SIMPLIFIED SUMMARY OF THE NEW BASELINE AND MONITORING METHODOLOGY OR METHODOLOGICAL TOOL FORM (Version 02.0)

BASIC INFORMATION OF THE NEW BASELINE AND MONITORING METHODOLOGY OR METHODOLOGICAL TOOL	
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Type of standard	New baseline and monitoring methodology
Unique reference number	A6.4-PMM011
Title of the new baseline and monitoring methodology or new methodological tool	Hydrogen production from electrolysis of water powered primarily by renewable electricity
Date of completion of the initial assessment	31/08/2026
SUMMARY OF THE NEW BASELINE AND MONITORING METHODOLOGY	
Scope of the methodology	The proposed mechanism methodology is applicable to standalone green hydrogen production. This methodology applies exclusively to the production of hydrogen through the electrolysis of water powered primarily by renewable electricity. Electrolysis pathways include alkaline, proton exchange membrane (PEM), solid oxide, and other commercially available electrolyser technologies, provided that the electricity input meets the renewable energy requirements set under this methodology.
Key applicability conditions	The methodology is applicable under the following conditions: a) The project activity involves the production of low-carbon hydrogen through the electrolysis of water using electricity supplied by one or more activity renewable energy power plants (REPPs). The REPPs may comprise: i) an on-site captive REPP; ii) an off-site captive REPP with a dedicated connection to the hydrogen production facility; and/or iii) a grid-connected captive REPP supplying electricity through wheeling arrangements. b) At least 90 per cent of the total electricity consumed for hydrogen production shall be supplied from the REPPs. c) Electricity that is not supplied from the REPPs referred to in paragraph (a), including electricity imported from the grid, shall not exceed 10 per cent of the total electricity consumed for hydrogen production. d) Freshwater extraction for the project shall not exceed 5 per cent of locally available renewable freshwater resources. This shall be verified at the initial validation and at each verification of emission reductions using project monitoring data and official hydrological or governmental data sources.

	e) The project activity shall demonstrate, ex ante, the availability of surplus freshwater resources within the project's hydrological catchment area based on credible and verifiable data sources. f) Use of seawater, desalinated water, industrial effluent, or treated/recycled wastewater is permitted and encouraged and may eliminate the need for a separate leakage assessment under paragraph 8(e) where such sources fully replace freshwater extraction. g) For retrofit (brownfield) project activities, any co-located grey hydrogen production facilities, including steam methane reforming (SMR), autothermal reforming (ATR), or coal gasification facilities without carbon capture and storage, shall be: i) Permanently decommissioned; or ii) Capped at baseline production levels with appropriate monitoring provisions to prevent leakage from continued fossil-based hydrogen production. h) The project activity shall demonstrate additionality in accordance with the latest applicable versions of Article 6.4 mechanism standards, methodological tools, and procedures relating to the demonstration of additionality. i) The project activity shall be consistent with the host Party's nationally determined contribution (NDC), long-term low greenhouse gas emission development strategy (LT-LEDS), and declared net-zero commitments.
Baseline approach and downward adjustment	For this proposed mechanism methodology: Option (a) best available technology (BAT) shall apply to greenfield projects, and Option (c) existing actual or historical emissions shall apply to brownfield or retrofit projects. The downward adjustment factor (AF_y,o) shall be expressed in tCO_2eq/year and applied such that the effective baseline intensity decreases by at least 1% per year over the crediting period, ensuring progressive alignment with the host country's NDC and long-term net-zero objectives.
Demonstration of additionality	Additionality is demonstrated in line with the "Standard: Demonstration of additionality in mechanism methodologies" (A6.4-STAN-METH-003), including a regulatory analysis, analysis of lock in risk, investment analysis and common practice analysis.
Calculation of emission reductions or net GHG removals	a) Baseline emissions: For brownfield or retrofit projects, the baseline historical actual emissions should be calculated. Emissions are determined based on the weighted average emissions intensity of actual fossil-based hydrogen production in the host country (or comparable region) over the three most recent full calendar years prior to the project start date. This approach ensures that the baseline reflects real-world operational performance, accounting for regional fuel mixes, technology penetration, plant efficiencies, and grid or auxiliary energy emissions, thereby avoiding hypothetical or theoretical assumptions. For greenfield projects, the BAT should be identified. The BAT determination shall consider all commercially deployed hydrogen production technologies using fossil feedstocks and may include: - Steam Methane Reforming (SMR), with or without Carbon Capture and Storage (CCS); - Autothermal Reforming (ATR), with or without CCS;

	- Coal Gasification with Carbon Capture and Storage; - Partial Oxidation (POX) using fossil feedstocks. b) Activity emissions: - Indirect emissions resulting from grid electricity consumption for electrolysers, compressors, and auxiliary equipment; - Direct emissions from combustion of fossil fuels for auxiliary or backup operations (if applicable); - Emissions associated with water treatment, desalination, and pumping for hydrogen production; - Physical leaks of hydrogen during production, compression, storage, and distribution stages. c) Leakage emissions: For green hydrogen production projects, potential sources of leakage include: - Transfer of Baseline Equipment (applies to brownfield project activities) - Diversion of Renewable Electricity - Market Leakage from Hydrogen Production Displacement - Hydrogen Transport and Distribution Losses - Water Resource Competition - Supply Chain Leakage - Land Use Change Effects
Monitored parameters	The key monitored parameters are: - Quantity of hydrogen produced in year y - Electricity consumed from the grid by the project activity in year y - Quantity of fossil fuel type *i* consumed in auxiliary systems - Volume of water treated and used for hydrogen production in year y - Percentage of hydrogen leaked in production, compression, storage, and distribution - Quantity of renewable electricity supplied to the hydrogen production facility in year y. This includes direct supply from dedicated renewable plants (solar, wind, hydro, biomass) or renewable PPAs
SUMMARY OF THE NEW METHODOLOGICAL TOOL	
Scope of the methodological tool	N/A
Key applicability conditions	N/A
Calculation of baseline emissions/removals, project emissions/removals or leakage	N/A

Monitored parameters	N/A

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Document information

Version	*Date*	*Description*
02.0	20 August 2025	Revision to incorporate new sections and sub-sections in line with current standards.
01.0	18 December 2024	Initial publication of form template.

Decision Class: Regulatory
Document Type: Form
Business Function: Methodology
Keywords: A6.4 mechanism, developing methodologies and tools, summary notes