

# Submission on A6.4-PMM008

## Leak detection and repair in natural gas transmission and distribution systems

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### Core request

PMM008 should be strengthened, not rejected. Methane leak detection and repair (LDAR) can deliver fast climate benefits, but Article 6.4 emission reductions (A6.4ERs) should issue only where reductions are additional, conservatively quantified, not double counted, independently verifiable, not used to prolong fossil-gas lock-in and not misused in buyer claims.

### Top three requests

If the Methodological Expert Panel (MEP) and Supervisory Body adopt only three changes, they should adopt these:

| Request                                                           | Decision requested                                                                                      | Actor/instrument                                                                      | Trigger/timing                                                                                                              | Minimum safeguard                                                                                                                                                                                                                                                          | Why adoptable                                                                                                                                                      |
|-------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. No issuance without CDM-VCS-Article 6.4 reconciliation         | Require a public reconciliation table before issuance.                                                  | PMM008 text, DOE verification, Article 6.4 registry/transition procedure.             | Before each issuance and whenever a transitioned activity has prior CDM/VCS issuance, withdrawal, retirement or claims-use. | Monitoring period, vintage, serial range, issued, withdrawn, cancelled, transferred, retired and claims-use status across CDM, VCS/Verra, Article 6.4, host-country accounting and any other GHG programme.                                                                | Uses information that activity participants, registries and DOEs should already hold; prevents double issuance, double claiming and uncertainty before units move. |
| 2. No issuance without additionality and exclusion evidence       | Require evidence that credited repairs are beyond business-as-usual and not excluded repair categories. | PMM008 eligibility/exclusion text, host-law memo, DOE validation/verification.        | At validation and before issuance if law, public finance, utility practice or methane regulation changes.                   | Show that credited repairs are not legally required, scheduled replacement, emergency repair, ordinary maintenance, tightening/re-greasing, conventional LDAR, public-financed repair, commercially justified by gas savings alone, or already credited/claimed elsewhere. | Works with PMM008 existing safeguard categories and converts them into evidence fields rather than new broad principles.                                           |
| 3. No issuance without auditable measurement and correction rules | Require leak-level QA/QC, conservative calculations and correction triggers.                            | PMM008 monitoring rules, DOE checklist, Supervisory Body review/correction procedure. | Each monitoring period and when new information shows error, overlap or non-additionality.                                  | Measurement QA/QC, baseline-duration, uncertainty, GWP, outage/cut-off, recurrence, gross/capped/issued number reconciliation, and review/correction/suspension triggers.                                                                                                  | Directly controls credit volume and can be verified using monitoring reports, workbooks, raw records and DOE sampling.                                             |

### How to read this submission

This is an independent public interest submission. I have no financial interest in the activities, credits, project participants, buyers, registries or ratings entities discussed. This submission is not an objection to methane LDAR and does not allege fraud, bad faith, capture or misconduct. It supports crediting where reductions are additional, conservative, independently verified, no lock-in, publicly traceable and not double-counted. Its purpose is to make PMM008 work in practice by converting safeguards into evidence fields, no-issuance conditions, verification duties and review triggers.

### What this submission does not allege

- It does not allege fraud, bad faith, capture or misconduct by Climate Compass LLC, EcoGas Asia Limited, EcoEye Co., Ltd., KOMIPO, PGCL, Carbon Check, Verra, Bangladesh authorities, or any credit buyer, retiree or beneficiary.
- It does not claim World Bank involvement makes PMM008 automatically non-additional; it argues that public-finance and sector-modernisation evidence should trigger dynamic re-testing.

- It does not claim Bangladesh law already requires advanced LDAR; it asks for an official host-law memo and DOE assessment.
- It does not claim AM0023 is invalid; it asks for Article 6.4-specific upgrades and evidence fields.
- It does not claim all raw data must be public; it separates public minimum datasets from DOE access to confidential raw records.

Confidentiality should be handled in three categories: information that may legitimately remain confidential, such as security-sensitive infrastructure detail or trade-secret-level records; information that can be published in aggregated, redacted, delayed or threshold-based form; and minimum information that should still be public or DOE/Supervisory Body-verifiable because it is necessary for accountability, comparability, issuance integrity or claims-use integrity.

## Executive summary

PMM008 should be strengthened, not rejected. Methane LDAR can produce fast climate benefits, but credits only help if they represent real, additional, conservatively quantified and uniquely claimed reductions.

PMM008 already contains several correct safeguard categories: no advanced LDAR in the prior three years, no legal mandate for advanced LDAR, exclusions for legally or regulatorily required repair, tightening/re-greasing, conventional LDAR and new leaks outside the first verification boundary, downward adjusted historical emissions, regulatory analysis, no lock-in, investment or barrier analysis, and common practice analysis. The implementation risk is that these categories can be satisfied by narrative assertions unless PMM008 requires public evidence fields, DOE access to raw records, dynamic re-testing and no-issuance consequences. [1], [2]

The Pashchimanchal lineage discussed across CDM 10562, Verra VCS 2739 and Article 6.4 PA10562 shows why this matters. The record contains issued CERs, VCS monitoring and verification reports, Verra review findings on overlapping CDM/VCS periods, multi-party credit-right and registry-authority arrangements, calculation workbooks where gross calculated reductions differ from capped eligible reductions, and World Bank-financed gas sector monitoring and carbon abatement work involving PGCL. This does not prove misconduct; it proves the need for a stronger methodology level evidence chain. [3], [4], [5], [6]

The recommendations below are designed to be implementable: no-issuance conditions, public minimum datasets, DOE-verifiable raw records, host-law and financial-additionality tables, CDM-VCS-Article 6.4 registry reconciliation, measurement QA/QC, source to site MRV reconciliation, stakeholder/SD evidence, no lock-in checks, claims-use controls, and correction/suspension triggers. The same safeguards should also inform any later Article 6.4 revision of AM0023 or related methodological tools for transitioned LDAR activities.

## Decision lens

The decision question is: what evidence should be required before PMM008 credits are issued, transferred, retired or used in claims?

The practical tests are:

1. Does PMM008 credit only additional methane reductions?
2. Does it exclude legal, routine, emergency, scheduled or commercially justified repair?
3. Does it reconcile CDM, VCS/Verra and Article 6.4 units and claims?
4. Are measurement, baseline duration, GWP and calculation assumptions auditable?
5. Does it prevent fossil-gas lock-in and misleading buyer or portfolio claims?
6. Is there correction if later information shows error, overlap or non-additionality?

## Recommendations at a glance

| No. | Recommendation                                                                | Mechanism/actor                                                         | Trigger/timing                                               |
|-----|-------------------------------------------------------------------------------|-------------------------------------------------------------------------|--------------------------------------------------------------|
| 1   | Operationalise PMM008 safeguards as evidence fields                           | PMM008 methodology text; public minimum dataset; DOE-verifiable records | Validation and each issuance                                 |
| 2   | Require a CDM-to-Article 6.4 upgrade table                                    | MEP methodology text and transition documentation                       | Before approval/finalisation and for transitioned activities |
| 3   | Make CDM/VCS/Article 6.4 programme-use reconciliation a no-issuance condition | Activity participant, DOE, Article 6.4 registry/transition process      | Before issuance and transfer/retirement                      |

|    |                                                                                           |                                                            |                                                                                       |
|----|-------------------------------------------------------------------------------------------|------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 4  | Separate transition approval from authorisation, corresponding adjustment and claims-use  | PMM008 plus transition, host Party and registry procedures | Before authorisation, transfer, retirement and claims-use                             |
| 5  | Require a host-law memo and routine-repair exclusion evidence                             | Host-law memo and DOE assessment                           | Validation and any legal/practice change                                              |
| 6  | Test financial additionality, saved-gas value and perverse-regulation incentives          | Financial-beneficiary table and DOE assessment             | Validation and each issuance where benefits or finance change                         |
| 7  | Require dynamic additionality and common-practice re-testing                              | PMM008 additionality/common-practice rule                  | Each verification where law, public finance or practice changes                       |
| 8  | Make baseline duration, operating hours and GWP explicit                                  | Monitoring report and calculation workbook                 | Each monitoring period                                                                |
| 9  | Strengthen measurement QA/QC for HFS, bags and alternatives                               | PMM008 monitoring rules and DOE checklist                  | Each monitoring period and alternative-method approval                                |
| 10 | Reconcile source-level records with site/station/network/top-down evidence where feasible | MRV reconciliation and DOE review                          | Each monitoring period where feasible or discrepancy appears                          |
| 11 | Define leak grading, repair timing, recurrence and rechecks                               | PMM008 monitoring and repair rules                         | Detection, repair, post-repair confirmation and re-survey                             |
| 12 | Reconcile gross, capped, verified, issued, retired and buyer-facing numbers               | Monitoring report, registry and claims-use disclosure      | Each monitoring period and retirement/claim                                           |
| 13 | Require version history, data dictionaries and error logs                                 | Monitoring reports, workbooks and DOE verification         | Each report/workbook version and correction                                           |
| 14 | Strengthen DOE verification scope, sampling and CAR/CL/FAR disclosure                     | DOE verification report                                    | Each validation/verification                                                          |
| 15 | Require stakeholder, grievance and sustainable-development evidence                       | Activity-cycle disclosure and SD monitoring                | Validation and each monitoring period where claims are made                           |
| 16 | Require a no lock-in test tied to real gas-system effects                                 | PMM008 no lock-in rule; buyer-claims controls              | Validation, issuance and claims-use                                                   |
| 17 | Disclose project-family, participant changes and registry authority                       | Activity-cycle and registry procedures                     | Registration, issuance, representor/ownership change and related-project findings     |
| 18 | Add review, correction, suspension and reasons-for-deviation rules                        | PMM008 plus SB/registry/activity-cycle procedures          | New information, over-issuance, double claiming, material error or rejected safeguard |

## Active ingredient, weakest link and minimum safeguard

The following table identifies the part of each recommendation that must be preserved for the reform to work in practice.

| Recommendation area   | Active ingredient                               | Weakest link                                           | Minimum safeguard                                                        |
|-----------------------|-------------------------------------------------|--------------------------------------------------------|--------------------------------------------------------------------------|
| Additionality         | Credits only beyond-BAU repairs                 | LDAR would happen anyway                               | Legal/routine-repair/public-finance/financial-benefit evidence           |
| Registry integrity    | Same reduction not reused                       | CDM/VCS/Article 6.4 overlap                            | No issuance unless period/vintage/serial/retirement status is reconciled |
| Measurement integrity | Real reductions quantified conservatively       | Duration, recurrence, spreadsheet or uncertainty error | QA/QC table, DOE raw-data access and public calculation summary          |
| Dynamic additionality | Additionality does not expire unnoticed         | Law, public finance or common-practice changes         | Re-test before issuance when material change occurs                      |
| Buyer claims          | Credits not used to overstate climate alignment | Portfolio masking or vague claims                      | Project-vintage-serial-retirement-purpose disclosure                     |
| No lock-in            | LDAR does not extend fossil-gas dependence      | Improved gas-system performance supports lock-in       | Throughput, capacity, asset-life and expansion test                      |

## Implementation map

The safeguards below should be implemented through the instrument or actor best able to give them practical effect.

| Instrument/actor                          | What belongs there                                                                                  |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------|
| PMM008 methodology text                   | Eligibility, exclusions, baseline, monitoring, additionality, no lock-in and no-issuance conditions |
| DOE validation/verification checklist     | Raw data, sampling, calibration, recurrence, legal memo and CAR/CL/FAR disclosure                   |
| Article 6.4 registry/transition procedure | Serials, vintages, transfers, retirements, cancellation and ring-fencing                            |
| Host Party process                        | Approval, authorisation, corresponding adjustment and NDC consistency                               |
| Buyer/retirement disclosure               | Beneficiary, retirement purpose and claims-use limits                                               |
| Supervisory Body review procedure         | New information, erroneous issuance, suspension, correction and replacement                         |

## Role map

Each safeguard should be attached to the actor or process able to implement it.

| Actor                 | Role to specify                                                              |
|-----------------------|------------------------------------------------------------------------------|
| MEP                   | Methodology wording, evidence fields and response to comments                |
| Supervisory Body      | Approval, reasons, review/suspension powers and reasons-for-deviation        |
| DOE                   | Validation/verification, raw-data checks, sampling and legal memo assessment |
| Host Party            | Approval, authorisation, corresponding adjustment and NDC consistency        |
| Registry              | Serials, vintages, transfers, retirements, cancellation and ring-fencing     |
| Activity participants | Data, ownership, repair records and financial-beneficiary table              |
| Buyers/retirees       | Claims-use, retirement purpose and beneficiary disclosure                    |

## Options considered

The preferred approach is a proportionate middle path: strengthen PMM008 with evidence, verification, reconciliation and review conditions, rather than approving it unchanged or rejecting LDAR crediting entirely.

| Option                                          | Decision                                                                                         |
|-------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Approve PMM008 unchanged                        | Too weak; safeguards may remain generic, private or static.                                      |
| Reject PMM008 entirely                          | Too strong; LDAR can cut methane if integrity conditions are met.                                |
| Rely on CDM/VCS validation                      | Insufficient for Article 6.4 authorisation, corresponding adjustment, no lock-in and claims-use. |
| Require universal public raw data               | Too burdensome and confidentiality-risky.                                                        |
| Public minimum dataset plus DOE raw-data access | Preferred.                                                                                       |
| No-issuance reconciliation plus review triggers | Preferred.                                                                                       |

## Detailed recommendations

### 1. Convert PMM008 safeguards into mandatory evidence fields

PMM008 already has the right categories, but methodology integrity depends on whether those categories are proven before issuance. The submission should therefore ask for a public minimum dataset, DOE-verifiable raw records and clear no-issuance consequences rather than simply adding broad principles.

This framing respects PMM008 current structure while making it harder to game, dilute or satisfy through unsupported assertions.

PMM008 should be designed to work even where activity participants, verifiers, buyers or host institutions face ordinary commercial or institutional incentives to maximise credit volume, minimise disclosure, preserve flexibility or rely on prior approvals. The methodology should not depend on persuasion or goodwill; it should require evidence, independent verification, registry reconciliation, claims-use transparency and correction triggers.

Public evidence fields should be standardised, machine-readable where practicable and updated for each monitoring period, not only at validation.

#### Suggested methodology wording:

*Each applicability condition and exclusion in PMM008 shall be supported by public or DOE-verifiable evidence. No A6.4ERs shall be issued for reductions from leaks or components for which the activity participant has not demonstrated that the repair was not legally required, not scheduled replacement, not emergency repair, not ordinary maintenance, not tightening/re-greasing, not conventional LDAR, not public-financed repair and not already credited or claimed under another programme.*

### 2. Require a CDM-to-Article 6.4 upgrade table

PMM008 arises from an older CDM/AM0023 lineage. That is not automatically a weakness: AM0023 has also received ICVCM/CCP treatment in a VCS context for first crediting periods. But Article 6.4 adds host-country accounting, authorisation, corresponding adjustment and buyer-claim consequences that CDM/VCS documents do not automatically solve. [8]

A CDM-to-Article 6.4 upgrade table would let the MEP show what has been kept, strengthened, replaced or rejected.

Transition into Article 6.4 should not be treated as a project-level integrity reset. Transitioned activities should undergo project-specific reassessment of additionality, conservative quantification, double-counting risk, sustainable-development claims and claims-use before issuance.

**Suggested methodology wording:**

*The methodology shall include a CDM-to-Article 6.4 upgrade table identifying which AM0023 provisions are retained, strengthened, replaced or rejected, and explaining how PMM008 satisfies Article 6.4 requirements on additionality, transparency, conservative quantification, no lock-in, leakage, sustainable development and avoidance of double counting.*

### **3. Make CDM-VCS-Article 6.4 reconciliation a no-issuance condition**

The Pashchimanchal lineage demonstrates why programme-use reconciliation is not optional. CDM 10562 had issued CERs and withdrawn monitoring reports. VCS 2739 produced monitoring, verification and review documents. PA10562 then transitioned into Article 6.4. Verra also raised a no-double-issuance finding for an overlapping CDM/VCS monitoring period that had to be resolved before VCU issuance. [3], [4], [5]

That proves the overlap risk is real enough to require a methodology level no-issuance rule.

The reconciliation table should cover monitoring period start/end date and vintage; programme-use status; serial ranges; issued, transferred and retired quantities; buyer/beneficiary where available; retirement purpose; host authorisation; corresponding adjustment; cancellation and ring-fencing status.

**Suggested methodology wording:**

*No A6.4ERs shall be issued unless the activity participant and DOE provide a public reconciliation table demonstrating that no overlapping CDM, VCS/Verra, voluntary-market, CORSIA, host-country or Article 6.4 claim remains active for the same monitoring period, vintage, component set or mitigation outcome.*

### **4. Separate transition approval from authorisation, corresponding adjustment and claims-use**

Host-country transition approval and Article 6.4 registration are not the same thing as final authorisation for transfer, corresponding-adjustment treatment, issuance eligibility, retirement or permitted buyer claims. The submission should therefore be precise: recognise host approval, but do not let it substitute for the full accounting chain.

**Suggested methodology wording:**

*For transitioned activities, PMM008 and the associated Article 6.4 transition, registry and host-Party procedures should require public disclosure distinguishing CDM host approval, CDM transition approval, Article 6.4 activity registration, authorisation of A6.4ERs, corresponding-adjustment treatment, Article 6.4 registry entry, transfer, retirement and permitted claims-use.*

### **5. Require a host-law memo and routine-repair exclusion evidence**

The corrected legal position is that available Bangladesh legal materials are enough to show legal duties are material, but not enough for this submission to claim advanced LDAR is already legally mandatory. PMM008 should require the legal analysis from the activity participant and DOE. [11]

The memo should not merely ask whether advanced LDAR is mandated; it should address safety, distribution, licence, emergency repair, scheduled replacement, meter/customer duties, illegal-use prevention, odorisation and enforcement practice.

Current-practice evidence should distinguish below-ground cathodic protection or safety maintenance from above-ground chronic leak detection and repair. It should disclose existing detector inventory, repair-material inventory, staff capacity, planned-maintenance schedules, emergency-repair criteria, unsafe-leak thresholds, conventional detection methods and ordinary repair materials.

**Suggested methodology wording:**

*The regulatory analysis shall include a host-law memo, in English or official translation, addressing gas safety law, gas distribution rules, energy-regulator licence duties, emergency repair duties, scheduled replacement, maintenance obligations, odorisation and leak-response requirements, regulator directions, enforcement practice and whether repairs would occur for safety, operational or legal reasons without Article 6.4 revenue.*

## 6. Test financial additionality, saved-gas value and perverse-regulation incentives

The Titas comparator and related reporting are not proof against Pashchimanchal, but they identify exactly the categories PMM008 should control: stand-alone financial viability, transparency risk, leakage-emissions risk, saved-gas value and possible perverse incentives against stronger methane regulation. [12], [13], [17]

Where LDAR generates saved gas, reduced losses, tariff or subsidy benefits and credit revenue, those benefit streams should be visible in the additionality analysis.

Comparator evidence from Titas VCS2478/CDM10077 and public carbon-rating commentary shows that AM0023 LDAR crediting can involve material questions about financial viability, information sufficiency, leakage-source evidence, recurrent repairs, very large credit volumes and perverse incentives against ordinary methane regulation. This submission uses that evidence only as a comparator. It does not allege misconduct or non-additionality by any PMM008 activity.

Saved gas should be disclosed as both a climate/sustainable-development benefit and a financial/additionality variable. The analysis should distinguish physical gas saved, utility revenue, tariff or subsidy effects, customer benefit, pressure or reliability benefit, credit revenue and public-finance interaction.

### **Suggested methodology wording:**

*PMM008 shall require a financial-beneficiary table showing implementation costs, O&M costs, public finance, saved gas volume and value, tariff or subsidy effects, credit revenue, credit ownership, revenue recipients and beneficiaries of saved gas. The DOE shall assess whether the activity would be financially viable without Article 6.4 revenue and whether crediting creates an incentive to delay adoption or enforcement of fugitive-methane regulation.*

## 7. Require dynamic additionality and common-practice re-testing

The World Bank gas-sector efficiency and carbon-abatement project involving PGCL is a strong reason not to freeze additionality at project start. Public finance, smart/prepaid metering, SCADA/GIS, methane inventories, MACC analysis, LDAR/MRV protocols, carbon-abatement action plans and regulatory roadmaps can change whether advanced LDAR is additional or common practice during the crediting period. [6]

Dynamic re-testing should include legal-requirement status, prior-consideration evidence, common practice, public finance, market penetration, utility practice and comparable methane regulation. It should occur at each verification where the crediting period is long or where material law, finance or practice changes occur.

### **Suggested methodology wording:**

*Additionality and common practice shall be re-tested before each issuance where host-country law, public finance, SCADA/GIS, smart or prepaid metering, methane inventories, MACC analysis, LDAR/MRV protocols, sector carbon-abatement action plans, regulatory roadmaps, utility practice or comparable methane regulation changes during the crediting period.*

## 8. Make baseline duration, operating hours and GWP explicit

PMM008 calculates reductions from leak flow and an assumed baseline duration. That makes leak-duration assumptions a major credit-volume lever. The project lineage also used different GWP values across CDM and VCS materials, so transition projects need explicit conversion rules.

### **Suggested methodology wording:**

*Each monitoring period shall disclose leak detection date, assumed baseline start/date logic, repair date, monitoring date, operating hours, outage deductions, baseline-duration assumptions, GWP value, GWP source, vintage applicability and conversion rule across CDM, VCS and Article 6.4 contexts.*

## 9. Strengthen measurement QA/QC for HFS, bag methods and alternatives

PMM008 monitors methane leak flow, methane mass fractions, bag volume and fill time. The submission should therefore cover not only high-flow samplers and gas detectors, but also bags and alternative measurement methods.

Measurement QA/QC is a high-probability improvement because it is technical, implementable and directly tied to credit volume.



Direct quantification should remain the default for crediting. Emission-factor substitution, proxy quantification or alternative measurement methods should be permitted only where explicitly justified, conservatively adjusted and DOE-verified.

**Suggested methodology wording:**

*PMM008 shall require leak-level measurement QA/QC fields: measurement method, instrument type and serial number, calibration date, calibration status, bag volume and fill time where applicable, operator identity, repeat-measurement rule, uncertainty value, uncertainty deduction, raw file or field-record reference, leak ID and DOE check. Alternative measurement methods shall require pre-defined approval criteria, performance demonstration, uncertainty treatment and DOE verification.*

## **10. Reconcile source-level records with site, station, network or top-down evidence where feasible**

OGMP 2.0 is not binding on PMM008, but it provides a useful MRV benchmark: higher-quality methane reporting reconciles source-level/bottom-up data with site-level or independent measurements and explains uncertainty. PMM008 should not require impossible satellite proof for every small leak, but it should use independent evidence where feasible and should not treat absence of satellite detection as proof of no emissions. [9]

Recent empirical LDAR evidence also supports complementary measurement: Wilde, Tyner and Johnson (2025) found that regulated OGI-based LDAR surveys can reduce detected emissions, but independent aerial surveys at the same sites detected substantially more methane, reinforcing the need for complementary measurement and independent reconciliation rather than reliance on one bottom-up method alone. [18]

**Suggested methodology wording:**

*Where feasible, leak-level/source-level records shall be reconciled with site-, station-, network-level or independent top-down evidence. Material discrepancies shall be quantified and explained, including the uncertainty, detection limits and limitations of each method.*

## **11. Define leak grading, repair timing, recurrence and rechecks**

Modern LDAR regulation uses leak grading, repair timelines and rechecks. PMM008 should define analogous crediting rules, without copying any one jurisdiction. A detected leak that is not repaired, repaired late, reappears or is re-repaired should have clear conservative treatment. [10]

**Suggested methodology wording:**

*PMM008 shall define leak categories or equivalent flow/risk classes, maximum time from detection to quantification, repair and post-repair confirmation, failed repair, reappeared leak, recurrence, re-repair and conservative deduction rules for deferred repairs or uncertain recurrence duration.*

## **12. Reconcile gross, capped, verified, issued, retired and SD/buyer-facing numbers**

VCS 2739 workbooks and reports showed a recurring issue: gross calculated reductions can differ from capped eligible or verified/issued reductions, while SD or public-benefit sections may refer to larger gross figures. That is not necessarily wrong if labelled, but it is a claim-integrity risk. [5]

Where an LDAR activity claims or is expected to claim very large annual reductions, PMM008 should require enhanced public disclosure and DOE review of leak-level data, operating-hour adjustments, recurrence, uncertainty, capped/issued quantities and buyer-facing claims.

Where A6.4ERs are marketed, retired or pooled through portfolio products, PMM008 should require look-through disclosure by project, vintage, serial range, retirement purpose and claims-use category, so portfolio-level labels or ratings do not obscure project level integrity risks. [14]

**Suggested methodology wording:**

*Each monitoring period shall disclose gross calculated reductions, baseline cap or downward adjustment, capped eligible reductions, verified reductions, issued units, transferred units, retired units and any SDG or buyer-facing claim number. Where these figures differ, the public record shall explain the difference and prevent larger gross figures from being presented as issued or claimable credits.*

### 13. Require version history, data dictionaries and error logs

MR2/MR3 version history, calculation spreadsheets, Excel serial dates, outage sheets and HFS timestamp/date-format issues show why data governance matters. This is not evidence of bad faith; it is evidence that complex LDAR crediting needs version control and public correction summaries. [5]

#### **Suggested methodology wording:**

*Each monitoring report, verification report and calculation workbook shall include a unique document ID, version number, date, monitoring-period boundary, vintage boundary, active sheets, data dictionary, formula summary, ISO-format dates and change log. Instrument, timestamp, date-format, transcription, spreadsheet, leak-code, cut-off, outage and database errors shall be logged, corrected conservatively and summarised publicly with DOE conclusions.*

### 14. Strengthen DOE verification scope, sampling and findings disclosure

VCS verification documents show large leak populations, sampling, CARs/CLs and documentary evidence chains. PMM008 should make these visible rather than relying on generic statements that a DOE verified the activity. [5]

Closed CARs, CLs and FARs do not show unresolved problems. They show why public issue-category disclosure is useful: users should know what was questioned, what evidence resolved it, what correction was made, and whether similar issues could recur in later monitoring periods.

#### **Suggested methodology wording:**

*Where DOE verification relies on sampling, the verification report shall disclose leak population, sample size, confidence/precision level, randomisation method, selected leak IDs, discrepancy expansion rule and whether any failure triggered wider review. All CARs, CLs and FARs shall be disclosed with issue, response, evidence, DOE conclusion and future-period relevance.*

### 15. Require stakeholder, grievance and sustainable-development evidence

Public consultation and SD claims should not be treated as boilerplate. No comments received through a web-hosted public-comment period does not prove meaningful stakeholder engagement. SD claims about saved gas, jobs, pressure, access, productivity or safety may be valuable, but they should be monitored and verified and should trigger financial-additionality and no lock-in checks where relevant.

#### **Suggested methodology wording:**

*PMM008 shall require public disclosure of stakeholder-consultation dates, languages, affected communities, notification method, comments, response table, grievance route and unresolved concerns. SD co-benefits shall disclose baseline/project values, data sources, monitoring frequency, responsible entity, verification status and benefit-sharing, including whether claimed saved-gas benefits reached customers, communities, utilities or project participants.*

### 16. Require a no lock-in test tied to real gas-system effects

My position is not that every LDAR project causes lock-in. It is that gas system LDAR can improve pressure, reliability, availability, revenue and network legitimacy. That can be climate-beneficial if it reduces methane without extending fossil dependence, but it needs evidence.

#### **Suggested methodology wording:**

*The no lock-in assessment shall address whether crediting extends asset life, increases throughput, expands service area, improves pressure/reliability in a way that supports expansion, delays retirement or replacement, duplicates public-financed network upgrades, or enables buyer claims that fossil gas or gas expansion is Paris-aligned.*

### 17. Disclose project-family, participant changes and registry authority

VCS documents show that project proponents, representors and registry-authority arrangements can change, and related Bangladesh gas-leakage projects may share methodology, actors or assumptions. PMM008 should treat this as an accountability issue. [5], [15]

Where related LDAR activities share country context, project developers, validators/verifiers, consultants, templates, calculation workbooks, buyers, monitoring contractors or assumptions, a material finding in one activity should trigger review of comparable assumptions in related activities.

#### **Suggested methodology wording:**



*PMM008, or associated Article 6.4 activity and registry procedures, should require each activity to disclose related project families, shared methodology, shared proponents, consultants, validators/verifiers, monitoring contractors, calculation templates, buyers or credit-right holders. It shall also disclose project proponents, registration representors, issuance representors, registry users, authorised representatives, credit owners, assignees, transfer-right holders and claims-use right holders, including changes during the crediting period.*

## 18. Add review, correction, suspension and reasons-for-deviation rules

The best anti-dilution pattern is: hard duty, precise metric, independent assessment, public reporting, consequence and reasons for deviation. VCS already recognises erroneous issuance remedies; Article 6.4 should not be weaker. If the MEP/Supervisory Body rejects a safeguard, it should explain what equivalent control remains.

The Supervisory Body should review PMM008 after the first issuances or first two monitoring periods, whichever comes first, to assess whether additionality, recurrence, public-finance overlap, calculation transparency, registry reconciliation and buyer-claims controls worked as intended.

### Suggested methodology wording:

*PMM008 and associated Supervisory Body, registry and activity-cycle procedures should include review, correction, suspension, cancellation, replacement, future-issuance deduction or account-restriction procedures where units are later found to be non-additional, over-issued, double-issued, wrongly authorised, based on material data error, affected by public-finance overlap, or used in misleading claims. Where the MEP or Supervisory Body rejects proposed safeguards, it should publish reasons explaining how equivalent or stronger integrity is maintained.*

## Minimum evidence table recommended for PMM008

| Evidence area       | Public minimum                                                                                                           | DOE-verifiable confidential record                                                                    |
|---------------------|--------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Legal/additionality | Host-law memo summary; legal/regulatory status; common-practice result; investment/barrier result.                       | Full legal memo, licence documents, enforcement evidence, budgets, contracts and financial model.     |
| Leak and repair     | Leak ID, component type, location category, detection date, repair date, post-repair check and exclusion status.         | Raw field notes, photos, GPS/geotags, repair records, maintenance logs and contractor records.        |
| Measurement         | Measurement method, methane fraction, leak flow, uncertainty, instrument/bag fields and calibration status.              | Raw HFS/bag files, calibration certificates, operator records and duplicate measurements.             |
| Calculations        | Gross, capped, verified, issued, transferred, retired and claimed numbers; GWP; operating hours; outage/cut-off summary. | Full calculation workbook, formulas, data dictionary, change log and raw database.                    |
| Registry/accounting | Programme-use status, serial ranges, authorisation/CA status and withdrawal/cancellation/ring-fencing status.            | Registry exports, transaction records, host approval/authorisation files and retirement certificates. |
| Claims/SD           | Buyer/beneficiary where available, retirement purpose, SD indicators and grievance route.                                | Buyer contracts/certificates where confidential, detailed benefit-sharing and stakeholder records.    |

## Minimum viable fallback

If the MEP/Supervisory Body does not adopt the full package, it should at minimum require:

1. CDM-VCS-Article 6.4 period, vintage and serial-range reconciliation;
2. host authorisation and corresponding-adjustment status disclosure;
3. host-law, legal-repair and routine-repair exclusion evidence;
4. gross, capped, verified, issued, transferred, retired and claimed number reconciliation;
5. measurement QA/QC, uncertainty and calibration evidence;
6. public-finance and dynamic-additionality re-testing; and
7. review, correction and suspension triggers for new information, overlap, non-additionality, material data error or misleading claims-use.

If these seven minimum conditions cannot be met, PMM008 should not be approved in its current form.

## Success metric

Success should be measured by whether PMM008 issuances show additional reductions, reconciled registry status, no unresolved overlapping claims, conservative measurement, no unsupported gross-number claims, transparent buyer claims-use, and correction where new information reveals error or non-additionality.

## Evidence base and references

This submission relies first on UNFCCC/CDM/A6.4 documents, VCS project documents, World Bank documents, AM0023 history, ICVCM/CCP principles and methane-MRV comparators. Market intelligence and rating material are used only as supporting evidence for claims-use, market-risk and review-trigger logic.

1. UNFCCC, A6.4-PMM008 Simplified Summary, "Leak detection and repair in natural gas transmission and distribution systems," 31 May 2026. [https://unfccc.int/sites/default/files/resource/A6.4-PMM008%20Simplified%20summary\\_Leak\\_detection.pdf](https://unfccc.int/sites/default/files/resource/A6.4-PMM008%20Simplified%20summary_Leak_detection.pdf)
2. UNFCCC Article 6.4 Methodologies page, listing A6.4-PMM008 as open for public input 5-25 June 2026. <https://unfccc.int/process-and-meetings/the-paris-agreement/article-6/article-64-pacm/methodologies>
3. UNFCCC CDM Project 10562 page: Reducing Gas Leakages within the Pashchimanchal Gas Distribution Network in Bangladesh. <https://cdm.unfccc.int/Projects/DB/RINA1583328291.33/view>
4. UNFCCC Article 6.4 transition page for PA10562. [https://unfccc.int/process-and-meetings/the-paris-agreement/paris-agreement-crediting-mechanism/CDM\\_transition/PA10562](https://unfccc.int/process-and-meetings/the-paris-agreement/paris-agreement-crediting-mechanism/CDM_transition/PA10562)
5. Verra Registry and VCS 2739 project documents reviewed: VCS PD, monitoring reports, ER workbooks, PRRs, verification reports, issuance and representation deeds. <https://registry.verra.org/>
6. World Bank, Gas Sector Efficiency Improvement and Carbon Abatement Project (P179009), ISR/PAD and SCADA/GIS market engagement materials. <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099070523165030812>
7. AM0023 v4 and TOOL02/Combined Tool for baseline and additionality, including AM0023 clarifications and revisions reviewed from CDM/UNFCCC material. <https://cdm.unfccc.int/methodologies/>
8. ICVCM, Core Carbon Principles, Assessment Framework and AM0023 v4 category decision. <https://icvcm.org/leak-detection-repair/>
9. OGMP 2.0 Starters Guide and UNEP methane MRV materials. <https://www.ogmpartnership.org/>
10. PHMSA, Gas Pipeline Leak Detection and Repair Final Rule, 2025. <https://www.phmsa.dot.gov/sites/phmsa.dot.gov/files/2025-01/PHMSA%20Final%20Rule%20-%20Gas%20Pipeline%20Leak%20Detection%20and%20Repair%20-%20As%20submitted.pdf>
11. Bangladesh legal/regulatory materials used only to justify a host-law memo, not to conclude that advanced LDAR is legally mandated: Bangladesh Energy Regulatory Commission Act 2003, English Gazette translation, [https://www.dpp.gov.bd/upload\\_file/gazettes/228-Law-2003.pdf](https://www.dpp.gov.bd/upload_file/gazettes/228-Law-2003.pdf); Gas Distribution Rules 2014 (Domestic), hosted policy text, <https://policy.asiapacificenergy.org/node/3515>; Bangladesh Gas Act 2010 lead, <https://bdlaws.minlaw.gov.bd/act-1052.html>.
12. Quantum Commodity Intelligence, "BeZero downgrades Titas Gas project following 'new information'," 27 July 2022, used only as comparator evidence for financial viability, information risk and perverse-regulation-risk safeguards. <https://www.qcintel.com/carbon/article/bezero-downgrades-titas-gas-project-following-new-information-7488.html>
13. Quantum Commodity Intelligence, "One in four carbon projects do not disclose enough data - BeZero," 29 July 2022, used only for information-risk and disclosure-quality context. <https://www.qcintel.com/carbon/article/one-in-four-carbon-projects-do-not-disclose-enough-data-bezero-7558.html>
14. BeZero Carbon, "BeZero Carbon Portfolio Rating report: Rubicon Rated Tonne 0625," June 2025, used only for portfolio-look-through and buyer-claims context, not as proof of project integrity or misconduct. <https://assets.bezerocarbonmarkets.com/f/179543/x/1e741a4161/rubicon-portfolio-rating-report-bezero-carbon.pdf>
15. Calyx Global, "An introduction to LDAR," 24 March 2025, used for LDAR project concentration, AM0023 context, current-practice and project-family safeguards. <https://calyxglobal.com/research-hub/research/an-introduction-to-ldar>

16. Calyx Global, "Analyzing the first credits transitioning to the Article 6.4 Paris Agreement Crediting Mechanism," 19 March 2025, used as transition-risk comparator evidence, not as LDAR-specific proof. <https://calyxglobal.com/research-hub/research/analyzing-the-first-credits-transitioning-to-the-article-64-paris-agreement-crediting-mechanism/>
17. Financial Express, "Titas plugs leaks, earns \$3m amid slumping carbon market," used only as public comparator context on saved-gas/CDM revenue and not as proof against any PMM008 activity. <https://thefinancialexpress.com.bd/economy/titas-plugs-leaks-earns-3m-amid-slumping-carbon-market>
18. Wilde, S.E., Tyner, D.R. and Johnson, M.R. (2025), "The Efficacy of Methane Leak Detection and Repair (LDAR) Programs in Practice," ACS ES&T Air. <https://pubs.acs.org/doi/10.1021/acsestair.5c00195>