Forskningsrådet

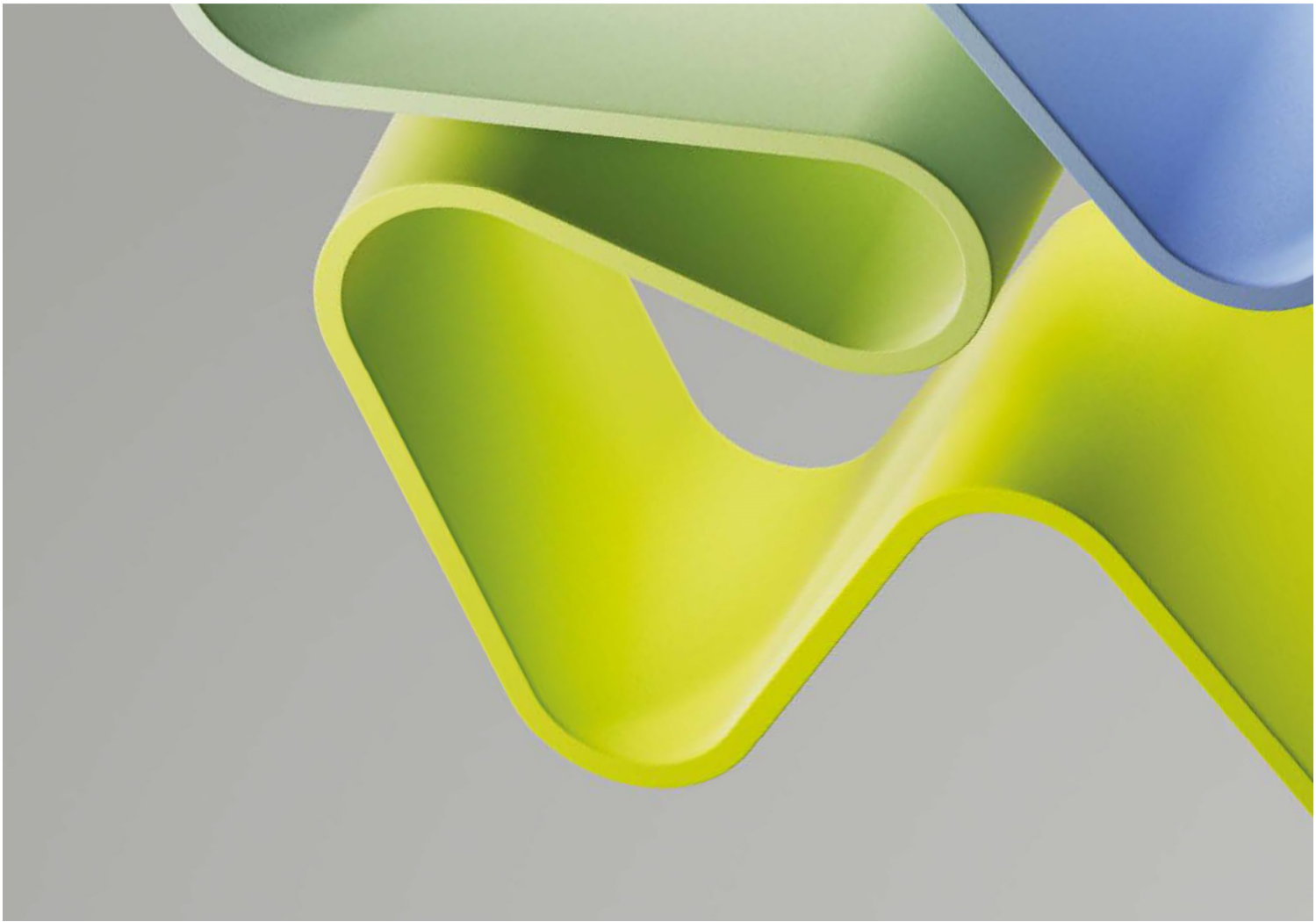
Evaluation of Life Sciences 2022–2024

Evaluation of Biosciences 2022–2023

Evaluation report

SINTEF AS
Biotechnology and Nanomedicine (BTN)

December 2023



Contents

Statement from Evaluation Committee 3 (Institute Sector)

This report is from Evaluation Committee 3 which evaluated the following administrative units representing the institute sector in the Evaluation of Biosciences 2022-2023:

- Institute of Marine Research, Havforskningsinstituttet
- Norwegian Institute for Nature Research, NINA
- Norwegian food research institute, Nofima
- Norwegian Polar Institute, NPI
- Biotechnology and Nanomedicine (BTN), SINTEF Industry

The conclusions and recommendations in this report are based on information from the administrative units (self-assessment), digital meetings with representatives from the administrative units, bibliometric analysis and personnel statistics from the Nordic Institute for Studies of Innovation, Research, and Education (NIFU) and Statistics Norway (SSB), and selected data from Studiebarometeret and the National Teacher Survey (Norwegian Agency for Quality Assurance in Education [NOKUT]). The digital interviews took place in Autumn 2023.

This report is the consensus view from committee 3. All members of the committee have agreed with the assessments, conclusions and recommendations presented here.

Evaluation committee 3 consisted of the following members:

Visiting professor
Collin Moffat (chair),
Robert Gordon University

Professor
Barbara König,
University of Zurich

Professor
Bengt Persson,
Uppsala University & Karolinska Institute

Professor
Douglas McMillian
University of Kent

Geert van der Veen, Managing Partner, Technopolis Group, was the committee secretary.

Oslo, December 2023

Profile of the administrative unit

The Biotechnology and Nanomedicine unit (BTN) has a total of 97 employees consisting of one research director, one chief market developer, one vice president of marketing, five research managers, 12 senior researchers, 35 researchers, 16 Master of Science and Doctor of Philosophy students, 11 senior engineers, eight engineers, one senior technician, three technicians and three department coordinators. The share of women differs depending on the category, with for example 40% of research managers being women and 91% of senior engineers being women.

BTN is comprised of one research group, the Department for Biotechnology and Nanomedicine.

The strategic goals of BTN are to ensure a high level of competitiveness and innovation capability for the administrative unit and for BTNs customers and collaborators, solve societal challenges and develop research competence of outstanding quality. This is defined in the institutional strategy for biotechnology and is aligned with the purpose of SINTEF; To provide technology for a better society. BTN's research is providing solutions to established industries and new industries, as well as industries yet to emerge. BTN's work has a significant societal impact through its emphasis on sustainable biotechnological processes, utilisation of bioresources, environmental research, and development of new pharmaceuticals and medical technology, in line with key United Nations (UN) Sustainable Development Goals (SDG) such as SDG 3, 8 and 9[1]. BTN has had and will continue to have a central role in the dialogue with the public, with policy makers, funding agencies, and industry organisations to ensure prioritisation of biotech research and industries.

In line with the requirements of being a Norwegian research institute, BTN strives to: 1. maintain a sound academic level, evidenced through scientific publications in recognised journals, 2. obtain competitive national and/or international research funding grants, 3. conduct contract research for private and/or public clients and 4. demonstrate robustness by having a reasonable number of researchers allocated to each research field. In relation to this, BTN mentions that it develops new technological solutions and knowledge with its clients through its extensive experience working with industry, both large enterprises and small and medium-sized enterprises (SMEs), developing research projects and technology solutions addressing the business needs. Moreover, BTN develops and runs research infrastructure. BTN has access to advanced in-house laboratories and high-performance computing resources. Most of its infrastructure has so far been funded by SINTEF/BTN, with some minor contributions from the Research Council of Norway's (RCN) INFRA program[2].

Based on its self-assessment, BTN in the future might take advantage of BTN's good track record of competing successfully for funding from industry, RCN and the European Union (EU) and that the broad and generic competence of the scientists in the unit is highly relevant addressing the much needed "green transition" of industry.

Overall assessment

Biotechnology and Nanomedicine (BTN) is a well managed biotechnology unit of the research institute SINTEF. BTN is a leading research department with impact. BTN has an adequate organisation; all projects have a project manager, a quality assurer, and an internal project owner. They clearly understand their position in the Norwegian research landscape.

BTN shows an impressive increasing trend in obtaining external funding, which has tripled over the last 10 years. European Union (EU) funding has increased considerably. At the same time, they have low basic funding (<10%) leading to BTN concentrating on relevant markets and societal challenges, but never engaging in projects that they do not judge to have a chance of success. BTN has clear strategies, invests in laboratories and undertakes recruitment based on changes, e.g. bioeconomy and precision medicine. Thus, they adapt to changes in society.

BTN is well connected internationally with numerous successful examples of collaborations. The collaborative themes include climate change, food sustainability, novel energy programs and biopharmaceuticals, which all are clear societal priorities.

BTN publishes in prestigious scientific journals. They report 52 papers in 2021 and 38 in 2020. The number of publications is lower than at universities, but comparable to the number of publications of some other research institutes in the field with low basic funding. Several publications are in high-impact journals, e.g. Proceedings of the National Academy of Science of the United States of America (PNAS), European Molecular Biology Organisation (EMBO), Nature and Science. BTN also shows a positive trend in the number of publications, increasing considerably from 2018 (32 publications) to 2021 (52 publications). The citation scores varies over the years, with a 15.8% share of the 10% most cited publications in 2019, while the corresponding share was 6.8% in 2020. The mean normalised citation score of BTN is above the Norwegian average.

BTN complies with open access requirements, and research data management adheres to FAIR principles. Results are published open access where possible (~80%) but, subjected to restricted access when considered necessary (e.g. commercial in confidence).

The research BTN undertakes is clearly relevant for the Norwegian society. They are able to attract clients that find their research so valuable they want to pay for it. The three impact cases also provide clear examples of impact. In nanomedicine, which has been a strategic focus since 2005, they have established research along the entire value chain and they now have multiple successful projects in this area.

Recommendations

1. BTN should continue with their successful operations.
2. The Evaluation Committee expects that the BTN-planned increase in Norwegian collaborations will increase the success of BTN even further and enable more universities to benefit from collaborations with BTN.
3. BTN should continue to focus on a balanced portfolio and to aim at a reasonable fraction of EU support in order to not be too dependent upon one funding source.
4. BTN should continue to follow the SINTEF strategy to offer Norwegian language courses for employees and also their partners, facilitating their integration in the Norwegian society.

1. Strategy, resources and organisation of research

BTN is a department with around 100 employees that is part of SINTEF, a large, independent research organisation with around 2,200 employees. BTN provides competence and infrastructure in microbial bioprocess development, bioprospecting, marine biotechnology, nanomedicine, and many more areas. BTN has had a long-term, close academic collaboration with the Norwegian University of Science and Technology (NTNU) in Trondheim where they have co-located laboratories but, is now also expanding its collaborations to other Norwegian universities.

BTN has a very professional setup in terms of leadership, and they engage in high-impact research in multiple areas. They clearly understand their position in the Norwegian research landscape. BTN is providing infrastructure to their collaborators and they are also part of several large Norwegian and international infrastructures.

BTN has been very successful in obtaining external grants and during the last 10 years they have considerably increased their EU funding. They have a well-balanced project portfolio and perform well in research, as judged from their publications, although their publication output in peer reviewed journals per head is relatively low when compared to Norwegian universities.

BTN adheres to the FAIR principles. Data shall be “as open as possible and as closed as necessary”. The ‘closed as necessary’ relates to the fact that BTN undertakes projects for national and international industries. Projects generating research data have a data management plan in place and are executed in line with the FAIR principles. SINTEF has support services for handling of research data.

BTN does annual strategic investments in new infrastructure and competence building, in line with their strategic goals, to ensure a high level of competitiveness and innovation capability for the department and for their customers and collaborators, in order to solve societal challenges and develop research competence of outstanding quality.

1.1 Research Strategy

BTN is the biotechnology division of SINTEF. SINTEF has a total of 2,200 employees, of which 71% are researchers, 13% are management/admin, 9% are engineers, and 7% are technical personnel. Fifty-six percent (56%) of the researchers have a PhD. BTN has close to 100 employees, of which 47 are researchers and 16 are Masters/PhD students. There are 23 engineers and technicians, 6 managers, 3 administrators, and 2 marketing developers.

The biotechnology goals of SINTEF are to ensure strengthened competitiveness and innovation capacity, to solve major societal challenges and develop academic environments of outstanding quality. SINTEF has a number of strategy documents, including a corporate strategy, a biotechnology strategy, a nanomedicine strategy, and an industry strategy. They aim to be close to customers through regional presence and industrial clusters. The strategy documents are relevant for all parts of SINTEF, including BTN. The different documents interlink and emphasise different components of relevance for the BTN activities.

BTN successfully works on development of generic technology and infrastructure for microbial bioprocess development. BTN also performs advanced analyses, cell-based analyses, bioprospecting, marine biotechnology, biorefining, medical technology and nanomedicine. BTN's laboratories are co-located with NTNU for mutual benefits. NTNU is BTN’s most important academic collaborator.

BTN implements and utilises new and emerging biotech tools and technologies. They collaborate with excellent research groups and industries nationally and internationally.

BTN has a very professional setup in terms of leadership including a clear focus on human resources and the mentoring of their people (including staff development and recruitment).

BTN has a very successful external funding strategy. It has a balanced funding portfolio consisting of national and international projects and has grown considerably during the evaluation period. BTN has obtained 85–90% of their funding in open competition and is involved in leading large EU networks including participation in research technology development (RTD), European Innovation Council (EIC) and Pathfinder projects.

BTN has many successful collaborations as proven by the publication list which reports 90 publications from 2020 and 2021. The co-author share is around 60% international and around 65% national. Most national co-publications are with NTNU, while the most common international collaborators are from Denmark, Italy, Sweden, USA, UK and Germany.

1.2 Organisation of research

BTN's vision is "Technology for a better society". All projects are well organised with a project manager, a quality assurer, and an internal project owner.

BTN performs research on biomass processing and development of bioprocesses, chemical and physiochemical analysis, characterization studies and development of formulations for drug delivery and compound release, thereby addressing major societal needs. Furthermore, they perform generic research on production processes using microbial and mammalian cells for production of value products, e.g., antibiotics, enzymes, food, feed, vaccines, and anticancer compounds, and they perform advanced chemical and physicochemical analysis.

BTN's research groups clearly engage in high-impact research, as reflected by strong publications in high-ranking journals including Science, Nature Nanotechnology and PNAS, and they are very strong in multiple areas: microbial molecular biology, bioprocess and medical technology, biopolymers/polymers, biopharmaceuticals and nanomedicine, based upon their reports and publications. However, it is noted that the number of publications per head is lower than in the Norwegian university sector.

BTN clearly understands its leading position in the Norwegian biotechnology research landscape, as judged from their self-evaluation. BTN has a good track record in obtaining external funding. They have low basic funding (<10%) leading to BTN concentrating on relevant market and societal challenges. BTN always checks that new projects are in line with their activities and have a chance of success. Furthermore, BTN has clear strategies for investments in new infrastructure and competence building, based on changes in markets and industry needs, e.g. bioeconomy and precision medicine. Thus, they adapt to changes in society.

BTN has state-of-the-art laboratory infrastructure and is an attractive employer, among the top 10 of preferred employers for young professionals in Norway (https://www.sintef.no/siste-nytt/2022/sintef-er-arets-mest-attraktive-arbeidsgiver-for-unge/). BTN sees opportunities in the "green transition" of industry. BTN constantly develops their competence, laboratories, and networks.

1.3 Research funding

BTN is very successful in obtaining external grants. Ninety percent (90%) of their funding is competitive. They have a well-balanced funding portfolio across national grants, international grants and industry funding. External grants from national sources (28% of funding) including RCN, regional funds, municipalities, and international sources (28% of funding), including primarily EU, EEA and ERA-nets, are enhanced by direct funding from the industry sector (44%). BTN's average grant success rate in Horizon 2020 was 26% which is good when compared to the average for the EU member states.

Sixty-two percent (62%) of the total staff time is allocated to research projects. In 2021, BTN had 153 projects (34 EU/ERA/EEA, 59 industry, and 60 national research grants) amounting to 177 million NOK.

BTN shows an impressive increasing trend in obtaining external funding, which has tripled over the last 10 years, from 62 million NOK in 2011 to 177 million NOK in 2021. Also, EU funding has increased considerably and was 24 million NOK in 2021.

In addition, BTN obtains some user fees when their infrastructure is utilised for various projects.

1.4 Use of infrastructures

Accessibility to both experimental and digital research infrastructures is very high, in house, at core facilities or via active co-operation.

BTN is a partner/node in several national infrastructures:

- NorBioLab: The Norwegian Biorefinery Laboratory
- NBioC: Norwegian BioCentre for Bioprocessing & Fermentation
- MiMaC: Norwegian Laboratory for Mineral and Materials Characterization
- ECCSEL: European Research Infrastructure for CO_2 Capture, Utilisation, Transport and Storage (CCUS)
- NOR-Openscreen: Norwegian node of the EU-Openscreen infrastructure project
- NorFab: Norwegian Micro- and Nanofabrication Facility

BTN also participates in and/or utilises several international infrastructures:

- ELIXIR: enables researchers to access and analyse life science data
- EU-OPENSCREEN: integrates high-capacity screening platforms throughout Europe

1.5 National and international collaboration

For BTN, collaboration is key to develop technology for a better society. BTN participates in strong scientific networks, nationally and internationally, with academic and industry partners of strategic importance. Collaboration ensures robustness and that societal needs are met along with development of products and services.

BTN is very well connected internationally as is shown by numerous successful examples of collaborations which are listed in the self-evaluation and e.g. the high success rate in Horizon Europe and the number of international co-publications. The collaborative themes include, for example, climate change, food sustainability, novel energy programs, and biopharmaceuticals, which all are clear societal priorities.

Collaboration is also shown in the publications, where in 2018–2021 between 47 and 63% of the publications were with international co-authors, and 60–86% of the publications with national co-authors. The most frequent countries for international collaboration are Denmark, Sweden, Germany, Italy, UK and USA.

BTN aspires to be nationally leading in applied biotechnology research and has ~45% industry share in the funding portfolio. BTN has long-term collaboration with key collaborators. BTN will increase its collaboration with national research environments (NTNU, Norwegian University of Life Sciences (NMBU), Norwegian Food Research Institute (Nofima), University of Oslo (UiO), The Arctic University of Norway (UiT), University of Bergen (UiB) etc), partly through national research platforms.

BTN is aiming at further increasing its international collaboration. To date, BTN has successfully increased the portfolio of international projects from 9% in 2011 to 25% in 2021. BTN focuses on a balanced portfolio, which sounds relevant; BTN wants to focus on the EU grants to keep up their competitive actions, but they have concluded that the EU share should not be larger than ~30% of their total funding.

BTN finds collaboration important to build new knowledge. However, BTN is worried about the fact that the amount of public funding/resources for applied research in Norway has shown little growth in recent years, at the same time as universities are required to increase their external financing, thus increasing the competition for BTN.

Regarding international benchmarks for BTN, they find it difficult to find any similar organisation, since BTN is quite unique in its setting. However, the international collaborations of BTN with prestigious international partners like the University of Leiden, being specialists in Streptomyces, and with the University of Zurich, which is super strong in biomaterials, is, in the eyes of the Evaluation Committee, an indicator of their competence. An additional indicator is that BTN is a popular partner in many EU projects.

1.6 Research staff

Staff are organised into five units. Each unit is led by a research manager (3 men, 2 women). Ninety-four (94) staff are classified as research staff out of a total of 97. Total share of women is 68%.

Professional development is primarily done through the projects. Furthermore, SINTEF operate a range of courses including on project management, academic writing and communication.

BTN staff have most of their time allocated to research, 62% of their time at work is registered to research projects.

Staff work on several research projects in parallel with many time-critical deliverables, which can limit options for long-term mobility, since they cannot be away from their ongoing projects for too long. However, shorter-term visits to industry are made for collaboration and knowledge transfer. Since SINTEF is a large organisation, there are mobility options with respect to temporary or permanent relocation between research units.

2. Research production, quality and integrity

BTN publishes in prestigious scientific journals. They report 53 papers in 2021 and 37 in 2020. Several publications are in high-impact journals, e.g. PNAS, EMBO, Nature and Science. BTN also shows a positive trend in number of publications, increasing considerably from 2018 to 2021.

The publications are also well cited. In 2018–2020, BTN had a share of the 10% most cited publications that was between 2.3 and 15.8%. Among well-cited papers are “Smart cancer nanomedicine” in Nature Nanotechnology and “Chitosan as a Wound Dressing Starting Material” in International Journal of Molecular Science.

SINTEF is an independent, non-profit research institute and adheres to its own ethical guidelines.

2.1 Research quality and integrity

Overall assessment:
BTN appears to be a very strong institute, the research matches strategic goals, and it is highly likely that the carefully designed management model contributes strongly to the productivity. It also contributes to the active development of competences and new business areas. Due to the confidential nature of a significant part of the work at BTN it is harder to assess the overall production up against the budget and resources. There are many examples of work which definitely are of very high quality, but harder to see the general picture, and where gaps in infrastructure may reduce the competitiveness going forward. In the budget there are “Other sources” and it would have been good to know how much of this comes from patents etc. even if timelines for innovation returns can be long. For a Department like BTN with its long legacy this should have been made clearer in the report.
(From Evaluation report – Panel 4b)

2.2. Open Science

BTN complies with open access requirements, and research data management adheres to the FAIR principles. Data shall be “as open as possible and as closed as necessary”. Results are published open access where possible (~80%) but subjected to restricted access when considered necessary.

BTN offers a self-archiving infrastructure, SINTEF OPEN, to provide open reports and articles. For the underlying data and programming codes, they have internal infrastructures. BTN is working on a system for standardisation of data as there are many systems and many types of data. The level of data publication is regulated by the consortium agreements in the respective projects.

Sharing of preprints is supported. SINTEF software is available via GitHub. Ownerships of results is with SINTEF.

3. Diversity and equality

SINTEF's ethical guidelines state that no employee shall be subjected to unwarranted discrimination on account of their gender identity and orientation, pregnancy, taking leave, role as career, ethnicity, religion, life stance, functional disability, or age. SINTEF offers Norwegian language courses for employees and their partners, which is, in the eyes of the Evaluation Committee, impressive.

4. Relevance to institutional and sectorial purposes

BTN is an attractive partner for R&D projects in many markets, having extensive experience working with industry and obtaining much funding via the industry and in several collaborative projects with industry. BTN has access to advanced in-house laboratories and High-Performance Computing resources. BTN develops new products but is also an attractive partner in developing knowledge for policymakers and actively participates in interest groups and networks, e.g. The Life Science Cluster and Blue Legasea. Furthermore, BTN have given input to the roadmap for new opportunities in Norway and contributed to a feasibility study on the establishment of antibiotic production in Norway. BTN employees hold positions in boards of advisory bodies to the EU research programme, and BTN researchers have provided knowledge on mRNA vaccines during the COVID-19 pandemics in newspapers. Three of the ten most visible SINTEF employees in the public internationally in 2021 are BTN staff.

SINTEF’s mission is applied research and innovation. Support for developing innovative ideas towards commercialization is granted internally as short (3 months) to longer (up to 3–4 years) strategic projects. BTN had more than 60 such projects in the evaluation period. SINTEF has a dedicated technology transfer office.

Examples of publicly funded commercialisation projects are: Treatment of lung cancer with nanoparticles (2020–2021); PRESORT: Platform for clinical decision support for precision therapy (2020–2024); Tailored alginate scaffolds for low temperature 3D cultivation of primary fish cells (2017–2019); and Optimization of novel microbial produced compounds with anti-cancer activity (2016–2018). Most of these projects are quite young, but there are also examples of older projects with proven success, e.g. antibiotics produced by Xellia that are used for treatment of serious bacterial and fungal infections globally.

Further examples are PACA technology, a drug delivery platform based on poly (alkyl cyanoacrylate) nanoparticles; new antibiotic compounds from marine microorganisms as part of marine bioprospecting; and the SpermVital technology for animal breeding.

BTN is aligned with the Strategy for holistic institute policy developed by the Ministry of Education and Research aiming at getting better coordination between the research institutes and improve industrial development and transformation. BTN has contributed to the knowledge base for policy development, e.g. for establishment of antibiotic production in Norway, and contributing to The Centre for Digital Life Norway (DLN).

In the eyes of the Evaluation Committee, BTN clearly contributes new products and processes to improve the innovation capacity of the industry, based on scientific excellence and high-quality research, documented in publications in high-ranking journals.

5. Relevance to society

BTN works on sustainable biotechnological processes, improved utilisation of natural resources and residual materials, environmental research, and development of new pharmaceuticals and medical technology. The three impact cases clearly show that BTN is relevant for society. In nanomedicine, which has been a strategic focus since 2005, they have established research along the entire value chain and they now have multiple successful projects in this area. Within the area of biopolymers, BTN focus on marine polymers, especially alginates from brown algae and bacteria, which has a large impact on innovation. Also here, BTN has multiple successful collaborations with companies. Finally, on microbial biotechnology, which is one of their core activities, they have made large contributions, and BTN is also the leader of the National Centre for Research-Based Innovation on Industrial Biotechnology.

Comments to impact case 1
Nanomedicine research for accelerated translation
BTN has established research along the entire value chain within nanomedicine, including formulation, full preclinical characterisation and regulatory issues. BTN has, since 2005, had a strategic focus on nanomedicine. BTN performs research focused on drug delivery using nanomedicine and possess advanced infrastructures, which has helped BTN to position itself in this area. BTN has over the years made a significant contribution to the translation of nanomedicines through several EU and international projects.

The research in BTN has been translated into health and economic benefits via industrial use, a spin-off company within cancer treatment which is based on a nanoformulation technology platform (PACA). They input to regulatory frameworks and policies as well as providing information to the public. BTN's research and competence, which cover the entire value chain within nanomedicine, have made them an attractive research partner and allowed them to amplify their impact on translation of nanomedicines.

Public dissemination regarding mRNA as medicine has been a priority, and BTN was very active during the COVID-19 pandemic, as the development and application of the novel mRNA vaccines resulted in a need for public information. BTN based this information upon its research activities and competence building within RNA therapeutics and vaccines.

BTN has contributed at the European level through their involvement and management in European organisations like the European Technology Platform on Nanomedicine. Many of the activities within the formulation of nanomedicines have involved students, mostly in collaboration with NTNU. Together, the research units have educated bachelor, master and PhD candidates with relevant nanomedicine competence for industry, communities and research organisations.

Comments to impact case 2
Biopolymers: From basic research to innovation in medicine, animal breeding, and marine industries
BTN has a lot of research activity on marine biopolymers, particularly alginates from brown algae and bacteria, which has had a large impact on innovation and value creation for industries working on biopolymer production and application development. The research has been conducted in close collaboration with NTNU. Cross-disciplinary international collaboration and state-of-the-art infrastructure platforms for screening, structural characterisation and microbial production processes have been important enabling factors.

For biopolymer engineering and production, BTN has contributed with synthesis and characterisation of new alginate epimerases, including structural design and characterisation of these biopolymers and associated biomaterials, and evaluation in immunological assays.

Several companies report the importance of the expertise and infrastructure at BTN for their commercial impact, increased funding and for successful scientific collaborations, including development of new processes and technology. BTN reports that they have had a significant impact on the growth of their collaborating partners and that their activities have had a substantial impact on their main research partner NTNU. BTN has participated in more than 62 research projects with NTNU between 2011 and 2021, leading to co-publication with 30 PhD students.

Comments to impact case 3
Microbial biotechnology

Microbial biotechnology is one of BTN's core activities, including molecular biology, synthetic and systems biology, high throughput screening, various omics and other advanced analyses, fermentation and bioprocess technology.

BTN has clearly contributed to national and international competence building and cooperation, e.g. BTN is active in the bioprospecting field, using numerous technologies to find and produce novel enzymes and bioactive molecules, including development of advanced cell factories for efficient and sustainable production of various biomolecules.

BTN also has an impact in provision of state-of-the-art infrastructure for cost efficient microbial bioprocess optimisation, which has been important for multiple companies, including several start-ups.

BTN reports numerous examples of innovations with impact for their collaborators and customers.

BTN is the leader of the National Centre for Research-Based Innovation on Industrial Biotechnology (SFI-IB) consisting of 4 research institutions and 16 companies.

Appendices

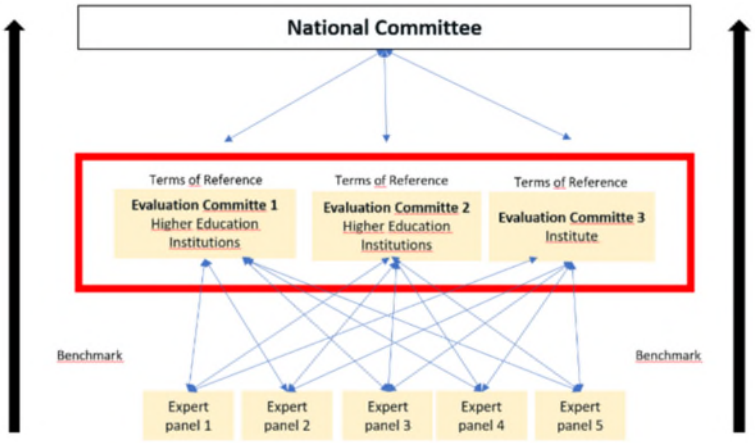
Evaluation of Biosciences 2022-2023

By evaluating Norwegian research and higher education we aim to enhance the quality, relevance, and efficiency. In accordance with the statutes of the Research Council of Norway (RCN), the RCN evaluates Norwegian professional environments to create a solid and up-to-date knowledge base about Norwegian research and higher education in an international perspective.

The evaluation of life sciences is conducted in 2022 - 2024. The evaluation of biosciences takes place in 2022 - 2023, and the evaluation of medicine and health is carried out in 2023-2024. The primary aim of the evaluation of life sciences is to reveal and confirm the quality and the relevance of research performed at Norwegian Higher Education Institutions (HEIs), the institute sector and the health trusts. The evaluation shall result in recommendations to the institutions, the RCN and the ministries.

Evaluation of biosciences (EVALBIOVIT) 2022-2023
The evaluation of biosciences includes twenty-two administrative units (e.g., faculty, department, institution) which are assessed by evaluation committees according to sectorial affiliation and/or other relevant similarities between the units. The administrative units enrolled their research groups (97) to five expert panels organised by research subjects or themes and assessed across institutions and sectors.

Organisation of evaluation of biosciences research 2022 - 2023



The institutions have been allowed to adapt the evaluation mandate (Terms of Reference) to their own strategic goals. This is to ensure that the results of the evaluation will be useful for the institution's own strategic development. The administrative unit together with the research group(s) selects an appropriate benchmark for each of the research group(s).

The Research Council of Norway has commissioned an external evaluation secretariat at Technopolis Group for the implementation of the evaluation process.

Each institution/administrative unit is responsible for following up the recommendations that apply to their own institution/administrative unit. The Research Council will use the results from the evaluation in the development of funding instruments and as a basis for advice to the Government.

The web page for the evaluation of biosciences 2022-2023:
https://www.forskningsradet.no/en/analysis-numbers/evaluations/subject-theme/biosciences/

Til innmeldte administrative enheter til
fagevaluering av biovitenskap (EVALBIOVIT)

Vår saksbehandler/tlf.	**Vår ref.**	**Oslo,**
Hilde D.G. Nielsen/4092 2260	21/10653	21.04.2022
	Deres ref.	

Fagevaluering av biovitenskap (EVALBIOVIT) 2022 – 2023

Vi viser til invitasjonsbrev om å delta i fagevaluering av biovitenskap (EVALBIOVIT) datert 11.11.2021 og til informasjonsmøte med innmeldte administrative enheter 15.12.2021.

Porteføljestyret for livsvitenskap vedtok evalueringsprotokollen for fagevaluering av biovitenskap 05.04.2022 (vedlegg 1). Protokollen beskriver roller, prosesser og ansvarsfordeling i evalueringsarbeidet og er i tråd med forslaget til nytt nasjonalt rammeverk for evaluering av forskning og høyere utdanning utarbeidet i regi av Kunnskapsdepartementet.

Forskningsrådet har mottatt innmelding av 37 administrative enheter til EVALBIOVIT. Disse vil bli fordelt på sektorspesifikke evalueringskomitéer: 1-2 evalueringskomité/er for administrative enheter som tilhører instituttsektoren og 1-2 evalueringskomité/er for administrative enheter som tilhører UH-sektor. Universitetsmuseene vil bli evaluert samlet i én evalueringskomité for UH-sektor.
Det skal i tillegg opprettes internasjonale fagekspertpaneler etter faglig eller tematisk likhet på tvers av sektorer. Ekspertpanelene skal evaluere forskergruppene som de administrative enhetene melder inn. Evalueringskomitéene og ekspertpanelene skal vurdere de innsamlede dataene og gi anbefalinger til den enkelte institusjon, til Forskningsrådet og til departementene.

Tilpasning av mandat (vedlegg 1)

Forskningsrådet ber med dette administrative enheter om å tilpasse mandatet (vedlegg 1) til de lokale forhold ved egen institusjon. Tilpasningen gjøres ved å fylle inn de åpne punktene i malen (Appendix A). Utfylt skjema sendes på epost til evalbiovit@forskningsradet.no *innen 30. september 2022.*

Innmelding av forskergrupper (vedlegg 2a og 2b)

Forskningsrådet ber administrative enheter om å melde inn forskergrupper i tråd med forskergruppedefinisjonen beskrevet i kapittel 1.2 i evalueringsprotokollen. Det bes også om at forskergruppene innplasseres i den tentative fagpanelinndelingen for EVALBIOVIT (vedlegg 2a). Utfylt regneark (vedlegg 2b) sendes til evalbiovit@forskningsradet.no *innen 31. mai 2022.*

Forskningsrådet vil ferdigstille panelstruktur og avgjøre den endelige fordelingen av forskergruppene på fagpaneler *etter* at alle forskergrupper er meldt inn.

Norges forskningsråd/
The Research Council of Norway
Drammensveien 288
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NO–1327 Lysaker

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Org.nr. 970141669

Invitasjon til å foreslå eksperter (vedlegg 3a og 3b)

Forskningsrådet inviterer administrative enheter til å spille inn forslag til eksperter som kan inngå i evalueringskomitéene og i ekspertpanelene (vedlegg 3a). Hver evalueringskomité skal bestå av 7-9 komitémedlemmer. Hvert ekspertpanel skal bestå av 5-7 eksperter. Utfylt regneark (vedlegg 3b, fane 1 og fane 2) sendes til evalbiovit@forskningsradet.no *innen 31. mai 2022.*

Forskningsrådet v/porteføljestyret for livsvitenskap vil oppnevne leder og medlemmer til evalueringskomitéene og til ekspertpanelene.

Data og datainnsamling

Forskningsrådet har nå ute et oppdrag for analyse av data om personal og forskningsproduksjon. Analysen skal i hovedsak baseres på data i DBH, NIFUs forskerpersonaleregister og Cristin. Analysene vil inkludere indikatorer som skal brukes for evaluering av alle institusjoner.

Videre vil institusjonene få et ansvar for innsamling av data til en egenevaluering som skal inngå i vurderingsgrunnlaget for evalueringskomiteene. For å sikre at evalueringen blir nyttig for forskningsinstitusjonenes utvikling, vil Forskningsrådet også invitere institusjonene til å delta i utvelgelse av relevante evalueringsdata og indikatorer som kan danne grunnlag for vurdering opp mot institusjonens egne strategiske mål og sektormål. På bakgrunn av dette har Forskningsrådet en forventning om at institusjonene som deltar i evalueringen stiller med nødvendige ressurser gjennom hele evalueringsprosessen.

Forskningsrådet har, etter en anbudskonkurranse om sekretariatstjenester, inngått en avtale med Technopolis Group som skal bistå Forskningsrådets administrasjon i arbeidet med EVALBIOVIT. Sekretariatet skal blant annet koordinere datainnsamlingen fra institusjonene og systematisere det innsamlede materialet for vurdering i ekspertpaneler og evalueringskomitéer.

Endring av administrativ enhet

For noen få tilfeller kan det være behov for å gjøre noen endringer i forhold til den administrative enheten[1] som allerede er innmeldt til EVALBIOVIT. For eksempel kan et fakultet som ble meldt inn samlet til EVALBIOVIT i desember 2021 finne det mer hensiktsmessig å heller melde inn fakultetets institutter som egne administrative enheter. Hvis man ønsker å endre på den administrative enheten må dette meldes Forskningsrådets administrasjon så fort som mulig, men ikke senere enn 31.05.2022. Melding om endring sendes på epost til: evalbiovit@forskningsradet.no.

Informasjonsmøte 9. mai 2022 og nettside for EVALBIOVIT

Forskningsrådet arrangerer 09.05.2022 kl. 12.00-12.45 et informasjonsmøte for alle som deltar i EVALBIOVIT. Møtet vil foregå digitalt (Zoom). Vi vil i møtet bl.a. gå gjennom evalueringsprotokollen samt at det vil være mulig å stille spørsmål. Påmelding til evalbiovit@forskningsradet.no *innen 07.05.2022.*

Forskningsrådet har opprette en egen nettside hvor informasjon om EVALBIOVIT vil bli publisert fortløpende. Lenke til nettsiden finner dere her: https://www.forskningsradet.no/statistikk-evalueringer/biovitenskap-2022-2023/.

[1] Med administrativ enhet menes en organisatorisk enhet på nivå 2 eller 3 i organisasjonsstrukturen til DBH for UH sektor eller NIFUs organisasjonsregister for institutt- og helsesektoren.

Spørsmål som gjelder fagevalueringen kan sendes på epost til evalbiovit@forskningsradet.no eller ved å kontakte Hilde Dorthea Grindvik Nielsen på epost hgn@forskningsradet.no /mobil 40 92 22 60.

Med vennlig hilsen
Norges forskningsråd

Ole Johan Borge
avdelingsdirektør
Avdeling for helseforskning og helseinnovasjon

Hilde G. Nielsen
spesialrådgiver
Avdeling for helseforskning og helseinnovasjon

Vedlegg

1. Evalueringsprotokoll for fagevaluering av biovitenskap 2022-2023
2a. Tentativ fagpanelinndeling for evaluering av forskergrupper
2b. Skjema for innmelding av forskergrupper
3a. Invitasjon til å foreslå eksperter og informasjon om evalueringskomitéer og ekspertpaneler
3b. Skjema for å foreslå eksperter til evalueringskomitéer og ekspertpaneler

The Research Council of Norway

Evaluation of life sciences in Norway 2022-2023

LIVSEVAL protocol version 1.0

By decision of the Portfolio board for life sciences April 5., 2022

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Oslo, 5 April 2022

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1 Introduction

Research assessments based on this protocol serve different aims and have different target groups. The primary aim of the evaluation of life sciences is to reveal and confirm the quality and the relevance of research performed at Norwegian Higher Education Institutions (HEIs), and by the institute sector and regional health authorities and health trusts. These institutions will hereafter be collectively referred to as Research Performing Organisations (RPOs). The assessments should serve a formative purpose by contributing to the development of research quality and relevance at these institutions and at the national level.

1.1 Evaluation units

The assessment will comprise a number of *administrative units* submitted for evaluation by the host institution. By assessing these administrative units in light of the goals and strategies set for them by their host institution, it will be possible to learn more about how public funding is used at the institution(s) to facilitate high-quality research and how this research contributes to society. The administrative units will be assessed by evaluation committees according to sectoral affiliation and/or other relevant similarities between the units.

The administrative units will be invited to submit data on their *research groups* to be assessed by expert panels organised by research subject or theme. See Chapter 3 for details on organisation.

Administrative unit	An administrative unit is any part of an RPO that is recognised as a formal (administrative) unit of that RPO, with a designated budget, strategic goals and dedicated management. It may, for instance, be a university faculty or department, a department of an independent research institute or a hospital.
Research group	Designates groups of researchers within the administrative units that fulfil the minimum requirements set out in section 1.2. Research groups are identified and submitted for evaluation by the administrative unit, which may decide to consider itself a single research group.

1.2 Minimum requirements for research groups

1) The research group must be sufficiently large in size, i.e. at least five persons in full-time positions with research obligations. This merely indicates the minimum number, and larger units are preferable. In exceptional cases, the minimum number may include PhD students, postdoctoral fellows and/or non-tenured researchers. *In all cases, a research group must include at least three full-time tenured staff*. Adjunct professors, technical staff and other relevant personnel may be listed as group members but may not be included in the minimum number.

2) The research group subject to assessment must have been established for at least three years. Groups of more recent date may be accepted if they have come into existence as a consequence of major organisational changes within their host institution.
3) The research group should be known as such both within and outside the institution (e.g. have a separate website). It should be able to document common activities and results in the form of co-publications, research databases and infrastructure, software, or shared responsibilities for delivering education, health services or research-based solutions to designated markets.
4) In its self-assessment, the administrative unit should propose a suitable benchmark for the research group. The benchmark will be considered by the expert panels as a reference in their assessment of the performance of the group. The benchmark can be grounded in both academic and extra-academic standards and targets, depending on the purpose of the group and its host institution.

1.3 The evaluation in a nutshell

The assessment concerns:

- research that the administrative unit and its research groups have conducted in the previous 10 years
- the research strategy that the administrative units under evaluation intend to pursue going forward
- the capacity and quality of research in life sciences at the national level

The Research Council of Norway (RCN) will:

- provide a template for the Terms of Reference[1] for the assessment of RPOs and a national-level assessment in life sciences
- appoint members to evaluation committees and expert panels
- provide secretarial services
- commission reports on research personnel and publications based on data in national registries
- take responsibility for following up assessments and recommendations at the national level.

RPOs conducting research in life sciences are expected to take part in the evaluation. The board of each RPO under evaluation is responsible for tailoring the assessment to its own strategies and specific needs and for following them up within their own institution. Each participating RPO will carry out the following steps:

1) Identify the administrative unit(s) to be included as the main unit(s) of assessment
2) Specify the Terms of Reference by including information on specific tasks and/or strategic goals of relevance to the administrative unit(s)

[1] The terms of reference (ToR) document defines all aspects of how the evaluation committees and expert panels will conduct the [research area] evaluation. It defines the objectives and the scope of the evaluation, outlines the responsibilities of the involved parties, and provides a description of the resources available to carry out the evaluation.

3) The administrative unit will, in turn, be invited to register a set of research groups that fulfil the minimum criteria specified above (see section 1.2). The administrative unit may decide to consider itself a single research group.
4) For each research group, the administrative unit should select an appropriate benchmark in consultation with the group in question. This benchmark can be a reference to an academic level of performance or to the group's contributions to other institutional or sectoral purposes (see section 2.4). The benchmark will be used as a reference in the assessment of the unit by the expert panel.
5) The administrative units subject to assessment must provide information about each of their research groups, and about the administrative unit as a whole, by preparing self-assessments and by providing additional documentation in support of the self-assessment.

1.4 Target groups

- Administrative units represented by institutional management and boards
- Research groups represented by researchers and research group leaders
- Research funders
- Government

The evaluation will result in recommendations to the institutions, the RCN and the ministries. The results of the evaluation will also be disseminated for the benefit of potential students, users of research and society at large.

This protocol is intended for all participants in the evaluation. It provides the information required to organise and carry out the research assessments. Questions about the interpretation or implementation of the protocol should be addressed to the RCN.

2 Assessment criteria

The administrative units are to be assessed on the basis of five assessment criteria. The five criteria are applied in accordance with international standards. Finally, the evaluation committee passes judgement on the administrative units as a whole in qualitative terms. In this overall assessment, the committee should relate the assessment of the specific tasks to the strategic goals that the administrative unit has set for itself in the Terms of Reference.

When assessing administrative units, the committees will build on a separate assessment by expert panels of the research groups within the administrative units. See Chapter 3 'Evaluation process and organisation' for a description of the division of tasks.

2.1 Strategy, resources and organisation

The evaluation committee assesses the framework conditions for research in terms of funding, personnel, recruitment and research infrastructure in relation to the strategic aims set for the administrative unit. The administrative unit should address at least the following five specific aspects in its self-assessment: 1) funding sources, 2) national and international cooperation, 3) cross-sector and interdisciplinary cooperation, 4) research careers and mobility, and 5) Open Science. These five aspects relate to how the unit organises and actually performs its research, its composition in terms of leadership and personnel, and how the unit is run on a day-to-day basis.

To contribute to understanding what the administrative unit can or should change to improve its ability to perform, the evaluation committee is invited to focus on factors that may affect performance.

Further, the evaluation committee assesses the extent to which the administrative unit's goals for the future remain scientifically and societally relevant. It is also assessed whether its aims and strategy, as well as the foresight of its leadership and its overall management, are optimal in relation to attaining these goals. Finally, it is assessed whether the plans and resources are adequate to implement this strategy.

2.2 Research production, quality and integrity

The evaluation committee assesses the profile and quality of the administrative unit's research and the contribution the research makes to the body of scholarly knowledge and the knowledge base for other relevant sectors of society. The committee also assesses the scale of the unit's research results (scholarly publications, research infrastructure developed by the unit, and other contributions to the field) and its contribution to Open Science (early knowledge and sharing of data and other relevant digital objects, as well as science communication and collaboration with societal partners, where appropriate).

The evaluation committee considers the administrative unit's policy for research integrity and how violations of such integrity are prevented. It is interested in how the unit deals with research data, data management, confidentiality (GDPR) and integrity, and the extent to which independent and critical pursuit of research is made possible within the unit. Research integrity relates to both the scientific integrity of conducted research and the professional integrity of researchers.

2.3 Diversity and equality

The evaluation committee considers the diversity of the administrative unit, including gender equality. The presence of differences can be a powerful incentive for creativity and talent development in a diverse administrative unit. Diversity is not an end in itself in that regard, but a tool for bringing together different perspectives and opinions.

The evaluation committee considers the strategy and practices of the administrative unit to prevent discrimination on the grounds of gender, age, disability, ethnicity, religion, sexual orientation or other personal characteristics.

2.4 Relevance to institutional and sectoral purposes

The evaluation committee compares the relevance of the administrative unit's activities and results to the specific aspects detailed in the Terms of Reference for each institution and to the relevant sectoral goals (see below).

Higher Education Institutions

There are 36 Higher Education Institutions in Norway that receive public funding from the Ministry for Education and Research. Twenty-one of the 36 institutions are owned by the ministry, whereas the last 15 are privately owned. The HEIs are regulated under the Act relating to universities and university colleges of 1 August 2005.

The purposes of Norwegian HEIs are defined as follows in the Act relating to universities and university colleges[2]

- provide higher education at a high international level;
- conduct research and academic and artistic development work at a high international level;
- disseminate knowledge of the institution's activities and promote an understanding of the principle of academic freedom and application of scientific and artistic methods and results in the teaching of students, in the institution's own general activity as well as in public administration, in cultural life and in business and industry.

In line with these purposes, the Ministry for Research and Education has defined four overall goals for HEIs that receive public funding. These goals have been applied since 2015:

1) High quality in research and education
2) Research and education for welfare, value creation and innovation
3) Access to education (esp. capacity in health and teacher education)
4) Efficiency, diversity and solidity of the higher education sector and research system

The committee is invited to assess to what extent the research activities and results of each administrative unit have contributed to sectoral purposes as defined above. In particular, the committee is invited to take the share of resources spent on education at the administrative units into account and to assess the relevance and contributions of research to education, focusing on the master's and PhD levels. This assessment should be distinguished from an

[2] https://lovdata.no/dokument/NLE/lov/2005-04-01-15?q=universities

assessment of the quality of education in itself, and it is limited to the role of research in fostering high-quality education.

Research institutes (the institute sector)

Norway's large institute sector reflects a practical orientation of state R&D funding that has long historical roots. The Government's strategy for the institute sector[3] applies to the 33 independent research institutes that receive public basic funding through the RCN, in addition to 12 institutes outside the public basic funding system.

The institute sector plays an important and specific role in attaining the overall goal of the national research system, i.e. to increase competitiveness and innovation power to address major societal challenges. The research institutes' contributions to achieving these objectives should therefore form the basis for the evaluation. The main purpose of the sector is to conduct independent applied research for present and future use in the private and public sector. However, some institutes primarily focus on developing a research platform for public policy decisions, others on fulfilling their public responsibilities.

The institutes should:

- maintain a sound academic level, documented through scientific publications in recognised journals
- obtain competitive national and/or international research funding grants
- conduct contract research for private and/or public clients
- demonstrate robustness by having a reasonable number of researchers allocated to each research field

The committee is invited to assess the extent to which the research activities and results of each administrative unit contribute to sectoral purposes and overall goals as defined above. In particular, the committee is invited to assess the level of collaboration between the administrative unit(s) and partners in their own or other sectors.

The hospital sector

There are four regional health authorities (RHFs) in Norway. They are responsible for the specialist health service in their respective regions. The RHFs are regulated through the Health Enterprises Act of 15 June 2001 and are bound by requirements that apply to specialist and other health services, the Health Personnel Act and the Patient Rights Act. Under each of the regional health authorities, there are several health trusts (HFs), which can consist of one or more hospitals. A health trust (HF) is wholly owned by an RHF.

Research is one of the four main tasks of hospital trusts.[4] The three other mains tasks are to ensure good treatment, education and training of patients and relatives. Research is important if the health service is to keep abreast of stay up-to-date with medical developments and carry out critical assessments of established and new diagnostic methods,

[3] Strategy for a holistic institute policy (Kunnskapsdepartementet 2020)

[4] Cf. the Specialist Health Services Act § 3-8 and the Health Enterprises Act §§ 1 and 2

treatment options and technology, and work on quality development and patient safety while caring for and guiding patients.

The committee is invited to assess the extent to which the research activities and results of each administrative unit have contributed to sectoral purposes as described above. The assessment does not include an evaluation of the health services performed by the services.

2.5 Relevance to society

The committee assesses the quality, scale and relevance of contributions targeting specific economic, social or cultural target groups, of advisory reports on policy, of contributions to public debates, and so on. The documentation provided as the basis for the assessment of societal relevance should make it possible to assess relevance to various sectors of society (i.e. business, the public sector, non-governmental organisations and civil society).

When relevant, the administrative units will be asked to link their contributions to national and international goals set for research, including the Norwegian Long-term Plan for Research and Higher Education and the UN Sustainable Development Goals. Sector-specific objectives, e.g. those described in the Development Agreements for the HEIs and other national guidelines for the different sectors, will be assessed as part of criterion 2.4.

The committee is also invited to assess the societal impact of research based on case studies submitted by the administrative units and/or other relevant data presented to the committee. Academic impact will be assessed as part of criterion 2.2.

3 Evaluation process and organisation

The RCN will organise the assessment process as follows:

- Commission a professional secretariat to support the assessment process in the committees and panels, as well as the production of self-assessments within each RPO
- Commission reports on research personnel and publications within life sciences based on data in national registries
- Appoint one or more evaluation committees for the assessment of administrative units.
- Divide the administrative units between the appointed evaluation committees according to sectoral affiliation and/or other relevant similarities between the units.
- Appoint a number of expert panels for the assessment of research groups submitted by the administrative units.
- Divide research groups between expert panels according to similarity of research subjects or themes.
- Task the chairs of the evaluation committees with producing a national-level report building on the assessments of administrative units and a national-level assessments produced by the expert panels.

Committee members and members of the expert panels will be international, have sufficient competence and be able, as a body, to pass judgement based on all relevant assessment criteria. The RCN will facilitate the connection between the assessment levels of panels and committees by appointing committee members as panel chairs.

3.1 Division of tasks between the committee and panel levels

The expert panels will assess research groups across institutions and sectors, focusing on the first two criteria specified in Chapter 2: 'Strategy, resources and organisation' and 'Research production and quality' The assessments from the expert panels will also be used as part of the evidence base for a report on Norwegian research within life sciences (see section 3.3).

The evaluation committees will assess the administrative units based on all the criteria specified in Chapter 2. The assessment of research groups delivered by the expert panels will be a part of the evidence base for the committees' assessments of administrative units. See figure 1 below.

The evaluation committee has sole responsibility for the assessments and any recommendations in the report. The evaluation committee reaches a judgement on the research based on the administrative units and research groups' self-assessments provided by the RPOs, any additional documents provided by the RCN, and interviews with representatives of the administrative units. The additional documents will include a standardised analysis of research personnel and publications provided by the RCN.

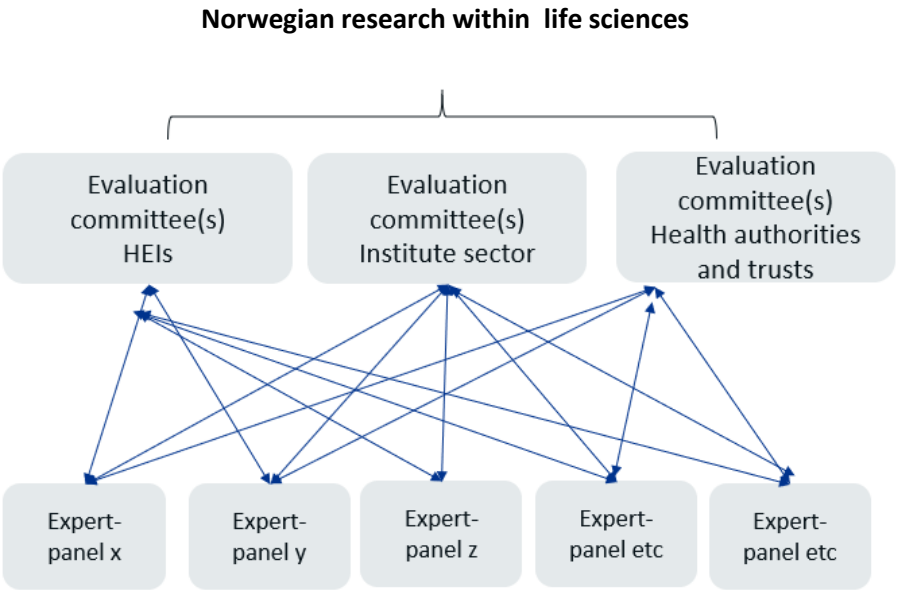

Figure 1. Evaluation committees and expert panels

The evaluation committee takes international trends and developments in science and society into account when forming its judgement. When judging the quality and relevance of the research, the committees shall bear in mind the specific tasks and/or strategic goals that the administrative unit has set for itself including sectoral purposes (see section 2.4 above).

3.2 Accuracy of factual information

The administrative unit under evaluation should be consulted to check the factual information before the final report is delivered to the RCN and the board of the institution hosting the administrative unit.

3.3 National level report

Finally, the RCN will ask the chairs of the evaluation committees to produce a national-level report that builds on the assessments of administrative units and the national-level assessments produced by the expert panels. The committee chairs will present their assessment of Norwegian research in life sciences at the national level in a separate report that pays specific attention to:

- Strengths and weaknesses of the research area in the international context
- The general resource situation regarding funding, personnel and infrastructure
- PhD training, recruitment, mobility and diversity
- Research cooperation nationally and internationally
- Societal impact and the role of research in society, including Open Science

This national-level assessment should be presented to the RCN.

Appendix A: Terms of References (ToR)

[Text in red to be filled in by the Research-performing organisations (RPOs)]

The board of [RPO] mandates the evaluation committee appointed by the Research Council of Norway (RCN) to assess [administrative unit] based on the following Terms of Reference.

Assessment
You are asked to assess the organisation, quality and diversity of research conducted by [administrative unit] as well as its relevance to institutional and sectoral purposes, and to society at large. You should do so by judging the unit's performance based on the following five assessment criteria (a. to e.). Be sure to take current international trends and developments in science and society into account in your analysis.

a) Strategy, resources and organisation
b) Research production, quality and integrity
c) Diversity and equality
d) Relevance to institutional and sectoral purposes
e) Relevance to society

For a description of these criteria, see Chapter 2 of the life sciences evaluation protocol. Please provide a written assessment for each of the five criteria. Please also provide recommendations for improvement. We ask you to pay special attention to the following [n] aspects in your assessment:

1. …
2. …
3. …
4. …

…

[To be completed by the board: specific aspects that the evaluation committee should focus on – they may be related to a) strategic issues, or b) an administrative unit's specific tasks.]

In addition, we would like your report to provide a qualitative assessment of [administrative unit] as a whole in relation to its strategic targets. The committee assesses the strategy that the administrative unit intends to pursue in the years ahead and the extent to which it will be capable of meeting its targets for research and society during this period based on available resources and competence. The committee is also invited to make recommendations concerning these two subjects.

Documentation
The necessary documentation will be made available by the life sciences secretariat at Technopolis Group.

The documents will include the following:

- a report on research personnel and publications within life sciences commissioned by RCN
- a self-assessment based on a template provided by the life sciences secretariat
- [to be completed by the board]

Interviews with representatives from the evaluated units
Interviews with the [administrative unit] will be organised by the evaluation secretariat. Such interviews can be organised as a site visit, in another specified location in Norway or as a video conference.

Statement on impartiality and confidence
The assessment should be carried out in accordance with the *Regulations on Impartiality and Confidence in the Research Council of Norway*. A statement on the impartiality of the committee members has been recorded by the RCN as a part of the appointment process. The impartiality and confidence of committee and panel members should be confirmed when evaluation data from [the administrative unit] are made available to the committee and the panels, and before any assessments are made based on these data. The RCN should be notified if questions concerning impartiality and confidence are raised by committee members during the evaluation process.

Assessment report
We ask you to report your findings in an assessment report drawn up in accordance with a format specified by the life sciences secretariat. The committee may suggest adjustments to this format at its first meeting. A draft report should be sent to the [administrative unit] and RCN by [date]. The [administrative unit] should be allowed to check the report for factual inaccuracies; if such inaccuracies are found, they should be reported to the life sciences secretariat no later than two weeks after receipt of the draft report. After the committee has made the amendments judged necessary, a corrected version of the assessment report should be sent to the board of [the RPO] and the RCN no later than two weeks after all feedback on inaccuracies has been received from [administrative unit].

Appendix B: Data sources

The lists below shows the most relevant data providers and types of data to be included in the evaluation. Data are categorised in two broad categories according to the data source: National registers and self-assessments prepared by the RFOs. The RCN will commission an analysis of data in national registers (R&D-expenditure, personnel, publications etc.) to be used as support for the committees' assessment of administrative units. The analysis will include a set of indicators related to research personnel and publications.

- **National directorates and data providers**
- Norwegian Directorate for Higher Education and Skills (HK-dir)
- Norwegian Agency for Quality Assurance in Education (NOKUT)
- Norwegian Agency for Shared Services in Education and Research (SIKT)
- Research Council of Norway (RCN)
- Statistics Norway (SSB)

National registers

1) R&D-expenditure
    a. SSB: R&D statistics
    b. SSB: Key figures for research institutes
    c. HK-dir: Database for Statistics on Higher Education (DBH)
    d. RCN: Project funding database (DVH)
    e. EU-funding: eCorda
2) Research personnel
    a. SSB: The Register of Research personnel
    b. SSB: The Doctoral Degree Register
    c. RCN: Key figures for research institutes
    d. HK-dir: Database for Statistics on Higher Education (DBH)
3) Research publications
    a. SIKT: Cristin - Current research information system in Norway
    b. SIKT: Norwegian Infrastructure for Bibliometrics
    (full bibliometric data incl. citations and co-authors)
4) Education
    a. HK-dir/DBH: Students and study points
    b. NOKUT: Study barometer
    c. NOKUT: National Teacher Survey
5) Sector-oriented research
    a. RCN: Key figures for research institutes
6) Patient treatments and health care services
    a. Research & Innovation expenditure in the health trusts
    b. Measurement of research and innovation activity in the health trusts
    c. Collaboration between health trusts and HEIs
    d. Funding of research and innovation in the health trusts
    e. Classification of medical and health research using HRCS (HO21 monitor)

Self-assessments

1) Administrative units
    a. *Self-assessment covering all assessment criteria*
    b. Administrative data on funding sources
    c. Administrative data on personnel
    d. Administrative data on the division of staff resources between research and other activities (teaching, dissemination etc.)
    e. Administrative data on research infrastructure and other support structures
    f. SWOT analysis
    g. Any supplementary data needed to assess performance related to the strategic goals and specific tasks of the unit

2) Research groups
    a. *Self-assessment covering the first two assessment criteria (see Table 1)*
    b. Administrative data on funding sources
    c. Administrative data on personnel
    d. Administrative data on contribution to sectoral purposes: teaching, commissioned work, clinical work [will be assessed at committee level]
    e. Publication profiles
    f. Example publications and other research results (databases, software etc.) The examples should be accompanied by an explanation of the groups' specific contributions to the result
    g. Any supplementary data needed to assess performance related to the benchmark defined by the administrative unit

The table below shows how different types of evaluation data may be relevant to different evaluation criteria. Please note that the self-assessment produced by the administrative units in the form of a written account of management, activities, results etc. should cover all criteria. A template for the self-assessment of research groups and administrative units will be commissioned by the RCN from the life sciences secretariat for the evaluation.

Table 1. Types of evaluation data per criterion

Evaluation units / Criteria	Research groups	Administrative units
Strategy, resources and organisation	Self-assessment Administrative data	Self-assessment National registers Administrative data SWOT analysis
Research production and quality	Self-assessment Example publications (and other research results)	Self-assessment National registers
Diversity, equality and integrity		Self-assessment National registers Administrative data
Relevance to institutional and sectoral purposes		Self-assessment Administrative data
Relevance to society		Self-assessment National registers Impact cases
Overall assessment	*Data related to:* *Benchmark defined by administrative unit*	*Data related to:* *Strategic goals and specific tasks of the admin. unit*

The Research Council of Norway

EVALBIOVIT

Self-assessment for administrative units

Version 1.2

Overview

Institution (name and short name):
Administrative unit (name and short name):
Date:
Contact person:
Contact details (email):

1 Introduction

The primary aim of the evaluation is to reveal and confirm the quality and the relevance of research performed at Norwegian Higher Education Institutions (HEIs), and by the institute sector. For the life sciences area, research undertaken by regional health authorities and health trusts is also included. These institutions will henceforth be collectively referred to as research performing organisations (RPOs). The evaluation report(s) will provide a set of recommendations to the RPOs, the Research Council of Norway (RCN) and the concerned ministries. The results of the evaluation will also be disseminated for the benefit of potential students, users of research, and society at large.

You have been invited to complete this self-assessment as an administrative unit. The self-assessment contains questions regarding the unit's research- and innovation related activities and developments over the past 10 years. All the submitted data will be evaluated by evaluation committees (for administrative units) and expert panels (for research groups). Please read through the whole document including all instructions before answering the questions to avoid overlaps.

As an administrative unit, you are also responsible for collecting the completed self-assessment for each of the research groups that belong to the unit. The research groups need to submit their completed self- assessment to the unit no later than the 1st of December 2022. The unit will submit the research groups' completed self-assessments and the unit's own completed self-assessment no later than the 5th of December 2022.

The whole self-assessment shall be written in English.

Please use the following format when naming your document: name of the institution, and name of the administrative unit, e.g. UiO_FacBiosci. Send it to evalbiovit@technopolis-group.com no later than 5th of December 2022.

For questions concerning the self-assessment or EVALBIOVIT in general, please contact RCN's evaluation secretariat at Technopolis Group: evalbiovit.questions@technopolis-group.com.

Many thanks in advance![1]

[1] Personal information will be deleted when evaluation reports are published and no later than 30 April 2024

For more information on how Technopolis Group handles data processing, see: http://www.technopolis-group.com/privacy-policy/

For more information on how the Research Council of Norway handles data processing, see: https://www.forskningsradet.no/en/privacy-policy/

2 Self-assessment for administrative units

Self-assessment guidelines:

- Data on personnel should refer to reporting to DBH on 1 October 2021 for HEIs and to the yearly reporting for 2021 for the institute sector
- Other data should refer to 31 December 2021 if not specified otherwise
- Please read the entire self-assessment document before answering
- Provide information – provide documents and other relevant data or figures about the administrative unit, for example strategy and other planning documents, as well as data on R&D expenditure, sources of income and results and outcomes of research
- Describe – explain and present using contextual information about the administrative unit (most often this includes filling out specific forms) and inform the reader about the administrative unit
- Reflect – comment in a reflective and evaluative manner how the administrative unit operates
- 4000 characters including spaces equals one page

2.1 Strategy, resources and organisation of research

2.1.1 Research strategy

2.1.1.1 Describe the main strategic goals for research and innovation of the administrative unit (1000–4000 characters). How are these goals related to institutional strategies?

- Describe the main fields and focus of research and innovation in the unit
- Describe how you work to maximise synergies between the different purposes of the unit
- Describe the planned research-field impact; planned policy impact and planned societal impact
- Describe how the strategy is followed-up in the allocation of resources and other measures
- Describe the most important occasions where priorities are made (i.e., announcement of new positions, applying for external funding, following up on evaluations)
- If there is no long-term research strategy – explain why

Form 1 *Administrative unit's strategic planning documents*

Instructions: For each category (Research strategy, Research funding, Cooperation policy, Open science policy) present up to 5 documents that according to you are the most relevant. If the administrative unit uses the strategies, policies, etc. of a larger institution, then present these documents. Please use the following formatting: Name of document, Years active, Link to the document.

Example: Norwegian University of Science and Technology Strategy, 2021–2025, hyperlink to the document

2.1.2 Organisation of research

2.1.2.1 Describe the organisation of research and innovation activities at the unit, including how responsibilities for research and other purposes (education, knowledge exchange, patient treatment, training etc) are distributed and delegated (500–1500 characters).

Form 2 *SWOT analysis for administrative units*

Instructions: Please complete a SWOT analysis for your administrative unit. Reflect on what are the major internal Strengths and Weaknesses as well as external Threats and Opportunities for your research and innovation activities and research environment. Assess what the present Strengths enable in the future and what kinds of Threats are related to the Weaknesses. Consider your scientific expertise and achievements, funding, facilities, organisation and management (500–2000 characters per cell).

2.1.3 Research funding

2.1.3.1 Describe the funding sources of the unit and indicate the share of the unit's budget (NOK) dedicated to research compared to other purposes. Shares may be calculated based on full time equivalents (FTE) allocated to research compared to total FTE in unit (500–1500 characters).

2.1.3.2 Describe how successful the administrative unit has been in obtaining competitive regional, national and/or international research funding grants (200–1000 characters).

Form 3 *Funding levels for the administrative unit for 2021*

Instructions: For administrative units in the institute sector receiving basic funding via RCN, funding levels should be provided for 2021 in the funding categories used in the yearly reporting:

a) National grants (NOK) (post 1.1 og 1.2)):

   i) from the Research Council of Norway (NOK) – excluding basic funding

   ii) from the ministries and underlying directorates (NOK)

   iii) from industry (NOK)

   iv) other national grants including third sector, private associations and foundations (NOK)

b) National contract research (post 1.3)

c) International grants (post 1.4)

d) Funding related to public management (forvaltningsoppgaver post 1.5)

For Higher Education Institutions costs covered by external funding sources should be reported according to the same categories as far as possible. Costs may be classified as Other if they cannot be placed in one of the specified categories. Reporting should be based on incurred costs (regnskapstall) for 2021.

2.1.4 Participation in national infrastructures

2.1.4.1 Describe the most important participation in the national infrastructures listed in the Norwegian roadmap for research infrastructures (Nasjonalt veikart for forskningsinfrastruktur) including as host institution(s) (200–1000 characters).

Form 4 *Infrastructures listed in the Norwegian roadmap for research infrastructures (Nasjonalt veikart for forskningsinfrastruktur)*

Instructions: Please present up to 5 participations in the national infrastructures listed in the Norwegian roadmap for research infrastructures (Nasjonalt veikart for forskningsinfrastruktur) for each area that were the most important to your administrative unit. For each category area, please use the following formatting:

Name of research infrastructure, Years when used, Description (100–500 characters) of the engagement with the research infrastructure (reasoning, objectives, expected/actual outcomes).

[2] Excluding basic funding.

[3] For research institutes only research activities should be included from section 1.3 in the yearly reporting

2.1.4.2 Describe the most important participation in the international infrastructures funded by the ministries (Norsk deltakelse i internasjonale forskningsorganisasjoner finansiert av departementene) (200–1000 characters).

Form 5 *Participation in international research organisations*

Instructions: Please describe up to 5 participations in international and European infrastructures (ESFRI) for each area that have been most important to your research unit. When presenting your participation, please use the following formatting:

Name of research infrastructure, Years when used, Description (100–500 characters) of the participation in the research infrastructure (reasoning, objectives, expected/actual outcomes).

2.1.4.3 Describe the most important participation in European (ESFRI) infrastructures (Norske medlemskap i infrastrukturer i ESFRI roadmap) including as host institution(s) (200–1000 characters).

Form 6 *Participation in infrastructures on the ESFRI Roadmap*

Instructions: For each area, please give a description of up to 5 engagements that have been most important to your research unit. When presenting your participation, please use the following formatting: Name of research infrastructure, Years when used, Description (100–500 characters) of the engagement with the research infrastructure (reasoning, objectives, expected/actual outcomes)."

2.1.5 Accessibility to research infrastructures

2.1.5.1 Describe the accessibility to research infrastructures for your researchers. Considering both physical and electronic infrastructure (200–1000 characters).

2.1.5.2 Describe what is done at the unit to fulfil the FAIR-principles[4] (200–1000 characters).

2.1.6 Research staff

2.1.6.1 Describe the profile of research personnel at the unit in terms of position and gender (200–1000 characters).

Form 7 *Administrative data on the division of staff resources for 2021*

2.1.6.2 Describe the structures and practices to foster researcher careers and help early-career researchers to make their way into the profession (200–1000 characters).

2.1.6.3 Describe how research time is distributed among staff including criteria for research leave (forskningsfri) (200–1000 characters).

2.1.6.4 Describe research mobility options (200–1000 characters).

2.2 Research production, quality, and integrity

2.2.1 Research quality and integrity

2.2.1.1 Describe the scientific focus areas of the research conducted at the administrative unit, including the unit's contribution to these areas (500–2000 characters).

2.2.1.2 Describe the unit's policy for research integrity, including preventative measures when integrity is at risk, or violated (200–1000 characters).[5]

2.2.2 Open Science policies at the administrative unit

2.2.2.1 Describe the institutional policies, approaches, and activities to the following Open Science areas (consider each area separately, 500–1000 characters in total):

- Open access to publications
- Open access to research data and implementation of FAIR data principles
- Open-source software/tools
- Open access to educational resources
- Open peer review
- Skills and training for Open Science
- Citizen science and/or involvement of stakeholders / user groups

2.2.2.2 Describe the most important contributions and impact of the unit's researchers towards the different Open Science areas (consider each area separately, 500–1000 characters in total):

- Open access to publications
- Open access to research data and implementation of FAIR data principles
- Open-source software/tools
- Open access to educational resources
- Open peer review
- Skills and training for Open Science
- Citizen science and/or involvement of stakeholders/user groups

2.2.2.3 Describe the institutional policy regarding ownership of research data, data management, and confidentiality (200–1000 characters). Is the use of data management plans implemented at the unit?

2.3 *Diversity and equality*

2.3.1 Diversity and equality practices

2.3.1.1 Describe the policy and practices to protect against any form of discrimination in the administrative unit (200–1000 characters).

Form 8 *Administrative unit's policies against discrimination*

Instructions: Give a description of up to 5 documents that are the most relevant. If the administrative unit uses the strategies, policies, etc. of a larger institution, then these documents should be referred to. For each document use the following formatting: Name of document, Years active, Link to the document

Example: Norwegian University of Science and Technology Strategy, 2021–2025, hyperlink to the document

2.4 Relevance to institutional and sectorial purposes

2.4.1 Sector specific impact

2.4.1.1 Describe whether the administrative unit has activities aimed at achieving sector-specific objectives[6] or focused on contributing to the knowledge base in general. Describe activities connected to sector-specific objectives, the rationale for participation and achieved and/or expected impacts (500–3000 characters).

- Alternatively, describe whether the activities of the unit are aimed at contribution to the knowledge base in general. Describe the rationale for this approach and the impacts of the unit's work to the knowledge base.

2.4.2 Research innovation and commercialisation

2.4.2.1 Describe the administrative unit's practices for innovation and commercialisation (500–1500 characters).

- Describe the interest among the research staff in doing innovation and commercialisation activities
- Describe how innovation and commercialisation is supported at the unit

Form 9 *Administrative unit's policies for research innovation*

Instructions: Describe up to 5 documents of the administrative unit's policies for research innovation, including IP policies, new patents, licenses, start-up/spin-off guidelines, etc., that are the most relevant. If the administrative unit uses the strategies, policies, etc. of a larger institution, then present these documents. For each document use the following formatting: Name of document, Years active, Link to the document

Example: Norwegian University of Science and Technology Strategy, 2021–2025, hyperlink to the document

2.4.2.2 Provide examples of successful innovation and commercialisation results, such as new patents, licenses, etc (500–1500 characters).

Form 10 *Administrative description of successful innovation and commercialisation results*

Instructions: Please describe up 10 successful innovation and commercialisation results at your administrative unit. For each result, please use the following formatting: Name of innovation and commercial results, Year, Links to relevant documents, articles, etc. that present the result, Description (100–500 characters) of successful innovation and commercialisation result.

2.4.3 Collaboration

2.4.3.1 Describe the unit's policy towards regional, national and international collaboration, as well as how cross-sectorial collaboration and interdisciplinary collaboration is approached at the administrative unit (500–1500 characters). Please fill out the forms that match your institution: the institute sector fills out Form 11a and Form 11b; HEIs fill out Form 12.

- Reflect on how successful the unit have been in meeting its aspirations for collaborations

Form 11a (institute sector) *Administrative unit's partnerships ('faktisk samarbeid')*

Instructions: For each of the administrative unit's tender and project-based cooperation (which are not tax deducted) please present up to 5 examples under each category (Collaboration with national public institutions; Collaboration with national private institutions; Collaboration with international public institutions; Collaboration with international private institutions). Please use 100– 500 characters to describe the impacts and relevance of collaboration.

Form 11b (institute sector) *Administrative unit's collaboration*

Instructions: For each of the administrative unit's tender and project-based cooperation please present up to 5 examples under each category (Collaboration with academic partners nationally; Collaboration with non-academic partners nationally; Collaboration with academic partners internationally; Collaboration with non-academic partners internationally). Please use 100–500 characters to describe the impacts and relevance of collaboration.

2.4.3.2 Reflect on the importance of different types of collaboration for the administrative unit (200–1000 characters).

- Regional, national and international collaborations

Collaborations with different sectors, including public, private and third sector

Form 12 (HEIs) *Administrative unit's partnerships" ('faktisk samarbeid')*

Instructions: For each of the administrative unit's tender and project-based cooperation (which are not tax deducted) please present up to 5 examples under each category (Collaboration with national public institutions; Collaboration with national private institutions; Collaboration with international public institutions; Collaboration with international private institutions). Please use 100– 500 characters to describe the impacts and relevance of collaboration.

2.4.3.3 Reflect on the importance of different types of collaboration for the administrative unit, the added value of these collaborations to the administrative unit and Norwegian research system (500–1500 characters).

2.4.4 ONLY for higher education institutions

2.4.4.1 Reflect on how research at the unit contributes towards master and PhD-level education provision, at your institutions and beyond (200–1000 characters).7

2.4.4.2 Describe the opportunities for master and bachelor students to become involved in research activities at the unit (200–1000 characters).

2.4.5 ONLY for research institutes

2.4.5.1 Describe how the research activities at the administrative unit contribute to the knowledge base for policy development, sustainable development, and societal and industrial transformations more generally (500–1500 characters).8

2.4.5.2 Describe the most important research activities including those with partners outside of research organisations (500–1500 characters).

2.5 Relevance to society

2.5.1 Administrative unit's societal impact

2.5.1.1 Reflect on the unit's contribution towards the Norwegian Long-term plan for research and higher education, societal challenges more widely, and the UN Sustainable Development Goals (500–1500 characters).

2.5.1.2 Describe how the administrative unit's research and innovation has contributed to economic, societal and cultural development by submitting one to five impact cases depending on the size of the unit. For up to 10 researchers: one case; for 10 to 30 researchers: two cases; for 30-50 researchers: three cases; for 50-100 researchers: four cases, and up to five cases for units exceeding 100 researchers. Please use the attached template for impact cases. Each impact case will be submitted as an attachment to the self-evaluation. Institutions that submit impact cases do not have to fill in the box below.

Case no. 1

Thank you for completing the self-assessment.

[7] Please note: RCN will provide data from the national student survey (Studiebarometeret) on students' experience with research methods and exposure to research activities. The data will most probably be on an aggregate level but including the unit under assessment.

[8] Strategi for helhetlig instituttpolitikk, Kunnskapsdepartementet, p.4): «Instituttsektoren skal utvikle kunnskapsgrunnlag for politikkutforming og bidra til bærekraftig utvikling og omstilling, gjennom forskning av høy kvalitet og relevans.» (The government's strategy for an independent institute sector).

List of research groups

Institution	Administrative unit	Research group
Sintef Industri	Department for Biotechnology and Nanomedicine	*Department for Biotechnology and Nanomedicine*

Scales for research group assessment

Organisational dimension

Score	Organisational environment
5	An organisational environment that is outstanding for supporting the production of excellent research.
4	An organisational environment that is very strong for supporting the production of excellent research.
3	An organisational environment that is adequate for supporting the production of excellent research.
2	An organisational environment that is modest for supporting the production of excellent research.
1	An organisational environment that is not supportive for the production of excellent research.

Quality dimension

Score	Research and publication quality	Score	Research group's contribution Groups were invited to refer to the Contributor Roles Taxonomy in their description https://credit.niso.org/
5	Quality that is outstanding in terms of originality, significance and rigour.	5	The group has played an outstanding role in the research process from the formulation of overarching research goals and aims via research activities to the preparation of the publication.
4	Quality that is internationally excellent in terms of originality, significance and rigour but which falls short of the highest standards of excellence.	4	The group has played a very considerable role in the research process from the formulation of overarching research goals and aims via research activities to the preparation of the publication.
3	Quality that is recognised internationally in terms of originality, significance and rigour.	3	The group has a considerable role in the research process from the formulation of overarching research goals and aims via research activities to the preparation of the publication.
2	Quality that meets the published definition of research for the purposes of this assessment.	2	The group has modest contributions to the research process from the formulation of overarching research goals and aims via research activities to the preparation of the publication.
1	Quality that falls below the published definition of research for the purposes of this assessment.	1	The group or a group member is credited in the publication, but there is little or no evidence of contributions to the research process from the formulation of overarching research goals and aims via research activities to the preparation of the publication.

Societal impact dimension

Score	Research group's societal contribution, taking into consideration the resources available to the group	Score	User involvement
5	The group has contributed extensively to economic, societal and/or cultural development in Norway and/or internationally.	5	Societal partner involvement is outstanding – partners have had an important role in all parts of the research process, from problem formulation to the publication and/or process or product innovation.
4	The group's contribution to economic, societal and/or cultural development in Norway and/or internationally is very considerable given what is expected from groups in the same research field.	4	Societal partners have very considerable involvement in all parts of the research process, from problem formulation to the publication and/or process or product innovation.
3	The group's contribution to economic, societal and/or cultural development in Norway and/or internationally is on par with what is expected from groups in the same research field.	3	Societal partners have considerable involvement in the research process, from problem formulation to the publication and/or process or product innovation.
2	The group's contribution to economic, societal and/or cultural development in Norway and/or internationally is modest given what is expected from groups in the same research field.	2	Societal partners have a modest part in the research process, from problem formulation to the publication and/or process or product innovation.
1	There is little documentation of contributions from the group to economic, societal and/or cultural development in Norway and/or internationally.	1	There is little documentation of societal partners' participation in the research process, from problem formulation to the publication and/or process or product innovation.

Methods and limitations

Methods

The evaluation is based on documentary evidence and online interviews with the representatives of Administrative Unit.

The documentary inputs to the evaluation were:

- Evaluation Protocol Evaluation of life sciences in Norway 2022-2023
- Administrative Unit´s Terms of Reference
- Administrative Unit's self-assessment report
- Administrative Unit's impact cases
- Administrative Unit's research groups evaluation reports
- Panel reports from the Expert panels
- Bibliometric data (*NIFU Nordic Institute for Studies of innovation, research and education*)
- Personnel data (*Statistics Norway (SSB)*)
- Funding data – The Research Council´s contribution to biosciences research (*RCN*)
- Extract from the Survey for academic staff and the Student Survey (*Norwegian Agency for Quality Assurance in Education (NOKUT)*)

After the documentary review, the Committee held a meeting and discussed an initial assessment against the assessment criteria and defined questions for the interview with the Administrative Unit. The Committee shared the interview questions with the Administrative Unit two weeks before the interview.

Following the documentary review, the Committee interviewed the Administrative Unit in an hour-long virtual meeting to fact-check the Committee's understanding and refine perceptions. The Administrative Unit presented answers to the Committee's questions and addressed other follow-up questions.

After the online interview, the Committee attended the final meeting to review the initial assessment in light of the interview and make any final adjustments.

A one-page summary of the Administrative Unit was developed based on the information from the self-assessment, the research group assessment, and the interview. The Administrative Unit had the opportunity to fact-check this summary. The Administrative Unit approved the summary without adjustments. The Committee judged the information received through documentary inputs and the interview with the Administrative Unit sufficient to complete the evaluation.

The Committee judged that the Administrative Unit's self-assessment report was insufficient to assess all evaluation criteria fully, and some information gaps remained after the interview with the Administrative Unit.

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