

TNO AND INTERNATIONALISATION



TNO innovation for life

TNO AS AN INTERNATIONAL PARTNER

Worldwide, there is an ongoing trend of combining knowledge and application in a limited number of global knowledge hubs. The concentration of knowledge in proximity to (SME) companies, governments and NGOs provides the necessary momentum and mass to top the global competition in the field of innovation.

Globalisation means that businesses worldwide are looking for employees, partners and knowledge. They also often adopt an international perspective when selecting research parties. To be able to participate internationally in the vanguard of research and innovation, TNO's knowledge base must also be internationally excellent and distinctive.

Research and innovation do not stop at national borders. TNO can strengthen the knowledge base of the Netherlands only by working closely with internationally-

leading knowledge partners, companies and governments. Knowledge that TNO develops for foreign partners or gains from them benefits Dutch industry and helps to solve societal issues in the Netherlands. This is fully in line with TNO's mission: helping to solve societal issues and strengthen the competitiveness of industry through innovation.

To summarise, there are three reasons why TNO operates internationally:

- To expand and/or strengthen the TNO knowledge base¹. Working with international (knowledge) partners provides access to world-class knowledge that can be implemented or applied in Dutch situations (knowledge transfer). In this way, TNO helps to

solve societal issues in the Netherlands and to strengthen Dutch industry. It also requires us to want to be among the very best.

- To maintain and build critical mass. Maintaining and strengthening a multidisciplinary knowledge base can only be achieved if there is and there remains sufficient mass and volume to continue to renew and develop it. International activities contribute to the scope of the TNO research groups.
- To strengthen the position and image of Dutch industry and government abroad. By solving challenging, societally-relevant issues abroad, TNO strengthens the position and image of the Netherlands and helps generate benefits for Dutch parties.

¹ The Rathenau Institute – which, as an independent KNAW institute, stimulates public and political opinion-forming on the social aspects of science and technology – published a report in December 2018 on Dutch applied research abroad. In this report, Rathenau concludes that internationalisation strengthens the knowledge base of TO2 institutions, including TNO. See <https://www.rathenau.nl/nl/kennis-voor-beleid/verstandig-internationaliseren>

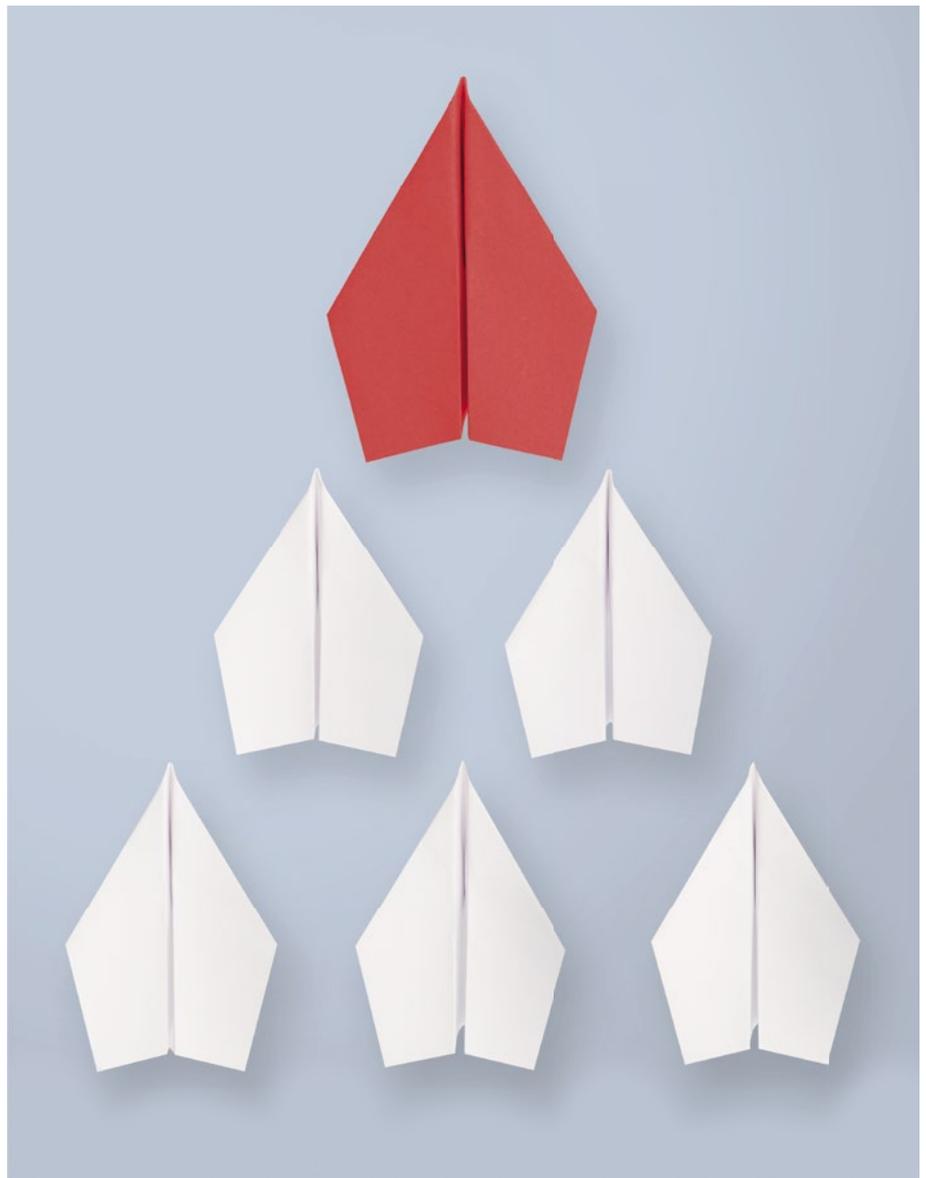
AMBITIONS

TNO wants to contribute to the further development of the Netherlands as a global knowledge hub. Given the ongoing globalisation of research, TNO's ambition is to further strengthen its international position. TNO is therefore becoming increasingly international in character, which is reflected in a higher percentage of international employees, the fit-for-purpose use of English as the language of communication and a higher percentage of turnover via international customers and partners.

TNO already operates abroad successfully. Including EU calls, TNO's turnover generated abroad amounted to €94 million in 2017. EU research projects are an essential addition to national knowledge and innovation programming. In this way, the EU facilitates international cooperation and the clustering of strengths in Europe. After all, cooperation with other European organisations and companies results in the exchange of knowledge that is also necessary to achieve international excellence and impact. TNO primarily focuses on strengthening strategic partnerships with fellow institutes in Europe. In this respect, the German Fraunhofer is an obvious choice because of the great importance of Germany as an industrial and trading partner of the Netherlands. We are also investigating the possibilities of working (more closely) on specific topics with VITO (Belgium), VTT (Finland), Sintef (Norway), Tecnalia (Spain) and RISE (Sweden).

Depending on the market, TNO uses different organisational forms for the acquisition of international assignments: through business development from the Netherlands, with the help of local agents, via sales or through TNO branch offices.

- Overseas business development from the Netherlands. TNO employees actively acquire assignments abroad.



The execution of research takes place in the Netherlands. This is the most common method within TNO.

- Business development by locally-hired agents. Research is carried out in the Netherlands. Examples are the Industry unit, with local agents in South Korea and Japan, and the Healthy Living unit, with agents in the United States and Japan.

In a very limited number of cases, TNO has opted for an international location, for example, if this is a condition for entering into long-term partnerships in the country concerned and/or for obtaining local government funding. This can take the form of:

- A sales office: a foreign office primarily focused on facilitating acquisition through a small number of locally-hired TNO employees. TNO currently has sales offices in Japan and China.

- A branch office. This is a combination of TNO business development and research staff, with locally-hired business development and research capacities. In recent years, this has involved the branches in Aruba, Qatar and Singapore.

Sales and branch offices require a healthy financial performance that follows the regular process of monthly reports and business reviews. In order to limit the risks to TNO's business operations and to simultaneously be able to organise business operations according to local requirements and rules, TNO aims for a local legal entity for branch offices. No government contribution can be used for the execution of projects abroad.

BACKGROUND, RESULTS AND DECISION-MAKING REGARDING THE SPECIFIC LOCATIONS IN ORDER OF ESTABLISHMENT:



QATAR

Originally established (2011) on the basis of a long-term contract with a major oil company. This was to enable TNO to apply the knowledge it had developed in the field of production optimisation in a practical environment. This allowed models to be validated and improved, making them suitable for use elsewhere in the world. Thanks to its local presence and distinctive knowledge position, this branch managed to attract other clients in Qatar and the region. However, the exclusive focus on 'Energy', the falling oil prices in 2016/2017 and the loss of the largest customer led to disappointing results and order intake. The costs were no longer in proportion to the revenues. In December 2017, it was therefore decided to close this branch in 2019 and to continue serving the region through local agents.



ARUBA

Established in 2012, on the basis of a 4-year contract, as a collaboration between the government of Aruba and TNO. The aim was to support Aruba in achieving sustainability goals, to stimulate a circular economy and to gain new knowledge in these areas for TNO. The contract with Aruba was renewed in

2016. In close consultation with Aruban stakeholders, TNO began a series of research programmes aimed at making the energy supply more sustainable. Over time, waste processing, housing, water purification and coastal protection have been added. The Aruban government recently announced that it would not continue the existing contract after 2019. As a result, there is no longer a foundation for the Aruba office and it cannot be financially justified to keep it open. The TNO Executive Board recently made the Proposed Decision to close the branch office at the end of 2019. The branch office will be gradually reduced in order to be able to carry out ongoing orders. TNO will remain active in the region from the Netherlands and will investigate alternatives for activities with interested stakeholders in the Caribbean.



SINGAPORE

In 2012, TNO took the initiative to explore opportunities in Singapore and the surrounding regional markets. In Singapore, TNO can gain knowledge about innovations for societal issues, comparable to those in the Netherlands and within the focus areas of the Dutch government. In addition, the local presence would make it possible to help advance Singapore's ambitions to become the world's first Smart Nation by 2020.

Since the Singapore branch office had not shown positive operating results, also after the start-up period with its corresponding costs, in 2018 a decision was taken in principle to consider a

different, cost-effective presence rather than continue the branch office in its current form. In Singapore TNO still sees plenty of opportunities for various knowledge areas, in particular Mobility and Cyber. In the field of Mobility, an order portfolio that is well aligned with TNO's knowledge development programmes in the Netherlands has now been built up among universities, ministries and government institutions. This will enable us to accelerate knowledge development, which will also benefit the Dutch business community.

TNO ALREADY OPERATES ABROAD SUCCESSFULLY. INCLUDING EU CALLS, TNO'S TURNOVER GENERATED ABROAD AMOUNTED TO €94 MILLION IN 2017



CHINA

As part of the transfer of ECN's sustainable energy activities to TNO, the ECN sales office in China (Beijing) has been transferred to TNO. This sales office has 2 local employees and focuses on sustainable energy and mobility. The office was founded in 2013 with the aim of applying ECN knowledge. Initially, the emphasis was on improving Photo Voltaic production processes. This focus has broadened to the production of biomass and air quality readings.



JAPAN

In the light of the important order intake from several major partners in the field of mobility, TNO decided to open a sales office in Japan in August 2018. The New Yokohama office employs 2 local employees.

TNO.NL

ABOUT TNO

TNO is an independent research organization. TNO connects people and knowledge to create innovations that boost the competitive strength of industry and the well-being of society in a sustainable way. We work in collaboration with partners and focus on nine domains.

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