POTSDAM INSTITUTE FOR CLIMATE IMPACT RESEARCH

The G77 Kyoto carry-over proposal

Implementation and Impact

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Outline

- **Background**
- **Terminology**
- **Elements of the G77 proposal**
- **Impact**

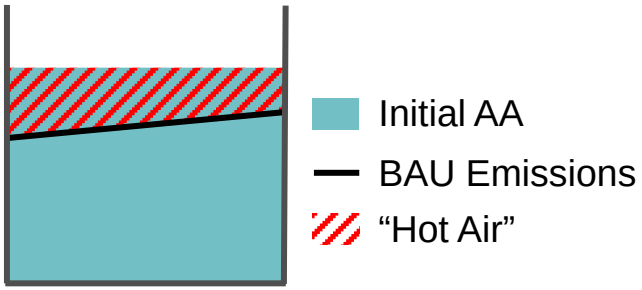
The G77 proposal - Background

- **Surplus Kyoto units from CP1 are estimated to be 14.5GtCO_2eq (including AAUs, ERUs, CERs, and RMUs) for CP1 parties and 8.2GtCO_2eq for prospective CP2 parties (i.e. without Russia and Japan)**
- **CP1 surplus large enough to allow prospective CP2 parties to stay at business as usual (BAU) until 2033 while fulfilling pledges (unconditional)**
- **New rules to address this under discussion at UNFCCC negotiations**
- **Proposals by AOSIS, Brazil, and African Group since 2010**
- **Joint proposal by G77 and China (Bangkok Sep. 2012)**
  - **Combines elements of old proposals**

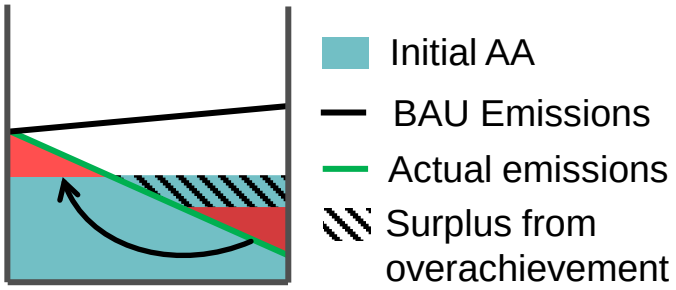
Terminology

- ***Initial Assigned Amount*: calculated following Article 3.7 and 3.8 KP, before trading and acquisition of units like CERs**
- ***Assigned Amount*: after trading and unit acquisition**
- **Two types of surplus**

***"Hot Air"*: used to describe initial AA exceeding business as usual (BAU) emissions**



***"Overachievement"*: actual emissions lower than pledged and lower than BAU**



For simplicity, the "Overachievement" graphic does not include trade and unit acquisition which influence the surplus

The Proposal - Overview

- Existing carry-over and use rules for CERs
- Existing carry-over rules for AAUs, ERUs, and RMUs
- Restrictions on use of carry-over AAUs and ERUs
  - Use for domestic compliance only
  - No trade
- Aims to prevent creation of new “hot air”
  - Assigned amount above 2012 emissions is cancelled
- Allows for surplus from overachievement
- Could work for a third CP

Full text of the proposal

13. If the emissions of a Party included in Annex I in a commitment period are less than its assigned amount under this Article, this difference shall, on request of that Party, be carried-over to the subsequent commitment period, as follows:

a. Any CERs held in that Party's national registry that have not been retired for that commitment period or cancelled may be carried-over to the subsequent commitment period, up to a maximum of 2.5 per cent of the assigned amount for that commitment period;

b. Any ERUs or AAUs held in that Party's national registry that have not been retired for that commitment period or cancelled shall be transferred to a Previous Period Surplus Reserve account of the subsequent commitment period, to be established in its National Registry, and shall remain in that account in its National Registry.

13 bis. The difference between the assigned amount of the second commitment period for a Party included in the Annex I and the emissions in the last year of the first commitment period multiplied by [five][eight] shall be transferred to the cancellation account of that Party.

13 ter. Units of a Party's Previous Period Surplus Reserve account shall be used for retirement during the additional period for fulfilling commitments of the second commitment period up to the extent by which emissions during the second commitment period exceed the assigned amount for that commitment period, as defined in Article 3, paragraphs 7 and 8. Any remaining units in that Party's Previous Period Surplus Reserve shall be cancelled.

Elements – Carry-over

13. If the emissions of a Party included in Annex I in a commitment period are less than its assigned amount under this Article, this difference shall, on request of that Party, be carried-over to the subsequent commitment period, as follows:

a. Any CERs held in that Party's national registry that have not been retired for that commitment period or cancelled may be carried-over to the subsequent commitment period, up to a maximum of 2.5 per cent of the assigned amount for that commitment period;

b. Any ERUs or AAUs held in that Party's national registry that have not been retired for that commitment period or cancelled shall be transferred to a Previous Period Surplus Reserve account of the subsequent commitment period, to be established in its National Registry, and shall remain in that account in its National Registry.

- **CERs: carry-over up to 2.5% of the initial AA**
- **AAUs: full carry-over, placed in Previous Period Surplus Reserve (PPSR)**
- **ERUs: 2.5% of initial AA, placed in PPSR**
- **RMUs: no carry-over**

Only change to current rules: PPSR

Elements – Restrictions on use

> 13 ter. Units of a Party's Previous Period Surplus Reserve account shall be used for retirement during the additional period for fulfilling commitments of the second commitment period up to the extent by which emissions during the second commitment period exceed the assigned amount for that commitment period, as defined in Article 3, paragraphs 7 and 8. […]

- **Previous Period Surplus Reserve (PPSR) units**
  - **For domestic compliance only**
  - **No trade**
  - **Only if emissions exceed initial AA**
    - **No "trading through overselling": parties can not sell CP2 AAUs and fill the gap with their surplus from CP1**
- **CERs**
  - **Usage as under current rules**

Elements – cancellation of surplus

> 13 ter. […] Any remaining units in that Party's Previous Period Surplus Reserve shall be cancelled.

- **PPSR can not be carried over again, cancelled at end of CP2**

> 13 bis. The difference between the assigned amount of the second commitment period for a Party included in the Annex I and the emissions in the last year of the first commitment period multiplied by [five][eight] shall be transferred to the cancellation account of that Party.

- **CP2 AA over historic levels is cancelled within CP2**
  - **For CP2: 2012 as historic level**
- **Works as well for a CP3**

Impact - Assumptions

For CP2 and post 2020 a trade model is needed to estimate surplus and surplus use: trade model assumptions (Chen, 2012)

- **CP2: 8 years, post 2020 CP: 8 years (results for 5 years CP2 in appendix)**
- **Post 2020 same rules as KP, KP units valid**
- **Parties try to stay at BAU: purchase as many units as needed not to go below BAU; no emissions above BAU**
- **EU is one party, no consideration of internal effort sharing + ETS**
- **Emission pathways**
  - **Low ambition: unconditional pledges / lower pledge range (CAT, 2012)**
  - **High ambition: conditional pledges / higher pledge range (CAT, 2012)**
  - **BAU: PRIMAP4BIS baseline (PRIMAP, 2012)**
- **Included only Parties which submitted a QELRO or said to do so**
  - **Australia, Belarus, Croatia, EU27, Iceland, Liechtenstein, New Zealand, Norway, Switzerland, Ukraine**

P I K

C. Chen et. al., 2012, in preparation
Climate Action Tracker (2012), www.climateactiontracker.org
PRIMAP (2012), www.primap.org

Impact - Emission reductions relative to 1990

Low Ambition	BAU	Pledge	Current KP rules	No carry-over	G77
2013-2020	**-17%**	**-12%**	**-17%**	**-17%**	**-17%**
2021-2028	**-16%**	**-25%**	**-16%**	**-24%**	**-22%**

High Ambition	BAU	Pledge	Current KP rules	No carry-over	G77
2013-2020	**-17%**	**-18%**	**-17%**	**-17%**	**-17%**
2021-2028	**-16%**	**-35%**	**-21%**	**-34%**	**-34%**

- **Post 2020 our model shows significantly higher emission reductions under the G77 proposal than with current KP rules**
- **However, it is unclear if KP units are valid in a new agreement under the ADP and how carry-over is handled**

Use of CP1 carry-over units (AAUs, CERs, ERUs)

	Carry-over use KP rules	Carry-over use G77 proposal	Demand	Supply: current CP	Supply: raw carry-over
Low ambition	**606Mt**	**606Mt**	**606Mt**	**3,979Mt**	**8,185Mt**
High ambition	**3,297Mt**	**2,107Mt**	**3,297Mt**	**3,098Mt**	**8,185Mt**

Supply is higher than demand in low ambition case. Only 200Mt net demand in high ambition case.

CP2 will be over-supplied with units independent of the carry-over rules. CP2 CERs, ERUs to be added

Less CP2 surplus can be sold if more carry-over is traded.

Total revenue from trade might decrease if more carry-over units available

net demand = demand - supply

Conclusions

- In CP2 the AAU market is over-supplied
  - Carry-over rules will not change CP2 emissions. They will be at BAU and are limited by BAU
  - Higher use of carry-over will lead to less use of CP2 surplus, might decrease revenue from surplus trade
- Higher ambition for CP2 may not lead to further emission reductions but leads to higher use of carry-over
- A 5 year CP2 can lead to emission reductions vs BAU before 2020
- Post 2020 emissions with G77 rules projected significantly below current KP rules case
  - 6% of 1990 emissions for low ambition case
  - 13% of 1990 for high ambition case
- Reminder: results for prospective CP2 members only
- Similar results for G77 proposal when including CP1 only members
  - Russia and Japan add more surplus than demand

Appendix: Detailed Assumptions

- **Trade model (Chen et al. 2012)**
  - **Participation in trade: KP and surplus rules apply**
  - **No participation: stay at pledge or BAU whichever is lower, no carry-over**
  - **Each seller sells the same proportion of his supply**
  - **Each buyer fulfills the same proportion of his demand**
- **Units**
  - **CERs, ERUs: max estimate from (den Elzen et al. 2012)**
  - **No CERs, ERUs for CP2 and later. CERs projected to be around 6Gt (UNEP RISØ, 2012)**
  - **RMUs from (Chen, 2011)**

den Elzen, M. G. J., M. Meinshausen, et al. (2012). Climatic Change **114**(2): 401-408.
Chen, C. (2011), PRIMAP LULUCF Activity Data Methodology, www.primap.org
Chen, C., et al. (2012), in preparation
UNEP RISØ, 2012, http://www.cdmpipeline.org/

Appendix: Emission reductions relative to 1990 – 5 year CP

Low Ambition	BAU	Pledge	Current KP rules	No carry-over	G77
2013-2017	**-17%**	**-9%**	**-17%**	**-17%**	**-17%**
2018-2020	**-16%**	**-15%**	**-16%**	**-16%**	**-16%**

High Ambition	BAU	Pledge	Current KP rules	No carry-over	G77
2013-2017	**-17%**	**-14%**	**-17%**	**-17%**	**-17%**
2018-2020	**-16%**	**-24%**	**-16%**	**-23%**	**-22%**

- **5 year CP2 and illustrative 3 year CP3 (to compare to 8 years)**
- **BAU emissions in CP2 for all cases**
- **Emission reductions compared to BAU in CP3 would occur already before 2020, as shown by illustrative 3 year CP3**