

THE THREE SUCCESSORS TO ACM0002

Renewable electricity crediting in the Paris era — a techno-commercial assessment of VMR0017 (Verra), G-RESET (Gold Standard) and A6.4-AMM-003 (Article 6.4), with an investment framework.

Presented by:



NatureFIX

Contents

List of Figures	4
List of Tables	4
List of Abbreviations	5
1. Executive Summary	7
1.1 The Verdict Runs on Two Ledgers	7
1.2 The Two Screens That Organize the Assessment	8
1.3 Structural Mechanism That Decides the Long Run	9
1.4 Headline Quantification	10
1.5 Recommendations in Brief	10
2. Approach and Evidence Base	12
2.1 Question and Its Boundaries	12
2.2 Method	12
2.3 Evidence Hierarchy and Confidence Grading	12
2.4 Limitations, and What Could Change the Conclusions	13
3. The Instruments and Their Origins	14
3.1 The Parent, and Why It Failed	14
3.2 Three Successor Designs	14
4. The Integrity Reset: Criticism, Benchmark, and the New Demand Architecture	19
4.1 The Documented Case Against Grid-Renewable Crediting	19
4.2 The Revealed Benchmark: Decoding the VMR0017 Approval	21
4.3 The Paris-Alignment Codification: Screen 1 Acquires Legal Text	21
4.4 The Demand Side: SBTi's Standard, the Double-Counting Layers, and the Claim Classification	23
5. Technical Assessment	25
5.1 Additionality: The Four Gates, and Who Bears the Burden of Proof	25
5.2 Quantification: Same Plant, Three Answers	29
5.3 Indicative CCP-Readiness of G-RESET	32
5.4 Technology-Trend Fit: Which Decade Is Each Framework Built For?	33
6. Market Access and Demand Channels	34
6.1 The Voluntary Premium Channel	34
6.2 CORSIA: The Aviation Compliance Channel	34
6.3 Article 6: Two Sovereign Routes, and the Liability Mechanism	34
6.4 Transition Outcome and the Adoption of AMM-003	36
6.5 Host-Country Investability	36

7. Investment Analysis	38
7.1 The Decision Framework: Why Expected Value Cannot Lead.....	38
7.2 Economics: The Revenue Stack, the Price Floors, and the Archetype Pro-Formas	39
7.3 Irreversibility and Movement Between Standards	43
7.4 Consolidated Risk Register	43
7.5 Monetization, Liquidity and Structuring	45
8. Findings, Verdict and Recommendations	46
8.1 Scorecard and Sensitivity	46
8.2 Two-Ledger Verdict	46
8.3 Strongest Case Against This Verdict	47
8.4 Recommendations by Mandate	48
8.5 Watch-List: The Named Triggers	48
Appendix A. Worked Calculations	50
Appendix B. Criticism-to-Response Traceability	51
Appendix C. Glossary	52
Appendix D. Sources	54



List of Figures

Figure 1: Paper issued per unit of real mitigation	9
Figure 2: Quality now sets price	20
Figure 3: The four gates, and where the burden of proof sits	25
Figure 4: Where the divergence comes from	30
Figure 5: Host-country tiering for authorization-dependent revenue.....	36
Figure 6: The decisiveness floor	40

List of Tables

Table 1: The two screens, at a glance	9
Table 2: Reference project outcomes, 100 MW solar, coal-heavy grid	10
Table 3: Three design philosophies.....	14
Table 4: Structural comparison of the four instruments.....	17
Table 5: The claim classification: where each class of credit can be used, and at what value	23
Table 6: The quantification divergence, one plant, three volumes	29
Table 7: Indicative assessment of G-RESET against the revealed Core Carbon Principles bar	32
Table 8: Archetype pro-formas (risk-adjusted, illustrative).....	41
Table 9: Risk register	43
Table 10: Weighted scorecard (1–5) with sensitivity to the weights.....	46
Table 11: Worked calculations for the reference projects	50
Table 12: Documented criticism mapped to each framework’s response.....	51

List of Abbreviations

Abbreviation	Full Form
ACM0002	Approved Consolidated Methodology 0002 (Consolidated baseline and monitoring methodology for grid-connected electricity generation from renewable sources), the CDM parent methodology
AMS-I.D	Small-scale methodology for grid-connected renewable electricity generation, merged with ACM0002 under A6.4-AMM-003
A6.4	Article 6.4 of the Paris Agreement (the UN's Paris Agreement Crediting Mechanism)
A6.4-AMM-003	Article 6.4 Mechanism Methodology 003 (Electricity generation from renewable sources connected to an electricity system)
BAU	Business-as-usual
CCP	Core Carbon Principles (ICVCM's credit-quality label)
CDM	Clean Development Mechanism (Kyoto Protocol)
CORSIA	Carbon Offsetting and Reduction Scheme for International Aviation
DNA	Designated National Authority
ER	Emission Reduction
GHG	Greenhouse Gas
G-RESET	Gold Standard's renewable electricity crediting framework (five-module rebuild; consultation draft)
ICAO	International Civil Aviation Organization
ICVCM	Integrity Council for the Voluntary Carbon Market
IEA	International Energy Agency
IETA	International Emissions Trading Association
I-REC	International Renewable Energy Certificate
IRENA	International Renewable Energy Agency
LDC	Least Developed Country
LoA	Letter of Authorization
MW / MWh	Megawatt / Megawatt-hour
NDC	Nationally Determined Contribution
OER	Ongoing Emissions Responsibility (SBTi's structured route for carbon credits)
SBTi	Science Based Targets initiative
SIDS	Small Island Developing States



Abbreviation	Full Form
tCO ₂ e	Tonnes of carbon dioxide equivalent
UNFCCC	United Nations Framework Convention on Climate Change
VCM	Voluntary Carbon Market
VCS	Verified Carbon Standard (Verra's program)
VMR0017	Verra Methodology for Renewable energy 0017 (published 23 April 2026)
VT0008 / VT0011	Verra Tool 0008 (additionality) / Verra Tool 0011 (grid-factor weighting)

1. Executive Summary

Grid-connected renewable electricity was the largest source of carbon credits in history and became the most criticized. In August 2024, the Integrity Council for the Voluntary Carbon Market (ICVCM) determined that eight renewable energy methodologies, covering roughly 236 million unretired credits, about 32% of the market, failed its additionality requirements. Three revised frameworks now compete to define what replaces the old model: Verra's VMR0017, Gold Standard's G-RESET, and the UN Paris Agreement Crediting Mechanism's A6.4-AMM-003. This report assesses which is technically superior, which is commercially superior, and what an investor with a defined mandate should do about the difference.

CONFIDENCE Established for the market facts; the recommendations are judgment on stated assumptions.

1.1 The Verdict Runs on Two Ledgers

On the technical and integrity ledger, G-RESET is the superior methodology, by a margin that is robust to how the criteria are weighted. The reasoning chain is set out in Sections 4 and 5 and summarized here: the market's criticism reduced to four failures: gameable project-level evidence, no control over time, inaccurate counting, and blindness to what modern grids need; and G-RESET is the only framework that answers all four directly. It is the only design in which independent market evidence can overrule a developer's financial model; the only one that re-tests financial need at every crediting-period renewal and can refuse renewal; the closest to physical truth in its counting; and the only one built for the storage-and-flexibility systems the energy agencies describe.

CONFIDENCE Probable, pending publication of the final text.

On the market-access ledger, VMR0017 is the superior instrument today. It is the only CCP-approved renewable methodology, it is operational now. That advantage narrowed four times during this assessment: the CORSIA aviation scheme retained its 15 MW cap on renewables for its second phase, closing the utility-scale compliance channel through 2029; its unlabelled tier proved economically self-defeating and is now also excluded from the only formal corporate-demand framework; the demand architecture itself, described in Section 4, is converging on attributes VMR0017 does not have; and Verra's own VCS Version 5 (December 2025) replaced 21-year crediting certainty with five-year conditional periods for the new-project era, cutting the volume ceiling while, in fairness, improving the temporal risk profile (Section 7.2).

CONFIDENCE Established for each individual event; the convergence reading is probable.

A6.4-AMM-003, adopted 30 July 2026 and published as v01.0 with its consulted options resolved on the conservative side (open geography; a 15 MW hydro cap in all countries; 5%/10% common-practice gates), is a transition-and-settlement vehicle rather than a competitor: conservative volumes with the corresponding adjustment built into

issuance, aimed at a CDM legacy pipeline that contracted sharply when China and India declined to approve transitions. The sovereign channel it serves is not exclusive to it: G-RESET credits carry the same corresponding adjustment through a host Letter of Authorization, and G-RESET is the lowest-liability unit a host government can authorize.

CONFIDENCE Established.

1.2 The Two Screens That Organize the Assessment

Two observable, methodology-level tests separate the Paris-era architecture from the Kyoto-era architecture, and the whole report can be read through them.

Screen 1, Paris-aligned baseline architecture

Does the methodology credit below business-as-usual, with a mandatory and escalating adjustment? This is no longer a preference. The UN's baseline standard requires an initial downward adjustment, for example, 10% below business-as-usual, plus a minimum 1% further reduction over time, expressly to avoid over-crediting. Gold Standard has adopted the same architecture at program level, with 1 January 2026 as the transition point for Paris-aligned methodologies, stating that baselines are to be set below business-as-usual with a mandatory adjustment factor, and that this approach meets the rising expectations of SBTi, ICVCM and CORSIA. AMM-003 passes Screen 1 by UN standard. G-RESET passes by program rule and its ambition adjustment. VMR0017 fails: its baseline section reads "no changes to ACM0002," crediting at full business-as-usual on the legacy combined margin.

CONFIDENCE Established.

Screen 2, additionality architecture

Who bears the burden of proof, whose data wins, and is the test repeated over time? Section 5 shows a clear gradient: G-RESET inverts the burden (outside market evidence outranks the developer's model, and the test re-runs at every renewal); VMR0017 strengthens the old test and adds a consistency rule, but applies its decisive test only to the labelled tier and never re-tests; AMM-003 holds middle ground, its gates now fixed in the adopted text. A caution accompanies Screen 1 throughout: a Paris-aligned baseline is necessary, not sufficient. A 10% haircut on a non-additional project is still 90% over-issuance. The two screens work only as a pair.

CONFIDENCE Established for the designs; the gradient ranking is analyst synthesis of documented features.

Table 1: The two screens, at a glance

Screen	VMR0017	G-RESET	AMM-003
1 · Below-BAU baseline	Fails	Passes	Passes

Screen	VMR0017	G-RESET	AMM-003
2 · Additionality architecture	Partial, labelled tier only; no re-test	Strongest	Quantitative gates adopted (5%/10%); no decisive or consistency rule

Full derivation in Sections 4.3 and 5.1.

1.3 Structural Mechanism That Decides the Long Run

Under the Paris Agreement, every credit a government authorizes for international transfer becomes a debit on its own national climate ledger, the corresponding adjustment. The physical mitigation from one megawatt-hour is identical under all three methodologies; only the paper volume differs. A methodology that issues 40–50% more paper per real megawatt-hour therefore asks the host government to carry 40–50% more ledger liability for the same delivery, partly for tonnes that were never physically reduced, since the generous counting overstates true displacement (Section 5.2). A rational authorizing authority will increasingly rank methodologies by this liability and prefer conservative ones, which, additionally, leave the uncredited share inside the host’s own climate target. The evidence that this is already operating is presented in Section 6.3. This mechanism structurally favors the conservative architectures in every channel that requires government paper, and it is the causal engine behind the direction of travel documented throughout the report.

CONFIDENCE *The mechanism is established as accounting logic; its behavioural adoption by hosts is probable, with supporting evidence.*

PLAIN-LANGUAGE NOTE

Authorizing a credit is writing a cheque on the nation’s own account. A generous methodology asks the government to write bigger cheques for the same delivery. Finance ministries eventually notice, and the conservative designs even leave part of the delivery in the nation’s own pantry.



Figure 1: Paper issued per unit of real mitigation

Tonnes of credit per real MWh displaced, reference project. Every tonne is a debit on the host’s national ledger. Section 6.3.

1.4 Headline Quantification

Table 2: Reference project outcomes, 100 MW solar, coal-heavy grid

Metric	VMR0017 (labelled tier)	G-RESET	AMM-003
Credits, year 1	≈145,800 t	≈101,600 t (70%)	≈114,300 t (78%)
Lifetime credits	≈3.06 Mt at the legacy 21-yr ceiling; less under VCS v5	≈1.52 Mt over 15 yrs	≈1.58 Mt over 15 yrs
Risk-adjusted value (10% discount)	≈\$13–15M	≈\$7–10M incl. sovereign branch	≈\$6–8M
Carbon price at which revenue is “decisive”	≈\$9–10/t	≈\$13–14/t	≈\$12–13/t
Screen 1 (Paris-aligned baseline)	Fails	Passes	Passes
Screen 2 (additionality architecture)	Partial (labelled tier only; no re-test)	Strongest	Quantitative gates adopted (5%/10%); no decisive or consistency rule

Illustrative; full arithmetic in Appendix A. Source: Assessment calculations from methodology texts; assumptions in Section 5.2.

1.5 Recommendations in Brief

Developed with full reasoning in Section 8.

01 For long-horizon capital, durability is the screen and expected value is only the tiebreaker within the set that passes it. The primary allocation is conservative-only: AMM-003 now for greenfield generation in authorization-ready host countries; G-RESET positions built as it publishes, and immediately for storage, captive supply and micro-scale activities, where no alternative exists.

CONFIDENCE *Judgment, on the durability-first framework argued in Section 7.1.*

02 VMR0017’s labelled tier is repositioned as a tactical bridge for short-horizon, risk-tolerant participants only: front-loaded vintages, forward sales, explicit exit intent, and three written exit tripwires (Section 8.5). It is not a core holding for infrastructure-horizon money, because its registration is a one-way door held open across at least two scheduled integrity-review cycles.

CONFIDENCE *Judgment.*

03 The single best risk-reward configuration in the current market is renewable capacity of 15 MW or less in a Tier-1 host country holding both the CCP label and a Letter of Authorization, the only renewable product reaching aviation-compliance prices before 2030.



CONFIDENCE *Established for the constraint; judgment for the ranking.*

04 The unlabelled tier of VMR0017 should not be touched in any mandate: it is economically self-defeating below roughly \$5–8 per tonne and is now excluded from the only formal corporate recognition framework.

CONFIDENCE *Established on both grounds; Section 4.4.*

2. Approach and Evidence Base

2.1 Question and Its Boundaries

The assessment answers three linked questions. First, a technical question: measured against the documented criticism of grid-connected renewable crediting, which of the three successor frameworks is the most robust? Second, a commercial question: which framework converts into revenue, through which demand channels, at what prices and volumes, over what period? Third, an investment question: given that the technical and commercial answers differ, how should capital with a defined horizon allocate between them? The report deliberately keeps the three questions separate before combining them, because collapsing them early is how analysis becomes advocacy.

2.2 Method

Four methods carry the work. **Corpus analysis:** twelve primary documents, the parent methodology ACM0002 v22.0, the three successor frameworks, and their supporting tools, were read at clause level, and every comparative claim in this report traces to a cited clause. **Revealed-benchmark calibration:** because ICVCM rejected the parent architecture in 2024 and approved VMR0017 with conditions in 2026, the difference between the rejected and approved configurations reveals which requirements actually bind; the draft frameworks are tested against that revealed bar rather than against their approval status, which would penalize them for being newer. **Worked quantification:** identical reference projects are computed through all three frameworks' formulas, so volume differences are arithmetic. **Market verification:** regulatory and market claims were checked against primary announcements and current data through 14 August 2026, including four decisive events verified during the assessment, the adoption and publication of A6.4-AMM-003 v01.0 (30 July 2026), Verra's launch of VCS Version 5 with shortened crediting periods (December 2025), ICAO's retention of the 15 MW renewable cap for CORSIA's second phase, and the publication of SBTi's Corporate Net-Zero Standard V2.0 (11 June 2026).

2.3 Evidence Hierarchy and Confidence Grading

Findings are graded throughout. **Established** means verified against primary text or primary data: a methodology clause, an official decision, a published dataset. **Probable** means strongly indicated by converging evidence but not formally confirmed, for example, G-RESET's ability to pass the revealed ICVCM bar, which is architecturally demonstrated but not yet formally assessed. **Judgment** means an analyst assessment on stated assumptions, all forward-looking volumes, prices, probabilities and recommendations. Where sources disagree (for example, on final CDM transition tallies), the range is shown rather than resolved silently.



These grades appear as a Confidence note beneath the relevant paragraphs throughout the report.

2.4 Limitations, and What Could Change the Conclusions

Four limitations bound this work. G-RESET is a consultation draft; its assessed features could change before publication. Two Verra tool texts (VT0008's common-practice step and VT0011's weighting) were characterized from official summaries rather than full texts, and the numeric default table of Gold Standard's adjustment-factor tool (MT400-05) was not yet available, so its value is carried as a stated 5% assumption. All commercial figures are order-of-magnitude estimates with stated assumptions, not forecasts. And the report's central structural argument, that authorization behaviour will increasingly track methodology liability, is a mechanism with supporting evidence, not yet a documented policy in any DNA's published criteria; Section 8.3 states the strongest case against the report's conclusions and answers it on the record.

3. The Instruments and Their Origins

3.1 The Parent, and Why It Failed

ACM0002 was consolidated in 2005 from eight pioneer project baselines and became the workhorse methodology of the Clean Development Mechanism era; its current version, 22.0, entered force on 31 May 2024. Its design assumptions belonged to its time: renewable electricity was expensive, so a project-level financial test could plausibly separate projects that needed carbon revenue from projects that did not; grids changed slowly, so an annual-average emission factor was a tolerable approximation; and a 21-year crediting horizon seemed safe. Every one of those assumptions was destroyed by the steepest cost decline in energy history. By the early 2020s, solar and wind were the cheapest new power in most large markets, the financial test had become an exercise in chosen inputs, annual averages misstated what intermittent plants displace, and projects validated honestly in 2010 were issuing credits their own economics no longer justified. Section 4.1 documents each of these failures with its evidence.

CONFIDENCE Established.

3.2 Three Successor Designs

The three frameworks respond to the same failure with three different design philosophies, and the philosophies, not the branding, are what an investor is actually choosing between.

Table 3: Three design philosophies

REVISION OVERLAY	FIVE-MODULE REBUILD	CONSOLIDATION
<i>Eligibility gating</i>	<i>Performance gating</i>	<i>Scope minimalism</i>
Decide who and where may participate, then run a strengthened version of the familiar machinery.	Anyone may participate anywhere, but every project must prove itself against outside evidence, and keep proving itself over time.	A narrow scope in service of a specific job: moving the CDM legacy pipeline into the Paris system with sovereign-grade units.

VMR0017 (Verra, published 23 April 2026) is a revision overlay: it must be read together with ACM0002 v22.0, and it operates by substitution. The four CDM tools are swapped for Verra's VT-series; the automatic-additionality route is deleted; an income-based eligibility table restricts mature technologies to low- and middle-income countries (with global eligibility for pre-commercial marine and floating technologies, and hydro confined to 15 MW or less in least-developed countries); embodied manufacturing emissions enter the accounting as a leakage deduction. The philosophy is eligibility gating: decide who and where may participate, then run a strengthened version of the familiar machinery. Notably, this re-opened a market Verra itself had closed, both Verra



and Gold Standard stopped accepting grid-connected renewables outside least-developed countries in 2019. Program law moved again as this report closed: VCS Version 5 (December 2025) shortened crediting periods to five years for most project types, with renewal conditional on adopting the latest methodology version, re-demonstrating regulatory surplus and reassessing the baseline; registered projects keep current terms to their next renewal, and new registrations from 1 January 2027 apply Version 5 in full.

G-RESET (Gold Standard, consultation draft) is a rebuild: a standalone architecture of five combinable modules: greenfield generation, brownfield life-extension, storage, captive supply, and aggregated virtual plants; absorbing the scope of four legacy methodologies with an explicit transition mapping. It is built on the UN's own Article 6.4 tools with Gold Standard overlays, and it implements a program-level legal decision: Gold Standard's Paris Agreement Alignment transition, effective 1 January 2026, which requires below-business-as-usual baselines with mandatory adjustment factors across its methodologies. The philosophy is performance gating: anyone may participate anywhere, but every project must prove itself against outside evidence, and must keep proving itself over time.

CONFIDENCE Established.

A6.4-AMM-003 (Paris Agreement Crediting Mechanism, adopted 30 July 2026) is a consolidation-and-restriction: ACM0002 and its small-scale sibling AMS-I.D merged into one UN methodology, deliberately narrowed to greenfield generation only, with storage, brownfield and captive supply explicitly deferred to later versions; and built on the standardized A6.4 tool stack with the mechanism's mandatory downward adjustment. The philosophy is scope minimalism in service of a specific job: moving the CDM legacy pipeline, four-fifths of which used grid-renewable methodologies, into the Paris system with sovereign-grade units.

CONFIDENCE Established.

A quieter structural fact matters for the market's future shape: Gold Standard adopted the UN tool stack with overlays, while Verra forked to proprietary tools. The market therefore has two tool ecosystems, not three, a UN-aligned ecosystem in which Gold Standard functions as an enhanced overlay, and a parallel Verra stack. Interoperability, mutual recognition and future regulatory convergence all run along this seam.

CONFIDENCE Established.

PLAIN-LANGUAGE NOTE

The parent methodology is an old, reliable truck built for last decade's roads. VMR0017 refits that truck with new brakes and mirrors, it runs today. G-RESET and AMM-003 are new vehicles engineered to the new highway code, with its stricter weighbridges and its toll ledgers. The refitted truck reaches the market first; the new vehicles are built for where the road is going.

Table 4: Structural comparison of the four instruments

Source: Clause-level corpus analysis.

Dimension	ACM0002 v22.0 (parent)	VMR0017	G-RESET	AMM-003
Instrument type	CDM consolidated methodology	Revision overlay on the parent	Standalone five-module rebuild	UN mechanism methodology (parent + AMS-I.D merged)
Status at 14 Aug 2026	In force 31 May 2024	Published 23 Apr 2026; CCP-approved with conditions May 2026	Consultation draft	Adopted 30 Jul 2026; v01.0 published
Activity scope	Greenfield, capacity addition, retrofit, storage retrofit	Inherits the parent in full	Greenfield, brownfield, storage, captive, aggregation; programmatic	Greenfield only; remainder deferred
Geography	Global	Income-gated; hydro ≤15 MW in LDCs only	Global, evidence-gated	Global, no host-country restriction (¶12–22); hydro ≤15 MW in all countries (¶16)
Additionality route	Positive list or TOOL01	VT0008; barrier analysis removed; positive lists deleted	Four mandatory tests plus a market-evidence override; micro-scale positive list ≤10 kt	Four tests via the A6.4 tools
Renewal of crediting	Near-formality	Baseline update only	Full re-test including financial need; renewal refusable	Baseline update plus a growing haircut
Screen 1: below-BAU baseline	No	No, “no changes” to parent baseline	Yes, ambition adjustment tied to the host’s long-term strategy	Yes, 10% initial plus 1% per year minimum
Life-cycle emissions	Absent	All plants, per-MWh deduction	All plants and storage; full footprint recovered within the 15-year window	Battery systems only, 0.06 t/MWh delivered
Crediting period	7×3 or 10 fixed	Legacy: existing terms to next renewal; VCS v5: 5-yr conditional periods	5×3 = 15 years with hard renewal tests	5-year renewable twice, or 10 fixed
Certificates on the same MWh	Silent	Cancellation via program rules	Cancellation-conditioned, single-claim rule (§11.3)	Cancellation or ring-fencing (§11)

4. The Integrity Reset: Criticism, Benchmark, and the New Demand Architecture

4.1 The Documented Case Against Grid-Renewable Crediting

The criticism was not rhetorical; each strand has an evidence trail, and each strand maps to a specific design response in Section 5 (the full mapping is Appendix B).

Additionality collapse

As renewable costs fell, projects increasingly would have been built without carbon revenue. A 2016 study for the European Commission (Cames et al., Öko-Institut) found roughly 85% of CDM projects, covering about 73% of credit supply, had a low likelihood of additionality, with wind and hydro among the weakest classes. A later econometric study of Indian wind (Calel, Colmer, Dechezleprêtre and Glachant) found at least half of CDM-approved wind capacity would have been built anyway. The regulator then ruled: on 6 August 2024, ICVCM determined that eight renewable energy methodologies, about 32% of the voluntary market and roughly 236 million unretired credits, failed the Core Carbon Principles on additionality.

CONFIDENCE *Established.*

A gameable financial test

The developer selected the tariff, the costs and the discount rate; the validator checked internal consistency, not truth. The rejected methodologies were designed up to two decades before the cost collapse they failed to register.

CONFIDENCE *Established.*

Inaccurate counting

Annual-average grid factors and legacy weighting overstate what intermittent plants displace, increasingly so as grids get cleaner, a result documented in the peer-reviewed literature the new methodologies themselves cite (Section 5.2).

CONFIDENCE *Established.*

No control over time

A project could pass one test and issue for up to 21 years while its economics transformed. This temporal failure, more than any single false positive, is how the asset class collapsed: truths of 2010 became falsehoods by 2018, and the instruments had no mechanism to notice.

CONFIDENCE *Established as history; the causal weighting is analyst synthesis.*

The market outcome

Renewable issuance fell 18% in 2025 to 62 million credits; renewables dropped below a quarter of retirements from more than a third in 2021–22; about half of all credits traded in 2024 changed hands below the \$6.37 average, dominated by legacy renewables and older forestry; and quality now sets price, highly rated credits near \$14.80 per tonne against \$3.50 for low-rated ones, with ICVCM-screened portfolios closing at €25–80.

CONFIDENCE Established, per the market sources in Appendix D.

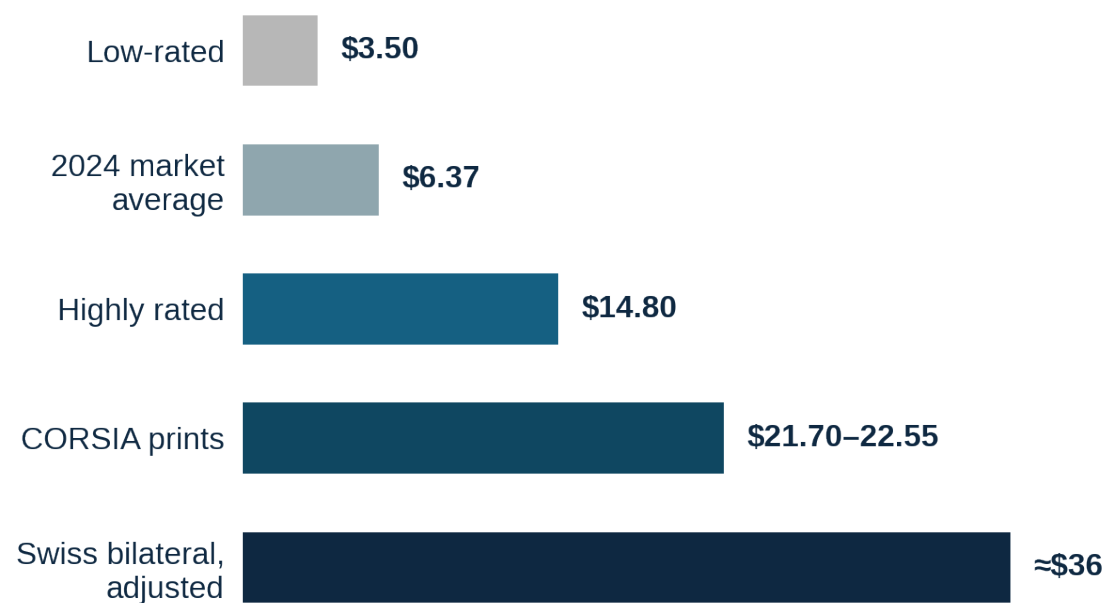


Figure 2: Quality now sets price

Observed per-tonne prices by credit class, 2024–2026. Source: market sources in Appendix D.

4.2 The Revealed Benchmark: Decoding the VMR0017 Approval

In May 2026, ICVCM approved VMR0017, conditionally. The Core Carbon Principles label attaches only where a benchmark analysis, run with Verra’s updated additionality tool, demonstrates that the project’s economic performance improves decisively through carbon revenue and reaches the financial viability benchmark; the condition is checked at verification; and no historical issuances receive the label. Because the same body rejected the parent architecture in 2024, the difference between the rejected and approved configurations reveals which levers actually bind. What changed: eligibility screening, deletion of automatic additionality and barrier analysis, life-cycle emissions entering the boundary, strengthened grid-factor tools with conservativeness safeguards, and the project-level decisiveness condition. What did not change: full business-as-usual crediting, 21-year periods, and the absence of any re-test over time. The inference, stated carefully: ICVCM’s binding constraint in 2026 was false-positive control at entry; baseline ambition and temporal control were not yet binding, “not yet” being the operative phrase, because Section 4.3 shows both are now codified elsewhere and Section 4.4 shows the demand side converging on them. The approval is therefore a floor for market access, not a ceiling for integrity.

CONFIDENCE Established for the conditions; the inference is analyst synthesis, graded probable.

One consequence deserves emphasis because it shapes everything commercial: the conditional approval created a two-class instrument. A VMR0017 project can register and issue on the standard route, or additionally satisfy the decisive-benchmark condition and carry the label. One methodology, two products, and, as Section 7.2 shows, two economics so different that the lower class contradicts its own additionality story.

CONFIDENCE Established for the structure; the economic conclusion is derived in Section 7.2.

PLAIN-LANGUAGE NOTE

The approval is a driving license issued with a condition, “must wear glasses.” Verra printed the license; the glasses clause applies only when the driver wants the premium insurance sticker. Gold Standard designed its car with the glasses built into the windshield.

4.3 The Paris-Alignment Codification: Screen 1 Acquires Legal Text

“Paris-aligned baseline” has moved from concept to codified requirement in two of the three institutions assessed. The UN’s baseline-setting standard for the Article 6.4 mechanism requires an initial downward adjustment, illustratively, historic or current baselines set 10% below business-as-usual, plus a minimum 1% further downward adjustment over time across all baseline approaches, with the stated purpose of steadily lowering the benchmark to avoid over-crediting; the UNFCCC describes the mechanism’s first adopted methodology as the first practical application of Paris-



aligned crediting, with renewable energy to follow, AMM-003 is that follow-on. Gold Standard has adopted the same architecture as program law: baselines below business-as-usual with a mandatory percentage reduction or adjustment factor, a 1 January 2026 transition point for Paris-aligned methodologies, positioning as the first major independent standard to take the step, and an explicit statement that the approach meets the rising expectations of SBTi, ICVCM and CORSIA and keeps credits fungible across Article 6 and domestic markets. G-RESET's ambition adjustment is the implementing instrument of that program decision, not a methodology-level stylistic choice.

CONFIDENCE *Established.*

The attribution is stated precisely because it strengthens the claim: the requirement's textual homes are the UN standard (binding for the 6.4 mechanism) and Gold Standard's program rules (binding for its methodologies from 2026). SBTi transmits the requirement by reference rather than by mandate, Section 4.4, and industry acknowledges the direction while contesting its scope: IETA's formal submission to the UN process records the live debate over the term's meaning while itself endorsing baselines that are conservative, credible and below business-as-usual. Screen 1 therefore has multiple independent anchors and two dated ones. Its verdict across the three frameworks is binary and unambiguous: AMM-003 and G-RESET pass; VMR0017 fails. The necessary-not-sufficient caution from Section 1.2 applies throughout.

CONFIDENCE *Established.*

4.4 The Demand Side: SBTi's Standard, the Double-Counting Layers, and the Claim Classification

SBTi published the final Corporate Net-Zero Standard V2.0 on 11 June 2026, effective 1 February 2027, creating for the first time a structured route for carbon credits in corporate net-zero strategies: the Ongoing Emissions Responsibility framework, a voluntary recognition program (with “Recognized” and “Leadership” tiers, the latter requiring an \$80-per-tonne internal contribution budget applied to 100% of ongoing emissions) that becomes mandatory for large companies from 2035, ramping from 1% of ongoing emissions toward 100% at the net-zero year. Credits remain a complement, never a substitute, for a company’s own reductions. Two design choices matter most for this report. First, SBTi does not build its own integrity framework; it recognizes external frameworks as consistent with its approach, in practice adopting the Core Carbon Principles as its operative quality filter. Second, its double-counting rules are layered, and the layers determine where each class of credit ends up.

CONFIDENCE Established.

Inside corporate ledgers, the prohibition is absolute: credits used for recognition must be permanently retired, must not be double counted, can never count toward Scope 1–3 targets or be netted from the inventory, and cannot be claimed by another actor in the corporate realm, with value-chain sharing permitted only where one party clearly assumes coverage. Across the corporate–government boundary, the NDC overlap, the final standard stepped back from its own draft: the draft prohibited outright the use of credits whose mitigation the host country claims toward its NDC without a corresponding adjustment; the final text (provision R46.1) requires disclosure of authorization and adjustment status and recommends, where possible and where available, using credits not simultaneously claimed against national targets. The softening is explicitly provisional: the criteria are scheduled for review in Version 3, stakeholder submissions formally welcomed corresponding adjustments as the double-counting fix, and the qualifier “where available” weakens automatically as authorization supply grows.

CONFIDENCE Established.

Table 5: The claim classification: where each class of credit can be used, and at what value

Source: SBTi CNZS V2.0 provisions; CORSIA eligibility rules; market price sources in Appendix D.

Claim Class	Definition	Usable For	Price Signal	Which Credits Land Here
Class 1, Adjusted units	Host authorization with corresponding adjustment applied	Compliance (CORSIA, Article 6 buyers) and the strongest voluntary claims	≈\$21–36/t observed; the adjustment itself is worth ≈\$25–30/t	AMM-003 units natively; G-RESET or VMR0017 credits with a

Claim Class	Definition	Usable For	Price Signal	Which Credits Land Here
				Letter of Authorization
Class 2, Labelled, non-adjusted	CCP-label integrity, mitigation still counted in the host's NDC	SBTi recognition and voluntary contribution-style claims, with the overlap disclosed	≈\$15–30/t	VMR0017 labelled tier; G-RESET on label approval, absent an LoA
Class 3, Unlabelled	No adjustment and no recognized integrity label	No formal corporate framework; residual bilateral demand only	≈\$1–4/t and declining	VMR0017 standard route; legacy vintages
Failure mode, Undisclosed overlap	NDC-overlapping credits used without the required disclosure	Reputational and reporting exposure	Negative value	Any class misused

Three conclusions follow, each load-bearing for the investment analysis. First, non-adjusted credits do not die under the new architecture; they step down one class (to disclosed, contribution-style claims) and remain usable, which preserves near-term demand for VMR0017's labelled tier and, incidentally, keeps host governments cost-free on voluntary projects for now. Second, unlabelled credits fall out of the classification entirely: recognition requires ex-post, independently assured credits meeting the integrity criteria, a gate the unlabelled tier fails before the NDC question even arises. Combined with the price-floor result in Section 7.2, the unlabelled tier is now both economically self-defeating and institutionally unclaimable, a two-part verdict this report states without hedging. Third, a single scheduled sentence separates Class 2 from collapse into Class 1's gate: if R46.1 hardens from recommendation to requirement at Version 3, every voluntary credit will need a government debit, at which point the host-liability mechanism of Section 6.3 governs the entire market and authorization-ready, conservative architectures are the prepared assets. R46.1 is therefore carried as a named watch-item with a named trigger in the risk register.

CONFIDENCE First two conclusions established; the third is a scenario with a documented mechanism, graded probable as to direction and judgment as to timing.

5. Technical Assessment

5.1 Additionality: The Four Gates, and Who Bears the Burden of Proof

All three frameworks run the same four-gate sequence, regulatory surplus, lock-in, financial analysis, common practice, inherited in shape from the CDM. The differences that matter are evidentiary: whose data wins, how often the gates are re-run, and where a motivated developer could still manufacture a pass. This subsection walks the gates in order; the gameability assessment and stress scenarios follow.

Figure 3: The four gates, and where the burden of proof sits

Reading down each column: who supplies the decisive evidence at each gate, and whether the gate re-runs over time.

	Regulatory Surplus	Lock-in	Financial	Common Practice
VMR0017	Validation only	No test	Developer model + consistency rule; decisive test label-only	Legacy-style step; open item
G-RESET	Start + every renewal; auction rule	All activities	Market evidence overrides the model	Hard 10% threshold, module by module
AMM-003	Every monitoring period	Geothermal only	Fails-if-flip and entity rules	Three-year additions share; values pending

Regulatory surplus

All three require that no law compels the project. AMM-003 checks fastest: every monitoring period, with crediting cut off the day a new legal requirement applies (§6.1). G-RESET checks at the start and at each renewal, and adds the sharpest single rule in the corpus: a project procured through a competitive auction with a binding delivery commitment fails the test (§6.3.1.c). The rule closes a real gaming path, winning a firm contract and then claiming the project needed carbon money, at the documented cost of also excluding some genuinely additional auction-won projects, since auctions are now the dominant procurement route for utility-scale renewables, including in least-developed countries. That over-exclusion is quantified as a pipeline deduction in Section 7.

CONFIDENCE Established.

Lock-in

A Paris-era test with no CDM ancestor. AMM-003 applies it to geothermal only, on evidence of the technology's wide emission-intensity range (roughly 4–740 gCO₂e/kWh in the World Bank data the methodology cites), with solar's land-use risk handled by an



applicability rule barring agricultural and forest land (¶17). G-RESET runs a lock-in step for all activities, pointing its heavy screen at combustion technologies and a quantitative test at geothermal against the host's long-term strategy. VMR0017 has no lock-in test. A right-sized instrument where it exists; a minor differentiator for wind and solar.

CONFIDENCE *Established.*

Financial analysis, where the 2024 failure happened, and where the three frameworks now differ most

Three protective layers exist, and the frameworks hold different ones. Layer one, in the UN tool family: the fails-if-flip rule, required inputs above 20% of costs or revenues must be varied by at least $\pm 10\%$, and if any variation makes the project viable it is not additional, plus the implementation-entity rule, which forces market-level cost of capital unless the participant proves only it could build the project. Layer two, Verra's VT0008 upgrades: the decisive-increase requirement for benchmark analysis, and a consistency rule under which the assumptions shown to the validator must match the information given to the entities financing and implementing the project, closing the two-sets-of-books practice that the empirical literature identified as the mechanism of the old failure. The consistency rule applies to every VT0008 user; the decisive test binds only the labelled class. Layer three, unique to G-RESET: the external-evidence override. For mature technologies, the developer's model is checked against recent auction and power-purchase prices and published sector costs in the host market; where independent evidence shows the technology deploying at scale without carbon revenue, a favourable model is not sufficient on its own (§6.5.1), carbon revenue is excluded to demonstrate pre-carbon unviability (§6.5.2), shared costs across co-located modules are pro-rated, and revenue synergies must appear in the cash flow (§6.7.2). No other framework allows outside market data to overrule the spreadsheet, and the empirically documented failure of the old regime was never the arithmetic; it was the asymmetry of who supplied the evidence.

CONFIDENCE *Established; the significance ranking is analyst synthesis.*

Common practice, the new battleground

With the financial test hardened, the cheapest remaining gaming space moved to definitions: what counts as a “similar” activity, how wide the comparison area is, and where the threshold sits. Gold Standard built a quantitative system (thresholds by technology maturity, stock or flow measurement, wider allowances for least-developed contexts, credited projects excluded from the comparator), and G-RESET then hard-codes a 10% threshold for mature utility solar and onshore wind in every country, with no first-period exemption and module-by-module testing, a co-located battery is tested separately from its solar plant. AMM-003 measures the technology’s share of installed capacity added in the most recent three calendar years (¶35(c)) and adopts thresholds of 5% for countries that are neither LDCs nor SIDS and 10% for LDCs and SIDS (¶35(f)), mid-range values consistent with the expert panel’s own advice to stay below the tool ceilings given its per-technology “similar activity” definitions; the comparison area widens from the electricity system to the host country, then to all LDCs and SIDS (for LDC/SIDS hosts) or the continent, then globally (¶35(d)). VMR0017’s step descends from the legacy test that historically almost never blocked a project; its exact stringency is an open verification item, and it matters, because for Verra the common-practice step, not the income table, is what decides whether the most-criticized project class can still register on the standard route.

CONFIDENCE Established, except the AMM-003 final values (probable) and the VT0008 step (open item).

The time gate

VMR0017 fixes eligibility and additionality at validation, for up to 21 years on legacy registrations, and with no financial re-test at the five-year renewals VCS Version 5 now imposes on the new-project era (those renewals check rules, methodology version and baselines, not need). AMM-003 applies a haircut that grows one percentage point each year and re-checks, at every verification, the regulatory gate and a set of applicability conditions, the hydro water rules, the solar land rule and the named-consumer prohibition (¶21), a control that can shrink or halt crediting on legal or applicability grounds, though never on financial ones. G-RESET alone re-runs the entire stack at each five-year renewal, including an ongoing-financial-need test under which renewal is refused if the activity is viable without carbon revenue, explicitly including the intended, conservative outcome that a project whose capital is recovered fails (§6.8, §17.1.1). This is the only instrument in the corpus that matches the documented mechanism of the asset class’s failure, which was temporal. Its cost is equally real and is priced in Section 7: a covenant that can produce zero makes years six to fifteen contingent, and lenders will treat them accordingly.

CONFIDENCE Established.

PLAIN-LANGUAGE NOTE

The renewal test is a scholarship, not a pension: renewed only while you still need it. That is honest, and it is exactly why a bank will only lend against the first term.

Game ability and over-exclusion, stated symmetrically

Residual gaming space: for VMR0017, the standard route in eligible middle-income markets, where the consistency rule constrains but the legacy-style common-practice step is the only quantitative backstop; for AMM-003, the leniency of its per-technology comparator definitions at the adopted 5%/10% gates plus the absence of the decisive and consistency rules; for G-RESET, the judgment terms (“decisively,” “at scale”) whose consistent application depends on verifier capability, and thin markets where auction and price evidence does not exist. Residual over-exclusion: G-RESET’s auction rule and mature-technology override can block genuinely additional projects in poor countries; VMR0017’s income gate excludes all high-income hosts however additional a project might be; AMM-003’s deferred scope excludes the storage-era activity classes entirely, and its adopted applicability additionally excludes any project contracted to supply specific consumers through the grid (¶19(a)), each conservative framework thus excludes a different slice of contracted supply: G-RESET the auction-won, AMM-003 the named-off taker, while VMR0017 excludes neither.

CONFIDENCE Established.

Three stress scenarios anchor the machinery in cases. Auction-won 200 MW solar in India: fails G-RESET at up to three gates (auction rule, 10% threshold, evidence override); fails AMM-003’s common practice at the adopted 5% gate; passes VMR0017’s income gate, where the legacy-style step then decides, and even on registration, the decisive test would very likely fail, leaving Class 3 economics. Solar-plus-storage, 40 MW, in an LDC: eligible everywhere in some form; a realistic label candidate at Verra; module-by-module treatment at Gold Standard; integrated-storage-only at the UN. Offshore wind, 100 MW, Viet Nam: passes all three as an emerging technology in a developing market, the case on which the frameworks now agree, and where the premium is easiest to earn honestly. The convergence at both ends of the spectrum is itself a finding: the fight is over the contested middle and over who bears the burden of proof there.

CONFIDENCE Established at clause level; scenario outcomes are direct applications.

5.2 Quantification: Same Plant, Three Answers

The counting machinery differs on five hinges: the grid-factor engine and its weighting, temporal resolution, below-business-as-usual adjustment, life-cycle deduction, and crediting-period length. Rather than describe each abstractly, the assessment computes one reference project through all three rulebooks. Assumptions: 100 MW solar, 175,200 MWh per year, 30-year technical life, a coal-heavy grid with an operating margin of 0.95 and build margin of 0.65 tCO₂ per MWh, no public hourly data, factors held flat, and Gold Standard's ambition adjustment set at 5%, a stated assumption: the factor is country-specific under the MT400-05 determination tool, derived from the host's national net-zero trajectory with a peer-group floor, and its 2026–2030 default table was not yet available; a 10% case is noted where it changes a conclusion. Full arithmetic, and a second wind-in-LDC case, are in Appendix A.

Table 6: The quantification divergence, one plant, three volumes

Source: Computed from ACM0002/VT0011 conventions, AMT-007 with the Gold Standard addendum, and the AMM-003 formulas; Appendix A.

Step	VMR0017	G-RESET	AMM-003
Grid factor (t/MWh)	$0.75 \times 0.95 + 0.25 \times 0.65 = 0.875$ (legacy weighting)	Operating margin discounted 10% for annual data $\rightarrow 0.25 \times 0.855 + 0.75 \times 0.65 = 0.701$	Conservative weight rule $\rightarrow 0.25 \times 0.95 + 0.75 \times 0.65 = 0.725$
Baseline (t/yr)	153,300	122,859	127,020
Below-BAU adjustment	None	–5% ambition factor (assumption) $\rightarrow 116,716$	–10% year one, growing 1 point/yr $\rightarrow 114,318$
Life-cycle deduction (t/yr)	–7,534 (43 g/kWh on output)	–15,067 (full 30-year footprint recovered in 15 years)	0 (no battery in this case)
Credits, year 1	≈145,800	≈101,600	≈114,300
Lifetime total	≈3.06 Mt at the legacy 21-year ceiling	≈1.52 Mt / 15 years	≈1.58 Mt / 15 years

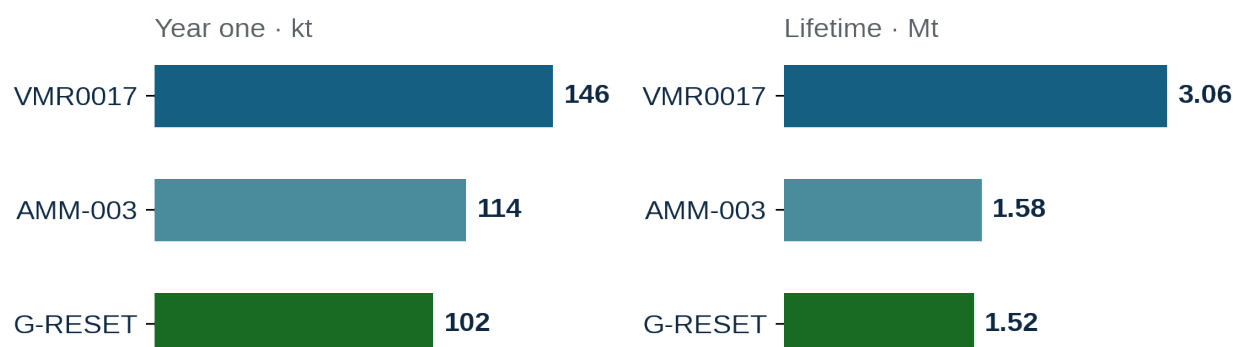


Figure 4: Where the divergence comes from

Left: year-one credits, thousands of tonnes. Right: lifetime credits, Mt, against the legacy 21-year Verra ceiling, Version 5's five-year periods collapse much of that wedge for new projects.

Three readings of the quantification divergence carry into everything downstream. Accuracy: the research the methodologies themselves cite shows annual-average factors misstate what intermittent plants displace and that the legacy 0.75 operating-margin weighting overstates displacement as grids clean. Against that literature, VMR0017's numbers are the least conservative of the three; AMM-003's conservative-weight rule and growing haircut bend toward the true value; G-RESET gets closest, hourly where data allows, discounted where it does not, with the manufacturing footprint fully recovered inside the crediting window rather than partially and passively. Price implication: against a legacy 21-year Verra profile, a G-RESET credit must sell for roughly twice the price for equal lifetime revenue; against a Version 5 profile the required premium falls toward the $\approx 1.4\times$ annual ratio, conservative counting is not free, and Section 7 tests whether realistic premiums can carry it. Duration: under the legacy ceiling, six extra Verra years contributed nearly as much to the lifetime gap as all factor choices combined; Version 5's five-year conditional periods collapse much of that wedge for new projects and shift the comparison back onto the factor choices.

CONFIDENCE *Established for the arithmetic; the accuracy ranking rests on the cited literature.*

Storage is where the difference stops being numerical and becomes categorical. G-RESET reconciles charging and discharging per settlement interval against an energy-weighted rolling carbon pool; a battery whose operation increases system emissions over the period earns zero; the build-margin weight is set to zero because storage defers no fossil capacity; and an anti-transmutation cap prevents co-located generation from earning more by routing through the battery than as direct supply. VMR0017 treats the battery as plumbing within the plant. AMM-003 permits only integrated batteries, charges them a life-cycle fee of 0.06 tCO₂ per MWh delivered, and defers refined treatment, though a pumped-hydro storage proposal now sits in the mechanism's pipeline. Only one framework can pay a battery for doing the right thing hour by hour, and refuse to pay it for doing the wrong thing.

CONFIDENCE *Established.*

PLAIN-LANGUAGE NOTE

Three scales weigh the same sack of grain. One is the old market scale with the merchant's thumb on it. One deliberately under-reads by a growing margin each year, to be safe. One is a calibrated instrument that also deducts the weight of the sack itself.

5.3 Indicative CCP-Readiness of G-RESET

Because ICVCM’s approval of VMR0017 revealed what currently suffices, G-RESET can be tested element-by-element against the revealed bar. This is stated as a formal indicative finding rather than left implicit, at the commissioning reader’s direction, and graded accordingly.

Table 7: Indicative assessment of G-RESET against the revealed Core Carbon Principles bar

Source: Decoded from the 2024 rejection and 2026 conditional approval; G-RESET clause references from the consultation draft.

Revealed Requirement	G-RESET, Current Draft	Reading
False-positive screening at entry	Market-evidence gate (§6.5.1) instead of a geography gate; excludes the same projects by revealed prices	Meets, by substitution; the substitution is formally untested
No automatic additionality at utility scale	Micro-scale route only (≤ 10 kt/yr), evidence-tested	Meets
Decisive-benchmark test	Mandatory and universal for mature technologies, plus the external-evidence override	Exceeds
Strengthened grid-factor tools with conservativeness safeguards	Hourly capability, data discounts, vintage decay, uncertainty machinery	Exceeds
Clean vintage break	New stack mandatory for 2026-onward vintages	Meets
Program-level assurance	Gold Standard already CCP-Eligible at program level	Met

Finding: G-RESET as drafted meets or exceeds every decoded element of the current bar. The residual risks are not architectural but procedural and temporal: the geography-for-evidence substitution has not been formally adjudicated; the text must survive its own editing; verifier application of judgment terms will be probed; and the assessment clock starts only at publication. The finding’s significance is doubled by Section 4.3: the decisive-test language ICVCM attached to VMR0017’s label is functionally the language G-RESET makes mandatory, and Gold Standard’s program-level Paris alignment was designed, in its own words, to meet the rising expectations of the same gatekeepers.

CONFIDENCE Probable.

5.4 Technology-Trend Fit: Which Decade Is Each Framework Built For?

The deployment data splits the market into a volume pipeline and two gaps. Volume: a record 692 GW of renewables was added in 2025 (solar about 511 GW; Asia 74%; China alone 440 GW), overwhelmingly in markets where carbon finance has no legitimate role and where all three frameworks now, by different mechanisms, exclude it. Gap one,



geography: developing economies hold two-thirds of the world's people and about 15% of clean-energy investment; financing cost, not equipment, is the largest cost element there, reaching half or more of a utility solar project's levelized cost; the needed investment must rise more than sixfold by the early 2030s; and about 95% of it is in mature technologies. The additionality frontier is therefore ordinary solar and wind in expensive-capital places, not exotic technology. Gap two, integration: battery additions reached 108 GW in 2025, up 40%, exceeding for the first time the all-time peak of gas-plant additions; under 30% of utility-scale storage is co-located with renewables; over 90% of new projects perform energy shifting.

CONFIDENCE *Established, per IRENA and IEA sources in Appendix D.*

Mapping the frameworks onto the gaps yields the trend verdict. VMR0017 aims at the geography gap, but its income gate admits India and Brazil, precisely the two developing markets the investment data identifies as already the largest, where mature renewables self-finance at scale; the genuinely under-financed portion of its eligible space is real but small in project count. AMM-003 aims at the past: the CDM backlog, a large one-time stock rather than a growth curve, with the storage-era classes deferred. G-RESET is the only architecture built for the integration decade: the only route for the roughly 70% of storage that stands alone, the only aggregation module, the only hourly engine, plus captive diesel displacement and a micro-scale route for energy access, with the honest caveat that these classes pay off over years, not quarters. A vintage warning completes the picture: a 2026 VMR0017 registration credits until about 2047 on annual-average logic while grids clean; the buyers' discount that sank legacy credits will replay on those late vintages in slow motion.

CONFIDENCE *Established for the coverage map; the vintage forecast is judgment with a documented mechanism.*

6. Market Access and Demand Channels

6.1 The Voluntary Premium Channel

Gate: the CCP label, now doubled in force by SBTi's adoption of recognized integrity frameworks as its operative filter (Section 4.4). VMR0017 holds the only renewable label today, giving Verra a first-mover window of roughly 12–24 months as sole supplier of labelled renewable credits into Class 2 demand. Gold Standard holds the program-level key; G-RESET's clock starts at publication. AMM-003 sits outside the CCP system; its buyers screen by other means. The money at the gate is documented in Section 4.1's price data.

CONFIDENCE Established.

6.2 CORSIA: The Aviation Compliance Channel

Phase 1 rules stand: renewable projects of 15 MW or less, crediting periods starting 2016 or later, vintages 2021–2026, host attestation, with airline surrender due by 31 January 2028, so compliance buying is under way, and real prints exist: \$21.70 per tonne at the first eligible auction in late 2024, rising to \$22.25 and then \$22.55 through 2025. For the second phase (2027–2029, with coverage rising toward 87% of international aviation as China, India and Brazil join), the question with the largest commercial stakes in this assessment resolved during its drafting: ICAO lifted the cookstove and thermal-efficiency exclusions, retroactively to Phase 1, but retained the exclusion of grid-connected renewables above 15 MW. Three independent sources triangulate the retention: the October 2025 edition of ICAO's eligible-units reference document, Gold Standard's guidance covering both phases (updated April 2026), and the enumerated list of Verra's reverted exclusions, which does not include renewables. The utility-scale compliance door stays shut through 2029; the sub-15 MW dual-key configuration is the only renewable product reaching aviation prices this decade's first half. The Paris Agreement Crediting Mechanism will be reviewed for CORSIA once operational.

CONFIDENCE Established.

6.3 Article 6: Two Sovereign Routes, and the Liability Mechanism

The sovereign channel has two routes to the same destination, distinguished by plumbing rather than capability. The mechanism route: AMM-003 units are born adjusted, the corresponding adjustment attaches as if authorized no later than issuance, inside the UN registry, with the 5% adaptation transfer applied automatically and at least 2% of units cancelled for overall mitigation; one standardized process, at a roughly 7% volume cost. The cooperative route (Article 6.2): the same adjustment attaches to independent-standard credits through a host Letter of Authorization assembled under

each host's own framework. G-RESET provides for it expressly, "where the host Party has authorised the units for international transfer, the corresponding adjustment applies" (§11.4.1), and its lock-in tool treats an LoA or an official Article 6 positive list as pre-approved alignment. Gold Standard also holds the strongest independent-standard delivery record on this road: early completed deliveries under the Swiss bilateral program ran on its certification, and it co-authored the 2025 Article 6.2 Crediting Protocol with Verra and Singapore's climate authority. The route choice is made on host-framework maturity and buyer procurement rules, some sovereign buyers prefer UN-issued units; others buy independent-standard credits with authorizations, not on capability.

CONFIDENCE *Established.*

The liability mechanism, with its evidence chain. Claim: authorizing authorities will increasingly rank methodologies by ledger liability per unit of real mitigation, favoring conservative issuance. Mechanism: the adjustment debits the national account for every exported unit; generous counting exports more units, and, to the extent it over-credits relative to true displacement (Section 5.2), exports units for tonnes never physically reduced, a pure national loss; conservative designs both shrink the debit and, by construction, leave the uncredited share inside the host's NDC, G-RESET states this as a principle (§11.2.1: the uncredited difference accrues to the host, and the 15-year cap leaves the host the substantial majority of lifetime mitigation). Evidence that the mechanism already operates: only about 13% of CDM transition volume obtained host approval, governments visibly pricing their ledgers; China and India, the two largest legacy hosts, approved nothing, keeping mitigation for their own targets; Brazil's July 2026 framework consultation ties authorization letters to a positive list of eligible activities, methodology-conditional authorization becoming written policy; and the governments' own collective bodies wrote below-business-as-usual baselines into the UN's methodology standard, revealed preference at the multilateral level. What the record does not yet contain is a DNA refusing a named authorization on stated over-crediting grounds; the mechanism currently operates as silent selection. Ranking the beneficiaries: strongest tailwind to G-RESET (least paper per real MWh at ≈ 0.55 t, plus the explicit benefit-sharing clause), then AMM-003 (≈ 0.65 t, adjustment built in), with VMR0017 (≈ 0.83 t at full business-as-usual) bearing the discount on its compliance-dependent branches.

CONFIDENCE *Mechanism established as accounting; adoption probable; the DNA-criteria formalization is a forecast, one to three years, judgment.*

6.4 Transition Outcome and the Adoption of AMM-003

The pipeline AMM-003 was designed for contracted before it arrived. About 1,500 CDM activities requested transition, nearly 80% using grid-renewable methodologies, ACM0002 alone over half, but by mid-2026 only roughly 13% of the requested volume held host approval (source tallies range from 106 to 197 approved activities depending

on date and counting), the extended approval window closed on 30 June 2026, and the two dominant hosts abstained entirely. The realized pipeline skews to Latin America, smaller Asian hosts, and East and Southern Africa. The Supervisory Body adopted the methodology on 30 July 2026 with its chair emphasizing conservative design; the first mechanism issuance (February 2026, a transitioned cookstove program) had already demonstrated recalibration in practice, arriving 41.5% below its CDM-era level. AMM-003 gives the approved remainder its operating manual: a high-legitimacy channel of modest and honest volume, roughly 10–30 Mt per year in this report’s estimates, rather than the successor-at-scale its ancestry implied. The published v01.0 text resolves every consulted bracket on the conservative side: no host-country restriction (¶12–22); hydropower capped at 15 MW in all countries under run-of-river or existing-reservoir conditions (¶15–16), which, in one quiet reversal, makes AMM-003 the geographically broadest home for small hydro, where VMR0017 confines the same class to least-developed countries; common-practice gates of 5% and 10% on a three-year window (¶35); the 10%-floor downward adjustment with annual escalation (\$7.3); and a new exclusion of projects contracted to supply specific consumers through the grid (¶19(a)).

CONFIDENCE Established, except volumes (judgment).

6.5 Host-Country Invest ability

Compliance-grade revenue runs through host paperwork, and the paperwork is the scarce input: roughly seven countries had issued Letters of Authorization by early 2026, with Uganda joining in August 2026 (a 10-million-tonne authorization) and Tanzania beginning to monetize approvals, the logjam easing at the margin, in the geographies the tiering predicts. The screen ranks jurisdictions on four keys: an operational authority, a demonstrated authorization precedent, a buyer linkage, and a published fee regime.

Figure 5: Host-country tiering for authorization-dependent revenue

Ranked on four keys: an operational authority, a demonstrated authorization precedent, a buyer linkage, and a published fee regime.

Tier 1 • Proven issuers <i>12–24 months realistic</i>	Guyana, the first country to report a corresponding adjustment to the UNFCCC, producing the first CORSIA-eligible adjusted units, Thailand, Ghana, Malawi, Suriname, Vanuatu, now joined by Uganda
Tier 2 • Ready frameworks <i>Active pipelines</i>	Rwanda (tiered fee rates, 2026), Kenya (2024 regulations including an adjustment fee, plus statutory community-share contributions whose rates require in-country confirmation), Bhutan, Senegal, Morocco, Peru, Chile, Uruguay, Paraguay, Cambodia, Indonesia, Viet Nam, Tanzania
Tier 3 • Forming or restrictive <i>2027-plus options</i>	Brazil, authorization letters tied to a domestic registry and a positive list still to be defined, India, Pakistan, Zimbabwe; mainstream renewables unlikely to make the restrictive lists

Tier 4 · No path

China and high-income hosts, no compliance path for this asset class

The authorization itself is worth roughly \$25–30 per tonne (Swiss bilateral prints near \$36 against \$5–8 for comparable voluntary units), is becoming insurable through a template Letter of Authorization designed for that purpose, and is increasingly treated by hosts as a fiscal asset, modelled host revenues of \$144–204 million from current bilateral pipelines, which motivates both signing and taxing. Adjustments surface through biennial transparency reports, so visibility lags are normal and are bridged with insurance at a premium the economics carry.

CONFIDENCE Established for the tiering keys and prints; tier placement is analyst assessment.

PLAIN-LANGUAGE NOTE

The Letter of Authorization is a visa stamp: few consulates issue them, the queue is long, and each stamp has real cash value. Apply at the design stage, not at the border.

7. Investment Analysis

7.1 The Decision Framework: Why Expected Value Cannot Lead

An earlier draft of this work ranked the frameworks by probability-weighted expected value and placed VMR0017's labelled tier first for generation archetypes. The commissioning review rejected that hierarchy, and the rejection is analytically correct for three reasons, each of which reshapes the framework rather than merely adjusting a number.

Irreversibility

Section 7.3 establishes that a generation asset registered under VMR0017 cannot later enter G-RESET: the entry tests, renewed proof of financial need after capital is partly recovered, and market evidence of self-financing deployment, are constructed to fail exactly such an asset. Registration is therefore a one-way door held for the life of the position. When a choice is irreversible and the regulatory environment drifts in one documented direction, the option value of durability, or of waiting, must be priced; a mean-based ranking prices it at zero. VCS Version 5 moderates this cost without removing it: five-year conditional periods create re-decision points and prevent two-decade grandfathering, but the cross-standard entry gates remain shut, the door is still one-way; the corridor behind it is simply shorter.

Correlated, directional risk

The register in Section 7.4 is not a set of independent coin flips. ICVCM's framework revisions, SBTi's scheduled Version 3 review of R46.1, buyer migration to quality, host-liability ranking, and vintage decay all point against the generous architecture and none point against the conservative one. That is negatively skewed exposure with a fat left tail on the Verra track and a structural tailwind on the Gold Standard and UN tracks. For a two-year trade, the mean is the right lens; for infrastructure-horizon capital, skew and regime risk dominate the mean.

Franchise risk

A firm holding long-dated positions in an instrument class whose lower tier is publicly discredited carries exposure beyond the asset cashflow: investor scrutiny, a shrinking exit-buyer universe, and the discount that attaches to the whole book. No committee accepts that for a few points of internal rate of return.

The corrected hierarchy, applied throughout the remainder of the report: durability is the screen, operationalized as Screens 1 and 2 of Section 1.2 plus authorization-readiness, and expected value is the tiebreaker within the set that passes. Two boundaries keep the correction honest. VMR0017's labelled tier is not "poor quality"; it passed the current bar

with the decisive condition; the accurate description is credible today, decaying by design, and it retains a legitimate role for short-horizon, risk-tolerant mandates under the discipline of Section 8.4. And “pick the best system now” requires an executable answer while G-RESET is unpublished; it has one: AMM-003 is adopted, conservative, and available.

CONFIDENCE *Judgment, with the reasoning stated.*

7.2 Economics: The Revenue Stack, the Price Floors, and the Archetype Pro-Formas

Certificate netting. All three frameworks make credits and renewable-energy certificates mutually exclusive on the same megawatt-hour (G-RESET §3.4.c and §11.3; AMM-003 §11; Verra program rules), so foregone certificate revenue is a cost of crediting. At current certificate prices, Indian I-RECs around \$0.40–0.50 per MWh, Brazilian around \$0.16–0.19, a planning range of \$0.2–1.5 across the eligible geographies, the cost is a haircut, not a rival: crediting dominates a certificates-only strategy at any carbon price above roughly \$1–2 per tonne. The genuine supply leakage is structural instead: projects serving domestic compliance-certificate schemes (often ten times I-REC prices) and projects under bundled green power contracts, where the buyer keeps the attribute claim, exit the crediting pool entirely, a percentage deduction in the supply model. A coherence note: where certificate revenue is high enough to rival carbon, that same revenue undermines the additionality case (G-RESET makes support revenue an explicit input, §6.3.1.c); high-certificate markets are excluded twice, which is the system working as intended.

CONFIDENCE *Established.*

The decisiveness price floor. Multiplying each framework’s credit intensity by price gives what carbon actually adds per megawatt-hour: at \$20 per tonne, roughly \$16.60 for VMR0017, \$13 for AMM-003, \$11 for G-RESET, transformative against frontier solar costs of \$40–60 per MWh, and honestly “decisive.” At \$3 per tonne, VMR0017’s standard route adds about \$2.50 per MWh, a fraction of a percentage point of return that no honest analysis can call decisive. The structural conclusion: below roughly \$5–8 per tonne the product contradicts itself, a project claiming decisive carbon revenue at those prices either misrepresented its economics or needs money it cannot obtain at that price. The market’s price floor now enforces additionality more brutally than any test, and Section 4.4 added the institutional half of the verdict: the unlabelled class is also outside the only formal corporate framework.

CONFIDENCE *Established as arithmetic and institutional fact; the interpretation is analyst synthesis.*

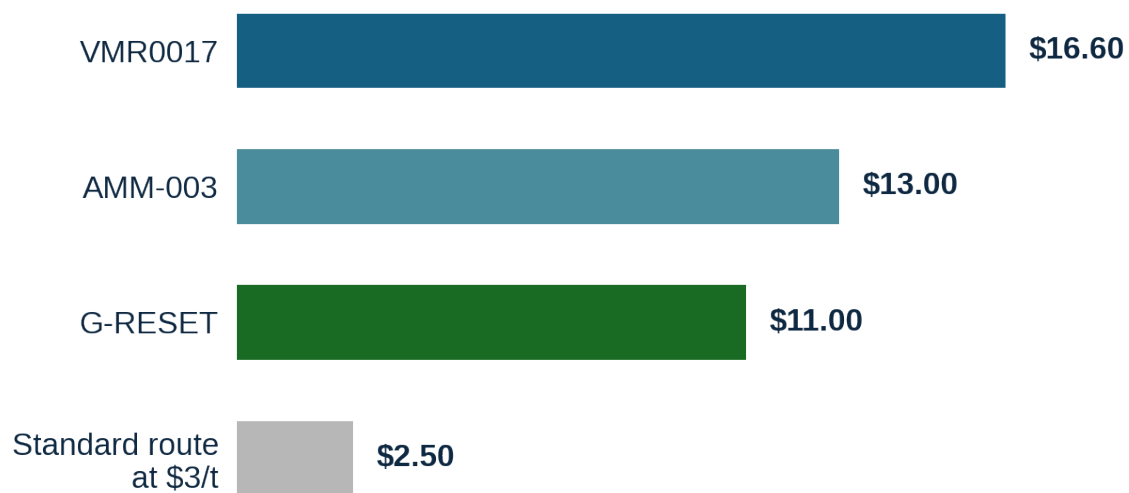


Figure 6: The decisiveness floor

Carbon revenue added per MWh at \$20/t, against frontier solar costs of \$40–60/MWh. Below roughly \$5–8/t the product contradicts its own additionality story.

Pro-forma method. For each archetype: year-one volumes from Section 5.2; prices net of certificate netting and, for AMM-003, the 7% levy; access, renewal and authorization probabilities from the register; a 10% discount rate; Verra paths re-modelled on VCS Version 5, five-year periods, renewal probability ≈ 0.85 – 0.9 per cycle, an assumed 8–12% baseline step-down at each reassessment, legacy-registered projects keeping current terms to first renewal. One correction, applied at the commissioning reader's direction and material to the results: authorization probabilities are methodology-conditional per Section 6.3, compliance-dependent branches of the generous architecture carry a preference discount, and the conservative architectures the matching tailwind. A second correction from the same review: the sovereign branch applies to G-RESET as well as to AMM-003, since its credits carry the same adjustment through an authorization; at roughly \$33 per tonne sovereign pricing, its if-successful value approaches \$24 million on the reference project, and probability-weighting lifts its expected value to about \$7–10 million.

CONFIDENCE Judgment throughout, on stated assumptions.

Table 8: Archetype pro-formas (risk-adjusted, illustrative)

Source: Assessment model; assumptions in text and Appendix A.

Archetype	Best-Fit Path(s)	If-Successful	Risk-Adjusted	Reading
A. 100 MW frontier solar, Tier-1 host	VMR0017 labelled (tactical) vs conservative pair (durable)	$\approx \$19$ – 20 M (Verra v5 profile; $\approx \$22$ – 23 M legacy) / $\approx \$25$ M (G-RESET with LoA) / $\approx \$14$ – 21 M (AMM-003)	$\approx \$13$ – 15 M / $\approx \$8$ – 10 M / $\approx \$6$ – 8 M	The gap, narrowed by Version 5 and the 5% adjustment assumption, now rests mainly on availability and access probability. Under the durability screen the conservative pair is the core; the Verra path is a bridge with tripwires
B. 50 MW wind, LDC	Same structure, ≈ 30 – 35% smaller	n/a	$\approx \$9$ – 11 M (Verra, v5) / narrower gaps still	Wind retains more intensity under conservative counting; the divergence narrows
C. 50 MW / 200 MWh storage, developing grid	G-RESET only	$\approx \$2$ M central	$\approx \$1$ – 2 M	Under 1% of capex per year today; scales with the hourly carbon spread; low renewal risk; the platform position, not the yield
D. ≤ 15 MW renewable, Tier-1 host, label + LoA	VMR0017 dual-key or AMM-003 native	$\approx \$7$ M	$\approx \$4$ – 5 M	Highest value per MW in the model: the only renewable product at aviation-compliance prices before 2030; robust under either philosophy, and the

Archetype	Best-Fit Path(s)	If-Successful	Risk-Adjusted	Reading
				adopted AMM-003 extends its hydro branch to non-LDC hosts

What moves the numbers, post-verification: the carbon price level first (a \$10 world sinks the conservative designs below their decisive floors while the Verra path limps; a \$30 world nearly equalizes all three); G-RESET's publication timing second; renewal probabilities third (for storage-class assets, its renewal risk already resembles the UN track's); authorization pace fourth. The CORSIA cap question, formerly the largest swing, resolved to the downside during the assessment.

CONFIDENCE *Judgment.*

7.3 Irreversibility and Movement Between Standards

The documented rules. Verra: registered legacy projects may move onto VMR0017 mid-period via a deviation procedure (future periods) or a quantification procedure (past and future); grouped projects must adopt it for instances added from 1 January 2027. Gold Standard: G-RESET admits a legacy activity at crediting-period renewal or earlier, including specifically to add new modules, through the program’s transition procedure, with phased metering conformance; but entry requires passing the full additionality stack, including the financial-need test. The investment reading, corrected from an earlier draft that treated these paths as cheap options: movement between standards is exceptional salvage, never strategy. A mainstream generation asset cannot realistically cross from the Verra track to the Gold Standard track later; the gate is built to refuse it; and even the one genuinely open path, adding a storage or captive module under G-RESET at a VMR0017 site, is an engineering-and-contracting project, not an assumed right: two registries on one site, metering boundaries that must have been kept separable from construction, verifier coordination, and a real possibility of stranding between systems if executed casually. The practical rules that survive: preserve separable storage metering in every generation deal (it protects the future module position at near-zero cost); treat the legacy fleet without transition approval as salvage bound for the standard route’s Class 3 economics; and make the registration decision as what it is, an irreversible commitment for the life of the position.

CONFIDENCE Established for the rules; the investment reading is judgment.

7.4 Consolidated Risk Register

Table 9: Risk register

Post-verification status; likelihood / impact Low–Medium–High. Source: Assessment synthesis; calibration priors follow.

#	Risk	L / I	Status and Handling
V1	CORSIA Phase 2 renewable cap	Resolved	Cap retained; utility-scale compliance upside off until at least the next eligibility cycle
V2	Integrity-bar ratchet: ICVCM framework revision and/or SBTi V3 hardening R46.1 reach baseline ambition, temporal control or adjustment status	M–H / H for the generous architecture	The named mechanism of labelled-tier decay; both reference points for a revision now exist in codified text (Section 4.3); tripwire list in Section 8.5
V3	Unlabelled-class contagion to the labelled brand	M–H / M	Underwrite at credit level; the class is already excluded from formal corporate use
V4	Vintage decay on annual-average counting	M / M	Version 5’s five-yearly baseline reassessments internalize part of the decay; front-load and forward-sell

#	Risk	L / I	Status and Handling
V6	VCS Version 5 renewal conditions: latest methodology version, regulatory-surplus re-check, baseline reassessment each five-year cycle	M / M-H	New program law (Dec 2025); priced in the pro-forma; converts stranding risk into step-downs and imports future rule changes at each renewal
V5	VT0008 common-practice step proves weak	M / M	Open verification item; determines the standard route's width
G1	G-RESET publication and label delay	M-H / M-H	Sequencing risk only; the specification is de-risked by the Section 5.3 CCP-readiness assessment
G2	Draft changes at publication (thresholds, auction rule, renewal detail)	M / M	Carry ranges; re-run at publication
G3	Renewal refusal at years 5/10 for mainstream generation	H by design / H on finance ability	Size debt on the first period; hold renewals as equity upside; weight to storage and emerging classes where refusal risk is low
G4	Verifier judgment variance and validation cost	M / M	Early verifier engagement; press for application guidance
M1	AMM-003 final configuration values	Resolved	v01.0 published: open geography; 15 MW hydro cap in all countries; 5%/10% gates; named-consumer exclusion (§19a)
M2	Host approval and authorization bottleneck	H / H	Tier 1–2 hosts; the mechanism's adjustment-at-issuance reduces per-deal friction
M3	Baseline recalibration (the –41.5% first-issuance precedent)	M / M	Already reflected in conservative volume estimates
S1	Authorization scarcity persists	M-H / H	Tiering, template LoAs, non-adjustment insurance; scarcity is also the holder's price support
S7	Methodology-conditional authorization: hosts rank by ledger liability per real MWh	M now, H by 2028–30 / H for generous issuers	Tailwind strongest for G-RESET (least paper per MWh; benefit-sharing clause §11.2.1), then AMM-003; discount on VMR0017's compliance branches
S8	R46.1 hardens at SBTi Version 3: every voluntary claim requires an adjustment	Scheduled review / H	The single sentence to watch; if it fires, S7 governs the whole market and authorization-ready assets are the prepared ones

Calibration priors used in the Section 7.2 pro-formas (structured judgments, updated at each verification event): G-RESET published by Q1 2027 ≈ 0.6 – 0.7 , label within a year of publication ≈ 0.6 ; renewal probabilities, Verra ≈ 0.85 – 0.9 per five-year cycle under Version 5 (legacy ≈ 0.95 to first renewal), AMM-003 ≈ 0.8 – 0.9 , G-RESET mainstream generation ≈ 0.2 – 0.4 at first renewal by design and 0.7 – 0.85 for storage and emerging classes;



authorization within 24 months $\approx 0.5\text{--}0.7$ in Tier 1, $0.2\text{--}0.4$ in Tier 2, ≤ 0.15 in Tier 3, with the methodology-preference multiplier of Section 6.3 applied on top.

CONFIDENCE *Judgment.*

7.5 Monetization, Liquidity and Structuring

Instruments have matured around the compliance channel: real transaction prints in the \$21–23 range for adjusted units; eight carbon-credit auction futures launched on ICE in December 2025 with calendars aligning to compliance conventions in 2026, giving a forward reference and a workable hedge; non-adjustment insurance now effectively required infrastructure, with programs using insurance or buffer pools where an adjustment is pending. Liquidity by unit class follows the claim classification: adjusted units, thinnest today, best price, deepest future; labelled non-adjusted, moderate and growing; unlabelled, technically liquid, economically dead. Six structuring rules consolidate the analysis: contract the label contingently (base price plus a step-up on confirmation at verification); match tenor to covenant, five-year firm under G-RESET, extensions only as options; bind authorizations to the insurable template language and disclose the reporting lag; keep storage metering separable in every generation contract; hedge CORSIA-shaped exposure where basis allows; and route adjusted units to compliance buyers and non-adjusted units to corporate buyers, never spend an adjustment on a buyer who does not need one.

CONFIDENCE *Established for the instruments; the rules are judgment.*

8. Findings, Verdict and Recommendations

8.1 Scorecard and Sensitivity

Table 10: Weighted scorecard (1–5) with sensitivity to the weights

Source: Assessment synthesis of Sections 3–7. Bars show the score out of five.

Criterion (Weight)	VMR0017	G-RESET	AMM-003
Additionality and integrity architecture (25%)	3	5	3
Quantification accuracy (15%)	2	5	4
Technology scope and future fit (15%)	3	5	2
Market access and demand alignment (20%)	5	3	3
Commercial viability and practicality (15%)	4	3	3
Institutional certainty and timing (10%)	5	2	5
Weighted total	3.60	4.00	3.20

Sensitivity: under integrity-heavy weights the G-RESET margin widens (4.30 against 3.25); the ranking reverses toward VMR0017 only when the combined weight on market access and commercial viability exceeds roughly 45%; AMM-003 reaches first place under no tested weighting, its ceiling is structural (deferred scope, contracted pipeline), not reputational. Two verified events moved the table during the assessment: AMM-003’s certainty score rose to full on adoption and publication, and the elimination of the CORSIA upside removed the scenario in which VMR0017’s commercial lead widened decisively.

CONFIDENCE Judgment on declared weights; the sensitivity mechanics are arithmetic.

8.2 Two-Ledger Verdict

Technical ledger: G-RESET is the superior methodology, the only design answering all four documented failures, passing both screens, and matching, in the Section 5.3 assessment, every element of the bar the regulator has revealed. Confidence: probable, gated on publication and formal assessment, with the risks procedural rather than architectural. Market-access ledger: VMR0017 is the superior instrument today, sole label and operational status, on a lead that narrowed four times during this assessment (the CORSIA cap, the unlabelled tier’s self-exclusion, demand-side convergence, and Verra’s own Version 5 duration reset) and whose decay now has named mechanisms with named review dates rather than a vague direction of travel. AMM-003 is the adopted, conservative settlement vehicle for the transition pipeline and one of two doors into the sovereign channel, a channel it shares with G-RESET, which offers hosts the lowest ledger liability per unit of real mitigation. The structural argument of Section 6.3 is what

converts the two ledgers from a stalemate into a sequence: every documented force (the codified Paris baselines, the demand-side filters, the host-liability ranking, the scheduled reviews) moves value from the first ledger's champion toward the second's.

CONFIDENCE *The verdict is analyst synthesis on the graded evidence above.*

8.3 Strongest Case Against This Verdict

THE STEELMAN

A report that never argues against itself is advocacy, so the best case for VMR0017-as-core is stated here at full strength. It is the only approved instrument; approval could persist for years. Its crediting duration, still 21 years for legacy-registered projects until renewal, is what infrastructure capital prizes. The label passes the operative demand filter SBTi just adopted, and SBTi declined to require corresponding adjustments, the draft's hard rule was softened, which preserves Class 2 demand and keeps hosts cost-free on voluntary projects. The conservative designs' premium is unproven; G-RESET is unpublished; the UN track is throttled by host bureaucracy. On this reading, the bird in hand beats two in the bush.

The answer, point by point. The duration argument has half-dissolved on Verra's own initiative: Version 5 already replaced 21-year certainty with five-year conditional periods for the new-project era, and the legacy grandfather that remains still spans at least two scheduled integrity-review cycles (ICVCM's framework revision; SBTi's Version 3) for which the reference texts now codify exactly the features the instrument lacks. The approval argument proves less than it seems: the same body's own condition imported the decisive test, and its parallel program decisions already scrutinize renewal provisions, the bar demonstrably moves. The softened-R46.1 argument is the strongest, and it is a duration argument, not a core argument: it protects Class 2 for a window whose end has a named trigger and a scheduled review. The unproven-premium argument cuts both ways, the observed adjusted-unit prints and rated-credit spreads are the premium, already trading. Each point in the steelman is time-limited; a core holding is not. That asymmetry, not any claim that the labelled tier is low quality, is why the durability screen leads.

CONFIDENCE *Judgment, with the reasoning exposed for challenge.*

8.4 Recommendations by Mandate

Long-Horizon Capital, Infrastructure Funds, Strategic Developers, Sovereign-Linked Vehicles

Conservative-only core. AMM-003 now for greenfield generation in Tier 1–2 authorization-ready hosts, sold into sovereign or compliance demand that pays for the built-in adjustment; G-RESET positions established at publication, and immediately, on publication, for storage, captive supply, aggregation and micro-scale, where nothing else exists; the sub-15 MW dual-key configuration wherever the pipeline allows it. Decline the Verra generation track as core under either vintage regime: grandfathered duration carries review-cycle exposure, and Version 5 periods carry renewal and step-down risk, bridge economics either way.

Short-Horizon, Risk-Tolerant Participants, Traders, Developers Monetizing Before Exit

The VMR0017 labelled tier as a disciplined bridge, front-loaded vintages, label-contingent pricing, forward sales rather than warehousing, explicit exit intent, and the Section 8.5 tripwires written into the position plan. Sized as satellite, never core.

All Mandates

No exposure whose case rests on the standard (unlabelled) route; preserve separable storage metering in every generation contract; start authorization conversations at design stage; route adjusted and non-adjusted units to their correct buyer classes.

Methodology and Policy Audiences

Two actionable findings fall out of the assessment: any DNA formalizing authorization criteria can operationalize the liability ranking of Section 6.3 with one sentence, a worked example of which this report's screens provide; and publication of the MT400-05 default adjustment-factor table would let market participants price Gold Standard volumes without assumption.

8.5 Watch-List: The Named Triggers

TRIGGER 01 · RISK S8

SBTi Version 3 treatment of R46.1, recommendation to requirement is the claim-classification collapse trigger.

TRIGGER 02 · RISK V2

ICVCM Assessment Framework revision, first appearance of baseline-ambition or temporal-control criteria is the labelled-tier decay trigger; the reference texts for such a revision now exist in the UN standard and Gold Standard program rules.

TRIGGER 03

Publication of the MT400-05 default adjustment-factor table, and the VCS Standard v5.0 total-ceiling clause for energy projects, the two remaining numeric assumptions in this report.

TRIGGER 04

G-RESET publication and label submission, starts the clock on the Section 5.3 formal test.

TRIGGER 05

ICAO's next eligibility cycle, any revisiting of the 15 MW renewable cap for periods beyond 2029.

TRIGGER 06 · RISK S7

Authorization flow, the pace of new Letters of Authorization and the first appearance of methodology-conditional language in any DNA's published criteria, which would convert risk S7 from mechanism to documented policy.

Appendix A. Worked Calculations

Project A: 100 MW solar PV; 175,200 MWh/yr (20% capacity factor); 30-year technical life; operating margin 0.95 and build margin 0.65 tCO₂/MWh; no public hourly data; factors held flat; Gold Standard ambition adjustment assumed 5% (country-specific under MT400-05; stated assumption); certificate netting excluded here and applied in Section 7.2.

Table 11: Worked calculations for the reference projects

	Calculation
VMR0017	Factor $0.75 \times 0.95 + 0.25 \times 0.65 = 0.875$. Baseline $175,200 \times 0.875 = 153,300$ t. Life-cycle $175,200 \text{ MWh} \times 43 \text{ gCO}_2\text{e/kWh} = 7,534$ t. Net $\approx 145,800$ t/yr; $\times 21$ years ≈ 3.06 Mt at the legacy ceiling; under VCS v5, five-year periods with reassessed baselines apply.
AMM-003	Conservative weights $(0.25/0.75) \rightarrow 0.725$. Baseline 127,020 t. Haircut year 1 = 10% $\rightarrow 114,318$ t; year 15 = 24% $\rightarrow 96,535$ t; average $\approx 17\%$ $\rightarrow$ lifetime ≈ 1.58 Mt over 15 years.
G-RESET	Operating margin $\times 0.90 \rightarrow$ combined 0.701. Baseline 122,859 t; -5% ambition (assumption) $\rightarrow 116,716$; - lifetime-footprint annuity $(175,200 \times 30 \times 43 \text{ g} \div 15 = 15,067 \text{ t/yr}) \rightarrow 101,649 \text{ t/yr}$; $\times 15 \approx 1.52$ Mt (at 10%: 95,506 t/yr; ≈ 1.43 Mt).
Ratios	Ratios (5% assumption): year one, AMM-003 78%, G-RESET 70% of the Verra volume. Lifetime against the legacy 21-year ceiling, 52% and 50%; parity there $\approx 1.9\text{--}2.0\times$, falling toward $\approx 1.4\times$ on annual volumes under a Version 5 profile.
Project B	50 MW wind, LDC; OM 0.70 / BM 0.55; 153,300 MWh/yr; 25-year life; wind footprint 13 g/kWh: VMR0017 $\approx 99,600$ t/yr (2.09 Mt / 21 yrs); AMM-003 $\approx 81,100$ (1.12 Mt / 15 yrs); G-RESET $\approx 79,700$ at the 5% assumption (1.20 Mt / 15 yrs; at 10%: 75,300 and 1.13 Mt).
Decisiveness floors	Breakeven price at which carbon revenue is plausibly decisive $\approx \$9\text{--}10/\text{t}$ (VMR0017), $\approx \$12\text{--}13$ (AMM-003, net of the 7% levy), $\approx \$13\text{--}14$ (G-RESET at the 5% assumption). Certificate-netting breakevens versus a certificates-only strategy: ≈ 1.1 , ≈ 1.7 and $\approx 2.2/\text{t}$ respectively at a $\$0.50/\text{MWh}$ certificate price.

Appendix B. Criticism-to-Response Traceability

Table 12: Documented criticism mapped to each framework's response

Documented Criticism	VMR0017	G-RESET	AMM-003
Additionality collapse	Met by gating (income table); residual: the standard route in middle-income markets	Met by evidence; the market can overrule the model; no country list needed	Conservative framing confirmed at adoption; final values pending
Gameable financial test	Partly met: consistency rule tool-wide; decisive test label-only	Exceeded: decisive test universal plus external cross-check	Partly met: fails-if-flip and entity rules; no decisive or consistency rule
Inaccurate counting	Unchanged baseline machinery; safeguards per the approval	Exceeded: hourly, discounts, full life-cycle recovery, honest storage accounting	Met: conservative weights, growing haircut, uncertainty-linked adjustment
No control over time	Not addressed	Exceeded: full re-test with refusable renewal	Partly met: per-period regulatory check and escalating haircut
Double counting	Program rules	Single-claim architecture (\$11.3)	Cancellation/ring-fencing; adjustment at issuance
Hydro-specific harms	Excluded above 15 MW and outside LDCs; reservoir factor updated to 100 kg/MWh	Conditions: power density, sustainability assessment above 20 MW	No new reservoirs; caps per adopted text
Legacy vintages	No labels for historical issuances	New stack for 2026-onward vintages	Recalibrated baselines; the -41.5% precedent

Appendix C. Glossary

Additionality

Proof the project needed carbon revenue to happen. No need, no credit.

Corresponding adjustment

The host country's ledger entry: exported credits are subtracted from its own climate account so a tonne is counted once.

Letter of Authorization

The government paper permitting international transfer and promising the adjustment. Scarce, valuable, increasingly insurable.

CCP label

The ICVCM's per-credit quality stamp; the operative filter that corporate frameworks now adopt by reference.

Paris-aligned baseline

A crediting baseline set below business-as-usual, with a mandatory and escalating adjustment, codified in the UN's methodology standard and Gold Standard's program rules.

Combined margin

A grid emission factor blending the plants running now with the plants being built.

Ambition adjustment / downward adjustment

The deliberate haircut that credits less than business-as-usual; the uncredited share stays with the host country.

Common practice test

If the technology is already widespread on that grid, it needs no subsidy, like claiming a grant for solar panels on a street where every roof has them.

Ongoing financial need

G-RESET's renewal rule: crediting continues only while the project still needs the revenue.

Ongoing Emissions Responsibility (OER)

SBTi's structured route for carbon credits in corporate net-zero strategies: voluntary recognition now, mandatory for large companies from 2035.

Claim Class 1 / 2 / 3

This report's classification of credits by usable claims: adjusted units; labelled non-adjusted units; unlabelled units (outside formal frameworks).

A6.4ER / Mitigation Contribution Unit

The UN mechanism's adjusted unit, and its non-adjusted counterpart for results-based finance.

Share of proceeds / overall mitigation

The UN mechanism's built-in take: 5% of units to adaptation plus at least 2% cancelled for net atmospheric benefit.

CORSIA

Aviation's compliance scheme: adjusted units from approved programs only, and renewable projects of 15 MW or less through 2029.

Vintage

The year the reduction happened; late vintages from generous counting carry a growing accuracy discount.

Appendix D. Sources

Primary Methodology Corpus

- CDM ACM0002 v22.0 (CDM-EB122-A02), in force 31 May 2024
- Verra VMR0017 v1.0, 23 April 2026, read with ACM0002 v22.0; Verra project-update procedures notice, April 2026
- Gold Standard G-RESET (PAA M400 series), consultation draft; GS4GG Common Practice Analysis MT400-06 v1.0 (22 December 2025); Lock-in Risk Analysis tool (draft); technical addenda to A6.4-AMT-006 and -007 (drafts); Gold Standard Paris Agreement Alignment publication (transition point 1 January 2026)
- A6.4-AMM-003 v01.0, Electricity generation from renewable sources connected to an electricity system (adopted 30 July 2026); A6.4 tools AMT-001, -002, -006, -007, -008; the UN baseline-setting standard (A6.4-STAN-METH-004 family)

Regulatory Decisions and Official Documents

- ICVCM: renewable-category decision of 6 August 2024; assessment-decisions announcement including the conditional approval of VMR0017, May 2026
- ICAO: CORSIA Eligible Emissions Units reference document, October 2025 edition; Council decisions on second-phase program eligibility, November 2025
- SBTi: Corporate Net-Zero Standard V2.0, 11 June 2026 (effective 1 February 2027), and associated provisions including R46.1; second-draft consultation record, November–December 2025
- UNFCCC: Paris Agreement Crediting Mechanism registry pages (approved methodologies and tools); announcements on the baseline standard and the first Paris-aligned methodology; Supervisory Body meeting outcomes, July 2026
- Verra and Gold Standard CORSIA eligibility notices and guidance, 2024–2026; VCS Program Version 5 launch notice and Overview of Program Updates (December 2025); the Gold Standard Downward Adjustment Factor Determination Tool (MT400-05, consultation draft, December 2025); the Article 6.2 Crediting Protocol (Gold Standard, Verra, Singapore NCCS, 2025)

Market and Deployment Data

- IRENA Renewable Capacity Statistics and Highlights 2026; tripling-gap tracking
- IEA Global Energy Review 2026 (battery storage); IEA analyses of clean-energy investment and cost of capital in emerging and developing economies, 2025–2026
- Ecosystem Marketplace State of the VCM 2025; MSCI Carbon Markets 2025–2026; Climate Focus VCM Dashboard 2025

- 
- IATA CORSIA fact sheets and transaction tracking 2024–2026; Fastmarkets, Sylvera and AlliedOffsets analyses of CORSIA and Article 6, 2025–2026; I-REC price reporting for India and Brazil
 - Academic literature: Cames et al. (Öko-Institut for the European Commission, 2016); Calel, Colmer, Dechezleprêtre and Glachant on Indian wind additionality; the marginal-emissions literature cited within the assessed methodologies

Compile note: figures are as reported by the cited sources at their publication dates; where sources disagree, the range is shown rather than silently resolved.