards and license conditions are faithfully complied. This will help to obtain improvement in the operational performance of the regulated entities without compromising the regulator's status.
25. The data presented in Table R – 1 of the Study Report pertaining to UFG benchmark in 12 countries needs to be expanded to add more countries and may also be given for major companies. We believe that UFG in Brazil, Bosnia, Japan, Holland, France and Italy is less than 01%. There are other countries too with low UFG and their data should be included.
26. The said Table also needs to be rechecked for accuracy. For example, we have come across, in Natural Gas Annual of US Energy Information Administration, UFG data for USA State-wise for 2015, showing the weighted average for USA as 1.1% with a maximum of 4%. As opposed to this, in the said Table R - 1, USA UFG level is shown as 1.41 to 5.00 % and 5% is ascribed to Texas State. The data that we have seen shows the UFG for Texas as 2%. Therefore, we contend that this table is inadequate and may also be inaccurate; therefore not reliable enough to base decisions on.
27. One of the oft repeated arguments advanced by the petitioner has been the change over time in bulk sale to retail sale ratio in favour of the latter. This argument is hollow and self-defeating. It amounts to saying that there is none or negligible loss in bulk sale and the retail sale is highly UFG-prone. This means that while the old distribution lines continue to leak pretty badly and are infected with theft and slow meters, new distribution and service lines also develop these deficiencies soon enough. This amounts to admitting that not only the old lines but also the new pipelines and service connections, are not constructed, monitored and maintained according to the standards prescribed by OGRA. Therefore, OGRA has consistently rejected this request and we urge that this position may be maintained.

ALL PAKISTAN
TEXTILE MILLS ASSOCIATION

SINDH-BALOCHISTAN REGION
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# Annexure V.9 - Govt. of Sindh Comments on 2nd Draft Report

Comments of Govt of Sindh
On 03-07-2017 at Karachi

1051

Govt of Sindh

Thank you Madam Chairperson for giving us an opportunity to present our position on the matters.

But before embarking on the topic we would like to thank The Authority for making the UFG Study public and placing it on its official web site for its maximum exposure. We also appreciate the efforts of the consultant for presenting a thorough study with very much practical suggestions and roadmap. The online available Study is significant in the sense that it carries the respective full comments of SNGPL & SSGC on the 1st draft report of this study. Those comments of the utility companies gave us an insight into the mindset of the companies towards this critical issue of inefficiency, inability and lethargy. The ultimate sufferers are consumers that are required to pay the price.

As far as the TOR or scope of the study is concerned we feel that instead of giving a free hand for an independent assessment of the situation, the Consultant has been put in a tight jacket when it was asked to put extra emphasis on some pre conceived factors benefiting the utility companies. Inefficiencies and inactions of the utility companies, lack of investment on upgradation of network infrastructure, inadequate monitoring and measurements, absence of capacity development, resistance to change and reliance on status quo may have also be included in the scope.

Page 1 of 6

1052

We are not raising this issue in isolation, the plain reading of the comments of one utility company at Annex- T.1 of the report clearly hints that the utility company in north is least interested in taking any serious effort for the reduction of UFG in its licence area and instead more content in hiding behind one not so proper 2013 letter of a new Chief Minister and the controversial and unconstitutional order of the Economic Coordination Committee (ECC) of the Cabinet.

We have time and again submitted before the Authority that Government of Sindh does not recognize ECC as a competent forum to issue policy guidelines on matters related to oil & gas. Moreover, the power of Federal Government to issue policy guidelines under Section 21 of the OGRA Ordinance is not absolute rather Federal Government, on oil & gas related matters, is subservient to the decision of the Council of Common Interest. So, any so called policy guidelines issued to OGRA by ECC has no legal or constitutional weightage. Recently, Sindh High Court has declared GIDC Act 2015 as unconstitutional despite the fact that it was passed by both National Assembly and Senate but it was not referred to CCI. It is our advice to the utility companies not to take the back door recourse of ECC in future. Moreover, the Authority may also do not consider any direction of Federal Government under Section 21 of OGRA Ordinance if specific CCI decision is not attached with it.

Page 2 of 6

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# Annexure V.9 - Govt. of Sindh Comments on 2nd Draft Report

1053

In the entire report and comments of the utility companies on 1st draft of the report an impression is being created that expansion of the distribution network under socio-economic agenda of the Government which has changed the bulk to retail ratio is one of the major contributory factor of UFG. And this expansion is commercially unviable and prone to losses and theft of gas is rampant in new urban and rural areas.

Madam Chairperson, Government of Sindh reject this argument. Provision of indigenous natural gas is not the right of only few urban centers. The benefits of natural gas should be extended to rural areas that are actually producing this resource. SSGC in the case of Sindh is the only licensee to provide gas infrastructure to entire Sindh. How can a gas utility company deny expansion of network and provision of gas infrastructure to new areas when it is ensured 17% returns on fixed asset? Sui companies, as far as our understanding is concerned, are on ***cost plus-fixed rate of return formula*** so we expect Sui companies to stop complaining and develop capabilities to cater expansion and growing clientele. The Sui companies shall devise mechanism for proper maintenance, control and monitoring. Presently their approach is not professional.

Page 3 of 6

1054

Government of Sindh, therefore, does not support any allowance for UFG under the plea of expansion of network to new areas or shift in bulk to retail ratio.

It is bit surprising that Sui Companies have been claiming allowance for gas leakages from their poorly maintained aging pipes, multiple measurement errors and minimum billing charges approach. This reflects inefficiency and incompetence. Government of Sindh also does not support any allowance under these heads for UFG. These are controllable.

Madam, the study has hinted that the entire UFG claim of Sui Companies is based on assumptions on some of the factors which they presume are responsible for losses. In this respect the consultant has suggested network segmentation and use of bulk meters to identify potential problematic areas. This is a good practical suggestions. K- Electric has extensively used this methodology in Karachi and greatly controlled their losses and system failures.

As far as any allowance for UFG under Law & Order in Sindh is concerned we do not support it as there is no region in Sindh where SSGC's cannot operate, maintain or control its infrastructure. Theft of natural gas is a separate issue and can be better

Page 4 of 6

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# Annexure V.9 - Govt. of Sindh Comments on 2nd Draft Report

1055

handled if the pockets are identified properly through network segmentation. We recognize SSGC's right to disconnect supply of gas if someone is found stealing gas.

Finally, we propose that the gas companies should only be granted allowance for UFG contributing factors that are unavoidable as these form a part of the normal business activity and cannot be eliminated. The remainder should be disallowed and borne by the gas companies as a consequence of failure or inability to control the factors rendering gas to be unaccounted for. In this respect the study has suggested fixed 5% for unavoidable factors and an additional allowance of up to 4.05% of avoidable factors. These are very high percentages and if allowed would encourage inefficiency and corruption in the companies. We propose maximum limit of 5% for UFG for all types of contributory factors.

With this I conclude

And thank you all for patient listening.

Page 5 of 6

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# Annexure V.10 – Ex-Auditor General Pak- Comments on 2nd Draft Report

08-03-2017

Advance Session at Islamabad

1057

**For OGRA**

**PROVISION OF GAS TO VILLAGES OF DISTRICT KARAK IN THE THREE SUB-DIVISION ALONGWITH INSTALLATION OF METERS ON PRIORITY BASIS**

Provision of Gas to 19 Villages of Tehsil KARAK, 19 Villages of Tehsil Takhti Nasrati and 36 Villages of Tehsil Banda Daud Shah, District Karak.

A) Original estimated cost for the Villages of Tehsil Karak and Tehsil Takhti Nasrati was Rs.922.990 million.

B) Cost covered under criteria Rs.249.848.

C) Cost not covered under criteria Rs.673.142 million. This was to be shared by FEDERAL GOVERNMENT and KPK Government on fifty fifty percent i.e. Rs.336.571 each. The Federal Government paid its share in one go however KPK Government was allowed to pay the share in four equal installments. It paid three installments equal to Rs.252.426 million but couldn't pay the fourth one. If we add all these, SNGPL, FEDERAL, KPK, it would be Rs.838.845 million. The estimate was revised and new one came to Rs.837.046. (This was stated by concerned minister in the National Assembly to a Question in the 19th Session dated 4th March, 2015. (Copy enclosed).

D) If seen in this perspective, SNGPL was having more money than the estimated.

E) Question was raised by the then MNA "Will the Minister of Petroleum and Natural Resources State",

a. Whether there is any proposal to supply Sui Gas to the localities of District Karak.
b. If so, the time by which it will be implemented?

Reply was Karak City by 30.04.2009, Tehsil Banda Daud Shah by 30.06.2009, Tehsil Karak by 30.06.2011, Tehsil Takhti Nasrati by 20.06.2010. (Copy enclosed)

However the work is still not completed.

F) Today the people of District Karak are punished for the negligence and inefficiency of different Departments and Institutions and blame is put on the shoulders of people of KARAK.

1058

G) It wouldn't be out of place to mention that in financial year 2015/16 Annual SMS put in 10 SMSs of Karak was 10.447 billion c.f. and SNGPL lost revenue to the tune of Rs.3969 million.

H) Beside the above, every day there are strikes, Roads blockade and closing of Oil wells. This is a huge loss to the country. One thing more, Industrial Zones have been created but gas connections are not give although thousands of people are employed.

All these problems are producing hatred among the inhabitants and it is not in favour of the nation. Looking at the problems and losses, it is requested that SNGPL either from its own resources or FEDERAL GOVERNMENT may give money for the repairs of damaged lines and complete the left over work, supplying Gas to the people and allow gas connections to Industrial Zones with installation of meters. This will be helpful in satisfaction of people and would also reduce the losses which are now in billions.

It may also be noted that many DISTRICTS have been gasified which are not even producing gas without Provincial share.

Thanks,

8.3.2017

**Fahim Ullah Khattak**
Ex-Additional Auditor General of Pakistan
Cell# 03339111176

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# Annexure V.11 - Government of NWFP Finance Department

GOVERNMENT OF NWFP
FINANCE DEPARTMENT

NO.SO(DEV.II)4-9/2007-08/FD
Dated Peshawar the August 8, 2007

To

The Director of Accounts,
Government Accounts Section,
State Bank of Pakistan,
Karachi

Subject: PROVISION OF SUI GAS FACILITY.

Kindly debit NWFP Account No.Ishan Fund) with a sum of Rs.84.142 million (Rupees Eighty Four million One Hundred & Forty Two Thousand only), per centre credit to Sui Northern Gas Pipeline Limited, Account No.202656-4 maintained with National Bank of Pakistan, WAPDA House Branch, Shahrah-e-Quaid-e-Azam, Lahore on account of "Supply of Gas to Six Southern Districts of N.W.F.P (Supply of Gas to Tehsil Karak and Tehsil Takht-e-Nusrati District Karak)".

The amount is adjustable to the accounts for 2007-08

SECTION OFFICER (Dev-II)
FINANCE DEPARTMENT.

Endst.no.Date:

The Additional Chief Secretary, NWFP, FATA Department, with the request that out of the above mentioned amount Rs. 84.142 million may be released immediately during the current financial year 2007-08 out of the amount Rs. 84.142 million out of the amount it provided through supplementary grant during the current financial year 2007-08 while Rs. 20.000 million already allocated in the ADP 2007-08 under ADP scheme No.900-30286-Supply of Gas to Six Southern Districts of NWFP". The share of Gas of NWFP as per installment to be released from development budget will be as under:-

| S.No. | Detail of installment | From development | From Royalty of Gas |
|---|---|---|---|
| 1 | 1st installment during 2007-08 | 42.071 | 42.071 |
| 2 | 2nd installment during 2008-09 | 42.071 | 42.071 |
| 3 | 3rd installment during 2009-10 | 42.071 | 42.071 |
| 4 | 4th & final installment during 2010-11 | 42.073 | 42.073 |
| | | 168.286 | 168.286 |

The Accountant General NWFP.
The expenditure involved to debitable to the Functional-cum-Object Classification
Community Awareness 062-Community Development 062202-Rural Works Programme (Revenue) Fund No.NC20010) for the ADP Scheme No.900-30286 "Supply of Gas to Six Southern Districts of NWFP", under Grant No.44 during the current financial year 2007-2008. The expenditure will be incurred only after completion of all codal formalities. The grant will be generated by the following areas and centaurs:-

(a) The grant will be spent for the purpose, it is sought.
(b) SNGPL shall provide quarterly progress reports to Chief Minister's Secretariat, Peshawar.

Additional Chief Secretary P&D and Finance Department.

1. The Chairman, SNGPL, Lahore.
2. The General Manager, SNGPL, Peshawar.
3. The Secretary to Chief Minister, N.W.F.P, Peshawar.
4. The PSO to Chief Minister, N.W.F.P, Peshawar.
5. The District Coordination Officer, Karak.
6. The District Accounts Officer, Karak.
7. The Director FMIU, Finance Department, Peshawar.
8. The Coordinator (S.W.) Finance Department.
9. The Monitoring Officer-III, Finance Department, Peshawar.
10. The Budget Officer (PFC-II), Finance Department, Peshawar.
11. PS to Secretary Finance.

SECTION OFFICER (DEV-II)

NATIONAL ASSEMBLY OF PAKISTAN

UN-STARRED QUESTION

Session No: 10

Division: Petroleum and Natural Resources

Diary No: 27

Group No: 6th

Reply Date: 21/01/2009

Mover: Mufti Ajmal Khan

* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

Will the Minister for Petroleum and Natural Resources be pleased to state:

a) whether there is any proposal to supply sui gas to the localities of Distaricť Kark;

b) if so, the time by which it will be implemented?

**Reply:**

**Minister for Petroleum and Natural Resources:** (a) Yes.

(b) The expected completion dates of the projects are as under:

| *Project Name* | *Expected Date of Completion* |
|---|---|
| Karak City | 30-04-2009 |
| Tehsil Banda Daud Shah | 30-06-2009 |
| Tehsil Karak | 30-06-2011 |
| Tehsil Takht-e-Nusrati | 30-06-2010 |

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# Annexure V.11 - Government of NWFP Finance Department

1061

(19th Session)

NATIONAL ASSEMBLY SECRETARIAT

"QUESTIONS FOR ORAL ANSWERS AND THEIR REPLIES"

*to be asked at a sitting of the National Assembly to be held on*

Wednesday, the 4th March, 2015

1. *Ms. Naseema:

*Will the Minister for Petroleum and Natural Resources be pleased to state:*

*(a) the criteria adopted to collect the amount from oil and gas exploration companies under social welfare obligation for development of local communities;*

*(b) the criteria adopted for disbursement of the collected amount to respective provinces where such exploration companies are operating at present;*

*(c) the year-wise amount paid to each province under said head during the last five years; and*

*(d) whether it is a fact that the exploration companies have not been contributing under such heads in letter and spirit; if so, the steps being taken in this regard?*

**Minister for Petroleum and Natural Resources (Mr. Shahid Khaqan Abbasi):** (a) As per existing criteria, the Exploration and Production companies are required to deposit the Social Welfare Obligatory funds in the joint accounts with the concerned DCOs/DCs of respective districts.

(b) The E&P company identifies the schemes in consultation with the local communities and civil administration. The schemes are endorsed by concerned MNA of the area and monitored by the concerned DCOs/DCs of the concerned district.

1062

32

*(e) the total number of meters installed in each of the said villages so far?*

**Minister for Petroleum and Natural Resources (Mr. Shahid Khaqan Abbasi) :** (a) No. SNGPL has reported that the directive has been implemented to the tune of approved cost of the project *i.e.* ***Rs. 837.046 million.***

(b) 143.90 Kms supply means was approved as per the plan of the project, out of which 117.30 Kms supply mains (8" & 6" dia) has been laid.

(c) 368.510 Kms distribution network was approved as per the plan of the project, out of which 188 Kms has been laid.

(d) The initial cost estimates based on preliminary survey were to the tune of Rs. 922.890 million, however, after detailed survey, and over all Manning and technical feasibility the cost of the Project was approved as ***Rs. 837.046 million.***

(e) The total number of meters installed in each of the said villages are as follows:-

| Consumer Category | Takht-e-Nusrati | Karak |
|---|---|---|
| Domestic | 1216 | 4140 |
| Commercial | Nil | 22 |
| Special Domestic | Nil | 9 |
| Total | 1216 | 4171 |

MOHAMMAD RIAZ,
*Secretary*

ISLAMABAD:
*The 3rd March, 2015.*

PCPPI—2317(2015) NA—03-03-2015—650.

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# Annexure V.12 - Government of KPK Comments on 2nd Draft Report

1101

**GOVERNMENT OF KHYBER PAKHTUNKHWA**
**ENERGY & POWER DEPARTMENT**

1st Floor, Block-A, Abdul Wali Khan Multiplex Civil Secretariat, Peshawar
PHONE: - 091-9223628 Fax" 091-9223624

No.CPO/E&P/TOG/OGRA/16-17 560-6
Dated 08/03/2017

To,

The Chairperson,
Oil & Gas Regulatory Authority (OGRA),
Islamabad.

Subject: - **STAKEHOLDERS AWARENESS SESSION ON UNACCOUNTED FOR GAS (UFG) LOSS BENCHMARK STUDY**

Dear Madam,

I have been directed to refer to OGRA letter No. OGRA-9(357)/2014, Dated 20/02/2017 (Annex-A) on the subject noted above and to state that the Government of Khyber Pakhtunkhwa has serious concerns over the 2nd draft of UFG report submitted by KPMG which contains a lot of ambiguities.

2. Reference to Clause 4 (v) of the TORs (Annex-B), KPMG was obligated to meet all the stakeholders which includes the Provincial Government. KPMG has not held any meeting with the Provincial Government, hence violated the TORs of the report. Therefore, the report may be rejected unless KPMG takes Government of Khyber Pakhtunkhwa on board and addressed our concerns.

3. Reference to Page:11 of the 2nd Draft UFG Report (Annex-C), KPMG is suggesting an allowance of 4.05% against local changing conditions on the basis of UFG claim made by the Sui Companies over the past four (4) years. Instead of suggesting allowances on the figures provided by the Sui Companies, KPMG should have visited the areas of local challenging conditions and had suggested the allowances on actual grounds backed by their own studies.

4. Reference to Page:22 of the 2nd Draft UFG Report (Annex-D), KPMG has claimed that since FY 2002, the UFG has increased from 7% ot 15% in FY 2015. On the other hand SNGPL has claimed a declining trend of UFG. in the Public hearings of FY2015-16, SNGPL has claimed to decreased the UFG to 9%. Therefore, it is suggested that the Incentive Portion (Beta) of KPMG,s proposed formula may also be neglected by the Authority for at least the next five.

1102

**GOVERNMENT OF KHYBER PAKHTUNKHWA**
**ENERGY & POWER DEPARTMENT**

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5. Reference to Page: 23 of the 2nd Draft UFG Report (Annex-E), the UFG profile is based on the figures provided by the Sui Companies. Instead of using the Sui Companies data, KPMG should have visited the UFG loss areas to take the actual figures from on ground realities.

6. Reference to Table: TT-1 & TT-2, Page: 35 of th 2nd Draft UFG Report (Annex-F), the data of theft by consumers & non-consumers is based on the figures provided by the Sui Companies. Instead of using the Sui Companies data, KPMG should have visited the UFG loss areas to take the actual figures from on ground realities.

7. Reference to Table: TT-3, Page: 36 of the 2nd Draft UFG Report (Annex-G), the analysis of theft volumes allowed and disallowed is based on the figures provided by the Sui Companies. Instead of using the Sui Companies date, KPMG should have visited the UFG loss areas to take the actual figures from on ground realities.

8. Reference to Page: 38 of the 2nd Draft UFG Report (Annex-H), the KPK letter of 19/12/2013 was based on the law & order situation of Khyber Pakhtunkhwa in 2013. As of today the reality is that the law & order situation is much improved as compared to 2013. Chinese Expats are residing in camps in District Karak & Kohat. Foreigner experts & investors are coming to Khyber Pakhtunkhwa to invest in Oil & Gas Sector. It is proposed that KPMG shall visit the UFG loss areas and examine the law & order situation itself.

9. Reference to Page: 41 of the 2nd Draft UFG Report (Annex-J), the main cause of pipeline leakage/damage in the Districts of Karak, Kohat & Hangu is zero infrastructure of gas from network of 2 mmcfd capacity in District Karak. Utilization of high pressure to inject biggest volumes of gas has caused the pipelines to get damaged.

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# Annexure V.12 - Government of KPK Comments on 2nd Draft Report

1103

**GOVERNMENT OF KHYBER PAKHTUNKHWA**
**ENERGY & POWER DEPARTMENT**

1st Floor, Block-A, Abdul Wali Khan Multiplex Civil Secretariat, Peshawar
PHONE: - 091-9223628 Fax- 091-9223624

10. Reference to Page: 47 to 54 of the 2nd Draft UFG Report (Annex-K), the tables/figures/analysis is based on the data provided by the Sui Companies. Instead of using the Sui Companies data, KPMG should have visited the UFG loss areas to take the actual figures from on ground realities.

11. The Authority is requested to:

a) Reject the draft UFG Report.
b) Direct KPMG to hold meetings with the Government of Khyber Pakhtunkhwa and address the Provincial concerns.
c) Make UFG Study a field study rather than a desktop study.
d) Postpone the Stakeholders Awareness Session till the KPMG doesn't respond to the concerns/queries of Government of Khyber Pakhtunkhwa.

12. Submitted, please.

Yours faithfully,

**(Syed Zain Ullah Shah)**
Chief Planning Officer

Cc:

1. Principal Secretary to Chief Minister, Khyber Pakhtunkhwa.
2. PS to Minister, Energy & Power, Khyber Pakhtunkhwa.
3. PSO to Chief Secretary, Khyber Pakhtunkhwa.
4. PS to Secretary, Energy & Power Department, Peshawar.
5. CEO, KPOGCL.

Chief Planning Officer

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