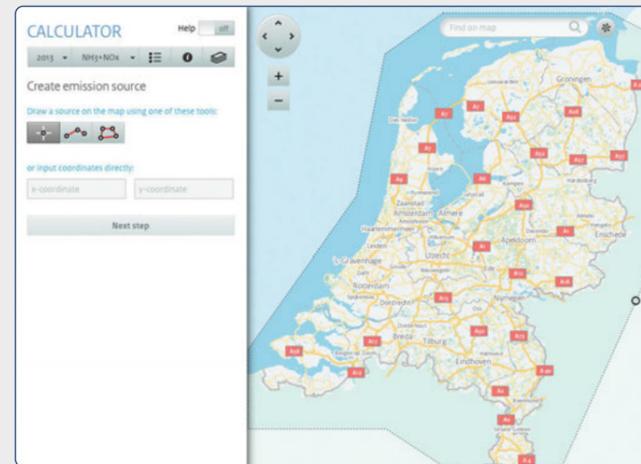


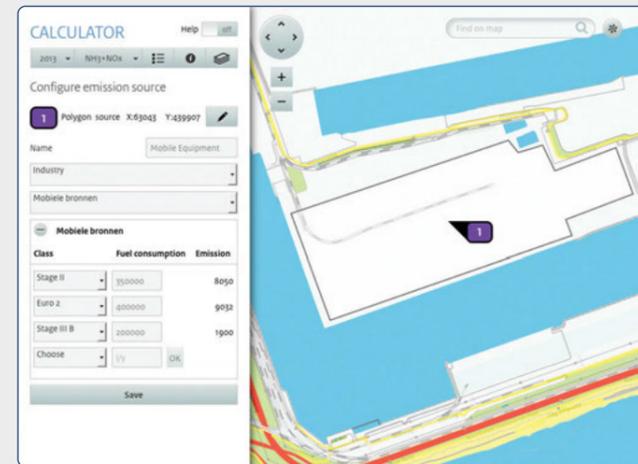
The Integrated Approach to Nitrogen (Programmatiese Aanpak Stikstof (PAS)) is the policy programme according to which the Netherlands addresses nitrogen issues. The PAS ensures that the objectives of European nature policy will be achieved while also leaving room for much needed economic development. The PAS applies to all economic sectors that emit nitrogen and to all Natura 2000 areas that are sensitive to nitrogen.

The AERIUS calculation tool is one of the cornerstones of the PAS. Its calculations translate nitrogen emissions into deposition levels in Natura 2000 areas. AERIUS supports the process in which permits are issued for economic activities that involve the emission of nitrogen, and monitors whether the overall nitrogen burden continues to decline.

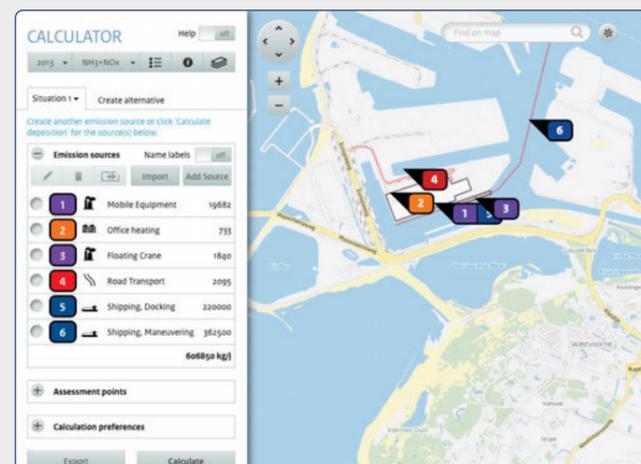
## AERIUS CALCULATOR in a nutshell



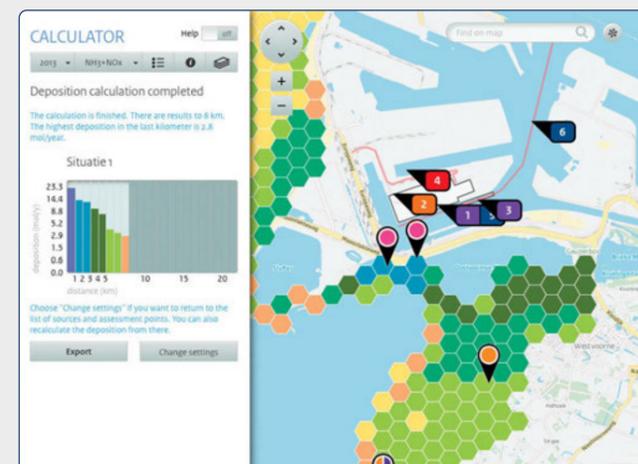
**1 Choose a location**  
Enter the emission source on the map.



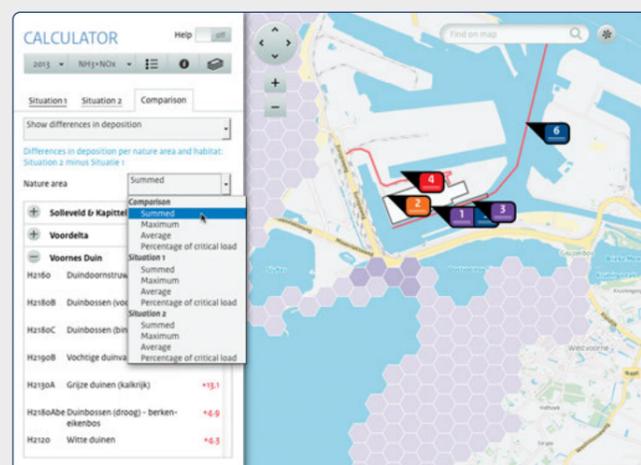
**2 Specify the emission source**  
Indicate to which sector the source belongs (e.g. agriculture or industry) and enter specific characteristics.



**3 Add other emission sources**  
If applicable, add more emission sources by repeating Steps 1 and 2. Then click on 'calculate deposition'.



**4 Examine deposition**  
The histogram and the map display the level of deposition in the area around the source or sources.



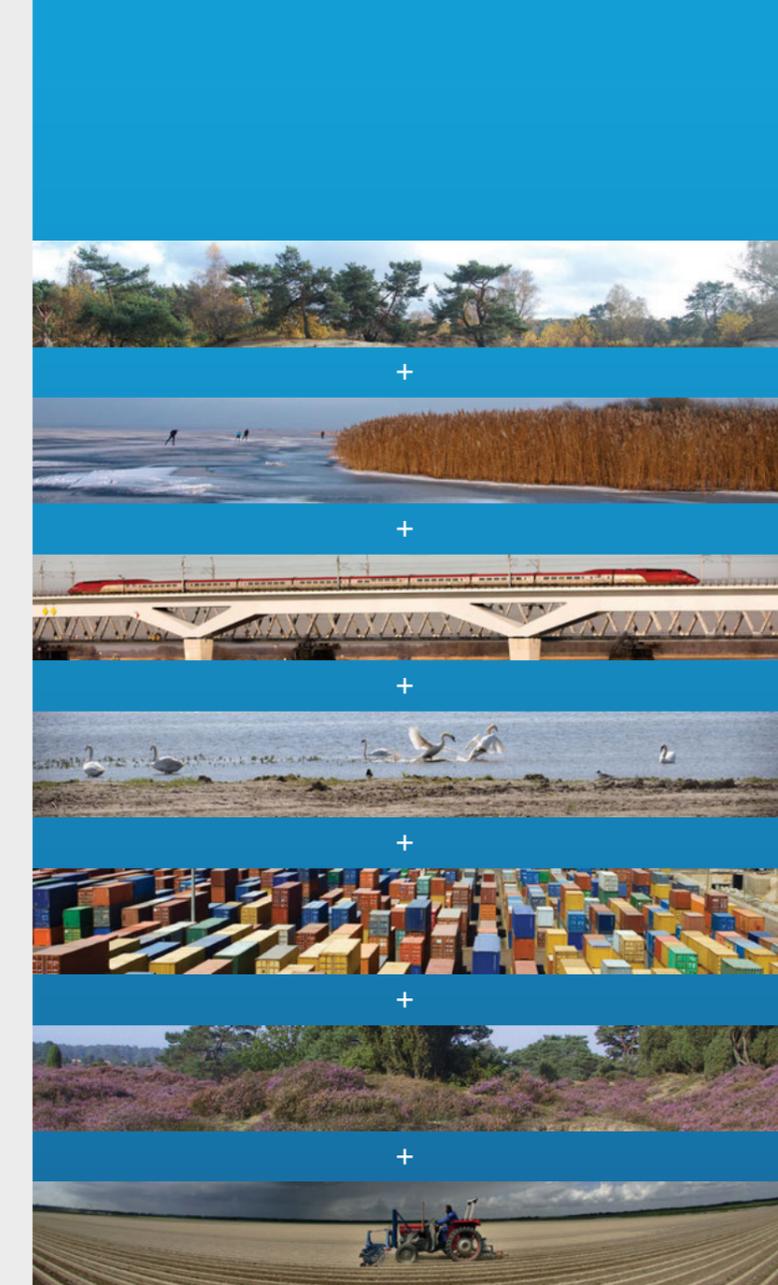
**5 Compare variants**  
Create variants by repeating Steps 1 to 4. AERIUS will clearly present the variants side by side.

If you are interested in trying out AERIUS, we invite you to apply for the demo on [AERIUS.nl/contact](http://AERIUS.nl/contact)

This brochure is a publication by the Natura 2000 Programme Directorate of the Dutch Ministry of Economic Affairs.

AERIUS is commissioned by the Dutch national and regional government

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ecology

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CALCULATION TOOL OF THE DUTCH INTEGRATED APPROACH TO NITROGEN

## Room for development

The Integrated Approach to Nitrogen (PAS) distinguishes two methods for realising the nature conservation objectives of Natura 2000: achieving a continued reduction in nitrogen deposition and the implementation of recovery strategies for nature that is sensitive to nitrogen deposition. According to the PAS part of the reduction may be used for new or expanded economic activity. This is considered 'room for development'. The process ensures a continued reduction in nitrogen deposition, while leaving room for much needed economic development and investment in cleaner production technologies. In this way, the preconditions for achieving the Natura 2000 objectives are being met.

This leaves the question of how much room for development there is and how this room is distributed over the country. The AERIUS tool is used for calculating the available room for each nature area. Calculations are based on the total of nitrogen emissions and deposition and the locations of the types of nature sensitive to nitrogen.



Hester Maij, official of the Province of Overijssel  
*'The PAS will benefit both nature and the economy. AERIUS is of great importance to facilitate an optimal use of the PAS for governments, businesses and citizens.'*

## Spatial planning

Government authorities use AERIUS in the development of land-use plans and structural plans. They use **AERIUS Scenario** to assess whether spatial plans fit in with the available room for development as agreed under the PAS. This could concern housing development or large infrastructural projects, such as the expansion of airports or harbours.

Parties involved in area development use location-specific information generated by AERIUS. **AERIUS Scenario** provides an indication of the locations where economic activities are likely to impact on nature sensitive to nitrogen. This product also supports the agreement process on nitrogen with regard to Natura 2000 management plans.



Marion Pross, permit issuing official at the Province of Zeeland  
*'AERIUS integrates all maps, data and calculation programs into one tool. At long last, we can have a clear picture of nitrogen contributions in relation to Natura 2000 areas.'*

## Permit process

Initiators use AERIUS to support their permit applications for the development of economic activities. **AERIUS Calculator** is used for calculating the amount of nitrogen emissions related to such an activity, as well as for indicating the area where the nitrogen is likely to be deposited. The latter is important, as the different types of nature vary in their sensitivity to nitrogen. On the basis of these calculations, AERIUS shows how much of the available room for development will be claimed by a particular economic activity. In addition, the tool can be used to compare a number of variants of such economic activity.

Competent authorities use AERIUS in the assessment of permit applications. The room for development allocated to the awarded permit is entered into **AERIUS Register**, so that it cannot be allocated twice. The competent authorities, in this case, are the twelve Dutch provinces, the Ministry of Infrastructure and the Environment and the Ministry of Economic Affairs.

AERIUS supports the permit process for all sectors emitting nitrogen: agriculture, industry, and traffic & transport. The tool is able to make calculations for economic activities at all scales and levels, varying from individual farming businesses to large industrial complexes.

As soon as the PAS enters into operation, the use of AERIUS in the permit process is a statutory obligation. This ensures that the impacts of new economic activities are calculated according to a nationally comparable method.



Rob Houben, project manager Port of Rotterdam  
*'AERIUS provides clarity to businesses and hopefully also certainty about the required foundation for permit applications. Furthermore, AERIUS may offer support in the process of area-specific planning for the Port of Rotterdam.'*

## Monitoring

AERIUS also enables all parties involved in the PAS to obtain insight into its implementation. **AERIUS Monitor** is used for monitoring the execution of recovery measures as well as the actual development of the nitrogen deposition level. Overviews are available for individual Natura 2000 areas, as well as on a provincial and national level. Assessments are carried out to determine whether agreed reductions in deposition are being realised. The results subsequently reveal how much room for development is left to be allocated.

This monitoring enables governments and society to supervise the process and see to it that the PAS will have its intended effect, namely that of achieving the Natura 2000 objectives as well as providing room for economic development.



Jac Hendriks, area development adviser at Staatsbosbeheer  
*'AERIUS will allow everyone insight into the issues of nitrogen. The scenarios provide a sound basis for all parties involved in an area to come to agreements on nitrogen. AERIUS is also very effective for monitoring the execution of those agreements.'*

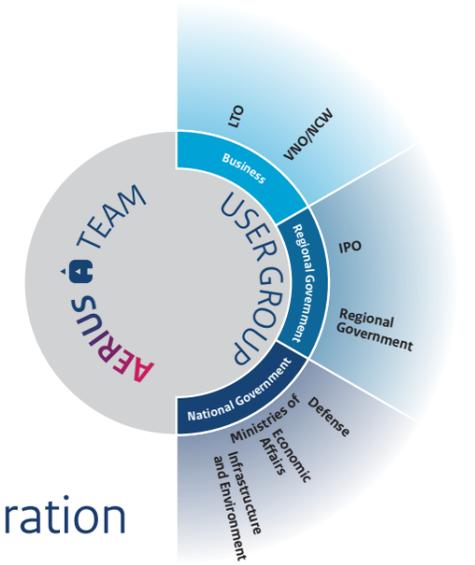
## AERIUS product release

The various AERIUS products will become available, one by one, in a stepwise process. The first product released will be AERIUS Calculator. Users will be provided with online access via Calculator.AERIUS.nl. Immediately following its release, AERIUS Calculator can be applied in the permit process within the current legal framework. As soon as the PAS becomes operational, the AERIUS Register will also be made available.

2012

2013

2014



## Collaboration

For an optimal connection with practical situations, AERIUS development is being directed by its future users. The AERIUS user group consists of representatives from the business community, interest groups, provinces and national government. They assess the amount of progress on a monthly basis and set priorities for further development of the tool.

AERIUS is being developed at the request of the twelve Dutch provinces, the Ministry of Economic Affairs (with its Natura 2000 Programme Directorate being the leading party), the Ministry of Infrastructure and the Environment, and the Ministry of Defence. AERIUS management is carried out by the Joint Management Organisation (Gemeenschappelijke Beheerorganisatie (GBO)) of the provinces.



Jan Duyzer, researcher at the Netherlands Organisation for Applied Scientific Research (TNO)  
*'In its review, TNO has found AERIUS to be based on state-of-the-art knowledge about the dispersion and deposition of nitrogen. The quality of the tool was studied extensively.'*