



**Verified Carbon
Standard**

REDUCING GAS LEAKAGES WITHIN THE TITAS GAS DISTRIBUTION NETWORK IN BANGLADESH

CLIMATE COMPASS



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1 PROJECT DETAILS

1.1 Summary Description of the Project

The proposed project was registered as a CDM project on March 17, 2015. The project is reducing gas leakages from components from the districts outlines in section 1.12 within the Titas Gas Company Limited (Titas) natural gas distribution system in Greater Dhaka and its adjacent areas in the People's Republic of Bangladesh, a Least Developed Country.

Construction began on the distribution system in the mid- 1960s and over the years the system has not been adequately maintained. As a result, a significant percentage of the natural gas throughput (predominately methane (CH₄)) leaks from components in the system and is released into the atmosphere contributing to global warming. The project is reducing methane, a potent greenhouse gas (GHG).

Leaks in the distribution system are caused by normal component wear, thermal and vibrational stresses and seasonal expansion/contraction cycling from ambient air temperature changes. Natural gas leaks occur through various sources including, ball/gate/plug valves, flanges, and connectors. These components have not been routinely checked for leaks under existing safety practices of Titas Gas. The company operators lack the advanced leak detection equipment, advanced repair materials and trained workers to identify chronically leaking components, accurately measure the leak rates and make reliable repairs of the leaks.

The project will lead to the reduction of methane emissions at flanges, valves, insulating joints and other above ground equipment components.¹

Project activity

The project activity will reduce natural gas leakage in the distribution network of Titas through the implementation of advanced leak detection and repairs (LDAR) procedures. The project activities will include inspection and leak measurements, as well as repair works at components in the natural gas above ground distribution system. using advanced leak detection and measurement technology including HiFlow Samplers. Leak Measurement Devices and Gasurveyors as well as advanced repair materials. In addition, selected staff of Titas will be trained in advanced leak detection, measurement, and repair techniques.

The Estimated Annual Average GHG Reductions is 3,512,909 tCO₂e with a total estimated reduction of 35,129,089 tCO₂e over ten years.

1.2 Sectoral Scope and Project Type

¹ The selected methodology AM0023 (Version 04.0.0) defines a component as "above-ground process equipment in natural gas production, processing, transmission, storage, distribution systems", including valves, flanges and other connectors etc.

Sectoral Scope 10 – Fugitive emissions from fuels (solid, oil, and gas)

This project is not a grouped project.

1.3 Project Eligibility

1. The six Kyoto Protocol greenhouse gases: The emissions reduction of the project comes from Methane (CH₄) emissions as a result of the previously leaking gas that will be eliminated by finding and repairing the leak in the project scenario; Thus, the project is applicable to this scope.

2. Ozone-depleting substances: NA This project does not involve ODSs.

3. Project activities supported by a methodology approved under the VCS Program through the methodology approval process: NA This project does not use a methodology approved under the VCS Program through the methodology approval process.

4. Project activities supported by a methodology approved under a VCS approved GHG program, unless explicitly excluded under the terms of Verra approval: The methodology AM0023 (Version 04) the project utilized is a methodology approved under CDM Program, that is a VCS approved GHG program.

5. Jurisdictional REDD+ programs and nested REDD+ projects as set out in the VCS Program document Jurisdictional and Nested REDD+ (JNR) Requirements: NA This project does not involve REDD+.

Additionally, the project is not included in the projects excluded in Table 1 of VCS Standard 4.3. Thus, the project is eligible under the scope of VCS program.

1.4 Project Design

As per 3.20.5(1) of the VCS Standard 4.3 this section is left blank.

Eligibility Criteria

As per 3.20.5(1) of the VCS Standard 4.3 this section is left blank.

1.5 Project Proponent

Organization name	NE Climate A/S
Contact person	Daragh Glynn
Title	Director of Carbon Projects
Address	
Telephone	+376640743
Email	daraghglynn@ne-climate.com

1.6 Other Entities Involved in the Project

Organization name	Climate Compass LLC
Role in the project	Project Development and Implementation
Contact person	Kevin James
Title	Managing Director
Address	
Telephone	+12023401112
Email	kjamesqt@gmail.com

1.7 Ownership

NE Climate A/S by virtue of an enforceable and irrevocable agreement with Titas Gas Company Limited, the holder of the statutory rights in the gas distribution system where the methane leaks are found and repaired by the project proponent, vests project ownership in the project proponent.

1.8 Project Start Date

29 January 2017 is the date of the commencement of the full baseline study and repairs. This date is when the first full activity of measuring and repairing leaks leading to the first methane emission reduction was undertaken. Some minor work was done as part of a pilot phase earlier, but the first date the full project activity actually reduced emissions was chosen as the start date. During this pilot study, no leak repairs were made, the repairs occurred when the baseline study began.

1.9 Project Crediting Period

CDM Crediting Period: 29 January 2017 - 28 January 2027 (10 year fixed)

VCS Crediting Period: 29 January 2017 - 28 January 2027 (10 year fixed)

1.10 Project Scale and Estimated GHG Emission Reductions or Removals

Project Scale	
Project	
Large project	√

Year	Estimated GHG emission reductions or removals (tCO ₂ e)
29 January 2017 – 31 December 2017	1,645,234 (Issued via CDM)
2018	1,831,300 (Issued via CDM)
2019	3,905,698 (Issued via CDM)
2020	3,527,652 (Issued via CDM)
2021	4,137,966
2022	3,950, 039
2023	3,950, 039
2024	3,950, 039
2025	3,950, 039
2026	3,950, 039
1 January 2027 – 28 January 2027	303,017
Total estimated ERs	35,129,089
Total number of crediting years	10
Average annual ERs	3,512,909

Note: These figures are based on both actual outcomes seen through issuances of CDM credits as noted or estimations using the actual baseline study data which is more accurate than previous pilot studies that formed the basis of the CDM estimations prior to the completion of the baseline study.

1.11 Description of the Project Activity

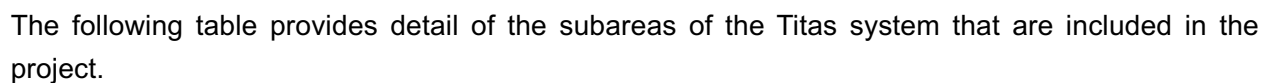
As per 3.20.5(1) of the VCS Standard 4.3 this section is left blank.

1.12 Project Location

The project is hosted by Titas Gas T & D Co. Ltd. (referred to as “Titas” in this document). The company’s headquarters are based in Dhaka, Bangladesh with the coordinates of 23.7000°N, 90.3833°E.

The exact locations of all the identified and repaired leaks will be recorded in the monitoring system database using GPS coordinate, and a street address when possible or a description of the location. A photo of the leak repair will also be provided for each leak include in the project. The dark purple in the pink region on the map below indicates the areas included in the project. The geographic areas do not overlap with those included in VCS project 3021 (different districts) so there is no double counting. In addition, the projects mark repaired equipment with different colored paint to ensure no accidental crossover, and finally the GPS coordinates of each leak are cross checked to ensure no overlap.

Map 1



Territory surveyed - Reducing Gas Leakages within the Titas Gas Distribution Network in Bangladesh (Titas-1) Baseline Study

Division	Sub Area	Territories
MD-1	1	Demra, Siddirgonj, Sanarpar, Amulia, Sonir Akhra, Matuail, Sarulia
	7	Shyampur, Postagola, Alambag, Doleswar, Namashyampur
	8	Gandaria, Jurain
	9	Hatkola, R.K.Mission Road, Begumgonj, Jatrabari
MD-2	10	Farsongj, Wari, Laksmibazar, Waterwax Road, Narinda, Tatibazar, Banglabazr, Sutrapur, Tipu Sultan Rd
	11	Nabapur, Bangshal, Siddikbazar, Kaptanbazar, Nayabazar, Patuatuli, Babubazar, Jindabaha Lane, Fulbaria, Armanitola
	12	Nazimuddin Road, Chotokatra, Borokatra, Agasadek Rd, Mitf, Waiseghat, Hosnidalan, Soarighat, Chankharpul,
	13	Lalbagh, Bakshi B, Islambagh, Begumbazar, Chokbazar, Urrduroad, Rohomotgonj
	16	Polashi Berak, Du, Dmc, Buet, Nilkhet, Bangla Academia
	17	Shantinagar, Kahr, Topkhana, Dit, Bangabandhu Ave, Gulistan, Bongobazar, Bijaynagar, Paltan
	18	Kamalapur, Motijh, Dilkhusha, Arambagh, Fakirapul, Kamlapur, Shajahanpur
	19	West Malibagh, Bellyroad, Shajahanpur, Kakrail (Part), Sahidbagh, Santibagh, South Khilgaon
MD-3	20	Malibagh Mor, Shantinagar, Sideeswari
	21	Shahabagh, Poribagh, Banglamotor
	26	Eskaton, Nayatola, Modhubagh, West Rampura, Boromoghbar, Tongi Diversion Road, Olon
	27	Khilgaon, Goran, Mugda, Madartek, Bonosri, Meradia, Nondipara, Shipahibagh, Ahmedbagh
MD-4	2	Tejgaon, Mohakhali, Mohakhali DOHS, Rasulbagh, Hozrat Para, Arjotpara, Bus Terminal, Amtoli, Cancer Hospital, Begunbari, Nakhapara, West Nakhapara)
	28	Gulshan-1, Gulshan-2, Badda, Merul Badda, Uttar Badda, Bhatara, Dokkhin Badda, Niketon, Baridhara, Lake City Corcard, Korail, Kuril, Bashundhara R/A, Kalachandpur, 100 ft. road, Link Road, Bhasantek)
	30	Banani R/A.
	31	Uttara (Sector-1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13), Rab Office Head Quartar, Kurmitola, Khilkhet, Azompur, Dhour, Alania, Mainertek, Dewanpara)
MD-5	14	Shankar, Zigatola, Raerbazar, Sultangonj, Katasur
	15	Lalbagh (Part), Azimpur, Pilkhana
	22	Elephant Road, Rajabazar, Hatirpool, Poribagh, Indira Road, Tejturi Bazar
	23	Dhanmondi R, A
	24	Mohammadpur, Lalmatia, Adabar, Shayamoli
MD-6	25	Sher-E-Bangla Na, Agargaon, Khamarbari, Monipuripara
	4	Mirpur (Agargaon, Shewrapara, Mirpur-10, Mirpur-1, Mirpur-2, Mirpur-6, Mirpur-7, Mirpur-11, Mirpur-12, Mirpur-13, Mirpur-14, Gabtoli, BNP Bazar, Pirebazar, Mirerbazar, Kuchukhet, Ibrahimpur, Kazipara, Lal Kuthi, Mazar Road, Rasulbagh, Paikpara, Ansar Camp, Estern Housing, Sangbadik Collonpy)
Narayanganj	1 (part) and 6	Narayanganj (Muktajheel, Hirajheel, Shiddhirganj, Shiddhirganj PO, Uttar para, Adamzee EPZ, Gop Nagar, Syednagar, Tamakpatti, Nitaiganj, Baburail, Dewbhog, Narshingpur)
	5 and 6	Fatullah (Saddam Market, Munshinagh, Pagla, Aligar, Khanpara, DC Office, Ishdair, Chasara)
	36	Narsingdi and its adjacent areas
	35	Ghorashal town
	50	Bhairab, Kuliayarchar
	52	Shibpur town
	51	Monohardi town
Gazipur	32	Joydevpur (Rajendrapur Can. To Shibpur, Shimultoly to Gazipur Chawrasta, Partial area of Kashimpur
	3	Tongi (Turag Bridge to Gazipura)
	60	Tangail town and its adjacent areas, Mirzapur, Elenga, Gopalpur
	38	Savar, Aminbazar, Hemayetpur, Fulbaria, Nabinagar, Ashulia, Bai Pail, Akran, EPZ, Naroshnghopur
Mymensingh	71, 72 and 73	Mymensingh town and its adjacent areas
	78	Trishal (both side of Mymensingh high-way
	84	Shombhuganj Bazar
	83	Muktagacha
	79	Valuka to Mawna, Master Bari, Seed Store
	80	Goforgaon town
	77	Kishoregonj town and its adjacent areas
	76	Netrokona town and its adjacent areas
	81	Sherpur town and its adjacent areas
	74 and 75	Jamalpur town and its adjacent areas
	82	Sorishabari town

1.13 Conditions Prior to Project Initiation

Situation before the project

Titas is a subsidiary of Petrobangla, the government-owned national oil company of Bangladesh. All under-ground distribution networks and facilities in the Titas Franchise Area are cathodically protected. Titas has a cathodic protection (CP) maintenance schedule, in which all components included in under-ground distribution networks are checked to ensure that they are properly protected against corrosion. However, the CP maintenance schedule does not extend to the identification and repair of chronic leaks that are present in the above ground distribution network. Titas does not have a “planned” maintenance schedule where teams are tasked with checking different components across the network to ensure their proper functioning. There is no formal operational procedure or specification on what type of maintenance should actually be implemented. There is also no limit on how much a component can leak before it is declared un- safe. In practice, repairs are implemented mainly out of safety concerns in locations where gas from leaks can accumulate underground and pose a threat of explosion. Therefore, the leaks identified and repaired under this project in above ground infrastructure like risers have not been regularly captured and repaired prior to the project.

Before the start of the project, Titas only had two hydrocarbon leak detectors for use throughout the more than 12,000 km system (Gasman Personal Gas Monitor (model: CE1180ExII1G), manufactured by Crowcon Oxon, UK). The quantities of these conventional detection devices are insufficient for widespread use; consequently, the examination of leaks is primarily undertaken through visual (i.e., bubbling of leaks through water), noise and odor detection. As such, existing procedures are only detecting a minority of leaks occurring in the system. A fact highlighted by the baseline study that detected over 38,000 leaks, which equate to gas losses of greater than 400 thousand liters/minute. Therefore, the leak detection technologies provided by the project have been critical to allow local operators to find and quantify leaks.

Furthermore, even for those leaks that are identified through noise or odor, the company lacks the modern repair materials required to fix all but the simplest leaks. Therefore, the repair materials provided by the project are critical to ending leakage over an extended period. So, prior to the project, Titas was not set up to find many leaks in its above ground system and the company lacked the proper materials required to make the repairs.

1.14 Compliance with Laws, Statutes and Other Regulatory Frameworks

The project complies with all Bangladesh laws. While the activities included in the project are not required from the gas companies, the leak detection and repair activities conform to the ‘Natural Gas Security Law’ also known as ‘Prakitik Gas Nirapatta Bidhimala, 1991 - Revised in 2003’. Per the ‘Natural Gas Security Law’. However, leakage reports prepared and submitted to the Department of Explosives as required under this law (attached to the Department of the Ministry of Energy and Mineral Resources, Government of Bangladesh) are confined to major incidents involving explosions. For these events, a special team not associated with the project is dispatched to make repairs and a report sent instantly. For other less catastrophic incidents, monthly reports are prepared. Any leaks or repairs made as part of this safety effort will be excluded from the project as they are part of the baseline case. A separate team from the project effort is completely responsible for this activity thereby preventing the accidental inclusion of safety related repairs into the project. As another safeguard, the safety team will have no access to the advanced monitoring equipment required to include a repair in the project. In addition, the project is in compliance with the “natural gas security law” called “Prakitik Gas Nirapatta Bidhimala, 1991 (Revised in 2003)” and the “gas marketing law” called “Gas Bipanan Niyomaboli 2004”.

1.15 Participation under Other GHG Programs

1.15.1 Projects Registered (or seeking registration) under Other GHG Program(s)

The project is registered under the United Nations Clean Development Mechanism (CDM) Program with the registration number 10077 and all project information can be found at [CDM Project Link 10077](#).

1.15.2 Projects Rejected by Other GHG Programs

NA- This Project has not been rejected by other GHG programs.

1.16 Other Forms of Credit

1.16.1 Emissions Trading Programs and Other Binding Limits

The project does not reduce GHG emissions from activities that are included in an emissions trading program or any other mechanism that includes GHG allowance trading.

1.16.2 Other Forms of Environmental Credit

The project hasn't sought or received another form of environmental credits.

1.17 Sustainable Development Contributions

The project achieves its emission reductions by training and employing local staff to find and repair leaks in the gas system using advanced gas detection technology and repair materials.

Natural gas leaks result in emissions of methane (CH₄) into the atmosphere. The implementation of the project from 29 January 2017 through 31 December 2021 has already reduced these emissions by over 15,000,000 tCO₂e, and could reduce almost an additional 20,000,000 tCO₂e over the remaining years in its fixed ten-year crediting period. In addition to reducing greenhouse gas emissions, this project will also contribute to the People's Republic of Bangladesh's sustainable development goals by:

- Improving environmental quality and minimizing risks for employees and local communities due to the reduction of harmful pollutants (methane). More than 38,000 leaks of methane have already been repaired and each year additional leaks on the risers within the project boundary will also be identified and repaired. This reduces risk of accidents within local communities and improves local air quality by reducing localized methane emissions;
- Preserving a finite resource (natural gas). The reduction in gas losses will mean that the same amount of service can be provided to customers but with a lesser amount of gas required. Using a finite resource more efficiently, and thus preventing waste of that resource, is an important example of sustainable development. Already leaks representing more than 400,000 liters/min of methane that was otherwise wasted into the atmosphere have been repaired.;

- Capacity building of the local staff in advanced LDAR techniques. Twenty-three local people have been trained and certified using advanced leak detection technologies and procedures;
- Transferring advanced technology in the form of leak detection kit and repair materials that have heretofore not been utilized in this region of Bangladesh. HiFlow Samplers and Gasurveyors have been provided for use in the project;
- Job creations through the hire of 23 staff;
- Strengthening human capital in the country through retention and employment of locals to support the project implementation (leak measurement program, repair works, and monitoring).

Gas savings and emission reductions data are shared with the company and national government to track progress in achieving sustainability goals.

1.18 Additional Information Relevant to the Project

Leakage Management

NA- There is no expected change of emissions outside the project boundary expected from reducing leakage from gas pipelines.

Commercially Sensitive Information

No commercially sensitive information has been excluded from the public version of the project description.

Further Information

No further Information is provided.

2 SAFEGUARDS

2.1 No Net Harm

As per 3.20.5(1) of the VCS Standard 4.3 this section is left blank.

2.2 Local Stakeholder Consultation

As per 3.20.5(1) of the VCS Standard 4.3 this section is left blank.

2.3 Environmental Impact

As per 3.20.5(1) of the VCS Standard 4.3 this section is left blank.

2.4 Public Comments

There were no public comments received during the open period 29 March 2022 to 28 April 2022.

2.5 AFOLU-Specific Safeguards

As per 3.20.5(1) of the VCS Standard 4.3 this section is left blank.

3 APPLICATION OF METHODOLOGY

3.1 Title and Reference of Methodology

As per 3.20.5(1) of the VCS Standard 4.3 this section is left blank.

3.2 Applicability of Methodology

As per 3.20.5(1) of the VCS Standard 4.3 this section is left blank.

3.3 Project Boundary

As per 3.20.5(1) of the VCS Standard 4.3 this section is left blank.

3.4 Baseline Scenario

As per 3.20.5(1) of the VCS Standard 4.3 this section is left blank.

3.5 Additionality

As per 3.20.5(1) of the VCS Standard 4.3 this section is left blank.

3.6 Methodology Deviations

There are no deviations from the methodology.

4 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

4.1 Baseline Emissions

As per 3.20.5(1) of the VCS Standard 4.3 this section is left blank.

4.2 Project Emissions

As per 3.20.5(1) of the VCS Standard 4.3 this section is left blank.

4.3 Leakage

As per 3.20.5(1) of the VCS Standard 4.3 this section is left blank.

4.4 Net GHG Emission Reductions and Removals

As per 3.20.5(1) of the VCS Standard 4.3 this section is left blank.

5 MONITORING

5.1 Data and Parameters Available at Validation

As per 3.20.5(1) of the VCS Standard 4.3 this section is left blank.

5.2 Data and Parameters Monitored

As per 3.20.5(1) of the VCS Standard 4.3 this section is left blank.

5.3 Monitoring Plan

As per 3.20.5(1) of the VCS Standard 4.3 this section is left blank.