# DEVELOPMENT OF ARTICLE 6 METHODOLOGY TOOLS

CONCEPT NOTE AND WORK PLAN FOR THE DEVELOPMENT PHASE OF THE INTERNATIONAL INITIATIVE FOR DEVELOPMENT OF ARTICLE 6 METHODOLOGY TOOLS



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Partners of the International Initiative for development of Article 6 Methodology Tools:



Funders of the conceptualisation phase of the International Initiative for development of Article 6 Methodology Tools:







## Introduction to the Initiative

With the adoption of the Article 6 rulebook, operationalization of international market-based cooperation under the Paris Agreement can start. However, there is a wide gap between the stringent principles and approaches agreed under Article 6 and the approaches of baseline and monitoring methodologies currently used in international carbon markets, e.g., in the context of the Kyoto Mechanisms. To prevent a significant delay in Article 6 implementation there is a need for a pragmatic, yet robust approach to transition the existing methodologies while making them 'fit for Paris'.

We believe that the 'blind spots' of existing methodologies can be remedied by the development of specific 'Article 6 tools' that can be added to Kyoto Mechanism baseline and monitoring methodologies in a modular fashion. This presents a compromise and middle way between those who want to avoid disruption of the international carbon market and those who want a 'fresh start'.

The development of Article 6 tools is crucial for the rapid operationalisation of market-based cooperation under Article 6. It can build on a wealth of past conceptual work on Paris Agreement alignment and on 'Article 6 readiness' from a governance perspective. Road-testing the tools must be done as quickly as possible, given Article 6 pilot activities are already underway, laying the groundwork and providing an understanding of the type of activities that will shape market-based cooperation in the first NDC implementation period. The tools can then be used by Article 6.2 cooperating Parties, activity developers seeking registration under the A6.4M, and independent standards seeking to align themselves to Paris Agreement principles.

Perspectives Climate Research has therefore initiated the **International Initiative for development of Article 6 Methodology Tools (II-AMT)**. The concept phase of this initiative was implemented from January to April 2022 and supported by the Swedish Energy Agency, the Ministry of Environment of Japan, and the African Development Bank.

In the concept phase, we assembled a team of international experts. The experts combine different perspectives and knowledge of key regions and their climate policies with long-standing expertise in developing methodologies in relation to different international carbon market mechanisms and standards on the voluntary market. They have also been heavily involved and leading in conceptual work and research on methodological issues in the Paris Agreement context. Thus, they are best placed to work together to consolidate their key insights and translate them into pragmatic, yet robust Article 6 methodology tools. These tools shall only cover the *mitigation* aspects of activities undertaken, given that guidance on promoting and safeguarding sustainable development in Article 6 is developed in other ongoing processes (e.g., the Sustainable Development Initiative), which shall not be duplicated by our initiative but will be referred to where appropriate. The Article 6 methodology tools developed in our initiative shall provide practical guidance to developers of Article 6 activities to:

- Determine additionality of the activities
- > Set the crediting baseline
- > Monitor, report and verify (MRV) emissions and emission reductions
- > Identify and report on contributions to the host country NDC and long-term strategy

The tools will be applicable to activities at the project or programme level. Policy crediting will be excluded as this requires a completely different methodological approach to crediting, with attribution of emission reductions to the policy. Experience in the past as well as research has shown that methodologies for policy crediting cannot build directly on project or programme-based methodologies.

## **Results of the Concept Phase of the II-AMT**

The concept phase was rolled out from January to April 2022 with the following activities and objectives:

- > The team of international experts developed the concept notes on the Article 6 methodology tools.
- Perspectives developed a detailed work plan for the full development phase of the initiative and liaised with potential supporters of this work.
- Perspectives extended invitations to the advisory group of the initiative and organised a workshop for discussions between the international team of experts and the advisory group.

#### Agreement on the Principles and the Guardrails

The following key principles and guardrails for the development of the Article 6 methodology tools have been agreed by the team of international experts:

- Adherence to well-known and established principles for carbon crediting, including, inter alia, conservativeness, transparency, accuracy, consistency, and comparability.
- > Alignment with the Article 6.2 guidance on cooperative approaches.
- Alignment with the rules, modalities and procedures (RMPs) of the Article 6.4 mechanism (A6.4M) regarding methodological principles, determination of additionality and baseline-setting. To ensure the tools follow a high integrity approach, both "shall" and "should" requirements in the RMPs are adhered to.

#### **Constitution of Expert Team and Advisory Group**

Perspectives Climate Research (PCR) has assembled an international team of methodological experts with both longstanding experience in carbon markets and crediting mechanisms (clean development mechanism (CDM), Joint Crediting Mechanism (JCM), Climate Action Reserve (CAR), Gold Standard, Verra, etc.) and deep immersion in Article 6 conceptualization and activities. The team consists of:

- > Axel Michaelowa, Perspectives Climate Research, Switzerland. Axel led the team of international experts, moderated internal calls and provided detailed inputs to all documentation developed in the concept phase.
- Clayton Munnings, Munnings Consulting, US. Clayton co-authored the concept notes on additionality and baseline setting.
- Derik Broekhoff, Stockholm Environment Institute, US. Derik co-authored the concept notes on NDC alignment and additionality.
- Jessica Wade-Murphy, Atmosphere Alternative, Colombia. Jessica co-authored the concept notes on NDC alignment and additionality.
- Kentaro Takahashi, Institute for Global Environmental Strategies, Japan. Kentaro co-authored the concept notes on baseline setting and MRV.
- Martha Ntabadde Kasozi, independent expert, Uganda. Martha co-authored the concept notes on baseline setting and MRV.
- Randall Spalding-Fecher, Carbon Limits, Norway. Randall has provided detailed review and inputs into all documentation of the concept phase.

Backstopping and support of this team was provided by PCR to ensure all inputs from the team of experts were collected and reflected in the produced outputs. The PCR backstopping team consisted of Aayushi Singh, Aglaja Espelage, Juliana Kessler and Malte Winkler. Aglaja Espelage and Jennifer Mora acted as project coordinators and oversaw coordination of tasks and communication of process and outcomes.

#### Figure 1: Team Composition for the Concept Phase

	NDC Alignment	AMT.1 Additionality	AMT.2 Baseline	AMT.3 MRV		
Co-authors of concept notes	Axel Michaelowa Randall Spalding-Fecher Jessica Wade-Murphy Derik Broekhoff	Axel Michaelowa Randall Spalding-Fecher Jessica Wade-Murphy Derik Broekhoff Clayton Munnings	Axel Michaelowa Randall Spalding-Fecher Kentaro Takahashi Martha Ntabadde Kasozi Clayton Munnings	Axel Michaelowa Randall Spalding-Fecher Kentaro Takahashi Martha Ntabadde Kasozi		
Perspectives						
Backstop	Malte Winkler	Aglaja Espelage	Juliana Kessler	Aayushi Singh		
counterpart						
Coordination	Coordination Aglaja Espelage and Jennifer Mora					

Source: International Initiative for development of Article 6 Methodology Tools (2022).

In addition, a stakeholder advisory group was set up to advise on the finalisation of the concept notes and provide strategic recommendations for the full development phase. A first meeting of the advisory group took place in March 2022 to discuss the draft concept notes presented below. The advisors agreed on the key aspects of the proposed approach and provided comments and remarks on the specific steps and in particular shared comments on the practicalities of the proposed approaches. Discussions focused on:

- How to assess activities' links to a host country NDC in a feasible, yet robust way and which of the options included in the concept note might be most suitable.
- Whether additionality assessment could be linked to baseline setting, e.g., through an approach determining best available technologies.
- > What aspects of barrier analysis could be retained in the additionality determination.
- > What the appropriate level of aggregation is for benchmarking.
- > Whether the concept of suppressed demand can still play a role in Article 6 cooperation.
- > Whether to consider negative lists as a methodological instrument alongside positive lists.

In the development phase, the expert team and the advisory group will continue their engagement from the concept phase. PCR would broaden its backstopping team as appropriate and necessary to implement the scope of tasks. PCR has a multidisciplinary staff with broad background in relation to Article 6 and extensive experience in project management, having been involved in both private and public sector projects, including large-scale and multi-year research and consultancy projects (e.g., German IKI-funded programmes). In addition, PCR can build on a broad stakeholder network and a great deal of experience in interacting with international organisations and national governments.

#### **Develoment of Concept Notes**

In the concept phase, four concept notes have been developed that address, for each potential Article 6 methodological tool, the type and scope of methodological guidance that will be elaborated in the development phase.

#### II-AMT GUIDE01 - NDC Alignment

The initial objective of the NDC document was to develop a methodological tool in which all aspects related to guaranteeing a proposed activity to contribute to its host country NDC and long-term low emission development strategy (LT-LEDS). Many of these aspects touch upon baseline setting, additionality determination and MRV. Consequently, it was decided to integrate the respective methodological steps of the drafted NDC-tool into the other three tools developed in II-AMT. This guarantees that, as an example, steps regarding the baseline setting do not appear in two tools, which would be confusing for activity developers. At the same time, it still seems helpful to cover all NDC-related aspects in one document to provide guidance on this cross-cutting new issue both for activity developers and for host country authorities assessing activities that request approval and or authorisation.

Therefore, it was decided to develop a summarizing guidance document on NDC and LT-LEDS alignment rather than a tool, and make detailed references to the respective baseline, additionality, and MRV tools, respectively.

The resulting concept note focuses on NDC alignment aspects that are within the scope of an overarching methodology. This includes:

- Assessing the planned activity's contribution towards achievement of the host country's NDC and LT-LEDS and ensuring the baseline is in line with the unconditional NDC target and LT-LEDS. The methodological steps proposed include options for activity developers to ensure their activity do not generate overselling risks for host countries in their efforts to achieve their NDC targets and that they contribute to the implementation of the host country's LT-LEDS, in alignment with achieving the long-term targets of the Paris Agreement.
- 2. Aligning the planned activity with the NDC implementation periods, including guidance on updating key parameters with each new NDC implementation period and avoiding non-permanence.
- 3. Cross-checking activity-level baselines with national and sectoral reference scenarios.

The baseline, additionality, and MRV tools will contain specific details on the operationalization of these steps, and the guidance note brings the different pieces of required information onto one reporting template for activity developers. The summary and overview of this information will make it easier for host countries to assess the implications of the activity on the NDC and support decision making processes related to approval of activities and authorization of ITMO transfers.

#### II-AMT TOOL01: Determining Additionality

The tool to determine additionality is to replace the currently used CDM additionality tool and shall be applicable to any CDM methodology. Its five steps allow a comprehensive evaluation of a proposed activity's additionality. An important new approach assesses whether the activity poses 'overselling' risks for host countries or whether it can be assumed to be in "target surplus", meaning going beyond the host-country's efforts to achieve the (unconditional) NDC mitigation target.

The first step required for additionality determination is a public notification from the activity developer showing that carbon market revenues were considered prior to embarking on the activity. As a second step, a regulatory analysis must show that the planned activity goes beyond both current and proposed regulations and is therefore additional to what is (or will foreseeably be) demanded by host country legislation. Regulatory additionality is clearly required as per the rules, modalities and procedures of the Article 6.4 mechanism and a necessary (albeit not sufficient) condition to determine whether an activity goes beyond the host country's NDC.

In the third step, the activity developer faces three sub-steps, which aim at identifying whether the proposed activity can reasonably be expected to be part of the host country's measures to reach the (unconditional) NDC, in which case it would not meet the criterion of being in target 'surplus'. While proving to go beyond the NDC is not specifically required in additionality testing as per the Article 6.4 rules, the experts agreed it should form part of a robust additionality assessment to assist host countries in ensuring that any activity they approve does not undermine the achievement of NDCs.

In a fourth and fifth step, to prove financial additionality, the developer is to credibly justify that its activity would not be financially attractive without the revenues from Article 6 crediting. While barrier analysis is not included as an alternative per se, risks to practical implementations are to be identified and can be considered by activity developers in the investment analysis. A full investment analysis is to be mandatory for all activities that belong to an activity type that generally has higher risks to financial additionality, e.g., activities that have significant revenues beside carbon finance.

In addition, experts decided to include further methodological guidance in the tool on:

- Minimum standards for positive lists (to determine additionality) and host country approval lists (for automatic Article 6 approval) that can enable activity developers to "skip" certain elements of the additionality tool.
- How to determine crediting period length, and specifically, under which conditions crediting periods should be shortened.
- > How to consider additionality when deciding on the renewal of a crediting period.

#### II-AMT TOOL02: Setting Baselines

The concept note for baseline setting first outlines the new Paris Agreement context for the determination of crediting baselines before the principles and rules for Article 6.2 and 6.4 cooperation are summarised. The concept note builds on Article 6.4 rules and principles including that the baselines must be set below business-as-usual (BAU), align with the long-term temperature goals, contribute to the reduction of emission levels in the host Party and align with its NDC and its LT-LEDS (if applicable) and consider policies and measures.

Based on the principles and rules, the concept note first specifies eligibility criteria that each Article 6 activity would need to fulfil under the tool including its alignment with the LT-LEDS (if available) and ensuring that the activity does not lead to a lock-in of current emission levels or a continuation of carbon-intensive practices.

Subsequently, a stepwise approach to the setting of the crediting baselines is proposed that mainly builds on the three baseline setting options in the Article 6.4 decision text. First, the appropriateness of performance benchmarking at the sector-level is assessed. If appropriate, baseline setting option 1 (best available technology approach) or option 2 (ambitious benchmark approach) can be chosen. For both options (option 1 and 2), specific sub-steps are to be followed including the determination of performance parameters of the best technology or the calculation of the benchmark's emissions intensity and the subsequent downwards adjustment of the baseline emissions intensity over the years. If not appropriate, the steps under baseline setting option 3, an approach based on existing actual or historical emissions adjusted downwards, should be followed provided that the host country has communicated a net-zero target, an LT-LEDS or official sectoral targets. After determining the baseline, a third step foresees the adjustment of the activity-level baseline according to national or sectoral reference scenarios to ensure NDC alignment. Finally, step 4 stipulates a regular update of the determined baseline at the start of each new NDC period.

#### II-AMT TOOL03: Monitoring, Reporting and Verification

The tool to monitor, report and verify emissions and emission reductions will provide for a general guidance on the required updates to the monitoring elements of CDM methodologies, as well as related reporting and verification elements, to ensure them to be in line with the Article 6.2 guidance and rules, modalities, and procedures of Article 6.4. The MRV tool will be structurally different from other tools under this initiative as it focuses on reforming the existing CDM MRV framework in light of the newly adopted Article 6 rulebook, rather than "reinventing the wheel". Where existing standards for monitoring, such as standards for monitoring equipment or sustainable development (SD) monitoring, appropriately capture the principles of Article 6, the tool will provide a direct reference to such standards.

During the concept phase, four key elements were identified that needed to be addressed and incorporated into the existing MRV framework for it to be in line with rules and principles of Article 6.

- a) Ensuring conservativeness of baselines and activity emissions since baselines are expected to be more conservative under Article 6 than under the CDM. This includes baseline parameters that need to be monitored, ensuring that these parameters lead to a baseline below BAU and also ensuring that monitoring emissions parameters leads to an overestimation of emissions rather than an underestimation of emissions.
- **b)** Ensuring monitoring of all relevant policies, including potential new policies by developing a high-level criterion on what constitutes a relevant policy, the level of aggregation of policies at which the policies must be monitored, frequency of policy monitoring and the relevant parameters of the policy universe that must be monitored.
- c) Ensuring full identification and monitoring of reversals by specifying reversal parameters; approaches for monitoring GHG reservoirs created by removal activities, and emission reduction activities including the capture of GHG emissions at source; and provisions of monitoring beyond the crediting period.
- d) Ensuring identification and monitoring of all relevant SD parameters through use of robust methodological guidance and tools.

The key challenge in the development of the MRV tool is integrating the elements proposed in the monitoring process and transforming them into steps to be undertaken by activity developer. Furthermore, there are specific challenges to be addressed for each element. For instance, the conservativeness module must be built in tandem with the baselines tool to avoid potential overlaps. Monitoring of policies is not an easy endeavour and balancing a robust monitoring approach with lowering monitoring costs will be a challenge. Incorporating provisions for monitoring of reversals over long periods is another challenge that must be resolved.

In addition, the tool will include further guidance to be provided to verifiers, to strengthen robustness of the process through expanding the scope of the validation and verification process to include checking additional public documentation beyond the ones provided by activity developers.

#### Identified needs for Additional Article 6 Methodology Guidance

Throughout the concept phase, experts identified further aspects, where Article 6-specific guidance and tools would be helpful to activity developers and government authorities. This relates to aspects such as policy choices on NDC alignment of activities, digitisation, and data sharing tools for the MRV process but also sector-specific methodological guidance for additionality determination, baseline setting and MRV, in particular for emission removals and the LULUCF sector. Throughout the course of the development phase, and subject to funding availability, the scope of the II-AMT may be expanded to include further guidance notes or tools to cover the identified issues.

### Approach to the Development Phase

The development phase will focus on developing the three tools and the NDC guidance note in an inclusive process, building on exchange with the advisors and further technical experts.

To ensure the proposed tools are ready to be applied by activity developers, the team of international experts will crosscheck the developed tools and guidance documents on their applicability to widely used CDM methodologies that are expected to still play a role in future Article 6 cooperation. A list of pre-selected methodologies is included in Annex 1.

#### **Modules and Outputs**

The methodological documents, TOOL01-03 and GUIDE01 will be developed in a stepwise approach and iterative process. A first internal working draft will be informed by the outcomes of a workshop with technical experts. This internal draft will be discussed with the advisory group, before being turned into a pre-final draft that is yet again discussed with technical experts and advisory before being finalised and validated by advisors. The tools and guidance document will be published as a joint output. Process, references, assumptions and justifications for the methodological choices taken will be transparently documented in a chapeau document. Beyond workshops, lessons learned through the process of the II-AMT will be shared

through briefing papers and articles, as well as presentations at conferences. All finalised outputs of the initiative will be shared on the webpage<sup>1</sup> hosted by Perspectives and be publicly available for further use.

#### Figure 2: Modules and Outputs of the Development Phase

#### Module 1: Article 6 additionality tool (TOOL01)

- Internal working draft
- Draft tool
- Revised tool

#### Module 2: Article 6 baselines tool (TOOL02)

- Internal working draft
- Draft tool
- Revised tool

#### Module 3: Article 6 MRV tool (TOOL03)

- Internal working draft
- Draft tool
- Revised tool

#### Module 4: Guidance document on NDC alignment (GUIDE01)

- Internal working draft
- Draft guidance
- Revised guidance

#### Module 5: Article 6 methodology tools- Chapeau document

- Internal draft chapeau document (with justification of approach taken, description of scope and limitations, description of process)
- Draft chapeau document

#### Module 6: Finalisation of documentation and tools

• Finalisation of entire project documentation and publication

#### Module 7: Stakeholder engagement/ outreach

- 2 workshops with expert community: one on the concept notes and another one on the draft tools
- 3 meetings with the advisory group: on the internal working documents, the draft tools, and a validation meeting
- Regular updates to the website and sharing of publications through social media
- 3 briefing papers on the initiative (prior to June SB56 session, prior to COP27, and at the end of the development phase)
- Presentations at SB56 and COP27 conference, e.g., in a side event

#### **Timeline of Implementation**

The anticipated timeline of implementation is May 2022 to February 2023, allowing the Article 6 Methodology Tools to be applied in 2023, the year in which the first initial reports for Article 6 cooperation can be submitted.

<sup>&</sup>lt;sup>1</sup> https://www.perspectives.cc/public/initiatives/international-initiative-for-development-of-article-6-methodology-tools-ii-amt/.

#### Figure 3: Timeline for the Development Phase May 2022-February 2023

Source: II-AMT (2022)

Module	Milestone	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23
1	Development of draft Article 6 Additionality Tool										
	Internal working draft										
	Draft additionality tool										
	Revised additionality tool										
2	Development of draft Article 6 Baseline Tool										
	Internal working draft										
	Draft baseline tool										
	Revised baselines tool										
3	Development of draft Article 6 MRV tool										
	Internal working draft										
	Draft MRV tool										
	Revised MRV tool										
4	Development of guidance documents on NDC alignment										
	Internal working draft										
	Draft guidance										
	Revised guidance										
5	Development of Chapeau/overarching guidance										
	Internal working draft										
	Draft chapeau/guidance										
6	Publication of all documentation and tools										
	Publication of all documentation and tools										
7	Stakeholder engagement/outreach										
	Workshops with expert community	•••					•••				
	Advisory Group meetings										
	Website and social media										
	Briefing papers	-	_				-	_			-
	Presentations at Conferences										

#### Perspectives Climate Research

# **Outlook for the Piloting Phase**

Piloting is essential to demonstrating the value of the tools. Therefore, Perspectives and its partners will mobilise funding for a piloting phase to follow the development phase of a first version of the Article 6 Methodology Tools. In this piloting phase, suitable pilot activities will be identified in consultation with the advisory group to test the developed tools. The team of experts will be involved in the test of the tools by activity developers; they will advise on questions related to the tools and provide clarifications. Based on the results of the tests, revisions to the tools will be proposed as needed. Lessons learned in the process will be shared publicly and with the broader expert community. Lastly, the revised Article 6 methodology tools will be submitted to the A6.4M Supervisory Board for approval to be used by A6.4M activities, as soon as the process for submitting methodologies has been established.

# Annex

#### Annex 1: "Anchor" Methodologies

Table 1: Anchor methodologies for Article 6 tool development

Ref nr.	Title	Technology type/Measure	Relevance
ACM1	Landfill gas project activities	Waste management and waste water: Flaring or use of landfill gas (GHG destruction and displacement of more GHG intensive service)	Rank 7 of the most widely applied methodologies in PAs (303 times)
ACM12	GHG reductions for waste gas or waste heat or waste pressure- based energy system	Industrial energy efficiency through waste gas/energy recovery (displacement of more carbon- intensive energy/technology)	Rank 4 of the most widely applied methodologies in PAs (398 times)
ACM2	Grid-connected electricity generation for renewable sources (no biomass)	Grid-connected renewable energy generation (displacement of a more GHG-intensive output)	Most widely applied methodology in PAs (3999 times); rank 3 for PoAs (75 times)
ACM6	Grid-connected electricity from biomass residues (includes AM4 & AM15)	Generation of power and heat in thermal power plants using biomass (displacement of more GHG-intensive electricity generation and avoidance of methane emissions)	Rank 6 of the most widely applied methodologies in PAs (351 times)
AMS-I.C.	Thermal energy production with or without electricity	Renewable thermal energy production including biomass-based co- or trigeneration (displacement of a more GHG-intensive output)	Rank 3 of the most widely applied methodology in PAs (628 times), rank 4 for PoAs (51 times)
AMS-I.D.	Renewable electricity generation for a grid	Grid-connected renewable energy generation (displacement of a more GHG-intensive output)	Second most widely applied methodology in PAs (3020 times); most widely applied methodology in PoAs (99 times)

Ref nr.	Title	Technology type/Measure	Relevance	
AMS-I.E.	Switch from Non-Renewable Biomass for Thermal Applications by the User	Renewable thermal energy for cooking (displacement of more GHG-intensive, biomass-fuelled applications)	Rank 7 of the most widely applied methodologies in PoAs (28 times)	
AMS-I.F.	Renewable electricity generation for captive use and mini grid	Renewable electricity captive power (displacement of a more GHG- intensive output)	Rank 5 of the most widely applied methodologies in PoAs (43 times)	
AMS-II.C	Demand-side energy efficiency programmes for specific technologies	Energy efficiency for industry as well as households regarding cookstoves, water pumping, water purification, refrigeration, lighting and other technologies (displacement of more GHG-intensive service by more efficient technology)	Rank 8 of the most widely applied methodologies in PoAs (26 times)	
AMS-II.D.	Energy efficiency and fuel switching measures for industrial facilities	Energy efficiency improvement in production steps and processes or in energy conservation equipment (increase in energy efficiency, optionally with switch to less carbon- intensive fuel)	Rank 9 of the most widely applied methodologies in PAs (197 times)	
AMS-II.G.	Energy Efficiency Measures in Thermal Applications of Non- Renewable Biomass	Energy efficiency in energy demand - cookstoves (displacement/EE enhancement of heat generation that results in saving of non-renewable biomass)	Second most widely applied methodology in PoAs (87 times)	
AMS-IIJ.	Demand-side activities for efficient lighting technologies (deemed savings)	Energy efficient lighting in households & buildings (displacement of more GHG-intensive lighting by technology switch)	Rank 6 of the most widely applied methodologies in PoAs (28 times)	
AMS-III.AR.	Substituting fossil fuel-based lighting with LED lighting systems	Households and building energy efficient lighting (displacement of more GHG-intensive service)	Rank 10 of the most widely applied methodologies in PoAs (20 times)	
AMS-III.D.	Methane recovery in animal manure management systems	Waste management and wastewater: treatment of manure and animal waste (GHG destruction and displacement of more GHG intensive service)	Rank 8 of the most widely applied methodologies in PAs (294 times); rank 9 of the most widely applied methodologies in PoAs (21 times)	

Ref nr.	Title	Technology type/Measure	Relevance
AMS-III.H.	Methane recovery in wastewater treatment	Waste management and wastewater: lagoons and biodigester biogas (GHG destruction and displacement of more GHG intensive service)	Rank 5 of the most widely ap- plied methodologies in PAs (358 times)
AMS-III. <u>Q</u> .	Waste gas-based energy systems (gas/heat/pressure)	Industrial energy efficiency through waste gas/energy recovery (displacement of more carbon- intensive energy/technology)	Rank 10 of the most widely applied methodologies in PAs (143 times)

Note: ACM: Approved Consolidated Methodology; AMS: Approved methodology for small-scale activities. Source: UNEP DTU CDM and PoA pipeline (2021)



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