

Empty targets?

HOW TO AVOID TRADING OF HOT AIR UNDER THE PARIS AGREEMENT

Policy briefing, December 2019

‘Hot air’: noun [U]

informal / 'hɒt 'eər/

words that do not really mean anything
and will have no practical results.

Executive summary

A very large number of carbon credits has been created through the three carbon markets of the Kyoto Protocol: the Clean Development Mechanism (CDM), Joint Implementation (JI) and International Emissions Trading (IET). It is unclear what will happen to these mechanisms in the future and whether these old credits will be used under the Paris Agreement, but the risk of transferring large quantities of credits is there.

The CDM alone could potentially supply four billion extra units. In addition, there are currently around 220 million units available under the JI. However, both systems are dwarfed by the number of Assigned Amount Units (AAUs) from IET which have not been used under the Kyoto Protocol.

While the 2012 Doha amendment, which still has not entered into force, limited the use of AAU surplus for the second commitment period of the Kyoto protocol, it remained silent on their existence post-2020. Several countries have shown willingness to exploit this loophole. There are still 14.1 billion AAUs available from the Protocol's first commitment period and, if the second commitment period were to enter into force, this would create an extra surplus of around 1.7 billion. Relying on any unit from the Kyoto protocol would therefore put the achievement of the Paris Agreement climate goals at risk.

In addition to this threat from the past, some countries' Nationally Determined Contributions (NDCs) under the Paris Agreement have low targets which will be easy to over achieve. This means that these countries could potentially create between 18.7 and 28.3 GtCO₂e worth of credits - or 'hot air' - that they can sell without reducing a single tonne of greenhouse gas emissions.

To prevent that these hot air units be used to meet current and future NDCs, four damage control measures are needed:

1. Only emission reductions that take place after 2020 can be used towards the NDCs
2. Countries that over achieve their targets because they were set below business-as-usual emission levels in the first place should not be allowed to transfer these hot air credits to other countries that have adopted more stringent targets
3. Countries with hot air in their current NDCs should not be allowed to transfer it to subsequent NDC periods to meet future targets
4. Emissions should not be compensated through the use of excessively old credits, representing emissions which took place a decade or more earlier

Introduction

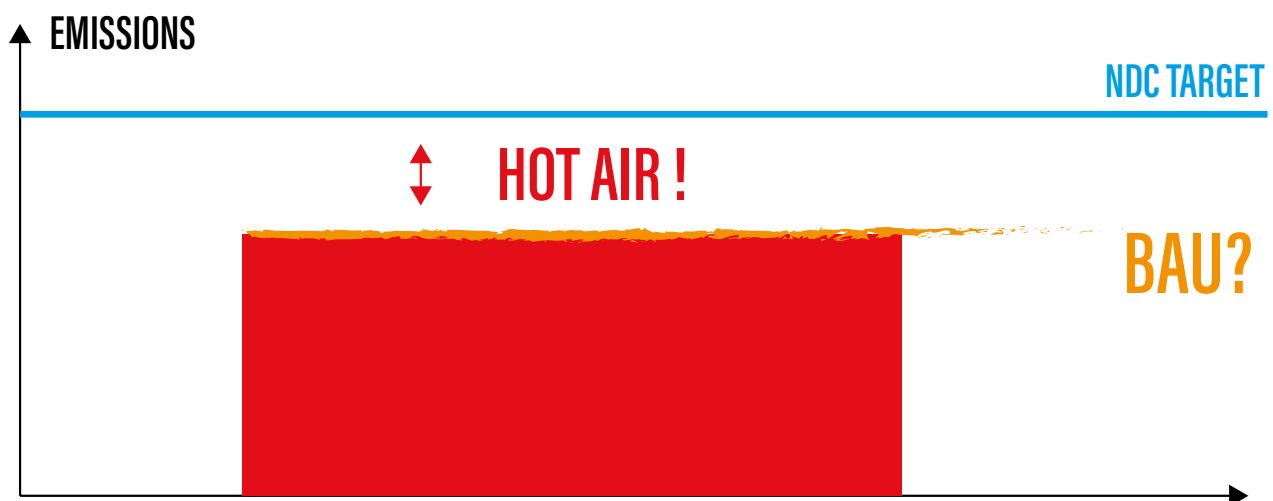
This briefing provides an overview of the evolution of ‘hot air’ in international carbon markets established under the UN Framework Convention on Climate Change (UNFCCC). Looking back at past situations where hot air has contributed to the collapse of international carbon markets, it draws parallels between past, present and potential future situations, and suggests solutions to ensure that hot air does not undermine the goal of the Paris Agreement to limit the global temperature increase to 1.5°C.

For a more introductory description of international markets, please refer to the guide “Carbon Markets 101”¹.

What is hot air?

In the context of climate policies and carbon markets, ‘hot air’ refers to a carbon credit which has been issued not because of deeper emission reductions, but because a country has adopted a weak climate target that it easily overachieved. This way, even without further climate action and following a business-as-usual (BAU) emission reduction scenario the country can generate carbon credits.

In principle, carbon credits should only be issued when a specific project is implemented, with clear and measurable baselines². However, sometimes countries are allowed to generate credits and sell them simply because they overachieve their targets, i.e. reduce emissions beyond what they had committed to. However, given that some countries have emissions targets that are higher than their emissions under a business-as-usual scenario, these countries would be allowed to issue credits without actually reducing emissions.



Why does it matter?

Allowing countries to issue, sell and use hot air credits under any carbon market creates incentives that work directly against the goal to reduce greenhouse gas emissions. First, it rewards seller countries for adopting weak climate targets, in particular those set above business-as-usual scenarios. Second, it gives buyer countries (or private buyers) access to very cheap credits³ and allows them thereby to escape their responsibilities when it comes to reducing emissions.

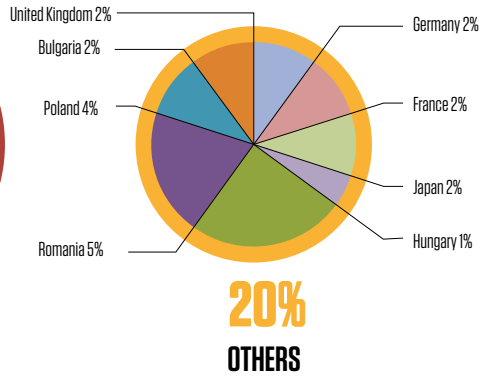
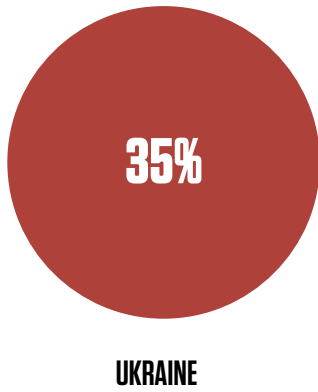
When these units are used to substitute legal emission reduction obligations - as was the case under the European Emissions Trading System (EU ETS) - they undermine domestic climate policies. At a global level, using hot air credits leads to a net increase in greenhouse gas emissions, thereby aggravating the climate crisis.

1 [Carbon Markets 101: the ultimate guide to global offsetting mechanisms](#)

2 A baseline is the reference level against which actual emissions are measured to know how many carbon credits can be created. It represents some counterfactual scenario, meaning an alternative scenario to the one which is observed.

3 Given that these units do not actually require any emission reductions in order to be issued, there are virtually no costs to their issuance, and hence prices can be near-zero while still being profitable to the seller.

AAUs HELD BY COUNTRY



AAUs HELD BY COUNTRY top 10 (Mt CO₂e)

Russia	5089
Ukraine	4001
Romania	533
Poland	411
Bulgaria	260
United Kingdom	243
Germany	228
Bulgaria	187
Japan	171
Hungary	169

What is the risk today?

As a new set of carbon market rules is being negotiated under Article 6 of the Paris Agreement, governments have to decide on the fate of the existing international carbon markets, established under the Kyoto Protocol. The Kyoto Protocol established three different carbon markets with different tradable units⁴: International Emissions Trading, under which Assigned Amount Units (AAUs) were traded, the Joint Implementation mechanism with Emission Reduction Units (ERUs), and the Clean Development Mechanism with Certified Emission Reductions (CERs).

A large majority of the units which remain in the system do not represent real, additional emission reductions. Some, in particular the AAUs and ERUs, can be described as hot air as they were issued because targets were set below business-as-usual levels, not because of the achievement of any extra greenhouse gas abatement.

Hot air: where does it come from and where could it go?

To date, two billion CERs have been released on the market, some of which have been used already, and it is estimated that the total potential supply of these CDM credits is around 4.6 billion (representing 4.6GtCO₂e). Considering the number of credits which would be used before 2020, around four billion CERs would remain available after 2020.

It is estimated that 72% of these credits are generated by non-additional projects, i.e. projects which would have happened anyway, regardless of their ability to sell CDM credits⁵. In addition, and perhaps more importantly, 82% of credits will come from projects that don't need the money to continue reducing emissions.⁶ These projects should not be allowed to continue issuing CERs, since the use of these credits would lead to an increase of global greenhouse gas emissions.

In parallel, around 872⁷ million credits (ERUs) have been issued under the Joint Implementation mechanism. Of these, around 630 million have been used (30% by companies under the EU ETS⁸ and 15% by companies under the NZ ETS⁹), and about 18 million have been cancelled¹⁰. Nearly all ERUs have been issued by countries which had surplus AAUs, i.e. had hot air to sell and using methodologies and baselines adopted by the issuing country. A vast majority of these units (80%) have been found to have little or no environmental value¹¹.

4 In this briefing, we do not consider Removal Units (RMUs) because of the small share of the overall credits they represent

5 Oeko Institut (2016): "How additional is the CDM?"

6 Warnecke et al. (2019): "[Robust eligibility criteria essential for new global scheme to offset aviation emissions](#)", Nature Climate Change, 9, 218-221.

7 UNFCCC data, see here

8 European Commission (2018): "Report on the functioning of the European carbon market", p.47

9 NZ EPA (2018) "NZ ETS facts and figures 2017", p.3

10 Based on data provided by IGES (2019) "IGES Kyoto Units transfer database CP1"

11 SEI (2015): "[Has Joint Implementation reduced GHG emissions?](#)"

Finally, around 57.6 billion credits (AAUs) have been issued under the International Emissions Trading mechanism. Out of these, 42.7 billion have been used under the first commitment period of the Kyoto Protocol (KP CP1)¹² and 14.1 are still held by countries (with a very small amount held by companies). All these credits were issued under the first commitment period of the Kyoto Protocol which finished in 2012, and nearly all were also used before that date¹³. In 2012, measures were adopted to limit the use of the 14 billion extra AAUs in the second commitment period of the Kyoto Protocol (KP CP2), but some uncertainty remains as to the exact fate of these units under the Paris Agreement (see section below “learning from the past”).

To conclude, it is clear that, in addition to the 3.8 billion CERs with low environmental integrity, there is a massive amount of other units from the Kyoto Protocol, which are nothing but hot air. Under no circumstances should these credits be used to demonstrate achievement of a national climate target under the Paris Agreement.

What is the risk in the future?

Transferring hot air from weak targets is not only an issue of the past. It is also a very real risk which could undermine carbon markets under Article 6 and therefore the entire Paris Agreement.

Current negotiations have not focused in detail on provisions to avoid the transfer of hot air, both from one country to another and from one NDC commitment period to another. Yet this is a very serious risk, as many countries have set very weak national climate goals.

Not only could hot air be sold by a country to another, thus reducing the climate action of the buyer country, but it could also be transferred from one NDC compliance period to the next, meaning that a country with hot air could use it to meet subsequent NDC targets. This would mean that countries could continue not to reduce emissions from one compliance period to the next, even if their subsequent NDCs became more stringent.

The future of hot air - pumping the balloon?

Estimating the amount of hot air in a country’s NDC requires comparing the level of emissions that the country is committed to reach to the level of emissions resulting from a business-as-usual scenario.

These are hard to define given the complexity of NDCs and the many factors which can influence the business-as-usual scenarios. However, it is possible to calculate ranges for high and low estimates of hot air that take into account various scenarios.

Over the period 2021-2030, the estimates for the amount of hot air in the NDCs vary between 18.7 and 28.3 GtCO₂¹⁴. Allowing countries to sell 20 billion credits which do not represent a single tonne of reduced greenhouse gas emissions would seriously undermine global climate action and put the Paris Agreement goals at risk.

It is estimated that between 50 and 73 countries have hot air in their NDCs. In the “low hot air” estimate, 50 do. In both cases, the Russian Federation holds the largest amount of hot air representing around 20% of the total¹⁶.

12 An AAU is like a pollution permit, similar to an allowance under an emissions trading system, hence countries had to surrender AAUs to match every tonne of CO₂e emitted over KP CP1

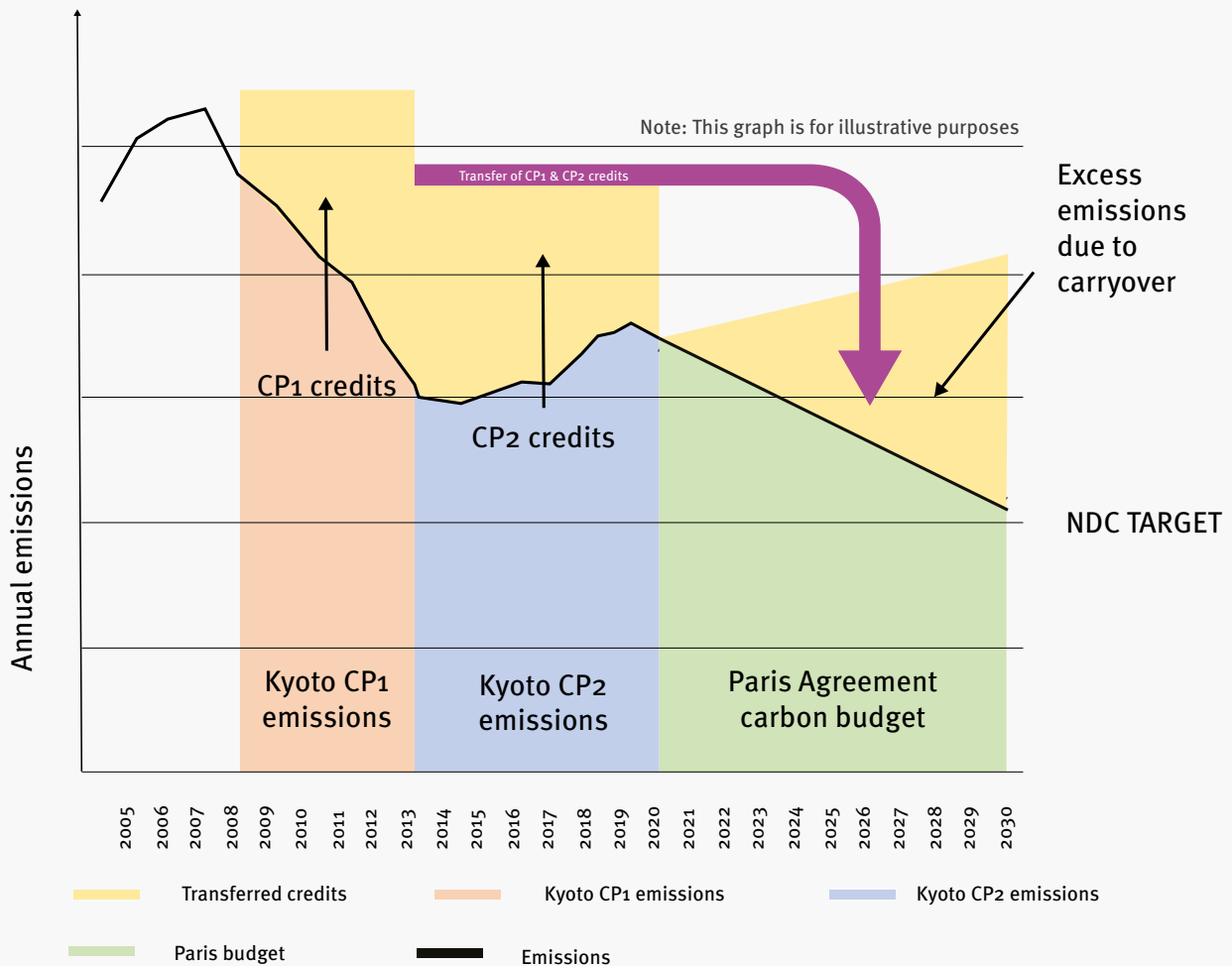
13 IGES (2019) “[IGES Kyoto Units all transaction data for the first commitment period](#)” and “[IGES Kyoto Units transfer database CP1](#)”

14 SEI (2017): “[International transfers under article 6 in the context of diverse ambition of NDCs](#)”

15 The lower end of this range is the amount of hot air in a “high ambition” scenario where the gap between NDC and BAU is lowest (for countries with NDC emissions > BAU emissions) by taking the lowest estimated value for NDC target and the highest estimated value for BAU level. The higher end of this range is the opposite, comparing the highest estimate of emission levels implied by an NDC target with the lowest level implied by a BAU scenario, which hence maximises the gap between NDC target and BAU level (for countries where NDC > BAU).

16 Based on data included in the NDC & INDC factsheets by Meinshausen and Alexander (2016)

How would old AAUs reduce the ambition of the Paris Agreement?¹⁷



What can we learn from the past?

In 2012, countries agreed on provisions to limit the use of hot air in international carbon markets. These included measures to deal with the large amount of unused AAUs from the Kyoto Protocol's first commitment period (CP1) in order to avoid that they enter and flood the second commitment period (CP2), as well as rules to avoid the build-up of new surplus¹⁸. Both of these are valuable examples to inform the Article 6 negotiations.

To limit the use of old surplus, the Doha decision established that a country could use its own CP1 AAUs in CP2 without restrictions, and sell its CP1 AAUs without restrictions, but could only buy a certain amount of CP1 AAUs from another country - up to 2% of the initial number of AAUs which the buyer received in CP1. This means that, while there was no restriction on using hot air across compliance periods within a country, there was a restriction on using hot air from other countries.

The second element to learn from, limiting the creation of new hot air during CP2, established that a country could not receive more CP2 AAUs than what it would have needed if it had kept its emissions constant at the 2010-2012 average. Hence, a country joining CP2 could not choose a target which is above its historical emissions and if it did, it would need to buy extra credits even if it had reached its target.

¹⁷ You can see an example of how this would look like for Australia [here](#)

¹⁸ For a more detailed explanation of the Doha Amendment rules to limit hot air, see [Doha decisions on the Kyoto Surplus explained](#)

As noted above, the surplus of AAUs today is around 14 billion credits. Since the Doha amendment never entered into force - but still could if enough countries ratified it -, the AAUs which countries should have received were never issued. Thus the surplus of AAUs today is virtually equal to the surplus of AAUs at the end of CP1. However, it also means that all the provisions to limit the transfer and/or use of Kyoto units from CP1 have never been implemented.

This raises some uncertainty regarding the future use of old units, in particular the AAUs. Current discussions under Article 6 have focused on the fate of CDM units, and to a lesser extent on that of JI units. But very little attention has been dedicated to whether or not AAUs can be used to demonstrate compliance towards the Paris targets. This is a crucial question, given the size of the AAU surplus and the severe risk it poses to the environmental integrity of the Paris Agreement.

Most experts and countries share the position that AAUs are not countries' assets but merely an instrument from the Kyoto Protocol that cannot be used in a non-KP context. However, countries such as Australia, where emissions are still on the rise, have clearly signalled their intention to use their surplus of AAUs to meet their Paris target.

How would the Doha amendment affect the supply of AAUs if it entered into force before 2021?

If the Doha amendment was to be ratified by a sufficient number of countries and entered into force, it would have two main impacts on the supply of AAUs. First, the AAUs allocated for each country for the Kyoto Protocol's second commitment period would be issued, but given the Doha rule which limits the creation of new surplus, most of these AAUs would be used to demonstrate compliance towards the CP2 target.

Some AAUs would still remain, because certain countries had very weak targets, adding up to around 1.7 billion AAUs from CP2, spread between the EU (1.7 billion), Australia (376 million), and Ukraine (239 million). All other KP CP2 Annex 1 Parties would have deficits and hence absorb some of the surplus (which is why the sum of country surpluses is different from the final total)¹⁹.

At the same time, the Doha amendment does not cancel any AAUs, even those generated in CP1. These are merely placed in a so-called "previous period surplus reserve", the status of which after 2020 is unclear, and seems to depend on the interpretation of the nature of AAUs (i.e. whether they are an asset which has a life beyond the Kyoto Protocol or whether they merely constitute an instrument of measurement within the Kyoto Protocol to demonstrate countries' achievement of their climate targets).

Therefore, if the Doha amendment was to enter into force, it would create a new volume of AAUs (so-called CP2 AAUs), but would not resolve the uncertainty around the use of AAUs post-2020 (both for CP1 and CP2 AAUs).

Conclusions: How to keep hot air out of the Paris Agreement

The amount of hot air which could be used under the Paris Agreement to cheat on the atmosphere is daunting.

Taken together, old credits from the Kyoto Protocol (four billion CERs, 220 million ERUs, 14.1 billion CP1 AAUs, and potentially an additional 1.7 billion CP2 AAUs) and the new hot air included in the nationally determined contributions (around 20GtCO_{2e}), could, in a worst case scenario, together add 40 billion credits that do not represent emissions reductions into the Paris-era, killing the agreement before it even starts.

While this is unlikely to happen, and there are differences between these different sources of credits which mean that they cannot be easily aggregated into a single number, the order of magnitude of this threat is clear. Four key damage control measures are therefore needed:

1. Only emission reductions that take place after 2020 can be used towards the NDCs
2. Countries that over achieve their targets because they were set below business-as-usual emission levels in the first place should not be allowed to transfer these hot air credits to other countries that have adopted more stringent targets
3. Countries with hot air in their current NDCs should not be allowed to transfer it to subsequent NDC periods to meet future targets
4. Emissions should not be compensated through the use of excessively old credits, representing emissions which took place a decade or more earlier

To see our detailed analysis of how to integrate these measures into Article 6 at COP25, including a detailed text proposal, please refer to the accompanying document "How to keep hot air out of the Paris Agreement: [technical proposal](#)".



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