Joint OECD/IEA submission to UNFCCC, September 2016

Views on "guidance on cooperative approaches referred to in Article 6, paragraph 2, of the Paris Agreement" (FCCC/SBSTA/2016/2, para. 96)[1]

The Organisation for Economic Co-operation and Development (OECD) and the International Energy Agency (IEA) jointly welcome the opportunity to submit views on the ***"guidance on cooperative approaches referred to in Article 6, paragraph 2, of the Paris Agreement".*** This submission draws from a series of published reports of the Climate Change Expert Group (CCXG).[2] These papers should be referred to for more detail, are listed at the end of this submission, and are available at http://www.oecd.org/env/cc/ccxg.htm.

1. Introduction

1.1 Scope of this submission

This submission addresses issues related to guidance on robust accounting for internationally transferred mitigation outcomes (ITMOs) requested in Article 6.2 of the Paris Agreement, and is also relevant to discussions on how to account for any emission reductions resulting from the new Article 6.4 mechanism. It does not address the other elements of Article 6.2 (promoting sustainable development, ensuring environmental integrity and transparency, including in governance).

1.2 "Robust accounting" and "avoiding double counting" in the context of the Paris Agreement

Article 6.2 of the Paris Agreement states that:

> *Parties shall, where engaging on a voluntary basis in cooperative approaches that involve the use of internationally transferred mitigation outcomes towards nationally determined contributions […] apply robust accounting to ensure, inter alia, the avoidance of double counting, consistent with guidance adopted by the Conference of the Parties serving as the meeting of the Parties to this Agreement.*

Decision Paragraph 36 of 1/CP.21 (FCCC/CP/2015/10/Add.1) requests SBSTA to develop the guidance referred to in Article 6.2

> *…including guidance to ensure that double counting is avoided on the basis of a corresponding adjustment by Parties for both anthropogenic emissions by sources and removals by sinks covered by their nationally determined contributions under the Agreement;*

[1] Correspondence should be directed to Christina Hood, International Energy Agency, christina.hood@iea.org .

[2] The CCXG, formerly known as the Annex I Experts Group (AIXG), for which OECD and IEA provide a joint Secretariat.

In the Paris decision, "robust" accounting therefore includes, but is not limited to, avoidance of double counting. Robust accounting is needed to provide assurance that use of ITMOs does not undermine, and is not perceived to undermine, the overall objectives of the Agreement as well as individual Parties' mitigation contributions. For example, instances of double counting could damage the reputation of the Agreement and of carbon markets, as well as slow progress toward the long-term goal.

The concept of "robust accounting" may need to be defined to fit the context of the Paris Agreement. For example, the Kyoto Protocol was based on compliance with multi-year carbon budgets, and its accounting system was designed to support this. By contrast, under the Paris Agreement a wide range of nationally determined contributions (NDC) types (including single-year contributions) have been submitted by Parties, and Parties have no legal obligation to comply exactly with NDC targets. Parties will need to decide when developing the SBSTA guidance how important it is to account for internationally transferred mitigation outcomes (ITMO) use toward NDCs with a high degree of precision (i.e. to the last tonne, which could limit participation in ITMO activities to Parties with certain NDC types) or whether it is sufficient for the accounting framework to provide a less precise but representative picture of ITMO use (which could allow participation by a broader range of countries as hosts and buyers of ITMOs).

Avoidance of "double counting" is emphasised in the Paris Agreement and accompanying decision. There are a number of forms that double counting can take:

- **Double issuance**, i.e. the issuance of more than one carbon unit corresponding to an emission reduction. Clear rules in the systems issuing units are needed that ensure units are not issued for emission reductions already counted elsewhere.
- **Double selling**, i.e. a single unit being sold (and used) more than once for compliance. Avoiding this requires good (and well interlinked) registry systems that prevent "lost" units or fraudulent activity.
- **Double claiming** of emission reductions toward the NDC, for example, by the host country counting a reduction in inventory emissions within its NDC, and a purchasing country counting a corresponding greenhouse gas (GHG) unit towards its NDC.

Different provisions will be needed to avoid these different types of double counting. Regarding double claiming, decision 1/CP.21 paragraph 36 gives specific direction on how to avoid this, i.e. at the level of individual Parties ("on the basis of a corresponding adjustment by Parties" – although what this means in practice has not been clarified further). As has been explored in the previous CCXG work summarized in this submission, it will be complex to implement this provision given the range of NDC types that have been communicated. In contrast, double issuance and double claiming need to be addressed at the level of individual mechanisms or cooperative approaches, with sound registry standards and governance procedures to avoid double-issuance and double-selling of units.

A question for the SBSTA guidance on accounting is what level of guidance (if any) on mechanism-level emissions accounting (as distinct from UNFCCC NDC accounting) is needed to provide assurance that accounting within mechanisms is robust. Such guidance could, for example, require

that Parties report information describing how their mechanisms operate. This reporting could be part of the Article 13 biennial transparency framework, and therefore subject to technical review via that process.

1.3 What kinds of "co-operative approaches" could involve ITMOs?

Mitigation actions reduce or avoid greenhouse gas emissions. A mitigation outcome could in theory be expressed either directly in terms of GHG levels (e.g. tCO_2, tCO_2-eq) or indirectly in terms of non-GHG indicators (e.g. renewable energy capacity). A number of Parties have expressed NDC goals in terms of non-GHG indicators such as the non-fossil fuel share of energy supply, and the general accounting framework of the Paris Agreement (to be developed under Article 4.13) will need to accommodate these types of goals. However, in the NDCs, none of the Parties with non-GHG NDC goals have indicated an intention to trade with other Parties directly in terms of these non-GHG outcomes.[3] If this is the case, work on accounting guidance for use of non-GHG ITMOs toward NDCs could be deferred until a later stage. This submission deals only with GHG-framed ITMO transfers: the CCXG Publication *GHG or not GHG: Accounting for Diverse Mitigation Contributions in the post-2020 Climate Framework (2014)* explores accounting for non-GHG ITMOs.

In their NDC submissions, many Parties have expressed interest in participating in transfer of GHG units, through current or future carbon market mechanisms or via direct transfers. ITMOs expressed in terms of GHGs can be quantified in terms of tCO_2 or tCO_2-eq and could potentially include:

- Direct trade between NDC targets at government-to-government level
- Units from domestically-governed mechanisms:
    - Emissions trading system (ETS) allowance transfers between internationally linked systems
    - Units issued from baseline and credit systems and used internationally, whether or not there is a "market" for the sale of these units
- Units from the new Article 6.4 mechanism
- Units from existing UNFCCC mechanisms such as CDM or JI if these are continued

Figure 1 illustrates an example of potential types of flows of mitigation outcomes between two Parties that have a linked ETS and also a domestically-governed crediting mechanism issuing units. Units could potentially be issued in sectors or time periods inside or outside the scope of the NDC, and purchased by ETS companies or directly by government.

1.4 Relationship to general accounting provisions for NDCs under Article 4

Accounting principles under Article 6 will need to be developed in coordination with the principles for NDC accounting established under Article 4. For NDCs expressed in quantitative terms (e.g. a 30% reduction in GHG emissions compared to a reference), the methods to "account for" the NDC will

[3] Trade in non-GHG framed ITMOs could for example include clean electricity exports, or international trading of renewable energy or energy efficiency certificates.

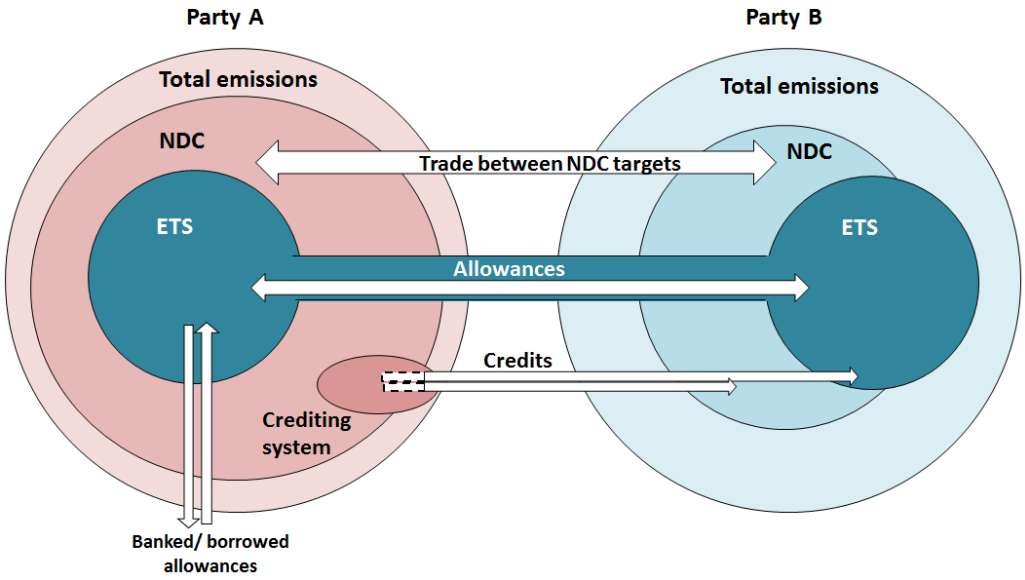
need to include a quantitative component. To be developed under the Article 4 work programme, this general accounting framework will follow the principles that *"In accounting for anthropogenic emissions and removals corresponding to their NDCs, Parties shall promote environmental integrity, transparency, accuracy, completeness, comparability and consistency, and ensure the avoidance of double counting".*

The accounting framework will need to address:

- "**What to count**" e.g. agreement on common indicators (e.g. tCO_2-eq and/or counting of individual gases separately), use of common IPCC methods , or agreement on how to "translate" one type of indicator (e.g. renewable energy capacity) into another (e.g. tCO_2-eq)
- "**How to count**", that is, providing a methodology to enable comparison of actual performance in the target year/period with the NDC target level. This would include
    - Establishing a process for how to combine information on emissions, removals and the target level to determine performance compared to the target level.
    - Methodologies for quantification of the target level for different NDC types.
- "**When to count**", i.e. whether accounting will be a routine part of biennial reporting, or be undertaken only after the end of the NDC target year/period.

This general accounting framework will cover a number of issues that are also highly relevant to Article 6.2, including: how to deal with single-year NDCs while maintaining environmental integrity (e.g. avoiding one-off fixes such as scaling back industrial production in target year, or how to deal with significant natural variability like hydro-electricity output); whether and how to provide for banking and/or carry-forward of over-achievement; and how to ensure methodological consistency for NDCs (e.g. provisions covering updating of BAU targets).

Figure 1. Potential flows of mitigation outcomes that cross NDC boundaries



Source: Adapted from Prag, Briner and Hood (2012), "Making Markets: Unpacking Design and Governance of Carbon Market Mechanisms"

Certain technical elements from the Article 4 discussions may need to be developed in more detail under the Article 6.2 process. For example, if Parties wish to trade directly between NDCs targets government to government (rather than trading via mechanisms such as ETS or crediting systems), then quantification of the NDC is particularly important, and technical issues will arise such as how to define base year emissions (whether to "fix" this or leave it open to inventory revisions), or how to adjust base year and target emission levels if there are changes in inventory methodologies or metrics.

2. Avoiding double claiming of ITMOs

2.1 Information needs to underpin accounting for ITMOs

Robust accounting for ITMOs would enable aggregation of emissions, removals, and ITMOs comparison with the NDC target level. Accounting that prevents double claiming of outcomes towards NDCs needs certain inputs:

- A regular, robust GHG inventory undertaken with a common IPCC methodology (via Article 13 biennial reports or annual national inventory reports and associated common tabular formats)
- Annual information on ITMO activity (reported under the transparency framework to be developed under Article 13)

The NDCs that Parties have submitted cover different sectors and timeframes. Some co-operative mechanisms generating ITMOs are likely to operate in sectors and/or time periods outside the scope of an NDC[4] and units could be traded into an NDC's boundary[5]. For robust accounting in the NDC target sector and year/period, it is therefore important that all Parties engaged in cooperative approaches involving ITMOs, whatever their NDC type, provide regular information on ITMO activity in all years and for ITMO activity both within and outside their NDC boundary. This would, for example, involve reporting of transfers, banking, issuance and retirement of units.

For Small Island Developing States (SIDS) and Least Development Countries (LDCs), some of whom have NDCs framed in terms of GHG units and may wish to participate in ITMOs as a host country, regular reporting to establish a time series on ITMO activity would be important for robust accounting, even if their full national inventories are less frequent.

[4] For example, an emissions trading system could operate continuously even if the country's NDC is only for a single year.

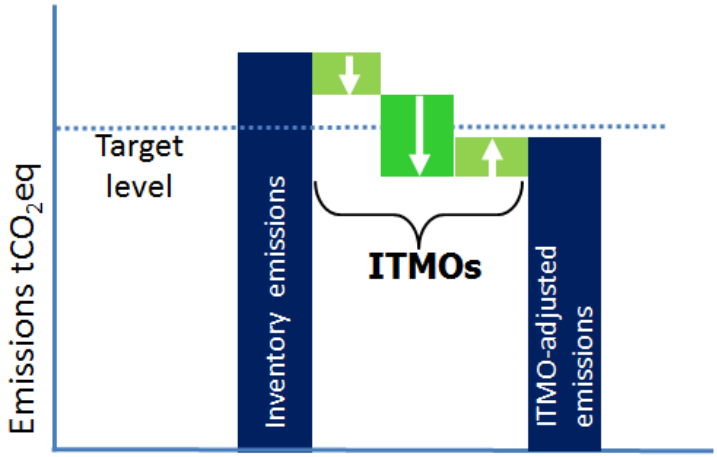
[5] Either within a country (from a time period or sector not covered by the NDC), or internationally.

The use of common metrics and IPCC methodologies for national inventories (as specified in Decision 1/CP.21 paragraph 31) is particularly important for Parties involved in trade of ITMOs, so that there is a common definition of a tonne traded.[6]

2.2 Corresponding adjustment

*A*ccounting for ITMOs is possible in the absence of a Kyoto-style AAU-based accounting system. Conceptually, accounting starts with the inventory emissions within the scope of the NDC, then adds/subtracts tCO_2-eq based on ITMO activity to give an ITMO-adjusted emissions level (Figure 2). In the target year/period, the ITMO-adjusted emissions can then be compared to the target level. It should be noted that accounting is not the same as compliance: the accounting system here provides information on emission levels after ITMOs are taken into account and information on achievement compared to the target level; it does not ensure that the target level is delivered.

Figure 2. Conceptual illustration of accounting for ITMOs.



Source: Adapted from Prag, Hood, Aasrud and Briner (2011), "Tracking and Trading: Expanding on Options for International Greenhouse Gas Unit Accounting After 2012"

In this approach, the "corresponding adjustment" is that the two Parties involved in the transfer would add or subtract the same quantity of tCO_2-eq in moving from inventory to ITMO-adjusted emissions.[7] While the focus under the Paris Agreement will be on emissions/removals and ITMOs within the boundary of each country's NDC, it is also important to track ITMO activity outside the boundary of the NDC (those issued in non-NDC sectors, or in non-target years). An ITMO could fall within the NDC of one Party and not the other, so to maintain "robust" accounting in light of such trading it would be important for Parties to report in both NDC and non-NDC sectors.

[6] That is, one tonne of CO_2eq added/subtracted under corresponding adjustment in the accounting process is the same quantity for buyer and seller.

[7] Complications arising from varying NDC types will be considered in later sections.

There are two main ways of "counting" ITMO activity, which are mathematically equivalent:

1. counting issuances and retirements of all units that can be used internationally, or

2. counting net transfers of units across the NDC boundary (i.e. international transfers and banking).

Accounting only at the time of use (i.e. retirement of units) would cause complications if mitigation outcomes can be banked, as has typically been the case in market mechanisms. If units are not accounted for by the host Party at the time of issuance, there could be a misleading impression given of that Party's achievement against its NDC in the short term. Secondly, the host Party would need to account for exported units that are used later: this means that the host country's future NDC achievement would be dependent on the actions taken by other countries. This could be impractical for host countries seeking to manage delivery of their NDCs.

Accounting guidance will need to indicate *when* the accounting should take place. One option would be for this to be done after the end of the target year/period only. Alternatively, Parties could account on an ongoing basis as part of the biennial transparency framework, presenting a time series of both inventory and ITMO-adjusted emissions (inside and outside the NDC sectors). In the information reported following the end of the NDC target year/period, the accounted emissions could then be compared to the NDC target. This information could be reviewed under the provisions of the Article 13 transparency framework.

An important complication in making a "corresponding adjustment" is the limited coverage and lack of granularity in national inventories: if an emission reduction from a project that generates credits is not reflected in the national inventory because of lack of granularity or exclusions[8] then there is no double-counting between host and buyer, even without corresponding adjustment.

2.3 Corresponding adjustment with single-year targets

Many of the Parties that have expressed interest in their NDCs in participation in activities involving ITMOs have NDC targets for a single target year, rather than a continuous period. The Article 4 accounting work programme will need to ensure that accounting for single-year NDCs in the target year provides a representative picture of the Party's level of achievement. Specific issues include, for example, guidance to deal with one-off measures to reduce emissions in a single target year or with natural variations that cause significant inter-annual shifts (e.g. variations with weather). For natural variations, the accounting framework could take two approaches: either to consider the actual target year information and then have Parties explain whether it reflects (or not) general trends, or Parties could be asked to submit more representative average values.

[8] E.g. removals from certain forestry projects that do not meet the "forest" definition of the accounting framework.

Accounting for single year targets is even more complex when dealing with ITMOs traded from other time periods and used toward a single-year NDC target. As with general issues around single-year targets, environmental integrity would be enhanced if the ITMO activity counted in the target year is representative of ongoing activity, rather than one-off.

GHG or not GHG: Accounting for Diverse Mitigation Contributions in the post-2020 Climate Framework (2014) explored an option for how *ongoing* activities (e.g. ETS unit retirements that happen annually, crediting system that issues steadily every year, government purchase programme that purchases every year etc.) could be treated, for both hosts and buyers, to provide a representative picture in a single target year. Analogously to managing natural variations, the target-year information could be made representative by using average values (e.g. smoothing over the compliance cycle of an ETS). It could be more challenging for *one-off* actions taken only in target year (e.g. one-off government purchase for target-year compliance only) to be seen as representative of ongoing activity.[9] Note that a single host-buyer relationship could be *ongoing* for one Party (e.g. issuing units annually) and *one-off* for the other (e.g. one-off purchase of units for target year).

Neither of these situations provides a precise accounting of all ITMO activity to the last tonne. This has led some to argue that truly "robust" accounting is only possible between countries with multi-year carbon budget type NDCs. While the accounting is more precise in this case, the use of ITMOs under Article 6.2 would be limited to the very small number of Parties with NDCs of this type. This could create a disincentive to linking emission trading systems internationally (or participating in other types of ITMO transfer) for Parties with other NDC types, as the traded units would not be able to be counted toward NDCs.[10] Even if ITMO use under Article 6.2 were limited to Parties with multi-year carbon budgets, participation in unit transfers within single-year NDC targets would still arise under a new Article 6.4 mechanism (particularly for host countries), and it will therefore still be necessary to develop accounting guidance for this situation.

2.4 Corresponding adjustment with BAU and intensity targets

NDCs that are expressed as a reduction against business as usual (BAU) trends, or in terms of emissions intensity improvement, have intrinsic ex-ante uncertainty over the eventual target-year emission level if the BAU trajectory or the target are revised, and because actual GDP can be different than forecast.

If the accounting guidance for ITMOs is based on ex-post comparison of ITMO-adjusted emissions with the target level, then the accounting process itself is not mathematically difficult: the target can be easily quantified ex-post based on actual parameters. The question rather is how much ex-ante confidence in the target level is needed for accounting to be considered robust, and why.

[9] Lazarus, Kollmuss and Schneider (2014) propose this could be done by defining a linear trajectory from base to target year, and retiring additional units against this trajectory.

[10] Conversely, if Parties have a strong desire to participate in carbon markets, this restriction could be seen as an incentive for countries to adopt emission-budget type NDCs.

Carbon markets need a clear understanding of system caps (i.e. the quantity of units to be issued) to function well. This was one motivation for the Kyoto Protocol's approach of fixing carbon budgets ex-ante. There may also be concerns that if Parties do not know their target ex-ante they might oversell units and end up not achieving their NDC if they expected a surplus that did not happen due to revision of the target.[11]

Further work is needed on the implications of forward-visibility of NDC target levels for robust accounting. As a first step a distinction could be drawn between ITMO trades associated with a mechanism (e.g. an ETS with its own robust cap which has ex-ante certainty) compared to direct government selling (like AAU trading under the Kyoto Protocol). For mechanisms with environmental integrity[12], any net export of surplus units traded internationally will be matched by corresponding inventory emission reductions, so allowing these trades would not leave the host government out of compliance. Direct trades by governments from the NDC target have no such guarantee. However there is a potential grey area as mechanisms could be established as a vehicle to sell "excess" emissions under NDC targets.

2.4 "AAU" type trading between NDCs vs trading between mechanisms

As noted above, direct government to government trading within NDC targets (analogous to AAU trading under the Kyoto Protocol) could be seen as risky with BAU target types, single-year targets and where there is lack of inventory information. One interpretation could therefore be that direct government-to-government trading of this type can only be fully robust (i.e. does not undermine emissions outcome compared to not using units) between Parties that have absolute multi-year targets. For Parties with a single-year or non-absolute NDC, the accounting guidance will need to consider how to mitigate these concerns. For example, if a Party with a single-year NDC wants to make a one-off purchase for the target year, the accounting guidance should consider how to ensure that a fair and representative picture is still given in the target year.[13]

Conversely if trading is via mechanisms such as ETS or crediting systems, then it is the parameters of these systems themselves rather than the NDC itself that are important. [14] For assurance that accounting is robust, the mechanism would need:

- Its own accounting and systems to be robust (avoid double issuance, double selling, etc.)
- To operate in a continuous manner (avoiding "one-off" actions in the NDC target year)

[11] Note that even with an absolute fixed-level NDC, emission levels can be different than expected: under the Kyoto Protocol the commitment period reserve required Parties to hold enough units to avoid overselling units and risking noncompliance, even with a fixed cap.

[12] For example an ETS with a binding cap or a baseline-and-credit system with an ambitious baseline

[13] For example, Lazarus, Kollmuss and Schneider (2014) propose this could be done by defining a linear trajectory from base to target year.

[14] Here the mechanism provides the annual cap or baseline, not the NDC.

- To have good MRV/compliance provisions, so that there is confidence caps and baselines are respected

Whether trading is directly between NDCs or via mechanisms, Parties would need to be up to date with inventory and ITMO reporting to enable robust accounting.

2.6 Banked surpluses

Although Article 6.2 does not make specific reference to banked units, the requirement for "robust" accounting mean that if units transferred are from previous NDC periods (or to future NDC periods), this will need to be considered as part of the Article 6.2 accounting guidance. This is a particular issue for units arising from ETSs, as these systems allow participants to bank units for future use.

There may be concerns about banking and subsequent sale of "surplus" units that correspond to weak NDC targets that are over-achieved. Questions that could be considered in addressing such a concern include 1) whether there is scope to distinguish carry-forward associated with trading mechanisms (such as ETSs) operating under their own robust rules from direct banking of NDC overachievement, 2) whether the sale of carried-forward surplus could be limited, as under the Kyoto Protocol, or 3) what role buyer integrity might play.[15]

3. Registries

The CCXG publication *Tracking and Trading* (2011) explored the pros and cons of centralised and peer-to-peer registry systems. Centralised systems comprise a central hub connecting registries, such as the Kyoto Protocol registries linked by the International Transaction Log, while peer-to-peer registries are linked bilaterally (Figure 3). There are many advantages to centralised systems in terms of security and tracking of all transactions to ensure that units are unique; in peer-to-peer systems, security is only as good as the "weakest link", and only aggregate information would be reported to the UNFCCC (so it would be more difficult for outside observers to be confident that units are unique).

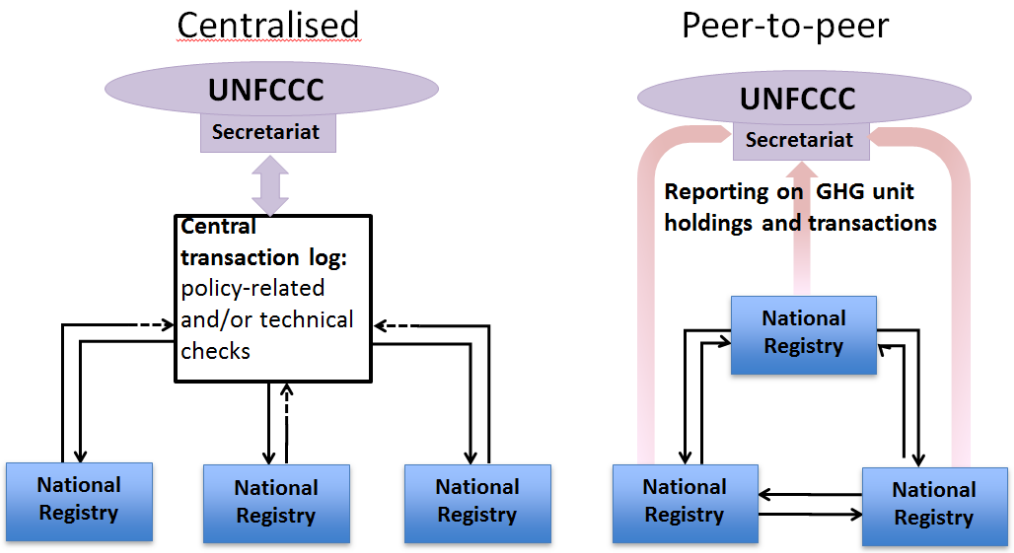
However some Parties may not wish to link their mechanisms' registries to a central hub, given the wide variety of NDC types and planned implementation policies. In this case, the accounting guidance will need to cover the information that needs to be reported from these registries to enable NDC accounting (e.g. issuances, retirements, transfers, holdings), but also what information might need to be reported on the registry system itself to provide assurance to others that the accounting is robust.

A Party may be involved in multiple mechanisms, e.g. bilateral trading under Article 6.2, and the Article 6.4 mechanism. If independent registries are used for each one of multiple activities,

[15] A group of 18 nations made a declaration in the sidelines of COP21 regarding environmental integrity of market use, and this might be the type of issue addressed by such a group. The G7 Carbon Markets Platform may also address such issues.

accounting for ITMOs would be more complex. An important question for SBSTA will be what types of units could or should be transferred via and/or housed within a centralised or common registry system, and which could be housed and transferred via independent peer-to-peer registries, even if all these units are being counted towards NDCs. One helpful element may be for any units that can be used toward NDCs to have a common serial number system, so that even if information is held within peer-to-peer registries with only net information reported to UNFCCC, there is assurance over the uniqueness of the units themselves in individual transactions.

Figure 3. Centralised and peer-to-peer registry structures



Source: Adapted from Prag, Hood, Aasrud and Briner (2011), "Tracking and Trading: Expanding on Options for International Greenhouse Gas Unit Accounting After 2012"

4. Conclusions

Robust accounting for NDCs using ITMOs is founded on a basis of reporting of:

- National greenhouse gas inventories: regular and with a common definition of tCO_2eq
- Information on annual ITMO activity (issuances and retirements, transfers)

With this information, Parties can generate a time series of ITMO-adjusted emissions, which can be compared to the NDC target level in the target year/period. For NDCs expressed in quantitative terms, quantification of the NDC would be needed in order to compare ITMO-adjusted emissions to the NDC target level.

For ITMOs arising from national or regional mechanisms with continuous multi-year operations – such as emissions trading systems – Parties may seek confidence that system-level accounting is robust. One approach to address this would be through reporting of information on how the system avoids double issuance or double selling, and on its MRV/compliance arrangements. If reported as part of the Article 13 process, this information would be subject to technical review.

Robust accounting on a tonne-for-tonne basis is possible between Parties with absolute multi-year emission caps, however few NDCs are of this type. In the absence of this precise accounting, environmental integrity would be enhanced if the level of ITMOs accounted in single-year NDCs is "representative". For Parties with single-year NDC target but using ITMOs arising from a continuous mechanism, one possibility would be to account for ITMOs in the target year by using an average value (e.g. smoothing over the compliance cycle of an ETS).

On the other hand, accounting robustly for one-off government to government trade (analogous to AAU trading under the Kyoto Protocol) where one or both Parties has a single-year NDC would be more challenging. Accounting guidance will need to consider how to ensure that ITMO use in this context gives a representative picture of achievement. For non-absolute NDCs (which are not known precisely ex-ante), there may also be concerns about this type of trading leaving the host government unable to fulfil its NDC.

A further issue for SBSTA to consider is how the design of the accounting framework could affect broader considerations e.g.

- What incentives are created to participate in (or avoid) use of international carbon markets, particularly for countries with lower capacity?
- What incentives are created to move (or avoid moving) to greater NDC coverage of sectors over time?
- What are the incentives to move (or avoid moving) to multi-year NDC targets over time?
- Does the accounting approach lead to the atmosphere seeing more or less emissions (in the short and longer term)?
- How much ex-ante clarity is provided on expected emissions levels? Does the ITMO use add uncertainty?
- How use of ITMOs relates to the aim in Article 2.1c of the Paris Agreement of making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development?

Work to date on ITMO accounting has not focused on the issues of incentives, and this is an area where further work is needed.

References

These papers are available at http://www.oecd.org/env/cc/ccxg.htm :

1. Hood, C., G. Briner and M. Rocha[16] (2014), "GHG or not GHG: Accounting for Diverse Mitigation Contributions in the post-2020 Climate Framework", *OECD/IEA Climate Change Expert Group Papers*, No. 2014/02, OECD Publishing, Paris. DOI: http://dx.doi.org/10.1787/5js1qf652kd3-en

2. Prag, A., C. Hood and P.M. Barata[17] (2013), "Made to Measure: Options for Emissions Accounting under the UNFCCC" *OECD/IEA Climate Change Expert Group Papers*, No. 2013/01, OECD Publishing, Paris. DOI: http://dx.doi.org/10.1787/5jzbb2tp8ptg-en

3. Prag, A., G. Briner and C. Hood (2012), "Making Markets: Unpacking Design and Governance of Carbon Market Mechanisms" *ECD/IEA Climate Change Expert Group Papers*, No. 2012/03, OECD Publishing, Paris. DOI: http://dx.doi.org/10.1787/5k43nhks65xs-en

4. Prag, A., C. Hood, A. Aasrud and G. Briner (2011), "Tracking and Trading: Expanding on Options for International Greenhouse Gas Unit Accounting After 2012" *OECD/IEA Climate Change Expert Group Papers*, No. 2011/05, OECD Publishing, Paris. DOI: http://dx.doi.org/10.1787/5k44xwtzm1zw-en

5. Briner, G., and S. Moarif (2016), "Unpacking provisions related to transparency of mitigation and support in the Paris Agreement", *OECD/IEA Climate Change Expert Group Papers*, No. 2016/02, OECD Publishing, Paris. DOI: http://dx.doi.org/10.1787/5jlww004n6nq-en

6. Briner, G. and A. Prag (2013), "Establishing and Understanding post-2020 climate change mitigation commitments", *OECD/IEA Climate Change Expert Group Papers*, No. 2013/03, OECD Publishing, Paris. DOI: http://dx.doi.org/10.1787/5jzb44qw9df7-en

Readers are also referred to the joint OECD/IEA submission made in March 2012, available at http://unfccc.int/resource/docs/2012/smsn/igo/74.pdf.

Other papers referred to in this submission:

1. Lazarus, M., A. Kollmuss and L. Schneider (2014) "Single-year mitigation targets: Uncharted territory for emissions trading and unit transfers", SEI Working Paper No. 20014-01, Stockholm Environment Institute.

[16] Fabrica Ethica Brasil

[17] Get2C