



Unaccounted For Gas (UFG) Report

Government of Pakistan
Ministry of Energy (Petroleum Division)

FY 2020-21

www.mpnr.gov.pk

1. Introduction:

The two public sector gas utility companies i.e. M/s Sui Southern Gas Company Limited (SSGCL) and M/s Sui Northern Gas Pipelines Limited (SNGPL) under license granted by Oil and Gas Regulatory Authority (OGRA) are engaged in transmission and distribution/sale of natural gas in the country in their respective franchise/ area. OGRA Ordinance, 2002, Tariff Rules and the License condition empowers the Authority (OGRA) to determine total annual revenue requirement of the gas companies. OGRA introduced much awaited new tariff regime for regulated natural gas sector in Pakistan with effect from 01.07.2018. The determination of annual revenue requirement takes into account the determination of Unaccounted For Gas (UFG) allowance and disallowance to the gas companies.

UFG is a phenomenon of gas loss which is contingent upon occurrence of various technical factors when gas flows from fields to end consumers. It is calculated as the difference between metered gas volume injected into the transmission and distribution network (Point of Dispatch/Delivery) and the metered gas delivered to the end consumers (Consumer Meter Station) during a financial year. Adjustments on account of self-consumption etc. in the operations of gas utilities are also accounted for in UFG determination. OGRA being the regulator, determines and fixes UFG benchmark of the both Sui Companies. Pursuant to UFG determination by OGRA for each year any percentage / value of UFG above the fixed benchmark treated as disallowance and deducted from the revenue of the gas utility companies. In 2017, OGRA undertook a UFG study through independent consultant vis M/s KPMG Taseer Hadi & Co. Chartered Accountants who submitted their final report on 11.07.2017 which was forwarded by OGRA to gas companies for implementation and compliance on 30.08.2017. Based on the said UFG Study following formula was recommended for calculation of UFG:

$$\text{UFG \%} = \frac{(\text{Gas received} - \text{Gas Delivered}) - \text{Adjustments}}{\text{Gas received}}$$

Further a two-component formula for calculating UFG allowance was recommended as under:

$$\text{UFG Allowance} = \text{Gas Received} \times (\text{Rate1} + \text{Rate2} \times \beta)$$

Rate1= Technical Component (Inherent gas loss in the system)

Rate 2= Local Challenging conditions component (Pakistan specific)

β =Performance factor (Key Monitoring Indicators - KMIs)

Rate1 is the benchmark fixed rate based on prevalent conditions / infrastructure in the areas of the operation of the sui companies and same is fixed at 5% for the next five years. The fixed rate also includes allowance for transmission losses which is calculated upto maximum 0.5%. Rate2 is the allowance for local challenging conditions as compared to the world at large. This factor is suggested to cover impact of gas losses due to expanding gas supply network in retail including law & order affected areas 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 fixed at a maximum of 2.6%. In order to ensure appropriate and serious efforts are directed towards reducing UFG over the agreed term of five (5) years, the local challenging conditions component has been linked to the achievement of KMIs. To compute and evaluate Estimate Revenue Requirements (ERRs) for prospective years, the Rate 2 will be taken at 50% and the same will be actualized in line with the achievement of proposed KMIs during the respective Final Revenue Requirements (FRRs) of the gas companies.

2. Approved Targets:

The present Government decided to take corrective measures in the reduction of UFG since UFG disallowances has a significant impact on the revenues of the company which in turn has a compounding impact on the revenue shortfall of the gas utility companies. In this regard, a three - year UFG Reduction Plan for both Sui Companies was approved by the Economic Coordination Committee (ECC) of the Cabinet and same was ratified by the Federal Cabinet. The ECC approved three-year UFG reduction targets of both Sui Companies are given below:

Table: Three-year UFG reduction total targets including both components of the plan in volumetric and percentage terms of SNGPL

Component	Description	Expected Contribution in UFG Reduction							
		FY 2019-20		FY 2020-21		FY 2021-22		Total	
		UFG Reduction Target		UFG Reduction Target		UFG Reduction Target			
		% age	Volume (MMCF)	% age	Volume (MMCF)	% age	Volume (MMCF)	% age	Volume (MMCF)
1	Accumulated reduction to be collectively achieved by 16 Nos. Distribution Regions through execution of 30 No. Key Monitoring Indicators (KMIs) advised by OGRA, subsequent to approval of UFG Study Report prepared by Consultants	0.75%	3,420	0.50%	2,280	0.50%	2,280	1.75%	7,980
2*	Reduction in Transmission & Distribution Losses in High UFG Areas of KPK through close liaison and essentially required administrative support of law enforcement agencies	0.75%	3,420	0.75%	3,420	0.75%	3,420	2.25%	10,260
Total		1.50%	6,840	1.25%	5,700	1.25%	5,700	4.00%	18,240

* This component is being implemented in three Phases. First Phase has been approved and will be completed by 30.06.2021

Table: Three-year UFG reduction total targets including both components of the plan in volumetric and percentage terms of SSGCL.

Component	Description	Expected Contribution in UFG Reduction							
		FY 2019-20		FY 2020-21		FY 2021-22		Total	
		% age	Volume (MMCF)	% age	Volume (MMCF)	% age	Volume (MMCF)	% age	Volume (MMCF)
1	Reduction of UFG against physical activities and OGRA's 30 KMIs.	1.87%	7,965	2.46%	10,462	2.87%	12,202	7.20%	30,629
2*	Savings by implementation of fixed billing tariff at Balochistan	-	-	-	-	2.4%	10,000	2.35%	10,000
	Total (Approx.)	1.87%	7,965	2.46%	10,462	5.22%	22,202	9.55%	40,629

*This component was not considered and approved; as such it is not part of SSGCL reduction plan.

The quarter-wise progress report for the FY 2020-21 against the UFG target and achievement is provided hereunder:

Table: Progress of both Sui Companies against Three-year UFG Reduction Plan.

Unit:MMCF	FY21-Q1 30.09.2020	FY21-Q2 31.12.2020	FY21-Q3 31.03.2021	FY21-Q4 30.06.2021	FY2021
SNGPL					
Performance	200	2,951	1,923	3,245	8,319
Outcome	1,625	4,376	3,348	4,670	14,019
Target	1,425	1,425	1,425	1,425	5,700
SSGCL					
Performance	(1,065)	(371)	1,886	2,175	2,625
Outcome	1,232	2,828	4,930	4,097	13,087
Target	2,297	3,199	3,044	1,922	10,462

From the above table, it is evident that SSGCL reduced UFG by 2,625 MMCF above the targeted UFG reduction of 10,462 MMCF. Similarly, SNGPL reduced UFG by 8,319 MMCF against the targeted UFG reduction of 5,700 MMCF.

The year to year comparison of overall UFG of Sui companies for FY 2020 and FY 2021 is provided here under (the reduction includes the above target achieved by companies):

Table: Year-wise progress of both Sui Companies.

	SSGCL	SNGPL
Year	July-June	July-June
2020-21	54,779 MMCF	34,237 MMCF
% CY	15.10%	8.83%
2019-20	67,866 MMCF	48,256 MMCF
% LY	17.05%	12.32%
Variance	(13,087 MMCF)	(14,019 MMCF)
%	-1.95%	- 3.49%

3. Key Performance Indicators / Quantitative Analysis of UFG Reduction of SSGCL and SNGPL during FY 2021:

SSGCL

Target Activities	Unit	UFG REDUCTION TARGETS AND ACHIEVEMENTS									
		1st Quarter		2nd Quarter		3rd Quarter		4th Quarter		Jul- Jun 2020-21	
		Targets	Achieved	Targets	Achieved	Targets	Achieved	Targets	Achieved	Targets	Achieved
Network Segmentation	Nos.	18	13	32	24	33	15	17	15	100	67
Rehabilitation of old leaking Pipelines	KMs	88	34	140	78	134	76	83	33	445	221
Underground Leak Survey	KMs	3,550	3,407	5,285	4,610	5,245	4,479	3,920	3,784	18,000	16,280
Overhead Leak Survey & Repairs	Nos.	222,400	180,423	348,700	182,353	342,900	290,371	261,000	293,557	1,175,000	946,704
Defective Meter Replacement (Domestic)	Nos.	70,750	46,049	108,200	87,557	106,650	103,902	79,400	107,639	365,000	345,147
Theft Detection (Domestic)	Nos.	43,400	44,128	64,950	59,312	64,450	52,487	47,200	44,851	220,000	200,778
Theft Detection (Industrial & Commercial)	Nos.	190	431	302	560	297	579	211	796	1,000	2,366
Theft Detection (Unregistered)	Nos.	104	125	184	26	179	181	133	264	600	596
Detail survey (Industrial)	Nos.	154	242	230	148	220	127	146	146	750	663
Industrial Meters Proving	Nos.	258	330	395	471	375	415	272	313	1,300	1,529
UFG SAVINGS	MMCF	2,297	1,232	3,199	2,828	3,044	4,930	1,922	4,097	10,462	13,087

- Against target of 100 numbers in network segmentation, company achieved 67
- Against target of 445 Kms for rehabilitation of old network, company achieved 221 Km
- Against target of 18,000 Km leak surveys, company achieved 16,280 Kms
- Against target of 1,175,000 leak survey and repairs, company achieved 946,704
- Against target of 365,000 replacement of defective meters, company achieved 345,147
- Against target of 220,000 theft detection of domestic consumers, company achieved 200,778
- Against target of 1,000 theft detection of commercial consumers, company achieved 2,366
- Against target of 600 non-consumers' theft detection, company achieved 596
- Against target of 750 detailed surveys of industrial consumers, company achieved 663
- Against target of 1,300 industrial meter proving, company achieved 1,5329

SNGPL

Sr. No.	Target Activities Under KMIs	Unit	UFG Reduction Activities Performed				
			Annual Target	July to September	July to December	July to March	July to June
1	Rehabilitation of old leaking Network	Km	892	0.78	277	515	888
2	Underground Leak Survey & Rectification of detected Underground Leakages	No	39,263	10,938	16,861	26,856	39,263
3	Aboveground Leakage Survey & Rectification	No	As per Actual	559,467	871,421	930,307	988,173
4	Industrial Meter Replacement & Flow Proving (Suspected/Tampered, Defective, Schedule etc.)	No	As per Actual	1,489	3,333	4,364	5,344
5	Commercial & Special Domestic Meter Replacement & Flow Proving (Suspected/Tampered, Defective, Schedule etc.)	No	As per Actual	3,452	8,534	15,766	16,087
6	Domestic Meter Replacement & Flow Proving (Suspected/Tampered, Defective, Schedule etc.)	No	As per Actual	85,350	205,243	369,762	537,306
7	Theft Detection - Industrial	No	As per Actual	11	32	44	63
8	Theft Detection - Commercial	No	As per Actual	659	1,211	1,714	2,162
9	Theft Detection - Domestic	No	As per Actual	14,396	28,906	42,738	80,667
10	Theft Volume Booked - All Consumer Categories	MMCF	As per Actual	401	769	1,189	1,604
		No	As per Actual	78	146	194	238
11	Theft Detection- Non Consumers(Unregistered)	MMCF	As per Actual	150	294	373	425
12	Industrial Vigilance - Detailed survey	No	Once in a month.	11,263	19,619	31,595	44,584
13	Commercial Vigilance - Detailed survey	No	Once after each quarter of a year.	60,093	114,973	177,534	250,144
Actual UFG savings <i>(as compared to corresponding period of previous FY)</i>			MMCF	1,633	6,088	9,535	14,235

- Against target of 892 Kms for rehabilitation of old network, company achieved 888 Kms
- Against target of 39,263 underground leak Survey & rectification, company achieved 39,263
- All targets from serial 3 to serial 13 were achieved as per the actual targets.
