

FY 2019-22



Unaccounted For Gas (UFG) Report

Ministry of Energy (Petroleum Division)
GOVERNMENT OF PAKISTAN
petroleum.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 into 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 under took 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 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 is yet to be approved by the Government being a separate proposal. In case it is not considered by the Government then the same will stand excluded from the three-year plan of SSGC.

3. UFG Reduction:

SSGCL progress during FY 2019 -22 on gas losses is as under:

SSGCL	
Year	July-June
2019-20	68,626 MMCF
% 1 st Y	17.20%
2020-21	55,491 MMCF
% 2 nd Y	15.30%
2021-22	*57,897 MMCF
% 3 rd Y	17.20%
Variance (1 st July, 2019 – 30 th June, 2022)	(14,751 MMCF)
%	0.1%

Table: SSGCL's UFG progress during three years UFG Reduction Plan.

*Provisional figures, yet to be finalized by OGRA.

SNGPL progress during FY 2019 -22 on UFG reduction is as under:

SNGPL	
Year	July-June
2019-20	48,256 MMCF
% 1 st Y	12.32%
2020-21	33,162 MMCF
% 2 nd Y	08.60%
2021-22	*29,228 MMCF
% 3 rd Y	08.06%
Variance (1 st July, 2019 – 30 th June, 2022)	(23,348 MMCF)
%	-3.80%

Table: SNGPL's UFG progress during three years UFG Reduction Plan.

*Provisional figures, yet to be finalized by OGRA.

4. Progress on UFG Reduction Activities:

SSGCL

Sr #	Description	Unit.	FY 2019-20		FY 2020-21		FY 2021-22	
			Target	Achieve	Target	Achieve	Target	Achieve
1	Segmentation	Nos.	60	74	100	67	115	112
2	Rehabilitation	Kms.	265	143	445	221	490	367
3	Underground Leak Survey	Kms.	11,000	16,061	18,000	16,280	20,000	20,970
4	Overhead Leak Survey & Repairs	Nos.	740,000	993,650	1,175,000	946,704	1,375,000	1,431,481
5	Defective Meter Replacement (Dom)	Nos.	203,000	315,290	365,000	345,147	350,000	258,477
6	Theft Detection (Dom)	Nos.	185,000	159,706	220,000	200,778	238,000	198,531
7	Theft Detection (Ind & Com)	Nos.	1,200	1,630	1,000	2,366	800	1,264
8	Theft Detection (Unregistered)	Nos.	650	1,603	600	596	500	2,525
9	Detailed Survey (Ind)	Nos.	700	685	750	663	900	462
10	Industrial Meters Proving	Nos.	1,000	1,546	1,300	1,529	1,800	1,769

UFG Targets	MMCF	7,965	-4,022	10,462	-13,135	12,202	2,407
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In FY 2019-20, the volumetric loss of the SSGC has decreased by 4,022 MMCF, against a target of 7,965 MMCF. The percentage UFG has hardly change as compared to same period of previous year. During the FY 2019-20, UFG activities were hampered due to Covid-19 lockdown, therefore, total UFG reduction targets for the year have not been achieved completely. In FY 2020-21, the Company's UFG has decreased by 13,135 MMCF against the target of 10,462 MMCF while percentage UFG has also decreased by 1.90 %. However, in FY 2021-22, the volumetric loss of the SSGC has increased by 2,407 MMCF, against the reduction target of 12,202 MMCF. The percentage UFG has hardly change as compared to same period of previous year. One of the main reason for increasing UFG in SSGC's system during last financial year was harsh winter season in the Province of Balochistan. In Balochistan region, indicators of socio-economic development have remained at dismal levels. Majority of population continue to live in settlements which are underdeveloped, economically backward and lacking basic amenities. The extreme cold makes space heating a necessity for life. Since wood/coal are costly and inconvenient, majority of people depend on natural gas. The increase in consumption coupled with lower income limit the ability of the people in this region to pay for the cost of gas. Around 0.5-0.5 million unauthorized consumers are using gas in Karachi city (due restriction imposed by Sindh Building Control Authority Act), which is also

contributing to Company's overall UFG. The company is engaged and working on different variables of UFG including the complex matter of losses in Balochistan.

SNGPL

Sr #	Description	Unit.	FY 2019-20		FY 2020-21		FY 2021-22	
			Target	Achieve	Target	Achieve	Target	Achieve
1	Rehabilitation of old leaking Network	Kms.		627		893		1,158
2	Underground Leak Survey & Rectification of detected Underground Leakages	No.	As per Actual	41,146	As per Actual	39,568	As per Actual	16,798
3	Aboveground Leakage Survey & Rectification	No.	As per Actual	973,688	As per Actual	952,537	As per Actual	984,158
4	Industrial Meter Replacement & Flow Proving (Suspected / Tampered, Defective, Schedule etc.)	Nos.	As per Actual	5,095	As per Actual	5,345	As per Actual	4,639
5	Commercial & Special Domestic Meter Replacement & Flow Proving, Suspected/Tampered, Defective, Schedule etc.)	Nos.	As per Actual	21,493	As per Actual	20,447	As per Actual	18,861
6	Domestic Meter Replacement & Flow Proving (Suspected/Tampered, Defective, Schedule etc.)	Nos.	As per Actual	613,303	As per Actual	537,306	As per Actual	871,119
7	Theft Detection - Industrial	Nos.	As per Actual	66	As per Actual	62	As per Actual	44
8	Theft Detection - Commercial	Nos.	As per Actual	3,078	As per Actual	3,100	As per Actual	2,171
9	Theft Detection - Domestic	Nos.	As per Actual	94,424	As per Actual	83,444	As per Actual	139,589
10	Theft Volume Booked - All Consumer Categories	MMCF	As per Actual	1,988	As per Actual	1,594	As per Actual	1,700
11	Theft Detection - Non Consumers (Unregistered)	Nos.	As per Actual	185	As per Actual	239	As per Actual	221
		MMCF	As per Actual	1,370	As per Actual	425	As per Actual	218
12	Industrial Vigilance	Nos.	Once in a month	47,649	Once in a month	45,410	Once in a month	42,374
13	Commercial Vigilance	Nos.	Once after each quarter of a year	255,467	Once after each quarter of a year	250,675	Once after each quarter of a year	252,384

UFG Targets	MMCF	6,840	-4,321	5,700	-15,093	5,700	-3,934
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As provided above, in FY 2019-20, the volumetric loss of the SNGPL has decreased by 4,321 MMCF, against a target of 6,840 MMCF. While during the FY 2020-21, the Company's total UFG has decreased by 15,093 MMCF against the target of 5,700 MMCF which is in term of percentage more than 250% of the reduction target of the year. However, in FY 2021-22, the volumetric loss of the SNGPL has decreased by 3,934 MMCF, against the reduction target of 5700 MMCF. The Company is continuously working on reduction in Transmission and Distribution in high losses areas i.e. Karak etc., de-looping of looped SMS clusters, replacement of underground network against system rehabilitation program, infrastructure improvement and isolation and segmentation of network to improve visibility and micro monitoring of losses at TBSs. A project of network extension/rehabilitation in oil & gas producing areas of Khyber Pakhtunkhwa is under progress. The Phase-II of the said project is under execution. However, Phase-I & Phase-II do not cover all the areas of oil & gas producing Districts. As network extension/ rehabilitation for provision of legal connections in Oil & Gas producing areas is not yet been completed, therefore, UFG reduction target of oil & gas producing areas have partially been achieved. Overall, both the Sui Companies are committed and working dedicatedly in reducing their UFG to minimum level given by their regulator.
