



NWO-I

Annual Report 2023

Translation of the financial statement prepared on June 20th 2024. In case of any discrepancies or possible differences in interpretation between the English translation and the financial statement prepared on June 20th 2024, the latter prevail. The original and official Dutch financial statements are available on www.nwo-i.nl/nwo-institutenorganisatie/over-nwo-i/jaarverslagen/



Colophon

Cover photo

In Exloo, Drenthe, lies the heart of the world's largest radio telescope, LOFAR, which observes low-frequency radio waves from the universe. In late 2023, the European Commission established the LOFAR ERIC (European Research Infrastructure Consortium). 'ERIC' is a legal form in the EU that facilitates the establishment and operation of research infrastructures that are of interest to Europe. Several countries, including the Netherlands, are participating in LOFAR ERIC. Its registered office is at ASTRON, the Netherlands Institute for Radio Astronomy in Dwingeloo, the original designer of the telescope.

Credit: ASTRON

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Facts and figures

The Foundation for Dutch Scientific Research Institutes (NWO-I) is a research organization under the Dutch Research Council (NWO). This foundation has its registered office in Utrecht. NWO-I consists of the following nine institutes:

- AMOLF | Physics of functional complex matter
- ASTRON | Netherlands Institute for Radio Astronomy
- CWI | Centrum Wiskunde & Informatica
- DIFFER | Dutch Institute for Fundamental Energy Research
- Nikhef | National Institute for Subatomic Physics
- NIOZ | Royal Netherlands Institute for Sea Research
- NSCR | Netherlands Institute for the Study of Crime and Law Enforcement
- SRON | Netherlands Institute for Space Research
- ARCNL | the collaboration the Advanced Research Center for Nanolithography

In addition, there are about forty working groups at universities (BUW: University Working Groups Administrative Unit) that are part of NWO-I. NWO-I has a central office, which supports the Foundation Board and the institutes.

NWO-I is part of NWO, which receives a budget for its institutes from the Ministry of Education, Culture and Science. NWO-I also receives funding awarded on a competitive basis from NWO, the European Union, the government and from collaborations with universities, industry and other public and private parties.

At the end of 2023, NWO-I employed a rounded number of 1,615 FTE (1,753 people), including (a rounded number of):

- 520 FTE (567 persons) scientific staff
- 334 FTE (338 people) PhD students
- 761 FTE (848 persons) technicians and other personnel

NWO-I institutes have a national and international role because of the research facilities they maintain or make available, a coordinating role in the national research landscape and/or a pioneering role because of the nature and quality of the research. The researchers at the institutes together produced a total of 90 dissertations, 2,132 scientific (referenced) publications and 979 other publications (including those targeting general audiences) in 2023.

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Foreword

There is no doubt that 2023 was once again a peak year for the NWO institutes. Our institutes develop networks and very large infrastructure for research not only for their own researchers, but also for fellow researchers from other knowledge institutes within and even outside the Netherlands. This research is exciting, takes place at the threshold between known and as yet unknown knowledge, and is extremely relevant.

This was duly confirmed in the evaluations that were held across the institutes in 2023. For all the institutes, this meant a labor-intensive preliminary phase involving the preparation of self-evaluations and strategy plans and then showing an independent committee how everything works in practice. These committees confirmed that our institutes are among the very best in the world and that they are scientifically and socially relevant. This is a great result and something that our institutes, i.e. the whole of NWO, can rightly be proud of.

In terms of research infrastructure, 2023 built on the success of the previous year. The Einstein Telescope as an organization has continued to grow and become more professionalized, as evidenced when the ministers of the Netherlands, Belgium, Flanders, Wallonia and North Rhine-Westphalia signed an agreement outlining their intention to bring the Einstein Telescope to the EMR region.

At ASTRON, the organization of the world's largest radio telescope, LOFAR, was bolstered when the European Commission recognized LOFAR as a European Research Infrastructure Consortium (ERIC). Construction of the research fleet for NIOZ is also progressing according to plan: the medium-sized vessel, the Wim Wolff, was christened in early 2024 and the construction of the largest research vessel began.

We then almost overlook the wealth of scientific accomplishments that our institutes have achieved, which are reflected in over 2,000 publications, contributions to software, algorithms, numerous university promotions, data collections and patents.

The development of a science policy did not stand still in 2023 either. There is a lot going on, particularly when it comes to knowledge security, partly on the back of geopolitical tensions around the world. Putting the spotlight on diversity and inclusion and the continued development of a healthy research culture are also on the agenda.

2023 was a turbulent year for the NWO-I organization. With the ad interim departure of the director of NWO-I during the summer, the board quickly put into action a temporary new governance model to ensure that the organization did not lose any clout.

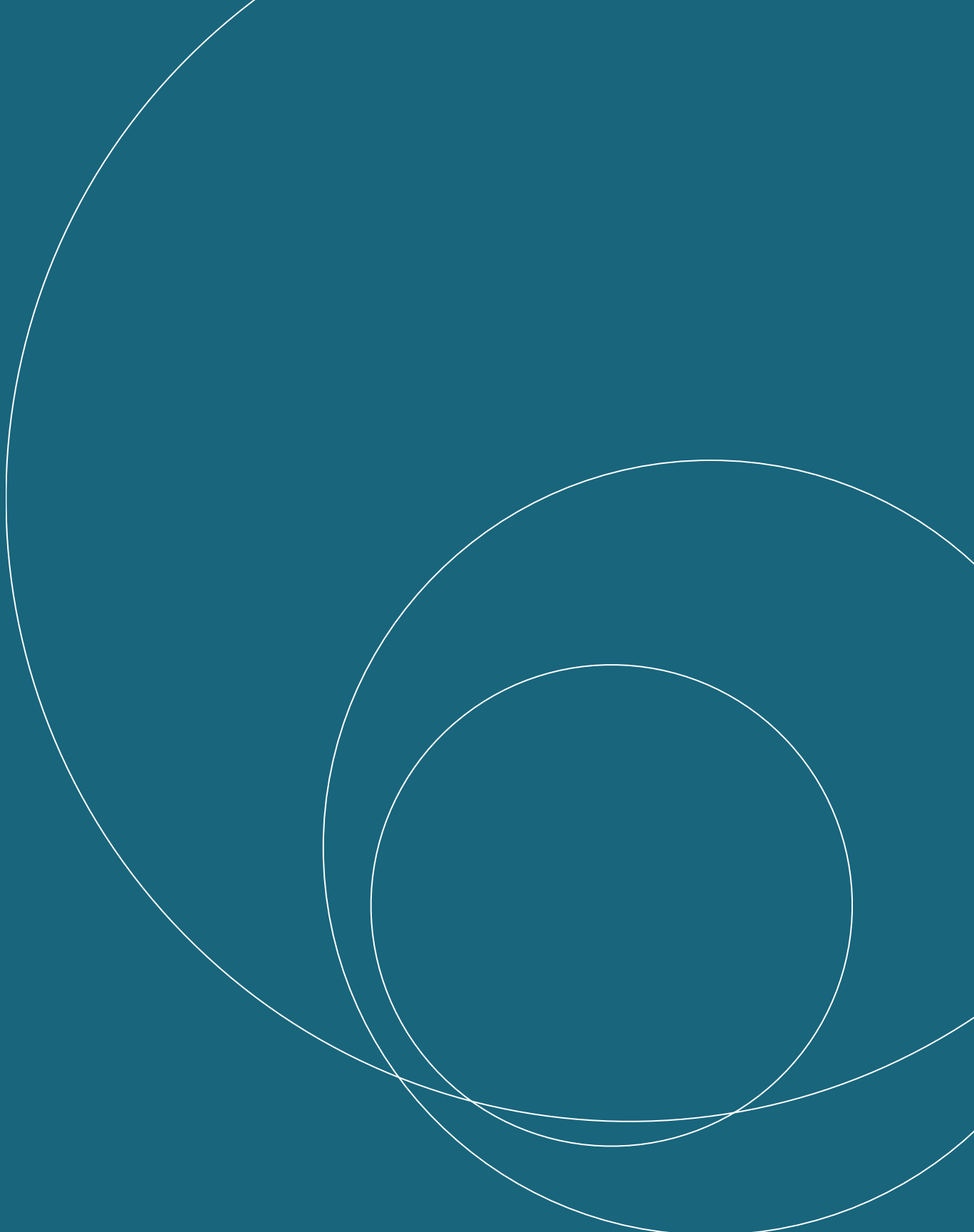
The main idea behind the temporary model is to govern and effect change together: shared ownership and distributed responsibility for the implementation. The initial experiences of the temporary model have been positive and mutual cooperation and coordination has grown. I hope that we can establish a definitive and stable governance model for NWO-I during the course of 2024.

The results achieved in 2023 do indeed leave us satisfied and proud of our institutes and the organization as a whole.

On behalf of the NWO-I Foundation Board,

Professor Marcel Levi

President of NWO-I





1 Introduction

In this annual report of the Netherlands Foundation for Scientific Research Institutes (NWO-I), NWO-I provides managerial and financial accountability for its work in 2023. We give our account to our funders and society.

This annual report consists of three parts. The first part is the board report, which includes an overview of the events and financial developments of 2023. It also contains a description of the NWO-I organization.

The second part is the financial statements including the accounting policies, balance sheet, statement of income and expenditure, cash flow and explanatory notes thereto.

The third part contains an independent auditor's audit opinion and the provisions from the articles governing the appropriation of the result.

About the NWO Institutes

NWO has nine national research institutes, enabling it to act in a targeted and decisive way at the international front of important research areas. The NWO institutes each have a scientific mission of national and international strategic importance and make a specific and unique contribution to the Netherlands' research system.

These contributions complement those of other research institutes, both in terms of research by the Netherlands' universities and in terms of applied research by, for example, the Applied Research Organizations (TO2), national knowledge institutes and universities of applied sciences. All NWO institutes work closely with many of these knowledge institutes.

The research and facility development at NWO institutes are fueled by curiosity and societal challenges, and they hold leading international positions across their respective fields. By conducting, making accessible and disseminating that research in a pioneering way, with integrity and excellence, the NWO institutes realize knowledge and solutions with scientific and societal impact.

Scientific and societal questions of national strategic importance, and the development and operation of (large) scientific infrastructure to answer those questions, require research with long-term commitment and pooling of multidisciplinary expertise and facilities. Our institutes offer the stability, extensive experience, experimental facilities and scientific reputation necessary to achieve these goals.

At the same time, our institutes remain responsive and agile so that they can respond quickly and strongly to new developments. Because the institute's missions and strategies are determined by the board on a regular basis and updated when necessary, NWO is able to introduce innovations at short notice and respond decisively to developments in science and to questions from society that require fundamental and applied research.



2 Key developments

This section highlights several impactful developments for NWO-I in 2023. Section 3 discusses some other developments and scientific infrastructure in greater detail.

2.1 Institute evaluations

In 2023, the nine NWO institutes were all evaluated separately in accordance with the Strategy Evaluation Protocol (SEP). The point of these evaluations is to assess the institute on its own merits and not to compare the institutes. That said, the evaluations may well reveal areas of concern that apply to more than one institute and thus give the board reasons to develop joint policies.

The evaluation process is carried out every six years and consists of a few steps. First, the institutes prepare a self-evaluation (based on the SEP protocol), which involves looking back over the previous six years. Second, all the institutes write a strategic plan (or update the existing one) for the next six years.

After the board approves these self-evaluations and strategic plans, they are presented to the evaluation committees (each institute has its own committee). Distinguished scientists and administrators in an institute's field sit on these committees. The evaluation focuses on 1) research quality; 2) social relevance; and 3) future-proofing. In addition, particular and close attention is paid to issues such as open science, training and supervision of doctoral students, (academic) culture and HR policy.

During the site visits in the fall of 2023, the institutes gave the committees an appropriate deferential reception, and the committees had ample time to discuss the self-assessment and strategic plans with the institutes in addition to exchanging views with staff.

At the end of the site visit, the committee verbally conveyed their initial findings and recommendations to the institute, summarizing them later in a report. These reports will be delivered in the first half of 2024 and made public after discussions between the board and the institute.



Lead test using solar cell technology (AMOLF)

AMOLF researchers from Wim Noorduin's group developed a simple test for detecting lead using the special properties of a perovskite semiconductor. This material is suitable for LEDs and solar cells, for instance. PhD student Lukas Helmbrecht discovered that a solution containing methylammonium bromide works best. As soon as this solution comes into contact with a lead compound, it immediately forms a lead perovskite, which glows bright green under UV lighting. The test is 1,000 times more sensitive than existing tests. The test can detect lead in a range of everyday objects such as paint, dishes and toys.

The researchers set up a company to market the test. This company, called Lumetallix, became very successful in a short time and is selling the tests worldwide. They are also working with NGOs to tackle lead pollution.

Image: Lead contamination from battery recycling plants in India gives off a green glow during the new lead test.

credits: AMOLF

2.2 Knowledge security

Developing a knowledge security policy is highly topical given the current geopolitical developments. There is ongoing political attention to the implementation of the National Knowledge Security Guidelines launched in 2022.

Commissioned by the Ministry of Education, Culture and Science, a baseline measurement was conducted on the implementation of the National Knowledge Security Guidelines at universities, universities of applied sciences as well as the Royal Netherlands Academy of Arts and Sciences (KNAW) and NWO institutes. The resulting sector overview of the NWO-I and KNAW produced by this baseline measurement are expected in April 2024.

In addition to this, the ministry is developing a legal screening framework for the recruitment of non-European knowledge workers who may come into contact with sensitive technology at a knowledge institution in the Netherlands. Because of the impact on the recruitment process, the Ministry of Education, Culture and Science is involving the knowledge institutions, including the NWO-I, in the development of the screening framework and the draft list of sensitive technologies.

In addition to these national developments, the demand for policy alignment within the EU and its allies is increasing because of the concern and importance of achieving a 'level playing field' and maintaining the openness of academic collaboration.

2.3 Board and management

Following the departure of the NWO-I director in June 2021, the NWO Executive Board began to consider the role and position of the NWO-I director, partly with the help of an external consulting firm. During 2022, the Executive Board worked with the institute directors and co-determination on a change in the governance that should ultimately result in an amendment to NWO's articles, internal regulations and management regulations.

Just as in 2022, the responsibilities of the NWO-I director were distributed among members of the Foundation Board (primarily the president), the NWO-I Director of Operations and the NWO-I Head of Strategic Support. In early June 2023, the director of operations (and the ad interim director of the NWO-I) resigned. This meant that the statutory positions for the director of the NWO-I and the NWO-I director of operations have been vacant since the summer of 2023.

The Foundation Board decided to adopt a temporary management model, in which no interim directors were appointed. Instead, tasks were distributed among existing officers. The main idea behind the temporary model is to govern and effect change together: shared ownership and distributed responsibility for implementation, which means that operational tasks in particular are distributed and delegated where they can best be carried out.

The temporary governance model will be in effect until April 1, 2024 at least. It is being used to gain experience that can serve as input for shaping a more definitive governance structure. The foundation's articles were not amended in 2023. The temporary governance model was thoroughly evaluated in early 2024, and it is expected that it will be clear in the summer of 2024 whether to continue on this footing, with perhaps some modifications.

2.4 Organizational developments at the NWO-I and annual planning cycle

Since 2020, the NWO-I has been working to further develop the organization, in part due to changes in legislation and regulations.

In 2021, NWO provided funds to work on efficiency gains and further professionalization of the NWO-I and its operations in particular. Most of these funds have been placed in a development fund from which money is made available based on specific plans.

One example is the efforts the organization has made in the context of cybersecurity. An awareness campaign was launched for all members of staff with the aim of making the NWO-I more resilient to digital threats. Among other things, a digital curriculum form is being used, including to improve knowledge about secure passwords and recognizing phishing e-mails.

In addition, a revised method used for the annual planning cycle was launched, which required a lot of time and attention, especially in the second half of 2023. The annual plans were drawn up during consultations between the business units, which will improve consistency in action points. The focus in these annual plans is specifically on the further harmonization of operations and more collaboration and knowledge sharing throughout the organization.



3 Strategy and research

This section discusses the main strategic and scientific developments surrounding the portfolio of institutes as a whole, the national research infrastructure, national and international collaborations, and the development of generic science policy within the NWO-I Foundation. We will conclude with an overview of scientific output.

3.1 NWO strategy ‘Science Works!’

In 2022, NWO published its new strategy ‘Science Works!’ The NWO institutes feature prominently in this new strategy, due to their national roles in their respective fields.

Several of the many ambitions in NWO’s new strategy relate directly to the institutes. For example, NWO has the ambition to further develop the portfolio of national research institutes, in close connection with developments in the Dutch and international knowledge sector.

NWO also strives to ensure that the institutes provide an inclusive, diverse, open, sustainable and safe working environment that fosters a healthy research culture. A healthy research culture at the institutes increases the attractiveness to all types of talent. This includes a hiring and promotion policy in line with the principles of the national Recognition & Rewards program.

In the area of science policy, there are also a number of ambitions that apply to the entire NWO umbrella organization and are focused on knowledge security, open science, scientific integrity, sustainability and science communication. This annual report addresses several of these ambitions for each of the topics.



New technique for measuring vapors (ARCNL)

ASML's most advanced computer chip machines use extreme ultraviolet (EUV) light to produce ultra-small computer chips. This EUV light is created by shooting a laser beam at a flat, molten slice of tin, which creates a luminous tin plasma. ARCNL researchers from Oscar Versolato's group looked for alternative methods to produce EUV light, such as vaporizing the tin first without immediately creating a plasma. They developed a method that looked directly into the tin vapor to extract valuable information.

PhD student Dion Engels and his fellow researchers used shadow photography, which involves shining light on the tin vapor damp and thus measuring which part of the light is and is not absorbed. This produced a series of images at different wavelengths, ranging from 230 to 400 nanometers. By combining the photographs, it was possible to measure the temperature, composition and aggregation state of the tin vapor. The method is widely applicable: as long as the detector can get close enough to the vapor, the technique can be used.

Image: Pictured on the right is Dion Engels, and on the left Luc Assink.
Credits: Ivar Pel

3.2 Scientific infrastructure

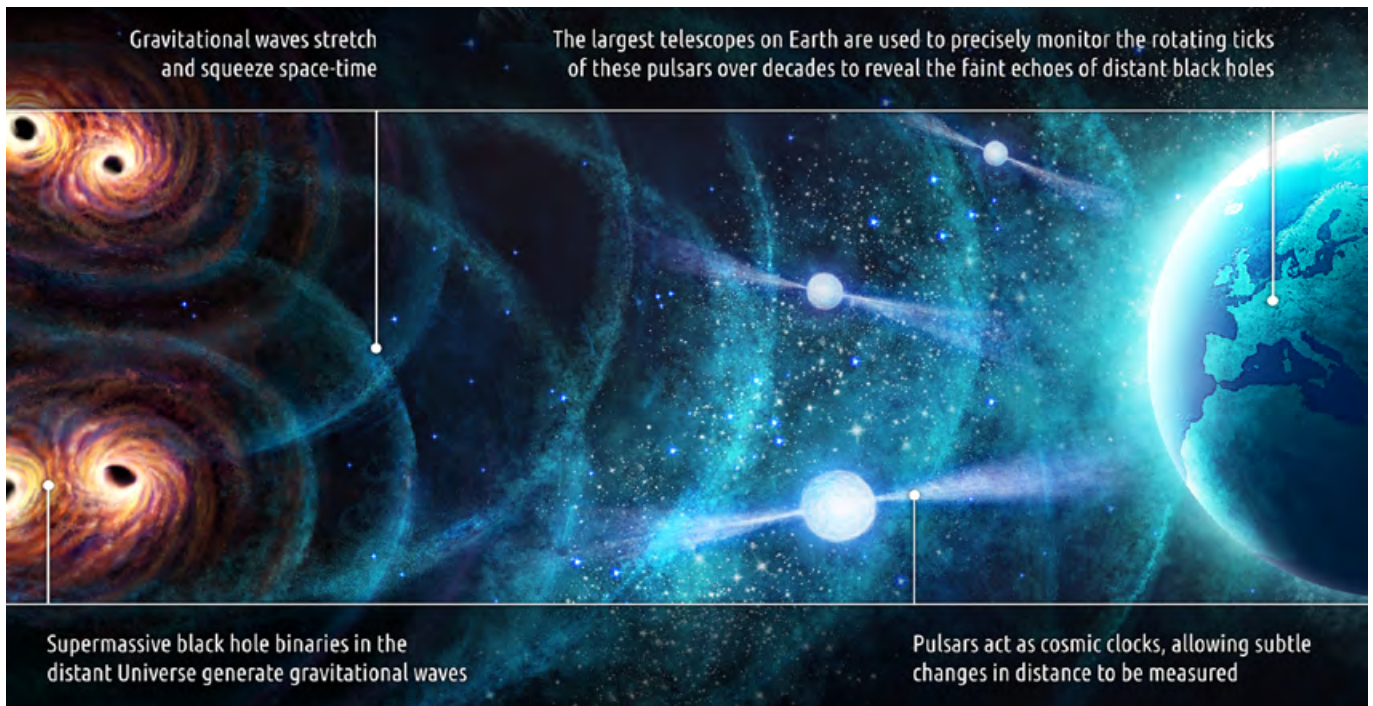
Through its institutes, NWO gives Dutch researchers the opportunity to access national or international scientific infrastructure. The institutes themselves often develop crucial large international scientific infrastructures, or parts of them.

This often occurs as part of large international consortia where the NWO institutes make Dutch contributions to or play a coordinating role in the development and construction of technological instrumentation. They also assist with the maintenance and use of this infrastructure and the advanced analysis of results required by scientific users. These are long-term projects: decades of preliminary study, development, construction, testing and integration of components precede the final scientific experiments for which they are intended.

3.2.1 Memberships

Over the past two years, NWO has been conducting an analysis across the scientific spectrum of the Netherlands' participation in international large-scale scientific infrastructure, leading to publication of the report on international memberships in September 2023.

At the same time, the proposal for the phased implementation of a national portfolio policy for international memberships is being worked on through three phased and largely parallel pathways. This is an important development for NWO-I to follow closely and actively contribute to, given the importance of (international) memberships for the NWO institutes and the coordinating role that the NWO institutes play as members.



Gravitational waves teach us more about the universe (ASTRON)

After more than 25 years of observations with highly sensitive radio telescopes around the world, gravitational waves have most likely been observed at the longest wavelengths. This would not have been possible without the crucial contribution of ASTRON's Westerbork Synthesis Radio Telescope in the Netherlands.

Gravitational waves are most probably generated by supermassive black holes orbiting each other in the cores of merging galaxies. These waves have such a long wavelength that it takes months to years to complete a single wave motion – and thus become observable. This ‘smoking gun,’ since speaking of ‘scientific evidence’ would be premature at this stage, has its roots in an international collaboration between European radio astronomy institutes. Independent observations from institutes in Australia, China and North America have arrived at the same conclusion.

The observation heralds the beginning of a new exploration of the universe, finally unraveling the long-kept secrets of gravitational waves and supermassive black holes orbiting each other.

Image: Infographic showing how pulsars have been used as cosmic clocks to detect gravitational waves.

Credits: Danielle Futselaar, MPIfR

3.2.2 Gravitational waves in Limburg: The Einstein Telescope

Together with the province of Limburg, for several years NWO institute Nikhef has been investigating the possibilities and feasibility of building a third-generation gravitational wave detector in South Limburg: the Einstein Telescope (ET).

At the end of 2019, the ET Pathfinder project was started for this purpose: with European, national and regional funding, a first mini-version of the ET is being built in a laboratory in Maastricht. Groundbreaking techniques will be tested on this mini-version to get a good idea of the technical feasibility of building the final ET.

In 2021, the ET was included in the ESFRI roadmap, the prestigious European Roadmap for Research Infrastructures. In 2022, Nikhef was granted €42 million from the National Growth Fund to prepare a bid book for the Einstein Telescope in the EMR region. This is a project shared by the Ministry of Education, Culture and Science and the Ministry of Economic Affairs and Climate, the Province of Limburg, and the Limburg Investment Fund, with the support of many other parties. Another €870 million has also been set aside in the National Growth Fund (LIOF) for the actual construction of infrastructure.

A project office has since been established in Maastricht, initial geological research has been conducted and R&D with a commercialization of research strategy has been further developed. This has led to much activity in cooperation with the Ministry of Education, Culture and Science, the Ministry of Economic Affairs and Climate Policy, Province of Limburg, LIOF and Nikhef.

Mutual coordination takes place regularly to meet the various challenges. In particular, the financial commitment from the neighboring countries (under the responsibility of the Ministry of Education, Culture and Science) and the feasibility in the region (above and below ground, under the responsibility of Nikhef, the province of Limburg and in cooperation with parties such as TNO and KNMI) are decisive in this respect.

The organization continued to grow and professionalize in 2023, and the Ministry of Education, Culture and Science has also become more active in efforts to bring the ET to the Netherlands. On September 26, 2023, ministers from the Netherlands, Belgium, Flanders, Wallonia and North Rhine-Westphalia signed an agreement outlining their intention to bring the ET to the EMR region.

3.2.3 Development and construction of the national research fleet

In 2020, the NWO Executive Board decided to proceed with the purchase of three research vessels: a large ocean-going vessel (the RV Anna Weber-van Bosse), a medium-sized vessel intended for mudflat research (the RV Wim Wolff) and a small vessel (the RV Adriaen Coenen).

Construction of the RV Wim Wolff and the RV Adriaen Coenen began in early 2021. In the summer of 2022, the RV Adriaen Coenen was delivered, and the RV Wim Wolff was expected to follow in the summer of 2023. Due to delays, this has been postponed to early 2024. In 2023, construction of the largest research vessel, the RV Anna Weber-van Bosse, began at the Spanish yard, Astilleros Armon.

3.2.4 LOFAR, the largest radio telescope in the world, becomes an ERIC

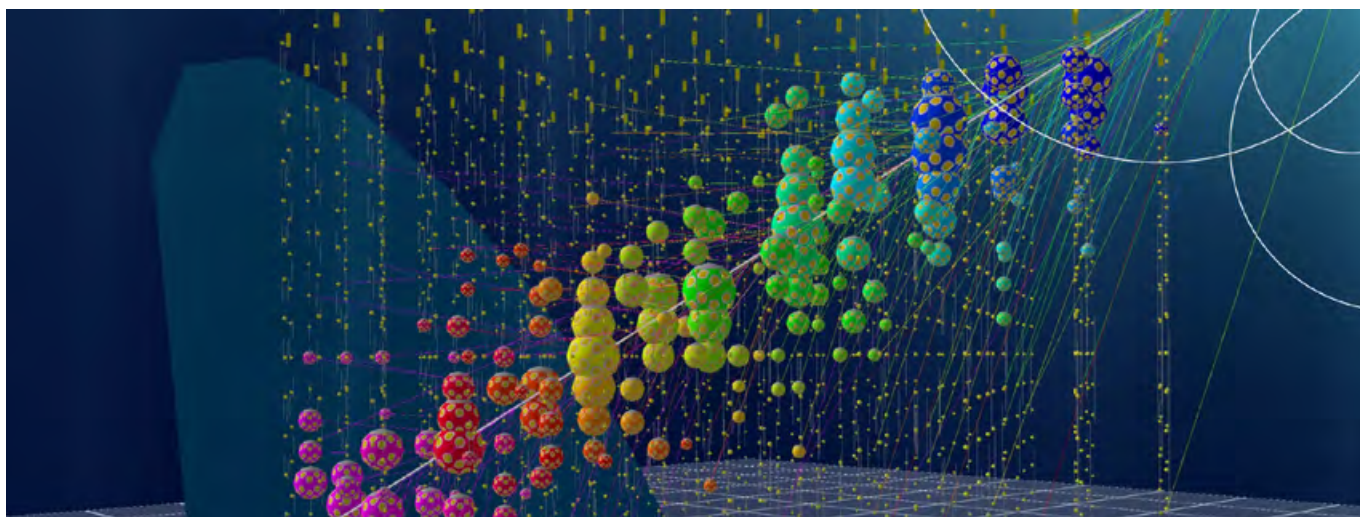
The world's largest radio telescope, LOFAR, detects the lowest frequencies on the Earth's surface and has since been operational for more than a decade. NWO institute ASTRON manages LOFAR on behalf of an international collaboration that now includes 54 antenna stations throughout Europe.

On December 20, the European Commission established LOFAR as the twenty-seventh European Research Infrastructure Consortium (ERIC). An ERIC is a European legal form that enables the creation and operation of large scientific infrastructures. Besides the Netherlands, participants in ERIC include Germany, Poland, Italy, Bulgaria and Ireland as full members, and France, Lithuania, Sweden and the United Kingdom as observers.

3.2.5 HFML-FELIX exploratory study

HFML-FELIX is an internationally renowned institute at Radboud University funded and managed by Radboud University and the NWO-I. The institute combines two major facilities under one roof: a high field magnet laboratory (HFML) and infrared/terahertz free-electron lasers (FELIX). With this, the institute conducts research into the properties and functionalities of molecules and materials, making new scientific breakthroughs possible in the fields of health, energy and smart materials.

Funding for HFML-FELIX from NWO-I dates back to when the NWO-I Foundation was still known as the FOM Foundation. The funding expired in 2022. Discussions took place in 2022 with the NWO Executive Board to explore sustainable funding for this unique facility. These discussions continued into 2023 and led to an exploratory assignment in the fall involving all universities in the Netherlands to see how HFML-FELIX can become a national institute (as a facility as well as a national scientific program). The exploratory study was completed in early 2024.



Construction progresses on submarine neutrino detector KM3NeT (Nikhef)

At a depth of several kilometers in the Mediterranean Sea, the construction of the giant neutrino detector, KM3NeT, a project in which Nikhef plays a decisive role, continues steadily. KM3NeT will become a forest on the seafloor, consisting ultimately of hundreds of lines of light detectors that can detect the impact of neutrinos. Neutrinos are a mysterious type of elementary particles. They have hardly any mass and fly through virtually all matter. To occasionally detect one, KM3NeT keeps a cubic kilometer of dark seawater closely monitored. All the signals from the detector lines together make it possible to study the ghost particles themselves and their sources in the sky. A total of forty-seven lines with dozens of detector spheres each have now been placed using ocean-going vessels at Toulon in France and Sardinia in Italy. Thirty-one of these lines were built in KM3NeT's workshop at Nikhef in Amsterdam.

Image: A passing neutrino lights up KM3NeT's sensors in the dark deep sea.
Credits: Simulation: KM3Net

3.3 Developments in national and international cooperation

The NWO institutes engage in national and international collaborations with a variety of partners. These collaborations are constantly evolving.

3.3.1 Funding opportunities

Several plans set out in the Ministry of Education, Culture and Science minister's policy letter were implemented in 2023. One example is the matching scheme for awarded Horizon Europe projects, which has been implemented. This means that, because NWO institutes are successful in acquiring these grants, the matching scheme provides additional income that is used for research.

In a sense, the matching scheme absorbs the loss of the European Research Incentive Scheme funds. In addition, NWO put out a call for the Summit grant. The NWO-I was allowed to submit two proposals. Through an internal selection process, the board elected two proposals, one of which was selected by the NWO for the second round. In addition, the NWO institutes are still participating in other Summit applications in several consortia.

3.3.2 National Growth Fund

The government decided in September 2020 to allocate €20 billion over five years to investments that contribute to economic growth. The funds, held in the National Growth Fund, are intended for knowledge development, physical infrastructure, and research, development and innovation.

In 2021, the NWO institutes AMOLF, CWI and DIFFER were successful via participations in proposals that were honored. In 2021, the second round was open for submission of a select number of proposals with support from different line ministries. The NWO institutes were involved in several awarded proposals (Sustainable MaterialsNL, Green Power II, the revolution of self-thinking molecular systems and the Einstein Telescope).

The proposals from the third round that will receive funding from the National Growth Fund were announced in 2023. For the NWO institute AMOLF, this involves the SolarNL proposal (€412 million), which focuses on the development and industrialization of new solar PV technology and facilitates the development of the next generation of fully circular solar panels.

3.3.3 Innovation and commercialization of research

At the end of 2022, the Ministry of Economic Affairs provided a grant of €870k to NWO-I to continue supporting the network of industrial liaison officers (ILO net) for the next four years.

This is a welcome investment because it allows us to continue working to improve the relationship between the NWO institutes (especially Nikhef, ASTRON, SRON and DIFFER, but HFML-FELIX and NOVA are also participating) and industry in the Netherlands, especially high-tech companies united in the Advanced Instrumentation roadmap for the leading sector, HTSM.

In addition, the institutes jointly decided to release funds from the development fund for the next two years to hire a strategic policy adviser in the field of innovation and valorization of research. In addition to supporting the ILO network, this consultant will shape development and build a network of contacts.

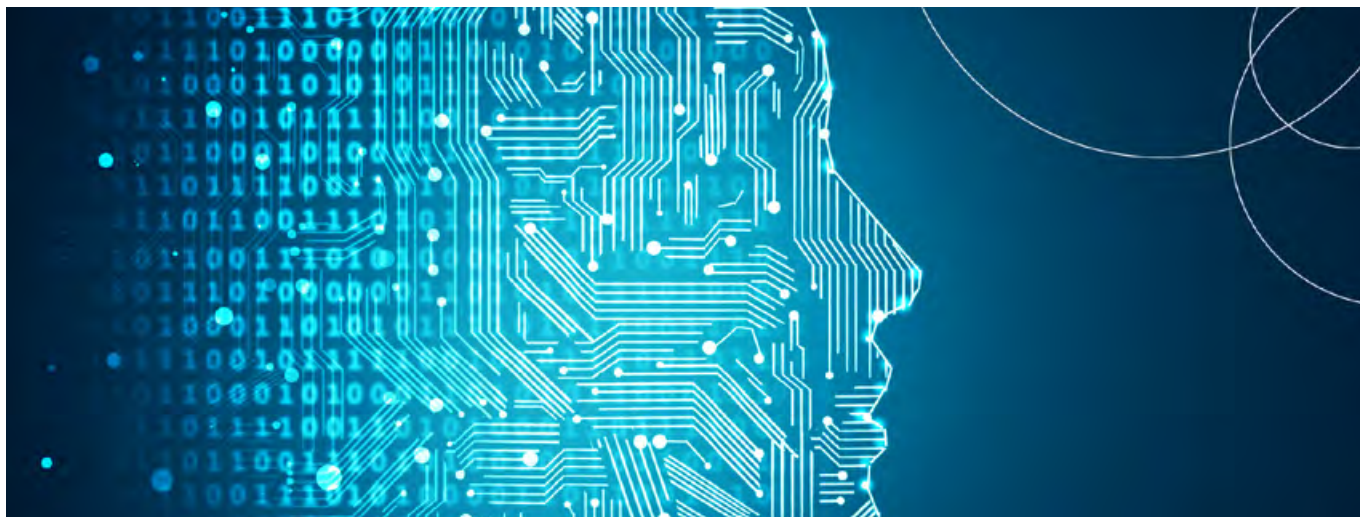
Furthermore, it was announced in 2023 that research funding together with industry through the TKIs will be reshaped in 2024: the funding will go through strategic programs instead of individual project funding. For NWO-I, the TKI-HTSM in particular is an important partner, and so NWO-I actively participated in shaping the new strategic programs.

Of the ten strategic programs eventually launched, NWO-I is the leader of two programs (Semicon Equipment and Advanced Instrumentation) and participates in two others (Microelectronics and Space). This opens doors for future research and collaboration.

3.3.4 Delta Climate Center in Zeeland

The Delta Climate Center (DCC) is being established in Zeeland. For this, Zeeland knowledge institutions will collaborate with Utrecht University and Wageningen University and NWO institute NIOZ. The DCC's mission is to create innovative solutions for a future-proof, safe and prosperous delta.

The center will focus on education, research, valorization and business development, thereby increasing the influx of students in secondary vocational education, higher professional education and university education into Zeeland. The Knowledge Center was launched in 2023, and the formal opening will follow in 2024.



Study presents large brain-like neural networks for AI (CWI)

In a recent study, CWI researchers Bojian Yin and Sander Bohté took an important step toward creating AI that can be used in local devices such as smartphones and in VR-like applications, while at the same time protecting privacy. The researchers demonstrate how brain-like neurons combined with new learning methods make it possible to train fast and energy-efficient spiking neural networks on a large scale. Potential applications range from wearable AI to ubiquitous speech recognition and augmented reality.

Although artificial neural networks are the backbone of the current AI revolution, they are only loosely inspired by networks of real, biological neurons such as our brains. That said, the brain is a much larger network, and it is capable of reacting at lightning speed when triggered by external events. It is also much more energy efficient: the neurons of our nervous system communicate by exchanging electrical pulses, and they hardly do so. Spiking neural networks are a special type of artificial neural networks that more closely mimic these properties of biological neurons.

Credits image: Shutterstock

3.4 Climate Research Initiative Netherlands

In response to various recommendations, NWO and KNAW decided to establish the Dutch Climate Research Initiative (KIN) in 2022. They appointed a coordinator tasked with doing the groundwork and made a limited budget available to investigate the feasibility of the initiative.

The coordinator and the budget were initially placed with NWO-I. The coordinator worked with a large group of people from science, government and society in various working groups toward the joint establishment of the KIN. For example, some policy advisers were hired (stationed at the NWO-I under employment law) to launch the KIN program.

The KIN's ambition is to accelerate the transition to a climate-neutral and climate-resilient world through the best possible use of scientific knowledge and the development of new knowledge. The KIN's aim is to slow climate change as quickly as possible, assist society with the necessary adaptations and contribute to a just, globally sustainable society.

In November 2023, the KIN was officially established as a governing body within the NWO's domain organization. At the end of 2023, the staff employed by NWO-I for the KIN were taken over by the NWO, ending the NWO-I's formal involvement in the Dutch Climate Research Initiative. It goes without saying that the NWO-I fully supports the ambitions of this initiative and is still involved through its institutes.

3.5 Science Practice and Policy

3.5.1 Scientific integrity

In order to conduct sound, reproducible research, it is important that research be conducted with integrity. Scarce research money and unclear perspectives put a lot of pressure on scientists to publish. This pressure can result in compromising the scientific integrity of research, be it deliberately or not.

The Netherlands Code of Conduct for Research Integrity, which has been in effect since the end of 2018, includes guidelines on how to deal with alleged violations of scientific integrity. The code sets out the duties of care that the institution is subject to.

In 2020, NWO-I adopted the Complaints Regulation for scientific integrity of the NWO institutes and set up a complaints committee based on this code. In addition to having a code of conduct and complaints committee, it is important for NWO-I to work toward a culture in which scientific integrity is discussed on an ongoing basis. This is a culture in which academic and support staff feel safe and their voices are heard when in doubt about the integrity of a research project.

In 2021, two confidential advisers for scientific integrity were appointed, Professor Thom Palstra and Dr. Tanja Kulkens. At the end of 2022, Kulkens indicated she would be stepping down as confidential adviser, due to her new position as director of NWO's Exact and Natural Sciences domain. As of June 1, 2023, dr. Freya Senf was appointed as the second confidential advisers for scientific integrity, alongside Thom Palstra.

3.5.2 SafeScience

Scientists regularly face threats, intimidation and hateful reactions. This is why the Universities of the Netherlands (UNL), NWO and KNAW launched the SafeScience platform in early November 2022.

The aim of SafeScience is to help scientists to quickly get the right help in the event of harassment, threats or hateful reactions. Together with the person seeking assistance, the employer will look into what help is appropriate and possible.

The www.wetenschapveilig.nl website offers scientists who are threatened or harassed the option of filing a report 24 hours a day. They are assisted within one business day, in many cases sooner.

3.5.3 Ancillary activities

The NWO-I aims to be transparent about employees' ancillary activities so that it can enhance scientific integrity. Openness is also needed to comply with the Netherlands Code of Conduct for Scientific Integrity 2018. By doing so, NWO-I is implementing an open and transparent research culture as envisioned in the NWO strategy, and it is following the Dutch universities that now have the registration and publication of ancillary activities in order.

For NWO-I, ancillary work is 'all work that the employee performs in addition to his/her position, regardless of whether that work is performed within or outside of the employee's assigned working hours'. In contrast, unpaid ancillary activities of a purely private nature are not considered ancillary activities.

Many employees with a double appointment already publish this via the university. As an employer, NWO-I has its own responsibility to provide a complete overview of ancillary activities. In order to enable unbiased review, registration and publication through its own channels are thus preferred.

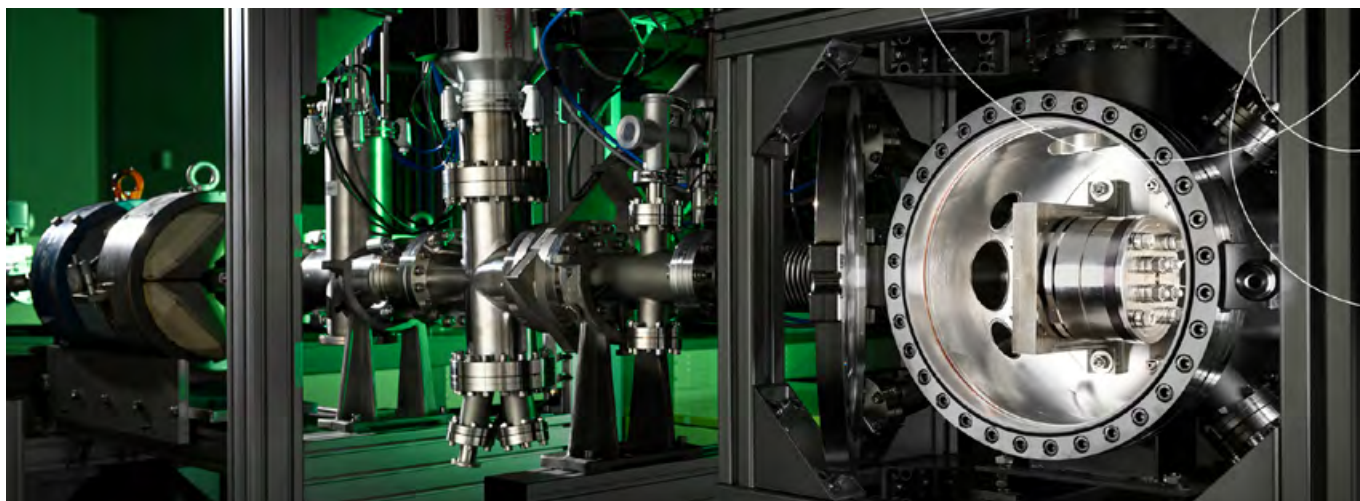
The Foundation Board adopted the ancillary activities policy in 2022. A new personnel information system, which makes it possible to enter ancillary work, was implemented in 2023. A manual inventory of professorships and endowed professorships among NWO-I employees was conducted in 2023. After further implementation of the ancillary activities policy in 2024, NWO-I may make its ancillary activities public, including those carried out by endowed and ordinary professorships.

3.5.4 Collaborating with third parties

The NWO's Executive Board is keen to encourage research that contributes positively to society. To this end, a framework and preconditions for cooperation with third parties was drafted in 2023.

Several meetings were held with directors and boards of the NWO-I and NWO-D (domain organization) with the framework in mind. Dilemmas that one may encounter when working with third parties were discussed. A draft assessment framework was prepared based on these discussions.

What is important in this document is that the NWO is keen to continue emphasizing that collaborating with third parties is and will continue to be an essential part of doing research, but that it is important to make the right considerations prior to and during the collaboration. The assessment framework will be adopted and implemented in 2024.



DICE: Brabant's unique test facility for studying resistant materials for the nuclear reactor officially launched (DIFFER)

DIFFER scientists are bringing nuclear power one step closer using inherently safe thorium reactors. Using DICE (the DIFFER Irradiation-Corrosion Experiment), they will develop materials that can withstand the combination of heat, salt and radiation. The challenge with molten-salt reactors is the wall of the reactor, as it has to withstand these conditions. DIFFER has now created a reservoir with hot, molten salt behind the ion beam at the existing ion beam facility. That salt flows past the structural materials being researched. After a while, the researchers can observe how the material reacted to the combination of radiation from the ion beam and the flowing salt. The Province of North Brabant announced its investment in developing the technology for a thorium reactor, also known as a molten-salt reactor, in 2022. The huge advantage of this type of nuclear fission reactors is that they cannot have a meltdown. They simply stop operating if something is wrong. What's more, the radioactive waste that they release is not as potent.

Image: The new DICE facility: the DIFFER Irradiation-Corrosion Experiment.
Credits: Bart van Overbeeke/DIFFER

3.5.5 Open science – open access policy

Thanks in part to NWO, the Netherlands is one of the global frontrunners in the transition to ensuring free access to publications and research data arising from publicly funded research. By joining cOAlition S, an international group of research funders, in 2018 and subscribing to Plan S, NWO committed to implementing far-reaching measures to accelerate this transition to Open Access.

The core of Plan S is that all publications arising from financing from these research funders must be published in open access journals and platforms as of January 1, 2021, so that everyone can read them.

For NWO-I, this means that all articles published by the NWO institutes are immediately and freely accessible to the larger public as well. To make this possible, NWO-I has committed to two pathways. In December 2020, NWO-I established a policy framework that allows for publications to be made directly available via the so-called 'green route.' This is based on self-archiving: after publication, a researcher places an article directly into a publicly accessible repository, making the publication freely accessible.

The effect of this policy framework on the institutes' open access figures has been monitored since 2021, and an evaluation of this policy framework was launched at the end of 2023. Now, 95% of the 'referenced' academic publications by the NWO institutes are freely accessible to all.

In addition, in 2020 NWO-I joined negotiations conducted by other institutions, united in UNL, among others, with several large publishers: the so-called transformative deals. A gradual transition to full open access is underway via these deals, in line with Plan S. In 2023, that collaboration was reinforced in preparation for new negotiations in 2024.

3.5.6 Digital Competence Center

In 2021, NWO-I established the Digital Competence Center (DCC) and appointed a Data stewardship coordinator. The DCC provides low-threshold advice, expertise and practical support to researchers at NWO institutes to make their results, research data and software suitable for reuse in the context of open science.

For instance, the DCC has developed a license tool to help employees find the right license for their data or software. The DCC also organized local activities in the fields of open science and open data and software management, as well as holding a few training courses and tutorials across NWO-I as a whole.

Since 2023, the coordinator of the DCC has been accommodated in the Governance Support & Strategy team of the NWO-I office. Also, the NWO-I was awarded a grant in 2023 through the NWO call for 'Local Digital Competence Centers II' (co-funded by Open Science NL) to reinforce the DCC by hiring a trainer in the field of innovative digital technology.

This is in addition to local certified instructors (in fields such as reproducible coding and data management) who are trained through the NWO-I membership in The Carpentries, a non-profit organization focused on training trainers, to support open science at the institutes.

With this expansion of the DCC team, NWO-I is responding to the institutes' demand for education and training in AI techniques, among others. In addition, NWO-I hopes to support and develop open data and open software practices at the institutes. Recruitment for the trainer vacancy began in early 2024.

3.5.7 A sound research culture

NWO-I is helping to build a sound research culture. In a sound research culture, talent is unlocked, better and supported solutions to questions and problems are found, and there are more opportunities for collaboration.

Such a culture is far from common and there have been several reports flagging an unhealthy work culture at knowledge institutions in the Netherlands. In addition, there have been several media reports of inappropriate behavior, including (sexual) harassment, on the part of people in higher positions (including at the universities), often targeting their subordinates.

The combination of the systemic dependency embedded in science between different layers and a lack of funding has made people uncomfortable when it comes to reporting wrongdoing. Our aim is to remove this barrier by working to create an open, safe and ethical culture based on having a good safety net for victims of inappropriate behavior.



NIOZ researcher Anja Spang wins Ammodo Science Award 2023

Anja Spang, research leader at NIOZ and associate professor of Symbiosis in Evolution at the University of Amsterdam, was bestowed the 2023 Award for her fundamental research on enigmatic microbes. The focus of Spang's studies is the role that various micro-organisms, such as archaea, have played in major evolutionary changes, including the origin of eukaryotes, a type of organism that includes humans. She discovered an impressive number of new archaeal variants in recent years, and she found revolutionary evidence for the hypothesis that eukaryotic organisms (such as humans) once evolved from a symbiosis between archaea and bacteria. Of particular relevance to Spang's research is that archaea also affect the climate. Exactly what their role there is is a question Spang plans to focus on in the near future.

Image: Research leader Anja Spang.

Credits: NIOZ

3.5.8 Recognizing and rewarding differently

In 2019, VSNU, NFU, KNAW, NWO and ZonMw published the position paper 'Room for everyone's talent; toward a new balance in recognizing and rewarding scientists.' In it, the organizations indicate how they want to recognize and reward the work of scientists more broadly: with less emphasis on the number of publications and citations and more emphasis on other domains in which scientists work, such as education and social impact.

This broader form of recognition and reward aligns better with the current core tasks of knowledge and educational institutions, as well as with the expectations of society.

In 2020, NWO-I established a committee with representation from all organizational units, scientific as well as support disciplines. The committee then wrote a document specifically for NWO-I outlining the ambition, vision and necessary changes regarding recognition and rewarding based on different core domains. These core domains are based on the aforementioned position paper and encompass the national role of the institutes: leadership, research, education and impact.

The committee also makes specific recommendations to ensure that this vision actually prompts change in the organization. The committee engaged with employees in three discussion sessions and sought input on the vision and recommendations.

The implementation plan was approved by the Foundation Board in November 2022, after which the implementation phase began. The vision includes a statement of intent outlining the ambition and aim for recognition and reward at NWO-I, and is thereby further developed along the five core domains for NWO-I: the national role, impact, leadership, research and education.

For each core domain, the committee shares its vision with recommendations and concrete actions that tie in with these. The functional domain and action holders are taking the lead in this regard, since they have the necessary expertise and experience in this domain and the domain can ensure that the actions tie in with ongoing programs in the functional domains.

Another premise is to ensure synergy with the NWO and universities in this area. A concrete plan of action, setting out the initial priorities, was initiated in 2023. An important condition in this plan of action is that actions that are started should preferably not be completely new projects, but rather topics that have been planned for some time and to which a Recognition & Reward perspective can be added. This is to keep the workload as low as possible and to give Recognition & Reward a natural place in the things we do anyway.

3.5.9 Professorial policy

In 2023, a start was made on identifying and analyzing the differences between the institutes in their policies for appointing staff as professors (or having them appointed), partly as part of the Recognition & Reward program. This included specific consideration of perceived differences in pay, including at the universities. The goal is to have a professorial policy in place by 2024, one that gives the institutes tools to help promising scientists along the path to becoming professors.



GUSTO balloon telescope launched from Antarctica (SRON)

Nasa's balloon telescope GUSTO was launched from Antarctica on New Year's Eve 2023. The far-infrared observatory is conducting the first large-scale survey of three elements in dust clouds between stars, including their velocities. GUSTO is equipped with three 8-pixel cameras to detect nitrogen, carbon and oxygen, respectively, in the interstellar medium (ISM), i.e. the gas and dust between stars. SRON and Delft University of Technology produced the oxygen camera and contributed to the other two.

GUSTO floats along for two months on the circumpolar vortex over Antarctica, on the edge of space at 36 km altitude. Antarctica has the advantage that there is energy for the solar panels 24 hours a day, so there are no day/night temperature fluctuations. Also, there are no national borders.

Image: GUSTO was launched from Antarctica on December 31, 2023. The balloon telescope floats along with the circumpolar vortex for three laps in 57 days before finally losing altitude under the influence of nightfall.

Credits: José Silva/SRON

3.5.10 Diversity and inclusion

In 2023, the NWO-I office appointed a diversity and inclusion project manager. The project manager is implementing the diversity and inclusion implementation plan, which comprises several action points. This plan targets all NWO-I employees. Given the diversity across organizational units and the differing challenges they face, not all action items are uniformly applied. Each organizational unit has the freedom to set up the process as it sees fit.

The focus of the 2023 implementation plan was on establishing overarching partnerships and raising awareness among employees. Some institutions did not yet have a diversity, equality and inclusion (DEI) team, while at others existing teams were modified or expanded.

By the end of 2023, eight of the nine institutes and the NWO-I office had a DEI team. In addition, an overarching organizational structure for DEI was established, including a monthly collaborative body chaired by the diversity and inclusion project manager. A DEI task force was established for policy development at the NWO-I level, consisting of representatives from various positions within the organization.

In 2023, several events were held to bring NWO-I employees together and raise awareness about diversity and inclusion. Examples include an online lunch lecture on International Women's Day, a women+ get-together in September and an online lecture on neurodiversity on Diversity Day. These initiatives led to the creation of employee networks for women and neurodiversity.

Finally, training courses were held, including an eight-month training course on inclusive writing, recruiting and selection, based on the Dutch Equal Opportunities in Recruitment and Selection (Supervision) Act. The DEI teams at the agency, CWI, DIFFER and Nikhef also took a course on inclusion, and there are plans to continue these training sessions at other institutes in 2024.



What is the price of retribution? (NSCR)

Researchers from Leiden University and the Netherlands Institute for the Study of Crime and Law Enforcement (NSCR) examined the pros and cons of custodial versus non-custodial sentences such as community service. In the process, they examined whether the need for retribution should outweigh the effectiveness and cost of punishment.

Results show that short prison sentences lead to more recidivism than non-custodial sentences: individuals commit between 76 and 81 percent more offenses over a five-year period after a short prison sentence than they do after a non-custodial sentence. It also shows that the cost of prison sentences is almost four times higher than that of non-custodial sentences.

The researchers conclude that the deterrent effect of short detentions is limited and provides little opportunity for behavioral change and reintegration. The main objective of the sentence therefore seems to be retribution. Based on this research, the question of what punishment is really appropriate and what retribution is worth to us can now be approached rationally.

Credits image: Shutterstock

3.5.11 Knowledge security and cybersecurity

NWO-I wants research at NWO-I to be conducted safely, in a safe environment. Doing the research in a safe manner means not only that the core academic values of integrity and independence are respected when conducting the research, but also that the research results can be shared, where possible, in the context of open science.

A safe environment means that researchers and staff feel free and respected to contribute to research to the best of their ability. Our knowledge security policies therefore aim to ensure that research collaborations take place in a safe environment, protect crown jewels from undesired transfer and safeguard scientific integrity and academic freedom.

In 2023, implementing the NWO-I implementation plan, which was adopted in 2022, based on the National Knowledge Security Guidelines, continued steadily. At NWO-I, several objectives from its own knowledge security implementation plan were achieved in the past year. Awareness of knowledge security is a key area of focus in the implementation plan, which is why knowledge security was part of an NWO-I-wide awareness campaign.

This awareness campaign concerning knowledge security, privacy and information security was developed together with an external partner. The basic premise for the campaign was not only to raise awareness but at the same time to link it to policy. In addition, four guidelines were established and implemented: safe recruitment and selection, safe international cooperation, safe foreign missions and safe visitor procedures.

Commissioned by the Ministry of Education, Culture and Science, a baseline measurement was conducted on the implementation of the National Knowledge Security Guidelines. In addition, NWO-I conducted a self-assessment on the implementation of the knowledge security policy at NWO-I. This will be followed up in 2024, and work on the other components of the implementation plan will also continue in 2024.

At the request of the Ministry of Education, Culture and Science, NWO-I provided input and feedback on the screening legislation for non-European knowledge workers. For instance, in the second quarter of 2023, an inventory of the presence of sensitive technology was carried out and the institutes gave their feedback on the draft list of sensitive technology and, more broadly, on the legislation being developed.

Finally, a learning approach and network building are key to the development of knowledge security policies. NWO-I's knowledge security team ensures that it stays connected to national and international external developments. It does so by participating in the steering group and fieldwork group initiated by the Ministry of Education, Culture and Science, affiliation with the UNL working group on knowledge security and by speaking at and/or attending national and international meetings. A team from Ministry of Education, Culture and Science was also a guest of NWO institute SRON, which they visited to exchange experiences in the development and implementation of knowledge security policies.

3.6 Impact of the Covid-19 pandemic

Shortly after the Covid-19 pandemic broke out, the NWO Executive Board established a €6-million Coronavirus Fund in 2020. The fund allowed the institutions to do what was necessary to minimize the impact of the coronavirus measures as much as possible.

The fund was later expanded by €815,000 and later by another €4.765 million from the resources of the National Education Plan (NPO). The Coronavirus Fund provides financial compensation for the costs of permanent (technical) staff who could not be productive during lockdown, which meant that delivery deadlines were not met or additional costs had to be incurred. Later on in Section 5, we report on the renewals funded with these National Education Plan funds in 2023.

3.7 Scientific output

Research at the NWO institutes leads to concrete results in many forms. The table below lists the key measurable results. Of the 'peer-reviewed' academic publications, more than 95% are published in open access journals.

Table: Scientific output of NWO institutes

Output	Number	Explanation
Academic publications	1934	Publications intended for scientists
of which were in peer-reviewed journals	1557	Articles in journals that use a peer-review system independent of the editors
of which were in other journals	377	For example, conference proceedings, but not posters or lectures
Contributions to books	52	Contributions to books that target an audience of scientists and researchers
Monographs	1	Books for scientists and researchers describing results of research
Doctoral theses	90	Dissertations
Professional publications and products	145	Products of scientific research aimed at disseminating knowledge to a wider professional audience (contributions to books, reports, software, CD-ROMs, etc)
Patents	1	Officially registered patents or patent applications
Publications aimed at the general public	66	Contributions to popular science journals and books for the general public
Other	912	All other publications; this includes algorithms, software, data collections, etc.

An important addition to the above figures is that, due to the war in Ukraine, the number of publications in peer-reviewed journals for the NWO institute Nikhef is down. Agreement was finally reached at the beginning of 2023 in the major collaborations in which Nikhef always publishes whether authors affiliated with Russian institutes are allowed to be listed in the publications. As a result, articles originally scheduled to be published in 2022 were published in 2023.

The output indicators mentioned above illustrate the concrete contributions of the NWO institutes. At the same time, they provide little insight into the important contributions that the institutes make to the knowledge field and the Dutch knowledge economy via the national roles they play. This includes the creation of new research directions, the development and maintenance of major research facilities, the facilitation of the use of this infrastructure by others, the coordination of large national research programs, attracting top international talent to the Netherlands, participation on behalf of the Netherlands in international organizations and the provision of education.



4 Finances

In 2023, the NWO-I's income totaled €225 million. Most of the income (€146.8 million) came from the NWO in the form of basic funding. Basic funding provides a stable basis for conducting and supporting scientific research at the nine research institutes. Researchers affiliated with the NWO institutes were also very successful in competing for funding. Income in 2023 for the projects obtained in competition amounted to €71 million.

Several institutes had funding granted for several major projects in 2023. For example, there were two awards from the National Growth Fund: €27 million for the Einstein Telescope, implemented by Nikhef, and €14.7 million for SolarNL, implemented by AMOLF.

There were also several awards from NWO instruments, such as €12.4 million for the LRSI Roadmap for SRON. DIFFER's WINC PLD proposal was given €4.8 million, and €4.2 million from GWI went to Delta-ENIGMA for NIOZ.

For the rest, the institutes were given funds from the National Science Agenda, innovation impulse, nine ERC Grants, H2020 Grants, Eurofusion funds and many other grants, such as a program in the context of freedom-restricting sanctions for NSCR.

In 2023, costs amounted to €220 million, down from €221 million in 2022. Most of these costs were personnel expenses (€148 million). Other significant items include depreciation (€9 million), housing expenses (€15 million) and other expenses (€48 million).

Compared to 2022, an increase can be observed in personnel expenses (€8 million), mainly due to increases under collective labor agreements. Housing costs mainly increase due to rising costs for water and energy (€3 million). Other expenses are lower because 2022 included a one-off expense.

The balance of income and expenditure resulted in a positive result for 2023 of €5 million. In addition, income from interest in 2023 amounted to €2 million, bringing the total result to €7 million (2022: plus €24 million).

The decrease in the positive result is due to non-recurring items in 2023 compared to 2022. In 2023, the one-off items were more limited in size than in 2022. They concern the delineation project LOFAR 2.0 (€3.8 million) and allocations from the NWO that will be spent after 2023 (€1.3 million).

In addition, the real estate fund was launched in 2023. In 2023, this accounted for €2 million more income than expenses, due to capitalization and deferral of maintenance to 2024.

In 2022, there were a number of one-off items that largely led to the positive result (€24 million), including the sale of old SRON building (€7.5 million) capitalization of renovation at Nikhef instead of expenses (€5 million) and project allocations spent after 2022 (€4 million).

4.1 Financial developments in 2023

4.1.1 Statement of income and expenditure

Table: Budgeted and realized income and expenditure 2023 (amounts x €1,000)

	2023	Budgeted for 2023	2022
Income			
Government grants	146,784	132,091	154,683
Other government contributions and grants	386	100	682
Income from work commissioned by third parties	71,014	72,904	73,226
Other income	7,141	6,007	14,403
Total income	225,325	211,103	242,994
Expenses			
Personnel expenses	148,064	142,493	139,643
Depreciation/amortization	9,269	10,757	8,499
Housing expenses	15,156	16,538	11,876
Other expenses	47,648	53,287	61,064
Total expenses	220,137	223,076	221,083
Balance of income and expenditure	5,188	-11,973	21,910
Realized revaluation	-	-	-
Financial income and expenditure	1,807	-	1,433
Result	6,995	-11,973	23,343
Taxes	-	-	-
Result from participating interests	145	-	372
Result after taxes	7,140	-11,973	23,715
Third-party share in result	-	-	-
Total net result	7,140	-11,973	23,715

Developments in income

The NWO provides the basic grant that NWO institutes receive. This so-called government grant amounted to €146.8 million in 2023, contributing 65% of NWO-I's total income. In addition to this government grant, NWO-I also secures grants competitively from NWO and external financiers. In 2023, this 'income from work commissioned by third parties' amounted to €71 million and, with that, about 31% of the total NWO-I income. Other income amounted to €7.1 million in 2023 and contributed 3% to NWO-I income.

Of the grants secured competitively, about 29% came from NWO, 28% from international organizations such as the European Union and ESA, 12% from National governments including the Ministry of Economic Affairs and Climate Policy (EZK) and the Ministry of Education, Culture and Science (OCW), 21% from other non-profit organizations including universities, 8% from companies and 2% from others.

The realized income exceeded the budget by €14.2 million in 2023. The main differences compared to the budget are additional basic grants for ASTRON, SRON and NSCR (€6.2 million), wage and price compensation for 2023 (€5.9 million), bridging financing for HFML-FELIX (€3.3 million) and income from interest (€2.2 million).

Income in 2023 was €17.7 million lower than income in 2022. In 2022, SRON's old premises were sold (€7.5 million) and NIOZ's fleet posted rental income amounting to €4 million. In addition, in 2022, €8.2 million was posted in additional grants from NWO, mainly due to the award for the Dutch contribution to the SKA.

Developments in expenditure

The total expenditure in 2023 was €2.9 million lower than budgeted. The decrease compared to budget was due to a combination of reasons. Personnel expenses were €5.6 million higher. This increase in personnel expense was mainly due to the new collective labor agreement. Higher personnel expenses were offset by lower depreciation expenses (€1.5 million, mainly due to the NIOZ fleet renewal being behind budget), lower housing expenses (€1.4 million lower, mainly due to lower maintenance expenses) and lower other expenses (€5.6 million, mainly due to the LOFAR 2.0 demarcation of €3.8 million).

Expenses in 2023 were €1.0 million lower than expenses in 2022. Expenses compared to 2022 present a mixed picture. Personnel expenses were €8.4 million higher than in 2022, mainly due to the new collective labor agreement. Depreciation expenses were €0.8 million higher due to the commissioning of the RV Wim Wolf at NIOZ and due to the Nikhef renovation; the building was occupied on November 1.

In addition, housing costs were €3.3 million higher, mainly due to increased charges for water and energy (€2.4 million) and higher maintenance costs (€0.9 million). Other expenses fell by €13.4 million, mainly because 2022 included a contribution to the SKA of €15 million, which was not the case in 2023.

4.1.2 Developments in the financial position

Table: Balance sheet total 2023 (amounts x €1,000)

	12-31-2023	Budgeted for 2023	12-31-2022
Assets			
Intangible fixed assets	2,594	3,256	3,243
Tangible fixed assets	214,079	206,297	184,636
Financial fixed assets	2,418	1,515	2,332
Fixed assets	219,091	211,068	190,211
Receivables	52,788	26,238	43,235
Cash and cash equivalents	79,801	54,566	81,810
Current assets	132,590	80,804	125,045
Total assets	351,681	291,872	315,256
Liabilities			
Equity	122,699	97,848	115,558
Provisions	9,750	10,085	9,472
Long-term liabilities	68,324	93,665	74,235
Current liabilities	150,908	90,274	115,991
Total liabilities	351,681	291,872	315,256

Tangible fixed assets rose by €29 million in 2023 in the wake of the NIOZ fleet renewal and the Nikhef renovation. To finance this fleet renewal, a loan agreement was signed with NWO, which we can draw down on as soon as there is a liquidity shortage. This was not necessary in 2023. Even though as much as €41 million was invested, NWO-I received more funds in advance, including funds for the National Growth Fund projects (the Einstein Telescope and Solar NL). Current liabilities/commitments rose by €35 million as a result.

Table: NWO-I financial ratios

RATIOS	12-31-2023	Budgeted for 2023	12-31-2022
	- Solvency	35%	34%
- Working capital	-18,318	-9,470	9,055
- Current ratio	0.88	0.90	1.08

Its solvency ratio is indicative of NWO-I being able to meet short and long-term payment and debt service obligations. The solvency ratio is calculated by dividing equity by total assets. The resulting ratio indicates what percentage of the total capital consists of equity, from which the percentage of borrowed capital can be deduced. A solvency ratio of between 25% and 40% is considered sufficient. The NWO-I has solvency ratios that fall within that standard.

Working capital is the difference between current assets and current liabilities. NWO-I's working capital fell by €27.4 million to €18.3 million in the red in 2023. This fall was due to major expenditure on investment projects (the NIOZ fleet and renovating Nikhef), which were financed from working capital in 2023.

The current ratio reflects the extent to which current liabilities can be paid from the totality of short-term receivables and liquid assets. The current ratio at the end of 2023 was 0.88, which is lower than at the end of 2022. To avoid the tightening of liquidity on the back of the fleet replacement and the renovation, a long-term loan was agreed with NWO. Depending on the liquidity position, the first tranche for 2024 will be paid out at a date to be determined.

Table: Liquid assets by cash flows (amounts x €1,000)

Liquid assets by funding flows	12-31-2023	12-31-2022
- Cash flow from operating activities	38,608	49,046
- Cash flow from investment activities	-40,617	-27,636
- Cash flow from financing activities	-	-
- Other balance sheet movements	-	-
Movement in liquid assets	-2,009	21,410

Liquid assets fell by €2.0 million to €79.8 million in 2023.

Cash flow from operating activities was €10.4 million lower than in 2022. Although income was €17.9 million lower and expenses were €1 million lower than in 2022, cash flow from operating activities was only €10.4 million lower. This is mainly due to higher advance receipts on projects (including from the National Growth Fund) of €19 million.

The negative cash flow from investment activities amounting to €40.6 million concerns the investments in tangible fixed assets (NIOZ fleet and renovating Nikhef).

4.1.3 Developments in the result and equity

Table: Developments in the result and equity (amounts x €1,000)

Profit distribution	2023	Budgeted for 2023	2022
- Movement in the general reserve	2,074	-450	7,158
- Movement in earmarked reserves (public)	5,861	-11,470	16,810
- Movement in earmarked funds	-146	0	-209
- Movement in other legal reserves	-649	-53	-43
Total result distribution	7,141	-11,973	23,716

NWO-I posted a positive result of €7.1 million in 2023. The budget had assumed a negative result of €12 million, but due to higher income and lower expenses, the result in 2023 is significantly more positive than budgeted (€19.1 million). This is partly because the 2023 budget was set in September 2022 and was based on the facts known at the time. On the other hand, unforeseen one-off allocations from NWO, which do not lead directly to expenses, produced a positive result that was larger than anticipated.

Income from interest earned on the NWO-I bank balance, which it holds with the Ministry of Finance, was added to the General Reserve. There were movements in public earmarked reserves, for instance because research funds received are spent later than when they were received, or because items financed from maintenance budgets were capitalized on the balance sheet, such as CWI's HVAC system. There were movements in earmarked funds due to projects in the University Working Groups Administrative Unit (BUW). Other movements in legal reserves were due to depreciation costs incurred for the financial system.

4.1.4 Treasury

The rules for investing and borrowing money on NWO-I resources are laid down in the treasury rules. The treasury rules were drafted based on the relevant legal framework (the 2001/2016 Government Accounts Act). The mandatory liquidity prognosis for at least five years is prepared quarterly. The legal framework is also shaped by the Ministry of Education, Culture and Science's Regulation on Investing, Borrowing and Derivatives of 2016 and the Treasury Banking Regulation for local governments.

The treasury charter was updated in 2021. The premise of the treasury function is that NWO-I monies may not be invested or used to borrow money on. All liquid assets are held at the Ministry of Finance, via Treasury banking, with the exception of a specific bank account for SRON and a US dollar account at CWI.

Investment grants received in advance are included in long-term loans.

4.2 Risk section

The NWO-I handles the funds it obtains responsibly. The NWO-I has a risk management and control system that is based on two widely used standards: the Three Lines of Defense model (The Institute of Internal Auditors) for clarification of duties and authority and the Enterprise Risk Management model (ERM COSO).

Risk management policy

The NWO-I risk management policy is based on key elements from the ERM COSO model and ISO 31000. The risk management policy was updated in 2022, not only to bring it up to date but also to raise awareness of risk management again. Follow-up steps were taken in 2023, based on the work carried out previously. The policy pays attention to the quality of both the risk assessment and evaluation process and the way control measures are set out. In the risk management process, NWO-I pays attention to the distinction between the different types of risk (strategic, operational, reporting and regulatory) and the attendant control aspects.

Risk appetite

NWO-I's has a low risk appetite. This is mainly because NWO-I operates with public funds that must be spent on the intended purposes under transparent conditions. The risks taken by NWO-I fall under regular business activities and are related to conducting research and operating and maintaining the institutes. NWO-I has set up various controls (as per the AO manual) for segregation of duties, authorization of roles/rights.

How have the risks identified for 2023 evolved?

The NWO-I 2022 annual financial report had mentioned a number of risks for 2023. The status of these risks is as follows:

- **Digital intrusion at NWO-I**

The 2022 initiatives continued unabated. The urgency is widely shared and has led to the laying down of strategic information security policies and adopting a high level of ambition. By 2023, the implementation of a SOC/SIEM had been completed at many institutions, with the last ones implemented in early 2024.

In 2023, another specialized company re-examined the security of the ICT infrastructure of multiple components at NWO-I. Once again, the findings prompted a tightening of security and a lowering of the risks. Supplementary to this, the organization's resilience has been bolstered by an organization-wide awareness campaign for information security, privacy and knowledge security. The internal harmonization of procedures has also improved the organization's resilience. In addition to the knowledge provided, the campaign was also tested to see if it produced behavioral change. It can be used again to implement more targeted measures for improvement.

- **EU projects, failure to satisfy grant conditions**
Periodic meetings are held with project controllers to define and implement improvement proposals.
- **Discrepancy between ambition and the knowledge and capacity it requires**
The scarcity on the labor market continues to be an area of concern. An attempt is being made to mitigate this risk by applying strategic HR policies with (strategic and tactical) workforce planning, labor market communication, proper incentives to keep employees, sound training policies and good benefits.
- **The effects of inflation, including rising energy costs at the institutes**
NWO-I was compensated in 2023 for wage and price increases and also given structural compensation for increased energy prices.

Key risks

NWO-I has included key risks and uncertainties in a risk matrix. The risks concerning prices, credit, interest rate/currency risk and liquidity risk are limited and are set out in the notes to the financial statements. Several management measures have been put in place to manage and mitigate the risks. The risk register is updated periodically and reviewed annually.

In line with major institutions, such as the Institute of Internal Auditors (IIA), IT security risk remains as high as ever. This is still considered one of the greatest risks worldwide. Partly for this reason, it remains a key area of focus in NWO-I risk management.

In line with global trends, NWO-I also believes that shortages in the jobs market will be one of the main risks from 2022 onwards. Indeed, with the growth required partly due to the National Growth Fund initiatives, NWO-I will need additional staff while, given the current tightness in the labor market, a relatively large number of staff will leave. The main risks to be managed, ones that the Foundation Board is ultimately responsible for, are summarized in the table below.

Table: Risks to be managed for NWO-I

Risk	Explanation	Existing control measures
Insufficient resources to maintain/replace/update (major) infrastructure and to operate this infrastructure.	Insufficient funding available (either from NWO-I or from external funding) for investment and operation. Insufficient staff to be able to carry out operations.	Investigate whether NWO-I funds can be made available for the co-financing of large scientific infrastructure, which the NWO-I Board can decide on itself, or other forms of earmarking NWO grants for institutes. In addition, criteria will be established that the investment request (business case, including housing issues) must meet.
Failure to satisfy grant conditions.	Insufficient awareness of conditions and/or insufficient taking into account of conditions throughout the project.	Project controllers have been appointed at the institutes to monitor such matters. Project control and expertise is strengthened and pooled partly by intensifying cooperation.
Insufficient structural funding for funding international memberships from central government.	As a state, the Netherlands participates in several international collaborations. Funding for this is not always invested structurally.	Coordination with the Ministry of Education, Culture and Science on participation, commitment from NWO I in these collaborations and this funding.
Digital intrusion/cyber attacks	Digital intrusions/cyber attacks can lead to unwanted loss of digital data. It may also include attempts at extortion or blackmail. Digital intrusion may also lead to temporary or permanent discontinuity of NWO operations.	<ul style="list-style-type: none"> • Firewalls, antivirus software and spam filters • 24/7 detection based on intensive log analysis and event correlation (SOC SIEM) • Segmentation of functionality and networks • Research IT vulnerabilities • Development of risk management and information security policies • Continuity-enhancing measures such as backup and incident procedures • Improve knowledge and raise awareness, using safe procedures
Privacy and information management	Inadequate information security and privacy protection can lead to unwanted loss of information (business-sensitive information, data breaches) and/or non-compliance with laws and regulations (including the GDPR).	Security and privacy office, training and awareness, embedding in decentralized planning and control cycle, internal reporting process for data breaches and security issues, risk handling plan, design of information security and privacy.

Table: Risks to be managed for NWO-I

Risk	Explanation	Existing control measures
Discrepancy between ambition and the knowledge and the capacity it demands. (Tight labor market)	NWO-I is unable to recruit and retain the right employees (technical, IT, engineering) ('war for talent').	Applying strategic HR policies with (strategic and tactical) workforce planning, labor market communication, proper incentives to keep employees, sound training policies and good benefits.
Central government cuts to research and innovation funding.	Political risk of a new government.	Collaboration in knowledge coalition. Contacts with parliamentarians and initiatives such as parliament and science.
Commitments with partners from high-risk countries and potential risks of financial setbacks arising from these commitments.	Misjudgment of business and/or scientific consequences of a collaboration, or poor awareness of potential risks and inadequate screening.	Knowledge security guidelines Approval must be granted in advance to participate in official (long-term) commitments. Awareness campaign on cooperation with high-risk countries. Proper screening of contracts and potential employees from high-risk countries, second-line advice from National Knowledge Desk.
Hazardous substances or hazardous equipment (for instance, in measuring stations).	Careless handling of hazardous materials or equipment can cause accidents and/or reputational damage, with associated financial consequences.	Procedures for ordering, managing, and disposing of the mentioned substances/procedures for the safe handling of hazardous equipment.

4.3 Multi-year forecast

The institutes are funded using NWO's government grants, and this includes components with a specific lead time in addition to structural components. Government grants will remain stable at around €142 million for the next few years. In addition to structural government grants, the institutes successfully acquire project funds from NWO, the European Union, the Dutch government and from collaborative projects with universities and the business sector.

The institutes expect to maintain their project portfolio in the coming years; in fact, a record €151 million in new project payments were awarded in 2023, which will be reflected in the budget in the coming years.

4.3.1 Budgeted income and expenditure

The income for 2024 is budgeted at €250 million. In the 2024 budget, NWO-I assumes grants and contracts that have already been secured. Additionally, estimates were made of the benefits NWO-I will acquire for new programs and projects. In general, this reduces the income in the longer term because some caution is applied in the process. The income also decreases in the long-term outlook due to the planned expiration of projects awarded.

The multi-year forecast includes structural new government grants for ASTRON, SRON and NSCR, the 2023 wage and price compensation, the structural allocation of the energy compensation and the funds for the SEP evaluation.

The following shows how income and expenditure are expected to develop over the next five years.

Table: Statement of income and expenditure (amounts x €1,000)

	Realization	Multi-year forecast				
	2023	2024	2025	2026	2027	2028
Income						
Government grants	146,784	142,479	142,293	142,358	142,063	142,081
Other government contributions and grants	386	1,152	1,392	1,098	692	60
Income from work commissioned by third parties	71,014	100,478	85,682	74,750	74,242	71,735
Other income	7,141	6,389	6,656	6,853	7,233	7,233
Total income	225,325	250,498	236,023	225,060	224,231	221,109
Expenses						
Personnel expenses	148,064	156,536	154,668	150,824	147,534	146,000
Depreciation/amortization	9,269	11,001	12,378	13,778	13,818	12,957
Housing expenses	15,156	17,515	17,130	16,560	17,261	15,963
Other expenses	47,648	74,827	58,855	47,475	47,105	44,992
Total expenses	220,137	259,879	243,031	228,637	225,718	219,913
Balance of income and expenditure	5,188	-9,381	-7,008	-3,577	-1,487	1,196
Realized revaluation	0	0	0	0	0	0
Financial income and expenditure	1,807	450	-50	-50	-50	-50
Taxes	0	0	0	0	0	0
Result from participating interests	145	0	0	0	0	0
Third-party share in result	0	0	0	0	0	0
Total net result	7,140	-8,931	-7,058	-3,627	-1,537	1,146

NWO-I has budgeted a negative result for the coming years. This is partly due to the planned use of accumulated reserves on research projects and scientific infrastructure.

The main reason for a fall in income in the period from 2024 to 2028 (- €29 million) relates to a fall in income work on behalf of third parties. All the NWO institutes secure funding in addition to the basic grant allocated by NWO from the government grant. The motivation and approach depend on the mission and context of the institute and therefore vary from institute to institute. This also applies to the volume of grants and contracts that are yet to be acquired, recorded for each institute. Project income from acquisition is generally estimated conservatively.

The ‘Income from work for third parties’ item includes:

- specific project grants from NWO funding instruments such as NWO major, roadmap, GWI and the Innovation Boost (Venis, Vidis, Vici) implemented by the institutes;
- income on account of projects funded by international organizations such as the European Union from the framework programs and by the European Research Council (ERC);
- benefits from state governments such as the ministries, companies and non-profit organizations such as universities, from public-private partnerships projects and contract research at the institutes.

Expenses are expected to fall by €40 million over the period from 2024 to 2028. The main reasons for this fall are the decrease in personnel expenses of €10.5 million, because the staffing capacity decreases over time, mainly as a result of the decrease in project revenues; and the fall in other expenses of €29 million, projects yet to be acquired are budgeted cautiously and, as a result, the corresponding ‘other expenses’ are also not budgeted.

Granting activities after the merger settled no later than 2024

On January 1, 2017, the Foundation for Fundamental Research on Matter (FOM) was transformed into NWO-I. In the process, the granting activities of the former FOM were transferred to NWO’s Exact and Natural Sciences (ENW) domain. NWO-I settles awards made by FOM before January 1, 2017. This allows the institutes and the BUW to conclude ongoing programs and projects. In 2022, NWO paid all the money for the granting activities. Several programs that required €124,000 less than expected were closed in 2023. The last program is expected to be concluded in 2024.

4.3.2 Investment plans and circumstances affecting the budget

Renovation of Nikhef

The renovation of Nikhef will cost €42.5 million all in all. Nikhef will be given a €26-million basic grant in the form of €1.3 million per year from 2019 to 2038 to cover this. Nikhef will supplement the remaining €15 million itself. Nikhef moved into the renovated housing at the end of 2023 and depreciation has begun. In 2024, we will examine how the outstanding remaining items are settled, and the renovation will be completed.

Fleet renewal

In 2020, the NWO Executive Board decided to proceed with the purchase of three research vessels: a large ocean-going vessel (the RV Anna Weber-van Bosse), a medium-sized vessel intended for mudflat research (the RV Wim Wolff) and a small vessel (the RV Adriaen Coenen).

Construction of the RV Wim Wolff and the RV Adriaen Coenen began in early 2021. The RV Adriaen Coenen was delivered in the summer of 2022, and the RV Wim Wolff was delivered in early 2024. In 2022, the tender process for the largest research vessel, the RV Anna Weber-van Bosse, was also completed with an award to the Spanish shipyard Astilleros Armon. The construction of the RV Anna Weber-Van Bosse is in full swing. It will be completed in 2025. The multi-year forecast includes the investments and, in later years, depreciation expenses for this vessel.

Phasing out of the Administrative Unit for Research Groups at Universities (BUW)

Research activities within the BUW were granted under the former granting function of the FOM foundation. The size of the BUW is decreasing as a result of its phasing out. The workforce shrank from an average of 54 FTE in 2022 to an average of 18 FTE in 2023. All BUW projects are expected to end in 2024.

Effects of the corona crisis

The NWO-I received various resources to deal with the impact of the Covid-19 pandemic. The NWO provided a budget of €6 million from the government grant and provided a budget of €0.8 million from the National Science Agenda funds to compensate for research delayed by Covid-19. The Ministry of Education, Culture and Science provided a budget of €4.8 million from the National Education Plan administrative agreement, the support program for the recovery and from the perspective of researchers.

The Foundation Board decided to accommodate these various contributions in a Coronavirus Fund in order to fund various types of expenses. It is expected that this fund can be closed in 2024.

Matching Horizon Europe

The NWO-I had the opportunity in 2023 to submit a grant application to the Netherlands Enterprise Agency for matching costs for Horizon Europe projects. The grant from the Dutch government is intended to encourage participation in the Horizon Europe Framework Program for Research and Innovation. This scheme provides a contribution for the matching costs incurred by institutions for participation.

The NWO-I was awarded €2.8 million from the Netherlands Enterprise Agency. Since this matching grant qualifies as an operating grant, it may not be recognized all at once in the year it is awarded. The NWO-I accounted for only a small portion of the grant through income, i.e. €67,000, in the 2023 financial statements; the remainder was accounted for as received in advance on the balance sheet.

The funds accounted for in income were used for hours related to writing activities/application for RI grants, a preliminary study/study Roadmap and to cover (central) overhead costs that are not billable under EU regulations, which qualify as non-economic activities.

4.3.3 Continuity section

The multi-year outlook regarding NWO's basic grant to NWO-I is outlined annually in NWO's Framework Letter. NWO-I's budget is drawn up based on the figures in the framework letter and on the project awards and contracts that have already been secured. The budget also includes an estimate of grants and contracts yet to be secured.

Equity

Table: Equity (amounts x €1,000)

	Realization	Multi-year forecast				
	2023	2024	2025	2026	2027	2028
Equity	122,699	114,057	106,998	103,364	101,825	102,968

The NWO-I's 2024 budget includes an overview of the movements in NWO-I's equity. Equity will decrease in the coming years as a result of the reduction of earmarked reserves at the institutes, especially for research projects and scientific infrastructure. In addition, various major investment projects, such as the replacement of the NIOZ fleet, the construction of the new SRON building and the renovation of Nikhef, will impact the development of the foundation's assets.

Liquidity

Table: Liquidity (amounts x €1,000)

	Realization	Multi-year forecast				
	2023	2024	2025	2026	2027	2028
Starting balance	81,812	79,805	60,915	51,381	76,228	75,438
Revenues	233,418	301,268	286,413	246,741	226,191	222,471
Expenditure	-235,425	-320,158	-295,947	-221,894	-226,981	-216,292
Final balance according to balance sheet	79,805	60,915	51,381	76,228	75,438	81,617

Liquid assets are continuing to decrease due to major investment expenditure for the fleet renewal in 2023 and subsequent years. In 2022, negative liquidity was expected from 2023, so a loan agreement was entered into with the NWO to finance major investment expenditure totaling €120 million. This loan agreement was formalized in 2022.

In 2023, the loan was not called on because there were sufficient liquid assets, mainly due to significant prepayments on growth funds. The multi-year forecast includes a drawdown of the loan in tranches in 2024, 2025 and 2026. This keeps the NWO-I's liquidity at a desirable level.

Actual drawing down on the loan depends on the development of revenues and expenditures and the funds expected to be required to continue to meet payment obligations.

Balance sheet

Table: Balance sheet (amounts x €1,000)

	Realization	Multi-year forecast				
	2023	2024	2025	2026	2027	2028
Assets						
Fixed assets						
Intangible fixed assets	2,594	1,945	1,296	647	-2	-2
Tangible fixed assets	214,079	246,004	274,290	263,138	256,501	244,404
Financial fixed assets	2,418	1,858	1,819	1,780	1,745	1,745
Fixed assets	219,091	249,807	277,404	265,564	258,244	246,147
Current assets						
Receivables	52,788	35,314	30,396	29,406	28,102	27,346
Liquid assets	79,801	60,915	51,381	76,228	75,437	81,616
Current assets	132,590	96,228	81,776	105,633	103,539	108,961
Total assets	351,681	346,035	359,180	371,197	361,783	355,108
Liabilities						
Equity	122,699	114,057	106,998	103,364	101,825	102,968
Provisions	9,750	8,442	8,421	8,420	8,412	8,412
Long-term liabilities	68,324	109,299	149,921	166,011	158,192	150,378
Current liabilities	150,908	114,237	93,841	93,403	93,354	93,350
Total liabilities	351,681	346,035	359,181	371,198	361,783	355,108

The balance sheet total fell in 2024 due to decreases in current liabilities and receivables. The balance sheet total will increase during 2025 and 2026, mainly due to the capitalization of various major investment expenditure for the fleet renovation. In subsequent years, the balance sheet total will decrease again due to the impact of the depreciation.

Equity is decreasing as planned, in part because arrears in research are being cleared and the BUW's earmarked reserve is decreasing.

This shows the projected development of income and expenditure through to 2028. The budgeted expenses are higher than the income, which yields negative results. This occurs, for instance, when income and/or expenses are not budgeted in the same year, as is the case for income for capital expenditure and the related depreciation expenses. Negative results covered by reserves do not pose a problem.

Events after balance sheet date

There were no events after the balance sheet date that had a significant financial impact on the 2023 figures.

FTE

Table: Average number of employees in FTEs

Personnel	Realization	Multi-year forecast				
	2023	2024	2025	2026	2027	2028
Permanent appointment	793	823	827	817	808	811
Temporary appointment	804	762	691	666	652	639
Total	1,597	1,585	1,518	1,483	1,460	1,450
Personnel in primary process/ scientific positions	848	832	785	766	756	756
Support staff/ other employees	749	753	733	717	704	694
Total	1,597	1,585	1,518	1,483	1,460	1,450

The foundation's workforce will shrink in the coming years as a result of the expiration of the granting function, on the one hand, and because not all vacancies for future projects have been budgeted, on the other hand. The future project portfolio has been conservatively estimated. The ratio of permanent appointments to temporary appointments has shifted toward more permanent appointments, again primarily due to the expiration of the granting function where traditionally more temporary appointments would occur.

Continuity

NWO-I has implemented various measures already to ensure the continuity of activities, for example by closely monitoring developments in the coronavirus outbreak and taking additional measures where necessary. Measures are also taken by project control to mitigate the risks of not being able to satisfy grant conditions.

Other aspects related to continuity are addressed elsewhere in the report: see, for instance, the description of risks and uncertainties above and internal control and supervision in Section 7.



5 Personnel

This section sets out the most important personnel developments in 2023.

5.1 Vision of human resources policy

The nine institutes that make up NWO-I are, each in their own field, initiators and implementers of scientific research, centers of expertise, incubators for scientific innovation, breeding grounds for talent, and both national and international connectors between science and application.

To fulfill these roles, NWO-I needs talented people who feel connected to our responsible mission and societal ambition. NWO-I aims to be an inclusive employer to motivated employees who energetically and enthusiastically utilize and develop their talents in science, technology or business management. This requires a strategic HRM framework to provide direction to NWO-I's human resources policy and ensure the use of appropriate tools while taking into account the specific context of each institute.

In 2022, a strategic HR framework was formulated for the period from 2022 to 2026. The framework focuses on the themes of labor market, leadership, vitality, performance, learning & development and inclusivity. Partly as a starting point for policy development on these topics, an employee survey was prepared, which will map out how employees perceive the situation around these topics at the end of 2023. The results of the employee survey will be shared with the institutes and the office in early 2024.

Labor market

It is critical for the institutes to be seen as and considered attractive employers. For the vast majority of positions, that attraction lies primarily in the substantive challenge of the research work. For this reason, every institute and the agency handle recruitment and onboarding on their own.

The name recognition of the institutes and their intense cooperation with universities are both great contributing factors to the influx of young scientists. In relation to the filling of more senior positions, the NWO-I increasingly recognizes the importance of facilitating settlement in the Netherlands, including finding housing and employment for the employee's partner.

NWO-I strives for a diverse composition of its workforce and emphatically positions itself in the labor market with this invitation.

Inclusion and retention, recognition and appreciation

The quality of the work that NWO-I brings to fruition depends on the diverse talents that our employees bring to the table and the freedom they perceive to do what they are good at or want to become good at. The institutes of NWO-I want to radiate and live up to the promise that every person with an appropriate qualification is welcome to make a lasting contribution.

Diversity reinforces the strength of the team, where everyone must be able to feel at home and safe. More and more, we as an organization highlight how different personalities, qualities and skills are recognized, deployed, acknowledged and valued. Being a good employer means aiming to create a lasting connection. Challenging development opportunities, social safety, flexible preconditions and good working conditions are important pillars in this regard.

NWO-I made extra efforts to be an interesting and safe employer for various target groups. For example, our organization explicitly recruits women for technical and scientific positions, a diversity and inclusion project manager has been hired, and the NWO-I participates in Workplace Pride activities.

5.2 Developments

NWO-I is the employer of the employees of the institutes, the NWO-I Office and the employees in the Administrative Unit for Research Groups at Universities (BUW).

5.2.1 Personnel employed

The table below shows how many FTE (rounded) NWO-I employed for different categories of employees. The male/female ratios were included as well. NWO-I has set a goal of increasing the percentage of women in scientific positions in particular and is actively working towards this objective (see also 3.5.10). Despite many efforts, we did not succeed in increasing the proportion of women in the organization in 2023.

Table: Personnel employed

Personnel category	Type of personnel	12-31-2022				12-31-2023				Difference	
		FTE	People	% M	% F	FTE	People	% M	% F	FTE	People
Scientific	PhD students	359	361	61%	39%	334	337	61%	39%	-15	-24
	Researchers on temporary contract (including postdocs)	252	268	65%	35%	250	271	61%	39%	-2	+3
	Researchers on permanent contract	269	292	82%	18%	271	295	78%	22%	+2	+3
Non-scientific	In temporary employment	127	149	73%	27%	152	174	60%	40%	+25	+25
	In permanent employment	591	647	71%	29%	609	666	72%	28%	+18	+19
Total staffing		1,598	1,717	70%	30%	1,615	1,743	70%	30%	+17	+26

As of December 31, 2023, the scientific payroll counted a (rounded) total of 855 FTEs (584 of which were temporary and 271 permanent), and other personnel accounted for a (rounded) total of 761 FTEs, including technicians, IT workers, facilities workers and financial staff (152 temporary and 609 permanent).

The number of researchers on permanent contracts stayed almost the same. In 2022, the number of interim and temporary contracts among non-scientific staff was higher due to previous staff turnover. By 2023, many of the contracts are permanently filled again, which explains the increase. The total size of the workforce grew by 1% in 2023.

The decrease in the number of scientists in temporary positions compared to 2022 is largely due to the phasing out of the Administrative Unit for Research Groups at Universities (BUW). BUW still exists from the days when the NWO-I was the FOM Foundation. FOM gave funding to universities and appointed researchers who were hired on that funding. These employees were placed in the BUW. Since 2017, the BUW has been phased out and is likely to end at the end of 2024.

NWO-I employs a total of 71 nationalities. Two thirds of the employees have Dutch nationality and over a fifth have another European nationality. The remaining tenth have nationalities from outside Europe.

The group of people working within the institutes also includes a large number (almost 600) of guest members of staff. They are not employed by NWO-I but do use the infrastructure available there to do (some of) their research work. Particularly in the mentoring of scientists in training, we also see the contribution that institutes make to the training of new generations. The composition of this group is (rounded) as follows:

Table: Guest staff at the institutes, divided by position

Trainee researcher (PhD students)	161
Researcher (including postdocs)	97
Scientific project manager	17
Associate professor	31
Professor	17
Master's students (university, higher professional education)	90
Interns (university, higher professional education, secondary vocational)	69
Support	88
Total	570

5.2.2 Sickness absence

After a decrease in 2021, the absenteeism rate (excl. pregnancy) at NWO-I increased again during the calendar year, although the increase appears to have stopped in 2023 and the percentage has actually declined slightly. The average duration of sickness absence cases that ended in the year under review has also fallen slightly.

There is considerable variation among the different organizational units. The NWO-I-wide average of 2.3% is still well below nationwide figures: the 2023 average in the Dutch labor market as a whole was approximately 6%; in the Education and Government sectors, figures vary between 4.5 and 6%.

The table below gives an overview of the absenteeism rates by organizational unit. The data that NIOZ supplied was based on a deviating method of calculation. For this reason, the total counts do not include these figures. Regarding sickness absence at BUW, there are indications that it concerns a small number of staff members and not every instance of short-term absence among NWO-I employees is consistently reported.

Table: Absenteeism rate by organizational unit

Location	Sickness absence rate				Average duration (days)	
	2021	2022	2023	Average	2022	2023
AMOLF	2.7%	3.9%	3.2%	3.3%	10.5	8.2
ARCNL	1.0%	1.3%	2.0%	1.4%	3.0	7.4
ASTRON	3.8%	4.5%	3.2%	3.8%	15.7	11.4
The NWO-I Office	6.2%	8.1%	6.5%	7.0%	16.4	12.8
BUW	0.5%	0.3%	1.3%	0.7%	4.9	22.3
CWI	1.1%	3.0%	1.9%	2.0%	17.8	9.0
DIFFER	2.4%	4.6%	3.4%	3.5%	11.2	12.3
DUBBLE	0.2%	1.2%	0.7%	0.7%	6.5	4.5
Jive	0.9%	1.9%	2.6%	1.8%	6.5	8.8
Nikhef	2.4%	3.2%	3.4%	3.0%	6.3	5.1
NIOZ	2.7%	3.8%	4.8%	3.8%	13.8	17.6
NSCR	2.1%	4.1%	3.1%	3.1%	14.1	10.7
SRON	1.6%	2.7%	2.3%	2.2%	12.6	10.1
Total NWO-I	2.7%	3.9%	3.2%	3.3%	10.5	8.2

5.2.3 Policy regarding junior researchers

PhD students

PhD students are employees who conduct scientific research via a learning trajectory that culminates in a doctoral thesis and a doctoral degree, the recognition as an independent scientific researcher. The primary and principal requirement for conducting scientific research is substantive knowledge in the PhD student's own research field.

The substantive development of the PhD student requires much more than substantive scientific knowledge. Being a fully fledged Doctor of Science with good job prospects requires 'soft skills' in addition to subject area knowledge and research skills.

Organizational units (institutes and the BUW) determine which training courses (in terms of content and provider) they organize for their PhD students in addition to internal training and 'hard skills' training.

Starting in 2020, NWO-I will offer a centrally organized 'PhD training program', which includes the joint procurement and organization of four training courses: 'Taking charge of your PhD project', 'The art of presenting science', 'The art of scientific writing' and 'Career orientation'. A course in scientific integrity was added for this group, as well as for other NWO-I employees in 2021.

A PhD network, by and for PhD students, was started in late 2023 at the request of some of the institutes' PhD students. The NWO-I office supports the network.

Implemented work-to-work policy

Most of the influx into benefits arises from the expiration of the employment contracts of PhD students. NWO-I pursues an active policy to help young researchers move from work to work after their temporary employment ends.

To assist PhD students in their job search immediately after NWO-I, we as the employer offer the opportunity to enroll in individual basic training courses on career planning. During their employment, the PhD students are invited to undertake skills training in order to increase their chances of finding subsequent employment.

NWO-I is the own-risk bearer for unemployment insurance. This means that the cost of a former employee's unemployment is borne by NWO-I. The implementation of the Unemployment Insurance Act is performed by the UWV.

NWO-I has also concluded an agreement with an external service provider who carries out the rehabilitation obligations on behalf of NWO-I, which we bear as self-insurer, if the candidate is expected to encounter difficulty in finding a new job. The agency advises on the use of so-called rehabilitation tools (training, trial placement, etc) and, if necessary, checks whether the ex-employee satisfies the obligations imposed by the Unemployment Insurance Act.

5.3 CLA and implementation regulations

CLA

The employers Royal Library, NWO and NWO-I, united in the Employers' Association of Research Institutes, and the Dutch Trade Union Confederation, National Federation of Christian Trade Unions in the Netherlands for Education and the General Union of Educational Personnel employee organizations reached an agreement on July 21, 2022 for a new Collective Labor Agreement for Research Institutions. This had already resulted in structural salary increases and one-off benefits by 2022. As of January 1, 2023, salaries were structurally raised by another 2%.

The CLA was concluded for eighteen months and ran from January 1, 2022 to June 30, 2023. On July 28, 2023, the Employers' Association of Research Institutes and the Dutch Trade Union Confederation, National Federation of Christian Trade Unions in the Netherlands for Education and the General Union of Educational Personnel employee organizations reached a final collective agreement. The new collective labor agreement ran from July 1, 2023, to June 30, 2024.

Wages were raised structurally by five percent as of September 1, 2023. In addition, each employee who was employed on September 1, 2023 received a one-off benefit of 1,500 euro gross (in proportion to the employment percentage from January 2023 onwards).

Effective January 1, 2024, wages were structurally raised by another 2.25 percent. So in total, a structural wage increase of 7.25 percent was agreed on for twelve months in this CLA.

The collective labor agreement also provides that, for structural work, an employment contract for an indefinite period of time will be entered into with the employee in question at the end of an initial fixed-term employment contract.

The collective labor agreement already has provisions that support diversity, equality and inclusion, and sustainable employability at all stages of life. To give more substance to these themes in the new collective labor agreement, agreements were reached on the exchange of three public holidays, leave for the transition process, informal care leave with continued payment of the pension premium, paid bereavement leave and leave savings scheme for sabbaticals.

Implementation regulations

In early 2023, the Central Works Council and NWO and NWO-I employers reached an agreement on the implementation regulations. Core themes were sustainability, inflation, and diversity and inclusion.

The new implementation regulations were finalized during the director's formal consultation meeting with the Central Works Council held on February 21, 2023. The duration of the new 2023 to 2025 implementation regulations runs from January 1, 2023 to December 31, 2025, which will include a reassessment of allowance amounts in 2024, among other things.

For the rest, the key changes involve adjusting commuting allowances. For example, the NWO-I encourages travel by public transportation by also making it possible to park a bicycle or car at the boarding station. For business travel, it is stipulated that flights will only be taken if that presence abroad is considered necessary.

The inappropriate behavior regulation was also tightened and expanded. As a result of the collective labor agreement to implement a mourning protocol, a guideline was agreed to and is attached to the implementation regulations.

5.4 Policy in response to the coronavirus

Shortly after the outbreak of the pandemic in 2020, the Foundation Board of NWO-I set up a coronavirus fund to enable the institutes to do what was necessary to minimize the effects of the coronavirus measures as much as possible. NWO's Executive Board assigned 6 million euro to this end. The fund was later expanded with resources from e.g. the National Education Plan (NPO), which were awarded to NWO-I through NWO.

In the Coronavirus Fund, special attention is devoted to the impact that restrictions have (had) on the careers of young researchers. The funds from the NPO are specifically intended for this group. Agreements on how the funds will be spent are laid down in the NPO administrative agreement. In October 2021, the Group Works Council approved the method of spending and allocating resources from this fund.

The Coronavirus Fund also provides scope for financial compensation for the expenses of permanent (technical) personnel who could not be productive during lockdown situations, which meant that delivery deadlines could not be met or other additional costs had to be incurred.

In the table below, we report on the contract renewals of temporary personnel, broken down by PhD students and postdocs, funded from NPO resources in 2023. Most of these researchers work at the institutes, but of the 36 or so temporary researchers working at the universities (Administrative Unit for Research Groups at Universities, BUW), 17 people in total received 74 months of contract renewal from the Coronavirus Fund in 2023.

The overheads in the table were calculated using the salary costs plus fixed surcharge system, as used by the Netherlands Enterprise Agency: an additional 50 percent of gross salary costs are considered overheads. The overheads in the table give an indication of the costs incurred that are not covered by the Coronavirus Fund.

Table: Extensions of temporary staff based on National Education Plan resources

2023 Institutes	number of people	number of months	gross salary costs	overhead	Total costs
PhD students	70	276.6	€1,377,286	€688,643	€2,065,928
postdocs	24	80.8	€486,431	€243,216	€729,647
total	94	357.4	€1,863,717	€931,858	€2,795,575

5.5 Ukraine emergency fund

Since the start of the war in Ukraine in February 2022, the NWO-I has been involved as a good employer to its employees coming from Ukraine, Russia and Belarus. The NWO-I also acts out of its commitment to the research community by supporting the reception of refugees from Ukraine.

A Ukraine emergency fund of 1 million euros was established in 2022. The purpose of this fund is to enable institutes to provide emergency assistance to their own staff members who have run into financial difficulties due to the war and to provide refugee Ukrainian scientists with a workplace or guest appointment.

It was concluded at the end of 2023 that there has been limited use of the available funds since the Ukraine emergency fund was established. Earlier in 2023, the NWO decided to open a hop-on call together with the National Research Foundation of Ukraine, and the NWO-I provided the necessary funds from the emergency fund for this purpose.

Despite the fact that the war in Ukraine is still raging on, it is expected that there will be no further use of the emergency fund, as there is no longer an acute need. The emergency fund was closed in 2023.



6 Housing, sustainability and occupational health and safety

This section sheds light on the key developments in real estate and housing, sustainability and occupational health and safety.

6.1 Real estate and housing

6.1.1 Nikhef renovation

The renovation of Nikhef's building at the Amsterdam Science Park kicked off in 2021. After a few months' delay, the renovated building was completed in late 2023.

The renovation consisted of structural and technical modifications to prepare the building for Nikhef's operations.

The ambiance is more modern and the building has been made sustainable. The redesigned layout fosters collaboration and informal meetings in a central location, preserving a tranquil environment in the other workspaces. A beautiful and future-proof building has been built, one that students, technicians and scientists will enjoy in the next twenty years at least.

Different parts of the building were tackled in five construction phases, and the building remained in use during the renovation. The opening was celebrated in early 2024.

6.1.2 CWI renovation

The NWO Institute CWI building is part of the complex that also includes Nikhef. Since one of the reasons for the renovation at Nikhef was the sustainability of the building, the extent to which the CWI portion can be renovated is now also being examined. Initial plans for this were developed in 2023, but it will not take shape until 2024. In mid-2024, the board will decide whether or not to renovate.

6.1.3 Maintenance plan and maintenance fund

The NWO's institutes are spread throughout the Netherlands. In total, NWO-I has approximately 28,500 m² of laboratories and 40,000 m² of workspaces in offices. The institutes traditionally took care of the maintenance of the buildings themselves, in part using their own funds and in part with funds provided by NWO on an ad-hoc basis.

On the basis of a thorough analysis, it has been determined that maintenance can be organized more efficiently in joint cooperation, but also that there are structurally inadequate resources for systematic maintenance in accordance with the requirements of the research and the research facilities. In 2022, this led to an NWO-I-wide maintenance policy and the establishment of a maintenance fund.

Major investment decisions on new construction or renovation are not paid out of this maintenance fund. These decisions are so intertwined with the scientific strategic agenda of institutes and decisions about infrastructure and facilities that they are made in that context.

The annual adjustment of the maintenance plan and the management of the maintenance fund are done by the real estate department of the NWO-I office, in close cooperation with the responsible units within the institutes. The next step is the realization of a Strategic Real Estate Plan (SVP). The NWO's Executive Board already adopted several strategic principles for this in 2018. They will be further developed in phases in 2023 and 2024.

6.2 Sustainability

Sustainability, the environment and climate are important to NWO-I. It goes without saying that we strive to work paperless, use as little plastic as possible, make our buildings as carbon-neutral as possible and encourage our employees to travel by public transport.

In 2020, the firm Arcadis conducted an analysis of the climate impact of NWO-I and possible measures to mitigate it. The results were used to further develop sustainability policies for each institute individually. To this end, every institute was screened in detail and the most important sources of environmental impact were identified.

Over the course of 2021, we looked at what measures could be taken at each institute on this basis, in order to reduce the impact on the environment or achieve carbon offsetting. This was continued in 2022 and 2023.

6.3 Occupational health and safety

The NWO-I will issue a separate internal occupational health and safety annual report for 2023. In this report, we limit ourselves to the most important events and the occupational health and safety policy of NWO-I.

Working conditions

The NWO-I health and safety policy pursues the following goals:

- to optimize the safety and protection of the health of all employees, guests, interns and visitors;
- to ensure the best possible health and safety standards when handling installations, equipment, machinery and goods;
- to prevent work-related psychosocial stress caused by an excessive workload, bullying, sexual harassment, aggression and violence.

A variety of issues to safeguard these policy goals were taken up by NWO-I's joint health and safety coordinators in 2023.

Safety audit

The NWO's Internal Audit Department completed the 'hazardous materials' section of the safety audit in 2023. The institutes has since started work on most of the findings from this audit section.

Policy development

The policy on the desire to have children, pregnancy and breastfeeding was established with the permission of the employee representation body.

The NWO-I developed a scheme for the framework for work-related health examinations, other medical examinations and vaccinations. This regulation was submitted to the employee representation body in early 2024.

NWO-I is participating in the 'Safe Practices' project together with the joint universities and Netherlands Organization for Applied Scientific Research, among others, to arrive at a method for laboratories that will eliminate the need to conduct exposure assessments for all activities.

The employer experts reviewed the Employers' Association of Research Institutes' Health and Safety Catalog. In 2024, this revision will be submitted to the collective bargaining partners and presented to the Dutch Labor Inspectorate for review.

The NWO-I has selected an IT system for maintaining records of hazardous substances, genetic sources, genetically modified organisms and biological agents and for instruction and review. The six participating institutes are expected to put this system into operation in 2024.

Accidents and incidents

No incidents involving serious injury occurred at the NWO-I during 2023. However, the consequences for employees could have been more serious in several incidents.

There is still a big difference in the number and type of incidents reported by the separate institutes. Receiving many reports is better in this regard, because it provides an opportunity to learn from minor incidents while preventing serious accidents in the process.

The working conditions report will be finalized in the course of 2024 and discussed with the employee representation body.



7 Organization and governance

The Foundation for Dutch Scientific Research Institutes (NWO-I) arose in its current form from a merger of foundations with one or more institutes that were affiliated with the Dutch Research Council (NWO) in various ways.

From 2018 onwards, a clear distinction can be made between the awarding of grants for research and the conduct of research. NWO concentrates on the awarding of grants, NWO-I concentrates on the conduct of research. This research is conducted at NWO-I.

This section discusses the objectives and strategy of NWO-I, the organizational structure and method of decision making, the composition of the Executive Board and management, the role of the institute advisory councils, the code of conduct and how NWO-I deals with complaints. The last part of this section describes the internal audit function and the assurance of good governance.

7.1 Objective of the NWO-I

The purpose of the Foundation for Dutch Scientific Research Institutes is to:

- promote excellence in science and the quality of scientific research in general;
- conduct scientific research of a high standard in specific fields;
- initiate and encourage new developments in scientific research;
- disseminate the knowledge derived from scientific research, initiated, conducted and supported by NWO-I, for the betterment of society;
- to manage the institutes.

To this end, the NWO-I focuses on, among other things, setting up and maintaining institutional, public-private national and international collaborations, facilitating and conducting research, facilitating and participating in national and international organizations and partnerships, developing policy, developing, managing and operating scientific infrastructure, establishing substantive and business links between the NWO-I and NWO, and training researchers.

7.2 Organizational structure

7.2.1 Governance

The link between NWO and NWO-I is laid down in NWO's management regulations and in NWO-I's articles. NWO is an independent administrative body under the responsibility of the Ministry of Education, Culture and Science.

NWO's mission and tasks are laid down by law. Since the entry into force of the new NWO Act in 2017, the NWO structure includes an Executive Board with four domains underneath and a separate NWO institutes organization (NWO-I). The Executive Board is ultimately responsible for the domain organization and the Foundation Board for the institutes' organization.

The Foundation Board of NWO-I forms a personal union with the NWO Executive Board: the boards consist of the same individuals. The NWO Executive Board is responsible for defining the mission and scientific strategy of each institute.

The Foundation Board is responsible for the maintenance and day-to-day management of the foundation and for carrying out the missions of the institutes. The board also monitors compliance with codes of conduct and guidelines, such as those concerning scientific integrity, appropriate behavior, knowledge security and working conditions. The various codes of conduct and guidelines can be viewed on the NWO-I website.

The NWO-I Foundation Board adheres to the Good Governance Code for Public Service Providers.

7.2.2 NWO Supervisory Board

The NWO has a Supervisory Board in addition to the Executive Board. The Supervisory Board assists the Executive Board and provides advice on NWO policy when requested or on its own initiative.

Advice from the Supervisory Board can also relate to the NWO-I. The Supervisory Board was established by the minister of Education, Culture and Science on March 1, 2017 and has had six members since January 1, 2019. The term of office is five years. This annual report includes a section (7.6.3) containing a report from the Supervisory Board, which pertains to the NWO-I. The members are listed here as well.

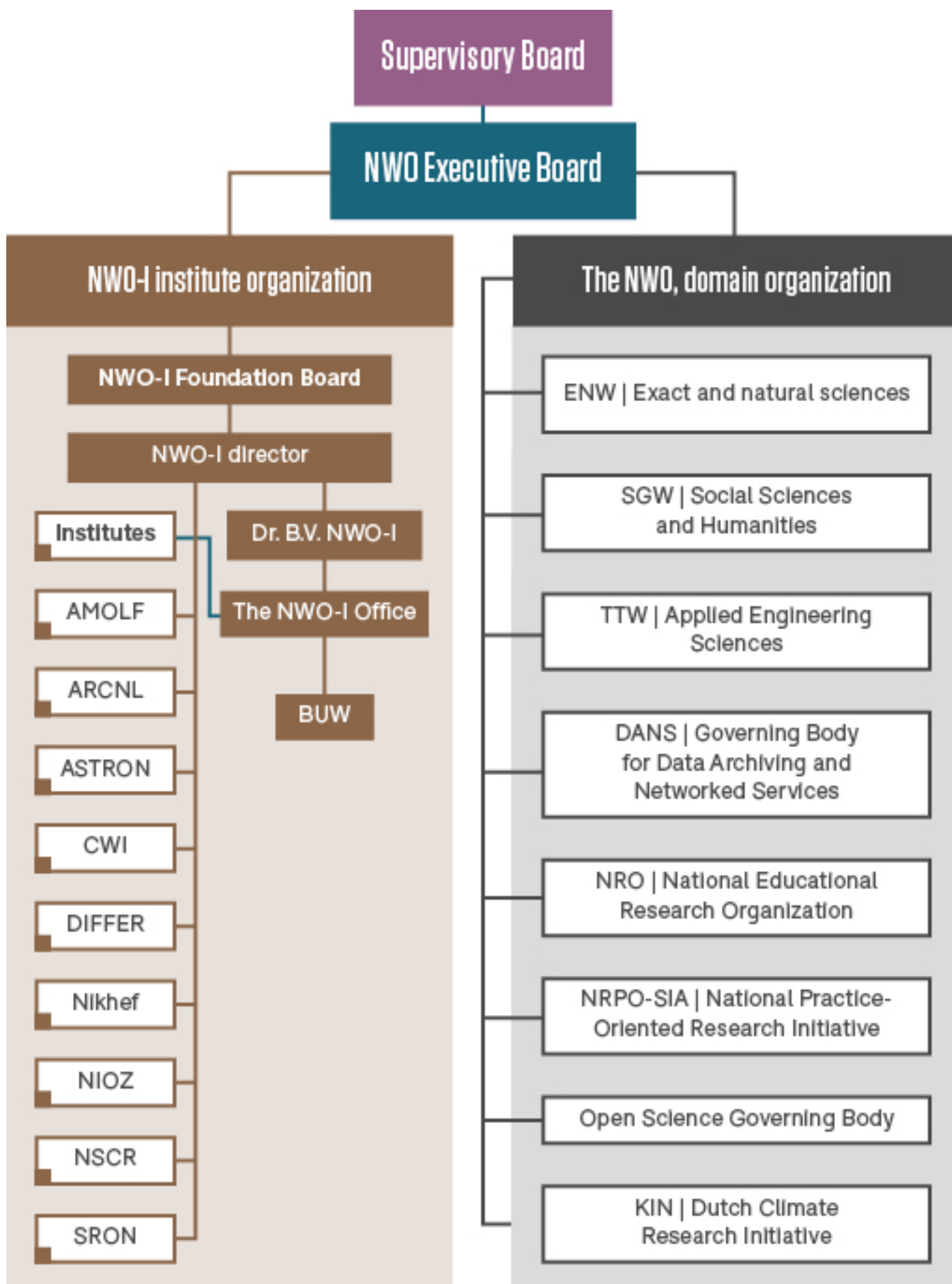
The NWO's Supervisory Board has an audit committee. In 2019, this committee consisted of two members of the Supervisory Board. Among other things, the audit committee monitors the quality of operations, the financial reporting process, the statutory audit of the financial statements and the effectiveness of the internal risk and control system.

In connection with NWO's designation as a public interest entity (PIE), the Supervisory Board appointed a third external member at the end of 2019. The activities of the audit committee are included in the Supervisory Board's report.

7.2.3 Organizational units and governance

The figure below shows how the various components are arranged within the organization and how NWO and NWO-I relate to each other.

Figure: Organizational units and governance



Under the articles, NWO-I has a director, who leads the entire foundation, and an operations director. Following the departure of the NWO-I director in June 2021, the NWO Executive Board began to consider the role and position of the NWO-I director, partly with the help of an external consulting firm.

The responsibilities of the NWO-I director have been distributed among members of the Foundation Board (primarily the president), the NWO-I Director of Operations and the NWO-I Head of Strategic Support. In this context, the president assumed the role of external figurehead as well as the role as manager of the institute directors.

In early June 2023, the director of operations (and the ad interim director of the NWO-I) resigned. This meant that the positions for the director of the NWO-I and the NWO-I director of operations have been vacant since the summer of 2023. The Foundation Board decided to adopt a temporary management model, in which no interim directors were appointed, but tasks were distributed among existing officers (specifically, the vice president of the board, the institute managers and some agency heads).

The temporary governance model will be in effect until April 1, 2024 at least. It is being used to gain experience that can serve as input for shaping a more definitive governance structure. Accordingly, the current bylaws have not been amended.

Institutes

Each institute is managed by an institute director. The directors of the institutes are integrally responsible for the day-to-day management of the institute. They also bear responsibility for the scientific fleshing out of the institute's mission and the accompanying strategy. They are supported in this respect by an institute manager who is operationally responsible for the management of the institute.

The following nine institutes comprise the NWO-I:

- **AMOLF | Physics of functional complex matter**
AMOLF corporation conducts fundamental research on complex material systems;
- **the ARCNL | Advanced Research Center for Nanolithography partnership**
ARCNL conducts high-quality fundamental research in the field of nanolithography, providing knowledge that contributes to the production of ever smarter and smaller electronics;
- **ASTRON | Netherlands Institute for Radio Astronomy**
ASTRON makes discoveries in radio astronomy possible;

- **CWI | Center for Mathematics & Computer Science**
CWI conducts fundamental and groundbreaking scientific research in mathematics and computer science and is committed to the successful transfer of its research results to society;
- **DIFFER | Dutch Institute for Fundamental Energy Research**
DIFFER conducts leading fundamental research in the fields of nuclear fusion and solar fuels by bringing together different disciplines in close collaboration with universities and industry;
- **Nikhef | National Institute for Subatomic Physics**
Nikhef pushes the boundaries of our knowledge about the elementary building blocks and interactions in the universe;
- **NIOZ | Royal Netherlands Institute for Sea Research**
NIOZ is the Netherlands' national oceanographic institute and center of expertise on ocean, sea, coast and delta. NIOZ promotes the fundamental understanding of marine systems, how they change, the role they play in the climate and biodiversity, and how they can provide sustainable solutions for the society of the future;
- **NSCR | Netherlands Institute for the Study of Crime and Law Enforcement**
The NSCR develops empirically substantiated knowledge of crime and criminals in a societal context, as well as prevention and (judicial) approach to crime;
- **SRON | Netherlands Institute for Space Research**
SRON is the national expert institute for scientific research from space, and home to the Dutch membership of the European Space Agency (ESA).

The institutes are *national* institutes: they all have one or more national roles through which they add value to the knowledge system in the Netherlands. They drive or coordinate specific research areas and/or develop, manage and operate national or international scientific infrastructure or facilitate the Netherlands' scientific contribution to large international treaty organizations.

The NWO-I participates in a large number of collaborations via the institutes. For example, our institutes work closely with all the universities in the Netherlands, but also with universities of applied sciences, applied research institutes, companies and other public and private organizations.

The NWO-I Office

For the first half of 2023, the NWO-I Office under the direction of the NWO-I director and the director of operations focused on the preparation and implementation of board resolutions, the facilitation of the institutes and the facilitation of the (organization of the) operational management of the foundation. During the second half of the year, the MT took over day-to-day management based on the temporary governance model, with the head of Administrative Support and Strategy as president.

The NWO-I Office provides the institutes with services that benefit from being offered on a collective basis, such as scale benefits, quality enhancement, vulnerability reduction and cost reduction. This includes, for example, support in the areas of strategy, financial management, procurement, real estate, human resources, communications and legal affairs.

University Working Groups Administrative Unit

The Administrative Unit for Research Groups at Universities (BUW) originally included around 100 university working groups at twelve university locations. At the head of each working group is a working group leader, usually a professor employed by the university involved. This working group leader is budget holder and manages the NWO-I employees, which include PhD students, postdocs and technicians.

The head of Administrative Support and Strategy in the NWO-I office is responsible for managing research projects. The BUW is a remnant from the past, when NWO-I, in its former capacity as the FOM foundation, also awarded projects to universities. The final projects are expected to be concluded over the course of 2024, after which this organizational unit will be dissolved.

Decision making

Under its statutes, the NWO-I Foundation Board grants the NWO-I director power of attorney and power of representation to conduct day-to-day management of (the organization of) the foundation. With the authority granted, the NWO-I director is responsible for making day-to-day management decisions for the foundation with the support of the NWO-I director of operations.

Based on the temporary board model, and in the absence of both directors, this authority is revoked and decision-making is done by the board. Decisions that impact the scientific strategy and/or missions of the institutes are always made by the NWO Executive Board.

Led by the president of the board, the institute directors and the head of Administrative Support and Strategy jointly attend the directors' meeting. This meeting discusses developments at the level of the institutes' organization. They also share experiences and set up joint policy frameworks that apply to the entire institutes organization.

In addition to the meeting of directors, there is also a business operations meeting (led by the vice president of the board) and various functional meetings at NWO-I, including for communications, ICT, finance and human resources.

7.3 Composition of the NWO-I Foundation Board

The NWO-I Foundation Board is the highest governing body at NWO-I. The Foundation Board forms a personal union with the NWO Executive Board. The president was appointed as of April 1, 2021 for a five-year term. The vice president was appointed as director as of October 1, 2016 for a five-year term. The appointment was renewed for another five years on October 1, 2021. The remaining members are appointed for three years with the option of a one-off three-year renewal. Officially, as of December 31, 2023, the NWO-I Foundation Board consisted of two female and four male board members.

Members of the NWO Executive Board and NWO-I Foundation Board (as of December 31, 2023)

- Professor Marcel Levi (president, also president of the NWO Foundation Board)
- Caroline Visser (vice president, portfolio holder for Operations and Finance, vice president of the Board of Directors)
- Professor Jan de Boer (president of the ENW domain)
- Professor Antal van den Bosch (president of the SGW domain) since July 1, 2023, prior to that Professor Hans de Bruijn – from January 1 to July 1, 2023
- Professor Margot Weijnen (president of the TTW domain)
- Professor Arfan Ikram (president of the MW domain)

7.3.1 Management and office of the NWO-I

The Foundation Board is supported by the NWO-I Office. Under the articles, the management of the agency is formed by the Director of the NWO-I and the Director of Operations of the NWO-I. In the first half of 2023, the board consisted of the director of operations and the head of Administrative Support and Strategy. Following the departure of the director of operations, the management duties for the office were assumed by the full MT as a collegial team chaired by the head of Administrative Support and Strategy.

7.3.2 Employee representation

The NWO-I has a Group Works Council that deals with issues affecting all of the NWO-I. The council consults with the director of the NWO-I and, under the temporary arrangement from July 2023 onwards, with the vice president of the Foundation Board. The institutes and the office each have one representative in the NWO-I Group Works Council. The BUW is entitled to two members on the NWO-I Group Works Council, but these vacancies were not filled in 2023. BUW is expected to be wound up in 2024 and thus these seats will expire. The NWO-I Group Works Council may consist of a maximum of 12 members.

All members of the NWO-I Group Works Council automatically hold a seat – together with three members of NWO-D – in the NWO's Central Works Council. The NWO Central Works Council deals with issues affecting NWO as a whole and consults with the NWO Executive Board.

In 2023, the NWO-I Group Works Council received the following requests for an opinion and/or consent:

- Request for an opinion on implementing SURF SOC/SIEM
- Request for an opinion and consent for Youforce
- Request for consent for the 2023 occupational health and safety annual plan
- Request for consent for the amendment to the policy for the desire to have children and pregnancy

In addition, nine requests for an opinion within the 'Development of Operations NWO-I' received in 2022 were also discussed. Ultimately, these requests for an opinion were withdrawn by the director at the end of 2023, with the exception of the Housing and Facilities domain, because the opinion process, including the decision, had already been completed. The intended developments in these requests for an opinion are included in the 2024 annual plans for the functional domains at the NWO-I. Should developments require advice or consent, they will be submitted to the NWO-I Group Works Council in 2024.

The departure of the ad interim director of the NWO-I in July 2023 was the starting point of a temporary method of operation for the governance of the NWO-I. The NWO-I Group Works Council chose not to have a dogmatic discussion about whether or not it has the right to advise on the temporary changes in distribution of authority and the appointment of the (temporary) director within the meaning of the Works Councils Act. The director pledged to be generous in the provision of information to employee representation body and to include their opinions in the evaluation of the temporary working method as a stepping stone to new governance.

The NWO-I Group Works Council then issued an unsolicited opinion on the temporary mode of operation, to which the director gave an extensive response. During the consultative meetings, the director regularly informed the employee representation body about both the new working method and (the preparation of) the 2024 annual plans for NWO-I's operations. The temporary way of operating will last at least until April 1, 2024. If the temporary solution proves to be working, all necessary steps to adapt the NWO-I governance model (including any requests for an opinion to the employee representation body) will be completed.

In 2023, the NWO-I Group Works Council made contributions to two working groups through participation (by a Group Works Council member in a personal capacity), namely: the employee survey working group and the Youforce working group (personnel information system).

7.4 Institute Advisory Councils

As stipulated in the NWO-I articles, each institute has an institute advisory council. The institute advisory council has an independent position and provides solicited and unsolicited advice to the institute director and the NWO Executive Board. The institute director is the point of contact for the institute advisory council.

The starting point is that the institute advisory council plays an important role in keeping the institute connected to relevant national stakeholders. The council contributes to the optimal maintenance of strategic relationships with science, the business sector, local or national politics, and other relevant social parties, and acts as a critical interlocutor to the director. The composition of the institute advisory council therefore ties in with representatives from science, society and the business sector who have an affinity with the institute's research.

In addition, virtually all the institutes have a science advisory council. This council advises the director of the institute on the scientific quality of the research conducted by the institute, on providing direction to the institute's research and on the alignment with and/or adherence to the broader international scientific context. In addition, the director of the institute may request advice on specific institute matters.

7.5 Codes of conduct and complaints procedure

7.5.1 Code of conduct for desired behavior

NWO-I employees as well as third parties, such as visitors or employees of hired companies, can be involved in undesirable behavior. The code of conduct therefore requires everyone working for or on behalf of NWO-I to act with integrity, respect and professionalism. These three behavioral traits are the guiding principle for desired behavior at NWO-I and a prerequisite for an optimal work environment. All organizational units (institutes and the NWO-I Office) have one or more confidential advisers to whom employees can turn if they are confronted with undesirable behavior.

7.5.2 Complaints procedure

The NWO-I observes the individual right of complaint. The employee, intern or seconded person therefore has the opportunity to make their complaint about conduct by or on behalf of the employer toward the employee the subject of discussion.

The complaint will be investigated in such a way that it guarantees that the complaint is handled justly and that the individual interests of the person who lodged the complaint are reasonably protected. The procedure is defined in the implementing regulations (Implementation Regulation 11). There were no complaints handled by the complaints committee in 2023.

7.5.3 Whistleblower policy

The NWO-I's confidential adviser under the whistle-blower scheme was not consulted in 2023. Sandra de Keijzer, head of Chemistry and Physics at ENW (NWO-D), was appointed as a confidential adviser under the whistle-blower scheme on December 13, 2023. She succeeds Tanja Kulkens, who was appointed as the director of ENW last year.

7.5.4 Complaints related to scientific integrity

The Netherlands Code of Conduct for Research Integrity, which has been in force since the end of 2018, includes guidelines for, among other things, how to deal with suspected violations of scientific integrity.

The code sets out duties of care for the institution. The NWO-I has its own complaints procedure and confidential advisers for Scientific Integrity. The Scientific Integrity Complaints Committee did not handle any complaints in 2023. The confidential advisers were not consulted in 2023. In 2023, Thom Palstra and Freya Senf were scientific integrity confidential advisers.

7.6 Horizontal accountability

Horizontal accountability involves internal and external actors. Important actors include the employee representation body, the NWO Supervisory Board and the audit committee.

Other actors for whom this annual report is relevant are: the NWO, partly for the purpose of consolidating the NWO-I figures in its financial statements in rendering account to the Ministry of Education, Culture and Science; the European Union and other granting parties; the tax authorities; the bank and the Ministry of Finance for the purposes of Treasury banking; in addition to insurance companies and other creditors.

7.6.1 Internal management and control system

An administrative organization and internal control system (AO/IC) has been agreed upon and is being observed at NWO-I. Findings arising from the external auditor's management letter are discussed and explained in the Foundation Board and audit committee. The Foundation Board and the audit committee will provide direction to the NWO-I organization on matters related to development and/or improvement.

The NWO's Internal Audit department will also conduct investigations that culminate in a report with findings and recommendations that are discussed with stakeholders and revisited by the audit committee.

The Foundation Board and audit committee are periodically briefed on the financial position of NWO-I in the form of quarterly reports in addition to the financial statements and multi-year budget. These documents pay due attention to developments in the organization, risks, order book and liquidity in a multi-year perspective in addition to the annual forecast and numerical analysis.

7.6.2 Internal audit

The NWO's Internal Audit department is deployed for the entire group, including the NWO-I. The purpose, duties, responsibilities, powers and functioning of the department are detailed in an audit charter and in a quality control system and policy. Both provide a framework for the Internal Audit department's service provision to the directors of NWO and NWO-I, the NWO Executive Board, NWO-I's Foundation Board, the audit committee and the NWO Supervisory Board.

Audit reports are discussed in the meeting of directors, the operational practices consultations and the NWO-I Foundation Board, depending on the topic. A summary of all the topics is presented to the audit committee of the Supervisory Board annually.

In 2023, the following internal audits were ongoing at the NWO-I: occupational safety, the integrity climate, the asset management of scientific infrastructure, GDPR compliance and knowledge security.

7.6.3 Supervisory Board

The Supervisory Board held six plenary meetings in 2023, in the presence of the members of the Executive Board on both internal matters and external developments. The Supervisory Board met informally on one separate occasion to reflect on the course of operations.

As part of the introductions to the organization, the Supervisory Board was a guest of the CWI, an NWO institute, in April, and in October the Board had a brief tour of the ARCNL partnership at the Science Park in Amsterdam. The Supervisory Board held appraisal interviews with the individual board members in April, June and November. The attendance of the president of the Supervisory Board scheduled for the December general meeting between the director and the Central Works Council was postponed to February 2024.

In preparation for the Supervisory Board meetings, the audit committee met four times with the portfolio holder for operations and finances of the board. These meetings focused on internal control and risk management, the operations and the continuity section. Both the audit committee and the Supervisory Board discussed findings on the 2022 financial statements, the 2023 management letter and the 2023 audit plan with the external auditors.

The 2024 annual plan and 2023 annual report were discussed with the head of the Internal Audit department. The audit committee further advised on the separate financial statements, NWO-I financial statements, discovered phantom invoices and the operation of the fraud protocol, granted project assignments to the auditors, reports from the whistleblower confidential advisers and updates concerning the state of cybersecurity at both the NWO-D and NWO-I.

With regard to the intended governance change at NWO-I, the conclusion was reached with the Supervisory Board to first consider whether the intended improvements could also be realized within the existing legal and other frameworks.

The Supervisory Board was informed about the long-standing collaboration with the NWO-I (and formerly FOM) concerning the large-scale top research facility HFML-FELIX in Nijmegen and the administrative consultations with the university on its expansion to become a national partnership.

Table: Supervisory Board composition on December 31, 2023

Supervisory Board composition on December 31, 2023	Term of office until**
Drs. Dirk Jan van den Berg (president)	04-01-2025
Ing. Amandus Lundqvist (vice president)	02-28-2027
Dr. Adriana Esmeijer	02-28-2027
Drs. Willem te Beest	02-28-2027
Vacancy	vacant
Prof. dr. Simone Buitendijk	01-01-2024

Lundqvist was appointed on the recommendation of the Ministry of Economic Affairs. Lundqvist, Esmeijer and Te Beest were appointed for a second term of up to five years. To maintain continuity on the Supervisory Board, these three members will not be stepping down at the same time. Since January 1, 2024, the vacancy has been filled by Professor dr. Dymph van den Boom and will be for the next five years.

7.7 Organizational development

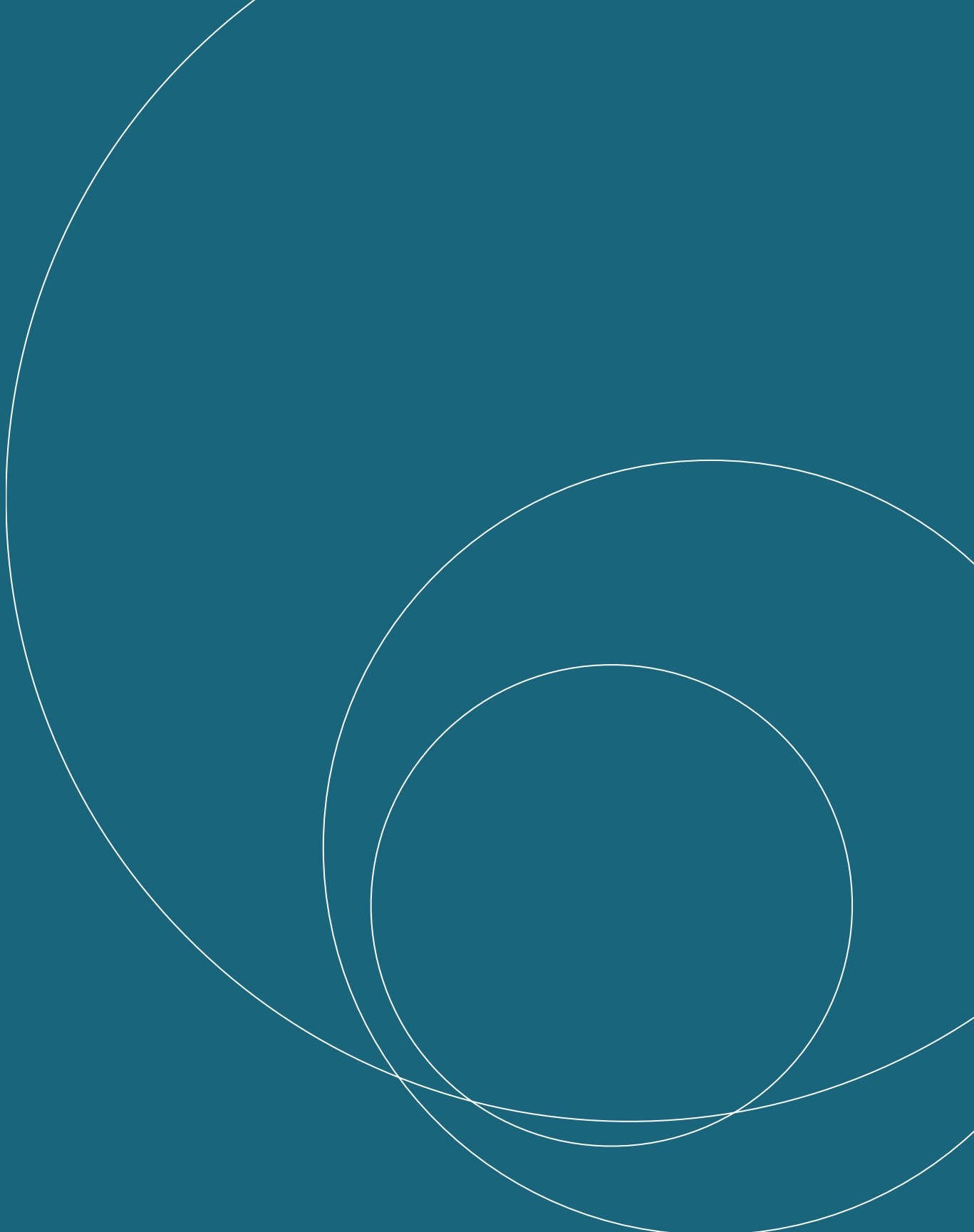
7.7.1 Moving toward a stronger institute organization

The NWO's institutes were combined into one foundation in 2017. Since then, the institutes and the Office have been working on a common understanding of the organization's identity and strategy, the positioning of the institutes in the knowledge field in the Netherlands, and a method of developing joint policy.

Major steps had already been taken prior to 2023 to strengthen the synergy between the institutes and Office as well as the effectiveness of the organization, among other things through a total package of measures to make the organization financially sound. The focus in 2022 was on the further development of operations. This process stopped in 2023. This also eventually led to the temporary governance model introduced in the second half of 2023.

The main idea behind the temporary governance model is that governing together ensures that changes in the organization are achieved together. The model contributes to shared ownership and distributed responsibility for implementation. Specifically, this means that business management tasks are distributed and delegated where they can best be carried out.

The temporary governance model has helped to have more focus in the 2024 annual plans on how best to shape the move toward a stronger institutes' organization. The organization as whole supports the annual plans drawn up by all the organizational units. By doing so, they provide sufficient perspective and concreteness to start making substantial strides in the development of the institutes' organization in 2024.



1 General accounting principles

General

The Foundation for Dutch Scientific Research Institutes (NWO-I) is based in Utrecht. The organization is registered with the Chamber of Commerce under number 41150068. According to its articles, NWO-I's objects are:

- a. promote excellence in science and the quality of scientific research in general;
- b. conduct scientific research of a high standard in specific fields;
- c. initiate and encourage new developments in scientific research;
- d. disseminate the knowledge derived from scientific research, initiated, conducted and supported by NWO-I, for the betterment of society;
- e. to manage the institutes;
- f. and do everything that is directly or indirectly related to the above or may be conducive to it.

Standards applied

The financial statements have been prepared in accordance with the Educational Institutions Reporting Regulations (DASB660). These regulations stipulate that the provisions of Title 9, Book 2 of the Dutch Civil Code and the Annual Reporting Guidelines apply, subject to the exceptions indicated therein. The financial statements were prepared on June 20, 2024.

Principles for the valuation of assets and liabilities and the determination of the result

General accounting principles

These financial statements have been prepared under the going concern assumption. An asset is recognized in the balance sheet when it is probable that the organization will receive future economic benefits, the value of which can be measured reliably. A liability is recognized in the balance sheet when it is probable that settlement of the liability will be accompanied by an outflow of resources embodying economic benefits, the size of which can be measured reliably.

Income is recognized in the statement of income and expenditure when an increase in economic potential, associated with an increase in an asset or a decrease in a liability, has occurred, the size of which can be measured reliably. Expenses are recognized when a decrease in the economic potential related to a decrease in an asset or increase in a liability has taken place, the size of which can be measured reliably.

If a transaction results in virtually all or all future economic benefits and all or virtually all risks relating to an asset or liability being transferred to a third party, the asset or the liability is no longer reported in the balance sheet. Assets and liabilities are also no longer reported in the balance sheet from the moment at which the conditions of the likelihood of the future economic benefits and/or the reliability of the determination of the value are no longer satisfied.

Income and expenditure are allocated to the period to which they relate.

The financial statements are presented in euros, the organization's functional currency. All financial information is indicated in thousands of euros unless otherwise stated. Negative values in the tables are shown in brackets ().

Scope of consolidation

The following legal entities belong to the scope of consolidation (DASB 217.301) of NWO-I:

- AstroTec Holding B.V. (100%) in Dwingeloo
- CWI Incubator B.V. (100%) in Amsterdam
- NIOZ Holding B.V. (100%) in Den Hoorn, which also includes NIOZ Haven, 100% owned by NIOZ Holding
- Particle Physics Inside Products B.V. (P2IP) in Amsterdam (100%)
- Mathematics and Computer Science Conferences Foundation in Amsterdam (>50%).

Based on Section 407(1), Book 2, Title 9 of the Dutch Civil Code, the aforementioned organizations are not consolidated and the exemption for consolidation on the grounds that the effect on NWO-I's solvency and liquidity is negligible is therefore applied. The participating interests are accounted for under financial fixed assets in the financial statements.

Other related parties

The other related parties are parties with which NWO-I is permanently affiliated and which satisfy the definition of an affiliated party:

Table: Other related parties

	Nature of the affiliation
NIOZ Haven B.V.	100% owned by NIOZ holding company
Foundation for the Management of the Watergraafsmeer Scientific Center	Participation on board
Swat.holding B.V.	25% ownership of the CWI Incubator B.V.

The Foundation for Dutch Scientific Research Institutes (NWO-I) is a research organization under the Dutch Research Council (NWO). The consolidated financial statements are published on nwo.nl.

ARCNL

NWO-I is a participant in the Advanced Research Center for Nanolithography (ARCNL) collaboration. Because the NWO-I appoints one of the four members of ARCNL's Governing Board, ARCNL is consolidated for 25% of ARCNL's value in NWO-I's financial statements (proportional consolidation). In the financial statements, the inter-entity debts, receivables and transactions have been eliminated in proportion to the share in ARCNL.

Use of estimates

The preparation of the financial statements requires the management to form opinions and make estimates and assumptions that affect the application of policies and the reported values of assets and liabilities, income and expenditure. The actual results may deviate from these estimates. The estimates and underlying assumptions are subject to continuous reassessment. Revisions to estimates are recognized in the period in which the estimate is revised and in any future periods affected.

Foreign currency accounting principles

A foreign currency transaction is initially measured at the exchange rate on the transaction date.

Financial instruments

Financial instruments include both primary financial instruments, such as receivables, securities and debts, and derivative financial instruments (such as derivatives).

For the accounting principles for the primary financial instruments, please refer to the treatment per balance sheet item.

Loans granted and other receivables

Loans granted and other receivables are initially recognized at fair value plus any transaction costs and subsequently at amortized cost using the effective interest method. Income and expenses are recognized in the statement of income and expenditure as soon as the loans granted and other receivables are transferred to a third party or become impaired.

Other financial liabilities

Other financial liabilities are measured on their initial recognition at fair value less transaction costs and are valued subsequently at amortized cost using the effective interest method. The repayment obligations t+1 of the long-term liabilities are included in current liabilities.

Determination of fair value

The fair value of a financial instrument is the amount for which an asset could be traded or a liability settled between knowledgeable and willing parties in an arm's-length transaction. A number of notes in the financial reporting require the determination of the fair value of financial instruments. The fair value is determined in those cases by discounting the expected cash flows at a rate equal to the prevailing risk-free market interest rate for the remaining term plus credit and liquidity surcharges.

Netting

An asset and a liability item are netted in the financial statements only if and to the extent that:

- a sound legal instrument is available to settle the asset and the liability item netted and simultaneously; and
- there is a firm intention to settle the netted amount as such or both items simultaneously.

Price risk

NWO-I undertakes few commercial activities, so there is not much exposure to price risk.

Credit risk

Accounts receivable include receivables from grantors and receivables from other debtors. The credit risk on these receivables is limited.

Interest rate risk and exchange rate risk

NWO-I incurs only limited interest rate risk on its debt, as cash flows are largely independent of market interest rates. The liquid assets are held at the government. NWO-I runs relatively little exchange rate risk. This is because virtually all transactions take place in euros. To manage interim interest fluctuations, the NWO-I policy is not to use derivative financial instruments.

Liquidity risk

NWO-I uses treasury rules to manage liquidity risks. The fundamental principle of the treasury rules is that the NWO-I monies may not be invested or used as collateral. The liquid assets are held at the Ministry of Finance.

Present value

The discount rate at which to discount is the government bond yield (DASB 252).

NWO-I is bound to treasury banking with the Ministry of Finance. In other words, the liquid market for corporate bonds is not available for NWO-I. For the discount rate, NWO-I uses the interest rates for government bonds, as listed on the website of the Ministry of Finance, Dutch State treasury Agency.

The term of the personnel provisions at NWO-I is less than 10 years, except for the provision for long-service awards. All provisions are presented at present value. The effect of the present value calculation is reflected in the statement of movements in the provisions and is accounted for under financial income and expenditure.

The term of the 'Other provisions' at NWO-I is fixed at 10 years; this provision is also calculated at present value and the effect is accounted for under financial income and expenditure.

The NWO-I has made a calculation to present value both for the Provisions and for the off-balance sheet liabilities and off-balance sheet assets. Based on this calculation, it was concluded that the effect of the recalculation is material, and an adjustment of the positions was implemented accordingly. This has been made visible for the various items to which this applies.

2 Balance sheet valuation accounting principles

Intangible fixed assets

An intangible fixed asset is included in the balance sheet if:

- it is probable that future economic benefits associated with an asset will accrue to the group; and
- the expenses of the asset can be reliably measured.

Expenditure on an intangible fixed asset that does not meet the conditions for capitalization is recognized directly in the statement of income and expenditure.

The intangible fixed assets are valued at acquisition or manufacturing price, less accumulated amortization and, if applicable, cumulative impairments. The costs of development are capitalized if the conditions stipulated for technical, commercial and financial feasibility are fulfilled. Another legal reserve is maintained in the amount of the balance sheet value.

Intangible fixed assets are amortized systematically on the basis of their estimated useful life with a maximum of twenty years using the straight-line method. The useful life and amortization method are reassessed at the end of each fiscal year.

Depreciation rates:

- infrastructural costs of research and development: 15.38% to 25%
- other intangible fixed assets 25%

Tangible fixed assets

Tangible fixed assets intended for grant projects and projects with companies are valued at cost (acquisition or manufacturing price) less accumulated depreciation, if applicable accumulated impairments and, if applicable, taking into account a residual value.

Tangible fixed assets not intended for own use are not depreciated and are charged directly to the project in question in the year of acquisition.

Contributions received from grantors for the purpose of financing tangible fixed assets are accounted for as investment grants received in advance under the long-term or current liabilities, respectively. The investment grants are realized according to the depreciation of the relevant tangible fixed assets. The release of the investment grants is deducted as movement in investment grants from depreciation expense in the statement of income and expenditure.

The depreciation is calculated as a percentage of the acquisition price according to the straight-line method. The rate is based on the expected useful life of the asset. Land and tangible fixed assets under construction and prepayments on tangible fixed assets are not depreciated. Depreciation takes place from the moment the asset is put into use. If the expectation regarding the depreciation method, useful life and/or residual value undergoes changes over time, they are accounted for as a change in estimate.

The following depreciation rates are applied:

- **Buildings:** 2.5% - 25% per year
- **Land:** no depreciation
- **Inventory and equipment:**
 - Installations and equipment: 5% to 25% per year, depending on useful economic life
 - Office furniture: 10% to 25% per year
 - Computer equipment: 20% to 25% per year
- **Other tangible fixed assets**
 - Vessels: 3% to 10% per year
 - Means of transport: 20% per year
 - Other fixed tangible assets: 10% to 25% per year

The depreciation method is used with the application of the component method. For the buildings, the components can be divided into shell, elevators, floors, roofing and other. Depreciation periods are determined based on the estimated time of replacement maintenance.

Major maintenance costs are included in the cost as soon as these expenses are incurred and the capitalization criteria are met. The carrying amount of the components to be replaced is then considered disinvested and charged to the statement of income and expenditure as a lump sum. All other maintenance expenses, insofar as they constitute 'minor' maintenance, are recognized directly in the statement of income and expenditure.

Financial fixed assets

Participating interests where the organization can exercise significant influence on the business and financial policy are measured according to the equity method on the basis of their net asset value. Participating interests with a negative asset value are stated at zero. If the NWO-I guarantees the debts of the participating interest in question, a provision is created, provided there is an expected outflow of resources.

This provision is formed primarily at the expense of the receivables from this participating interest and, for the remainder, under the provisions, for the amount of the share in the losses suffered by the participating interest, or for the expected payments by the organization for this participating interest.

Participating interests in which no significant influence can be exercised are valued at cost or permanently lower value in use.

The NWO-I provides interest-bearing monetary loans to startup companies of former employees as part of the commercialization of research results. These so-called 'starter loans' are carried on the balance sheet at amortized cost. For each loan, an estimate is made of the risk that the loan cannot be repaid. In that case, a provision for bad debts is made.

Impairments

Fixed assets are reviewed for impairment whenever changes or circumstances arise that suggest that the carrying amount of an asset may not be recoverable.

Disposal of fixed assets

Assets available for sale are measured at the lower of their carrying amount and net realizable value.

Projects in progress

Projects in progress are determined based on the 'percentage of completion' method, or PoC method. The balance of projects in progress is valued at the directly attributed cost of labor and materials with a surcharge for indirect costs on the personnel expenses and less the provision for expected losses. Invoiced instalments/advances received are deducted from the balance of projects in progress.

Proceeds from projects and project costs from the contract in progress are recognized as net revenue and expenses on the income statement in proportion to the work performed as of the balance sheet date, if the outcome of a contract in progress can be reliably estimated (using the percentage-of-completion method). The percentage of completeness is based on the project costs incurred in relation to the estimated total project costs.

If it is probable that total project costs will exceed total proceeds from projects, a provision for a loss-making contract is established and the expected losses are recognized immediately on the income statement.

Grant projects and third-party projects

The NWO-I is involved in many complex grant projects and third-party projects. Projects with a positive balance are included under receivables. Projects with a balance of amounts received in advance are included in current liabilities.

Other current receivables

Current receivables are initially recognized at fair value plus the directly attributable transaction costs and subsequently measured at amortized cost less any necessary provision for bad debts.

Liquid assets

Liquid assets means cash, balances in bank accounts, bills of exchange and checks. Liquid assets are stated at face value. They are at the organization's free disposal unless otherwise noted. Liquid assets not available or not expected to be available to the group for more than twelve months are classified as financial fixed assets.

Equity

Presented under equity are the general reserve, earmarked reserves, earmarked funds and other legal reserves.

The general reserve consists of the reserves at the free disposal of NWO-I. If a more limited spending possibility has been imposed by the Foundation Board, the part of the equity thus segregated is designated as an earmarked reserve. All reserves of the institutes and Office are earmarked reserves. If the more limited spending possibility has been imposed by third parties, then this portion is designated as an earmarked fund. The movement statement shows all earmarked funds separately. The other legal reserve was formed pursuant to DASB 240.229. Capitalized costs of self-developed software are included in capitalized development costs for which another legal reserve must be created.

Provisions

Unless otherwise stated, all provisions are measured at the present value of the expenditures expected to be necessary to settle the liabilities and losses. The discount rate used is the interest rate as listed on the Ministry of Finance's website at the end of December 2023 (indicatively, 1 year 3.00%, 5 years 2.21%, 10 years 2.39%).

A provision is recognized in the balance sheet when there is:

- a legally enforceable or constructive obligation resulting from a past event; and
- of which a reliable estimate can be made; and
- it is likely that settlement of that obligation will require an outflow of funds.

If it is probable that any of the expenses expected to be necessarily incurred to settle the provision will be reimbursed by a third party, wholly or in part, the reimbursement is presented as a separate asset. Additions to the provisions are made at the expense of the statement of income and expenditure. Expenditures are made directly from the provision.

An indication of how it is valued is given for each provision; therefore it is presented either at nominal value if the difference between present and nominal value (the effect of time value) can be considered immaterial or at present value with a discount rate. To calculate the discount rate, NWO-I uses the interest rates for government bonds, as listed on the website of the Ministry of Finance, Dutch State Treasury Agency.

Provision for social policy, reorganizations and other legal status

This relates to the expenses of the 2015-2017 Social Plan for the 2015 reorganization at NIOZ. The provision was formed to cover future salary expenses of redundant employees. The calculation is based on the maximum benefit period of the employee in question and the expected transition payments or other charges. This provision is presented at nominal value since the difference between present and nominal value (the effect of time value) can be considered immaterial.

Provision for long-service awards

This provision was established for liabilities arising from future long-service awards of personnel employed by the NWO-I.

The assumptions used for the provision are:

- calculation rule: benefit payable * accrual rate, plus a surcharge for salary increases and adjusted for the average likelihood of the NWO-I employees staying on;
- changes in the workforce are taken into account; a correction factor is applied to the calculated amount in connection with possible departures. This correction factor is based on 4.3% for 2023, resulting in a likelihood of staying on of 95.7%.
- To calculate the discount rate, NWO-I uses the interest rates for government bonds, as listed on the website of the Ministry of Finance, Dutch State Treasury Agency.

Unemployment contributions

NWO-I is self-insurer for the Unemployment Insurance Act (WW) and, in addition to the regular WW, has negotiated an Enhanced Scheme (BWOI) with the unions. If an employee of NWO-I becomes unemployed, the benefit is fully at the expense of NWO-I. The provision for unemployment benefits is based on the obligation to former employees known at December 31, 2023. These relate to benefit expenses payable during the maximum term of the benefit period at nominal value. This provision is presented at present value. The effect of the time value has been deducted from personnel expenses.

Chronically ill employees

If an employee is ill, the NWO-I is obliged to continue paying the employee 100% of the salary during the first year and 70% during the second, or 85% if the employee is sufficiently rehabilitated. Pursuant to DASB 271, a provision has been made for the future wage costs of employees who are ill as of December 31 of the reporting year and for whom it is virtually certain that they will no longer or not fully return to work.

The liability is calculated as the present value of future salary payments and transition payments. The effect of the time value has been deducted from personnel expenses.

Transition payment under the Work and Security Act

NWO-I employees who, after temporary employment, do not leave voluntarily are entitled to a transition payment in accordance with the Work and Security Act and the supplementary Balanced Labour Market Act.

As a result of amended legislation (the Balanced Labour Market Act), as of January 1, 2020, a provision must be created for all temporary employees, regardless of the period of their employment. Until January 1, 2020, a minimum employment period of two years applied.

The starting points used to calculate the size of the provision are:

- calculation rule for each temporary employee: benefit to be paid * accrual percentage (what percentage of the temporary employment has been accrued at the reference date), increased with a surcharge of the legally determined percentage of 7% due to the employer's contribution under the health insurance act and increased with an assumed or actual salary increase; the provision is discounted taking into account the applicable discount rate. The effect of the time value has been deducted from personnel expenses.
- no correction factor is applied for earlier termination of temporary contracts because this is rare.

Generation Plan scheme

NWO-I employees on an employment contract who are within five years of the state pension age have the option of participating in the Generation Plan scheme. Pursuant to this regulation, this employee shall be granted extraordinary leave with partial retention of pay. The scheme came into effect for the first time with the 2018-2019 CLA for Research Institutions, and the scheme was renewed in the current CLA.

The provision was created to cover the salary costs of this scheme. This provision for future payments to current participants of the Generation Plan for Research Institutions is based on a calculation of the rights accrued by employees up to the end of the year. This exclusively concerns the rights of employees who are actually using the scheme as of the balance sheet date. This provision is presented at present value. The effect of the time value has been deducted from the personnel expenses.

Provision for remediation of radioactive materials PiMu

The basement of the PiMu building, located on a lot at the Amsterdam Science Park that NWO-I holds in leasehold until the end of 2024, contains materials that have become radioactive due to accelerator activities in the 1980s. NWO-I has an obligation to ensure proper disposal of the radioactive materials prior to termination of the leasehold. The cost of removing these radioactive materials will be equally shared between NWO-I and landowner NWO. For these removal costs, a provision was made in 2016 by NWO-I for the full obligation, and a claim on landowner NWO was subsequently recognized separately.

In setting up the provision, NWO-I used both internal and external specialists to estimate these costs.

This was based on the following principles:

- The estimate includes a detailed breakdown between the costs of demolishing PiMu and the portion explicitly related to the removal and disposal of radioactive material;
- In 2016, 20-centimeter-thick concrete was classified as active. Further analysis of measurement and experience from other radiological removal projects teaches that for this situation about 50 cm should be used;
- The above point means not only higher demolition costs, but also much higher dumping costs at Covra;
- A correction has been made to the size of the dam wall construction.
- Increased construction/demolition costs due to inflation and price increases.

This provision is presented at present value. The effect of time value is presented as financial income and expenditure.

Investment grants received in advance (long term)

NWO-I received investment grants and investment contributions for the new construction and/or renovations of the following buildings: AMOLF, ASTRON, CWI, DIFFER, Nikhef, NIOZ and SRON.

For these grants and contributions, an annual release in proportion to the depreciation is recognized in favor of the statement of income and expenditure. The release is deducted from the depreciation item. The portion that will be released in the year under review is presented under current liabilities, investment grants and contributions received in advance (current).

Current liabilities and accrued liabilities

Liabilities with a remaining maturity of up to one year on the balance sheet date are designated as current liabilities. Liabilities are not netted with assets.

Accrued liabilities are amounts received in advance (including earmarked contributions) and amounts yet to be paid regarding expenses allocated to an expired period.

For supplementary grants made available for multiple years, the unspent portion is held on the balance sheet as an accrued liability. Release to the credit of the statement of income and expenditure then takes place annually pro rata to the expenditure. With this method of accounting, amounts received in advance are allocated to successive periods systematically and proportionate to time.

Financial assets and liabilities no longer included in the balance sheet

A financial instrument is no longer recognized in the balance sheet if a transaction results in all or virtually all rights to economic benefits and all or virtually all risks relating to a position being transferred to a third party.

In accordance with the requirements of DASB 252, off-balance sheet liabilities and off-balance sheet assets are also valued at present value.



3 Accounting principles for the statement of income and expenditure

Determination of income

Income and expenditure are allocated to the fiscal year to which they relate. Gains are recognized only insofar as they have been realized on the balance sheet date. Losses and risks originating before the end of the year under review are taken into account if they have become known before the adoption of the financial statements.

Income

Revenue from the provision of services is recognized proportionally to the services provided, based on the services performed before the balance sheet date relative to the total services to be provided.

Government grants from Ministry of Education, Culture and Science via NWO

Government grants from Ministry of Education, Culture and Science via NWO are recognized as income in the statement of income and expenditure in the fiscal year to which the allocation relates.

Grant projects

Grants are recognized as income in the statement of income and expenditure in the fiscal year in which the subsidized costs were incurred. If there is an own contribution to a subsidized project, the own contribution is spread over the term (matching).

Projects in progress

For projects in progress, income is recognized based on the 'percentage of completion' method, i.e. the PoC method. Under this method, income is recognized based on progress. Progress is determined based on the actual estimated progress or the expenses. The balance of projects in progress is valued at the directly attributed cost of labor and materials with a surcharge for indirect costs of personnel expenses. Invoiced instalments/advances received are deducted from the balance of projects in progress.

Profit recognition of projects financed by third parties is determined in accordance with the PoC method.

Expected losses are recognized in the statement of income and expenditure as soon as they are known. A predefined own contribution to a project is not regarded as a loss on a current project, as a result of which no additional loss provision is created.

If the result of a current project cannot be reliably estimated, revenue is recognized in the statement of income and expenditure only up to the amount of the project costs incurred that are likely to be recoverable ('percentage of completion with zero profit' method).

Income in kind

Income in kind is stated at fair value (insofar as this can be reliably determined and is material) and recognized in the statement of income and expenditure.

Expenses

The expenses are determined in accordance with the aforementioned accounting principles and allocated to the fiscal year to which they relate. Foreseeable liabilities and possible losses originating before the end of the fiscal year are taken into account if they were known before the preparation of the financial statements and if the conditions for including provisions are satisfied.

Periodic interest charges and similar expenses are charged to the year for which they are owed.

Tenure-track positions

The commitment accounting system is applied if grants are involved. That is, when the grant is allocated, the entire grant is recognized directly as an expense (regardless of when payments are made). This applies to, for example, personnel grants from NWO-I for a university tenure-track position.

Personnel expenses

Salaries and social charges (including pension contributions) are recognized in the statement of income and expenditure on the basis of the employment conditions, insofar as they are payable to employees.

NWO-I is affiliated with the Stichting Pensioenfonds ABP. ABP is a sectoral pension fund with a defined benefit pension plan (multi-employer defined benefit scheme). Given that the pension plan is a multi-employer plan, the pension plan has been accounted for as a defined contribution plan.

The premise is that the pension expense to be recognized in the reporting period is equal to the pension contributions payable to the pension fund for that period. A liability is recognized for any pension contributions payable that remain unsettled on the balance sheet date. If the pension contribution already paid by the balance sheet date exceeds the pension contribution payable, an asset is recognized under prepayments and accrued income if the fund will refund this amount or offset it against future payable pension contribution.

A provision is also recognized at the balance sheet date for existing additional liabilities to the fund and employees if it is probable that an outflow of funds will be required to settle those liabilities and the amount of the liabilities can be reliably estimated. Whether or not additional liabilities exist is assessed on the basis of the administration agreement with the fund, the pension agreement with the employees and other (explicit or implicit) commitments to employees. The provision is measured at the best estimate of the present value of the amounts required to settle the liabilities on the balance sheet date.

NWO-I recognizes a liability if the organization has demonstrably made an unconditional commitment to pay a severance or transition payment. If the dismissal is part of a reorganization, NWO-I recognizes the cost of a severance or transition payment in a provision for reorganization costs.

Financial income and expenditure

Interest income is recognized on a time-proportionate basis in the statement of income and expenditure. This takes into account the effective interest rate of the asset concerned, if the amount is determinable and likely to be received.

Periodic interest charges and similar expenses are charged to the year for which they are owed.

Result from participating interests

The share in the results of investee companies includes the group's share in the results of these participating interests. Gains and losses on transactions that involved the transfer of assets and liabilities between the group and the non-consolidated participating interests, or between its participating interests themselves, are not recognized if they can be deemed unrealized.

The results of participating interests acquired or disposed of during the fiscal year are recognized in the result of NWO-I from the moment of acquisition and until the moment of disposal, respectively.

Cash flow statement

The cash flow statement has been prepared in accordance with the indirect method.

The cash in the cash flow statement consists of liquid assets and short-term securities. The securities can be considered highly liquid investments. Short-term highly liquid investments can be converted into cash without restrictions and without material risk of impairment as a result of the transaction.

Exchange rate differences on cash are shown separately in the cash flow statement.

Income and expenditure arising from interest, dividends received and tax on profits are included in cash flow from operating activities. Dividends paid are recognized under 'Cash flow from financing activities'.

The acquisition price of acquired group companies and the sale price of sold group companies are included in cash flow from investment activities, to the extent that payment in cash has been made. Cash present in these group companies is deducted from the purchase price or sale price respectively.

Transactions involving no exchange of cash are not included in the cash flow statement.

4 Balance sheet on December 31, 2023 after result appropriation

Table: Balance sheet total (amounts x €1,000)

	12-31-2023	Budgeted for 2023	12-31-2022
1. Assets			
1.1 Fixed assets			
1.1.1 Intangible fixed assets	2,594	3,256	3,243
1.1.2 Tangible fixed assets	214,079	206,297	184,636
1.1.3 Financial fixed assets	2,418	1,515	2,332
	219,091	211,068	190,211
1.2 Current assets			
1.2.2 Receivables	52,788	26,238	43,235
1.2.4 Liquid assets	79,801	54,566	81,810
	132,590	80,804	125,045
Total assets	351,681	291,872	315,256
2. Liabilities			
2.1 Equity	122,699	97,848	115,558
2.2 Provisions	9,750	10,085	9,472
2.3 Long-term liabilities	68,324	93,665	74,235
2.4 Current liabilities	150,908	90,274	115,991
Total liabilities	351,681	291,872	315,256

5 Statement of income and expenditure after result appropriation

Table: Budgeted and realized income and expenditure

	2023	Budgeted for 2023	2022
	x €1,000	x €1,000	x €1,000
Income			
3.1 Government grants	146,784	132,091	154,683
3.2 Other government contributions and grants	386	100	682
3.4 Income from work commissioned by third parties	71,014	72,904	73,226
3.5 Other income	7,141	6,007	14,403
Total income	225,325	211,103	242,994
Expenses			
4.1 Personnel expenses	148,064	142,493	139,643
4.2 Depreciation	9,269	10,757	8,499
4.3 Housing expenses	15,154	16,538	11,876
4.4 Other expenses	47,648	53,287	61,064
Total expenses	220,137	223,076	221,083
Balance of income and expenditure	5,188	-11,973	21,910
Realized revaluation	-	-	-
Financial income and expenditure	1,807	-	1,433
Result	6,995	-11,973	23,343
Taxes	-	-	-
Result from participating interests	145	-	372
Result after taxes	7,140	-11,973	23,715
Third-party share in result	-	-	-
Total net result	7,140	-11,973	23,715

6 Cash flow statement

Table: Cash flow statement

	<u>12-31-2023</u>	<u>12-31-2022</u>
	x €1,000	x €1,000
Balance of income and expenditure	5,188	21,910
Adjustments for:		
Depreciation/amortization	15,354	14,865
Changes in provisions	279	-826
Movements in present value calculation	-786	-
Change in working capital		
Receivables (-/-)	-9,554	11,358
Current liabilities	25,534	306
Total cash flow from operations	36,015	47,613
Interest received	2,644	1,981
Interest paid (-/-)	-50	-549
	2,593	1,433
Total cash flow from operating activities	38,608	49,046

Table: Cash flow statement

Continued from previous page	12-31-2023	12-31-2022
	x €1,000	x €1,000
Cash flow from investment activities		
Investments in tangible fixed assets (-/-)	-41,490	-28,654
Disinvestments in tangible fixed assets	18	16
Investments in intangible fixed assets (-/-)	0	-23
Disinvestments in intangible fixed assets	0	123
Investments in participating interests and/or joint ventures (-/-)		-
Investment grants and contributions received in advance	670	863
Movements in loans (-/-)		-
Other investments in financial fixed assets (-/-)	185	39
Total cash flow from investment activities	-40,617	-27,636
Cash flow from financing activities		
Newly taken loans	-	-
Repayments on long-term liabilities (-/-)	-	-
Total cash flow from financing activities	-	-
Other balance sheet movements	-	-
Movement in liquid assets	-2,009	21,410
Balance at start of fiscal year	81,810	60,401
Balance at end of fiscal year	79,801	81,810
Movement in liquid assets	-2,009	21,409

7 Notes to the balance sheet

ASSETS

Table: Intangible fixed assets

	Purchase price	Cumulative depreciation	Carrying amount	Investments	Disinvestments	Depreciation/ amortization	Other decreases in value +/-	Purchase price	Cumulative depreciation	Carrying amount
	01-01- 2023	01-01- 2023	01-01- 2023	2023	2023	2023	2023	12-31- 2023	12-31- 2023	12-31- 2023
	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000
1.1.1 Intangible fixed assets										
1.1.1.1 Costs of research and development	4,183	940	3,243	-	-	649	-	4,183	1,589	2,594
1.1.1.2 Other intangible fixed assets	1,463	1,463	-	-	-	-	-	1,463	1,463	-
1.1.1.3 Tangible fixed operating assets under construction and prepayments on intangible fixed assets	-	-	-	-	-	-	-	-	-	-
Intangible fixed assets	5,646	2,403	3,243	-	-	649	-	5,646	3,052	2,594

The intangible fixed assets are the capitalized costs of the acquisition of software, website, promotional films and a new finance system in 2021.

The depreciation in research and development costs (€649k) relates to the new financial system.

Table: Tangible fixed assets

	Purchase price	Cumulative depreciation	Carrying amount	Investments	Commissioning	Disinvestments	Depreciation/ amortization	Other decreases in value +/-	Purchase price	Cumulative depreciation	Carrying amount
	01-01- 2023	01-01- 2023	01-01- 2023	2023	2023	2023	2023	2023	12-31- 2023	12-31- 2023	12-31- 2023
	X €1,000	X €1,000	X €1,000	X €1,000	X €1,000	X €1,000	X €1,000	X €1,000	X €1,000	X €1,000	X €1,000
1.1.2 Tangible fixed assets											
1.1.2.1 Buildings	212,987	94,636	118,351	10,077	14,387	-	8,233	-	237,451	102,869	134,582
1.1.2.2 Land	3,053	-	3,053	-	-0	-	-	-	3,053	-	3,053
1.1.2.3.1 Inventory and equipment	81,780	58,532	23,248	3,957	13,068	-5	5,946	45	98,800	64,523	34,277
1.1.2.3.2 Other tangible fixed assets	13,138	8,859	4,279	40	-	-	526	-	13,178	9,385	3,793
1.1.2.3.3 Tangible fixed operating assets under construction and prepayments on tangible fixed assets	35,705	-	35,705	30,125	-27,455	-	-	-	38,375	-	38,375
Tangible fixed assets	346,663	162,027	184,636	44,199	-0	-5	14,705	45	390,856	176,777	214,079

At year-end 2023, the tangible fixed assets amounted to €214,079k, therefore increasing by €29,443k.

Investment in tangible fixed assets in 2023 amounted to €44,199k (2022: €29,289k). The Nikhef building was occupied in early November 2023, after the renovation, which will continue through 2024. This investment for the renovation amounted to €35,790k through 2023, of which €9,957k relates to investments in 2023 and €25,833k from before 2023, which at the end of 2022 were included under tangible fixed assets under construction and prepayments on tangible fixed assets. This investment relates to buildings, inventory and equipment.

Other investments relate to investments in buildings including for condition-based maintenance, and annual investments in inventory, equipment and computers.

Tangible fixed operating assets under construction and prepayments on tangible fixed assets at the end of 2023 was €38,375k. Of this, €2,876 relates to sustainability and building modifications including for condition-based maintenance at various institutes and €35,046k to the fleet replacement at NIOZ (2022: €8,096k).

Land

Ownership

NWO-I owns the following lots of land:

- **Landsdiep 4 and Zuider Haaks 5 and 7 in Den Hoorn (Texel, section P, number 704)**
NIOZ's main building is on this lot.
- **Korringaweg 7 in Yerseke (Reimerswaal, section Y, number 869 (previously 407))**
NIOZ's branch office is on this lot.
- **Oude Torenstraat 39 in Yerseke, (Yerseke, section G, number 6808)**
The guest accommodation of NIOZ is on this lot.
- **Veenschapsweg 10 in Schoonebeek (Schoonebeek, section C, number 5183)**
The LOFAR station RS208 is on this lot.

Leasehold

NWO-I is leaseholder of the following lots:

- **Science Park 104 in Amsterdam (Watergraafsmeer, section B number 5192 (created from 5057))**
This plot is home to AMOLF. The leasehold ends on November 30, 2060.
- **Science Park 105 and 107 in Amsterdam (Watergraafsmeer, section B, numbers 5054 and 5055)**
Nikhef and the University of Amsterdam are on this lot. The leasehold ends on November 30, 2060.
- **Science Park 108 in Amsterdam (Watergraafsmeer, section B, number 5187 (created from 5106))**
The PiMu laboratory building, which has been used by Nikhef since June 1, 2019, is on this lot. The leasehold ends on December 31, 2024.
- **Science Park 123 in Amsterdam (Watergraafsmeer, section B, number 4046)**
CWI is on this lot. The leasehold ends on November 30, 2060.
- **Niels Bohrweg 4 in Leiden (Leiden, section X number 4620)**
The new building for SRON was built on this lot. SRON's completion and relocation took place in mid-2021. The leasehold is perpetual.
- **Oude Hoogeveensedijk 4 in Dwingeloo (Dwingeloo, section E, numbers 1560 and 1602)**
ASTRON's main building is on this lot. The leasehold ends on January 31, 2042.

- **Schattenberg 1 and 2 in Zwiggelte (Westerbork, section A numbers 2957 and 3131)**
Twelve of ASTRON's parabolic antennas, the Westerbork Synthesis Radio Telescope (WSRT), 2 of which are mobile, are on these plots. There is also a service building and some other structures (including a shed, dwelling house and garage boxes). The leasehold ends for both lots on January 31, 2026.
- **Halkenbroeken in Aa en Hunze (Rolde, section T, number 1661)**
Two more mobile radio telescopes are located at number 1661, about 1.5 kilometers eastward from the 12 antennas in Zwiggelte. The leasehold ends on January 31, 2026.
- **De Zaaie 20 in Eindhoven (Tongelre, section D, number 1197 (partial)).**
DIFFER is on this lot. The leasehold ends on September 11, 2063.

The leaseholds terminated at the end of 2023 include:

- **Science Park in Amsterdam (Watergraafsmeer, section B, number 5188 (created from 5106))**
There is no building on this lot. The leasehold ended on December 31, 2023.
- **Science Park in Amsterdam (Watergraafsmeer, section B, number 5189 (created from 4876))**
There is no building on this lot. The leasehold ended on December 31, 2023.

NIOZ Haven's land is leased from the Municipality of Texel. Consequently, NIOZ Haven is a subsidiary of NIOZ Holding and is not directly incorporated within the NWO-I Foundation.

The 'Watergraafsmeer, section B, number 4045' lot at Science Park in Amsterdam is held in leasehold by Cooperatie SURF U.A. and concerns the WCW building section Z (including conference rooms, the boiler room and some CWI and Nikhef offices). SURF relinquished the leasehold and the plot became the property of the landowner NWO at the end of 2022. NWO has divided the plot into lots 5293 and 5294. Subsequently, NWO allocated lot 5294 in long lease to NWO-I Foundation for the purpose of CWI building and, along with lot 4046, extended the long lease to November 30, 2060.

Lot 5294 is subject to an easement for use by Nikhef and WCW Management Foundation, and NWO-I became the grantor of the easement.

Rights of superficies and user agreements

ASTRON has concluded 34 rights of superficies, including for the LOFAR antennas, other outdoor stations, cables and pipelines. ASTRON also has 4 land user agreements, for the construction, use and maintenance of infrasound sensors.

NWO-I (at the time FOM) concluded a user agreement with NWO on July 22, 2014 for the Science Park in Amsterdam, lot B 5107, Watergraafsmeer, for the units at Science Park 110. In 2021, Nikhef concluded three rights of superficies for the realization and use of drilling and inspection wells, including related electrical/instrument cabinets, measurement sensors, cabling and pipelines, and associated work areas.

Buildings

The buildings owned by NWO-I are as follows:

- Science Park 102 in Amsterdam AMOLF
- Science Park 104 in Amsterdam AMOLF
- Science Park 105 in Amsterdam Nikhef (main building)
- Science Park 108 in Amsterdam Nikhef (laboratory building)
- Science Park 110 in Amsterdam Nikhef (temporary office building; porta cabins)
- Oude Hoogeveensedijk 4 in Dwingeloo ASTRON
- Oude Hoogeveensedijk 6 in Dwingeloo ASTRON
- Schattenberg 1 in Zwiggelte ASTRON
- Schattenberg 2 in Zwiggelte ASTRON
- Science Park 123-125 in Amsterdam CWI (125 concerns building section WCW)
- De Zaale 20, Eindhoven DIFFER
- Landsdiep 4 in Den Hoorn NIOZ
- Zuider Haaks 17c in Den Hoorn NIOZ
- Zuider Haaks 18 in Den Hoorn NIOZ
- Zuider Haaks 20 in Den Hoorn NIOZ
- Korringaweg 7 in Yerseke NIOZ
- Oude Torenstraat 39 in Yerseke NIOZ
- Niels Bohrweg 4 in Leiden SRON

The University of Amsterdam wing of Science Park 107 at Amsterdam Nikhef (in use by University of Amsterdam) adjacent to Nikhef is legally owned by NWO-I. NWO-I has granted the University of Amsterdam right of use until the end of the leasehold/superficies of NWO-I with NWO. The University of Amsterdam is the beneficial owner and has the right to sublet.

The private sale value of the buildings was appraised in December 2015.

The insured value of all movable and immovable assets, irrespective of whether they are owned, managed or utilized by NWO-I, as well as the movable and immovable assets for which NWO-I bears responsibility, amounted to €829.822k as of July 1, 2023. Approximately €394,100k of this relates to buildings.

The value for the purposes of the Valuation of Immovable Property Act of real estate owned by NWO-I is €112,901k (reference date January 1, 2022 and January 1, 2021).

Table: Financial fixed assets

	Carrying amount 01-01-2023	Investments and loans granted 2023	Disinvestments and loans repaid 2023	Other movements +/- 2023	Result from participating interests +/- 2023	Carrying amount 12-31-2023
	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000
1.1.3 Financial fixed assets						
1.1.3.1.1 Other participating interests	1,637	19	20	1	145	1,782
1.1.3.3.2 Other long-term receivables	2,122	-	39	-1		2,082
1.1.3.3.3 Provision for bad debts -/-	-1,427	-			-19	-1,446
Financial fixed assets	2,332	19	59	-	126	2,418

Other participating interests

This concerns the 100% interest in:

Table: Other participating interests

Astrotec Holding B.V. (ATH) with its registered office in Dwingeloo	€598k
CWI Incubator B.V. with its registered office in Amsterdam	€693k
NIOZ Holding with its registered office in Texel, which houses NIOZ Haven B.V. (100%)	€498k
Particle Physics Inside Products B.V. (P2IP), with its registered office in Amsterdam	-/- €7k
Mathematics and Computer Science Conferences Foundation with its registered office in Amsterdam (100%)	€0k
The total amounted to	€1,782k

Other receivables

NWO-I grants money loans as part of the commercialization of the research results. This amounted to €2,082k at the end of 2023. This includes two loans granted to P2IP (total €1,000k) with a term that ends on July 1, 2025. There are also several other loans for a combined amount of €598k. Since these loans are risk-bearing in nature, a provision of the same amount has been made for them.

Furthermore, the permanent advance to WCW amounted to €484k (AMOLF (€75k), CWI (€134k) and Nikhef (€275k))

3.1 Related parties

Table: Related parties

Name	Legal form	Registered office	Code for activities	Result of year			Article 2:403 of the Dutch Civil Code	Participation	Consolidation	Intra-group transactions	Liable for corporate income tax or exempt	Result of year		
				Equity	2023	2023						Equity	2022	2022
Decisive influence/ significant influence	2023			12-31-2023	2023	2023	Yes/No	%	%	Yes/No		12-31-2022	2022	2022
	x €1,000			x €1,000	x €1,000	x €1,000						x €1,000	x €1,000	x €1,000
AstroTec Holding B.V.	Limited liability company [besloten vennootschap]	Dwingeloo	4	549	-49	not yet known	No	100%	0%	yes	Corporate income tax liable	598	66	494
Wiskunde en Informatica Conferenties	Foundation [stichting]	Amsterdam	4	62	26	292	No	>50%	0%	yes	Corporate income tax liable	37	0	56
CWI Incubator B.V.	Limited liability company [besloten vennootschap]	Amsterdam	4	688	121	131	No	100%	0%	no	Corporate income tax liable	567	323	331
Particle Physics Inside Products (P2IP)	Limited liability company [besloten vennootschap]	Amsterdam	4	13	not yet known	not yet known	No	100%	0%	no	Corporate income tax liable	13	-21	0
NIOZ Holding	Limited liability company [besloten vennootschap]	Den Hoorn	4	498	-21	0	No	100%	0%	yes	Corporate income tax liable	519	79	0
NIOZ Haven	Limited liability company [besloten vennootschap]	Den Hoorn	4	220	-18	262	No	100%	0%	yes	Corporate income tax liable	238	30	299
Foundation for the Management of the Watergraafsmeer Scientific Center (WCW)	Foundation [stichting]	Amsterdam	4	2,260	not yet known	not yet known	No	20%-50%	0%	yes	Exempt	2,260	15	2977
SWAT.holding	Limited liability company [besloten vennootschap]	Amsterdam	4	733	not yet known	not yet known	No	25%	0%	no	Corporate income tax liable	733	515	515
				5,023	59	685				0		4,965	1,007	4,672

Legend for the table codes: 1. Contract education, 2. Contract research, 3. Real estate, 4. Other

It should be noted that the 2023 figures as set out in this table are draft figures. The end position for 2022 differs slightly from the stated end position as reported in the 2022 Annual Report. This is because this table incorporates the definitive 2022 results, which were not known yet at that time (beginning of 2023).

The associated parties of which NWO-I:

- is the sole shareholder (100% shareholding); or
- is the majority shareholder (20 to 50% of the shareholding/voting rights); or
- is an influential shareholder (presumption of significant influence); or
- has managerial influence/a key role in management.

In 2023, the associated parties were recalibrated and, as a result, several changes were made to the associated parties included compared to the previous year.

With effect from 2023 and based on DASB 300, associated parties that are considered insignificant are no longer listed on the associated parties table. 'Insignificant' refers to less than 20% of share ownership or between 20-50% of share ownership if there is no significant influence.

CURRENT ASSETS

Short-term receivables

Table: Short-term receivables

	12-31-2023	Budgeted for 2023	12-31-2022
	x €1,000	x €1,000	x €1,000
1.2.2 Receivables			
1.2.2.1 Accounts receivable general	7,620	4,478	9,423
1.2.2.2 Receivables from NWO	7,968	3,911	7,997
1.2.2.3 Receivables from other participating interests	2,213	110	1,221
1.2.2.4 Receivables from personnel	156	29	37
1.2.2.5.1 Valuation of projects in progress at NWO	44	-	14
1.2.2.5.2 Valuation of projects in progress	879	1,600	1,197
1.2.2.6 Other receivables	21,827	9,002	14,995
1.2.2.7.1 Taxes and social insurance contributions	3,960	190	1,305
1.2.2.8.1 Prepaid costs	8,963	5,320	7,648
1.2.2.9.1 Other prepayments and accrued income	-	2,000	-
1.2.2.10.1 Less: Provision for bad debts -/-	-841	-401	-603
1.2.2 Receivables	52,788	26,238	43,235

Receivables amounted to €52,788k, having increased by €9,553k compared to 2022 (€43,235k).

The largest movements compared to 2022 concern Accounts Receivable (– €1,804k, mainly in General (€783k), SRON (€817k) and CWI (€468k)); Other receivables (€4,644k, mainly due to receivables from international ILT partners by ASTRON and the amounts still to be received at Nikhef such as for the UVA-HEF and ET pathfinder); Taxes (€2,655k) and Prepaid Expenses (€1,315k, on the one hand due to development costs for LOFAR 2.0 and on the other hand due to decrease of ESRF that was prepaid in 2022 for 2023 and not for 2024 in 2023).

Accounts receivable general

Accounts receivable includes NWO accounts receivable, accounts receivable with associated participating interest and trade receivables according to the specification below:

Table: Accounts receivable general

Breakdown	NWO	Group company	Third parties	Total
	12-31-2023	12-31-2023	12-31-2023	
	x €1,000	x €1,000	x €1,000	x €1,000
1.2.2.1 Accounts receivable general	254	349	7,016	7,620

Valuation of projects in progress

Table: Valuation of projects in progress

	12-31-2023	Budgeted	12-31-2022
	x €1,000	for 2023	x €1,000
	x €1,000	x €1,000	x €1,000
1.2.2.5.1 Realized billable costs at NWO	44		14
Expected losses -/-	-		-
Invoiced installments -/-	-		-
Valuation of projects in progress at NWO	44	-	14
1.2.2.5.2 Realized billable third-party costs	5,086		3,636
Expected losses -/-	0		-
Invoiced installments -/-	-4,206		-2,439
Valuation of projects in progress (third parties)	879	1,600	1,197

The balance of the valuation of projects in progress with a debit position involves research projects for which the research costs at year end exceed their invoiced installments. On balance, a net amount remains to be claimed from the financiers in question.

Only SRON has a position in Projects in Progress.

Other receivables

Table: Other receivables

	12-31-2023	Budgeted for 2023	12-31-2022
	x €1,000	x €1,000	x €1,000
1.2.2.6.1 Other receivables third parties	6,810	3,799	2,166
1.2.2.6.2 Other receivables from related parties	-	-	-
1.2.2.6.2.2 Projects still to be claimed: other	15,017	8,450	12,795
1.2.2.6.30 Internal checking account ratio	-0	-3,248	34
1.2.2.6 Other receivables	21,827	9,002	14,995

Other receivables amounted to €21,827k and increased by €6,832k, of which €4,644k were higher advances on grant projects (of which ASTRON €3,861k and Nikhef €697k).

Taxes and social insurance contributions

Table: Taxes and social insurance contributions

		12-31-2023	Budgeted for 2023	12-31-2022
		x €1,000	x €1,000	x €1,000
1.2.2.7.1	Sales tax	3,106	40	1,274
1.2.2.7.1	Other taxes	854	150	31
	Taxes and social insurance contributions	3,960	190	1,305

Taxes and social security contributions amounted to €3,960k and were €2,655k higher than at year-end 2022, of which €789k was in General (LOFAR), €340k at ASTRON (LOFAR) and €1,345k at Nikhef (renovation of the building).

Provision for bad debts

Table: Provision for bad debts

		12-31-2023	Budgeted for 2023	12-31-2022
		x €1,000	x €1,000	x €1,000
1.2.2.10.1	Balance as at January 1	-603		-1,682
1.2.2.10.2	Withdrawal (+/+)	7		1,120
1.2.2.10.3	Allocation (-/-)	-183		-41
1.2.2.10	Less: provision for bad debts	-841	-401	-603

The provision for bad debt amounted to €841k, of which at AMOLF €201k, ASTRON €150k, CWI €33k and Nikhef €457k. The provision for bad debts relates to bad debts of €780k and to €61k for short-term receivables relating to participating interests.

Liquid assets

Table: Liquid assets

		<u>12-31-2023</u>	<u>Budgeted for 2023</u>	<u>12-31-2022</u>
		x €1,000	x €1,000	x €1,000
1.2.3.1	Cash	21	8	20
1.2.3.2	Bank account balances	204	498	317
1.2.3.3	Current account balance Treasury banking	79,576	54,061	81,473
Liquid assets		79,801	54,566	81,810

The liquid assets fell in 2023 by €2,009k from €81,810k to €79,801k. Liquid assets consist of cash and bank balances and are freely available to the institution with the exception of €412k.

- Of this, €286k relates to the bank guarantee for the rent of a building at the Science park in Amsterdam and a bank guarantee of €122k, which was given to the Tax Authorities/Groningen Customs and €4k to the Tax Authorities/West Customs
- The intraday limit at ABN-AMRO Bank is €10,200k.

LIABILITIES

Equity

Table: Equity in previous year

		Balance as of	Result +/-	Other	Balance at
		01-01-2022	2022	changes +/-	31-12-2022
		x €1,000	x €1,000	x €1,000	x €1,000
2.1.1.1	General reserve	658	7,158		7,816
2.1.1.2	Legal reserve	-			-
2.1.1.3	Earmarked reserve (public)	85,798	17,515		103,313
2.1.1.4	Earmarked reserve (private)	-			-
2.1.1.5	Earmarked fund (public)	1,396	-209		1,187
2.1.1.6	Earmarked fund (private)	-			-
2.1.1.8	Other legal reserves	3,992	-749		3,243
2.1.1.7	Reserves under the articles				
2.1.1	Equity	91,843	23,715	-	115,558

Table: Equity for current year

	Balance as of 01-01-2023	Result +/- 2023	Other changes +/- 2023	Balance at 12-31-2023
	x €1,000	x €1,000	x €1,000	x €1,000
2.1.1.1 General reserve	7,816	2,074		9,890
2.1.1.1a Legal reserve	-			-
2.1.1.2 Earmarked reserve (public)	103,313	5,861	-	109,174
2.1.1.3 Earmarked reserve (private)	-			-
2.1.1.4 Earmarked fund (public)	1,187	-146		1,041
2.1.1.5 Earmarked fund (private)	-			-
2.1.1.7 Other legal reserves	3,243	-649	-	2,594
2.1.1.8 Reserves under the articles				
Equity	115,558	7,141	-	122,700

The movements in Equity are the movements based on the appropriation of the net result in 2023. Equity increased from €115,558k at the end of 2022 to €122,700k at the end of 2023.

The general reserves increased by €2,074k to €9,890k, due to income from interest. The earmarked reserve increased by €5,861k to €109,174k in 2023.

The earmarked reserve is intended for, among other things:

- specific financial risks (to be specified and approved by the Foundation Board);
- depreciation charges for buildings, building-related and infrastructure investments;
- the mismatch in time between operating grants for new construction and renovation and the associated expenses (in particular, the renovation of Nikhef);
- the buffer capital without specific allocation.

Earmarked funds public decrease by €146k to €1,041k. The remaining balance of earmarked funds consists mainly of the sector plan funds within the BUW (€1,023k).

Table: Earmarked fund (public)

	Balance as of 01-01-2023	Newly awarded 2023	Result +/- 2023	Other changes +/- 2023	Balance at 12-31-2023
	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000
2.1.1.4. Earmarked fund (public)					
Sector plan	1,169	-	-146		1,023
The Einstein Telescope	18	-	-		18
Earmarked fund investment for the cleanroom	-	-	-		-
Earmarked fund (public)	1,187	-	-146		1,041

The 'Other legal reserves' item became mandatory in 2020 for the capitalization of research and development costs in relation to the investment in the New Finance System.

Foundation capital

The foundation capital is €45.38.

Equity

Table: Provisions

	Balance as of 01-01- 2023	Alloca- tions 2023	With- drawals 2023	Release 2023	Interest rate movement (at present value) 2023	Balance at 12-31- 2023	Short- term portion < 1 year	Long-term portion > 1 year
	x €1,000	x €1,000	x €1,000		x €1,000	x €1,000		
Provisions								
2.2.1.7.3 Personnel provisions	6,442	3,228	-1,760	-1,474	147	6,582	3,153	3,429
Other provisions	3,030				139	3,169	-	3,169
Provision for loss-making contracts	-	-			-	-	-	-
Provisions	9,472	3,228	-1,760	-1,474	285	9,750	3,153	6,597
Breakdown of personnel-related provisions								
Provision for social policy, reorganizations and other legal status	768	374	-185	-304	-106	548	-	548
Leave savings and sabbatical leave	-	-	-	-	-	-	-	-
Provision for long-service awards	948	230	-106	-88	24	1,008	131	877
Unemployment contributions	1,059	513	-111	-431	172	1,203	711	492
Chronically ill employees	957	953	-475	-298	-7	1,130	626	504
Transition payments	1,618	892	-560	-256	38	1,732	1,122	610
Generation Plan	781	265	-292	-98	27	683	301	382
Other personnel provisions	311	-	-32	-	-0	278	262	16
Total personnel provisions	6,442	3,228	-1,760	-1,474	147	6,582	3,153	3,429

Provisions increased by €278k to €9,750k.

Personnel-related provisions

The provision for social policy, reorganizations and other legal positions amounted to €548k and mainly concerns the reorganization provision that was set up to cover future salary costs of redundant employees.

The long-service provision amounted to €1,008k and relates to future obligations to employees in respect of bonuses based on the current CLA.

Unemployment contributions amounted to €1,203k. The provision rose by €144k.

The allocation for 2023 amounted to €513k, for several employees and will run through to 2032. The withdrawal amounted to €111k and the release amounted to €431k. The interest movement for present value amounted to €172k.

Chronically ill employees

If an employee is ill, the NWO-I is obliged to continue paying the employee 100% of the salary during the first year and 70% during the second, or 85% if the employee is sufficiently rehabilitated. Pursuant to DASB 271, a provision has been created for the future salary costs of employees who are sick as of the reporting date and for whom it is fairly certain that they will not return to work or will not return to work in full.

The liability is calculated as the present value of future salary payments and transition payments.

This provision was created starting in 2019 and amounted to €1,130k at the end of 2023.

Transition payment under the Work and Security Act

NWO-I employees who, after temporary employment, do not leave voluntarily are entitled to a transition payment in accordance with the Work and Security Act and the supplementary Balanced Labour Market Act.

As a result of amended legislation (the Balanced Labour Market Act), as of January 1, 2020, a provision must be created for all temporary employees, regardless of the period of their employment. This provision rose by €114k on balance in 2023. The provision at year-end 2023 was €1,732k (2022: €1,618k).

Generation Plan

This provision for future payments to current participants of the Generation Plan for Research Institutions is based on a calculation of the rights accrued by employees up to the end of the year. This exclusively concerns the rights of employees who are actually using the scheme as of the balance sheet date. The scheme came into effect for the first time with the 2018-2019 CLA for Research Institutions. The balance at the end of 2023 was €683k. The provision was mainly formed at ASTRON (€122k), NIOZ (€163k) and SRON (€284k).

The other provisions within the personnel provisions concern a contribution to the salary costs for employees who have transferred to other employment as a result of the transition (with effect from January 1, 2017). Furthermore, it relates to a provision made in 2012 for SRON's contribution to the Euclid project, which contributed in part to the successful launch of the James Webb Telescope on December 25, 2021 (term up until the end of 2023).

The balance at the end of 2023 was €278k. The release of this provision will be reviewed in 2024.

Other provisions

The 'Other provisions' within the 'Provisions' item includes the provision for remediation of radioactive materials PiMu. The provision at the end of the year under review amounted to €3,169k.

The basement of the PiMu building, located on a lot at the Amsterdam Science Park that NWO-I holds in ground lease by operation of law until the end of 2024, contains radioactivity that arose in the 1980s. NWO-I has an obligation to ensure proper disposal of the radioactive materials prior to termination of the leasehold. The cost of removal will be equally shared between NWO-I and landowner NWO.

In 2016, the required scope of the total provision was determined, and the provision was immediately recognized in its entirety in the 2016 fiscal year. The provision is based on reports from external expert parties. There is an estimation uncertainty in the amount, because it will not be known how much radioactivity is still present and what the actual cost will be until the actual removal takes place. In accordance with DASB 252, the NWO contribution has been deducted from the expenses. Short-term receivables include the NWO contribution (nominal) €2,026k (€1,674k excl. VAT) as a receivable from NWO.

Long-term liabilities

Table: Long-term liabilities

	Balance as of 01-01-2023	Loans taken out	Repay- ments	Balance at 12-31-2023	Term > 1 year	Term > 5 years
	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000
2.3.2.1.1 Long-term loans: other	-			-		
2.3.2.1.2 Investment grants and contributions received in advance	74,235	670	-6,581	68,324	68,324	46,547
2.3.2.1.1 Long-term liabilities NWO consolidation	-	-	-	-	-	
Long-term liabilities	74,235	670	-6,581	68,324	68,324	46,547

The balance of long-term liabilities concerns the investment grant received from NWO in advance, being the pre-financing of new construction and renovation projects. In addition, the University of Amsterdam gave a contribution for the Nikhef building renovation for the entrance. The redemption relates to the shift from long-term to current liabilities. In addition, there is a conditional right provided by NWO for the Housing New Construction Leiden. At the end of the year under review, this right still amounted to €34,800k.

Current liabilities

Table: Current liabilities

	12-31-2023	Budgeted for 2023	12-31-2022	
	x €1,000	x €1,000	x €1,000	
2.4.1	Amounts owed to NWO	44,936	28,427	41,567
2.4.2	Amounts owed to other participating interests	-	80	-
2.4.3	Pre-invoiced installments Projects	128	1,500	516
2.4.4	Accounts payable	8,523	3,351	5,589
2.4.5	Taxes and social insurance contributions	10,030	7,415	7,774
2.4.6	Pensions	1,806	1,800	1,792
2.4.7	Other	16,562	4,401	9,638
2.4.8	Investment grants Investment grants and contributions (current)	5,738	5,391	6,024
2.4.9	Amounts received in advance	1,862	230	1,947
2.4.10	Vacation pay and days	14,293	12,085	13,569
2.4.11	Other accrued liabilities	47,031	25,595	27,576
2.4	Current liabilities	150,908	90,274	115,991

The total of current liabilities amounted to €150,908k and rose by €34,917k. This increase can be seen in other accrued liabilities and payables to NWO regarding grants for projects received in advance. Also, accounts payable and tax and social security balances rose compared to the end of 2022.

Pre-invoiced installments for projects

Table: Pre-invoiced installments for projects

	12-31-2023	Budgeted for 2023	12-31-2022
	x €1,000	x €1,000	x €1,000
Realized billable third-party costs	-473		-2,901
Expected losses -/-	51		100
Invoiced installments -/-	550		3,317
2.4.3.1.2 Valuation of pre-invoiced third parties	128	1,500	516

The 'Pre-invoiced installments for projects' item relates to research projects for which the invoiced installments at the end of the year under review exceed the realized research costs.

Compared to 2022, the balance increased by €24k.

Taxes and social insurance contributions

Table: Taxes and social insurance contributions

	12-31-2023	Budgeted for 2023	12-31-2022
	x €1,000	x €1,000	x €1,000
2.4.5.1.1 Payroll taxes	7,208	6,500	6,642
2.4.5.1.2 Sales tax	2,822	915	1,132
2.4.5 Taxes and social insurance contributions	10,030	7,415	7,774

2.4.15 Investment grants received in advance (short term)
Decrease relative to 2022 of €286k.
These grants are updated annually for coverage on depreciation costs.

2.4.19 Other accrued liabilities are the 'Other accrued liabilities' and 'Third-party grant projects' items, according to the specification below:

Table: Accrued liabilities

	12-31-2023	Budgeted for 2023	12-31-2022
	x €1,000	x €1,000	x €1,000
2.4.11.1.1 Other accrued liabilities	-	200	37
2.4.11.1.2 Grant projects received in advance (credit)	47,031	25,395	27,539
Other accrued liabilities	47,031	25,595	27,576

Other accrued liabilities rose by €19,456k, which mainly relates to the grant projects received in advance (credit), including the installment receipt of €17,000k for the Einstein Telescope. This item fluctuates annually depending on the projects honored, the installment receipts and expenses incurred in a fiscal year.

Notes to the balance sheet versus the budget

The balance sheet total was €351,681k, which is €59,809k higher than the budgeted balance sheet total.

Below is a brief explanation.

Assets

Fixed assets, €8,023k more than budgeted,

- €7,782k Tangible fixed assets, of which
 - €3,525k for the NIOZ fleet replacement and the Nikhef renovation €3,293k.
- Current assets €51,786k more than budgeted, of which
 - €26,550k in Receivables, ASTRON €9,847k (LOFAR 2.0), Nikhef €5,666k, NIOZ €4,547k.
 - €25,235k Liquid assets, mainly due to the later realization of budgeted investment expenditure.

Liabilities

- Equity, €24,851k more than budgeted,
 - which is partly explained by the difference with respect to the budgeted result of negative €11,973k, while a positive result of €7,140k was realized.
- Provisions €335k less than budgeted,
 - which is partly explained by the valuation of the provisions at present value, while in the budget these were valued at nominal value; the impact of this amounted to €147k).

- Long-term liabilities, €25,341k less than budgeted.
 - The budget included a loan of €26,000k to (partially) finance the fleet replacement of NIOZ, the New SRON building, the Renovation of the WCW boiler house (CWI/Nikhef) and the renovation of Nikhef. This loan will be effectuated in the future; the private loan agreement (€120,000k) with NWO was signed on December 22, 2022.
- Current liabilities, €60,633k more than budgeted.
 - This is largely due to the effects of project-in-progress calculations, partly influenced by the checking account positions that fall on the other side of the balance sheet in the budget or realization.

Off-balance sheet rights and liabilities

Table: Off-balance sheet rights and liabilities

(amounts x €1,000)	Amount 31-12- 2022	Move- ments	Amount 31-12- 2023	< 1 year	2 to 5 years, inclusive	From 5 years onward	Total
Off-balance sheet commitments							
1. Contingent liabilities and unrecognized liabilities							
(a) Claims submitted by third parties	-	-	-	-	-	-	-
b) Guarantees and sureties issued, etc	13,180	1,089	14,269	1,421	5,580	7,268	14,269
c) Liabilities from orders for tangible fixed assets	76,422	(19,573)	56,849	31,669	25,180	-	56,849
d) Other off-balance sheet liabilities	7,794	(535)	7,258	4,428	2,760	70	7,258
Future liabilities	-	-	-	-	-	-	-
Tax entity for NWO and NWO-I VAT	-	-	-	-	-	-	-
TOTAL contingent liabilities and unrecognized liabilities	97,396	(19,019)	78,377	37,519	33,520	7,338	78,377
2. Long-term financial liabilities							
a) Rights of use and other rights (leasehold, superficies, rental, lease and leasing)	4,430	(62)	4,368	910	1,634	1,824	4,368
b) Obligations under cooperative arrangements and potential risks of financial setbacks arising from these obligations	4,986	6,313	11,299	7,500	3,799	-	11,299
TOTAL Long-term financial liabilities	9,416	6,251	15,667	8,410	5,433	1,824	15,667
TOTAL Off-balance sheet liabilities	106,812	(12,768)	94,044	45,929	38,953	9,162	94,044
Off-balance sheet rights							
1. Contingent rights and unrecognized rights							
a) Claims submitted to third parties	-	-	-	-	-	-	-
b) Other	40,971	17,665	58,636	3,025	11,288	44,323	58,636
TOTAL Off-balance sheet rights	40,971	17,665	58,636	3,025	11,288	44,323	58,636

The amounts included in the statement of off-balance sheet rights and liabilities and the notes thereto are stated at nominal value excluding VAT. In general, VAT increases the costs for NWO-I.

Contingent liabilities and unrecognized liabilities

Claims submitted by third parties

No claims were submitted by third parties in 2023.

Guarantees and sureties issued, etc

Compared to 2022, the liability rose by €1,089k, of which €1,080k was due to the rent increase as of April 1, 2023 (9.59%) of the ARCNL lease. The lease obligation at ARCNL with the effective date being the date of handover and a term until December 31, 2033 amounted to €13,947k at the end of the reporting year.

A bank guarantee was also issued for ARCNL in the amount of €286k.

For NWO-I's office building in Utrecht and for facility support provided by NWO, the associated annual obligation is paid to NWO. In return, NWO-I is entitled to an annual grant from NWO of the same scope as the obligation (€900k). Since the obligation and right are identical and involve the same legal entities, they are not included in the overview above.

Liabilities from orders for tangible fixed assets

Compared to 2022, the liability fell by a net amount of €19,537k. A decrease of €4,684k relates to the Wim Wolff fleet replacement and a decrease of €17,200k relates to the Anna Weber-van Bosse fleet replacement. In addition, DIFFER launched a European tendering procedure for the purchase of the PLD Research Cluster Basis at a cost of €2,200k.

Other off-balance sheet liabilities

Compared to 2022, the liability fell by €535k.

Future liabilities

For 2023 and beyond, NWO-I has committed itself as far as the BUW is concerned based on project allocations. Furthermore, NWO-I holds multiple commitments to provide financial contributions to partnerships.

NWO-I's personnel is its largest asset. NWO-I therefore has liabilities for its personnel as well, both when it comes to permanent staff and when it comes to temporary staff. All of these liabilities result from NWO-I's normal business operations and are covered from the grant contributions from NWO and contracts concluded with third parties.

Grants awarded are subject to specific grant conditions. Upon completion of a project, account must be rendered with the inherent risk that the grantor may lower the grant awarded if specific conditions have not been satisfied. The risk cannot be quantified.

Tax entity for NWO and NWO-I VAT

On September 28, 2017, the request was submitted to the Tax Authorities for a fiscal unit for VAT between NWO and NWO-I as of January 1, 2017. Even though a formal confirmation has not yet been received, the financial statements from 2018 onwards are stated as if a fiscal unity had been created for VAT.

A consequence of a fiscal unit is that NWO-I becomes (jointly and severally) liable for the tax debts of this fiscal unit as a whole.

Long-term financial liabilities

Rights of use and other rights

Compared to 2022, user and other rights were updated for a total of €62k.

Liabilities under cooperative arrangements and potential risks of financial setbacks arising from these liabilities

As contained in the board report, NWO-I recognizes the risk resulting from undesired obligations to third parties. The risk cannot be quantified.

The currently known liabilities increased compared to 2022 by €6,313k, which is mainly due to the ILT upgrade of LOFAR 2.0/Dupllo software and hardware at ASTRON.

Off-balance sheet rights

Contingent rights and unrecognized rights

- a. Claims submitted to third parties
No position
- b. Other

Compared to 2022, this item has increased by €17,665k, of which a decrease of €200k relates to the LNHV and a decrease of €1,392k relates to the Housing New Building Leiden.

NWO awarded Nikhef an annual grant as a non-earmarked basic grant, and this grant must be recognized as 100% income. This item automatically goes via the statement of income and expenditure to the earmarked reserve in equity (annually until 2038). This item (€19,500k) was included for the first time in 2023.

NWO awarded SRON/NWO-I an annual grant as a non-earmarked basic grant, and this grant must be recognized as 100% income. This item automatically goes via the statement of income and expenditure to the earmarked reserve in equity (annually until 2048).

In accordance with DAS 252, the amounts included in the statement of 'Off-balance sheet rights and liabilities' must be recognized at present value, if the effect of the time value of money is material.

Taking into account the currently prevailing interest rates, the calculation showed that the effect of this for the off-balance sheet liabilities is therefore €5,117k lower and for the off-balance sheet rights €13,648k lower.

Table: Off-balance sheet commitments

(amounts x €1,000)	Amount 31-12- 2022	Move- ments	Amount 31-12- 2023	< 1 year	2 to 5 years, inclusive	From 5 years onward	Total
Off-balance sheet commitments							
1. Contingent liabilities and unrecognized liabilities							
(a) Claims submitted by third parties		-	-	-	-	-	-
b) Guarantees and sureties, etc issued	11,194	1,420	12,614	1,380	5,170	6,064	12,614
c) Liabilities from orders for tangible fixed assets	71,028	(16,315)	54,713	30,746	23,967	-	54,713
d) Other off-balance sheet liabilities	6,845	85	6,930	4,298	2,572	60	6,930
Future liabilities		-	-	-	-	-	-
Tax entity for NWO and NWO-I VAT		-	-	-	-	-	-
TOTAL contingent liabilities and unrecognized liabilities	89,067	(14,811)	74,256	36,423	31,709	6,124	74,256
2. Long-term financial liabilities							
a) Rights of use and other rights (leasehold, superficies, rental, lease and leasing)	3,801	(28)	3,773	883	1,484	1,405	3,773
b) Obligations under cooperative arrangements and potential risks of financial setbacks arising from these obligations	4,797	6,100	10,897	7,281	3,616	-	10,897
TOTAL Long-term financial liabilities	8,598	6,073	14,671	8,165	5,100	1,405	14,671
TOTAL Off-balance sheet liabilities	97,665	(8,738)	88,927	44,588	36,809	7,530	88,927
Off-balance sheet rights							
1. Contingent rights and unrecognized rights							
a) Claims submitted to third parties		-	-	-	-	-	-
(b) Other	29,012	15,976	44,988	2,937	10,943	31,108	44,988
TOTAL Off-balance sheet rights	29,012	15,976	44,988	2,937	10,943	31,108	44,988

In addition to the off-balance sheet rights and liabilities, NWO-I entered into a loan agreement with NWO on December 20, 2022. The principal amount is €120,000k, which is intended for the (partial) financing of the NIOZ fleet replacement, the New SRON building, the Renovation of the WCW boiler house (CWI/Nikhef) and the renovation of Nikhef. The loan will be disbursed in tranches upon request or based on the financing requirement. When requested, the financing requirement will be substantiated with verifying documents, such as an investment progress report and an up-to-date liquidity forecast. The term of the loan is 30 years, with the interest rate set at 2.21% for the entire term of the loan and based on the published interest rate for 30 years treasury banking. As of December 31, 2023, no tranche had been requested.

8 Notes to the statement of income and expenditure

Government grants

Table: Government grants

		2023	Budgeted for 2023	2022
		x €1,000	x €1,000	x €1,000
3.1.1	Government grants from Ministry of Education, Culture and Science via NWO	146,784	132,091	133,642
3.1.2	Other grants from the Ministry of Education, Culture and Science via NWO	-	-	21,041
3.1	Government grants	146,784	132,091	154,683

Total government grants amounted to €146,784k and are on balance €7,899k lower than the position at the end of 2022. The increase in this income is due, on the one hand, to allocations for bridging HFML FELIX (€3,300k), 2023 wage and price compensation (€6,008k), non-recurring and structural allocations to institutes (€3,750k) and increase in basic subsidy (€2,086k) and, on the other hand, by a decrease in various funds (Corona, Development and Emergency Fund) totaling -/- €5,775k and a decrease in the SKA contribution (-€17,393k).

Government contributions/grants from other authorities

Table: Government contributions/grants from other authorities

	2023	Budgeted for 2023	2022
	x €1,000	x €1,000	x €1,000
3.2.2.1 Provincial contributions and grants	121	100	127
3.2.2.2 Other municipal and joint arrangement contributions and grants	-	-	-14
3.2.2.3 Other authorities	266	-	569
3.2 Other government contributions and grants from other authorities	386	100	682

The other governmental contributions and grants from other authorities concern, on the one hand, the provincial contribution of the Province of North Brabant and of the Municipality and Region of Eindhoven for DIFFER (€121k) and, on the other hand, the contributions of the Ministry of Economic Affairs and Climate Policy (€254k) and the Ministry of Education, Culture and Science (€12k).

Income from work commissioned by third parties

Table: Income from work commissioned by third parties

	2023	Budgeted for 2023	2022
	x €1,000	x €1,000	x €1,000
3.3.2 Contract research	69,400	61,110	66,165
3.3.5 Other income from work for third parties	1,614	11,794	7,061
3.3 Income from work commissioned by third parties	71,014	72,904	73,226

The total income from work for third parties amounted to €71,014k and was €2,212k less than year-end 2022.

Table: Total income from work commissioned by third parties

	2023	Budgeted for 2023	2022
	x €1,000	x €1,000	x €1,000
3.3.2.1 International organizations	19,459	14,315	15,645
3.3.2.2 National authorities	8,668	2,592	5,825
3.3.2.3 NWO	20,801	29,050	28,953
3.3.2.4 KNAW	83	-	0
3.3.2.5 Other nonprofit organizations	15,046	10,627	12,135
3.3.2.6 Businesses	5,342	4,526	3,607
3.3.2 Contract research	69,400	61,110	66,165

Income from contract research (€69,400k) increased by €3,235k compared to 2022:

- Income from international organizations (€19,459k) increased by €3,815k, particularly at AMOLF (€1,582k), CWI (€1,148k) and Nikhef (€659k)
- Income from national government authorities (€8,668k) increased by €2,843k, particularly at AMOLF (€1,681k) and Nikhef €2,694k, while at CWI it fell by (€1,460k)
- The income from NWO at year-end 2023 was €20,801k and fell by €8,152k. Of this, €3,422k relates to the NWO expiration of granting. The expiration of granting is a result of the granting commitments made by the former FOM and guaranteed by NWO.
- Income from Businesses (€5,342k) increased by €1,735k, particularly at CWI €1,687k.

The BUW's income decreased because of the expiration of granting, whereby the annual contribution from NWO to fulfill the granting commitments will decrease to zero in 2024. The income for projects by NWO and third-party projects is determined by the annual expenses and changes mainly with grants received in advance from NWO and third parties. In due course, as the projects reach completion, these items will also diminish to nil. After all, there will be no new projects.

For the institutes, the income in these items fluctuates yearly depending on newly awarded projects and on the expenses incurred in a fiscal year, or it is determined using the PoC method. With respect to grant projects, income fluctuates according to financial progress and is determined using the PoC method, according to the progress of the project in question.

Other income

Table: Other income

		2023	Budgeted for 2023	2022
		x €1,000	x €1,000	x €1,000
3.4.1	Rental income	5,012	4,960	4,563
3.4.2	Secondment of personnel	242	331	1,195
3.4.3	Gifts	-	-	-
3.4.4	Sponsoring	21	-	3
3.4.5	Other	1,867	716	8,641
3.4	Other income	7,141	6,007	14,403

This income, with the exception of rental income, was non-recurring income.

Rental income

Nikhef has agreements for an indefinite period of time with over 160 parties for the use of facilities in the Nikhef data center. As a result, this has become a structural source of income for Nikhef.

This concerns income in the context of internet exchange housing and the renting out of buildings not used for research.

Other income

Other income fell by €7,262k compared to 2022, mainly related to the sale proceeds of the former SRON property in Utrecht in 2022.

Notes on the income versus the budget

Table: Notes on the income versus the budget

Income		2023	Budgeted for 2023	2022
		x €1,000	x €1,000	x €1,000
3.1	Government grants	146,784	132,091	154,683
3.2	Other government contributions and grants	386	100	682
3.4	Income from work commissioned by third parties	71,014	72,904	73,226
3.5	Other income	7,141	6,007	14,403
Total income		225,325	211,103	242,994

Total income was €225,325k, which is €14,223k higher than budgeted.

- The government grant was €14,693k higher, mainly due to:
 - €6,008k Wage and price compensation
 - €3,300k Bridging of HFML FELIX
 - €2,800k Non-recurring income institutes
 - €3,400k Structural income for institutes
- Income from work for third parties was €1,890k lower, due to lower project income.
- Other income was €1,134k higher and other income was €1,151k (NIOZ €767k in particular).

EXPENSES

Table: Expenses

	2023	Budgeted for 2023	2022
	x €1,000	x €1,000	x €1,000
4.1 Personnel expenses			
4.1.1 Wages, salaries, social insurance and pension costs	129,332	127,158	122,144
4.1.2 Other personnel expenses	19,092	15,415	17,911
4.1.3 Fees received -/-	-359	-80	-411
4.1 Personnel expenses	148,064	142,493	139,643
Breakdown			
Wages and salaries			
4.1.1.1 Wages and salaries	101,846	98,671	95,045
4.1.1.2 Social insurance costs	13,130	14,534	12,015
4.1.1.5 Pension contributions	14,357	13,953	15,084
4.1.1 Wages and salaries	129,332	127,158	122,144
Other personnel expenses			
4.1.2.1 Allocations personnel provisions	-10	65	-823
4.1.2.2 Non-employee personnel expenses	7,686	3,675	7,484
4.1.2.3.1 Other salary costs (Gemal)	6,979	2,326	6,477
4.1.2.3.2 Other	4,437	9,349	4,772
4.1.2 Other personnel expenses	19,092	15,415	17,911

The personnel expenses amounted to €148,064k and increased by €8,421k compared to 2022.

- Direct personnel expenses (Wages, Salaries and Pension Expenses) increased by €7,188k.
 - The increase in Wages and Salaries amounted to €6,801k, of which
 - an increase in the costs because of the new 2023 to 2024 CLA for Research Institutions (07-01-2023 to 06-30-2024), whereby as of September 1, the salaries were increased by 5% and a one-off payment of €1,500 gross was made for every employee who was employed on September 1. Salary scale amounts were structurally increased by 2.25% effective January 1, 2024.
 - the workforce declined (by 15 FTE), of which 36 FTE were at the BUW
 - Social insurance contributions rose by €1,115k
 - Pension contributions fell by €727k
- Other personnel expenses (€19,092k) increased €1,181k compared to 2022, of which
 - Movements in personnel provisions amounted to €813k
 - Charges for personnel not employed increased by €202k, of which
 - An increase at BUW (€41k), Nikhef (€826k), NSCR (€53k) and NIOZ (€392k), whereas at General (€99k), AMOLF (€57k), ASTRON (€312k), Bureau (€291k), CWI (€188k), DIFFER (€95k) and SRON (€66k) there was a decrease in these costs.

The average number of FTEs during the reporting year was 1,598 and was 15 FTEs lower than the previous year's average. In particular, the workforce at BUW shrank (average 36 FTE), which is in line with the expiration of the research projects at BUW.

Table: Average number of FTEs

Reporting period	Management	Primary process (science)	Support	Total average	Average 2022	Difference
Office	1.00	0.00	44.26	45.26	37.71	7.55
NWO-I (BUW)		18.36	0.00	18.36	54.11	-35.75
NWO-I (DIFFER)	2.00	51.14	58.07	111.21	112.82	-1.61
NWO-I (AMOLF)	2.00	109.11	76.85	187.96	170.19	17.77
NWO-I (ARCNL)	2.00	38.31	9.72	50.04	50.65	-0.61
NWO-I (ASTRON)	2.00	60.28	124.38	186.66	176.20	10.46
NWO-I (CWI)	2.00	150.87	41.66	194.53	202.02	-7.49
NWO-I (JIVE)	0.00	11.83	10.73	22.56	23.53	-0.97
NWO-I (Nikhef)	2.00	89.57	109.19	200.76	207.43	-6.67
NWO-I (NIOZ)	2.00	178.08	151.59	331.66	335.10	-3.44
NWO-I (NSCR)	2.00	44.85	5.96	52.82	55.11	-2.29
NWO-I (SRON)	2.00	95.76	98.34	196.11	187.92	8.19
Final total	19.00	848.16	730.76	1,597.92	1,612.79	-14.87
Final total last year	19.00	888.27	705.51	1,612.79		
Movement	0.00	-40.11	25.24	-14.88		

Reporting based on the Dutch Senior Executives in the Public and Semi-Public Sector (Standards for Remuneration) Act

This Act came into effect on January 1, 2013, and it applies to NWO-I. The maximum remuneration applicable for NWO-I was €223,000.00 (general maximum remuneration) in 2023. The senior executives on an employment contract identified at our organization are not employed as senior executives by any other institution(s) subject to the Act (entered into from January 1, 2018 onwards).

Table 1a: senior executives in employment (amounts x €1)

	J.E. van der Boon	C.C.J.H. Bijleveld	S.C.M. Bentvelsen	M.W. Wise
Job details	Director of operations/Interim director at NWO-I	Senior researcher 1 <1>	Director Nikhef <2>	Director SRON <2>
Start and end of holding the post in 2023	01/01 – 8/6	01/01 – 08/31	01/01 – 12/31	01/01 – 12/31
Part-time factor in FTE	1	0.9474	1	1
(Notional) employment relationship?	yes	yes	yes	yes
Remuneration				
Remuneration plus taxable expense allowances	€89,503.89	€90,879.50	€178,796.99	€161,861.98
Remuneration payable in due course	€13,429.90	€14,127.04	€22,507.92	€22,467.96
Remuneration	€102,933.79	€105,006.54	€201,304.91	€184,329.94
Individually applicable remuneration maximum	€133,189.04	€140,653.86	€223,000.00	€223,000.00
-/- Undue amount paid				
Total remuneration	€102,933.79	€105,006.54	€201,304.91	€184,329.94
The amount of the excess and the reason why the excess is or is not allowed	N/A	N/A	N/A	N/A
2022 data				
Start and end of holding the post in 2022	01/01 – 12/31	01/01 – 12/31	01/01 – 12/31	01/01 – 12/31
Part-time factor 2022 in FTE	1	0.8368	1	1
(Notional) employment relationship	yes	yes	yes	yes
Remuneration plus payable expense allowance	€144,740.34	€114,083.49	€173,373.60	€162,590.29
Remuneration payable in due course	€22,383.72	€20,775.26	€23,645.76	€22,828.08
Subtotal	€167,124.06	€134,858.75	€197,019.36	€185,418.37
Individually applicable remuneration maximum	€216,000.00	€180,748.80	€216,000.00	€216,000.00
Total remuneration 2022	€167,124.06	€134,858.75	€197,019.36	€185,418.37

<1> The officer is designated as a senior executive until no later than September 1, 2023 in connection with previous position as director of NSCR.

<2> The officer is designated as a senior executive until no later than 10-1-2024 due to change in governance as of 10-1-2020

Table: Board

Name	Position
M.M. Levi	President of the Foundation Board
C.E. Visser	Vice president of the Foundation Board
J. de Boer	Board member
M.P.C. Weijnen	Board member
A. van den Bosch	Board member from 7-1-2023
M.A. Ikram	Board member

The accountability for the income of board members is given in the NWO Annual Report

Table 1d: Senior executives on a total remuneration of €1,900 or less

Name	Position
M.M. Levi	President of the Foundation Board
C.E. Visser	Vice president of the Foundation Board
J. de Boer	Board member
M.P.C. Weijnen	Board member
A. van den Bosch	Board member from 7-1-2023
M.A. Ikram	Board member

The accountability for the income of board members is given in the NWO Annual Report

Table 3: Remuneration of persons who are not senior executives (amounts x €1)

Job details	Research program manager
Start and end of holding the post in 2023	01/01 – 12/31
Part-time factor in FTE	1
(Notional) employment relationship?	yes
Remuneration	
Remuneration plus taxable expense allowances	€229,088.17
Remuneration payable in due course	€10,604.38
Remuneration	€239,692.55
Individually applicable remuneration maximum	€223,000.00
The amount of the excess and the reason why the excess is or is not allowed	The person in question works on the EUROFUSION project. NWO-I is required to pay a monthly mobility allowance to the employee, which the project management determines.
2022 data	Research program manager
Start and end of holding the post in 2022	01/01 – 12/31
Part-time factor 2022 in FTE	1
Remuneration plus payable expense allowance	€225,205.93
Remuneration payable in due course	€23,122.92
Total remuneration 2022	€248,328.85

Depreciation/amortization

Table: Depreciation/amortization

	2023	Budgeted for 2023	2022
	x €1,000	x €1,000	x €1,000
4.2.1 Amortization on intangible fixed assets	649	814	649
4.2.2 Depreciation on tangible fixed assets	8,661	9,943	7,905
4.2.3 Depreciation charges passed on	-41	-	-54
4.2 Depreciation/amortization	9,269	10,757	8,499

Table: Breakdown

	2023	Budgeted for 2023	2022
	x €1,000	x €1,000	x €1,000
Depreciation on tangible fixed assets	14,705	15,431	14,216
Release of investment grants and contributions	-6,045	-5,488	-6,311
4.2 Total depreciation on tangible fixed assets	8,661	9,943	7,905

The depreciation of tangible fixed assets (€14,705k) is €489k more than in 2022, mainly due to higher depreciation charges.

- Buildings (€24k), notably an increase at Nikhef (€78k) and NIOZ (€9k) and a decrease at DIFFER (€68k).
- Inventory and equipment (€419k), of which €368k was at Nikhef.

The investment grants and contributions (being a contribution from NWO for the new building and from University of Amsterdam for the Nikhef entrance building as part of the renovation) have been deducted from the depreciation of tangible fixed assets (€6,045k), 2022 (€6,311k)

Housing expenses

Table: Housing expenses

		2023	Budgeted for 2023	2022
		x €1,000	x €1,000	x €1,000
4.3.1	Rent expenses	996	800	1,473
4.3.2	Insurance expenses	387	268	377
4.3.3	Maintenance expenses (minor maintenance)	2,930	4,643	2,027
4.3.4	Energy and water	6,783	7,151	4,344
4.3.5	Cleaning costs	1,630	1,163	1,292
4.3.6	Housing taxes and levies	1,066	931	618
4.3.7	Other housing expenses	1,362	1,584	1,744
4.3	Housing expenses	15,156	16,538	11,876

Housing expenses (€15,156k) rose by €3,280k compared to 2022, mainly due to

- €903k increase in Maintenance Expenses (minor maintenance), of which ASTRON €304k, NIOZ €364k and SRON €294k
- €2,439k increase Energy and Water, of which AMOLF €321k, ASTRON €738k, DIFFER €417k and Nikhef €1,239k, while at NIOZ and SRON there was a decrease (€163k and €191k, respectively).
- €338k increase in Cleaning Costs, of which at AMOLF an increase of €191k, CWI €61k
- €448k increase Taxes and Levies, of which NIOZ €180k and SRON €166k
- €381k decrease Other Housing Expenses, of which at SRON a decrease of €758k and at AMOLF an increase of €232k.

Other expenses

Table: Other expenses

	2023	Budgeted for 2023	2022
	x €1,000	x €1,000	x €1,000
4.4 Other expenses			
4.4.1 Administration and management expenses	20,860	15,675	28,360
4.4.2 Inventory and equipment	6,609	7,256	6,838
4.4.3 Allocation to other provisions	274	-	554
4.4.4 Other	19,905	30,356	25,312
Other expenses	47,648	53,287	61,064
Administration and management expenses			
4.4.1.1 ICT costs	3,571	2,814	2,492
4.4.1.2 Outsourced work	3,762	2,599	1,692
4.4.1.3 Auditor's costs	662	406	535
4.4.1.4 Interest expenses associated with interest subsidies	-	-	-
4.4.1.5 Other administration and management expenses	12,866	9,856	23,642
4.4.1 Administration and management expenses	20,860	15,675	28,360
Breakdown of auditor costs			
4.4.1.3.1 Costs of auditing the financial statements	355	387	414
4.4.1.3.2 Other audit engagements	245	19	87
4.4.1.3.3 Advice on tax matters	62	-	34
4.4.1.3.4 Other non-audit services	-	-	-
4.4.1.3 Auditor's costs	662	406	535
Other			
4.4.4.1 Research-related costs	18,379	25,867	21,174
4.4.4.2 Other expenses	-3,697	1,490	170
4.4.4.3 Travel and subsistence expenses	5,222	3,000	3,968
4.4.4 Other costs	19,905	30,356	25,312

Other Expenses amount to €47,648k, which is €13,415k less than 2022.

- Administration and Management Expenses (€20,860k) decreased by €7,500k, of which
 - Increase by €1,080k ICT costs, of which General €281k, ASTRON €239k, Office €202k and DIFFER €213k
 - Increase by €2,071k for Work Outsourced, Nikhef €2,008k
 - Decrease by €10,776k Other Administration and Management Expenses, ASTRON €12,116k, due to charges for SKA in 2022 and no longer in 2023.
- Inventory and Equipment (€6,609k) decreased by €228k, of which there was an increase of €1,839k at AMOLF and at NIOZ a decrease of €1,428k
- The item Other (€19,905k) fell by €5,407k, of which
 - Research Related Costs (€18,379k) a decrease of €2,795k, mainly a decrease at BUW due to lower production activities (€924k), DIFFER (€577k), Nikhef (€2,957k) and NIOZ (€1,922k) and an increase in General (€2,037k) and AMOLF (€370k) than the year 2022.
 - Other Expenses fell by €3,867k, mainly at ASTRON (€3,841k), which relates to reduction in software development costs at LOFAR 2.0, which are borne by the international partners.
 - Travel and Accommodation Expenses (€5,222k), an increase of €1,254k, the increase being €278k on domestic travel and €976k on foreign travel.
- The audit costs for the audit of the 2023 financial statements have been fully accounted for to the best of the available knowledge. The expenses included under this item for 2023 relate to the current auditor Ernst & Young Accountants LLP.

The Other audit engagements item of €245k relates to the audit of projects.

Tax advice was provided by PricewaterhouseCoopers Belastingadviseurs N.V.

Notes on expenses compared to the budget

Table: Notes on expenses compared to the budget

		2023	Budgeted for 2023	2022
		x €1,000	x €1,000	x €1,000
4.1	Personnel expenses	148,064	142,493	139,643
4.2	Depreciation/amortization	9,269	10,757	8,499
4.3	Housing expenses	15,156	16,538	11,876
4.4	Other expenses	47,648	53,287	61,064
	Total expenses	220,137	223,076	221,083

The total expenses amounted to €220,137k and were €2,938k less than the budget

- Personnel expenses were €5,571k higher
 - Wages and salaries were €2,174k
 - Other personnel expenses were €7,551k, of which
 - €4,011k consisted of more expenses for non-salaried personnel
 - Personnel costs passed on were €3,874k lower than budgeted.
- Depreciation expense were €1,488k lower,
 - mainly due to lower depreciation on tangible fixed assets (€725k) and higher release of the investment grant (€557k) than budgeted
- Housing expenses €1,382k lower, of which
 - Rent €196k higher,
 - Maintenance expenses €1,713k lower,
 - Energy €367k lower,
 - Cleaning costs €467k higher
- Other expenses, €5,639k lower, of which
 - Administration and management expenses €5,186k higher,
 - Inventory and equipment €647k lower,
 - Allocation to other provisions €274k higher,
 - Other €10,200k lower than budgeted.

NET INCOME

Table: Net income

	2023	Budgeted for 2023	2022
	x €1,000	x €1,000	x €1,000
Balance of income and expenditure	5,188	-11,973	21,910
5 Realized revaluation			
6 Financial income and expenditure	1,807	-	1,433
Result	6,995	-11,973	23,343
7 Taxes	-	-	-
8 Result from participating interests	145	-	372
Result after taxes	7,140	-11,973	23,715
9 Third-party share in result	-	-	-
Total net result	7,140	-11,973	23,715

The **financial income and expenditure amount** to €1,807k, being €2,644k in income from interest 2023. The interest rate rose in 2023. Financial expenses (-€836k) include a change in present value of -€786k and other interest expenses for bank charges, etc of -€50k.

The **results from participating interests** amounted to €145k (2022: €372k). For a more detailed explanation, please refer to what is stated in the balance sheet under the 'Financial fixed assets' item.

The **net result** for the 2023 financial year amounts to €7,140k and was allocated in equity according to the specification below. For a more detailed explanation, please refer to the balance sheet items in question in the 'Notes to the balance sheet'.

Table: Result appropriation

	x €1,000	x €1,000	x €1,000
- Movement in the general reserve	2,074	-450	7,158
- Movement in earmarked reserves (public)	5,861	-11,470	17,515
- Movement in earmarked funds (public)	-146	-	-209
- Movement in other legal reserves	-649	-53	-749
Total result distribution	7,141	-11,973	23,715

9 Notes to the cash flow statement

The NWO-I cash flow statement states what caused the decrease in liquidity of €2,009k.

This decrease is due to:

- operational activities (€38,608k)
- Investing activities (-€40,617k)

Cash flow from operating activities resulted in a net increase in liquidity of €38,608k, mainly due to the balance of income and expenditure adjusted for depreciation and amortization (€15,354k), provisions (€279k) and movement in present value (-€786k). In addition, there was a decrease in Receivables (-€9,554k) and an increase in Current Liabilities (€25,534k), mainly due to higher grant projects received in advance (€19,278k, including for the Einstein Telescope project).

The movement in the current liabilities takes into account the annual movement from the long-term investment grant to the short-term investment grant. The change in present value (-€786k) relates to the change in 2023 for calculating the present value of the provisions, the receivable from NWO regarding the PiMu (50% of the provision) and the advances to WCW for the construction of the boiler house.

Cash flow from investment activities resulted in a decrease in cash and cash equivalents of €40,617k, mainly due to changes in intangible and tangible assets (-€41,472k), investment grants and contribution received in advance (€670k) and changes in financial fixed assets (€185k).



10 Events after the balance sheet date

There were no events after the balance sheet date that had a significant financial impact on the 2023 figures.



11 Provisions in the articles on result appropriation

The articles contain no stipulations concerning the result appropriation.



12 Independent auditor's report

The independent auditor's report begins on the next page.

The following is an English translation of the independent auditor's report issued 20 June 2024.

Independent auditor's report

To: the board of the Foundation for Dutch Scientific Research Institutes

Report on the audit of the financial statements 2023 included in the annual report

Our opinion

We have audited the financial statements for the financial year ended 31 December 2023 of Foundation for Dutch Scientific Research Institutes, based in Utrecht.

In our opinion the financial statements included in this annual report give a true and fair view of the financial position of the Foundation for Dutch Scientific Research Institutes as at 31 December 2023, and of its result for the year 2023 in accordance with the RJ-Richtlijn 660 Onderwijsinstellingen (Dutch Generally Accepted Accounting Principles for Educational Institutions) and in accordance with the provisions contained in Wet Normering Topinkomens (WNT) (Standards for Remuneration Act).

The financial statements comprise:

- ▶ The balance sheet on 31 December 2023
- ▶ The statement of income and expense for the year 2023
- ▶ The notes comprising a summary of the accounting policies and other explanatory information

Basis for our opinion

We conducted our audit in accordance with Dutch law, including the Dutch Standards on Auditing and the Auditing Protocol 2023 for WNT. Our responsibilities under those standards are further described in the Our responsibilities for the audit of the financial statements section of our report.

We are independent of the Foundation for Dutch Scientific Research Institutes in accordance with the Verordening inzake de onafhankelijkheid van accountants bij assurance-opdrachten (ViO, Code of Ethics for Professional Accountants, a regulation with respect to independence) and other relevant independence regulations in the Netherlands. Furthermore, we have complied with the Verordening gedrags- en beroepsregels accountants (VGBA, Dutch Code of Ethics).

We believe the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Compliance with anti-cumulation provision of WNT is unaudited

In accordance with the "Controleprotocol WNT 2023" (WNT Auditing Protocol 2023), we did not audit the compliance with the anti-cumulation provision in Section 1.6a of the WNT and Section 5(1) (n and o) of the "Uitvoeringsregeling WNT" (WNT Implementation Regulation). Therefore, we did not audit whether or not a remuneration maximum was exceeded by a senior management official as a result of possible employment as senior management official at other institutions that are subject to the WNT, nor did we audit whether the required disclosure is accurate and complete in this respect.

Report on other information included in the annual report

The annual report contains other information in addition to the financial statements and our auditor's report thereon.

Based on the following procedures performed, we conclude that the other information is consistent with the financial statements and does not contain material misstatements.

We have read the other information. Based on our knowledge and understanding obtained through our audit of the financial statements or otherwise, we have considered whether the other information contains material misstatements.

By performing these procedures, we comply with the requirements of the Dutch Standard 720. The scope of the procedures performed is substantially less than the scope of those performed in our audit of the financial statements.

The board is responsible for the preparation of the other information, including the board report and the other information in accordance with the RJ-Richtlijn 660 Onderwijsinstellingen (Dutch Generally Accepted Accounting Principles for Educational Institutions).

Description of responsibilities regarding the financial statements

Responsibilities of the board for the financial statements

The board is responsible for the preparation and fair presentation of the financial statements in accordance with the RJ-Richtlijn 660 Onderwijsinstellingen and in accordance with the provisions contained in Wet Normering Topinkomens (WNT). Furthermore, the board is responsible for such internal control as the board determines is necessary to enable the preparation of the financial statements that are free from material misstatement, whether due to fraud or error.

As part of the preparation of the financial statements, the board is responsible for assessing the entity's ability to continue as a going concern. Based on the financial reporting framework mentioned, the board should prepare the financial statements using the going concern basis of accounting unless the board either intends to liquidate the institution or to cease operations, or has no realistic alternative but to do so.

The board should disclose events and circumstances that may cast significant doubt on the institution's ability to continue as a going concern in the financial statements.

Our responsibilities for the audit of the financial statements

Our objective is to plan and perform the audit engagement in a manner that allows us to obtain sufficient and appropriate audit evidence for our opinion.

Our audit has been performed with a high, but not absolute, level of assurance, which means we may not detect all material errors and fraud during our audit.

Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements. The materiality affects the nature, timing and extent of our audit procedures and the evaluation of the effect of identified misstatements on our opinion.

We have exercised professional skepticism throughout the audit and have exercised professional judgment where relevant, in accordance with Dutch Standards on Auditing, de Regeling Controleprotocol WNT 2023 (Regulation Auditing Protocol WNT), ethical requirements and independence requirements. Our audit included among others:

- ▶ Identifying and assessing the risks of Material misstatement of the financial statements, whether due to fraud or error, designing and performing audit procedures responsive to those risks, and obtaining audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control
- ▶ Obtaining an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control
- ▶ Evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the entity
- ▶ Concluding on the appropriateness of the board's use of the going concern basis of accounting, and based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the entity's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause an entity to cease to continue as a going concern
- ▶ Evaluating the overall presentation, structure and content of the financial statements, including the Disclosures
- ▶ Evaluating whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation

Communication

We communicate with the board regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant findings in internal control that we identify during our audit.

Utrecht, 20 June 2024

Ernst & Young Accountants LLP

signed by M.A. Brandhorst

List of abbreviations

Table: List of abbreviations

Abbreviations	Meaning
ABP	General Pension Fund for Public Employees [Algemeen Burgerlijk Pensioenfonds]
AMOLF	Institute for research into the physics of functional complex matter
AO	Administrative organization
ARCNL	Advanced Research Centre for Nanolithography
ASTRON	Netherlands Institute for Radio Astronomy
BUW	University Working Groups Administrative Unit
CLA	Collective labor agreement
COR	Central Works Council
CWI	Research Institute for Mathematics & Computer Science in the Netherlands
DIFFER	Dutch Institute for Fundamental Energy Research
DUBBLE	Dutch-Belgian BeamLine
ENW	NWO Exact sciences and Physics
ERC	European Research Council
EU	European Union
EZK	Ministry of Economic Affairs and Climate
ET	The Einstein Telescope
FOM	Foundation for Fundamental Research on Matter
FTE	Full-time equivalent
GWI	Large-scale scientific infrastructure
HFML-FELIX	High Field Magnet Laboratory – Free Electron Laser for Infrared eXperiments

Table: List of abbreviations

Continued	
Abbreviations	Meaning
IC	Internal control
KNAW	Royal Netherlands Academy of Sciences
LOFAR	Low Frequency Array
NFU	Netherlands Federation of University Medical Centers
Nikhef	National Institute for Subatomic Physics
NIOZ	Royal Netherlands Institute for Sea Research
NPO	National Education Plan
NSCR	Netherlands Institute for the Study of Crime and Law Enforcement
NWO	The Dutch Research Council
NWO-I	The Foundation for Dutch Scientific Research Institutes
Oio	PhD students
OCW	Ministry of Education, Culture and Science
P2IP	Particle Physics Inside Products B.V.
PCNI	Standing Committee on National Institutes
PPS	Public-private partnership
RU	Radboud University Nijmegen
RUG	University of Groningen
RvB-NWO	NWO Executive Board
RVO	Netherlands Enterprise Agency
SB	NWO Supervisory Board
SEP	Strategy Evaluation Protocol
SKA	Square Kilometer Array

Table: List of abbreviations

Continued

Abbreviations	Meaning
SOC/SIEM	Security Operations Center/Security Information & Event Management
SRON	Netherlands Institute for Space Research
TO2	Knowledge institutes for applied research (united in the TO2 federation)
UNL	Universities of the Netherlands
University of Amsterdam	University of Amsterdam
IR	Implementation regulations
VH	Netherlands Association of Universities of Applied Sciences
VU	Vrije Universiteit Amsterdam
WINC	Scientific Infrastructure: national consortia
WNT	Senior Executives in the Public and Semi-Public Sector (Standards for Remuneration) Act
WVOI	Employers' Association of Research Institutes
WW	Dutch Unemployment Insurance Act
