

Frequently asked questions

Why has the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) launched the Nitric Acid Climate Action Group (NACAG)?

BMUB launched the NACAG at the UN Framework Convention on Climate Change (UNFCCC) Conference of the Parties (COP) 21 in Paris in order to incentivise both pre-2020 climate action and long-term emission abatement. The abatement of nitrous oxide (N₂O) emissions from nitric acid production represents a relatively low-cost mitigation potential, which in the past was widely exploited under the Clean Development Mechanism (CDM). However, since the collapse of certificate prices under the CDM, N₂O abatement projects have been put on hold and this mitigation potential is now largely unexploited. The NACAG operates in a unique way because it combines pre-2020 climate finance with a requirement that partner countries take full responsibility for the mitigation activities after 2020.

Why did BMUB decide to engage with the nitric acid sector in this way?

N₂O is formed as an unwanted by-product of the nitric acid production process and has a global warming potential (GWP) 265 times that of CO₂ (see below). However, these N₂O emissions can be abated relatively easily and usually at a lower cost than most other major forms of GHG emission abatement. Effective abatement technology is already widely available and can be installed quickly in existing plants. Given the magnitude of the challenge of climate change, we cannot afford to continue releasing emissions that can be avoided with moderate effort. Besides, the mitigation potential of the nitric acid sector is significant: for developing countries this potential is estimated at roughly 200 million tonnes of CO₂ equivalents between 2016 and 2020.

What is the NACAG's vision?

Around the world a significant number of nitric acid plants are still operating without N₂O abatement technology. The NACAG is therefore incentivising the installation and sustained operation of N₂O abatement technology in all existing nitric acid plants worldwide. The Group is working to phase out global N₂O emissions from nitric acid production by supporting pre-2020 mitigation efforts and encouraging the regulation of the sector in partner countries after 2020. The NACAG's vision is that, after 2020, all countries will include N₂O abatement in their Nationally Determined Contributions (NDCs) under the UNFCCC's Paris Agreement.

What does the NACAG offer?

To encourage the nitric acid sector to phase out its N₂O emissions, the NACAG offers technical support to governments, business organisations and companies that are considering this particular mitigation action. Alongside providing technical advisory services on how to install and use abatement technologies, the NACAG also offers consultancy and support on the development of project idea notes (PINs) and project design documents (PDDs) that enable the abatement activities to be implemented under the CDM.

Moreover, the NACAG offers financial support for the implementation of the physical abatement activity and for all CDM-related costs until 2020. This support covers not only the procurement and installation of the abatement technology and monitoring equipment required, but also any necessary plant modifications and the labour costs related to monitoring and maintenance. The financial support is provided on condition that countries commit to taking responsibility for the sustained operation of the abatement activities after 2020.

Who can participate in the NACAG?

The NACAG is open to all parties – including governments, institutions and representatives from the private sector – who support the goal of abating N₂O emissions from nitric acid production in a sustainable manner. The group is also inviting countries and organisations to join the initiative as donors. In this way, they can help the NACAG to achieve its ambitious goals by increasing the volume of funds it has available for providing financial support under the initiative.

Who can benefit from the NACAG, and is access to the support, and particularly to the financial support, limited in any way?

The NACAG offers advisory and general technical support to all countries and interested stakeholders intending to contribute to the attainment of the initiative's goals. However, financial support is only offered to countries in need of such support. A country's eligibility for official development assistance (ODA) is considered compulsory for receiving NACAG funding; however, additional criteria may be applied. Another precondition for receiving financial support is the political commitment of the host government to permanently continue the supported abatement activities after 2020. At the plant level, additional eligibility criteria are applied and a case-by-case due-diligence evaluation is conducted.

What kind of technical support does the NACAG offer?

The NACAG offers technical support at both the government level and the plant level.

Governments are provided with advice and support on the general technical aspects related to implementing abatement activities as well as on the different options for their integration into national policies and mitigation actions (e.g. inclusion in NDCs, national emission trading solutions, etc.). The NACAG works with countries and governments on implementing the national-level structures required to effectively and sustainably maintain the abatement activities after 2020.

At the plant level, the technical support consists, on the one hand, of advisory services and, on the other, of direct support on the physical implementation of the abatement activity (feasibility and technical evaluation, choice of appropriate abatement and monitoring technology, etc.) and the fulfilment of all CDM-related requirements (development of project idea note (PIN) and project design document (PDD), and CDM validation, registration, monitoring and verification). The NACAG secretariat will bring in experienced experts to work on all of the above tasks and ensure the highest levels of quality and, ultimately, a successful implementation. As part of the technical support, and to make sure plant operators have the skills and knowledge they need to meet future requirements, local plant personnel will receive training in the operation of the abatement technology and all its associated monitoring and reporting activities.

What costs will be covered by the NACAG's financial support?

The financial support provided by the NACAG will cover all costs related to the actual technical implementation of the abatement activity. This includes: the investment costs involved in procuring the abatement technology and making necessary plant modifications; the procurement of monitoring equipment and its shipping, installation and acceptance test costs; and all costs related to the operation of the abatement activity as a CDM project (e.g. the labour costs involved in meeting the monitoring requirements and providing overall project management, and the UNFCCC registration and issuance fees).

Why is the NACAG using the Clean Development Mechanism (CDM)?

The CDM has been very successful in the nitric acid sector, reaching out to many countries and efficiently promoting the adoption of N₂O abatement technology and its further development. Moreover, the CDM offers tried-and-tested methodologies, standards and procedures that assure high levels of quality and accuracy in the monitoring and reporting of emission reductions achieved. By making use of these well-established CDM structures and generating internationally regarded certificates in the course of the initiative, the NACAG is adopting high standards and removing any suspicions related to the integrity of the abatement activities.

What happens to the emission reductions and certificates generated during the NACAG initiative?

All certified emission reductions (CERs) based on the reductions achieved in the course of the initiative up to 2020 will be suspended and cancelled. Consequently it will not be possible to sell or use these certificates for the fulfilment of any reduction commitments. Germany will not use the certificates for compliance either. This approach ensures that abatement activities undertaken as part of the NACAG initiative deliver real net GHG emission reductions as opposed to offsetting. However, the partner countries in which these abatement activities are carried out may account for the reduced emissions in their national registries and communications. It should be noted that in some cases the amount of technical emission reductions (amount of emissions that have been avoided from a technical perspective) is likely to exceed the amount indicated in the certificates generated, as the latter employ conservative calculation methods to avoid overestimation. This disparity can differ from case to case and greatly depends on the CDM methodology used, the history of the project and the technical specifications of the plant. Accounting should be performed in accordance with international standards, and double counting must absolutely be avoided.

All emission reductions achieved from the continued abatement activities after 2020 are to be considered part of the national mitigation commitment in the context of the NACAG initiative. As such, the CERs generated must not be sold as international offsets. However, national solutions in the sense of a national emission trading system (ETS) or national offset scheme (or a combination of the two) would present an appropriate option for distributing mitigation costs at the national level.

Why is the NACAG of interest to the chemical industry?

From a technical and economic perspective, GHG abatement in the nitric acid sector is generally easier and less costly to achieve than other forms of GHG abatement. It therefore makes sense to tackle this sector's existing emission reduction potential early on, before moving on to more difficult and more expensive mitigation options. Given that the international community has made a commitment to keep global warming below 2°C, it is highly likely that N₂O emissions from nitric acid production will, sooner or later, be abated in all countries. The NACAG's offer of support therefore presents chemical industry actors with a rare opportunity to recover their initial investment and other upfront costs arising from the implementation of abatement activities. Once national regulations have been established to sustainably mitigate the emissions from this sector, the industry will not have to bear the considerable initial investment costs that these regulations will likely engender. Moreover, plant operators will have already gained experience in operating the technology and in meeting monitoring and reporting standards.

In short, the NACAG intends to promote and kick-start the use of relatively cheap and easy-to-harness emission reduction potentials and, at the same time, help the nitric acid sector to prepare for the future task of sustainably mitigating process-related N₂O emissions. The NACAG offers a one-stop solution that includes initial advice and investment, consultancy, CDM project development and assistance, and the training of local personnel. This approach should eliminate – or at least substantially reduce – the barriers that would prevent the implementation of structures aimed at exploiting the existing N₂O abatement potential.

Does the NACAG work with plants producing nitric acid for weaponry or military use?

Facilities associated with the manufacture of weapons or of explosives that are not produced solely for civilian purposes will not be eligible for any support from the NACAG.

What is the annual emission reduction potential of the nitric acid sector in developing countries?

Estimates suggest that the emission reduction potential in developing countries ranges from 60 to 80 million tonnes of CO₂ equivalents per year.

What is the nitric acid sector's global emission reduction potential?

Globally, the cumulative N₂O abatement potential is estimated at 300 to 400 million tonnes of CO₂ equivalents between 2016 and 2020 and 600 to 800 million tonnes of CO₂ equivalents between 2021 and 2030.

What is the global warming potential (GWP) of N₂O?

The GWP on a 100-year time horizon is expressed in relation to the potential climate impact of CO₂. Currently three different values for the GWP of N₂O are being used. All of these have been determined by the IPCC but have been updated over time, resulting in a situation where different regulations refer to different values (usually the most recent at the time of release). In its Fifth Assessment Report (the most recent, published in 2013), the Intergovernmental Panel on Climate Change (IPCC) lists N₂O as having a GWP of 265. While this value represents the latest scientific findings, all emission reductions generated under the regulations of the second commitment period (2013–20) of the Kyoto Protocol (CMP Decision 4/CMP.7 paragraph 5) are calculated using a GWP for N₂O of 298. Meanwhile, under the EU's emissions trading system (ETS) and regulations on its third commitment period, the previously employed value of 310 remains valid and is still being applied. In any event it can be concluded that the GWP of N₂O is significantly higher than that of CO₂, making nitrous oxide a very potent GHG.

What is the abatement efficiency of secondary and tertiary catalysts?

The abatement efficiency of secondary catalysts normally ranges between 70% and 90% and can in some cases reach up to 98%; tertiary catalysts operating under perfect conditions reach up to 99%. The choice of abatement technology and the efficiency levels ultimately achieved are, however, generally dependent on the specific situation and condition of the nitric acid plant. Also, as the catalyst operates, its catalytic material is gradually consumed, often leading to decreases in efficiency over time.

Who will decide on the choice of abatement technology?

In general, the operators of the nitric acid plant and the NACAG Secretariat will choose which technology to use (secondary or tertiary catalyst; manufacturer; etc.) on a case-by-case basis. BMUB and the NACAG are 'technology-neutral', which means they will not prescribe any specific technology or provider to plant owners. However, to secure financial support, the owners must consider the technical and economic aspects and demonstrate that their requirements are reasonable. The NACAG can provide interested parties with access to experts who can offer advice and consultancy on the choice of appropriate technology.

Can Germany, with the NACAG's help, fund the installation of abatement technology in all facilities around the world where the owners lack sufficient means to do so?

The limited funds currently available mean that this is not possible at present. However, the NACAG is set up as a global action group that other interested countries, organisations and cooperations are welcome to join as donors, thus increasing the funding available. Also, in addition to funding, the NACAG offers technical advice and non-financial support to all countries and parties.

Does the NACAG act in accordance with the EU regulations on the use of certificates from industrial gas projects under the EU ETS?

While there are limits on the use of certificates from adipic acid production, there are no EU limitations on the use of certificates from nitric acid production. Furthermore the NACAG uses the CDM mainly for the purposes of quality assurance, monitoring, reporting and accounting, and not within the framework of the ETS. Furthermore, all certificates generated in the course of the initiative will be cancelled and cannot therefore be used to fulfil any reduction/compliance obligations.

Is the initiative targeting existing or new abatement projects?

The initiative is targeting both existing and new abatement projects. Tailored technical and financial support options have been developed for both cases.

What happens if national governments introduce a regulation before 2021 affecting projects under contract with the NACAG?

Should the national governments of partner countries introduce regulations or schemes for sustainably assuring the abatement of N₂O emissions from nitric acid production before 2021, the NACAG will still meet the financial support obligations it has agreed with individual plant owners up until the end of 2020. This also represents a successful outcome for the NACAG, as its primary objective is to incentivise the long-term inclusion of N₂O abatement in countries' national mitigation strategies.

In what ways is the NACAG's work transformational?

The NACAG delivers transformational outcomes through its unique approach that links the provision of climate finance for the installation of N₂O abatement technology with a political commitment for long-term mitigation action. With this approach, the NACAG is working to tap the short-term mitigation potential of the nitric acid sector until 2020 and, at the same time, is incentivising the long-term transformation of the sector by including individual countries' reduction potentials in their Nationally Determined Contributions (NDCs).

Will the NACAG support project activities under the joint implementation (JI) mechanism?

Abatement activities that were previously developed under the JI mechanism can generally be supported.

How can I get involved?

For more detailed information on the NACAG, please do not hesitate to contact the [NACAG Secretariat](#). If you would like to get involved in our work, you can sign the NACAG [declaration](#) and in this way show your support for the initiative's goals. The NACAG Secretariat would also be pleased to discuss your aims, concerns and any possible next steps regarding your involvement.

How can I access technical support?

For any requests on purely technical matters, please contact the [NACAG Secretariat](#). We are happy to enter into any dialogue that may help advance the initiative's goals and to offer support where applicable. All requests will be considered on a case-by-case basis and possible further steps will be discussed. Project owners or plant operators from countries eligible for the financial support will be provided with full technical support alongside any financial support they receive.

How can I secure financial support?

In the next few months, a platform through which individual projects (existing and new) can submit applications for financial support will go live on the [NACAG's website](#). A set of detailed eligibility criteria for the evaluation of individual project situations will also be made available at this time. To apply for financial and technical support, interested plant operators or project owners will need to complete a standard form and process, providing information on their plant or project for initial evaluation. If you would like to discuss possible options in advance of the launch of this application process, please contact the [NACAG Secretariat](#) who will be pleased to advise you.

In the NACAG approach, countries and plant operators are required to take on the responsibility of reducing their N₂O emissions in future. What does this mean in practice?

Partner countries having to take full responsibility for the sustainable continuation of the abatement activities and related emission reductions after 2020 is part and parcel of the NACAG initiative. In short, countries benefiting from the NACAG's financial support must ensure that N₂O emissions from nitric acid production continue to be abated permanently in future. This can be achieved in a number of different ways, such as by regulating the sector using a range of flexible approaches from emissions trading and national offsetting to taxes and enforced emissions limits. Countries are encouraged to include N₂O abatement in their Nationally Determined Contributions.

What actions are countries taking to tackle N₂O emissions?

The most successful example of comprehensive N₂O abatement to date is the EU where nitrous oxide emissions from nitric acid production are covered by the EU Emissions Trading System. Over recent years, this has achieved the consistent abatement of around 90% of N₂O emissions in the EU. A number of countries intend to follow the EU's example.

What role do NDCs play in the NACAG approach?

The concept of Nationally Determined Contributions (NDCs) plays an important role in the context of the NACAG, because it is the tool that all countries are required to use to express their ability and willingness to commit and contribute to global efforts to tackle climate change. Employing this tool is integral to the NACAG's approach because it enables specific emission sources to be included in permanent national mitigation actions. Alongside its vision of incentivising the installation of effective N₂O abatement technology in all nitric acid plants worldwide, the NACAG aims to ensure that the abatement achieved is sustained in future. The NDCs provide an effective and promising tool to make sure this is achieved.

How are emission reductions monitored?

The emission reductions resulting from the implemented abatement activities will be monitored in accordance with the valid CDM methodologies and standards. These contain a number of specific requirements regarding the monitoring equipment, applicable technology, data flow, measurement intervals, etc. Moreover, CDM rules provide exact instructions on how relevant emission reductions must be monitored, calculated and reported so that they can be subsequently verified, which is a precondition for the issuing of certificates (CERs) for these reductions. The quality of the monitoring and of all the equipment used is ensured through ongoing quality assurance measures and regular checks performed by recognised independent third-parties.



In short, why does the NACAG exist and what is it trying to achieve?

Abating nitrous oxide emissions from nitric acid production is a highly cost-efficient option for mitigating climate change. N₂O abatement technology can be installed in production facilities relatively easily and cheaply compared to other forms of mitigation options. Looking ahead, countries have been tasked with revising their NDCs and increasing the ambition of their mitigation targets. The NACAG is encouraging countries to integrate nitrous oxide emission abatement into their national policies and revised NDCs. This would lay the foundations for permanent emission reductions in the sector. The NACAG incentivises industrial N₂O abatement by covering the investment costs associated with the installation of abatement and monitoring technologies and by providing partners with support on the technological, political and financial matters related to these emission reductions.