

Meeting: International Public Sector Accounting
Standards Board

Meeting Location: Toronto, Canada

Meeting Date: December 8–11, 2015

Agenda Item 9

For:

Approval

Discussion

Information

Emissions Trading Schemes

Objectives of Agenda Item

1. The objective of this session is to provide direction on development of an Emissions Trading Schemes consultation paper.

Materials Presented

Agenda Item 9.1	Issues Paper
Agenda Item 9.2	Draft Background Paper
Agenda Item 9.3	Description of Accounting Options

Actions Requested

2. The IPSASB is asked to discuss the issues identified and provide direction for development of the Emissions Trading Schemes consultation paper.

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Objectives of this Paper

1. This paper identifies issues for development of a consultation paper (CP) on accounting for Emissions Trading Schemes (ETs). Staff seek direction from the International Public Sector Accounting Standards Board (IPSASB) on these issues.

Background

2. The ETS project was activated in September 2014. Staff received direction on development of the CP in March, June and September 2015. In September IPSASB members directed staff to:
 - (a) Continue to work closely with International Accounting Standards Board (IASB) staff to develop a coherent accounting approach that reflects the economic substance of transactions from both administrator and participant perspectives;
 - (b) Revise a draft description of ETS public policy objectives, alternative interventions to reduce emissions and their economic impacts so that it becomes a background paper that can inform consideration of administrators' and participants' accounting; and
 - (c) Develop the accounting approaches discussed in September to support the IPSASB's identification of a preferred treatment, and identify any further approaches arising from IASB discussions.
3. The Task Based Group (TBG) consists of Angela Ryan, Aracelly Mendez, Fabienne Colignon (Conseil de Normalisation des Comptes Publics (CNOCP)) and Martin Koehler (European Commission (EC)).

Collaboration with IASB Staff and Recent IASB Developments

4. Development of the CP involves collaboration between IPSASB and IASB staff. The IASB project is now named the "Pollutant Pricing Mechanisms" (PPMs) project, but remains focused on ETs. The IASB discussed PPM issues in June. An education session occurred in October.

Overview of Issues

5. This paper requests the IPSASB's direction on the following issues:
 - (1) IPSASB project's approach, given recent IASB project developments;
 - (2) Draft background paper ETS public policy objectives (agenda item 9.2); and
 - (3) Description and evaluation of accounting options and linkage between economic impacts and accounting treatments (agenda item 9.3).

Issue 1: IASB Developments and IPSASB Project Timing

6. This issue asks the IPSASB to consider recent IASB developments with respect to its PPM project and consider possible impacts for the IPSASB's ETS project.
7. At the IASB's PPM education session in October several IASB members noted links between the PPMs project and the IASB's Conceptual Framework exposure draft (ED)¹, which discusses definition and recognition of elements. Since that discussion IASB staff have indicated that next steps for the PPM project are linked to Conceptual Framework developments and, specifically, responses to the ED, where the deadline for responses is 25 November 2015². IASB staff plan to provide an analysis of responses to the IASB in the first quarter of 2016. A high-level understanding of implications for liability recognition, sufficient for input into the IASB's consideration of PPM accounting alternatives may be available earlier.

IASB's Next Discussion in First Quarter of 2016

8. In September, the IPSASB noted that collaboration between IPSASB and IASB project staff could extend the project timetable. The IPSASB emphasized the desirability of a coherent accounting approach that reflects the economic substance of transactions from both the ETS administrator's and participants' perspectives. A critical issue then, for the IPSASB project, is the timing of IASB decisions on accounting options to include in its discussion paper.
9. The IASB does not plan to discuss its PPM project in November or December 2015. The next IASB PPMs discussion has not been confirmed, although it could occur in either January or February 2016. Given the link with its Conceptual Framework project it is possible that the IASB will not firm up its PPM accounting options until mid-2016 and possibly later.

Options Considered by Staff and TBG between Meetings

10. In response to this new information on IASB developments, the TBG considered the following three options for ETS project continuance:

Option 1—IPSASB ETS discussions continue: ETS discussions would occur in March and June. Aim to issue the CP in mid-2016, although this risks the IPSASB's CP not including all of the accounting options discussed in the IASB's discussion paper. Alternatively, timing of the IPSASB's CP could be reviewed on an on-going basis as IASB progress occurs.

Option 2—Defer IPSASB ETS discussions until September 2016: Meanwhile IPSASB staff and the TBG would continue to work on ETS accounting issues, continue to monitor IASB developments and provide input to those, where appropriate. Brief progress reports could be provided to the March and June IPSASB meetings. The IPSASB project would remain active.

Option 3—Temporary halt to IPSASB project: Place IPSASB ETS project in abeyance until the IASB's discussion paper has been issued. IPSASB staff would continue to monitor IASB progress. Some collaboration between IPSASB and IASB staff could occur, if IPSASB staff resources allow for this.

¹ IASB (2015) ED/2015/3, *Conceptual Framework for Financial Reporting*

² The ED's original deadline for comments was 26 October. In September, the IASB revised this to 25 November 2015.

Recommendation—Option 1, Continue IPSASB ETS Discussions

11. TBG members expressed strong support for Option 1, which is to continue IPSASB's ETS discussions in March and June. Option 1 benefits include that the IPSASB will be in a position to:
 - (a) Build on the foundation of the IPSASB's 2015 discussions and maintain the project's momentum;
 - (b) Provide direction to IPSASB staff for on-going collaboration with IASB staff; and
 - (c) Extend and deepen understanding of the economic substance of different types of ETSS, and alternative government interventions (e.g. carbon taxes), while also considering, in more depth, examples of country experiences with emission reduction interventions.
12. Point (c) above is linked to proposals, discussed under Issue 2, for:
 - (a) Further development of the draft background paper (agenda item 9.2); and,
 - (b) Transforming this background paper into a joint IPSASB–IASB paper.
13. TBG and staff see an opportunity to widen the IPSASB's consideration of ETSS, and thereby strengthen the CP. There may also be an opportunity to engage more directly with the IASB with a view to building an agreed dual-board view on the economic impact of ETSS for both ETS administrators and participants. Other factors to consider are:
 - (a) Extent to which the IPSASB's considerations could influence IASB developments;
 - (b) Whether the IPSASB CP, if developed earlier than the IASB's paper, could focus either exclusively on administrator accounting or propose views on both administrator and participant accounting independently of IASB accounting options;
 - (c) The extent to which symmetry between the administrator's and participants' accounting is a necessary consideration when developing the administrator's accounting.

Actions Requested:

1. The IPSASB is asked to:
 - (a) Note that the IASB's equivalent "Pollutant Pricing Mechanisms" project's next steps are linked to IASB Conceptual Framework developments; and
 - (b) Confirm the recommendation (Option 1) to continue IPSASB's ETS discussions in March and June.

Issue 2: ETS Public Policy Objectives—Background Paper

14. This issue asks IPSASB members to consider Agenda item 9.2, a draft background paper on governments' public policy objectives for ETSs. This paper is a work-in-progress, and staff request direction from the IPSASB for the paper's further development.
15. Agenda item 9.2 is based on the draft description that the IPSASB considered at its September 2015 meeting³. Its aim is to support consideration of ETS accounting issues, by describing governments' public policy objectives when developing an ETS, the other types of interventions that governments could also use to reduce emissions, their different economic impacts, and implications for ETS accounting.
16. In September, the IPSASB directed staff to revise the draft description and develop it into a background paper which could, potentially, be a resource for both the IPSASB and the IASB. The TBG received an earlier version of this paper. Based on comments received and discussions with the TBG, staff have re-ordered and extended the draft paper.

TBG Proposal—Further Development and Joint IPSASB–IASB Paper

17. After reviewing an earlier version of agenda item 9.2, the TBG considered proposals on further development of the background paper. These proposals are provided in Appendix B. In brief, the paper's further development would:
 - (a) Widen and deepen the descriptions of different types of ETSs;
 - (b) Extend the descriptions of other types of government interventions that reduce emissions and include comparisons between ETSs and other, alternative interventions; and
 - (c) Provide descriptions of a range of different countries' interventions to reduce emissions.
18. Given TBG support for these proposals, staff have developed the background paper along the lines indicated and highlighted areas for further development. If IPSASB approves the general direction indicated the paper would be developed further along those general lines, while also taking into account any specific IPSASB directions received at this meeting. The paper would then be brought back for consideration by the IPSASB when it next discusses ETS issues.
19. In addition, the following process for the background paper's development was proposed:
 - (a) IPSASB and IASB staff work together on the paper's development; and
 - (b) Both boards—IASB and IPSASB—review the draft paper, as part of its development and/or as a meeting paper for discussion of ETS (PPM) economic impact and their implications for financial reporting; and
 - (c) Possible publication of the background paper as a joint IASB–IPSASB paper.

IASB Staff View on Joint Paper Proposal

20. Staff have discussed the idea of a joint paper with the IASB staff. They have indicated that, if a joint paper were to be developed, it would need to be very concise. The descriptions of different types of government interventions should focus on:
 - (a) The main categories of government interventions;

³ See Appendix C of the IPSASB's September agenda item 11.1.

- (b) Common characteristics between the interventions, focusing on characteristics relevant to accounting treatment; and
 - (c) Differences that are directly relevant to accounting treatments.
21. The joint paper should not aim to provide a comprehensive description that attempts to capture all factors relevant to achievement of any public policy objectives.
22. IASB staff received an earlier version of the background paper in September, before the IASB's October education session on PPMs, and the idea of exploring governments' policy objectives to understand the intended economic impacts of ETSs was raised by IASB staff. The IASB indicated support for monitoring IPSASB developments. IASB members also asked about the main differences between a cap-and-trade ETS and other interventions, e.g. baseline-and-credit ETS, carbon taxes and other pollutant pricing mechanisms.

Staff Document Initially—Later Decision on Formal Publication

23. Staff recommends that, if the IPSASB supports development of a joint IPSASB–IASB paper, then the paper should be treated initially as a staff paper that will inform both boards' consideration of ETS accounting options, as discussed at the September 2015 IPSASB meeting. The two boards may decide subsequently that there are benefits from formal publication of the paper. A joint decision on publication would arise from both boards' consideration of that issue, in light of their different policies and experiences with respect to issuance of documents.

Some Issues Raised by the Development Proposals

24. Staff note the following subsidiary issues with respect to further development of the background paper along the general lines indicated above:
- (a) What interventions should be discussed?
 - (i) The IPSASB background paper presently focuses on command and control; results based financing, carbon taxes and ETSs.
 - (ii) There are indications that the types of intervention under consideration by IASB staff for the PPMs project are; ETSs; Kyoto's Clean Development Mechanism (CDM) and similar incentive schemes; carbon-capture type schemes; and, carbon taxes or levies.
 - (iii) World Bank reports on carbon pricing instruments also identify "joint implementation", "new market-based mechanisms" and "frameworks for different approaches", as well as interventions outside of the UNFCCC, for example, voluntary carbon markets, initiatives related to deforestation, results-based financing, and developments with respect to international aviation.
 - (b) If international initiatives are discussed separately from national and subnational initiatives, should they be described first, on the basis that they provide the framework for national initiatives? (The Kyoto Framework has implications for national interventions generally, while the EU-ETS has implications for EU nations and, as illustrated by the example of Switzerland, potential to influence what is done in non-EU nations.)
 - (c) Should the paper discuss use of a mixture of different interventions and discuss the economic impact of this type of approach? (See, for example, agenda paper 9.2's summary descriptions for South Africa and Switzerland, which illustrate the use of several different interventions in a single jurisdiction.)

- (d) Should one or more of the interventions be dealt with in either more depth or less depth?
 - (e) Should comparisons with respect to economic impact focus on real-world examples (e.g. a comparison between the economic impact using four example countries, each of which primarily uses one main intervention (e.g. Australia—results-based funding, and, New Zealand—ETS); on simplified illustrative examples, or a mixture of both real world and simplified examples?
25. Staff recommend that the list of interventions should be kept focused on major categories that apply to most entities, rather than attempt to discover and address subcategories and specific variations⁴.

IPSASB's Direction on Paper's Development—Specific Points

26. Staff seek IPSASB members' comments on the two proposals and the paper's indicative revisions. In particular the IPSASB is asked:
- (a) Whether it supports the proposed:
 - (i) Broad direction for the paper's content and structure; and
 - (ii) Shared IPSASB–IASB development and ownership of the background paper.
 - (b) Whether it agrees that the paper should have a:
 - (i) New order for the descriptions of interventions, so that ETs are discussed last;
 - (ii) In-depth coverage for all four interventions, including descriptions of country specific examples for each type of intervention;
 - (iii) Remain focused on the main interventions and characteristics relevant to development of accounting options; and
 - (iv) Exclude coverage of accounting options, which would be in a separate paper.

Actions Requested:

2. The IPSASB is asked to provide direction on the draft background paper (agenda item 9.2), and indicate whether the paper should be:
- (a) Developed as proposed in Appendix B, including the specific points highlighted in paragraph 26(b) above; and
 - (b) Turned into a joint IPSASB–IASB paper with staff from both boards contributing to and reviewing the paper's development.

⁴ Staff have been informed that, for example, China's development of different ETs applies the approach used for the EU ETs, with some relatively minor differences in the different ETs there. A recent World Bank report identified at least 11 kinds of offset mechanism. However, CDM and JI are the main ones, and they account for over 92% of the mechanisms used in practice. Other offset mechanisms are based on them with only minor changes.

Issue 3: Accounting Options and Economic Impacts

27. Issue 3 asks for IPSASB:

- (a) Views on accounting options for ETS involvement by an administrator, and direction with respect to the development of their descriptions and evaluation; and
- (b) Input into the identification of economic impacts from different interventions and their linkage to accounting treatments.

Accounting Options and their Evaluation

28. Agenda item 9.3 provides draft descriptions of the following four accounting options:

Approach 1, *Emission Notes (Financial Liability)*

Approach 2, *Emission Licenses (Intangible Asset)*

Approach 3, *Pollutant Pricing Mechanisms—Rights and Obligations*

Approach 4, *Emission Limits (Taxes and Contingencies, formerly Approach 3, Revenue)*

29. Since September the main revisions to these descriptions have been to remove the “executory contracts” option (previously Approach 5, *Executory Contracts*); and, integrate the September meeting presentation’s illustrations of credits and debits into the descriptions. A general discussion of issues, based partly on earlier discussions in IPSASB meeting papers from 2015, has been provided as an introduction to the descriptions of the four accounting options.

IPSASB Preliminary View on a Preferred Accounting Option

30. Further accounting options may emerge. Nonetheless staff ask the IPSASB to provide its views on these accounting options and indicate a preferred option, while also identifying those factors that the IPSASB deems significant for evaluating the four options.

Set of Accounting Options

31. With respect to this set of four accounting options, staff note that further administrator accounting options could emerge from:

- (a) The IASB’s consideration of participant accounting options; and
- (b) Consideration of the economic impacts of different government interventions designed to reduce emissions, based on an expanded discussion of interventions in the background paper (agenda paper 9.2).

Descriptions of Accounting Options

32. With respect to the descriptions of accounting options, staff note that these could be expanded through the development of:

- (a) Further descriptions of the impact of different simplifying assumptions (e.g. assume that all EAs are issued for a fee and either (i) no trading occurs and all EAs are returned, or (ii) there is an overall surplus of EAs such that the EAs surrendered and cancelled at the end of the period cover significantly more than actual emissions); and
- (b) Further description and discussion to compare and contrast the economic impact of different interventions.

Evaluation of Accounting Options

33. Staff note that issue papers during 2015 have focused mainly on Conceptual Framework criteria for assets and liabilities (their definition and recognition). Issue papers have also discussed, to lesser extent, the following criteria for consideration:
- (a) Symmetry with accounting by participants;
 - (b) Economic substance of transactions (linked, for example, to ideas about whether EAs are in-substance separate from emission obligations and therefore should be accounted for separately);
 - (c) Future proofing (i.e. review an accounting option for its ability to cope with the evolution of ETSSs and government interventions generally over time); and
 - (d) Relationship to existing IPSASs, GFS reporting guidelines, and present accounting treatment for similar interventions (e.g. carbon taxes, fishing quotas, government restrictions and sales of natural resources such as electromagnetic spectra).
34. The present discussion of accounting options maintains the primary focus on Conceptual Framework criteria for assets and liabilities.

Interventions—Economic Impacts and Accounting Treatments

35. In September, the IPSASB directed staff to consider whether the economic impacts of each broad type of intervention can be linked to particular accounting treatments and thereby provide further insights into accounting for the economic impact of an ETSSs.

Economic Impact

36. Tables 1 and 2, on the following pages, provide high-level summaries of the economic impacts of each type of government intervention. Table 1 summarizes economic impact from the government's perspective, while Table 2 addresses the polluting entity's perspective. In considering "economic impact" these two summaries focuses narrowly on:
- (a) Cash flow impacts for each intervention; and
 - (b) Creation of rights, resources and obligations.
37. In developing these tables (and the discussions of economic impact in agenda item 9.2) staff noted the need to check that this approach to "economic impact", with its narrow focus, is sufficient. Are there any other types of economic impact that should be included? For example, there are benefits to both groups (government and polluting entities) from emission reductions in terms of achieving (and being seen to achieve) a social good. That type of broader benefit has not been included in the two tables.

Table 1, Economic Impacts for Government as Administrator/Regulator

Intervention	Negative cash flows	Positive cash flows	Resources, rights and obligations	Comparison with Other Interventions
Command and control (C&C)	Cost to implement and administer	Fees for permits and penalties for non-compliance	Rights to charge, fine, and generally enforce	Carbon tax and ETS also enforce compliance.
Results-based financing (RBF)	Cost to implement and administer Funds for projects that deliver results	None	Right to project work (service performance) by those funded.	<i>ETS link:</i> Some RBFs generate EAs (e.g. UNGCCC's CDM)
Carbon tax	Cost to implement and administer	Tax revenue	Right to enforce.	<i>ETS link:</i> Scope to have a threshold so that only emissions above that are taxed.
ETS	Cost to implement and administer	Transfer fees (and sales) for EAs on initial issuance	Initial rights to EAs (resource). Rights to EAs as emissions occur. Right to enforce.	<i>Carbon tax:</i> Potential for fund-raising similar to carbon tax <i>RBF:</i> An ETS may allow RBFs to generate EAs

Table 2, Economic Impacts for Entities as Polluters/ ETS Participants

Intervention	Negative cash flows	Positive cash flows	Resources, rights and obligations	Comparison with Other Interventions
Command and control (CaC)	Payments for permits, upgrades, etc.	None	None	Carbon tax and ETS also enforce compliance.
Results-based financing (RBF)	Cash spent on the project	Receive grant or payment for projects	Earn right to funding for/from projects, or earn EAs, or both Obligation to carry out project	<i>ETS link:</i> Some RBFs generate EAs
Carbon tax	Tax payments	None	Obligated to pay taxes	<i>ETS link:</i> Scope to have a threshold so that only emissions above are taxed.
ETS	Any fees to receive EAs, costs to change operations	Possible scope to sell EAs for a profit	Receive EAs that provide rights to emit Obligated to surrender EAs	<i>Carbon tax:</i> Potential for fund-raising similar to carbon tax

Accounting Treatments

38. The economic impacts for a government acting as a regulator, summarized in Table 1, appear linked to the following accounting treatments or accounting issues:

Command and control: Accounting for operating expenses related to the government's administration of the intervention.

Accounting for non-exchange revenue (from permits and fines).

Results-based financing: Accounting for operating expenses related to the government's administration of the intervention.

Accounting for loans and non-exchange expenses.

Carbon tax: Accounting for operating expenses related to the government's administration of the intervention.

Accounting for non-exchange revenue (from permits and fines).

Accounting for non-exchange revenue from taxes.

ETS: Accounting for operating expenses related to the government's administration of the intervention.

Accounting for non-exchange revenue (from permits and fines).

ETS accounting issues: Accounting for EAs and rights to receive EAs.

Accounting for non-exchange revenue from transfer of EAs.

39. Staff request the IPSASB to provide comment on these summaries of economic impacts and the proposed linkage between interventions, economic impacts and accounting treatments.

Actions Requested:

3. The IPSASB is asked to provide comment and indicate views on the:
- (a) Descriptions and evaluations of the accounting options (see agenda paper 9.3);
 - (b) IPSASB's preferred accounting option; and
 - (c) Economic impacts identified for the four government interventions and proposed linkage between interventions, economic impacts and accounting treatments.

APPENDIX A: IASB MEETINGS—EMISSIONS TRADING SCHEMES

As of November 11, 2015

Introduction

- A1. This appendix provides a list of those International Accounting Standards Board (IASB) meetings that have involved discussion on the IASB's Pollutant Pricing Mechanisms (PPM) (formerly Emissions Trading Schemes (ETs)) project, since it restarted in September 2014.
- A2. For a full understanding of the papers presented, IASB discussions and the ETS related meeting outcomes please refer to the relevant IASB papers. For each meeting below there is a link to the IASB agenda papers, where the audio discussion is also available. Meeting updates are available from: www.ifrs.org/Updates/IASB-Updates/Pages/IASB-Updates.aspx. Meeting agenda items can be accessed from the list of public meetings: <http://www.ifrs.org/Meetings/Pages/Meetings-Page.aspx>

October 2015

- A3. A one hour education session on accounting for PPMs was provided to the IASB at its October meeting. No decisions were made. Next steps were for IASB staff to provide more detail on ETs and other types of intervention (schemes) world-wide and continue consideration of alternative accounting approaches. (This project was not discussed at the IASB's July and September meetings.)
- A4. The next IASB discussion of this project is expected to occur in the first quarter of 2016.

June 2015

- A5. ETs issues were discussed at the IASB's June meeting. No decisions were made. Next steps were for IASB staff to provide more detail on ETs worldwide and continue consideration of alternative accounting approaches. (This project was not discussed at the IASB's July and September meetings. The next IASB discussion is expected to occur at the IASB's October meeting.)

February–May 2015

- A6. The ETs project was not discussed at the IASB's February, March, April and May meetings.

January 2015

- A7. Agenda paper available at: <http://www.ifrs.org/Meetings/Pages/IASB-Meeting-January-2015.aspx>.
- A8. The IASB considered staff recommendations on:
- (a) Scope of the project (and related name change);
 - (b) Approach to the project; and
 - (c) Direction of the project.
- A9. IASB members supported the staff's recommendations that:
- Scope:* The scope of the project should be set broadly to encompass:
- (i) A variety of schemes that involve the issue of allowances for emission reduction and absorption projects, as well as ETs, and

- (ii) Accounting by emitters, traders and entities that carry out projects to reduce or absorb emissions.

Project name: The name of the project should be changed to “Emissions Management Schemes”

Approach: Staff should:

- (i) Take a “fresh start” approach to the project, and
(ii) Work collaboratively with other standard setters during the research phase.

Direction of project: Staff should develop a discussion paper which outlines:

- The common characteristics of a wider variety of schemes, the accounting issues raised and the possible accounting or approaches that could provide a faithful presentation of the overall effects of the schemes identified;
- The approach should not be restricted to identifying separate assets and liabilities but also look at the relationships between rights and obligations; and
- The IASB’s developing Conceptual Framework should be the primary source for development of accounting approaches rather than existing Standards.

November 2014

A10. Agenda papers available at: <http://www.ifrs.org/Meetings/Pages/IASB-Nov-14.aspx>.

A11. First IASB meeting to discuss ETS issues since the project’s restart in September 2014. This was an education session. No decisions were made.

A12. Staff provided the IASB with background information about the type of schemes in operation and related accounting issues. Two common types of ETSs were described: ‘cap and trade,’ and ‘baseline and credit’ schemes. Staff research shows that there are diverse accounting approaches in use today.

APPENDIX B: FURTHER DEVELOPMENT OF BACKGROUND PAPER (AGENDA PAPER 9.2)

B1. This appendix describes proposed further development of the Emissions Trading Schemes Background Paper. It explains the main revisions proposed, their rationale and a new process for the paper's development.

Introduction

B2. The draft background paper, *Emissions Trading Schemes Public Policy Objectives, Alternative Interventions and Economic Impact* (Agenda 9.2), should be revised and expanded. What is needed is a comprehensive paper, which includes a stock take of the interventions/schemes. The paper should discuss the distinction between an ETS and alternative interventions. One specific issue, for example, is what is meant by "trading" and how much trading is required before an ETS, within the scope of this project, actually exists. Another issue to consider is how the economic impact of an ETS is distinguishable from that of other interventions, particularly carbon taxes, which also have the effect of making emissions more costly for polluters.

B3. The proposed further development of the background paper will result in a paper that:

- (a) Supports the IPSASB's ability to consider a broad range of cap-and-trade schemes and their economic impacts, and then compare these to other interventions to understand how, if at all, their economic impacts differ;
- (b) Better addresses constituents' information needs, if the background paper is issued for their information; and
- (c) Supports the development of accounting models that address all types of ETSs and the likely evolution of ETSs in the future.

B4. Once developed into a comprehensive discussion of interventions, the background paper will be both an important output from the project and an input to considerations of accounting models for any type of ETS. To reach this point the background paper should:

- (a) Provide an understanding of the policy objectives of a broad range of interventions and schemes to better understand the rationale for particular schemes, which can impact the economic substance of the schemes (and hence drive people's views on the appropriate accounting treatment).
- (b) Describe interventions and ETSs:
 - i. Describe and explain the mechanics of the four main interventions and the different types of ETSs.
 - ii. Describe the economic impacts of the ETSs for both administrators and participants; compare and contrast ETSs with the different interventions; and identify the characteristics of the four main types of interventions, i.e. ETSs, control and command, result-based financing and carbon taxes.

B5. The background paper would not cover:

- (a) Research around current accounting practices for ETS involvement; or
- (b) Proposed accounting models for ETS involvement.

B6. These would be covered in a separate paper.

Process recommendation: IPSASB and IASB staff work together

- B7. IPSASB and IASB staff should work together on the background paper as a joint staff paper. The basis for this recommendation is that the paper will:
- (a) Benefit from input by both sets of staff and their different perspectives, while shared development demonstrates collaboration in the research phase.
 - (b) Provide a comprehensive, in-depth understanding of ETSs and their economic impacts that both boards support;
 - (c) Be a factual paper about the state of interventions and schemes worldwide, rather than board views on accounting practice or proposed accounting models.
 - (d) Provide material that can be used by both boards in their respective research phase/consultation phase documents i.e. the IPSASB's CP and the IASB's DP.

Overview of Revisions to the Background Paper

1. *Intervention categories:*
 - a. More in-depth discussion of each intervention category, dedicating sections exclusively to each type of intervention.
 - b. Discuss demarcation between the four main interventions, including discussion of real work examples of actual interventions operating worldwide, including times where interventions (and combinations of them) have been evolving. (Illustrate the categorization's meaningfulness (or difficulties) by applying it to real world examples.)
2. *Discussion of ETSs:*
 - a. Describe and discuss different types of ETS e.g. cap-and-trade compared to baseline and credit.
 - b. Describe and discuss ETSs or countries that penalize participants for removing resources that absorb carbon (e.g. forests), rather than being emitters.

REVISIONS TO DRAFT BACKGROUND PAPER

The list below provides a comprehensive description of the proposed revisions to the background paper. Some of these have been addressed since the TBG feedback, so that the background paper provided as agenda item 9.2 indicates the direction of further development applying these proposals.

A. Public Policy Objectives

Overview of public policy objectives:

1. Expand by describing the public policy objectives of specific countries or schemes under each of the intervention headings to illustrate these with real-world examples.
2. Note upfront that there are ongoing developments of mechanisms in jurisdictions to determine the most effective way to meet the objectives while balancing impacts on the economy. (e.g. Australia have recently launched new initiatives including consultation on a baseline and credit approach for certain industries, One of China's provinces has recently launched a pilot ETS scheme, the 4th provincial ETS scheme in China).
3. Ensure that the paper is based on the current status of schemes, so update for any further developments during 2015.

B. Responses and Interventions

1. Using four main intervention categories build on existing material and combine economic impacts under each category. (Ensure that all the discussion about each intervention is under one category heading.)

1. Control and Command

- (a) Describe what these are
- (b) Provide real life example(s) of these to support the description
- (c) Describe any specific policy objectives that were considered in design of the scheme above the general ones identified earlier, e.g. specific design choices administrators made
- (d) Describe the economic impacts of the intervention, from both the administrator and participants' perspective
- (e) Describe the main mechanics of the interventions. Does it involve purchasing or receiving free allowances or permits?
- (f) Summarize the key features of a command and control scheme

2. Results-based financing

- Repeat as per points under Control and Command

3. Carbon Taxes

- Repeat as per points under Control and Command

4. ETSs

- Repeat as per bullet points under Control and Command

Also:

- (a) Include the different types of ETSs, cap-and-trade, baseline and credit, and ensure that variations on the basic scheme (e.g. New Zealand approach to forestry), while also considered the point of demarcation between an ETS and other interventions, particular carbon taxes.
- (b) Include treatment of participants that are penalized for removing resources that absorb carbon (e.g. forests), rather than being emitters. (Discuss the general issue of how governments deal with deforestation and note how each intervention fits within the four categories above. Consider relationship to ETSs.)

5. Compare and contrast interventions

Compare and contrast the interventions:

- (a) Highlight the key differences of the interventions without repeating the descriptions of the schemes from the sections above.
- (b) Note that this is a critical section for the boards to review the project's scope. The project scope presently is accounting for ETSs, so it is important to be able to distinguish the features of ETSs compared to other interventions in this paper. Also critical to check whether the term "ETS" is used to cover a wide range of interventions, some not ETSs.
- (c) Appendix—List of Interventions and ETSs Reviewed

- (i) A list of the interventions and schemes that staff researched and used to inform the above (plus any relevant references or website links)
 - (ii) For each scheme or jurisdiction's intervention looked at, a brief description of the scheme and mechanics and the intervention category that staff have concluded it to be (e.g. is it an ETS, results-based financing etc.).
- C1. IPSASB members could be asked to provide confirmation that their jurisdictions' ETSs (or other intervention) has been captured appropriately in the Appendix.

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DRAFT BACKGROUND PAPER: EMISSIONS TRADING SCHEMES PUBLIC POLICY OBJECTIVES, ALTERNATIVE INTERVENTIONS AND ECONOMIC IMPACT

19 November 2015

Introduction

1. This paper aims to support understanding of the economic impact of an Emissions Trading Schemes (ETSs). It describes governments' public policy objectives for Emissions Trading Schemes (ETSs) and identifies the main types of intervention that a government could use to achieve those objectives. The following interventions are described:
 - (a) Command and control;
 - (b) Results-based financing;
 - (c) Carbon taxes; and
 - (d) ETSs.
2. For each type of intervention the economic impacts for the government and polluting entities are described and real world examples provided.
3. Section 1 describes governments' public policy objectives for ETSs. Section 2 provides an overview of the choice of interventions that governments have in order to achieve those objectives. The subsequent four section—Sections 3 to 6—describe the four types of intervention listed above, including their economic impact. Section 7 provides an overview of the interventions' different economic impacts, and a high level comparison of economic impact from the government's perspective.

1. Public Policy Objectives

4. A government's primary objective when introducing an ETS is to reduce greenhouse gas (GHG) emissions. That objective arises within the context of international agreements and local pressure to address environmental damage, global warming and environmental hazards

Primary Policy Objective—To Reduce Emissions

5. An ETS controls or "caps" emissions and, over time, reduces them. "Emissions" are gases emitted into the atmosphere. An ETS is working effectively when the volume of target pollutants released into the atmosphere each year stops rising and then, over time, reduces down to lower limits.
6. The goal of an ETS is not necessarily to completely eliminate emissions, because some level of emissions may be both necessary and desirable. For example, one target gas for an ETS is carbon dioxide. Carbon dioxide is naturally emitted by almost all life forms, including plants and animals, and carbon dioxide will continue to be emitted into the atmosphere for as long as life exists on this planet. However, carbon dioxide is the primary "greenhouse gas" (GHG). The unnaturally high volume of carbon dioxide presently in earth's atmosphere causes global warming. Human activities that emit carbon dioxide include burning coal to produce electricity and burning petrol in combustion engines to drive machinery, cars and airplanes. An administrator's target for carbon dioxide will be to reduce emissions to earlier, more sustainable levels, rather than attempt to eliminate them entirely. By contrast to carbon dioxide, sulphur dioxide is a gas where the target would be to reduce man-made emissions to close to zero.

Sulphur dioxide naturally exists in small quantities, and is not a by-product of life, except in a very few, exceptional cases. When mixed with rain sulphur dioxide forms acid rain, and it causes respiratory diseases in humans when inhaled.

Secondary Concern—Share the Costs of Emissions

7. In addition to an ETS's primary policy aim (to reduce emissions), a government may also use an ETS to redistribute or share the cost of emissions. Governments incur costs due to emissions. These include costs related to:
 - (a) Health care for illnesses caused by emissions;
 - (b) New infrastructure to ensure sufficient water supply for communities and businesses;
 - (c) Increased emergency response activities arising from forest fires and more powerful storms caused by global warming;
 - (d) New and improved infrastructure for flood prevention, including relocation of residences after flooding, to address increased risk of flooding due to global warming; and,
 - (e) Increased border control activities due to environmental changes as a result of global warming (droughts, rising water levels, etc.) affecting neighboring or related countries.

Government Interventions that Work Best—Maximize Benefits and Minimize Costs

8. When a government develops its policy to address emissions, its intervention approach is likely to take into account a complex set of other considerations, including the political context for an intervention. Two considerations that support use of an ETS are that a government wants to:
 - (a) Avoid negative impacts (as far as is possible) on business activity and the economy. (For example, the ETS should not result in significant additional costs that make businesses less competitive and/or drive business to leave that jurisdiction in order to find cheaper locations. Government aims to avoid interventions that could cost jobs, cause inflation, add to the costs of ordinary people and/or damage the economy.)
 - (b) Achieve an economically efficient way to achieve emission reductions. (For example, an ETS provides scope to trade EAs, which is expected to ensure that the overall costs of emission reductions for ETS participants are less than the costs of other types of government intervention. An ETS provides economic incentives to find efficient, future-oriented solutions to the problem.)

International Pressure and International Agreements

9. A government's policy on emissions intervention may arise due to international pressure, expressed through an international treaty or other mechanisms for international agreement. In that situation compliance with the international agreement is likely to be a major public policy objective for the national government. The application of international agreements can be an important factor for a government's choice of intervention, because they may either partially restrict choices or facilitate the choice of one option rather than another. For example, where a government can access an international ETS that is already working effectively with a reputation for delivering emission reduction results there are likely to be practical and political benefits to joining that ETS.

2. Overview of Types of Intervention

10. Once having established a policy objective to reduce emissions, a government chooses one or more interventions (or mechanisms) to achieve that objective. The Kyoto Protocol (described in more detail in Appendix A) provides national governments with choices, also called “flexibility”.

11. An excerpt from a Parliament of Australia document describes the different “mechanisms” that a government may use, under the Kyoto Protocol, to meet its emission reduction target:

The parties to the Kyoto Protocol can meet their obligations either by reducing their greenhouse gas emissions or increasing their removals sinks or both. Removals sinks are limited to direct human-induced land-use change and forestry activities (afforestation, reforestation and deforestation since 1990).

The Kyoto Protocol does not specify the mechanisms by which Parties to the Protocol must meet their emissions target, thus providing an Annex I country such as Australia reasonable amount of discretion as to the policies and measures it implements domestically to meet its target. Domestic abatement action should be the primary means by which Annex I countries such as Australia meets their emissions target. Parties are also provided with an indicative list of policies and measures that they may wish to consider. These include promoting sustainable agriculture, promoting the renewable energy, removing market assistance for environmentally damaging economic activities, confronting the issue of transport sector emissions, and so forth.

The Kyoto Protocol also sets out three 'flexibility mechanisms' that Annex I parties such as Australia may use as a supplementary means of meeting its target. These potentially help Annex I Parties cut the cost of meeting their emissions targets:

(a) The Clean Development Mechanism—this mechanism allows Australia to implement projects that reduce emissions in developing countries (non-Annex I Parties to the Protocol), or absorb carbon through afforestation or reforestation activities, in return for certified emission reductions that Australia can use towards meeting its own target.

(b) The Joint Implementation Mechanism—this mechanism allows Australia to implement an emission-reducing project or a project that enhances removals by sinks in the territory of another Annex I Party and count the resulting emission reduction units towards meeting its own target.

(c) Emissions Trading.

12. Intervention choices are not restricted to those that the Kyoto Protocol makes available to national governments. Subnational governments and even individual companies may take their own initiatives, using emission reduction mechanisms such as carbon pricing, to reduce emissions.

13. Table 1 on the following page provides an overview of the four main types of interventions, classifying them as either market or non-market interventions. Market interventions require a market for some aspect of the mechanism in order to operate as intended. By contrast, non-market mechanisms do not require a market to operate.

Table 1: Types of Emission Reduction Interventions

Market Interventions		Non Market Interventions		
Over-the-Counter Market	Organized Market	Carbon taxes	Results-based financing	Command and control schemes
EAs exchanged between States (e.g. ESD ¹ in the EU)	<ul style="list-style-type: none"> • Primary market: e.g. auctions on exchange platforms (EU ETS : ICE/EEEX) between States/EU and participants; • Secondary market: between participants/States where all types of allowances (whether initially allocated for free or auctioned) are tradable. 	Mandatory tax that applies to actual emissions Increases the cost of emissions. Encourages entities to reduce & innovate	E.g. contributors of finance receive EAs in exchange. These may be remitted to the ETS administrator instead of EAs issued by that ETS.	Regulations set to address pollution such as imposing the use of filters in polluting industries, etc. Regulation through legislation, irrespective of level of emissions
<p><i>Applies to both types of market mechanism:</i></p> <ul style="list-style-type: none"> • The regulator/administrator sets a limit (cap) on the total level of covered GHG emissions; • EAs must be submitted to cover actual emissions; • Unused EAs are tradable; setting a price on GHGs, which acts as an economic incentive to reduce GHGs, including incentive to innovate. 				

14. The next four subsections will consider each intervention in more detail. First, however, some general points applicable to all four categories.

Many Different Interventions

15. Although this paper focuses on the main four intervention categories there are many different interventions available. The list below is not exhaustive:

- (a) Reduce emissions:
 - (i) Replace GHG-producing technology with sustainable technology (e.g. solar or wind-powered generators to replace coal-burning generators);
 - (ii) Develop public transport systems to replace use of cars;
 - (iii) Tax cars (taxes on their purchase, fuel, driver license renewals);
 - (iv) Improve building designs to reduce energy needs (insulation, etc.);
 - (v) Encourage people to become vegetarians; or
 - (vi) Introduce limits on emissions, with penalties for exceeding those limits.
- (b) Make fossil fuels more expensive:
 - (i) Create scarcity by reducing the number of drilling and mining permits for gas, oil and coal; or

¹ See Decision No.406/2009/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduce their GHG emissions to meet the European Community's GHG emission reduction commitments up to 2020.

- (ii) Add new taxes to fossil fuels either at entry into the country or as sales taxes or when burnt.
- (c) Increase or protect carbon sinks (forests):
 - (i) Create national parks where deforestation is prohibited;
 - (ii) Provide communities with low-interest funding to plant trees;
 - (iii) Provide tradeable EAs in exchange for projects to plant trees;
 - (iv) Impose penalties on those that destroy forests (e.g. obligations to surrender EAs or imposition of government fines); and
 - (v) Penalize regions that destroy forests (e.g. withdraw central government funding for those regions).

Combinations of Intervention and Availability of Choice

16. A government may (and usually does) use a combination of different interventions to reduce emissions. For example, a government may choose to use a command-and-control approach that requires coal-burning power plants to be shut down progressively over the next 15 years, while also introducing an ETS that impacts on the same companies. The Australian, South African, Swiss and United States governments have, for example, used a mixture of different interventions to achieve their emission goals.
17. Governments can also allow affected entities some level of choice with respect to the type of intervention that applies to them. For example, the Swiss federal government has, broadly-speaking, allowed a choice between paying a carbon tax or joining, as participants, an ETS. Where an ETS provides its participants with the ability to earn EAs by carrying out projects that reduce emissions (e.g. forestation projects) then could be characterized as providing a choice between “results based financing” and participation in an ETS. In practice, participants are likely to still be required to surrender EAs for some percentage of their emissions. A government may specify the extent to which one approach can be replaced with another.

Complexity to Address Specific Situations

18. The examples of governments’ interventions, listed in Appendix A, illustrate both complexity and evolution. Governments consider their specific situation when developing interventions and customize one or more interventions to address that situation. Factors that a government is likely to consider include:
 - (a) Application of international agreements;
 - (b) Scope to cooperate with other governments on emissions reduction;
 - (c) The pattern of emissions in the region, including identification of the main sources of emissions;
 - (d) Scope to change emissions behavior;
 - (e) Impact on consumers and their ability to cope with consequential price changes, if any, for different goods and services; and
 - (f) Impact on the economy, including impact on GDP and competitiveness of exports.
19. Any one intervention can be applied in a variety of different ways, without changing the fundamentals of the intervention. For example, individual ETSs differ with respect to their start date, length of compliance period, and ability to carry EAs forward to future periods.

Changing Interventions—Learning from Experience and Responding to New Developments

20. Before choosing a particular intervention (or mixture of interventions) a government will evaluate the specific situation that it needs to address. There is likely to be a consultation period, where proposed interventions are put out for comment.
21. Experience shows that, after introducing an intervention, a government will review the results, consider comments and concerns, and then make adjustments or major changes to what has been introduced. Factors that lead a government to change emission–reduction interventions are both technical and political. They include, for example:
 - (a) Effectiveness of a particular intervention, which could indicate that further interventions need to be introduced or the parameters of the first intervention may need to be adjusted;
 - (b) Scope to extend an intervention to a wider group and a different set of industries;
 - (c) Negative impacts on the economy and/or cost of living;
 - (d) Economic downturns that impact on the market for EAs with the result that EA issuance and/or the useful life of an EA changes;
 - (e) A change of government and the new government is more (or less) friendly to business with the result that the intervention changes to one that rewards businesses for positive actions (or imposes costs on business that emit) or there is a hiatus while the new government consults on a new set of possible interventions; and
 - (f) A legal challenge stops the intervention, and the government develops alternatives that are less vulnerable to future legal challenges.

All Four Interventions Involve Government Control

22. All four interventions, described in detail below, involve some form of direct government control. For example, an ETS is expected to work through economic incentives and a market approach, because it transforms the ability to emit GHGs into a scarce, tradeable commodity instead of a free good. Yet an organization that fails to surrender sufficient EAs to cover its emissions will find itself forced to pay financial penalties. There is some flexibility to trade and reduce, then an absolute requirement to surrender sufficient EAs. From the perspective of all ETS participants (and when the government considers the group as a whole) the cap (or baseline) for an ETS is an absolute upper limit on emissions.

Other Perspectives on Interventions—Statistical Categories

23. The statistical community has developed categories relevant to different types of government intervention in the economy, including interventions that involve the creation of different types of permits, licenses, quotas and allowances. Appendix B provides information on these from the perspective of the statistical community.

3. Command and Control

24. “Command and control” interventions consist of government regulations that directly addresses pollution, without the involvement of a market mechanism. For example, governments can pass legislation that requires coal powered electricity generators to install filters to reduce the amount of pollutants emitted, set limits on emissions and use fines to enforce the limits. Command and control does not involve issuance and trading of EAs or EA equivalents. Descriptions of what is meant by “command and control” include:
- (a) Command and control policy refers to environmental policy that relies on regulation (permission, prohibition, standard setting and enforcement) as opposed to financial incentives, that is, economic instruments of cost internalization².
 - (b) Command and control regulation can be defined as “the direct regulation of an industry or activity by legislation that states what is permitted and what is illegal”. This approach differs from other regulatory techniques, e.g. the use of economic incentives, which frequently includes the use of taxes and subsidies as incentives for compliance. The ‘command’ is the presentation of quality standards/targets by a government authority that must be complied with. The ‘control’ part signifies the negative sanctions that may result from non-compliance e.g. prosecution³.
25. Command and control interventions rely on governments’ coercive power to achieve changed behavior rather than economic incentives. Companies *must* change their operations or incur penalties. Penalties include financial costs (fines, for example, or temporary shut-down), personal costs (penalties for management, including convictions, fines or prison), and/or business closure. The market is not directly relevant to this type of intervention, in the sense that it does not require a market for its application. However, the value of shares in a company and its ability to raise finance may be negatively impacted if government requirements are viewed as imposing significant costs or creating a risk that the company could have to shut-down some or all of its operations.

Command and Control Example—Regulations under the Clean Air Act (U.S.A)

26. The United States government agency the Environmental Protection Agency (EPA) has, in application of the Clean Air Act, taken the following command-and-control style actions:
- (a) Required industrial sources to install controls or change production processes in order to reduce polluting emissions. The EPA publishes regulations that cover a range of industrial categories, including chemical plants, incinerators, dry cleaners, and manufacturers of wood furniture. The regulations do not generally prescribe a specific control technology, but set a performance level based on a technology or other practices already used by the better-controlled and lower emitting sources in an industry. Companies must meet the emissions levels required in the regulations.
 - (b) Established limits on emissions from vehicles, which affect manufactured and imported vehicles, and requirements to restrict fuels used to very low Sulphur gasoline and diesel fuel.

² Glossary of Environment Statistics, Studies in Methods, Series F, No. 67, United Nations, New York, 1997.

³ McManus, P. (2009) Environmental Regulation. Australia: Elsevier Ltd

- (c) A ban on lead in gasoline, implemented in 1996, which followed earlier requirements to limit lead in gasoline.
- (d) Requirements to:
 - (i) Use reformulated gasoline in vehicles.
 - (ii) Install vapor recovery nozzles at gas stations. (These reduce the release of gasoline vapor into the air when people put gas in their cars.)
 - (iii) Carry out regular car maintenance through mandated inspection and maintenance programs.
 - (iv) Equip passenger vehicles with on board emission diagnostics.

Economic Impact for Government

- 27. This type of intervention is relatively low cost for the government. From a cash flow perspective the overall effect will either be neutral or slightly negative.
- 28. The government incurs costs “to develop and manage” the intervention, as follows:
 - (a) One-off, initial costs to develop and implement the intervention; and
 - (b) On-going costs to manage the intervention, which will involve a monitoring and enforcement aspect.
- 29. The government may receive cash flows from the entities affected. For example, under the United States’ Clean Air Act system polluting companies are required to purchase permits before they can operate their facilities. The purchase costs are likely to help to finance the monitoring and enforcement related to the permit system. Fines and other penalties will also result in positive cash flows. For example, the financial penalties applied to Volkswagen are likely to be large, given the extent to which its actions attempted to evade the regulations with respect to car emissions and the potential for such behavior to undermine regulations aimed at reducing emissions.

Economic Impact for Polluting Entities

- 30. Command and control is likely to involve one-off unavoidable costs for polluting entities, which could be large. Facilities may need to be shut-down (moth-balled) because they are no longer viable. Pressure to change operations so as to reduce emissions can lead to costs for new investment, with the alternative being higher product costs and a loss of competitiveness or a reduction in profit. There will also be on-going costs to provide emissions information to the government and demonstrate that the applicable regulations are being met. As noted above, polluting entities may be required to purchase permits in order to continue to operate.
- 31. Research shows that the level of costs depend on an emitters’ specific situation. For example, a new entrant energy producer that uses efficient, sustainable technology, may not need to change operations. By contrast an energy producer that relies on old, inefficient non-sustainable and highly polluting technology (for example, coal-burning power plants) may incur high costs to change its operations.

4. Results-Based Financing

32. Results-based financing uses a financing approach to support development objectives and policy goals. Financing approaches are used, for example, to support the role of conservation, sustainable management of forests and enhancement of forest carbon stocks. A variety of forms of results-based financing exist. In some cases, contributors of finance receive carbon credits or EAs in exchange. Such credits or allowances may be remitted to the administrator of an ETS to which the contributor is a participant, instead of credits or EAs issued by that ETS.
33. South Africa and Switzerland are two examples of national governments that use results-based projects to achieve emission reductions and earn tradeable EAs.

Projects that Generate EAs, International—UNFCCC’s Clean Development Mechanisms

34. The UNFCCC administrated “Clean Development Mechanism” (CDM) is what some describe as an “offset” program. This program allows countries to receive EAs in exchange for projects that reduce emissions. The CDM, defined in Article 12 of the Protocol, allows a country with an emission-reduction or emission-limitation commitment under the Kyoto Protocol (Annex B Party) to implement an emission-reduction project in developing countries. Such projects can earn saleable certified emission reduction (CER) credits, each equivalent to one tonne of CO₂, which can be counted towards meeting Kyoto targets. The mechanism is the first global, environmental investment and credit scheme of its kind, providing a standardized emissions offset instrument, CERs.

Projects that do not Generate EAs—Australian Example

35. Results-based financing may also result in tradeable units that are *not* EAs, but could be mistaken for EAs. For example, the Australia’s Federal Government presently finances projects that reduce emissions⁴. Financing is done through reverse auctions and successful bidders will receive “Australian Carbon Credit Units” (ACCUs). These units do not allow entities to emit a certain amount of GHGs, which is what an EA does. Although these units can be traded their value ultimately depends on a repurchase price previously set by the government. Their value is fixed through the auction process, when the Australian government contracts to redeem the ACCUs at a set price. Successful bidders “earn” ACCUs by carrying out their project and achieving the expected GHG reductions. When ACCUs are returned to the government, the government has a contractual obligation to purchase them, if these conditions have been met.

Economic Impact for Government

36. As for other interventions the government incurs costs to develop and manage the intervention, as follows:
 - (a) One-off, initial costs to develop and implement the intervention; and
 - (b) On-going costs to manage the intervention, which will usually involve a monitoring and enforcement aspect.
37. If the project financing approach used is that of government purchase, as in the Australian example, then the government is paying the full cost of the emission reduction projects, which is likely to involve relatively high costs for the government compared to other interventions. If the

⁴ IETA (2015) *Australia: An Emissions Trading Case Study*, as of May 2015.

project financing approach used is that of subsidized loans for projects, then costs to government are those of interest foregone. There is also the risk of default. In the South African case there appears to be scope to receive aid funding from other governments or international organizations, which would result in a low economic impact for the government.

Economic Impact for Polluting Entities and Others

38. This type of intervention appears to have the least costs for polluting entities since generally engagement in such projects is a matter of choice and, if an entity takes on a project then it expects to receive government funding (a grant or subsidized loan) to carry out the project.

5. Carbon Taxes

39. Carbon taxes place a price on carbon, using a metric based on carbon (e.g. price per metric ton of CO₂ or equivalent (tCO₂e)). A carbon tax guarantees the carbon price in the economic system and, if the price is high enough, will provide an incentive for entities to reduce their emissions to reduce the tax cost.
40. Although the mechanism of carbon taxes involves the governments' sovereign power to tax, emission reductions are expected to result because of economic incentives. Businesses are expected to find ways to reduce emissions so that they can compete more effectively, where competition is on a price. If businesses simply transfer additional costs to customers, then customers are expected to reduce consumption, because the price of the product (e.g. electricity) has increased. In both cases lower emissions are expected to result, but cannot be guaranteed. Carbon taxes may simply increase costs without changing behavior sufficiently to either reduce emissions or slow their rate of increase.
41. Governments that have used (or plan to use) carbon taxes as a primary emissions reduction intervention include:
- (a) Provinces of Alberta, British Columbia and Manitoba;
 - (b) South Africa; and
 - (c) Switzerland.
42. Summaries of the South African and Swiss governments' interventions are provided in Appendix A. When introducing a carbon tax governments are likely to consider whether it should be "revenue-neutral", whereby revenue collected is primarily used to reduce costs for the community in other areas. For example, the Swiss and British Colombian governments' carbon taxes both aim to be revenue-neutral.

Economic Impact for Government

43. As for other interventions the government incurs costs to develop and manage the intervention, as follows:
- (a) One-off, initial costs to develop and implement the intervention; and
 - (b) On-going costs to manage the scheme, which will usually involve a monitoring and enforcement aspect.
44. A carbon tax provides positive cash flows for government. These are dependent on the level of emissions. Cash flows rise as emissions increase.

Economic Impact for Polluting Entities

45. Polluting entities will incur costs (the tax) as they emit. Costs increase directly proportional to emissions. Depending on the type of tax, there may be a threshold before which no taxes are paid and then taxes apply to emissions above that threshold. Alternatively, the carbon tax may apply to all emissions with no threshold. In practice, taxes may be applied either to actual emissions or “emission surrogates” such as the fuel used by a polluting entity or even fuel imports or production, without consideration of the eventual user of the fuel, whether industrial, commercial or private individuals.

6. Emissions Trading Schemes

46. An ETS is a market-based way to control pollution by providing economic incentives for reductions in emissions. ETSs provide polluting entities with flexibility to reduce their emissions in a cost-effective manner, while stimulating technological innovation and avoiding unnecessary negative impacts on the economy. The main focus of ETSs has been GHGs.
47. As of February 2015 there were 17 active ETSs worldwide, with 14 further ETSs planned⁵. These ETSs include the European Union’s ETS, which covers 28 countries, and ETSs that relate to eight further countries, which have either a national ETS or involvement with an ETS at a subnational level or through linkage to an international arrangement. The active ETSs are in:
- (a) Canada (Quebec, which is part of the Western Climate Initiative).
 - (b) China (Beijing, Guangdong, Hubei, Chongqing, Shanghai, Shenzhen and Tianjin).
 - (c) European Union (28 countries).
 - (d) Japan (Saitama and Tokyo).
 - (e) Kazakhstan⁶.
 - (f) New Zealand.
 - (g) South Korea.
 - (h) Switzerland.
 - (i) United States of America (California, which is part of the Western Climate Initiative, and Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island and Vermont, which are in the Regional Greenhouse Gas Initiative).
48. There are two main types of ETS; cap-and-trade schemes and baseline-and-credit. There are described in more detail below.

Statutory or Non-Statutory Schemes

49. Schemes may be further segmented into statutory or non-statutory schemes. Statutory schemes are government imposed and require mandatory participation of entities that emit greenhouse gases. Non-statutory schemes are voluntary in nature.

⁵ ICAP (2015) *Emissions Trading Worldwide International Carbon Action Partnership (ICAP) Status Report 2015*, February 2015

⁶ Kazakhstan implemented IPSASs in 2013. The World Bank has a project to review the implementation and provide support on any remaining financial reporting issues. The project is likely to start in 2015.

Cap-and-Trade Schemes

50. The most common type of ETS is described as a cap-and-trade ETS. The administrator (usually a government) sets a legal limit or “cap” on the amount of pollutant that may be emitted. The overall cap divides into emission allowances (EAs) (also called units or permits). For example, the European Union (EU) ETS trades primarily in European Union Allowances (EUAs), the Californian scheme in California Carbon Allowances (CCAs), while the New Zealand scheme trades in New Zealand Units (NZUs).
51. The EAs are either allocated or sold to ETS participants providing them with rights to emit a specific volume of the specified pollutant. Firms are required to hold sufficient EAs to cover their emissions. The total number of EAs in an ETS region cannot exceed the overall cap, limiting total emissions to that level. Firms that exceed their allowed volume (or tonnage) of emissions must buy EAs from those who have remained below their allowed volume (or tonnage). In effect, the buyer is paying a charge for emissions, while the seller is being rewarded for having reduced emissions. Thus, in theory, those who can reduce emissions most cheaply will do so, achieving pollution reduction at the lowest cost to the economy and society.

Baseline-and-Credit Schemes

52. In a baseline-and-credit scheme the administrator allocates the cap in the form of baselines. The baseline provides an entity with a right to emit up to a specified level. The baselines are assigned to a specific emitting source and, unlike allowances in cap and trade schemes, cannot be traded. The trading mechanism is introduced at the end of the reference period, when the administrator issues tradable ‘credits’ to entities that have emitted below their baseline. Conversely, the administrator requires entities that have emitted above their baseline to provide credits. This mechanism imparts scarcity and gives rise to a market.
53. The Government of New South Wales implemented a baseline-and-credit scheme which was then cancelled when the Australian Federal Government began to implement an ETS and required companies to purchase EAs to cover their emissions. Further information on baseline-and-credit trading schemes is provided in Appendix C. The description there includes a comparison between cap-and-trade schemes and baseline-and-credit.
54. Sources reviewed clearly state that there have been, in the past, baseline-and-credit schemes that are ETSs. However, to date, it has not been possible to identify an *active* ETS that falls into this subcategory of ETSs. One of the problems in searching for such a scheme is that the term “baseline and credit scheme” is used with a general meaning, as explained below.

Concept of “Baseline and Credit Schemes” versus an ETS

55. The term “baseline and credit scheme” appears to include schemes that are not types of ETSs. For example, any situation where a baseline is defined and some sort of “credit” is received for a reduction below the baseline can be treated as falling within the general term “baseline and credit scheme”. But the credit, in this situation, could be a simple right to receive funds from the government, rather than a tradeable right to emit. In that case two critical aspects of an ETS are missing; the tradeable aspect and the relationship with emissions. Furthermore, this meaning could cover results-based financing, where projects that reduce emissions below a previous level are then rewarded.

Different Pollutants Covered

56. There are active trading programs in several air pollutants. For GHGs the largest is the EU–ETS. In the United States of America there was a national market to reduce acid rain, through restricting emissions of sulphur dioxide and nitrogen oxides. EAs can be traded directly or through financial instruments that are then exchanged for units at a later point in time.
57. Some regional ETSs allow the use of EAs from outside of the region. For example, participants in the EU–ETS can use emissions unit types defined under the Kyoto Protocol, although this is subject to quantitative and qualitative limits. Kyoto Units can be traded between national governments. EUAs can be traded within the EU group of 28 nations.

ETS Design, Issuance of EAs and Emergence of Obligations to Surrender EAs

58. As noted earlier in this paper, the design of an ETS is likely to take into account many different factors, including factors specific to the particular jurisdiction. ETSs differ with respect to their:
 - (a) Start date, length of compliance period, and ability to carry EAs forward to future periods;
 - (b) Industries or installations targeted by the ETS (e.g. power generation, transport, agriculture, etc.);
 - (c) Geographic application (e.g. national, regional, or local);
 - (d) Target or cap on emissions (e.g. emissions are set at 20% below 1990 levels by 2020 or some other figure);
 - (e) Type of emissions covered (e.g. carbon dioxide, methane, sulphur oxides, etc.);
 - (f) Government assistance to affected industries;
 - (g) Type of penalty for non-compliance; and
 - (h) Mandatory or voluntary nature of the ETS.
59. ETSs can confer EAs on participants in different ways. For example, EAs may be:
 - (a) Transferred to ETS participants at no cost or for a nominal fee or a subsidized charge;
 - (b) Sold either to participants only or to the general public using different sale mechanisms including auctions; or
 - (c) Provided to entities in exchange for projects that reduce emissions or otherwise reduce the amount of pollutants in the environment (e.g. a project that has developed and implemented emission reduction technology or a re-forestation project that removes GHGs from the environment).
60. ETS participants' obligations to submit EAs to the administrator may also be driven in different ways. The main driver is emissions. However, at least one ETS, the New Zealand ETS, requires entities that cut down forests to submit EAs, if particular conditions are met. In this case the target entities may start with zero EA holdings (i.e. the administrator does not provide them EAs at the start of the compliance period) and then develop an obligation to submit EAs, because they have cut down forests.
61. This paper does not attempt to convey the complexity of the task involved in developing an ETS, such that it will be effective in its policy objectives, while minimizing or avoiding any unintended negative impacts on society.

Economic Impacts for Government

62. From the government's perspective an ETS can fulfil its role without having a major economic impact on the government as ETS administrator. There are costs to set up an ETS, and costs to administer the ETS going forward. However, the majority of ETS activity—the issuance of EAs to participants, their holding of EAs and eventual return of them to the administrator, and participants' emission activity—can occur almost without any cash outflows (positive or negative) for the government in its role as ETS administrator.
63. The EA administration costs should not be high, given the electronic and intangible nature of the EA instrument, although there are likely to be emission monitoring costs.
64. An ETS appears capable of achieving its policy objectives without generating any inwards cash flow for the government, however an ETS can be used to generate revenue. That possibility indicates that EAs could be resources for the government.
65. Charging ETS participants for EAs (or auctioning EAs) could generate cash flows that:
 - (a) Help achieve the ETS's primary public policy aim; or
 - (b) Generate revenue for the government to:
 - (i) Cover the costs of the ETS;
 - (ii) Cover the costs of emissions (health care costs, etc.); or
 - (iii) For the general budget.
66. Where a government decides to auction or otherwise sell EAs and thereby generate cash flows, the sale decision is not necessarily about earning revenue. Auctions help create an EAs market and determine the current market price for EAs.

Economic Impacts for Polluting Entities

67. From the participants' perspective an ETS appears to impose costs proportional to an entity's emissions. If EAs are initially provided for free then an ETS participant will only incur costs once it exceeds the emissions limit set by its allocation of free EAs. Until that point it has "opportunity costs" when it emits, because an alternative use for its EAs is to sell them on the market, and thereby received cash flows. If EAs are issued for a charge then there are immediate costs, which can be defrayed if an entity sells some EAs on the basis that it can reduce emissions beneath the amount covered by the transferred EAs.

7. Overview of Economic Impact of Different Interventions—Regulator and Polluter

68. This section is focused on the economic impact of different interventions to reduce emissions. For all four interventions the government (as regulator or ETS administrator) incurs costs “to develop and manage” the intervention, as follows:
- (a) One-off, initial costs to develop and implement the intervention; and
 - (b) On-going costs to manage the scheme, which will usually involve a monitoring and enforcement aspect.
69. However the net economic impact for a government and for its polluting entities varies significantly. Table 2 below provides an overview of the economic impact of the four broad types of interventions described in section 2 above.

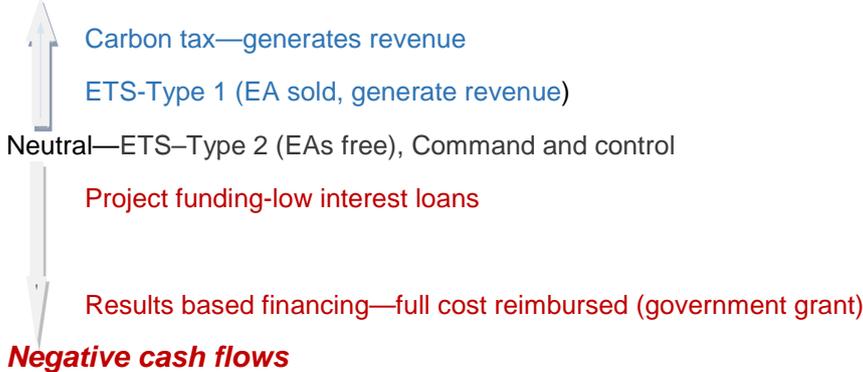
Table 2—Economic Impact of Interventions

Intervention	Administrator	Emitting Organization
<i>Market Mechanism</i>		
ETS	Costs to develop and manage. <i>On-going:</i> May receive revenue from EA transfers or from fines collected. (No cash flow implications other than fines and initial sale or transfer price charged.)	May incur costs to: - receive EAs, if these are transferred for a price. - purchase additional EAs, if organization emits more than the amount covered by original set EAs received. - change operations (e.g. new technology) to reduce emissions. May have gains (losses) from EA trading
<i>Non-Market Mechanisms</i>		
Command & control	Costs to develop and administer.	Limited to one-off, specific costs required to implement changes. (May affect organizations differently depending on their situation.)
Carbon Taxes	Costs to develop and manage. <i>On-going:</i> Revenue from taxes collected. (Cash inflow from taxes.)	On-going costs (taxes) proportional to emissions. (Scope to reduce costs by reducing emissions or higher charges to customers.)
Results-based financing	Costs to develop and manage. <i>On-going:</i> Costs to review project and provision of funding for projects. (Funding costs could be low if a loan, and otherwise will be significantly higher than other interventions.)	Relatively low costs arising from application for funding and management of the grant. Main cost depends on whether funding is a loan, in which case close to full costs of project will be incurred, or a government grant with performance conditions.

Economic Impact for Government (Regulator or Administrator)—All Interventions

70. This brief overview focuses on cash flow effects. Some of these four interventions generate positive cash flows for a government, while others are likely only to result in negative cash flows. Broadly speaking, the net impact of each intervention category, from the government's perspective, is as follows:

Positive cash flows



Economic Impact for Participants—All Interventions

71. For entities that emit pollutants, their emissions can be made costly by using either:
- A tax on emissions, so that the amount of taxes paid increases directly proportional to emissions and there is no threshold before the emitting entity incurs costs; or
 - Restrictions on the volume of emissions, so that exceeding a set limit results in costs (an ETS's basic approach); or
 - Fines or other penalties for exceeding a set limit.
72. In each of these three types of intervention (tax, emissions cap with scope to trade, or cap with penalties and no scope to trade) a government would be using economic incentives (actual or potential costs due to emissions) to influence behavior and achieve the policy objective of reducing emissions.
73. For participants three of these four interventions involve both costs and risks. Clearly a carbon tax involves costs to an entity that emits GHGs in order to do business. An ETS makes emissions costly without necessarily resulting in negative cash flows for the polluter. If the government decides to charge a fee for EAs issued then the economic impact of an ETS for participants begins to resemble that of a carbon tax although, as discussed below, there are still important differences in how the costs arise. Command and control is likely to involve one-off unavoidable costs, which could be large, and may even cause a company to decide to shut down facilities (a very costly exercise) because they are no longer viable. Generally there are risks to the viability of all polluting entities, when a government begins to make emissions costly. Pressure to change operations so as to reduce emissions can lead to costs for new investment, with the alternative being higher product costs and a loss of competitiveness or a reduction in profit.
74. Results-based financing can have a positive impact for polluting entities, because it helps them to develop or implement changes that reduce emissions without necessarily costing them anything (government grant approach) or costing them less than would otherwise be the case (low interest loan approach).

Comparison between Impact of Carbon Taxes and Impact of an ETS

75. For the administrator carbon taxes and an ETS are very different in their economic impact. A government will expect to receive revenue from carbon taxes and be able to estimate the amount, which will broadly be in line with economic activity, following similar patterns as those for other tax revenues that are driven by economic activity. By contrast the ETS administrator should not expect to receive any cash flow from an ETS other than that arising at the start of a compliance period when EAs are issued. There is no reason why a successful ETS should generate net cash flows to the administrator. No cash flows means that the overall emissions cap has been achieved, and no entities have been forced to pay penalties for failing to keep within their individual, EA-covered, limits. However a government can use an ETS to generate cash flows if it chooses to do so. The basis for this decision is not known, because it does not appear necessary to charge for EAs in order to use them to set limits on entities' emissions or to ensure that entities consider emissions to involve costs.
76. A carbon tax at source directly charges the emitting entity and indirectly the customers that receive the emitters' products, while also providing funds that a government can use to defray any costs (health, etc.) that it incurs due to pollution. Similarly, if a government charges for EAs or auctions them, the funds received can be used to defray costs arising from pollution, which the government would otherwise bear and share with all taxpayers. Those funds may also cover the costs of administering the ETS. Therefore, charging ETS participants for EAs could be a way to:
- (a) Help achieve the ETS's primary public policy aim;
 - (b) Generate revenue for the government to cover the costs of the ETS; or
 - (c) Generate revenue for the government to cover the costs of emissions (health care costs, etc.).
77. On that basis, the sale of EAs (or a non-zero transfer) by a government does not reflect the "value" of the allowances so much as a decision about either economic incentives or cost sharing. For an ETS the primary approach to economic incentives is creation of economic scarcity, which is established by setting emissions limits, i.e. the "cap".
78. From the participants' perspective both carbon taxes and an ETS appear to impose costs proportional to an entity's emissions. In the case of carbon taxes the relationship is simple; the more an entity emits the more taxes it pays. For an ETS the situation is more complex.
79. If EAs are initially provided for free then an ETS participant will only incur costs once it exceeds the emissions limit set by its allocation of free EAs. Until that point it has "opportunity costs" when it emits, because an alternative use for its EAs is to sell them on the market, and thereby earn cash flows. If EAs are issued for a charge then the ETS costs look more like a carbon tax. But the costs can still be reduced by holding emissions below the total covered by the EAs, which will then mean being able to sell surplus EAs. Depending on the sale price of surplus EAs an entity may be able to recoup some or all of its original EA transfer costs. An ETS provides a potential up-side for participants, because an entity may be able to sell any surplus EAs and thereby earn revenue from its ETS involvement. A carbon tax is purely another cost, which the participant must cover.

Participant's Scope to Control or Influence the Economic Impact of an ETS

80. The economic impact for an ETS participant depends on various factors. Some of the factors are within the participant's control or influence:

- (a) Incurrence of costs for initial receipt of EAs depends on whether the administrator decides to charge a price and/or auction EAs. The participant may also decide, if EAs are auctioned, to purchase fewer EAs, on the basis that there is scope to reduce emissions below the level that the government has set.
- (b) Whether a participant incurs further costs to purchase additional EAs during the compliance period depends on whether the entity keeps its emissions below the limit set by the original EAs received.
- (c) Costs to change operations (e.g. new technology) and thereby reduce emissions is managed by entity.
- (d) The participant also chooses whether to trade in EAs, which could result in gains (losses) from trading activities, with risks arising that could impact on the statement of financial performance.

What “Costs” Should an ETS Participant Pay, if Emissions Remain Within its Cap?

- 81. The question of how costs arise under an ETS is an important difference between its operation and that of carbon taxes. An ETS does not aim to charge its participants for all their emissions. Apart from the cost to receive EAs at the start of the compliance period—where that could be zero or minimal—participants will have no further costs so long as they stay within the limits set for them by the administrator. This element relates to one of the secondary public policy objectives, which is to avoid negative consequences for society, including the economy, by adding an unavoidable cost burden to companies.
- 82. This implies a different perspective from the cost-sharing one. Emitters can avoid ETS costs, so long as they remain within the “cap” or limits for emissions that the administrator has put in place. Applying this perspective, “the norm” is viewed as participants remaining within the limits created by the EAs they receive at the beginning of a compliance period. Only a minority of participants will incur costs, because they cannot remain within the limits imposed. Even then the net effect for the group of participants is “cost-neutral”, because other participants will receive benefit from being able to sell their excess EAs.
- 83. If that approach were mapped onto carbon taxes, it is as though the taxes would only apply to emissions that *exceed* a particular level, instead of all emissions. (It is possible to design a carbon tax that mimics that situation by having an emissions threshold beneath which no tax is paid.) From this perspective an accounting approach that treats *all* emissions as costly does not appear to reflect the economic substance of the arrangement, whereby only emissions that exceed the cap are costly. The problem is that EAs are separate from emissions. An entity can sell its EAs, and then continue to emit and build-up obligations to surrender EAs.

APPENDIX A: EMISSION REDUCTION INTERVENTIONS—CASE STUDIES

- A1. This appendix describes a selection of emission reduction interventions. It is divided into three sections. Section 1 describes two international arrangements; the Kyoto Protocol, which has implications for all national developments, and the EU-ETS. The EU-ETS is the largest ETS and the longest-running ETS. It applies to 28 countries altogether.
- A2. Section 2 describes the following national or subnational interventions:
- (a) Australia's results-based financing.
 - (b) New Zealand's ETS.
 - (c) South Africa's carbon tax.
 - (d) Switzerland's carbon tax and ETS.
 - (e) United States of America—Clean Air Act 1990's command and control
84. Section 3 lists other pollutant pricing mechanism; PPMs that are international and outside of the UNFCCC, and a description of companies' internal pricing of carbon.

Further descriptions of Government Interventions

- A3. The following further descriptions could also be provided:
- (a) Brazil's use of incentives to protect forests and reduce deforestation,
 - (b) Canada—Provinces of Alberta and Quebec.
 - (c) China's ETSs (Beijing, Guangdong, Hubei, Chongqing, Shanghai, Shenzhen and Tianjin)
 - (d) European Union— Individual country implementation of the EU-ETS:
 - (i) France
 - (ii) Germany
 - (iii) Italy
 - (iv) Romania
 - (v) United Kingdom
 - (e) Japan—City of Tokyo's ETS
 - (f) United States—The Western Alliance Initiative ETS (California and Quebec) and the Regional Greenhouse Gas Initiative (Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island and Vermont)
- A4. The EU-ETS appears to allow individual variation at the national level. Therefore explanations of that variation as it applies, for example, to France, Italy, Romania and the United Kingdom could be useful additions to the individual country descriptions provided in Section 2 of this appendix. These are included above as proposed further descriptions of individual interventions.

SECTION 1 INTERNATIONAL EMISSION REDUCTION INTERVENTIONS

Kyoto Protocol 1997—2012

- A5. The Kyoto Protocol is an international agreement to address global warming and delay climate change. The Protocol aims to reduce the total greenhouse gas emissions of developed countries (and countries with economies in transition) to 5 per cent below the level they were in 1990. The Kyoto Protocol is named after the Japanese city where it was concluded in 1997.
- A6. The Kyoto Protocol entered into force in 2005, after it had been signed and ratified by 55 countries—the minimum number needed for the Protocol to become international law. Only countries that ratify the Protocol are bound by it. The Protocol set targets for GHG emissions for the period 2008 to 2012 (the first commitment period). Different countries have different targets. For the first commitment period country targets ranged from eight per cent below, to ten per cent above 1990 levels.
- A7. Parties to the Protocol are allocated an assigned amount of emissions units equal to their target multiplied by the number of years in the commitment period. For example, in the first commitment period New Zealand was allocated Assigned Amount Units (AAUs) equal to five times its 1990 emissions levels.
- A8. Parties may implement domestic policies and measures to limit or reduce emissions to a level equivalent to or less than their assigned amount, or take responsibility for any excess emissions through the flexibility mechanisms provided for in the Kyoto Protocol. The flexibility mechanisms are:
- (a) International Emissions Trading;
 - (b) Joint Implementation; and
 - (c) The Clean Development Mechanism.

International Emissions Trading

- A9. Parties with commitments under the Kyoto Protocol (Annex B Parties) have accepted targets for limiting or reducing emissions. These targets are expressed as levels of allowed emissions, or “assigned amounts,” over the 2008-2012 commitment period. The allowed emissions are divided into “assigned amount units” (AAUs). Emissions trading, as set out in Article 17 of the Kyoto Protocol, allows countries that have emission units to spare - emissions permitted them but not "used" - to sell this excess capacity to countries that are over their targets.

Clean Development Mechanisms

- A10. The Clean Development Mechanisms (CDM), defined in Article 12 of the Protocol, allows a country with an emission-reduction or emission-limitation commitment under the Kyoto Protocol (Annex B Party) to implement an emission-reduction project in developing countries. Such projects can earn saleable certified emission reduction (CER) credits, each equivalent to one tonne of CO₂, which can be counted towards meeting Kyoto targets.
- A11. The mechanism is the first global, environmental investment and credit scheme of its kind, providing a standardized emissions offset instrument, CERs.
- A12. The mechanism stimulates sustainable development and emission reductions, while giving industrialized countries some flexibility in how they meet their emission reduction or limitation targets.

Joint Implementation

- A13. The mechanism known as “joint implementation,” defined in Article 6 of the Kyoto Protocol, allows a country with an emission reduction or limitation commitment under the Kyoto Protocol (Annex B Party) to earn emission reduction units (ERUs) from an emission-reduction or emission removal project in another Annex B Party, each equivalent to one tonne of CO₂, which can be counted towards meeting its Kyoto target.
- A14. Joint implementation offers Parties a flexible and cost-efficient means of fulfilling a part of their Kyoto commitments, while the host Party benefits from foreign investment and technology transfer.
- A15. A joint implementation project must provide a reduction in emissions by sources, or an enhancement of removals by sinks, that is additional to what would otherwise have occurred. Projects must have approval of the host Party and participants have to be authorized to participate by a Party involved in the project. Projects starting as from the year 2000 may be eligible as joint implementation projects if they meet the relevant requirements, but ERUs may only be issued for a crediting period starting after the beginning of 2008.
- A16. If a host Party meets all of the eligibility requirements to transfer and/or acquire ERUs, it may verify emission reductions or enhancements of removals from a joint implementation project as being additional to any that would otherwise occur. Upon such verification, the host Party may issue the appropriate quantity of ERUs. This procedure is commonly referred to as the “Track 1” procedure.” If a host Party does not meet all, but only a limited set of eligibility requirements, verification of emission reductions or enhancements of removals as being additional has to be done through the verification procedure under the Joint Implementation Supervisory Committee (JISC). Under this so-called “Track 2” procedure, an independent entity accredited by the JISC has to determine whether the relevant requirements have been met before the host Party can issue and transfer ERUs. A host Party which meets all the eligibility requirements may at any time choose to use the verification procedure under the JISC (Track 2 procedure).

New Market-based Mechanism⁷

- A17. The “new market-based mechanism” aims to enhance the cost-effectiveness of, and to promote, mitigation actions, bearing in mind different circumstances of developed and developing countries. (*Staff:* Further review is needed to understand the new market mechanism, which could represent either a new type of intervention or a new relationship between existing interventions.)

Framework for Various Approaches⁸

- A18. The Framework for Various Approaches (FVA) is a set of components and rules that will ensure that all approaches used for mitigation will meet certain standards, especially from an environmental integrity point of view. The FVA aims to ensure that all mitigation approaches are integrated, and receive recognition, for UNFCCC compliance. These mechanisms allow developed countries to purchase emissions units from other developed countries or from emissions reduction projects implemented in other countries and use these for compliance with their Kyoto Protocol obligations.

⁷ http://unfccc.int/cooperation_support/market_and_non-market_mechanisms/items/7710.php

⁸ http://unfccc.int/cooperation_support/market_and_non-market_mechanisms/items/7709.php

A19. The flexibility mechanisms thus allow a country to comply with its target even though its domestic emissions may exceed its assigned amount. The Kyoto Protocol recognises that reducing global GHG concentrations in the atmosphere can be achieved by reducing the quantity of GHGs emitted or removing carbon dioxide presently in the atmosphere by increasing and maintaining carbon sinks (for example, managing forests).

Negotiations for Future International Agreement

A20. In December 2007, the United Nations Climate Change Conference in Bali culminated in the adoption of the Bali Road Map, which set the direction for securing a post-2012 agreement in Copenhagen in December 2009.

A21. The Bali Road Map divides the negotiations into two tracks: the Ad-hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWG-KP), and the Ad Hoc Working Group on Long-Term Cooperative Action under the Convention (AWG-LCA). The AWG-KP works on future commitments of Parties listed in Annex B to the Kyoto Protocol, while the AWG-LCA works on a broad negotiation under the UNFCCC involving all countries (developed and developing) on matters relating to the Bali Action Plan. The Bali Action Plan includes developing a shared vision, including a long-term global goal and looks at ways to enhance mitigation, adaptation, technology and finance in the context of addressing climate change.

A22. These two Ad-hoc Working Groups closed at the 18th Conference of the Parties (COP 18) in Doha in December 2012. Parties are now focussed on negotiating a new comprehensive global agreement applicable to all Parties by December 2015, to come into force in 2020. These negotiations are taking place under the Ad-hoc Working Group on the Durban Platform for Enhanced Action (ADP).

EFRAG BRIEFING PAPER—EUROPEAN UNION EMISSIONS TRADING SCHEME

EU Emissions Trading Scheme

Objective

1. To summarise⁹ how the EU Emissions Trading Scheme (EU ETS) operates, for inclusion output from IASB research project (a Discussion Paper).

Background to the EU ETS

2. The EU ETS is the largest multi-country scheme in the world. EU ETS is a statutory (i.e. mandatory) scheme that applies to the volume of greenhouse gases emitted by more than 11,000 power plants, factories and other fixed installations ('covered installations'), and aviation operators¹⁰. It covers all 28 EU member states, plus Iceland, Norway and Liechtenstein. These installations are collectively responsible for around 50% of the EU's CO₂ emissions.
3. The EU ETS was designed to be compatible with the Kyoto Protocol and the emissions limits in that. The first commitment period of the Kyoto Protocol expired, on 31 December 2012 and the EU ETS therefore operates outside any wider multinational framework, pending the entry into force of the second commitment period. However, momentum behind implementation of such

⁹ This document does not cover all aspects of the EU ETS and should not be taken as being a comprehensive guide. Further information is available on the website of the European Commission.

¹⁰ There are some specific requirements relating to aviation, which are outside the scope of this summary.

systems is growing in a broad range of countries. This includes national or sub-national systems in Canada, China, Japan, Kazakhstan, Korea, New Zealand, Switzerland and the United States.

4. The EU ETS applies to:
 - CO₂ emissions from:
 - Power and heat generation;
 - Energy-intensive industry sectors, including oil refineries, steel works and production of iron, aluminium and other metals, cement, lime, glass, ceramics, pulp, paper, cardboard, acids and bulk organic chemicals; and
 - Civil aviation.
 - Nitrous oxide (NO₂) from production of nitric, adipic, glycol and glyoxalic acids; and
 - Perfluorocarbons (PFCs) from aluminium production.
5. Emissions are measured in tonnes of CO₂ or equivalent, based on greenhouse impact. Participation in the EU ETS is mandatory for companies operating in this sector, but in some sectors only certain, larger, installations are covered.
6. The cap is on all emissions of greenhouse gases from covered installations based on emissions over a set period. Each of these periods is called a 'phase' or 'trading period', and emissions are therefore capped over the entirety of that phase. The first phase was from 2005-2007, the second phase from 2008-2012, the current third phase started in 2013 and will last until 2020, and the next will start in 2021. As of the current phase this cap reduces annually up to 2020 and beyond. Allowances within a scheme period are fungible (that is they are perfectly substitutable). Furthermore, allowances still in circulation from the previous period are banked to the current period (see paragraphs 42-39).
7. Scheme participants are required to measure their output of greenhouse gases from covered installations on an annual basis, using calendar years. In the April following the end of each calendar year scheme participants are required to surrender allowances equal to the volume of greenhouse gases emitted in the previous calendar year.
8. In discussing the EU ETS this paper considers the following elements:
 - Holding and recording of emissions allowances;
 - Allocation and auctioning of emissions allowances;
 - Trading of emissions allowances;
 - Monitoring of emissions;
 - Surrender of emissions allowances;
 - 'Banking' of emissions allowances;
 - Linkages with other emissions trading schemes.
9. It also identifies some key features in relation to financial reporting.

Holding and recording of emissions allowances

10. Rights to emissions allowances are fully dematerialised (they exist only in the form of electronic records) and are recorded on a single EU registry. The EU registry records the holding of

emissions allowances and transactions concerning these allowances. The main types of transactions defined are:

- Creation of allowances;
 - Free allocation of allowances;
 - Auctioning of allowances;
 - Trading of allowances;
 - Surrendering of allowances; and
 - Deletion of allowances.
11. Any EU company or legal individual may open an account at the EU registry and participation is not limited to these entities that operate covered installations. Accounts are therefore held by both operators (who have a holding account per covered installation and may also have additional trading accounts offering more flexibility) and traders (including banks).
 12. The accounts on the registry are accessed online, in a manner similar to online-banking or a securities custodian.
 13. There are two main types of accounts held by companies or physical persons on the registry: 'holding' accounts and 'trading' accounts. Entities frequently have both types of accounts, and the main difference between them is in relation to the security rules applicable to trading transactions, including initiation of transfers.
 14. Holding accounts can only make transfers to accounts specified in a trusted account list, and the process takes 26 hours to complete¹¹.
 15. Trading accounts can make transfers to any other accounts. For transfers to accounts specified in a trusted account list, delivery is immediate. For transfers to accounts not specific in a trusted account list, dual authorisation is required and delivery takes place 26 hours later.

Allocation and auctioning of emissions allowances

16. The emission rights are distributed amongst scheme participants either through direct grant ('allocation' for free) to covered installations or through an auction process.

Allocation of emissions allowances

Existing installations

17. For the 2005-2007 and 2008-2012 periods, allowances were allocated to covered installations by national governments in line with what were known as National Allocation Plans. Participating states drew up National Allocation Plans and had relative freedom to allocate allowance (subject to not unduly favouring any specific undertakings or companies). In the 2005-2007 and 2008-2012 schemes the vast majority of emissions allowances under the scheme were allocated in this manner.
18. For the 2013-2020 period and beyond the allocation of allowances is done on the same basis across the participating countries, using both a 'bottom-up' and 'top-down' approach.
19. The bottom-up allocation of emissions allowances to covered installations is in line with a 2011 European Commission 'Benchmarking Decision'. The number of allowances allocated to each

¹¹ When the 26-hour delay applies, the transfer is initiated 26 hours after its validation and is normally completed immediately after initiation, unless unforeseen circumstances (e.g. technical downtime of the system).

installation is based on a number of factors, including historical levels of production¹², the product being produced, benchmarking in comparison to leading producers and the cross-sectoral correction factor, decreasing annually in line with the overall emissions cap. There is also a split between manufacturing and electricity production, with electricity production not, in general, being entitled to any free allocation of emissions allowances.

20. For installations from sectors and sub-sectors included in a list of sectors deemed to be exposed to a risk of 'carbon leakage' (when, for reasons of costs related to climate policies, production is at risk of being transferred to countries without constraints on greenhouse gas emissions) the allocation deriving from the benchmarking formula is multiplied by 100% to calculate the number of emissions allowances to be received. For manufacturing covered installations not deemed to be at risk of carbon leakage, the number of emissions allowances to be received each year is calculated by taking the number generated from the benchmarking formula and multiplying by a predetermined percentage that progressively reduces the number of free allowances allocated (it reduces from 80% in 2013 to 30% in 2020).
21. There is also a 'top-down' cap on the total amount of allowances that can be allocated for free, based on the overall number of allowances to be allocated. If the bottom-up calculation results in a total number of emissions allowances to be allocated in excess of the "free allocation cap", the number of emissions allowances for each covered installation is reduced by a predetermined formula known as the Cross-Sectoral Correction Factor. This ensures that the total number of allocated allowances does not exceed the free allocation cap in each year.
22. In each period, the actual number to be received will not be known until both the bottom-up and top-down processes are complete and approved across the whole EU ETS. But once the processes are complete, the number of allowances to be allocated for each year in a period is known in advance, except for significant capacity changes.
23. The actual allocation of emissions allowances is done by crediting the covered installation's account at the EU registry. This generally takes place by 28 February each calendar year, in relation to the allocated emissions rights for that year. Changes in allocation for installations that have partially ceased to operate, significantly changed their capacity or closed in that year, will only take place in the subsequent calendar year.

New and expanding installations

24. New installations that are covered by the EU ETS and installations that increase capacity significantly are eligible for the allocation of additional free allowances from what is known as the 'New Entrants' Reserve'. The number of allowances received is calculated on the same basis as an existing installation, but uses estimated capacity (increase) and standard capacity utilisation factors rather than historic figures.

Cessations and significant capacity reductions

25. In the case of covered installations that close, reduce capacity significantly or partially cease operations there are implications for the number of emissions allowances allocated. In all instances the change in the number of emissions allowances allocated takes place in the calendar year following the closure, reduction of capacity or partial cessation.
26. Entities have no obligation to return previously allocated allowances if they close, reduce capacity or partially cease operations at a covered installation.

¹² There is a specific methodology for free allocation for process emissions (estimated to cover less than 1% of eligible emissions), which is based on historical levels of emissions.

Auctioning of emissions allowances

27. The remaining emissions rights (around half of all emissions rights in the 2013-2020 period) are auctioned. Emission allowances are distributed across the countries participating in the scheme. Eight-eight percent of the allowances are distributed based on the national share of EU ETS emissions in 2005. Ten percent are distributed to the least wealthy EU states as a form of fiscal transfer. The remaining 2% is given as a 'bonus' to countries that had, by 2005, reduced their greenhouse gas emissions by more than 20% from their 'base year' as defined in the Kyoto Protocol¹³.
28. Auctions are held on behalf of each national government, but are open to buyers from any country participating in the EU ETS.
29. There are no legal restrictions on how governments use the money raised by auctioning allowances, but the Directive governing the EU ETS states revenues generated 'should be used to tackle climate change in the EU and third countries' without legally requiring it. However, as of 2014, Member States have to report on the use of auctioning revenue.

Trading of emissions allowances

30. In principle, the trading of emissions allowances is open to anyone. At present, the main categories of traders are:
 - energy and industrial companies that have obligations under the ETS; and
 - financial intermediaries such as banks who operate both for speculation (proprietary trading), and on behalf of smaller companies and emitters (market making).
31. Most transactions in emissions allowances takes place in the form of derivatives. These derivatives are both over the counter and exchange traded. Settlement of the derivatives is either net cash, or through physical delivery (by transfer of an emissions allowance on the EU registry).
32. All transactions, in both derivatives and the emissions allowances themselves, will be regulated under the new Markets in Financial Instruments Directive ('MiFID'), applicable as of January 2017. Transactions in derivatives are already regulated under the currently applicable MiFID. Transactions in emissions rights are therefore subject to regulations regarding insider trading, market manipulation, transaction reporting and Anti-Money Laundering safeguards.
33. The most liquid European platform for trading of emissions allowances is via ICE Futures Europe, which has daily and monthly physically-settled futures that reference emissions allowances. As this is the most liquid market, most purchases and sales of emissions rights take place through the ICE futures market.

Monitoring and verifying of emissions

34. As part of the approval permit for joining the EU ETS (which is mandatory for covered installations) an approved monitoring plan is required. This sets out how the covered installation will monitor and report their emissions during the year. Covered installations are therefore required to monitor their emissions throughout a year.
35. Reports of emissions are required to be verified by an external verifier. The external verifier's report is similar to the audit of financial statements. The report is based upon the systems

¹³ Base year is 1990 for all countries apart from Bulgaria (1988), Hungary (average of 1985-1987), Poland (1988), Romania (1989) and Slovenia (1986).

included in the monitoring plan, and verifier is required to assess (and come to a 'reasonable assurance' conclusion) whether:

- the report is complete and meets the requirements of the applicable European Regulation;
- the operator has acted in compliance with the monitoring plan;
- the data in the report are free from material misstatements; and
- information can be provided in support of the operator's data flow activities, control systems and associated procedures to improve the performance of monitoring and reporting.

36. Verifiers are also required to include in the verification report any identified areas for improvement in relation to the operator's:

- risk assessments;
- development, documentation, implementation and maintenance of data flow and control activities and evaluation of the control system;
- development, documentation, implementation and maintenance of procedures for data flow and control activities; and
- monitoring and reporting of emissions.

37. A verified report of emissions during a calendar year is required to be submitted to the relevant national authority and the corresponding emission date entered in the EU registry by 31 March of the following calendar year. This verified emissions report identifies the amount of greenhouse gas emissions (in tonnes of CO₂ equivalent), and therefore the number of allowances that must be surrendered.

38. Each country is responsible for establishing measures to ensure that a verified monitoring report is submitted by operators for each covered installation. Submission is required for every year and any penalties for failure to submit (on time or at all) do not do not remove this obligation. If a covered installation fails to submit a verified monitoring report, the relevant national authority may 'assess' the number of emissions allowances required to be surrendered.

Surrender of emissions allowances

39. For each covered installation the number of allowances specified in the verified report must be surrendered by 30 April of the calendar year following that in which the emissions took place.

40. If an entity does not surrender sufficient emissions allowances by 30 April, there is a fine of €10014 per emissions allowance. The obligation to surrender emissions allowances is not extinguished, so the entity is also required to obtain sufficient rights to meet its obligation and surrender these.

41. Following surrender, the emissions rights are cancelled.

¹⁴ 2013 equivalent, rising in line with Eurozone inflation.

Banking of emissions allowances

42. Although emissions allowances are allocated and auctioned on an annual basis¹⁵ all emissions rights for the 2013-2020 scheme period are fungible and may be surrendered to fulfil the obligations for any year of the period.
43. Emission rights from the 2008-2012 period may not be used to settle obligations arising in 2013-2020. However, in a process known as ‘banking’ emissions allowances remaining at the end of the 2008-2012 period were deleted and an equal amount of additional 2013-2020 rights were created and credited to the accounts of those who held 2008-2012 rights.
44. This banking process took place as part of a deliberate policy decision. For the 2005-2007 scheme period, banking (and therefore conversion of 2005-2007 emissions allowances into 2008-2012 emissions allowances) did not take place. This caused a collapse in the price of 2005-2007 emissions allowances, meaning the desired economic effect of disincentiving carbon emissions did not happen.

Linkage with other emissions trading schemes

45. The EU ETS currently stands alone, but the European Union is attempting to link the EU ETS to other cap-and-trade schemes. This would allow emissions allowances for one scheme to be used to satisfy liabilities created in other schemes.
46. It is not yet clear whether this would be through direct surrendering of EU ETS emissions allowances for other schemes (and vice versa) or whether the emissions allowances would be ‘swapped’ first.

Key features in relation to financial reporting

Linkage between covered installations and legal entities

47. The Directive governing the EU ETS refers to both ‘Operators’ and ‘installation’:
 - ‘installation means a stationary technical unit where one or more activities listed in Annex I are carried out and any other directly associated activities which have a technical connection with the activities carried out on that site and which could have an effect on emissions and pollution’ ; and
 - ‘operator’ means any [natural or legal] person who operates or controls an installation or, where this is provided for in national legislation, to whom decisive economic power over the technical functioning of the installation has been delegated.
48. Obligations for submitting a verified emissions report and surrendering emissions allowances fall on the operator of a covered installation on particular dates (see timeline).
49. An entity can therefore avoid any applicable obligation by not being the operator of a particular covered installation on the specified date.

Emissions allowances allocated for free

50. Allocated emissions allowances are intended to partially compensate operators for the costs of obtaining emissions allowances. The allocation is explicitly linked to a particular year.
51. However, operators which receive allocated emissions allowances are free to do with them as they wish. There is no requirement to continue to trade or to emit. However, an entity which

¹⁵ The auction calendar is determined on annual basis, but the auctioning itself takes place almost on a daily basis.

substantially reduces its activities will receive a reduced allocation the next year. An entity that closes will receive no allocation the next year.

Annual timetable of key EU ETS dates for scheme participants

1 January	Start of annual emissions monitoring period.
28 February	Receipt of allocated free allowances in EU registry account.
31 March	Deadline for submission of verified annual emissions report for previous year.
30 April	Deadline for surrender of allowances equal to the verified annual emissions from previous year.
30 June	Deadline for submission of improvement report.
31 December	Deadline for notification to national regulator of changes to monitoring plan, capacity, activity level or operations. End of annual emissions period.

SECTION 2 NATIONAL AND SUBNATIONAL EMISSION REDUCTION INTERVENTIONS

AUSTRALIA¹⁶—RESULTS BASED FINANCING

Australia—Summary

- A23. Presently the Australian government does not have an ETS and does not issue EAs. The government does issue “Australian Carbon Credit Units” (ACCUs). These represent a right to receive funds from the government, in exchange for emission reductions.
- A24. In 2012 the Australian government introduced “carbon pricing”, as a first step towards creation of an ETS. The fixed carbon price was initially set at AUS\$23 per tonne of CO_{2e}, to increase at a rate of 2.5% per year. This intervention was replaced, in 2015, with financial incentives for projects that reduce emissions. Entities receive ACCUs in exchange for carrying out projects that reduce emissions. The government agrees to purchase back the ACCUs for an agreed price, once the projects have achieved the promised emission reductions.

Intervention (1) “Carbon Pricing Mechanism”—Carbon Pricing and ETS

- A25. Australia’s Carbon Pricing Mechanism (CPM) established a fixed carbon price at which emission allowances (also called “permits”) could be bought from the government. This was the foundation for an Australian ETS, to be established in 2015. The fixed carbon price was set at AUS\$23 per tonne of CO_{2e} and would have increased at a rate of 2.5% per year. Once the CPM transitioned to an ETS, it was intended to link to the EU ETS. The CPM was one part of a package of laws that included the Carbon Farming Initiative (CFI) framework, which evolved to become the Emission Reduction Fund, described below.

Intervention (2) “Direct Action Plan” Financial Incentives for Emissions Reduction Projects

- A26. The CPM was replaced with the Direct Action Plan, where the government’s main tool to reduce emissions is the Emission Reduction Fund (the Fund). The Fund provides financial incentives for investments in technologies that reduce emissions. (Budgeted cost AUD\$2.55 billion over four years, starting in 2015.) The Fund purchases emissions reductions offered by entities via reverse auctions. It covers projects from a wide range of sectors: agriculture, building, electricity, fuel combustion, forestry, industry, transport, and waste. These projects can generate abatement by reducing or avoiding emissions of methane (CH₄), nitrous oxide (N₂O), or by converting CH₄ into carbon dioxide (CO₂).
- A27. The Fund has three main elements:
- (a) *Crediting emission reduction*: An entity registers their emissions reduction project with the Clean Energy Regulator. If the Regulator approves the project, it can be issued with Australian Carbon Credit Units (ACCUs). After project approval, entities must submit a bid to sell emissions reductions on the basis of price per tCO_{2e}. Only bids less than a maximum amount (benchmark price), set by the Regulator, will be considered. The Regulator credits projects for a single defined “crediting period”, which is the period of time over which a project can generate ACCUs. Emission reduction projects have a seven years period while sequestration projects have a 25 years crediting period.
 - (b) *Purchasing emissions reductions*: Successful bids are entered into a carbon abatement contract with the Regulator, which agrees to purchase emissions reductions from the project

¹⁶ EDC-IETA case study updated as of May 2015. Available from https://ieta.memberclicks.net/assets/CaseStudy2015/australia_case_study_may2015.pdf

at the bid price. The project proponent is obliged to deliver the bid quantity of emission reductions. Carbon abatement contracts apply a five year time span. The project proponent can either deliver emission reductions from its own project, or buy ACCUs from another registered project. Once verified the Regulator will pay the agreed price. (ACCUs generate income, because they can be sold to the government through a carbon abatement contract, or sold in the secondary market. The government is the ultimate purchaser of ACCUs.)

- (c) *The safeguard mechanism*: To ensure that emissions reductions acquired by the Fund are not offset by emissions increases elsewhere a “safeguard mechanism” will encourage businesses to keep emissions below historical levels. Regulations for this were expected to be drafted in July 2015, released in October 2015 and enter into force on 1 July, 2016.

Complementary Measures

A28. The government also implemented three complementary measures:

1. *Renewable energy*: A mandatory target that at least 20% of Australia’s electricity supply will come from renewable sources of energy by 2020, with yearly targets for renewable generation. A second initiative that supports renewable energy projects by streamlining and coordinating administration, funding, research and development.
2. *Energy efficiency*: A 10-year strategy to accelerate energy efficiency improvements across Australia, which includes actions to be undertaken by the Commonwealth, State and Territory governments.
3. *Voluntary carbon markets*: The National Carbon Offset Standard serves the voluntary market, ensuring the integrity of the offset available to consumers and businesses. The programme also offers information to businesses and consumers to help them determine their carbon footprint, and provides information on carbon neutral products. The Carbon Neutral Program provides a mechanism based on the NCOS to gain carbon neutral certification.

A29. These measures do not involve issuance or creation of emission allowances.

NEW ZEALAND—ETS

New Zealand Government and Kyoto

A30. The government has an obligation to the United Nations to keep emissions within the prescribed cap or to provide Kyoto credits for the difference for the first commitment period (2008-2012). There are no current obligations beyond this period, although to make progress toward the policy goal of managing climate change negotiations are underway to extend the Kyoto agreement to further commitment periods.

A31. The government was allocated 309.5 Assigned Amount Units (AAUs) by the UNFCCC and is expected to generate approximately 80m forest sink credits. These are international units and represent the NZ emission levels in 1990. These credits are internationally tradable. However, under Kyoto the government must hold a quantity of international units equal to 90% of its AAU allocation. This mitigates the risk that countries sell their units and then default on their Kyoto obligation. The government can use these units to settle its Kyoto obligation to the UNFCCC. Current forecasts show that NZ’s emissions will exceed the prescribed cap, so it will need to purchase further international units to fully settle its obligation if these forecasts eventuate.

The New Zealand (NZ) ETS

A32. Certain entities (points of obligation entities) must provide units (not cash) to the Government to meet their total emissions for each year. It is their total emissions, not just those above 1990

levels that must be covered by the credits. These ‘points of obligation’ entities (e.g. petrol companies, energy producers) are typically upstream of the final consumer/polluter. Units acceptable by the government are NZ units and international units. There is no hard domestic emission cap, as international credits can be used to cover excess emissions. The ETS does, however, operate within the global Kyoto cap.

- A33. To meet the cost of providing units, the ‘point of obligation’ entities can be expected to pass the cost on to their customers (and so on to the final polluter). To help some industry meet these increased costs, the Government will allocate units free to sector participants (but not ‘point of obligation’ entities). In turn, they can sell these units and so help meet cost rises. Free allocations are typically a % of the sector’s 2005 emissions. The Government also has the option of auctioning NZ units. A registry will record holdings and trades of NZ units.
- A34. NZ units represent one metric tonne of emission. Each NZ unit is identical in design – they can be traded within and across sectors. NZ units can only be traded within NZ, but they will be backed by AAUs. That is, for every NZ unit the government stands ready to swap it into an AAU (or equivalent international unit) by the end of the ‘true-up’ period (approx 2014). The backing of NZ units by AAUs is government policy. Otherwise there is nothing preventing the government from issuing more NZ units, although this would have implications for pricing of units and adverse consequences for encouraging polluters to manage emission levels.
- A35. Having AAU backing provides liquidity and acts as a safety valve on price, as differences between NZ unit prices and international prices will result in trades between the two markets. The decision to create a NZ unit instead of trading AAUs directly was made because there are some restrictions on AAU trading in the first commitment period and the future of AAUs beyond the first commitment period is uncertain. Having NZ units and associated rules/markets better ensures an enduring ETS.
- A36. The ETS will progressively be introduced across sectors. Some sectors, notably agriculture, will be not captured in the first Kyoto commitment period (2008-2012).
- A37. Emissions will be measured and invoiced annually, with payment due shortly after invoicing and penalties attracting to non-compliance. This approach follows the tax collection model and will be rolled-out to sectors over the Kyoto commitment period. More detail on the framework for a New Zealand Emissions Trading Scheme publication can be found at <http://www.climatechange.govt.nz/>

SOUTH AFRICA¹⁷

South Africa—Key Points

A38. The South African Government has a target to reduce emissions by 34% by 2020, which was submitted to the UNFCCC in 2010. It does not have an ETS. A carbon tax will be implemented in 2016. The government has introduced taxes and incentives that encourage greater sustainability. South Africa is active in developing “Clean Development Mechanism” projects as per the UNFCCC.

Emission Reduction Policy and Interventions

A39. South Africa signed the Kyoto Protocol in 2002 as a non-annex I party, which means there are no specific targets ascribed under the protocol. In 2009, South Africa pledged to reduce emissions 34% by 2020, and 42% by 2025, below the business as usual trajectory. This voluntary pledge is subject to the provision of adequate financial, technological and capacity building support from developed countries.

A40. The South African government interventions involve taxes and other measures to move the country toward a greener economy, including:

- (a) Taxes: a fuel levy on petrol and diesel, an electricity generation levy; and
- (b) Incentives: an energy efficiency tax incentive, a renewable energy depreciation allowance, a depreciation allowance for biofuels production, and a research and development tax incentive, among others.

A41. The electricity generation levy was implemented in 2009. It applies to production of electricity from non-renewables, including coal, petroleum-based fuels, natural gas, and nuclear.

Clean Development Mechanism (CDM) Projects

A42. South Africa's main experience with carbon markets has been through the Clean Development Mechanism (CDM). Projects have covered bio-fuels, energy efficiency, fuel switching and hydro-power. Revenue from these projects is exempt from taxation. To date, there have been 360 CDM projects submitted for consideration; 222 Project Idea Notes (PINs) and 138 Project Design Documents (PDDs). Of the 138 PDDs, 90 projects have been registered, including 35 Programs of Activities (PoAs). 12 have reached CER issuance, and 48 are at different stages of the project cycle; approval, validation stage, and/or request for review.

Government Decision to Choose Carbon Tax

A43. A 2010 discussion paper by the South African National Treasury examined the implementation of a carbon tax and the advantages and disadvantages of a carbon tax versus an ETS. The paper was updated in May 2013 and includes a final argument supporting implementation of a carbon tax.

Carbon Tax Scope and Coverage

A44. The carbon tax will cover emissions that result directly from fuel combustion and gasification, and from non-energy industrial processes. Due to complicating factors affecting the

¹⁷ Source: The ETS case study for South Africa, prepared by the Environmental Defence Fund (EDF) and the International Emissions Trading Association (IETA), updated as of May 2015. Available at: <https://www.edf.org/sites/default/files/south-africa-case-study-may2015.pdf>.

implementation of a tax directly on actual emissions, a fuel input tax was the best agreed upon option by the South African government as a proxy for a direct tax on emissions. Instead of measuring and taxing emissions directly, CO_{2e} emissions will be quantified based on the carbon content of fuels at the point at which they enter the economy. The tax rate will start at 120R (South African Rand)/ton CO_{2e} (US\$10/€8.96)/tCO_{2e} from 2016 and increase by 10% per year until 2019.

Compensation and Flexibility Provisions

Tax Free Threshold

A45. The proposed carbon tax policy will include a percentage-based tax-free threshold, for which companies will not have to pay for a fixed percentage of their emissions. From 2016-20, the tax-free threshold will be fixed at 60%. Additional relief will be given to trade-intensive sectors and sectors where the potential to reduce emissions is limited, such as process emissions the cement, iron, steel, aluminum and glass sectors. The basic threshold of 60% for emissions from fuel combustion and 70% for process emissions will effectively reduce the tax rate to R48/tCO_{2e} and R36/tCO_{2e} respectively (trade exposure also merits exemption from the tax) during the first phase. A tax free threshold of 60% implies that 40% of emissions will be taxable. If offsetting is taken into account the tax free threshold can increase to 90% meaning that 10% of emissions will be taxable. Proposals for recycling revenue derived from the carbon tax are currently under discussion and will likely focus on providing incentives to facilitate the transition to a low carbon economy. The maximum tax-free threshold for those sectors included in the first five-year period is 80% (including offsets).

Offsetting emissions

A46. Offsets may also be used to reduce a firm's carbon tax liability up to a sector specific limit determined by the mitigation potential of that sector. The specifics of the offset mechanism and design features, including carbon offset standards, project types and methodologies, and origins of offset projects have yet to be finalised and published. Entities liable for the carbon tax can implement a carbon offset purchasing strategy which could help to reduce their carbon tax duty payable by 25%. Offsets are currently trading at low prices, but could increase to between R80/t and R100/t.

Market Regulation and Oversight

A47. Mandatory reporting requirements are currently under development.

Complementary Measures and Supplementary Measures

A48. Measures to ease the transition into the carbon tax regime and ensure that there is no increase to the total tax burden include tax shifting through rebates or other assistance measures for households. For coal combustion and gasification processes, there will be a specific tax rebate for carbon capture and storage. The government has identified programs to reduce emissions or manage the impact of climate change.

SWITZERLAND¹⁸

Switzerland—Key points

A49. Switzerland has made an international commitment to reduce emissions, which is met in part through the use of international credits (projects outside of Switzerland), with at least 30% of the reduction in-country. It has an ETS. (One tonne of CO₂ is priced at CHF12, as of February 2015.) Some companies must join the ETS, while others can choose to join. EAs are generally distributed free of charge, although some are auctioned. For the 2013-20 period, companies that do not surrender enough EAs and/or emissions reduction certificates must pay CHF125/tCO_{2e} to the federal government by the following year. Switzerland has introduced a carbon tax. The “CO₂ levy” applies to thermal fuels, and was CHF 60 for one tonne of CO₂ in February 2014. Companies generally have a choice between paying a carbon tax (the “levy”) and joining the ETS as participants, although this choice is not available to all companies.

Swiss Emission Reduction Policy and Interventions

A50. Swiss environmental policy is given effect through the 1985 Act on the Protection of the Environment (PE Act), and the 1999 Act on the Reduction of Carbon Dioxide (CO₂) Emissions (CO₂ Act). The goals and mechanisms in these two Acts were designed to help Switzerland meet its Kyoto Protocol commitment of a 8% greenhouse gas (GHG) reduction relative to 1990 during the period 2008—2012. A 2011 revision to the CO₂ Act set a target of 20% below 1990 levels (52.5 million tonnes of CO₂) by 2020.

Choice between Carbon Tax or Participant in ETS—Restricted

A51. The Swiss ETS is an alternative option to that of complying with the national CO₂ levy on heating, industrial processes and transport fuels. For the period 2008-12, firms covered by the levy had two choices: (1) pay the CO₂ levy, or (2) voluntarily set a verified absolute emissions target and associated allowance allocation and participate in the Swiss ETS, which exempted them from the levy. In essence, the CO₂ levy functioned as a hard price ceiling for covered entities, and the option for ETS participation allowed firms to potentially pay a lower rate for emissions reductions than this ceiling price.

A52. At the beginning of 2013, the CO₂ Act and the revised CO₂ Ordinance entered into force. They form the framework for the current Swiss climate policy from 2013 to 2020. On 27 February, 2015, Switzerland submitted its Intended Nationally Determined Contribution (INDC) to the United Nations Framework Convention on Climate Change (UNFCCC) committing to a 50% reduction in GHG emissions compared to 1990 levels by 2020. At least 30% of this reduction must be achieved within Switzerland itself. The rest may be attained through projects carried out abroad. This effort can be met in part, with the use of international credits and corresponds to an average emission reduction of 35% over the period 2021-30 and an overall emission reduction of 50% by 2030 relative to 1990 levels.

ETS Scope and Coverage

A53. The Swiss ETS point of regulation is at the company-level; at the point of combustion. In the period 2008 - 2012, it covered firms that set absolute caps—approved by federal authorities—

¹⁸ Source for this summary: The ETS case study for Switzerland, prepared by the Environmental Defence Fund (EDF) and the International Emissions Trading Association (IETA), updated as of May 2015. Available at: <https://www.edf.org/sites/default/files/switzerland-case-study-may2015.pdf> .

for themselves in order to receive exemption from the CO₂ Act's carbon levy. The lower emissions threshold for a company to qualify as a direct participant is set at 0.25 million tCO_{2e}/year. Medium-sized companies belonging to sectors intensive in greenhouse gases, whose CO₂ tax represents a significant burden in comparison to their value added, and whose total thermal input exceeds 10MW thresholds, can apply to participate in the ETS voluntarily (opt-in). Emission reduction obligations are imposed on installations whose thermal input exceeds 100 MW.

- A54. In 2008-12, the Swiss ETS covered heating and process fuels. Sectors with companies covered by the ETS included ceramics, paper, plastics, aluminium, glass, chemistry, metal-working and engineering, foodstuffs and lime, foundries, printers, and haymakers. The compliance periods within the Swiss ETS were annual.
- A55. For 2013-20, the Federal Council will specify economic sectors whose installations operating with high or moderate GHG emissions may apply to participate in the ETS. In designating the covered economic sectors, the Federal Council must take into account: (1) the correlation between the CO₂ levy burden and the value added of the specified economic sector, and (2) the extent to which the CO₂ levy adversely affects the specified sector's economic competitiveness. In addition, the Federal Council may mandate compulsory ETS participation from sectors with high GHG emissions per installation. As was the case during 2008-12, ETS participants are exempted from the CO₂ levy in 2013-20.

Allowance Distribution and Auction Overview

- A56. From 2008-12, EAs were distributed free of charge to Swiss ETS participants. The quantity of EAs that a company received was determined via a "bottom-up" approach. Federal authorities verified the company's potential to reduce CO₂ emissions from both a technical and economic standpoint, based on both projected production and CO₂ emissions, and CO₂ reduction measures already implemented. As mentioned above, small and medium enterprises (SMEs) that volunteered to set an emissions target or follow an emissions reduction plan did not receive free EAs. If, however, the emissions for an SME exceeded the target level, then the company was allowed to purchase EAs in order to fulfil its commitment.
- A57. For 2013-20, the Federal Council allocates EAs annually. Allocations are calculated using benchmarks similar to those applied in EU ETS allocation. The maximum amount of EAs that can be assigned per unit of production are defined by product benchmarks for new entrants, the Federal Council has created a reserve of 5% of EAs. The number of free EAs is adjusted to account for the risk of carbon leakage. Since the start of the Second Period (2013-20), EAs that have not been freely allocated are auctioned by the Federal Office for the Environment (FOEN) on the Swiss emission trading registry (EHR).

Flexibility Provisions

International offsets

- A58. Emission Reduction Units (ERUs), Certified Emission Reductions (CERs), and Removal Units (RMUs) are accepted international offset credits within the Swiss ETS. Temporary certificates from carbon sink projects (RMUs, tCERs, and ICERs), such as afforestation and reforestation, are allowed, but they cannot be banked for use in future commitment periods. The FOEN may ask companies that use temporary credits to guarantee that additional offsets are purchased once temporary credits expire.

- A59. There are no limits for banking Swiss EAs or international AAs for use in 2013-20. The banking limit through the next commitment period for both CERs and ERUs is 2.5% of banked AAs. However, companies may not bank RMUs, tCERs, and ICERs for use in the next commitment period. Banking and borrowing were allowed within the first commitment period, 2008-12. Most credits issued from Clean Development Mechanism (CDM) projects in Non-Annex I countries are allowed, whereas credits from other countries need to have been registered and implemented before 31 December 2012. For 2013-20, measures carried out abroad are allowed to achieve no more than 75% of additional reductions in GHG emissions.

Market Regulation and Oversight

- A60. Electronic register: Swiss ETS credits exist electronically and are listed on the “National Emissions Trading Registry” (the Registry), which is an online accounting system that ensures that the issuance, holding, transfer, acquisition, cancellation and surrender of emission credits are all accurately recorded, and reduction targets are achieved. After the government approves a company’s cap, the agreed-upon quantity of EAs (the amount of tax-exempt emissions) appears on the Registry under the company’s name. Companies with emissions that exceed their allowance buy credits on the Registry, and companies that emit below their caps either bank or sell credits. The Registry also connects Swiss ETS participants to Kyoto flexibility mechanisms, and transactions involving these units are subsequently approved by the UN.
- A61. Penalties for exceeding emissions limit: For 2008-12 period, the penalty for companies that failed to achieve their Swiss ETS targets required the retroactive payment of the carbon levy (plus interest) for each ton of CO₂ emitted since the company’s exemption. For 2013-20, companies that fail to surrender enough EAs and/or emissions reduction certificates must pay the Confederation CHF125/tCO_{2e} by the following year.

Complementary Measure (CO₂ Levy) and Supplementary Measures

- A62. As noted above, the Swiss ETS and the carbon levy are alternative compliance options. This approach allows companies to bypass levy payments if they voluntarily join the Swiss ETS. From 2008-12, companies were covered by the CO₂ levy if their emissions exceeded a set percentage of their 1990 emissions from fuel combustion. Beginning 2009, a company that emitted greater than 90% of its 1990 emissions level in 2007 was covered by the levy. By 2010, if a company emitted more than 90% of its 1990 emissions level in 2007 it would be covered by the levy. In 2010, if a company emitted more than 86.5% of its 1990 emissions in 2008, or more than 85.5% in any subsequent year, it would be covered by the levy. Beginning in 2013, certain companies face mandatory ETS participation. Since 2008 the levy has increased from CHF12/tCO₂ to CHF60. A percentage of levy revenue is used to finance emission reduction activities, while most is returned to the community through funding of health insurance, etc.
- A63. Supplementary measures include:
- (1) A binding target for average CO₂ emissions from new cars;
 - (2) Implementation of emissions reduction measures that allow producers of fossil propellant fuels to fulfil an obligation to cover a quarter of their emissions; and
 - (3) Enhanced climate change adaptation activity. The present focus is on emissions reductions from buildings, passenger cars, and sinks. For example, the “Buildings Program” aims to improve thermal regulation of buildings by promoting renewable energy sources, waste-heat recovery and building technology.

UNITED STATES OF AMERICA—CLEAN AIR ACT 1990

Clean Air Act—Example of Command-and-Control¹⁹

A64. The 1970 version of the Clean Air Act (the Act) empowers the Environmental Protection Agency (EPA), a federal agency, to set limits on air pollutants and limit emissions of such pollutants from specified sources such as chemical plants, utilities and steel mills.

Enforcement

A65. The Act gives EPA important enforcement powers. There are civil and criminal sanctions available. In general, when EPA finds that a violation has occurred, the agency can issue an order requiring the violator to comply, issue an administrative penalty order (use EPA administrative authority to force payment of a penalty), or bring a civil judicial action (sue the violator in court).

Provides Scope for Many Interventions—Description Focuses on Command-and-Control

A66. The Clean Air Act (the Act) is described in order to illustrate different types of command-and-control interventions, so those interventions are the main focus of this description. The Act is not limited to command-and-control interventions. The Act requires states and tribal territories in the United States of America (the United States) to achieve limits on air pollution. States, tribes and local governments are able to choose the specific interventions that they consider will best achieve those pollution limits.

Approval of Plans and Power to Intervene

A67. The EPA approves state, tribal and local agency plans for reducing air pollution. State Implementation Plans (SIPs) outline how each state will control air pollution, using regulations, programs and policies. If a plan does not meet its requirements, EPA can issue sanctions against the state and, if necessary, take over enforcing the Clean Air Act in that area.

Command-and-Control Interventions

A68. The list of command-and-control interventions provided below is illustrative rather than exhaustive. Acting under the Clean Air Act, the EPA has taken the following command-and-control style actions:

1. Established state and local area limits on air-borne pollutants, which must be achieved, with penalties for non-achievement.
2. Requires industrial sources to install controls or change production processes in order to reduce polluting emissions. The EPA publishes regulations that cover a range of industrial categories, including chemical plants, incinerators, dry cleaners, and manufacturers of wood furniture. The regulations do not generally prescribe a specific control technology, but set a performance level based on a technology or other practices already used by the better-controlled and lower emitting sources in an industry. Companies must meet the emissions levels required in the regulations.

¹⁹ Sources: Environmental Protection Agency (2007) The Plain English Guide to the Clean Air Act, available at http://www3.epa.gov/airquality/peg_caa/pdfs/peg.pdf and EPA website on laws and regulations at <http://www2.epa.gov/laws-regulations>, and last part of the Acid Rain Program description (market and trading) is from https://en.wikipedia.org/wiki/Acid_Rain_Program.

3. Requires factories and other businesses to develop plans to prevent accidental releases of highly toxic chemicals.
4. Established limits on emissions from vehicles, which affect manufactured and imported vehicles, and requirements to restrict fuels used to very low Sulphur gasoline and diesel fuel.
5. A ban on lead in gasoline, implemented in 1996, which followed earlier requirements to limit lead in gasoline.
6. Requirements to:
 - a. Use reformulated gasoline in vehicles.
 - b. Install vapor recovery nozzles at gas stations. (These reduce the release of gasoline vapor into the air when people put gas in their cars.)
 - c. Carry out regular car maintenance through mandated inspection and maintenance programs.
 - d. Equip passenger vehicles with on board emission diagnostics.
7. A 1998 rule limiting volatile organic compounds (VOC) emissions from consumer products. It requires many United States manufacturers, importers, and distributors to limit the VOC content of their products. EPA also issued a rule limiting emissions from architectural coatings (exterior and interior house paints, wood and roof coatings).

Use of Permits at the State Level

- A69. One of the major initiatives Congress added to the Clean Air Act in 1990 is an operating permit program for larger industrial and commercial sources that release pollutants into the air. Operating permits include information on which pollutants are being released, how much may be released, and what kinds of steps the source's owner or operator is required to take to reduce the pollution. Permits must include plans to measure and report the air pollution emitted. States and tribes issue operating permits. If those governments do not do a satisfactory job of carrying out the Clean Air Act permitting requirements, EPA can take over issuing permits.
- A70. Operating permits are especially useful for businesses covered by more than one part of the Clean Air Act and additional state or local requirements, since information about all of a source's air pollution is in one place. The permit program simplifies and clarifies businesses' obligations for cleaning up air pollution and can reduce paperwork. For instance, an electric power plant may be covered by the acid rain, toxic air pollutant, and smog (ground-level ozone) sections of the Clean Air Act. The detailed information required by those separate sections is consolidated into one place in an operating permit.
- A71. Businesses seeking permits have to pay permit fees, much like car owners paying for car registrations. These fees pay for the air pollution control activities related to operating permits.

Other EPA Actions to Reduce Air Pollutants

- A72. The EPA also:
1. Provides funding for projects and actions with the potential to reduce air pollution, (e.g. research and development, funding for school bus engine adjustments that reduce emissions).

2. Places conditions on funding that was previously unrelated to pollution. Any state level transportation project (e.g. construction of highways) must be consistent with air quality goals before it can receive Federal funding.
3. Educates the public and businesses on ways to reduce their use of energy and their carrying out of activities that contribute to air pollution such as high-pollution wood-burning stoves and high-pollution transportation choices.

The Clean Air Act and Emission Trading Schemes

A73. The EPA's is not restricted to the use of command-and-control interventions, although it provides many different examples of that type of intervention. The EPA has historically supported the use of ETSs. It does this through advice to states, tribes and local agencies which explains the benefits of an ETS. In 1990 the EPA, under the Clean Air Act, introduced a national "cap-and-trade" ETS to reduce acid rain.

EPA's Acid Rain Program

- A74. The Acid Rain Program is a nation-wide law designed to reduce acid rain through reductions in emissions of sulfur dioxide (SO₂) and oxides of nitrogen (NO_x). Using a market-based cap and trade approach, the program sets a permanent cap on the total amount of SO₂ that may be emitted by electric power plants.
- A75. The initial phase of the Acid Rain Program went into effect in 1995. The law required the highest emitting units at 110 power plants in 21 Midwest, Appalachian, and Northeastern states to reduce emissions of SO₂. The second phase of the program went into effect in 2000, further reducing SO₂ emissions from big coal-burning power plants. Some smaller plants were also included in the second phase of the program. Total SO₂ releases for the nation's power plants are permanently limited to the level set by the 1990 Clean Air Act—about 50 percent of the levels emitted in 1980.
- A76. Each EA is worth one ton of SO₂ emissions released from the plant's smokestack. Plants may only release the amount of SO₂ equal to the allowances they have been issued. If a plant expects to release more SO₂ than it has allowances, it has to purchase more allowances or use technology and other methods to control emissions. A plant can buy allowances from another power plant that has more allowances than it needs to cover its emissions.
- A77. There is an EA market that operates like the stock market, in which brokers or anyone who wants to take part in buying or selling allowances can participate. Allowances are traded and sold nationwide.
- A78. Bonus allowances are provided to power plants for installing clean coal technology that reduces SO₂ releases, using renewable energy sources (solar, wind, etc.), or encouraging energy conservation by customers so that less power needs to be produced. EPA has also awarded allowances to industrial sources voluntarily entering the Acid Rain Program.
- A79. The 1990 Clean Air Act has stiff monetary penalties for plants that release more pollutants than are covered by their allowances. All power plants covered by the Acid Rain Program have to install continuous emission monitoring systems, and instruments that keep track of how much SO₂ and NO_x the plant's individual units are releasing. Power plant operators keep track of this information hourly and report it electronically to EPA four times each year. EPA uses this information to make sure that the plant is not releasing quantities of pollutants exceeding the plant's allowances. A power plant's program for meeting its SO₂ and NO_x limits will appear on the plant's permit, which is filed with the state and EPA and is available for public review.

Market Prices, Trading and Effectiveness

- A80. In 1991 the retrofit cost per ton of SO₂ pollution control equipment (scrubbers) on existing units was estimated to be \$665– \$736/ton range. 2005 was the first year the price of an SO₂ allowance reached this level, when a few trades were registered at slightly over \$1,600/ton. At those rates, it was less expensive to install scrubbers and reduce air pollution than to purchase SO₂ emissions allowances and continue polluting. Subsequently, the market price of SO₂ allowances decreased to around \$88/ton in August 2009.
- A81. Citizens and groups can purchase sulfur dioxide EAs alongside electric utilities and other producers of air pollution in annual auctions conducted by the EPA and on the Chicago Board of Trade. Each year the EPA auctions off about 250,000 EAs that enable their owners to emit one ton of sulfur dioxide.
- A82. A small number of local groups have participated for many years, on the theory that reducing the supply of EAs may drive up the price of acquiring them. For example, the Acid Rain Retirement Fund (A.R.R.F.), a non-profit, all-volunteer, community educational group, bid alongside polluters since 1995 for as many EAs as their funds can buy. The A.R.R.F. then retires the EAs permanently, taking allowances off the market and keeping sulfur dioxide out of the air. As of 2013 A.R.R.F. owned the right to emit 2,826,000 pounds (1,413 tons) of sulfur dioxide per year, plus whatever amount it did not emit under EAs purchased in previous years. Because it did not exercise its right to emit any pollution during 1996–2013, "banking" its emissions allowances for the future, A.R.R.F. holds the legal right to emit a total of 4,644,000 pounds—or 2,322 tons—of sulfur dioxide in 2013. That amount will increase by another 100 tons in 2018, when allowances A.R.R.F. purchased in the 7-year advance auction of 2011 are eligible for use.
- A83. Examination of EPA Auction results 1993–2013 indicates groups or individuals like A.R.R.F. who purchased emissions allowances for purposes other than releasing air pollution now own the right to emit 3,188 tons per year. Although most have purchased only one or a few tons, this adds up to considerably more than the 760 tons/year allocated by law to the Miami Fort #5 coal-fired generating unit in Ohio.
- A84. A general issue with cap and trade programs has been over-allocation, whereby the cap is high enough that sources of emissions do not need to reduce their emissions. This program had early over allocation during Phase I, and this allowed emission sources to "bank" their allowances for future years. In Phase II, emission sources drew down their banked allowances. In 2006, emissions were again below the cap, leading to further banking.

SECTION 3: OTHER INTERVENTIONS

International—outside of UNFCCC

Voluntary carbon market (Carbon offsets)

A85. As a part of the global carbon market, the voluntary CO₂ market is different from the compliance schemes under the Kyoto Protocol and EU-ETS. Instead of undergoing the national approval from the project participants and the registration and verification process from the UNFCCC (United Nations Framework Convention on Climate Change), the calculation and the certification of the emission reduction are implemented in accordance with a number of industry-created standards.

Reducing Emissions from Deforestation, Forest Degradation, and the role of conservation, sustainable management of forests, and enhancement of forest carbon stocks (REDD+)

A86. Deforestation and forest degradation, through agricultural expansion, conversion to pastureland, infrastructure development, destructive logging, fires etc., account for nearly 20% of global greenhouse gas emissions, more than the entire global transportation sector and second only to the energy sector. It is now clear that in order to constrain the impacts of climate change within limits that society will reasonably be able to tolerate, the global average temperatures must be stabilized within two degrees Celsius. This will be practically impossible to achieve without reducing emissions from the forest sector, in addition to other mitigation actions.

A87. Reducing Emissions from Deforestation and Forest Degradation (REDD) is an effort to create a financial value for the carbon stored in forests, offering incentives for developing countries to reduce emissions from forested lands and invest in low-carbon paths to sustainable development. "REDD+" goes beyond deforestation and forest degradation, and includes the role of conservation, sustainable management of forests and enhancement of forest carbon stocks.

Result-based Finance

A88. Results-based finance (RBF, also referred to as "performance-based payment") is a funding approach where payments are only made after specified outcomes can be proven to have taken place.

A89. The delivery of finance is made conditional upon the recipient country or company agreeing to outside verification that some agreed objectives have taken place. This, in turn, requires the funding to be focused on objectives that can be clearly measured, in contrast to input-based approaches to paying for improved capacity, whether in the form of new technology, training or equipment.

A90. The RBF approach provides a mitigation activity with financial support once its emission reductions have been duly verified. Some RBF programs purchase compliance emission reduction units, including CERs and ERUs, helping bridge the current lack of demand for these units. Other programs not specifically designed for compliance markets use RBF as a direct funding mechanism.

International Aviation

A91. The international aviation industry's commitment to limit its emissions was affirmed by the 2013 Assembly of the International Civil Aviation Organization (ICAO), which resolved to cap net

carbon emissions at 2020 levels. The ICAO has identified four pillars of climate action, which it intends to use to meet its emission reduction target: technology, operations, infrastructure, and a global market-based measure (MBM). The 2013 Assembly decided to finalize the MBM by 2016, and set into motion several actions to accomplish this task:

- a) Finalize work on the technical aspects, environmental and economic impacts and modalities of the possible options for a global MBM scheme, including its feasibility and practicability;
- b) Organize seminars and workshops on a global scale for international aviation officials and experts of member states as well as relevant organizations; and
- c) Identify the major issues and problems, including those expected to affect its member states, and make recommendations for a global MBM scheme to be implemented by 2020.

Corporate carbon pricing

- A92. Carbon pricing is spreading beyond the domain of government policy and becoming an increasingly common tool in business decision making. Private sector firms are adopting internal carbon prices, even in jurisdictions without legislated carbon pricing. Internal carbon pricing can be implemented in various forms: some companies incorporate it into the business case for investment, while other companies use it to transfer the costs of emissions offsetting to individual business units.
- A93. Globally, at least 150 companies use an internal carbon price, as reported by the Carbon Disclosure Project (CDP), with disclosed prices ranging from US\$6 to US\$89/tCO_{2e}. These companies represent diverse sectors of the economy, including the consumer goods, energy, finance, industry, manufacturing, and utilities sectors.

APPENDIX B: THE GFSM 2014 AND RIGHTS OVER NATURAL RESOURCE USAGE

1. Appendix A of the GFSM 2014 discusses classification of different ways in which a government could issue rights to use a natural resource (permits, licenses or allowance).
2. A government's choices when creating licenses and permits for natural resources are:
 - (a) Allow use of the natural resource to extinction (i.e. open-ended right to use);
 - (b) Allow use for an extended period with little or no intervention; or
 - (c) Extend or withhold continued use of the right (to use the resource) from one year to another (i.e. a resource lease).
3. Government control over a resource can happen:
 - (a) Without payment to the affected entities (or payment by the entity);
 - (b) With payments that constitute:
 - (i) A tax;
 - (ii) A rental (lease) payment;
 - (iii) Purchase of an asset that is then included on the entity's statement of financial position (i.e. the GFS equivalent statement).
4. Each of these options have different classification and reporting consequences for GFS.
5. A government may issue licenses or permits²⁰ to use natural resources that are either:
 - (a) Claimed by the government on behalf of the community; or
 - (b) Privately owned.
6. GFSM 2014 discusses application of the principles to governments' issuance of permits or licenses for a range of different natural resources, including the radio spectrum, land, timber, fish, water, and mineral and energy resources.

Relevance to Emission Allowances

7. EAs could be thought of as similar to rights to use the atmosphere. However, they are better understood as rights to use a government created resource. The government first creates the total capacity for emissions (i.e. the cap or overall limit available for emissions), and then makes that resource valuable by restricting entities' ability to operate without having the resource. There are serious consequences for an entity that does not hold sufficient EAs to cover their emissions. Although this resource (the total capacity for emissions) has similarities to a "natural resource", it is a government creation, a "man-made resource" that is not physical. It depends for its existence on legislation, and is a type of socially constructed, intangible reality. The government issues rights to use a fraction of the resource. Those rights are EAs, and each EA provides a certain capacity to emit, which is a small fraction of the total resource, i.e. the total capacity to emit, which was set through establishment of the overall cap on emissions.
8. The emissions cap is similar to a large volume of space that can be divided into smaller rooms. A company can receive the right to use several rooms for a period of time (e.g. for a three year

²⁰ The OECD–Eurostat Task Force report explains the word "allowances" are, in the report, restricted to instruments that do not need to be acquired before emissions occur and are designed to restrict quantities of emissions, whereas "permits" refer to instruments that must be acquired before emissions occur and do not necessarily directly restrict the quantity of emissions but rather they restrict the quantity of operators engaged in emission activities.

compliance period). If the company doesn't need all the room available then it can on-sell the space, or at least the right to use the space for during that three year compliance period.

APPENDIX C: BASELINE–AND–CREDIT SCHEMES

(Excerpt from IASB agenda paper 10A for IASB’s meeting of the week beginning 17 May 2010, titled “Draft Research Paper Emissions Trading Schemes [XXX 2010]”, author: Nikolaus Starbatty.)

- D1. Baseline–and–credit schemes represent the second main type of emissions trading schemes, but they are less common than cap–and–trade schemes. Baseline–and–credit schemes also introduce a cap on emissions by using a trading mechanism. In a statutory (i.e. mandatory) baseline–and–credit, a government typically initiates the process of establishing a Baseline–and–credit scheme by passing a law that puts restrictions in that jurisdiction on the ability to emit specified gases. This means that the law introduces a transfer of the ability to freely emit from emitting sources to the government. Following enactment of the law, scheme participants apply for a permit to emit before carrying out regulated activities. Up to this point, baseline–and–credit schemes are no different to cap–and–trade schemes.
- D2. Where baseline–and–credit schemes differ from cap–and–trade schemes is in the implementation of the trading mechanism. Instead of (a) creating transferable allowances up to the overall cap and then (b) allocating allowances to eligible participants, Baseline–and–credit schemes assign baselines of emissions to regulated sources of emissions. Baselines are linked to specific sources of emissions and hence, participants cannot buy or sell baselines separately. Baselines are similar to an allocation of allowances in a cap–and–trade scheme in that a baseline establishes an amount of allowable emissions up to which a participant may emit without incurring additional costs.
- D3. Baseline–and–credit schemes differ from cap–and–trade schemes in the implementation of the trading mechanism in the scheme. In a Baseline–and–credit scheme, the trading mechanism is not introduced before the end of the compliance¹ period. This is because Baseline–and–credit schemes establish the trading mechanism by issuing credits to sources whose emissions remain below their associated baselines in a compliance period. Hence, credits are not created before the end of the compliance period after emissions have been verified. A source that has emitted below its baseline receives credits equal to the difference. Credits are transferable and may be sold or banked for use in future compliance periods (provided the scheme allows for the carry-forward of credits to other compliance periods). On the other hand, a source that has emitted in excess of its baseline is required to surrender credits equal to the difference, shortly after the end of the compliance period. The period of time between the issuance of credits and the deadline for surrendering credits in a baseline–and–credit scheme is short, usually only a few months. As a result, the trading window in a baseline–and–credit scheme is shorter than in a cap–and–trade scheme. The trading window in a baseline–and–credit scheme, however, expands if (a) a scheme splits the commitment period into shorter compliance periods, and (b) the scheme allows carrying over surplus credits to following compliance periods.
- D4. Baseline–and–credit schemes differ from cap–and–trade schemes in another aspect. The overall cap on emissions in a baseline–and–credit scheme can be expressed in (a) fixed units of emissions, or (b) in variable units of emissions to be released during a commitment period. If a scheme establishes a cap expressed in variable units of emissions, the cap on emissions is typically determined in relation to units of output generated during the commitment period. A cap expressed in variable units of emissions is a means to regulate the intensity of emissions intensity (not the overall amount of emissions). For example, a scheme with a variable cap may specify units of allowable emissions to be granted to participants for each unit of power generated. This means that baselines are determined at the end of the commitment period, based on the number of power units generated during the commitment period. In contrast, the

overall cap on emissions in a cap-and-trade scheme establishes a fixed cap on emissions that can be released during a commitment period.

- D5. As in the case of cap-and-trade schemes, the feature that is most hotly debated in a Baseline-and-credit scheme is the mechanism to determine the amount of allowable emissions that is allocated for free to eligible emitting sources. Whereas cap-and-trade schemes allocate allowable emissions by freely issuing allowances, baseline-and-credit schemes allocate allowable emissions by assigning individual baselines to emitting sources. The mechanisms that are applied in order to determine the amount of allowable emissions is similar to the mechanism in cap-and-trade schemes: baselines are typically based either on (a) emissions of an emitting source in the past (known as grandfathering) or (b) a benchmark of emissions per unit of output (known as benchmarking). For practical reasons, schemes often apply grandfathering in the early stages of the schemes before they switch to benchmarks of emissions.
- D6. Similarly to schemes, Baseline-and-credit schemes provide guidance in their allocation plans on how to deal with participants that:
- (a) Start operating emitting sources subsequent to commencement of the scheme (i.e. new entrants); or
 - (b) Close their emitting sources during a commitment period.
- D7. In essence, baseline-and-credit schemes treat new entrants and participants that close their emitting sources during the commitment period no differently than do cap-and-trade schemes. This means that baseline-and-credit schemes generally assign baselines to emitting sources that start operating subsequent to the commencement of the scheme, and revoke baselines from emitting sources that close during a commitment period.

Comparative analysis of the schemes

- D8. Emissions cap-and-trade schemes and baseline-and-credit schemes represent two different mechanisms for establishing a cap on emissions. The introduction of a trading mechanism in order to regulate emissions is intended to achieve the cap on emissions more efficiently than other mechanisms that regulate access to restricted resources (e.g. a tax on emissions). This is because the trading mechanism results in a market-based signal that determines the price of emitting. Under the market-based mechanism, if the costs of avoiding emissions are less than what the participants receive if they sell allowances or credits, participants will avoid emissions and then sell allowances (in a scheme) or credits (in a baseline-and-credit scheme). On the other hand, if the costs of avoiding emissions exceed what participants have to pay to buy the equivalent amount of allowances or credits, participants will emit and will buy allowances or credits to pay for those emissions.
- D9. The main difference between cap-and-trade schemes and baseline-and-credit schemes is that the schemes implement the cap on emissions differently. Cap-and-trade schemes implement the cap on emissions by issuing allowances to emit up to the cap; while baseline-and-credit schemes implement the cap on emissions by assigning individual baselines to participants up to the cap. In terms of regulating emissions, baseline-and-credit schemes may be seen as equivalent to cap-and-trade schemes if the cap implicit in the baseline-and-credit scheme is fixed and is numerically equal to the fixed cap in a cap-and-trade scheme. The following table compares the main features of the schemes.

Table 2: Main features of cap-and-trade schemes and baseline-and-credit schemes

type of scheme	cap-and-trade	baseline-and-credit
cap on emissions	units of emissions that may be released within commitment period	
implementation of cap	allowances up to cap 7. free allocation to participants and/or 8. sale of allowances	baselines up to cap free allocation to participants
trading mechanism	allowances are tradable	baseline is not tradable credits are tradable
offsetting emissions	allowances covering <i>total</i> emissions	credits covering only emissions in excess of baseline

- D10. In theory, a cap-and-trade scheme can be linked to a baseline-and-credit scheme with a similarly tight cap on emissions. If a cap-and-trade scheme is linked to a baseline-and-credit scheme, scheme participants can use allowances (arising from a scheme) or credits (arising from a baseline-and-credit scheme) interchangeably to offset emissions obligations in either of the schemes. Linking of schemes is said to lower the overall costs of compliance with the aggregate cap on emissions, because emissions will be avoided in the scheme that has the lowest costs of abatement.
- D11. The equivalence of the schemes in terms of regulating emissions raises the issue of how this applies to individual participants that are within the scope of the schemes. The extent to which a participant is affected by the scheme primarily depends on the level of allowable emissions that a participant receives via allowances in a cap-and-trade scheme or baselines in a baseline-and-credit scheme. All other things being equal, a participant in a cap-and-trade scheme is in a similar position, in terms of additional costs due to the schemes, to a participant in a baseline-and-credit scheme if they receive the same level of allowable emissions.
- D12. Take the example of Cap Co, which is a participant in a cap-and-trade scheme, and Base Co, which is a participant in a baseline-and-credit scheme. Cap Co receives 100 allowances and Base Co receives a baseline of 100 units of emissions. Cap Co and Base Co each emit 90 units of emissions during the commitment period. If Cap Co does not sell any of its allowances from the allocation, it ends up with 10 surplus allowances at the end of the commitment period, after surrendering 90 allowances in order to offset its emissions. Base Co ends up with 10 credits that it receives from the scheme administrator at the end of the commitment period. The credits reflect the difference between Base Co's actual emissions of 90 units and the baseline of 100 units of emissions.
- D13. Participants, however, are in different positions in terms of their ability to trade according to whether they operate in a cap-and-trade scheme or in a baseline-and-credit scheme. In a cap-and-trade scheme, the creation of allowances up to the cap on emissions means that participants, typically, are able to start spot trading allowances as of commencement of the scheme. This is because allowances in a cap-and-trade scheme are typically issued at, or shortly after, the commencement of a compliance period, and there are no restrictions on

participants buying or selling allowances. By contrast, baseline-and-credit schemes create credits as result of a participant having emitted below its baseline in a compliance period. This means that credits are not issued before the end of the compliance period. Hence, trading of credits starts later in a baseline-and-credit scheme than in a cap-and-trade scheme. The issue of credits only to participants that have emitted below their baseline also means that the number of credits in a baseline-and-credit scheme will be significantly smaller than the number of allowances in a cap-and-trade scheme with the same cap on emissions. In practice, markets for credits in baseline-and-credit schemes are often said to be of restricted liquidity.

- D14. Hence, even though Cap Co and Base Co end up with the same number of allowances or credits, the participants are in a different position in terms of trading the instruments that result from the schemes. Base Co cannot trade its baseline; it can trade its credits, but not until it has received them, whereas Cap Co is free from the start to sell the 100 allowances that it has received under its allocation. Some argue that the availability of markets for forward contracts renders baseline-and-credit schemes theoretically identical to cap-and-trade schemes. If markets for forward contracts exist, a participant in a baseline-and-credit scheme can enter into a forward contract to sell credits if it expects to emit below its baseline. A forward contract allows a participant to sell credits at a specified date in the future, at an agreed price, before credits have been issued. This means that a participant in a baseline-and-credit scheme can virtually sell (parts of) its baseline via forward contracts.

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ACCOUNTING OPTIONS: ADMINISTRATOR'S INVOLVEMENT IN AN EMISSIONS TRADING SCHEMES

Introduction

1. This paper discusses different accounting approaches for an Emissions Trading Scheme (ETS) administrator's involvement with an ETS. The first section provides a general discussion of the significance of emission allowances (EAs) and emissions (or rights and obligations arising from emissions). It considers whether EAs are assets and whether emissions by ETS participants could result in revenue for an administrator.
2. The four subsequent sections describe and then evaluate four accounting options for an administrator's involvement with an ETS, focusing on the recognition of elements. The four accounting options are:
 - Approach 1, Emission Notes (Financial Liability);*
 - Approach 2, Emission Licenses (Intangible Asset);*
 - Approach 3, Pollutant Pricing Mechanisms—Rights and Obligations; and*
 - Approach 4, Emission Limits (Taxes and Contingencies, formerly Approach 3, Revenue).*
3. Each evaluation applies the Conceptual Framework's criteria for element definition and recognition. The implications of each approach for ETS participants are considered, deriving the equivalent participants' accounting approach through the application of symmetry. Further considerations are raised where appropriate. Measurement of elements is mentioned on occasion, although recognition is the main focus.

Significance of Emission Allowances and Emissions

4. Agenda item 9.2 describes a government's public policy objectives for an ETS. The primary objective of an ETS administrator is to reduce emissions. An ETS places a cap on the overall level of emissions, then allocates rights to emit (EAs) to ETS participants. The application of an ETS has the effect of making emissions a scarce resource to participants. Before introduction of an ETS, producers of emissions have no limit on the amount of emissions they can produce. The environment, as a sink into which emissions can be dumped, is treated as a free good. So an ETS creates costs for the participants, but what does this mean for the administrator?
5. As explained in agenda item 9.2, from an administrator's perspective the costs involved in an ETS are those of creation followed by the relatively low costs to keep it going (administration and enforcement). The creation, issuance and receipt back of EAs (sufficient to cover emissions) do not necessarily involve cash flows for the administrator. An administrator may choose to charge a fee for EAs when they are issued. When received back from participants the EAs are usually cancelled. Emissions are both a "necessary evil", given their relationship to economic productivity and something to control then reduce.

Are Emission Allowances, before Issuance, Assets for the Administrator?

6. The Conceptual Framework defines an asset as "[a] resource presently controlled by the entity as a result of a past event." When the ETS administrator establishes an ETS and creates EAs it seems fairly straightforward to decide that EAs are controlled by the administrator as a result of a past event.

7. The Conceptual Framework describes a resource as "...an item with service potential or the ability to generate economic benefits". The Conceptual Framework further notes that economic benefits can arise from "the direct exchange of an asset for cash or other resources". It appears that EAs have this characteristics of a "resource". Although an administrator may decide to transfer EAs free of charge, the ability to charge for EAs exists.
8. As will be seen below, for three of the four approaches described EAs are viewed as resources. Under Approach 1, *Emission Notes (Financial Liability)* the recognized asset (for EAs created) is viewed as inventory, similar to banknotes or other currency, measured at cost of production. Under Approach 2, *Emission Licenses (Intangible Asset)* an intangible asset has been created, with measurement at either cost or current market value. Approach 3, *Pollutant Pricing Mechanisms—Rights and Obligations* assumes that EAs are assets, without being conclusive about the type of asset. Only Approach 4, *Taxes and Contingencies (formerly Approach 3, Revenue)* takes the position that EAs are not assets.

Are Emission Allowances Assets for the Participant?

9. The view that EAs are assets to the administrator, before their transfer to ETS participants, is consistent with the IASB's view which, generally, has been to view EAs as assets when they are controlled by ETS participants. An IASB June 2015 agenda paper explained that:

The staff think that there is general acceptance that emissions allowances meet the definition of an asset in the IASB's Conceptual Framework. This is because:

- (a) they are economic resources;
- (b) they are controlled by the entity, and
- (c) they are expected to result in the economic benefits flowing to the entity because they can either be sold or be used to settle the entity's obligation to submit a determinable number of allowances to the scheme administrator at the end of the compliance period.

[Paragraph 18, Agenda paper 6A, IASB June 2015 meeting]

10. However, IASB staff also note that the nature of the asset is open to debate. The same June 2015 IASB paper noted that:

Although there seems to be general acceptance that the emissions allowances are assets, questions arise over the nature of the asset. This is partly because of the different ways in which the entity can use them to obtain economic benefits. This has resulted in different parties suggesting that the allowances have characteristics of different types of assets. Consequently, different accounting treatments that are used in practice tend to reflect different views about the nature of the allowances, based on how the allowances are expected to be used. This has also led to some 'mixed model' approaches in which an entity's allowances are accounted for in different ways, depending on which use they are expected to be put, despite the allowances being homogeneous in nature and fully interchangeable.

[Paragraph 19, Agenda paper 6A, IASB June 2015 meeting]

11. The special nature of EAs was further discussed in paragraphs 25 to 29 of the same paper:

25. This difficulty in classifying allowances in the same way as other intangible assets was highlighted in a case heard in the High Court in England and Wales in 2012. In that case, the judge, Mr. Stephen Morris QC, considered the nature of European Union Allowance (EUAs) in law as property¹. There was no dispute between the parties that

¹ Armstrong DLW GmbH v Winnington Networks Ltd [2012] EWHC 10 (Ch) (11 January 2012)

EUAs constitute property as a matter of law. What was at issue, however, was their precise nature and characterisation as property, because the classification could have an effect on the nature of the legal remedies available.

26. Mr Morris noted that ‘At the heart of the legal difficulties to which this case gives, or may give, rise is the somewhat novel nature of a European Union Allowance (EUA). This novelty arises from two particular features: the first is that an EUA is a creature of European legislation and the second is that an EUA exists only in electronic form’.

27. Consequently, the case does not conclude on the precise category of asset to which EUAs should be classified, but Mr Morris observed;

‘As a matter of substance, [an EUA] does not give the holder a "right" to emit CO₂ in this sense. Rather it represents at most a permission (. . .) or an exemption from a prohibition or fine. But for the entitlement to the EUA, the holder would either be prohibited from emitting CO₂ beyond a certain level or at least would be required to pay a fine if he did so. In this way, the holding of the EUA exempts the holder from the payment of that fine.

An EUA is a creature of the ETS. As a matter of form an EUA exists only in electronic form. It is transferable automatically by electronic means within the registry system. Under the ETS legislation it is transferable under the terms of the ETS Directive. It has economic value, first because it can be used to avoid a fine, and secondly, because there is an active market for trade in EUAs.’

28. Although the judgement in *Armstrong DLW GmbH v Winnington Networks Ltd* [2012] concluded that EUAs could be considered to be intangible assets, it highlighted that they do not have the typical characteristics normally associated with other intangible assets². As noted by Mr Morris QC, the EUAs do not give the entity a right to emit greenhouse gases (GHGs).

29. This difficulty in determining the precise nature of the EUA and how to classify it as an asset is reflected in the different accounting treatments that are seen in commonly used accounting treatments. The most common classification is as an intangible asset, but others classify them as inventory.

12. More recently IASB staff have considered whether EAs are loaned to participants, so that both an asset and a liability would be recognized by them, when received at the start of a compliance period. This approach still views EAs as resources, however production of emissions no longer results in an expense. Instead emissions merely confirm the participant’s original obligation to repay the loan, which was established when the EAs were transferred³. The significance of emissions is discussed below.
13. After EA issuance the ETS administrator expects to receive EAs back, but does not appear to control EAs that have been transferred to participants.

During the Compliance Period: Do Emissions Result in an Asset for the Administrator?

14. As participants emit pollutants during the compliance period, an administrator has the right to receive EAs that cover the volume (or weight) of emissions. The first three approaches described in the second section of this paper have the administrator “better off” financially when emissions are produced. The administrator reports revenue when ETS participants emit GHGs. On the one hand this is consistent with the idea that an ETS makes it expensive for participants

² IAS 38 *Intangible Assets* defines an intangible asset as ‘an identifiable non-monetary asset without physical substance’.

³ This approach is described in an Accounting Standards Advisory Forum (ASAF) October 2015 agenda paper; ASAF Agenda Ref. 5, *Cap-and-Trade Emissions Trading Scheme Liabilities*.

to emit. Under an ETS there is a cost to emissions, which participants must pay. Since ETS participants are paying for their pollution, it follows logically that another entity receives benefits (payments) from their pollution. An alternative view is to ask what benefits (economic benefits or service potential) the administrator receives when ETS participants emit pollutants. Given that the administrator's purpose in setting up an ETS is to reduce polluting emissions, the reporting of revenue as a consequence of emissions seems counter-intuitive. Perhaps the surrender of EAs by participants benefits the administrator because it shows that participants are complying with the ETS requirements, which is "less bad" so a positive result.

15. Applying the Conceptual Framework's definition of an asset it is fairly straightforward to conclude that the administrator will control something (the right to receive EAs) as a result of a past event. The past event is participants' emissions, while present control is conferred through ETS legislation, which obliges participants to submit EAs at the end of the period. Submission of EAs does not happen immediately, but there is no way for participants to avoid it, other than non-compliance and consequential fines and other penalties.
16. Is a "right to receive EAs" a resource for the administrator? Once returned, EAs do not appear to have either service potential or the ability to generate economic benefits. However, if the administrator does not recognize an asset while the participant recognizes a liability, there will be a lack of symmetry between participant and administrator when accounting for the same event i.e. production of emissions.
17. Administrators are able to extend the life of an EA. This has happened in the context of the European Union (EU) ETS where, for one compliance period, emissions were much lower than expected and, as a result, a significant surplus of EAs resulted. Holders of surplus EAs viewed them as worthless as the end of the period drew closer, because the EAs were not needed to cover emissions and their market value had dropped close to zero. Governments chose to adjust the terms of the EAs and allow them to be used to cover emissions in the following compliance period, which increased their market value and restored their value as a resource to be used in production during the following period. The adjustment arguably indicates that EAs continue to have service potential, even after the end of the compliance period, so that they are resources after surrender to the administrator. Alternatively, the extension of the EAs application could be seen as only, in substance, benefiting holders of the EAs (participants or traders) rather than the administrator. There is no economic impact for the administrator from re-configuring the EAs, so that they last longer. By contrast, if EAs were licenses that lasted for a set period and that period was doubled without any additional charge, the administrator would receive less revenue from the sale of licenses than originally expected.

Administrator's Ability to Use Surplus EAs to Generate Economic Benefits

18. There are situations where a government is able to use "surplus EAs" to generate economic benefits in the form of cash flows. This situation arises when a government is part of a larger ETS, and effectively acts as both an administrator for the national scheme and an ETS participant (at least with respect to some aspects of that role) for the larger, international scheme. For example, during the first Kyoto compliance period the New Zealand administrator received Kyoto EAs (international EAs) from New Zealand ETS participants. The participants had purchased the Kyoto EAs internationally, and then used them to cover their emissions. The New Zealand Government ended the period with a surplus of Kyoto EAs, which could be sold onto the international market for cash. National governments in the EU-ETS can be in the same situation of having a surplus of EU-ETS EAs, which can be sold to generate cash flows. Kyoto Units are traded between national governments. A government that has excess Kyoto

Units can sell these to a government that has a deficit because it has exceeded the emission limit covered by the Kyoto Units that it holds. This situation also raises the possibility that a government may need to purchase EAs from the international market, in order to cover a nation-wide deficit.

19. Based on the discussion above it can be seen that there are arguments for and against the idea that EAs are a resource to an ETS administrator not only at the point of issuance, when they could generate cash flows for the administrator, but also subsequently.

Is there a performance obligation when EAs are transferred at less than fair value?

20. This paper aims to address element recognition rather than measurement. However, the issue of EAs transferred at less than fair value raises inter-related recognition and measurement issues. The IPSASB's two current projects on non-exchange revenue and non-exchange expenses could have implications for accounting for ETS involvement. The administrator's "granting" (transfer) of EAs to participants without charge or for below market value involves a non-exchange expense for the administrator. There is no IPSAS that addresses non-exchange expenses. The surrender of EAs back to the administrator could, arguably, also be viewed as a non-exchange transaction, since the ETS requirements force participants to surrender EAs without recompense, and this would be revenue from the administrator's perspective if the EAs are viewed as resources. IPSAS 23, *Revenue from Non-Exchange Transactions (Taxes and Transfers)*, would apply.
21. IPSAS 23 presently has strict criteria for recognition of a liability on transfer. EA transfers would not, applying IPSAS 23, provide a basis for deferral of revenue recognition because there is no "condition on the transferred asset" (i.e. no condition on the EAs). Without such a condition there is no performance obligation. (This issue impacts particularly on Approach 4, discussed in more detail below, and on the other IASB approaches that involve an ETS participant recognizing a "government grant liability" on receipt of transferred EAs.)

Is the "market for EAs" really a market?

22. IPSAS 23 has a general rule to measure transferred assets at fair value. The market is viewed as providing the most relevant and reliable (or objective) information about the value of a transferred asset. The donor's views on the worth of a donation, for example, are not applied. Nor are the recipient's views accepted.
23. EAs are transferred (and then traded) in a very heavily regulated situation, where governments directly control the supply of EAs and, for a national jurisdiction, the national government may be the monopoly supplier of EAs. Market values reflect scarcity created by the administrator's approach to issuing EAs, the majority of which go directly to ETS participants, and the administrator's fixed transfer "price" also applied to the majority of EAs issued. Can a "fair value" be said to exist in such circumstances? And if a fair value cannot be determined then on what basis can it be concluded that (a) the EAs transfer "price" is less than fair value, and (consequently) (b) the transfer is a non-exchange transaction?
24. EA market values are not the result of normal market forces. This is particularly true at the beginning of the compliance period, when EAs are first transferred to ETS participants. IASB members and industry members generally (as indicated by ASAF participant comments) are generally skeptical about the information quality of EAs' fair value as an indicator of their initial value when first transferred for free or at a nominal amount. The administrator is concerned to ensure that participants can cope with the requirements of the ETS. This includes not charging either anything or the "market value" of the EAs when they are transferred. But what is really

known about the EA market value at the beginning of a compliance period? The only significant information could, arguably, relate to market values for EAs at the end of the *previous* compliance period, and those EAs reference a very different set of expectations about the scarcity of abundance of EAs.

25. The market has a price of EAs—period (1), but all that is reliably known about the price of EAs—period (2) is that the administrator is willing to transfer them for the value given, whether zero or close to zero or some other value based on calculations of both a political nature and a “what the market will accept” nature. EA market values are not the result of normal market forces. This is particularly true at the beginning of the compliance period, when EAs are first transferred to ETS participants.
26. IASB members and industry members (as indicated by ASAF participant comments) are generally skeptical about the information quality of EAs’ fair value as an indicator of their initial value when first transferred for free or at a nominal amount.
27. The administrator is concerned to ensure that participants can “cope” with the requirements of the ETS. On this basis the EAs are transferred at less than “market value” (i.e. at zero or minimal amount). But what is known about the EA market value at the beginning of a compliance period? The only significant information could, arguably, relate to market values for EAs at the end of the *previous* compliance period. Those EAs reference a very different set of expectations about the scarcity (or abundance) of EAs. The market has a price for “EAs—period (1)”, but all that is reliably known about the price of “EAs—period (2)” is that the administrator is willing to transfer them for the value given, whether zero or close to zero or some other value based on calculations of both a political nature and a “what the market will accept” nature.

EAs at Start of Compliance Period—Transfer or Taxation?

28. If the quality of the transaction between administrator and participant on initial transfer of EAs is closer to taxation than transfer then the questions arises of whether fair value measurement is appropriate.
29. The ETS as a whole is usually a product of an administrator’s sovereign power, and the absolute necessity for ETS participants to hold EAs in order to continue their business indicates that the initial transaction is coercive. The government entity (the administrator) is not kindly donating EAs to participants at less than their market value. It is forcing participants to pay for (if there is a charge) or accept (if EAs are provided for free) something that they have previously been able to enjoy for nothing, i.e. the capacity to emit a certain volume (or tonnage) of GHGs. The transfer of EAs both identifies capacity (to emit) and restricts it, signaling that any additional capacity (beyond the capacity covered by the EAs received initially) will have to be purchased by each individual participant. The EA transfer situation is not that of a normal donation.

Approach 1, Emission Notes (Financial Liability)

30. Approach 1, *Emission Notes (Financial Liability)*, is an approach used in practice by a national government. The New Zealand Government developed this approach through application of IPSAS—similar financial reporting concepts and standards.

Description of Approach 1

31. In Approach 1 EAs are viewed as similar to currency issued and in circulation⁴. The EAs are initially treated as a type of inventory, with their value being very low, because inventory is measured at cost of production and those costs are very low. When the administrator issues EAs the administrator recognizes a liability, on the basis that the legislative framework of the ETS requires the administrator to repatriate (or redeem) EAs for their emissions value. The EAs can be used by participants to meet their emission obligation to the ETS administrator. Those obligations are denominated in EAs.
32. During the compliance period the administrator accrues emissions levy revenue and recognizes a receivable from the participant through its sovereign power. The receivable reflects the administrator's right to be reimbursed for actual emissions. The timing of revenue recognition will be based on when the activity giving rise to the emissions—and therefore the participant's liability—occurs. The emissions activity is similar to a taxable event. If it is not possible to reliably estimate emissions at the 'taxable event' moment, then revenue recognition will be delayed until an emissions return is received and the administrator has assessed the obligation to surrender EAs. The actual surrender of EAs to the administrator may occur later than the administrator's recognition of revenue.
33. When EAs are surrendered to the administrator, the outstanding sovereign receivable is settled. The EAs operate as an acceptable medium of exchange for settlement of participants' emission obligations. Also, as a result of the EAs being surrendered, the administrator's EA financial liability is extinguished. The extinguishment of the financial liability on surrender of EAs is similar to when a bank surrenders currency to a Central Bank in exchange for other consideration. However, in the case of EAs, the settling of the participant's emission obligation is the consideration received by the participant in exchange for surrendering the EAs.

Accounting Entries for Approach 1

34. The accounting entries for Approach 1 would be as follows:

Step 1 Administrator creates EAs (EAs are like currency)

Dr EAs asset (inventory)

Cr Gain on asset creation (nil value, initial cost)

Step 2 Administrator transfers EAs (At start of compliance period)

Dr Expense

Cr Liability (notes (like currency) issued)

⁴ This approach treats EAs as similar to currency, but does not argue that EAs are currency, or that they would meet the IPSAS definition of a financial instrument. During development of IFRIC 3, *Emission Rights*, the IASB considered whether EAs meet the IFRS definition of a financial instruments and concluded that they do not. Applying the IPSAS definition, IPSAS staff reached the same conclusion.

Step 3 Emissions occur (During compliance period)

Dr Right to receive EAs

Cr Revenue

Step 4 EAs received back (At end of compliance period)

Dr Liability (Notes returned)

Cr Right to receive EAs

35. Note that, at the end of the compliance period when participants' EAs have been surrendered, the administrator does not show any residual amounts on its statement of financial position; no liability and no asset.

Evaluation of Approach 1, Emission Notes (Financial Liability)

Application of the Conceptual Framework—Are EAs a Liability for the Administrator?

36. The particular conceptual issue raised by Approach 1 is whether the transfer of EAs to participants means that the administrator should recognize a liability equivalent to the value of EAs transferred. The idea is that the administrator is required to repatriate (or redeem) EAs for their emissions value. The EAs can be used by participants to meet their emission obligation (payments denominated in EAs) to the administrator. On this basis EAs held by participants are similar to currency held by the public.
37. The Conceptual Framework defines a liability as “[a] present obligation of the entity for an outflow of resources that results from a past event.” The Conceptual Framework defines a present obligation as “a legally binding obligation (legal obligation) or non-legally binding obligation, which an entity has little or no realistic alternative to avoid.” An ETS obliges the administrator to accept EAs back from participants. Arguably, the participants are redeeming a form of currency (the EAs) by using them to pay for their emissions. However, there are two arguments against recognizing a liability in the administrator’s financial statements when EA are transferred. First, the participants has no obligation, at this point in time, to submit EAs, because the participant has not yet emitted pollutants. The necessary “past event” has not occurred. Second, it is difficult to see how the administrator’s obligation to accept EAs involves the administrator in an “outflow of resources”. However, issued currency appears to raise similar issues for the issuing government so that is not necessarily an insurmountable obstacle for this approach.
38. As discussed in the first section above, this approach (like Approaches 2 and 3 below) raises an issue with respect to the administrator reporting revenue when ETS participants emit GHGs. Should the administrator’s financial report show that it is “better off” because GHGs have been emitted, when the policy objective of an ETS is to reduce emissions?

Comparison with Currency

39. Like currency, no interest is paid on this liability. However, unlike currency, EAs are likely to be repatriated (or redeemed) in full at some stage, although EAs may remain in circulation among participants for long periods of time. With currency, it is highly unlikely that the issuer will ever be paid out the financial liability in full, because there is always going to be a minimum amount of cash required in the financial system.
40. When a government issues currency, there is usually an exchange of value through consideration, so the currency analogy fits better to situations where an administrator issues

EAs for consideration. The issuance of EAs free of charge (or for minimal cost) mitigates the economic consequences for participants of introducing an ETS. From this perspective the economic impact of EAs transferred is similar to that of a subsidy or grant and the accounting treatment (arguably) should be similar.

41. A government chooses how much currency to issue and adjusts supply either up or down, depending on the needs of the economy. By contrast the supply of EAs is set to reduce over time. The amount and timing of emission cap reductions are planned to force the group of entities (ETS participants) to reduce emissions, while allowing sufficient time for industries to adjust so that entities should not (theoretically) be forced to relocate or go out of business, and the economy will not be negatively affected by the ETS. International agreements such as Kyoto or national commitments are also important factors in setting the speed/amount of emissions reduction for a jurisdiction.
42. Another difference between currency and EAs is that EAs are time-bound and usually expire at the end of an applicable compliance period while currency is not.

Participants' Accounting—Symmetry applied to Approach 1

43. Applying symmetry to Approach 1 under this approach the participant would initially recognize an asset equivalent to the value of the EAs received, where those EAs could either be received as a government grant (transfer at nil or subsidized price) or purchased from the administrator. The participant will recognize revenue (a "day 1 gain") equivalent to any excess of EA book value (in the participant's books) over actual purchase price⁵.
44. As actual emissions occur, a participant will recognize a liability (and expense) to submit EAs. The liability is discharged when the participant returns EAs to the administrator.

⁵ The size of this day 1 gain will depend on the measurement approach used. If the participant uses market value to measure EAs transferred (granted) for nil value, then the day 1 gain would be significant. If a cost measurement approach is used, then no gain would be recognized. In June the IASB tentatively rejected an approach that applied this pattern of recognition and used fair value measurement for transferred EAs.

Approach 2, Emission Licenses (Intangible Asset)

45. Approach 2, *Emission Licenses (Intangible Asset)*, was identified as a possible option by the New Zealand Government through application of IPSAS—similar financial reporting concepts and standards, although not used in practice.

Description of Approach 2

46. In Approach 2, *Emission Licenses (Intangible Asset)*, EAs are viewed as similar to government created intangible assets such as permits or licenses⁶. EAs embody rights to undertake economic activity, where a target group (the ETS participants) could potentially benefit from possessing those rights⁷. As for Approach 1, the initial value of the EAs would be close to zero if the cost measurement approach for internally generated intangible assets is applied, because EA production costs are very low.
47. After creating the EAs the administrator either transfers or sells them to ETS participants. Depending on the measurement basis used and the payment received (which could be somewhere between zero and the market value of the EA), the administrator reports either an expense (loss on transfer), revenue (gain on sale) or no change (transferred at value). Once the EAs have been transferred the administrator has no asset on its statement of financial position.
48. As participants emit pollutants, they owe EAs to the administrator. The administrator recognizes revenue and assets (EAs to which the administrator has rights). At the end of the compliance period, participants submit (or redeem) the necessary number of EAs, which then are held by the administrator. At this point the value of EAs is extinguished, as though the end of the compliance period acts as an immediate impairment equivalent to their total value.

Accounting Entries for Approach 2

49. The accounting entries for Approach 2 would be as follows:

Step 1 Administrator creates EAs (EAs are intangible assets)

Dr EAs (intangible assets)

Cr Gain on asset creation (nil value, if at cost)

Step 2 Administrator transfers EAs (At start of compliance period)

Dr Expense (Depends on book value of EAs and their transfer “price”)

Cr EAs (intangible assets)

Step 3 Emissions occur (During compliance period)

Dr Right to receive EAs

⁶ IPSAS 31, *Intangible Assets*, establishes requirements for recognition of internally generated assets. The CP could discuss whether IPSAS 31’s recognition criteria and also its measurement approach should be applied to EAs created by the administrator. Staff have not taken that approach here, because EAs are being treated, at this stage of the project, as a phenomenon that warrants consideration on its own merits, even though reference can be made to argument by analogy. IASB staff and the IASB have eschewed application of existing IFRSs to this phenomenon.

⁷ Note the GFS reporting guidelines which reject the idea that EAs are a type of license or permit, because entities can engage in the activity (emissions) without first receiving EAs, whereas they must have a license or permit before they are allowed to engage in their target activity.

Cr Revenue

Step 4 EAs received back (At end of compliance period)

Dr EAs

Cr Right to receive EAs

50. At this point the EAs are on the administrator's statement of financial position and need to be removed through impairment, as follows:

Dr Impairment

Cr EAs

Evaluation of Approach 2, Emission Licenses (Intangible Asset)

Application of the Conceptual Framework's Element Definition and Recognition Criteria

51. Approach 2's accounting for the creation and transfer of EAs appears consistent with the Conceptual Framework's element definition and recognition criteria. EAs are controlled by the administrator, following a past event related to government (or other administration entity) decisions on timing and volume of EAs available for issue. They are resources, because they are able to be sold, which means that they can generate future economic benefits. With respect to the recognition criteria of ability to reliably measure and probable resource, EAs can be reliably measured either at their historical cost or market value and, once the administrative entity has decided to charge for transfer of EAs, the resource (economic benefits of future cash flows in this case) is very probable.
52. Approach 2 is problematic when EAs are received back from participants. Once received back the EAs are worthless to the administrator. That eventual lack of value (the EAs are cancelled) has implications for the administrator's reporting of revenue during the compliance period, as participants emit pollutants and incur EA obligations. Why should the administrator report an asset (the right to receive EAs) at an earlier point in time—before EA return—when ultimately there will be no "service potential or the ability to generate economic benefits" for the administrator, when the EAs are returned?
53. As discussed in the first section above, this approach (like Approaches 1 and 3) raises an issue with respect to the administrator reporting revenue when ETS participants emit GHGs. Should the administrator's financial report show that it is "better off" because GHGs have been emitted, when the policy objective of an ETS is to reduce emissions?

Participants' Accounting—Symmetry applied to Approach 2

54. Applying symmetry to Approach 2 results in the same recognition pattern for participants as that described under Approach 1. From the participant's perspective these two approaches are indistinguishable. As for Approach 1 the participant would initially recognize an asset equivalent to the value of the EAs received, where those EAs could either be received as a government grant (transfer at nil or subsidized price) or purchased from the administrator. The participant will recognize revenue (a "day 1 gain") equivalent to any excess of EA book value (in the participant's books) over actual purchase price⁸. As actual emissions occur, a participant will recognize a liability (and expense) to submit EAs. The liability is discharged when the participant returns EAs to the administrator.

⁸ As notes for Approach 1 the size of this day 1 gain will depend on the measurement approach used.

Approach 3, Pollutant Pricing Mechanisms—Rights and Obligations

55. Approach 3, *Pollutant Mechanism—Rights and Obligations*, (Approach 3) is based on what was the IASB’s main approach to participants’ ETS accounting at its June 2015 meeting discussion. The IASB discussed four approaches at its June meeting. The first two approaches (Approach 1, *Gross–Liability (A)* and Approach 1, *Gross–Liability (B)*) were the same with respect to recognition, but slightly different with respect to measurement. This paper’s Approach 3 takes the same recognition approach as those two IASB approaches, but describes what this would mean for the administrator. (The IASB’s discussion paper appears likely to include one or both of those two approaches.) This approach has been developed by applying symmetry to the participant’s accounting to derive accounting by the administrator. The IASB approach applies fair value measurement for EAs and for obligations arising from emissions. To maintain symmetry the same measurement base has been applied.
56. The administrator creates EAs and recognizes these as assets. On transfer of EAs to participants the administrator shows a loss on transfer, assuming the EAs have been transferred at less than their market value, while recognizing a new asset equivalent to the participant’s “government grant” liability⁹. The asset is measured at fair value of EAs transferred, so that the net effect for the administrator’s statement of financial position will be zero.
57. The administrator recognizes an expense during the compliance period as its government grant asset reduces, as though the asset depreciates or is amortized. (This is symmetrical with the participant’s recognition of government grant revenue during the compliance period. The participant’s “government grant liability” decreases until it is zero by the end of the compliance period, which indicates that the participant’s performance obligation has been discharged.)
58. During the compliance period the administrator also recognizes a right to receive EAs and related revenue. This right arises because participants are emitting GHGs. The value of the asset increases as participants emit more. (Meanwhile participants recognize their increasing obligations to submit EAs to the administrator and equivalent expenses.)

Accounting Entries for Approach 3

59. The accounting entries for Approach 3 would be as follows:

Step 1 Administrator creates EAs

Dr EAs

Cr Gain on asset creation (fair value, or two steps, cost then revalue to fair value)

⁹ Another perspective is that the administrator continues to recognize an asset for the EAs, as though control had not “really” been transferred to the participants. It may also be possible to treat this amount as an “other resource”, applying paragraph 5.4 and 5.27 of the Conceptual Framework, which allows recognition of items that do not meet the definition and recognition criteria for assets or liabilities. This would impact on “net financial position” and also have an effect on revenue (expenses.) The idea that control over the EAs has not been transferred is not really consistent with the IASB approach and is not fully symmetrical. The IASB approach has the participant recognizing, for the government grant liability, only the *difference* between actual transfer costs and the EAs’ market value. Furthermore, the participant recognizes the EAs separately on the basis that it does control the EAs.

Step 2 Administrator transfers EAs (At start of compliance period)

Dr Government grant asset

Cr EAs

Step 3 Emissions occur (During compliance period)

Dr Right to receive EAs (as emissions occur)

Cr Revenue

Dr Expense (spread over period; transfer)

Cr Government grant asset

Step 4 EAs received back from participants

Dr EAs

Cr Right to receive EAs

60. At this point the EAs are on the administrator's statement of financial position and need to be removed through impairment, as follows:

Dr Impairment

Cr EAs

Evaluation of Approach 3, Pollutant Mechanism—Rights and Obligations

Application of the Conceptual Framework's Element Definition and Recognition Criteria

61. Conceptually the significance of the "government grant" asset for the administrator is unclear. One explanation is that it represents the administrator's right to receive performance from the participant. The performance received is the participant's acceptance of the ETS requirements. By accepting the EAs, in effect, the participant promises to abide by the ETS's terms and work towards the administrator's overall emission reduction objective.
62. The Conceptual Framework does not support existence of "government grant" asset for the administrator. There does not appear to be any resource presently controlled by the entity, after transfer of the EAs. There is no service potential or ability to generate future economic benefits. Therefore, Approach 3 involves recognition of an administrator's asset—the government grant asset—that does not appear to meet the Conceptual Framework's definition of an asset.
63. It may be possible to treat this amount as an "other resource", applying paragraph 5.4 and 5.27 of the Conceptual Framework, which allows recognition of items that do not meet the definition and recognition criteria for assets or liabilities. This would impact on "net financial position" and also have an effect on revenue (expenses.) Another perspective is that the administrator continues to recognize an asset for the EAs, as though control had not been transferred to the participants. But the IASB approach has the participant recognizing, for the government grant liability, only the *difference* between actual transfer costs and the EAs' market value. The participant recognizes the EAs separately on the basis that it does control the EAs.
64. As discussed in the first section above, this approach (like Approaches 1 and 2) raises an issue with respect to the administrator reporting revenue when ETS participants emit GHGs. Should the administrator's financial report show that it is "better off" because GHGs have been emitted, when the policy objective of an ETS is to reduce emissions?

Approach 4, *Emission Limits (Taxes and Contingencies, formerly Approach 3, Revenue)*

65. Approach 4, *Emission Limits (Taxes and Contingencies, formerly Approach 3, Revenue)* (Approach 4) has the administrator recognizing revenue to the extent that the transfer of EAs generates inwards cash flows for the administrator. If revenue recognition is deferred until the end of the compliance period then a “revenue received in advance” credit will also be recognized initially by the administrator.) This approach does not involve recognition of assets arising from an administrator’s holding of EAs or rights to receive EAs from participants. The disclosure of contingencies depends on a net approach that subtracts EAs from expected emissions to calculate the likelihood of needing to cover a deficit or be able to sell a surplus of EAs.
66. Although individual participants will disclose contingencies (see below), arguably there will be no need for the administrator to do so because, when considering the ETS as a whole, the probability that the emissions cap overall will be exceeded (i.e. total emissions for all participants is higher than the total number of EAs available to submit) appears fairly low. If an individual ETS participant is unable to submit sufficient EAs at the end of a compliance period to cover emissions, then the administrator will recognize revenue and a right to receive the penalty established by the administrator (e.g. a fine), rather than disclose a contingent asset. The probability that there will be a surplus of EAs overall, while not only possible but also something that has actually occurred during recent years, does not appear to result in a contingent liability for the administrator. The excess EAs are either cancelled or renewed to apply to the next compliance period
67. Approach 4 focuses on the administrator’s use of an ETS to achieve public policy aims. The only value of EAs is their role as part of the ETS apparatus. Any economic benefits (cash flows) generated from issuing EAs are peripheral to the ETS’s public policy aims to:
- (a) Reduce emission of GHGs to protect the environment and prevent global warming.
 - (b) Create a situation whereby emissions are costly to participant entities and they have economic incentives to reduce their GHG emissions.
68. Benefits to the administrator arise from the whole public policy initiative; policy development, legislation, initiation, monitoring, enforcement, etc. of which EAs are one small part. The administrator requires participants to submit EAs to cover their emissions. The number of EAs available is restricted, so that EAs are expected to be valuable items to participants. But the primary value of EAs to the administrator is as a public policy instrument. When the EA is issued, the administrator is not worse off and has no liability. An EA submitted to the administrator does not hold future economic benefits or service potential.
69. For the administrator, a well-functioning market for EAs could achieve public policy aims without generating cash flows. However, increasingly administrators are using EA issuance to generate revenue. The revenue received may then be used on other emission reduction interventions.

Accounting Entries for Approach 4

70. The accounting entries for Approach 4 would be as follows:

Step 1 Administrator creates EAs (EAs are not recognized as assets)

No accounting entries

Step 2 Administrator transfers or sells EAs (At start of compliance period)

Dr Cash from transfer/sale

Cr Tax revenue received in advance

Step 3 Emissions occur (During compliance period)

No accounting entries

Step 4 EAs received back (At end of compliance period)

Dr Tax revenue received in advance

Cr Revenue (tax)

71. Note disclosures are an important part of Approach 4. Note disclosures would be as follows:

- Administrator discloses contingencies—two options
 - Option A: No contingency (Recommended)
 - Option B: *Symmetry*: Either contingent asset or contingent liability depending on position of whole group of participants (expect to exceed emissions cap or expect to stay beneath cap)
- Participants disclose contingent asset or contingent liability
 - Contingent asset if expect to emit *less* than EAs received
 - Contingent asset if expect to emit *more* than EAs received

Evaluation of Approach 4, Emission Limits (Taxes and Contingencies, formerly Approach 3, Revenue)

Application of the Conceptual Framework's Element Definition and Recognition Criteria

72. Approach 4 takes a very narrow view with respect to recognition of assets and liabilities. By recognizing assets and revenue only to the extent that cash is generated on transfer (or sale), the Conceptual Framework requirements for recognition of these elements are definitely met. Cash received (or the right to receive such cash if the transaction initially generates an accounts receivable) represents a resource which is controlled by the administrator, after a past event (the transfer) has occurred and the value can be measured reliably.
73. The question that arises for this approach is whether it is too narrow, and fails to recognize other elements (for example, those arising from related obligations) or fails to fully recognize the full value of the transaction. If the Conceptual Framework arguments in favor of wider recognition of elements—which are described above for the first three approaches—are accepted, then Approach 4's very limited recognition of elements will be viewed as inadequate.
74. The main difficulty with Approach 4 is the "asset-like nature" of EAs. From the participants' perspective EAs appear to be assets which should be measured appropriately and recognized. EAs can be traded, they can be used to generate cash flows if necessary. There appears to be scope for the administrator to at least recognize the EAs that it holds initially, before transfer or sale.
75. An argument in favor of this approach is, as previously discussed in the June IPSASB paper, that it is better aligned with the public policy aims of an ETS. An ETS aims to change the environment within which emissions occur. An ETS does not introduce costly emissions per se. (By contrast, a tax on emissions makes all emissions costly.) An ETS introduces a cap on emissions, so that emissions become limited or "scarce". However, it is also possible to take a

broader view of costs imposed by an ETS, such that the costs could apply to emissions in similar fashion to costs arising from a carbon tax or the economic costs of the right to emit, as indicated by the market value of such rights (the EAs).

GFS Split Asset Approach to Revenue Recognition

76. The statistical community's "split asset" approach¹⁰ could be considered a sub-option of this approach because, from the administrator's perspective, it focuses on revenue narrowly defined as equivalent to cash received when EAs are transferred or sold to participants. Under the split asset approach, cash received by the administrator is treated as a prepayment of tax revenue, and a prepayment liability is recognized. Tax revenues are booked later when the EAs are surrendered.

Participants' Accounting—Symmetry applied to Approach 4

77. Under Approach 4 each individual participant assesses the probability that their total emissions could exceed the EAs they hold. Depending on that assessment the participant discloses either a contingent liability (an obligation to use cash flows to purchase EAs, as a result of a probable excess of emissions over EAs) or a contingent asset (the ability to generate cash flows from selling EAs, as a result of a probable excess of EAs over emissions).
78. From the participant's perspective:

Step 1: Receipt of EAs

- (i) Recognize an expense for any payment for allowances (if EAs are purchased initially) and treat the expense as a government charge (a type of tax). (The timing of expense recognition could be either immediately on payment or spread over the compliance period as the participant emits. The second approach would be consistent with the idea the "tax" relates to the production of emissions.)
- (ii) Disclose either a contingent asset or a contingent liability based on assessment of which is more likely. Provide note disclosures on the participant entity's assessment of its likely emissions and its holding of allowances to explain this contingency¹¹.

Step 2: During the compliance period

- (iii) Reassess the disclosure based on the impact of actual emissions on likelihood of cash outflows or cash inflows.
- (iv) No liability arising from emissions is recognized, unless an entity's emissions appear likely to result in a need either to purchase more EAs or pay a fine. (Similarly, no asset is recognized unless it becomes probable that, at the end of the period, EAs will be in excess of emissions.)

¹⁰ The approach is called "split asset," because EAs are conceived as consisting of two types of asset: (a) a financial asset for the cash auction proceeds (prepayment of tax), for which the value is offset by a liability; and (b) a non-financial (intangible) asset for the changes in market value of permits after issue, for which the value disappears on surrender.

¹¹ Measurement of the contingency could, for example, be in terms of the market value of the expected deficit or surplus of emissions (measured with respect to EAs' market value) over actual holdings of EAs.