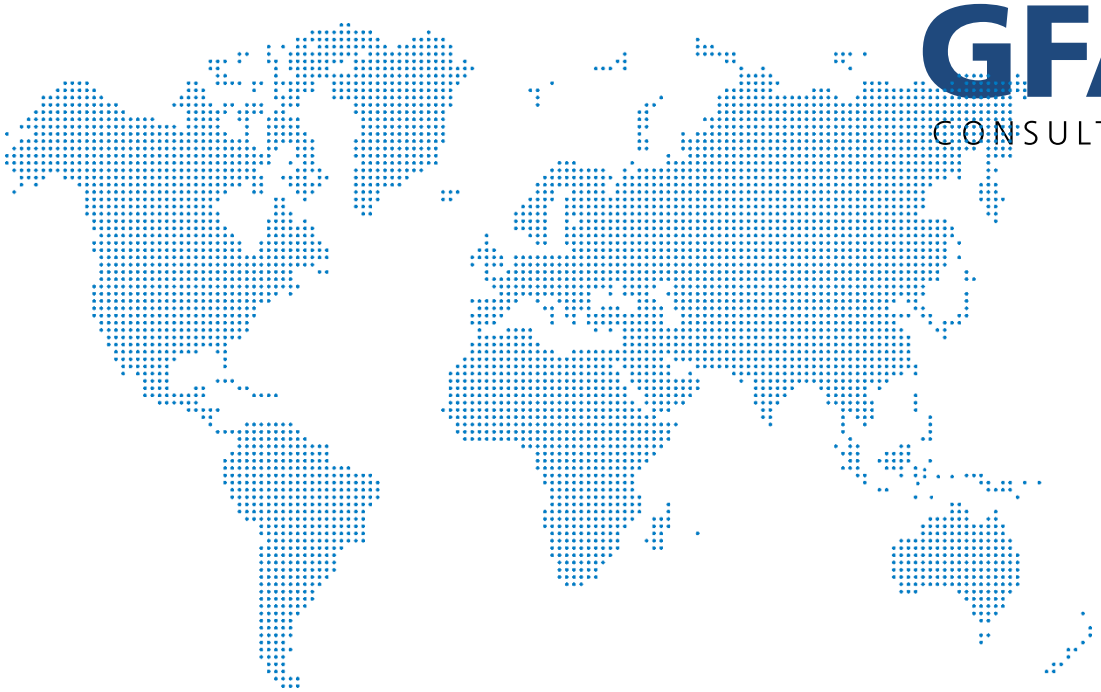

REPORT 3

GLOBAL

PoA Mapping and Reporting
CRITICAL ANALYSIS AND RECOMMENDATIONS

Presented to:
Foundation 'Future of the Carbon Market'
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PoA Mapping and Reporting

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List of Abbreviations

BAU	Business as usual
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CMA	Conference of the Parties serving as the meeting of the Parties to the Paris Agreement
CME	Coordinating or Managing Entity
CMP1	Meeting of the Parties to the Kyoto Protocol
COP	Conference of the Parties
CPA	Component Project Activity
DD	Design Document
DNA	Designated National Authority
DOE	Designated Operational Entity
EB	Executive Board
EE	Energy Efficiency
ETS	European Emission Trading System
GHG	Greenhouse Gas
GS	Gold Standard
IGES	Institute for Global Environmental Studies
LDC	Least-Developed Country
MDB	Multilateral Development Bank
MRV	Monitoring, Reporting, Verification
NDC	Nationally Determined Contributions
PA	Paris Agreement
PD	Project Developer
PoA	Programme of Activities
RMP	Rules, Modalities and Procedures
UNEP CCC	United Nations Environment Programme Copenhagen Climate Centre
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Verified Carbon Standard
ZdK	“Future of the Carbon Market” Foundation

1 INTRODUCTION

The introduction of programmatic approaches under the Clean Development Mechanism (CDM) was a turning point for small and micro-scale mitigation activities that had previously been excluded from the CDM due to prohibitive transaction costs associated with the CDM project cycle. The programmatic approach allows for the aggregation of a large number of individual activities with similar technologies into a single Programme of Activities (PoA), and the gradual expansion of the programme over time by adding further component activities. This has enabled decentralised technologies such as efficient cookstoves, domestic biogas digesters and other household-level energy solutions to be incentivised through the CDM; extending the benefits of carbon finance to a wide range of beneficiaries including rural and underserved communities. In principle, the PoA concept is also applicable to large-scale activities but has in practice been of far lesser importance for larger investments such as grid-connected renewables.

Since the introduction of PoAs at the first session of the Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol (CMP1) in Montreal in 2005, many countries – including least developed countries (LDC) – have been able to build PoA pipelines and gain experience with the approach. While PoAs have been successful in ensuring a broader and more equitable participation in the CDM, especially for micro-scale activities, through lowering transaction costs, simplifying the additionality assessment and catering to the needs of decentralised technologies, the management of these programmes continues to pose significant challenges. Many PoAs have fallen short of the expectations vested into them such as facilitating access to upfront financing, issuance success, reducing overall risk through more sophisticated financial procedures and the scaling up of the market. Next to the managerial challenges associated with the scale and complexity of the operations, the rules of PoAs themselves have been criticised by stakeholders as limiting factors (e.g. the monitoring of micro-technologies and multi-country PoAs through the duration of the PoAs lifetime).

This report promoting the programmatic approach in Article 6 is initiated by the "Future of the Carbon Market" Foundation (ZdK). This third and final report is part of a wider project that takes stock of the ongoing CDM PoAs and maps the experiences and expectations of the relevant stakeholders. This report presents the result of this project that will be presented at COP27 in Sharm El-Sheikh.

OBJECTIVE

This report presents a critical analysis of host country experiences with PoAs under the CDM and provides input for an informed discussion on the future of PoAs in the context of further developing the ruleset under the Article 6.4 mechanism of the Paris Agreement (PA), including the transition of CDM PoAs to this mechanism.

OUTLINE AND METHODOLOGY

The report is structured into three main sections, building on several work steps that generated the insights that are summarised in this synthesis report:

- **Chapter 2** sets the stage by providing a detailed overview of the results of the stocktake of PoAs globally including the key characteristics and achievements of PoAs as well as a quantitative representation of PoAs globally.
- **Chapter 3** presents the outcomes of the interviews held with over 30 stakeholders, conducted during the second half of 2022 with host country focal points, multilateral development banks and project developers. The first part of this chapter provides information on the degree of in-country PoA knowledge from focal points observed with regards to PoA implementation. The second part lays out the insights from project developers and multilateral development banks on their experience with

PoAs. Finally, 5 stakeholder recommendations are provided to inform the negotiation process on the new rule set for PoAs under Article 6 in an objective manner.

- **Chapter 4** considers the current integration of PoAs into the Article 6 Rulebook and explores opportunities for introducing reforms to the PoA ruleset into the UNFCCC process.

2 TAKING STOCK OF POAS TO DATE

2.1 KEY CHARACTERISTICS AND ACHIEVEMENTS OF POAS

PoAs are a key innovation and an essential reform achievement of the CDM mechanism. PoAs have created a mature and consolidated set of rules for programmatic approaches in carbon markets. Unlike the standalone project structure, PoAs allow the possibility of including an unlimited number of individual component project activities (CPAs) under one single PoA. This has the potential to significantly lower transaction costs as a programme's expansion does not require the registration of a new project altogether; instead CPAs can be included under a PoA by the CDM EB based on demonstrated compliance with the programme's PoA design document (PoA-DD). This section highlights key insights on the progress of implementation of the PoA concept under the CDM.

PoAs enabled rapid upscaling of mitigation outcomes through fast-track "inclusion" procedures. Project design documents (PDDs) necessary for standalone CDM activities took years to develop and validate to eventually register a project. Projects can only generate carbon credits from the moment they are registered and delays caused by lengthy validation and registration procedures cost projects developers and investors considerable amounts of time and resources. In contrast to PDDs, adding CDM-CPAs to a PoA required only a quick check by a validator which significantly shortened the time and cost needed to include the CPA under the PoA. Such quick access to the carbon market increased – only for a modest number of PoAs – the amount of emission reductions and potentially also the issuance of carbon credits.

PoAs supported the inclusion of additional mitigation activities to scale up programmes over time. This was particularly useful for programmes that had little indication early-on regarding the number and location of potential activities they would like to include. There are no caps or other limitations that need to be established ex-ante, which offers a great amount of flexibility to PoA developers.

PoAs enhanced conventional bundling approaches. Compared to conventional bundling approaches that are subject to the application of similar crediting periods and large-scale methodologies, PoAs facilitated the inclusion of flexible crediting periods between CPAs and the application of simplified (and often less costly) small-scale methodologies. The attractive characteristics of PoAs provided project developers with the flexibility to choose the size of a CPA to match the size limits of small-scale methodologies.

The PoA concept also enabled the inclusion of technologies that were previously difficult to register under the CDM because they were too small in size on a per-unit basis. In particular, decentralised energy mitigation activities experienced a rise under PoAs, including improved cookstoves and energy efficient lighting. Geographically, this also opened the door for many project activities in Africa as well as in least developed countries (LDCs). On top of that, PoAs also reduced the risk of non-registration of projects by simplifying the CPA inclusion process. At the same time, **PoAs supported mitigation projects that were beneficial for local communities**, especially in the areas of clean cooking, drinking water treatment, and energy supply. The lower transaction costs, reduced registration time for CPAs, and the fact that many PoAs were located in LDCs (see Figure 1) – issuance from which remained eligible under the European Emission Trading System (EU ETS) after the end of its second phase in 2012 – enabled the registration of new mitigation activities under existing PoAs despite a low average Certified Emission Reduction (CER) price. CPAs need only to demonstrate compliance with the PoA-DD rather than go through the full UNFCCC registration process that standalone projects must

go through. This simplified inclusion procedure is both faster and can be achieved at lower cost than the full registration procedure.

2.2 PoAs in Numbers

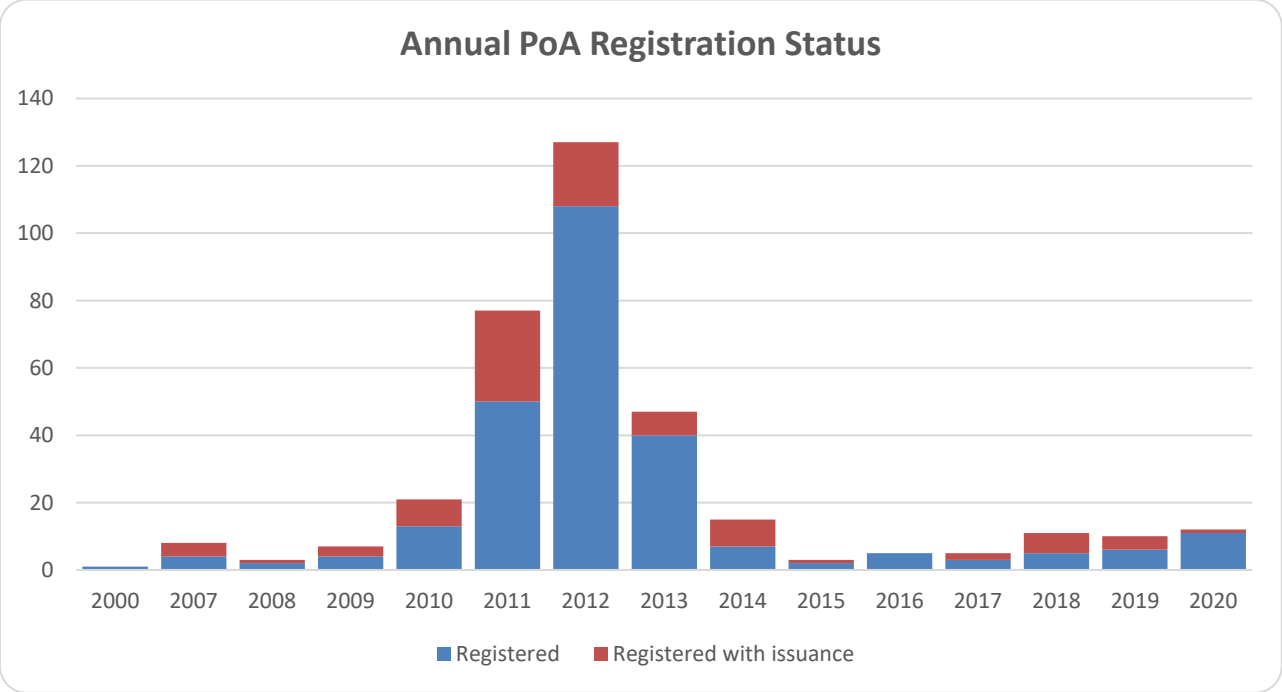
This section presents an overview of the current PoAs to provide insight into their role under the CDM. To present an up-to-date overview of the PoAs, three databases have been evaluated:

- UNFCCC CDM PoA and CPA database[1]
- UNEP CCC CDM PoA pipeline database[2]
- Institute for Global Environmental Studies (IGES) CDM pipeline[3]

Although the concept of PoAs was agreed by Parties as early as 2005, it took until 2007 that the CDM Executive Board (CDM EB), at its 32nd meeting, adopted the procedures that allowed PoAs to be registered as CDM activities.

The PoA framework presently comprises a total of 359 registered PoAs out of a total of 605 listed[4] PoAs (UNEP CCC, 2022). In total, only around 25% of registered PoAs have issued CERs (Figure 1) with the vast majority remaining programme 'shells' devoid of certified emission reductions with an unclear implementation status. Reasons for this low issuance rate can be manifold, but the arguably most conclusive explanation are low CER prices. Importantly, the lack of CER issuance does not necessarily mean that a CPA may not be under implementation as CMEs may have continued monitoring reports but have shied away from the verification and issuance costs during a low-price market environment.

Figure 1: Annual PoA Registration Status



[1] UNFCCC (2022): CDM Programmes of Activities. Available here: https://bit.ly/3sOGNVP

[2] UNEP CCC (2022), The UNEP CCC CDM/JI Pipeline Analysis and Database. Available here: https://bit.ly/3fnbG0s

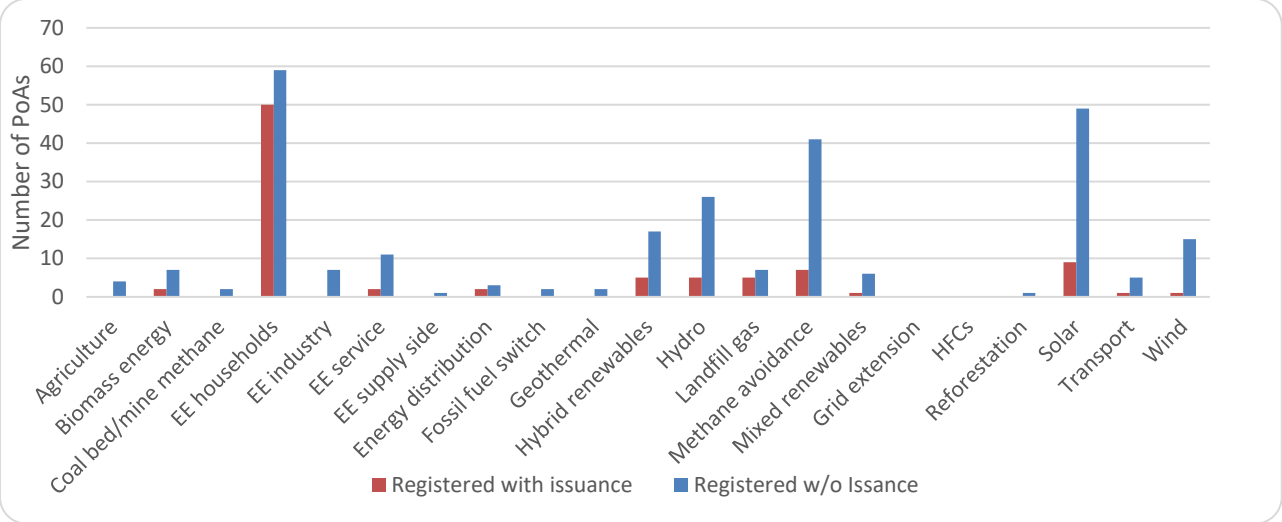
[3] IGES (2022), IGES CDM Project Database. Available here: https://bit.ly/3DtLh9b

[4] The UNEP CCC PoA Pipeline includes registered PoAs with the status: Article 6 ready, registered. The full list also includes PoAs that are: At validation, rejected, replaced at validation, replaced validation terminated, validation terminated, and withdrawn.

Source: UNEP CCC CDM PoA pipeline

Turning to the performance of PoAs by technology, among all PoAs registered, the largest share is associated with categories in the renewable energy and efficiency space, representing more than 90% of registered PoAs. Based on the current number of registered PoAs, the largest portion of PoAs address emissions through energy efficiency (EE) measures at the household level (e.g. distribution of energy efficient cookstoves), followed by projects of technologies that use solar energy sources (e.g. solar photovoltaic), methane avoidance (e.g. domestic biogas) and hydropower (see Figure 2).

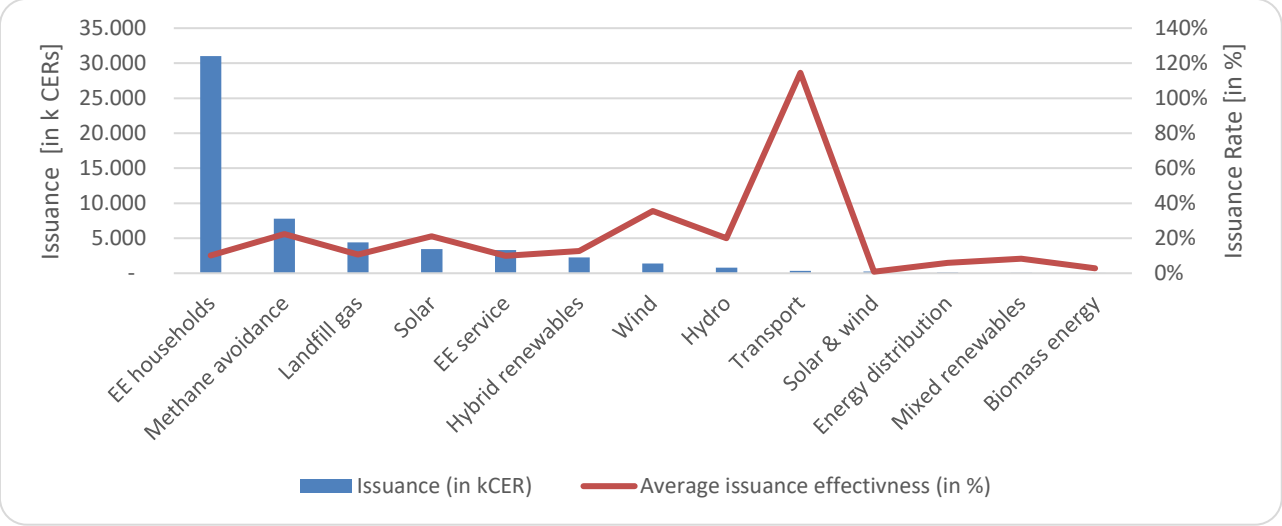
Figure 2: Issuance registration per PoA category



Source: UNEP CCC CDM PoA pipeline

One prevailing factor is the performance of different technologies by CER issuance. Most registered activities among PoAs are energy efficiency projects in households, with a cumulative issuance of 31 million CERs. This is significantly more than has been issued by activities in methane avoidance (7.8 million CERs) and landfill gas (4.4 million CERs). Other technologies such as solar PVs, EE service, hybrid technologies, wind and hydropower are responsible for the remaining issuances of emission reduction certificates from PoAs.

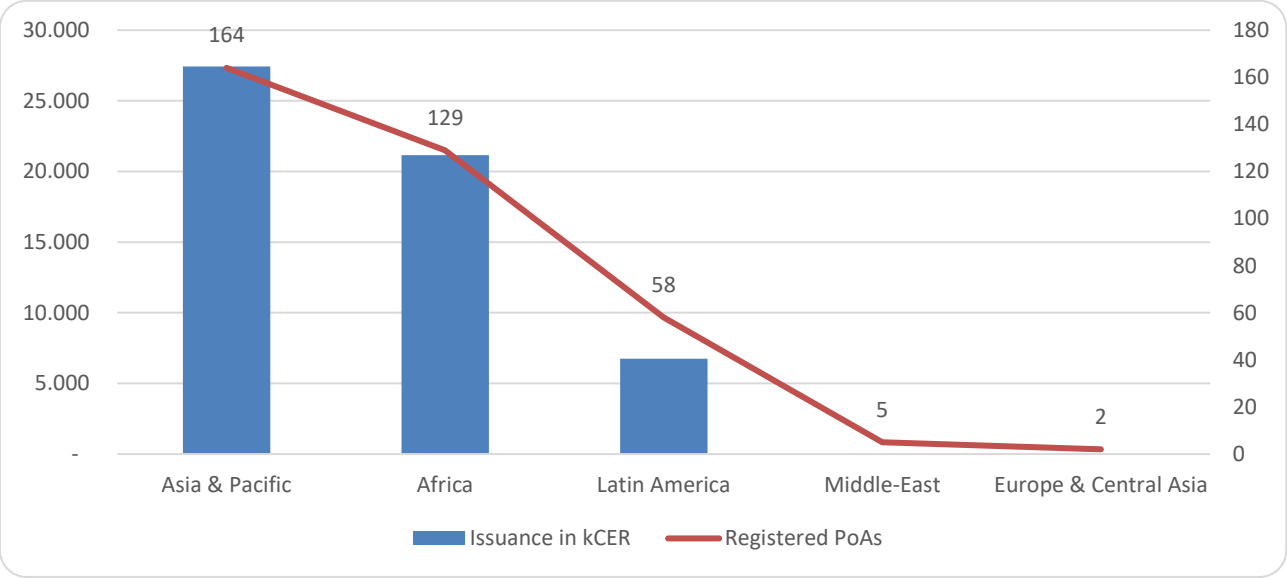
Figure 3: CER issuance per PoA category



Source: UNEP CCC CDM PoA pipeline

Among all regions identified based on the UNEP CCC pipeline, the Asian & Pacific region are the most successful with regards to PoA registration with 164 PoAs, followed by the African region with 129 PoAs, and delivered the largest number of emission reductions over the total operational lifetime of PoAs until August 2022 with 27.4 MCERs and 21.2 MCERs for the Asian & Pacific region and Africa respectively. This demonstrates that PoAs did make a material contributing to enhancing access to the benefits of the CDM for underrepresented countries, which are often low-income countries, and thus a highly relevant achievement in light of the longstanding debate about equitable access to CDM benefits. Latin America also includes a sizeable portion of CERs issued at 6.1 MCERs. However, in comparison to the Asian & Pacific and African regions, the number of registered and successful CDM PoAs in Latin America is much lower, as a result of several countries, including Caribbean small island states for which it may be most relevant given their small individual size not (yet) being successful in implementing PoAs. Moreover, the results are negligible or null in Europe, Central Asia and the Middle East (Figure 4).

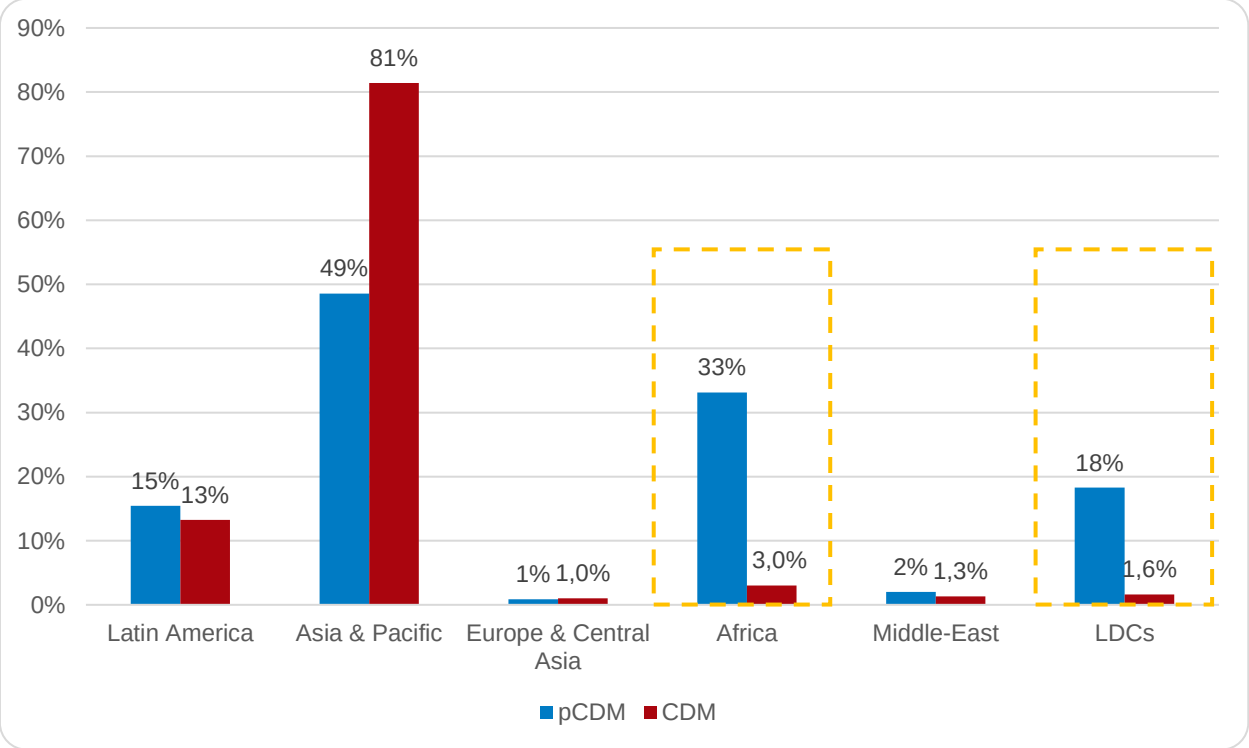
Figure 4: CER issuance (in thousands) and registered PoAs per region



Source: UNEP CCC CDM PoA pipeline

On a similar note, when comparing CDM PoAs to single CDM activities, the region with the largest number of PoAs is the Asian & Pacific region, as illustrated in Figure 5 below. The relevance of PoAs for LDCs can be seen in an approximate tenfold increase in the percentage of activities undertaken by PoAs in LDCs compared to single CDM activities. This increase observed can be largely linked to energy-efficient cookstoves and off-grid solar PV appliances.

Figure 5: Comparison in regional distribution between PoAs and single CDM activities



Source: UNEP CCC CDM PoA pipeline

Despite the low CER issuance rates, PoAs have been firmly established in the international carbon markets and provide a novel pathway to accessing carbon finance for decentralised energy and energy efficiency technologies beyond single CDM project activities. In particular, PoAs have been essential in broadening access to the CDM to a larger group of previously underrepresented countries.

2.3 Consideration of PoA Elements in Article 6 Piloting Activities

This section summarises the results of a mapping exercise that was carried out under the assignment, which looks at the uptake of programmatic approaches in Article 6 pilots. The analysis examines to which extent PoA typical characteristics such as aggregating small or micro-scale technologies or a PoA typical activity cycle are employed by the Article 6 pilot. To do so, relevant characteristics were identified, translated into questions, for which the existing pilots were screened. This was complemented by questions relating to the type of project implementer (private sector or government) and potential innovative elements applied by the pilots. The analysis is based on the 53 Article 6 pilots listed in the UNEP CCC database and grouped according to their geographic location. Any potential future transition of CDM PoAs to the Article 6.4. mechanism is not yet reflected in this analysis, as this process has not yet begun at the time of writing. The characteristics and questions are listed in Table 1 below.

Table 1: List of characteristics of PoAs

CHARACTERISTIC	QUESTION
Micro-scale technologies	Does the project promote micro-scale activities such as cookstoves, solar water heaters, energy efficient lightbulbs, among others?
Grouping similar activities	Does the Art. 6 pilot follow a CDM-PoA activity cycle?
Project boundaries	Is the Art. 6 pilot implemented in multiple countries?
Sectoral approach	Does the pilot have a sector-wide coverage?
Innovation	Does the Article 6 pilot deploy innovative approaches to reduce time, effort and transaction costs?
Coordination	Is there a central entity that oversees project monitoring and implementation?
Implementing entity	Who is the main implementer of the pilot activity (government, project developer or other)?

Source: author

The analysis shows that:

- The majority of pilots promoted micro-scale technologies;
- Over half of the pilots had elements of the PoA activity cycle, which were concentrated in East Africa, Latin America, and Asia;
- The overwhelming majority of pilots were implemented in a single country;
- Half of the pilots had a sectoral scope;
- The majority of pilots did not have innovative elements;[5]
- Project management was centralised in 60% of the pilots, especially in Africa.

The prevalence of PoA elements across Article 6 pilots indicates that organising activities under a PoA framework remains relevant as the market transitions to the new Paris Agreement mechanism.

[5] Innovative elements include approaches for the reduction of implementation costs and time.

MICRO-SCALE TECHNOLOGIES

Among the regions analysed globally, 64% of pilots promoted micro-scale technologies through a programmatic approach. In this regard, the region with the largest number of pilots is East Africa, with 10 PoA-type activities, followed by West Africa (7) and Latin America (6).

GROUPING SIMILAR ACTIVITIES

The mapping found that 51% of Article 6 pilots presented elements typical of the PoA activity cycle. These were found in East Africa (Kenya, Ethiopia and Uganda), Latin America (Peru, Colombia) and Asia.

PROJECT BOUNDARIES

Additionally, 85% of the Article 6 pilots analysed are implemented in a single country. Two regions have implemented multi-country PoAs with East Africa and Southern Africa developing two and one such PoA respectively.

SECTORAL APPROACH

Half of the activities analysed include a sectoral scope, with a higher emphasis on those in Latin America. By contrast, there was no clearly stated sectoral approach in many of the activities in Africa.

INNOVATION

With regards to the deployment of innovative approaches for dealing with the registration and implementation complexities that characterised activities, **36% of pilots are innovating in one way or another** with half of them coming from Latin American countries.

COORDINATION

Finally, 60% of the Article 6 pilots have a centralised activity management entity in charge of overseeing the monitoring and implementation of the activity. African countries in particular tend to subscribe to centralised management entities to oversee the implementation activities.

3 Results of the Stakeholder Interviews

3.1 Feedback from Government Focal Points

In-depth interviews were conducted with national climate change focal points (CFPs) in 30 countries on their experience and lessons learnt from CDM-PoAs and their inputs on the application of a similar programmatic approach under Article 6. This section highlights the key messages that emanated from the responses to the questionnaire by CFPs.

3.1.1 Experience and Lessons Learnt From CDM-PoAs

1. **National implementation level**

The PoA framework increased access for lower income countries to include decentralised mitigation activities under the CDM. The majority of CFPs indicated that their countries have registered more than one PoA. This indicates that there is considerable interest from host countries and project developers in developing and engaging in PoAs. While many countries approved PoAs for registration under the CDM to test the viability of the concept, some African countries have developed a profound interest and registered a large number of PoAs. These countries credit the simplified registration process for micro-scale activities, such as improved cookstove and energy efficient lighting programmes. PoAs also contributed to the deployment of decentralised renewable energy and energy efficiency technologies that served mainly low-income populations in LDCs.

Despite the low PoA registration number of some countries, respondents claimed that a general interest in PoAs still prevails and that the continued discussion about the future of the PoA concept in the Article 6.4 mechanism is being closely followed. This clearly shows that many countries, in particular in Africa but also other regions, recognise the advantages of the PoA framework to significantly contribute towards a country's NDCs. In addition, PoAs are perceived as a practical approach for implementing transformative mitigation activities that also contribute to achieving SDGs.

2. **Time and cost reduction (to implement both PoAs and CPAs)**

Respondents' views suggest a strong approval of the PoA concept with regards to time and cost savings, especially when compared to standalone CDM activities. CFPs claim that one of the main advantages of PoAs when compared to developing standalone CDM activities is the reduction of management efforts. In addition, respondents commended the PoAs simplified standards and procedures for registration and verification (e.g. verification utilising the sampling approach). These PoA features shorten timeframes and speed up the approval process of PoAs and in particular the inclusion of CPAs, providing both time and cost savings.

Also, many CFPs stated that the revised CDM-PoA standards including the development of eligibility criteria, demonstration of additionality and application of multiple methodologies facilitated the raising of mitigation ambition in their country by easing the implementation of PoAs.

The temporal scope and required effort to develop and implement PoAs is still considered burdensome. A few interviewees are opposed to the claims regarding time and cost savings and express difficulties with monitoring and approving PoAs. Although the development and management of PoAs is perceived to be less onerous for a number of CFPs, others still criticise the prevailing complexity and bureaucratic effort required to develop PoAs and the excessive time required to issue CERs (up to 7 years for some). Going forward, this

should serve as a stimulus to explore opportunities for reducing the bureaucratic effort overall when transitioning or developing a successor to the PoA framework under Article 6 (see chapter 3.3).

3. PoA performance

The institutional capacity of DNAs and sector ministries/agencies as well as the technical implementation capacity of project proponents emerged as significant factors impacting the performance of PoAs. Cited barriers linked to institutional capacity largely relate to the lack of project coordination with different government agencies. This concerns in particular PoAs that are managed by public sector CMEs. This factor is prevalent in countries with comparatively limited exposure to carbon markets. Additionally, navigating through complex CDM-PoA requirements often requires international expertise – due to lack of domestic market participants or experts. This limited availability of expert staff at the local level negatively impacted the development and performance of PoAs. Furthermore, some CFPs mention that it is essential that they become heavily involved in the implementation of PoAs and that enhanced communication channels between them and CMEs should be established. Developing the expertise and capacity of PoA developers and relevant national experts in particular for new PoAs under Article 6 that will operate within an NDC context is required to fill these gaps and improve programme performance.

Finally, the performance of PoAs can influence the engagement of countries by increasing their level of exposure. Some CFPs mentioned a lack of available data on the success and running impacts of the projects, which makes it more difficult for them to evaluate the performance and achievements of PoAs. Missing information on the performance and achievements of operational PoAs not only with regard to emission reductions but also to their contribution to national strategies and policies as well as to SDGs is seen as a major problem. Establishing an operational PoA infrastructure in the host country that allows the host country's government to control and steer the implementation of mitigation programmes could be one of the prerequisites for the successful transfer of the PoA concept to Article 6. This includes not only enhancing the capacities of the national institutions, but also establishing appropriate MRV and registry infrastructure and procedures.

The end of the second commitment period of the Kyoto protocol and the uncertain future regulatory framework inhibited investor engagement in PoAs. While the PoA concept received some positive indication that it will be transitioned to the Paris Agreement, investors were reluctant – for lack of financial incentives and due to regulatory uncertainty – to register new PoAs under the CDM. Furthermore, while complex bureaucratic issues delayed the issuance of CERs, their low rate could also be attributed to the low price of carbon credits at the time, owing to a combination of insufficient demand as well as political uncertainty.

3.1.2 Moving Forward Towards a Framework Under Article 6

1. PoA transition to Article 6

Overall, countries expect more advantages from the transition of PoA elements to Article 6 than disadvantages. The transition of PoAs would allow existing programmes to continue and established capacities to be preserved, enhancing project developers' trust. In addition, countries could still register new CPAs under existing PoAs and adopt one accounting framework for multiple technologies as practiced under the PoA concept. Many countries expressed their intention to adopt the PoA approach or are already using it for the implementation of Article 6 pilots, albeit capacity building needs and comparatively high upfront costs are yet to be addressed. For example, micro-scale mitigation activities lead to significant development impacts that

would not otherwise have been achieved, especially in low-income countries where large parts of the population live in rural areas.

However, it will be crucial to address concerns on the transition to facilitate an effective continuation of integrated programmes under Article 6. First, the transition of PoAs would require the re-interpretation of additionality as per the Article 6 Rulebook. Second, the simplified procedures of the CDM PoA approach should be maintained and further applicable simplifications should be considered. Third, guidelines and rules must be developed to ensure that the transfer of large amounts of CERs from existing PoAs with the aim to meet buyer countries' NDCs will not limit the host countries' ambition level. Finally, an unanswered question that still needs to be addressed is how emission reductions are calculated in the case of PoAs, which use a regional standardised baseline.

2. Public-private sector interaction and coordination needs

The public and private sector must go hand in hand to facilitate both a smooth transition of PoAs to Article 6 and effective use of PoA elements for the development of future mitigation activities. The involvement of the private sector with the national host country institutions requires clear guidelines and policies provided by the government as part of their institutional framework for participating in Article 6 carbon market instruments. This would ensure a conducive environment to private sector stakeholders engaged in PoA activities that also look for opportunities to expand their engagement under Article 6.2 and 6.4.

As countries perceive the private sector to be a key actor to achieve emission reductions, countries are looking at frameworks to address interaction and coordination needs in light of new requirements under Article 6. It will be important to establish continuous communication and stakeholder engagement for the government to understand the issues and needs of the private sector in light of PoA transition. Even more importantly, given the importance of accounting and reporting on potential ITMO transfers as part of countries' Article 6 strategies for achieving NDC targets, the private sector needs to understand which programmes can be developed and have confidence that carbon credits will be authorised as per Art. 6.2 requirements.

Enhance interaction between governments and private sector would guide financing options for project implementation. It will also be essential for the public sector to understand how the private sector can finance PoAs and how to assess the risks associated with a programme. Establishing and promoting public-private-partnerships is one option to pool resources to achieve objectives on both sides faster and at lower costs. Furthermore, the development of refined financial instruments could enhance the private sectors' engagement. Importantly, how to integrate the role of carbon revenues with a higher degree of long-term certainty is crucial in light of the historical volatility of carbon prices.

3. Capacity building needs

Lack of technical and institutional capacity is perceived to be as major constraint to develop and implement PoAs. Some CFPs expressed the need for capacity building for PoA aspects such as i) the strengthening of communication channels between the CMEs and CFPs/DNAs ii) assessing the transition of PoAs to Article 6 (i.e. and resulting interactions e.g. on authorizing mitigation outcomes and performing corresponding adjustments) and iii) capacity building for local authorities to develop sectoral programmes, potentially in direct support of policy instruments that are designed to achieve NDC targets. This capacity building effort could be

facilitated through ensuring that PoAs are duly recognised in potential national Article 6 task forces or committees that are currently emerging alongside the establishment of institutional frameworks for Article 6.

CFPs mentioned the urgency of targeted and well-coordinated capacity building (including governance, monitoring and registry operation) that will help countries facilitate the transition of PoAs from the CDM to the Article 6.4 mechanism, while transitioning guidelines should not be overly complicated for PoA developers.

Some CFPs claim that the CDM EB's task of managing and incorporating new CPAs with clear and simpler requirements facilitated the inclusion of many CPAs under the CDM. However, the registration procedure required for PoAs and CPAs remains a major obstacle. The training of DNAs, government staff but also the private sector (including for service providers such as PoA-DD consultants and DOEs) in implementing countries can facilitate a more effective registration of future PoAs under Article 6.

Many countries are still in the infant stages of developing national Article 6 frameworks and identifying the institutional capacity requirements for the PoA transition and how this relates to their NDCs. Furthermore, it is important to note that throughout these interviews, several CFPs expressed lack of knowledge regarding the status of PoAs in their countries. This is likely due to the lack of continuity of projects and government staff that limited the inclusion of CPAs and PoAs but also to limited information on the topic.

The experiences shared by interviewees suggest that the uncertainty on the future of the CDM may have prevented substantial investments into capacity building efforts prior to finalizing the Article 6 Rulebook. After its completion, capacity-building activities and the provision of hands-on advice on how to implement PoAs could significantly enhance the transition of the concept and its future performance.

3.2 Insights From PoA Practitioners

In addition to the interviews carried out with government focal points, we also consulted a number of PoA practitioners. While the focus of the study was on gathering feedback from governments and therefore no similarly comprehensive and structured interviews were carried out, the discussion with PoA practitioners nevertheless offered relevant additional insights regarding the experiences made. PoA practitioners interviewed during the study include representatives from multilateral development banks (MDBs) that operate significant PoA pipelines as well as programme developers.

Practitioners confirmed the earlier described benefits such as the lowering of transaction costs and enabling the dissemination of micro-scale technologies with high development impacts, particularly in Africa and low-income regions. Innovative elements that were highlighted include the grouping of CPAs under a single monitoring report and sampling group, and the flexibility to accommodate different implementation schedules. Practitioners however also points to the prevailing barriers in the implementation of PoAs. These are on the one hand managerial: By nature, programmes involve numerous individual actors and require strong management capacity on the side of the CME. When PoAs include a large number of CPAs – each host to a large number of dispersed technologies – project management and MRV can become complex and require the implementation of strong data management systems. Because of operational challenges, some PoAs are "empty shells" or have a large number of registered CPAs that are idle in anticipation of future activities.

At the same time, practitioners also pointed to some regulatory challenges resulting from the PoA activity cycle. One such challenge lies in the artificial size limitation of CPAs, if PoAs are based on small-scale methodologies. This poses rather arbitrary restrictions on the way micro-scale activities can be aggregated. Other

practitioners challenged the "bundling philosophy" of the PoA even more fundamentally and suggested moving away from the need to validate small bundles of activities and to simplify the access to the PoA by individual units (as pioneered by the World Bank's Standardised Crediting Framework).

Finally, an issue that is of great relevance for the large part of PoAs in Africa, LDCs and SIDS is the calculation of emission reductions from the displacement of non-renewable biomass. As the emission reductions generated by technologies such as efficient cookstoves, water purification and biogas digesters largely derive from the displacement of charcoal and wood, how these emission reductions are calculated has ramifications on the financial viability of these technologies. Under the CDM, emission reductions are calculated based on an artificial baseline factor based on a mix of fossil fuels, due to the exclusion of avoided deforestation as a category under the CDM. This has led to a substantially lower amount of CERs than if the true emission factor of charcoal and firewood had been used, as pointed out by the African Group of Negotiators in the context of the CMP negotiations. In the transposal of the CDM methodologies to the Article 6.4 methodologies the treatment of non-renewable biomass can be reconsidered as Article 6.4 mechanism does not exclude land-use based activities. At the same time, practitioners have raised the concern of "inventory visibility", if reductions in the use of non-renewable biomass achieved from these interventions are not captured by national inventories due to missing data and granularity in the reporting methodology of the host country. This would be a concern if emission reductions are internationally transferred and corresponding adjustments are effected that are not backed by lower emissions in the inventories. In order to facilitate PoAs under Article 6 these methodological issues should be addressed with priority.

3.3 Stakeholder Recommendations

The results of the stakeholder interviews indicate that there is strong support for the PoA concept, while at the same time, significant adjustments are envisaged to align the experiences under the CDM with the new Article 6 quality principles and participation requirements. This section builds on the interview findings with country focal points and PoA practitioners. It then proposes recommendations to i) tackle the barriers withholding them from implementing PoAs and ii) objectively inform the negotiation process of the future of PoAs under Article 6.

Recommendation 1: Recognise the achievements of PoAs and build upon their successes in Article 6

Respondents mention that PoAs have achieved a successful optimisation of the relevant processes for the implementation of CPAs, which lowered the costs for verification. The achievements of PoAs are:

- Providing a suitable framework to address many distributed GHG emission sources and related abatement potentials, allowing to harness previously untapped mitigation potentials in e.g. rural regions in Africa.
- Complementing the mitigation outcomes achieved, PoAs deliver stronger and more evenly spread development impacts (compared to standalone CDM activities).
- Adopting a bottom-up approach with a programmatic framework structure for CPAs under PoAs.
- Including different CPA types (and thus technologies) under one PoA umbrella – especially micro-scale technologies facilitated the access to carbon finance for countries that previously did not manage to register CDM activities.
- Standardising the MRV process complemented with the flexibility to include different implementation schedules is seen as an innovative element.

A sizeable number of responses from practitioners highlighted the attractiveness of these PoA features. Article 6.4 and also Article 6.2 could benefit from the inclusion of successful elements of PoAs.

Recommendation 2: Address existing PoA limitations for successful uptake at scale under Article 6

Respondents claim that PoAs require a closer examination in several aspects namely:

- Ensuring that there is clarity on how a PoA-like framework will be operationalised under Article 6.
- Further improving the management and implementation of PoAs, including decreasing the validation and verification requirements.
- Ensuring that the processes continue to facilitate the aggregation and simultaneous monitoring of different technologies and multi-country CPAs under a single PoA.
- Strengthening the PoA framework to allow for the development of policy crediting approaches and financing facilities (fuelled by carbon finance) to complement the introduction of increasingly ambitious policies and regulations to cut GHG emissions.

These steps for criteria fulfilment and monitoring could be enhanced under Article 6 by i) implementing digitised PDDs, ii) standardising emission reduction calculation spreadsheets, iii) introducing more default parameters or standardising baselines.

Recommendation 3: Support the capacity building of relevant host country actors

Interviewees highlighted the lack of knowledge of national authorities and developers in understanding the complexities associated with PoAs. Also, DNAs or representatives at the host-country level could advise and provide the technical support required by project developers. A better understanding of these programmatic approaches could also help public sector actors unlock the necessary tools for a more engaged and efficient participation with project developers and relevant actors. Some of the key stakeholders still have a limited understanding of PoAs and the necessary processes that are required for their implementation. Additionally, several country focal points lacked awareness of the total number of PoAs in their countries.

Moving from PoAs to Article 6, it is essential to improve communication and coordination between CMEs and national climate change focal points, while developing their capacities. Many focal points approved PoAs but subsequently were not held up to speed on actual implementation and/or adding of CPAs. Climate change focal points express the need for capacity building to develop procedures for the regular provision of updates on implementation from CMEs to responsible entities.

Recommendation 4: Expand temporal scope and reduce bureaucracy

While the general perception of interviewees supports the claim that the PoA concept simplified processes, resulting in time and cost savings, some criticism prevailed regarding the complexity of the approach, bureaucratic effort and long timelines for CER issuance. When transitioning the PoA approach to Article 6, it should be seen as an opportunity to explore ways in which administrative steps can be reduced. This could be achieved through further simplification of processes and national crediting frameworks under Article 6 that ensure a timely issuance of carbon credits. For example, standardised templates, monitoring and verification steps can help simplify programmatic approaches for both national decision-making authorities and project developers who would find an additional incentive for involvement and investment if processes are a less heavy bureaucratic burden.

Recommendation 5: Review the needs of LDCs/SIDS and micro-scale activities

PoAs gave rise to micro-scale activities in the energy efficiency sector and enabled LDCs and SIDS to participate under the CDM mechanism. These activities were not only relevant for rural communities in low-income countries but also provided access to results-based finance, enabled through PoAs. Therefore, the PoA approach should be adequately reflected and strengthened under Article 6. For example, decisions to be made regarding the use and adjustment of methodologies and project cycles should be informed by a comprehensive review of the needs of LDCs/SIDS and micro-scale projects. The methodologies for the calculation of emission reductions should be reviewed in light of specific conditions in many PoAs in Africa, LDCs and SIDS.

4 Reform Options Under Article 6

This last chapter considers how the stakeholder recommendations identified above could find their way into the Article 6 Rulebook.

4.1 Integration of the PoA Concept in the Article 6 Rulebook

At the level of the Article 6 Rulebook, programmatic approaches are clearly established but with little operational details.

The Article 6.2 guidance does not contain any reference to PoAs, as it is not specifying instruments, but defines authorisation, accounting and reporting guidance for ITMO transfers. As cooperative approaches are developed and administered by the participating Parties, it is up to them to define the modalities of the crediting approach. The Article 6.2 guidance itself stays at a high level and only defines the principles that cooperative approaches have to meet. While programmatic approaches could therefore in principle get implemented under Article 6.2, how they would be operationalised lies outside the purview of the UNFCCC.

The Article 6.4 rules, modalities and procedures (RMP) are more similar in nature to the CDM modalities and procedures and define the steps of the project cycle that an Article 6.4 project activity has to undergo. According to paragraph 31.b, the activity "*may be a project, programme of activities or other type of activity approved by the Supervisory Body*", thereby anchoring the PoA concept in the Article 6.4 mechanism. However, the RMP do not expand on any differences between programmatic approaches and standalone project activities when it comes to the steps of the activity cycle such as baseline setting, crediting periods, validation and verification and neither do they mention the PoA specific step of including CPAs. Elaborating the details of the activity cycle falls under the mandate of the Article 6.4 Supervisory Body.

Another direct reference to PoAs in the RMP can be found in relation to the transition of CDM activities, where the Supervisory Body shall ensure that registered PoAs as well as small-scale CDM project activities undergo an expedited transition from the CDM to the Article 6.4 mechanism by prioritising their requests (paragraph 74).

In addition to the recognition of PoAs, the RMP also enable the use of standardised baselines (paragraph 37) and recognise suppressed demand in the development of mechanism methodologies (paragraph 33), both of which are important concepts in the operationalization of PoAs. Furthermore, paragraph 39 allows for the application of simplified approaches for demonstration of additionality for any least developed country (LDC) or small island developing State (SIDS) at the request of that Party. A final entry point for the consideration and enhancement of PoA rules may lie in the mandate to the Supervisory Body in the Article 6.4 Decision to "*consider ways to encourage participation by small and micro businesses in the mechanism, in particular in LDCs and SIDS*".

Curiously absent in the RMP is the recognition of simplified modalities and procedures for small-scale project activities, which had been adopted under the CDM. Compared to the CDM, the Article 6.4 mechanism is more technology-neutral and neither excludes any project categories nor does it positively distinguish small and micro-scale activities.

4.2 PoAs and the Work of the Supervisory Body

Given the high-level treatment of PoAs in the Article 6 Rulebook, the space where the rules for programmatic approaches will be defined and any reforms could be introduced is at the level of the Article 6.4 Supervisory Body (SB). Currently, the SB does not have a dedicated agenda item focusing on PoAs. However, several topics listed in the work plan of the SB for 2023 seem of relevance for the operationalisation of PoAs under Article 6.4. These are listed in Table 3 and concern the further elaboration of the activity cycle, the review of methodologies and the preferential treatment of LDC/SIDS and small and micro businesses.

Table 2: SB activities with potential relevance for PoAs in 2023

ACTIVITY	SB 004	SB 005	SB 006	SB 007	SB 008
Special circumstances of LDCs and SIDS	Concept				
Ways to encourage participation by small and micro businesses in the mechanism, in particular in the LDCs and SIDS	Concept				
Develop activity standards	Concept				
Develop activity cycle procedure	Concept and Draft	Final			
Develop validation and verification standard	Concept and Draft	Final			
Review CDM methodologies, standardised baselines, methodological tools and guidelines for application to the A6.4 Mechanism		Final	Final	Final	Final
Develop new (top-down) methodologies and standardised baselines		Final	Final	Final	Final

Source: Workplan of the Supervisory Body 2022–2023

4.3 Opportunities for Introducing Reforms Into the UNFCCC Process

Reforms to the PoA concept under Article 6.4 could either be introduced by the CMA as part of the CMA4 decision – or arise in the discussions of the SB. At this moment, no mandate exists for revisiting the rules of PoAs. Without an explicit initiative from either Parties or SB members, the current practice could simply be transferred to the Article 6.4 mechanism, as long as it is consistent with the RMP. Reforms such as those recommended by stakeholders would require a clear mandate. Given that relevant agenda items are scheduled for the first quarter of 2023, such mandate should ideally be given at COP 27. The mandate could include an invitation for Parties and registered observers to submit relevant reform proposals for programmatic approaches ahead of SB 005. It could also consist in a mandate to the SB from the CMA to carefully review the needs of LDCs/SIDS and micro-scale activities when deciding on issues related to methodologies and the activity cycle.