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Public consultation on a measure to introduce further quality restrictions on the use of credits from industrial gas projects - organisation

Dear Directorate-General Climate Action,

we would like to thank you for giving us the opportunity to provide you with a response to your planned proposal for a measure to introduce further quality restrictions on the use of credits from industrial gas projects in the post-2012 EU ETS.

Kind regards,

Dr. Marten von Velsen-Zerweck & Albrecht von Ruffer

INDUSTRIAL GAS CERS – WHY CERS FROM NITRIC ACID CDM PROJECTS SHOULD NOT BE RESTRICTED IN THE POST-2012 EU ETS & NOT ALL INDUSTRIAL GAS PROJECT TYPES ARE THE SAME!

SUMMARY – KEY FACTS

The objective of this fact sheet is to avoid the wholesale condemnation of ‘industrial gas’ projects and to ensure that industrial gas project types with a proven ‘environmental integrity’, that are successfully contributing to the reduction of greenhouse gases, will remain in the post-2012 trading period of the EU ETS.

1. The CDM nitric acid N_2O reduction project type fulfils the ’environmental integrity’ criteria and generates real, permanent, measurable, verifiable and additional reductions
2. It was found by independent studies that there are no ‘Windfall profits’ or ‘carbon leakage’ in this project type and hence there are no grounds for limiting the use of nitric acid CERs or ERUs in the EU ETS.
3. These projects have the support of green groups such as CDM Watch and the Stockholm Environment Institute (SEI).
4. Further restrictions on CERs generated from nitric acid projects could lead to catalyst technology being removed, due to high investment and operational costs, and the continued release of high amounts of greenhouse gases into the atmosphere.

BACKGROUND

PROPOSED BAN OF INDUSTRIAL GAS PROJECTS IN THE NEXT POST 2012 TRADING PERIOD OF THE EU ETS - THE CASE FOR NITRIC ACID CDM PROJECTS

The European Commission Directorate-General (DG) CLIMA is currently considering quality restrictions or even an outright ban for the use of credits from industrial gas projects in the post-2012 EU ETS. Moreover, Commissioner Connie Hedegaard suggested a general CDM overhaul to address criticism about its environmental integrity. These developments were triggered by suspicions that HFC projects might be ‘gaming’ the system to maximize CER generation.

While the focus of attention is on HFC (and adipic acid projects,) some commentators assume that all industrial gas projects are alike and include perverse incentives to generate windfall profits, which could even lead to a shift of production facilities from industrialised to non-industrialised countries (so-called ‘carbon leakage’). These concerns lead to discussions within the European Commission’s Directorate-General for Climate Action to restrict or even ban outright the use of CERs from industrial gas project types in the next trading phase, which starts in 2013.

This would be a huge mistake as some of them, in particular **nitric acid N_2O**, are a **real CDM success story** as the market incentives provided do not lead to excessive profits and gaming, but enable the transfer of innovative environmental abatement and monitoring technology and know-how from industrial to developing countries by the means of CERs generated in these projects as originally intended by the Kyoto Protocol.

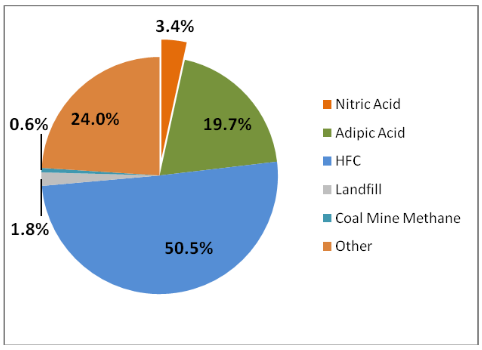
THE MAIN ARGUMENTS IN FAVOUR OF NITRIC ACID PROJECTS IN MORE DETAIL, HIGHLIGHTING THE DIFFERENCES BETWEEN HFC AND ADIPIC ACID N_2O PROJECTS ON THE ONE HAND AND NITRIC ACID N_2O ON THE OTHER.

1) CER VOLUMES

To date 2,750 CDM projects are registered, to which 429 million CERs have been issued.

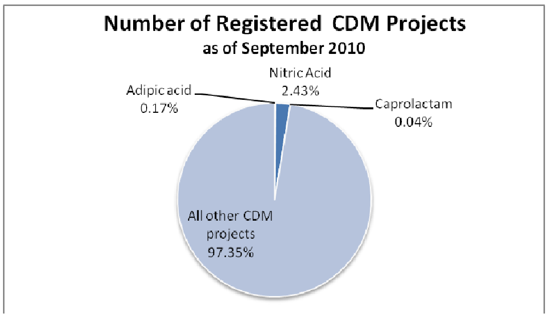
- 19 HFC projects account for less than 1% of the number of CDM projects but for more than 50% of the total of 429 million CERs issued to date (see figure 1)!
- 4 Adipic acid projects account for only 0.1% of the number of projects but for almost 20% of the CERs issued so far.
- 58 nitric acid projects account for only 3.4 % (14.5 million) of all issued CERs. No CERs have been issued to the 8 PFC or SF_6 projects yet (see figures 2 & 3).

Figure 1: Issued credits under the CDM to date



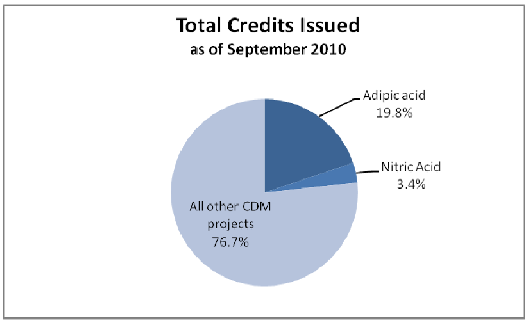
Source: N.serve based on UNEP Risoe (2010)

Figure 2: Industrial N_2O Projects under the CDM



Source: Kollmuss, A. & Lazarus, M. (2010)

Figure 3: Industrial N_2O CERs under the CDM



Source: Kollmuss, A. & Lazarus, M. (2010)

2) NO WINDFALL PROFITS, NO PERVERSE INCENTIVES

- Nitric acid N_2O abatement projects include high investment costs associated with the installation of the abatement catalyst, a complex N_2O monitoring system and the latest quality assurance standards (EN14181) for the monitoring technology and quality assurance and control processes.
- Table 1 shows that the cost of production for one tonne of nitric acid by far outweighs the revenues generated with the sales of CERs. Note also, that this is a pure monetary estimate and no qualitative considerations such as production risks, CER prices or political uncertainties are part of this simplified calculation.

Table 1: Cost of production for primary product nitric acid vs. CER revenues (non-existence of windfall profits)

Items	Nitric Acid
CERs produced per tonne of product	2 (range 0.5-3.8)
Abatement costs per CER (not including CDM related transaction costs)	EUR 1-4
Price per CER once it is issued	EUR 13
Net profit (CER price minus abatement costs) from CDM per tonne of product	average EUR 18-24[1] (range EUR 3.5-45.6)
Production cost per tonne of product	EUR 125
Potential earnings from CERs stand-alone	**minus 101 Euros (loss)**
Sales price per tonne of product	EUR 100-225 t of ammonium nitrate

Source: Kollmuss, A. & Lazarus, M. (2010), modified by N.serve

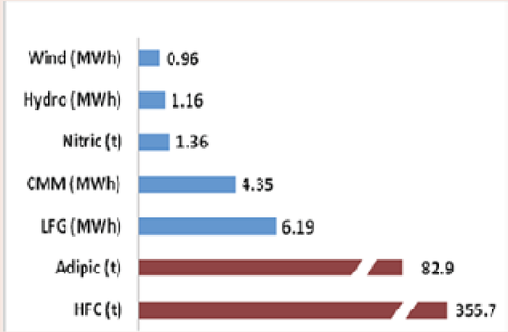
- At current market prices, the average nitric acid N_2O project would yield CER revenues in the region of €26 per tonne of nitric acid. However, the production costs for one tonne of nitric acid are in the region of €125 and the cost for the abatement catalyst is on average €8 per tonne of acid (apart from other transaction costs). This clearly indicates that these projects do not result in windfall profits or perverse incentives associated with other project types. Revenues, yielded by CERs, do not exceed the production costs of the main product.

- Nitric acid projects currently take place in 18 different CDM countries across the globe. The main revenues from these projects are earned by the project owners: local fertilizer companies that to a large extend use these revenues to finance technology and necessary plant modifications. The technology applied quite often is not end-of-pipe and involves modifications at the core of the nitric acid plants. This comes with significant investment and operating expenses. Furthermore, it involves a very real risk to the efficiency and functioning of the plant (several projects where stopped or suspended because such problems could not be overcome). The profit margin of these projects are not only already very significantly lower than HFC and adipic acid, but these margins also have to be considered in light of the technical risks, country risks and the complexities and transaction costs of the CDM. Without the incentives provided by the CDM, many of the plants in developing countries will stop to abate N2O..

3) CER Productivity and Profitability:

An even clearer picture emerges from a representative analysis of more than 20 projects from different project types that looks at the number of CERs that can be earned per unit of underlying product.

Figure 4: CERs per unit of product (MWh or tonne)



Source: N.serve Environmental Services (2010)

Figure 4 shows that the output of CERs per unit of product is in the same range as of wind or hydro projects and even below the CER output per unit of product of the landfill gas (LFG) and coal mine methane (CMM) project types. It also shows the stark contrast to the CER productivity of adipic acid and HFC projects which produce on average 83 and 356 CERs per tonne of adipic acid or HFC produced respectively.
As a result, the CER revenues can be as much as 30 times the value of the underlying product in adipic acid and HFC projects, but make up less than 0.2 times the value of nitric acid or its derivative products.

While one might argue that there could be an economic rationale to ramping up HFC or adipic acid production for the sole purpose of CER generation, it becomes clear that this economic incentive does not exist for nitric acid plants.

4) CDM Success Story:

Initiated by the CDM, newly developed N_2O abatement technology was introduced in developing countries several years before the more recent diffusion in the EU and even further ahead of the US, Japan or Australia.

More than 400 nitric acid plants are thought to be in operation around the world, most of which are owned by local companies supplying their regional markets. Nitric acid is a predecessor in the production of fertilizer, the production of which will increase with the rise of the world population and increasing demand for agricultural products. According to N.serve's estimates, the potential global N_2O emissions from nitric acid plants amount to about 590,000 t N_2O annually, which would equate to approximately 150,000,000 t CO_2eq per year if no abatement measures were implemented in the absence of incentives like CDM and JI.

The reduction of N_2O greenhouse gas emissions in nitric acid plants is a real CDM success story:
Before the existence of the Kyoto Protocol there was no regulation of N_2O emissions from the nitric acid industry anywhere in the world. Triggered by the market incentives provided by the Kyoto Protocol's flexible mechanisms (the Clean Development Mechanism (CDM) and Joint Implementation (JI)) today there are more than 100 plants which have installed cutting edge abatement and monitoring technologies, culminating in an estimated physical reduction of about 12 million tonnes of CO_2equivalents until today. Most of these projects are located in developing countries and thus fulfill the overarching sustainable development goals pursued by the Kyoto Protocol: innovative environmental N_2O abatement and monitoring technologies have been installed in industrial facilities in developing countries.

5) RIGOROUS METHODOLOGY APPLIES STRICTEST QUALITY STANDARDS AND PREVENTS GAMING

The application of a very rigorous methodology (AM0034) means that nitric acid plants in developing countries now have the most sophisticated emissions monitoring systems and apply the strictest quality assurance and control procedures based on the latest European Union's emission monitoring norm, EN14181. **In short, the 'developing world' overtook the 'industrialised' world and is ahead by several years of experience in this sector – a success not possible without the CDM.**

Selected key requirements in nitric acid CDM methodology AM0034 that prevent 'gaming' with regard to boosting Emission Reductions in Nitric Acid N_2O project

1.) Mandatory use of EN 14181 as quality assurance standard for emission monitoring systems, including external audits by testing laboratories with EN ISO IEC 17025 accreditation.
2.) Full deduction of measurement uncertainty as determined in a separate independent audit from Baseline emission factor.
3.) Restricted to plants that were in commercial production before December 31st 2005 and restricted to the actual design capacity.
4.) Using 5 historic campaigns for determination of normal operating conditions (permitted ranges) only data from within that permitted range obtained during the baseline campaign can be used for the determination of the baseline emissions factor. Gaming the permitted range would mean for an operator to run the plant outside of this optimal range for a significant time during the historic campaigns and the baseline campaign in order to achieve a higher baseline emissions factor (a campaign is usually between 3 and 12 months long). However, this would mean a very significant loss in nitric acid and wasting of ammonia, since more N_2O means less nitric acid. The economic incentives thus work against such gaming possibilities.
5.) Using the same primary gauzes during the baseline as were used during the relevant historic campaigns (same composition, or provide technical evidence for no influence on N_2O generation if different gauze was used).
6.) Application of statistical analysis to baseline campaign monitoring data in order to remove outliers and implausible emission data.
7.) Practical restrictions to eliminate abnormal historic campaigns from determination of permitted ranges
8.) Application of conservative emission factor during AMS downtime in the baseline campaign (4.5 $kgN_2O/tHNO_3$).
9.) Restricting the length of the baseline campaign to the length of the average historic campaign, thereby preventing an overly long baseline campaign that would increase the baseline emissions factor.
10.) Recalculation of the emissions factor baseline in case a project campaign is shorter thereby eliminating the risk of taking advantage of an extraordinarily long Baseline Campaign, since the respective project campaign would need to be even longer, resulting in higher project emissions (N_2O emissions tend to be higher at the end of a campaign).
11.) Implementation and Application of a moving average emissions factor and minimum project emissions factor after the 10th campaign which in the long run restricts the increases in performance for which CERs can be earned.

Green groups, such as CDM Watch, and independent Institutes, such as the Stockholm Environmental Institute (SEI), support the Nitric Acid project type.
The SEI (2010) recently wrote a report entitled '*Industrial N_2O Projects Under the CDM: The Case of Nitric Acid Production*'. The detailed and independent study concludes that there is no evidence of manipulation, windfall profits or carbon leakage from this sector, but on the contrary, confirms the environmental integrity of this project type and the underlying methodologies AM0034 and AM0028.

Conclusion

A differentiated approach should be taken when considering the merits for qualitative restrictions on any type of CER or ERU. In the case of nitric acid projects, there are no windfall profits, no carbon leakage and no evidence or even incentive for gaming. More importantly, nitric acid projects have a proven strong environmental integrity and are a true success story of the CDM in its widespread dispersion of cutting edge technologies and know-how.

CERs and ERUs from nitric acid projects should not be restricted for their future use in the EU ETS

The CDM has taken a lot of criticism in the media and there is a danger that this negative impression takes hold. While it is necessary to improve the CDM's processes and administration, it is even more important to bring the numerous CDM success stories to broader attention. Otherwise we run the risk that suspicions on a tiny number of projects discredits and potentially derails an otherwise successful mechanism promoting and transferring clean technologies across the globe.

References

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