Photo: Espen Solli

2024

Sustainability and Annual report

Research for a better future

Contents

Sustainability at IFE

Introduction from the CEO

IFE's vision is 'research for a better future'. Since its establishment in 1948, IFE has played a leading role in the development of Norway as an energy nation. IFE's research in energy, the environment and human-centred digitalisation is our most important contribution to a more sustainable society, both in Norway and internationally.

Sustainability has always been an important and integral part of IFE's work, but we are more familiar with it being referred to in terms of safety, safety culture, looking after our surroundings, social responsibility, and being a good workplace for our employees.

In recent years, our sustainability efforts have been more structured, and our reporting draws on the Corporate Sustainability Reporting Directive (CSRD) and European Sustainability Reporting Standard (ESRS). The nature of our sustainability work has changed in recent years, partly due to the regulation of several factors under national and EU laws, directives, standards and reporting, in addition to board and management requirements and expectations from customers, partners and employees. IFE supports this developmentand, although as a foundation we are not legally required to produce sustainability reports, we have chosen to use ESRS as a framework and guide for our improvement efforts within sustainability.

> "Since its establishment in 1948, IFE has played a leading role in the development of Norway as an energy nation.

Kjeller, 29 April 2025

Photo: Pixel & Co

Nils Morten Huseby
CEO

IFE's sustainability efforts

Sustainability has always been an important and integral part of IFE's work. IFE started working systematically with sustainability in 2022. We identified applicable Norwegian laws and recommendations, relevant EU directives and UN Sustainable Development Goals (SDGs). A materiality and risk analysis was performed, and relevant standards for sustainability reporting were mapped. IFE prepared the first greenhouse gas accounts for 2022 according to the Greenhouse Gas Protocol (GHG Protocol), and we developed our first sustainability strategy, human rights policy and procedures for compliance with the Norwegian Transparency Act. The work was continued in 2023 and 2024, and we have prioritised training in CSRD and ESRS for managers and key personnel, climate and environmental improvements and gap analyses to prepare for future reporting. In 2024, a simplified double materiality analysis was performed, and sustainability has been integrated into IFE's corporate strategy for the period 2025–2029.

For 2024, IFE has voluntarily aligned itself with the disclosure requirements in ESRS that are relevant to IFE. The report does not meet, nor is it intended to meet, all the requirements of the ESRS. In 2024, it became clear that foundations in Norway are not legally required to report on sustainability, and IFE's board decided that 'IFE shall henceforth use the ESRS as the standard for its sustainability reporting. The Board requests that the administration assess the level of ambition and timeline to ensure alignment with the other major transformation processes currently underway at IFE'.

In autumn 2024, the Draghi Report on Europe's competitiveness was published. The report highlighted the increased reporting burden that CSRD places on many European companies. In February 2025, the European Commission presented a comprehensive proposal to simplify the EU's sustainability regulations. In 2025, IFE will monitor developments and determine the future course of its sustainability reporting once the revised EU requirements are clearer in Norwegian legislation.

The Sustainability Report 2024 has been approved by IFE's board, but it has not been verified by an auditor.

IFE is a research foundation whose objective is to conduct research in the field of energy and other areas that are particularly relevant to the foundation's expertise. IFE's research is its most important contribution to sustainability. However, quantifying the impact of many of our projects remains a challenge. Research for developing more sustainable solutions comes with a footprint. We use gases, chemicals, oils and other input factors that have an environmental footprint. In the Sustainability Report, we describe our work on environmental sustainability and our efforts to reduce our carbon footprint.

IFE is subject to the Transparency Act that came into effect on 1 July 2022. We have developed guidelines and procedures for due diligence vis-à-vis suppliers and business partners. IFE's management has also decided to introduce similar requirements for new collaboration partners, which is beyond the scope of the Act. The Sustainability Report addresses IFE's duty to publicly report on its due diligence pursuant to section 4 of the Transparency Act, cf. sections 2-3 and 2-4 of the Accounting Act.

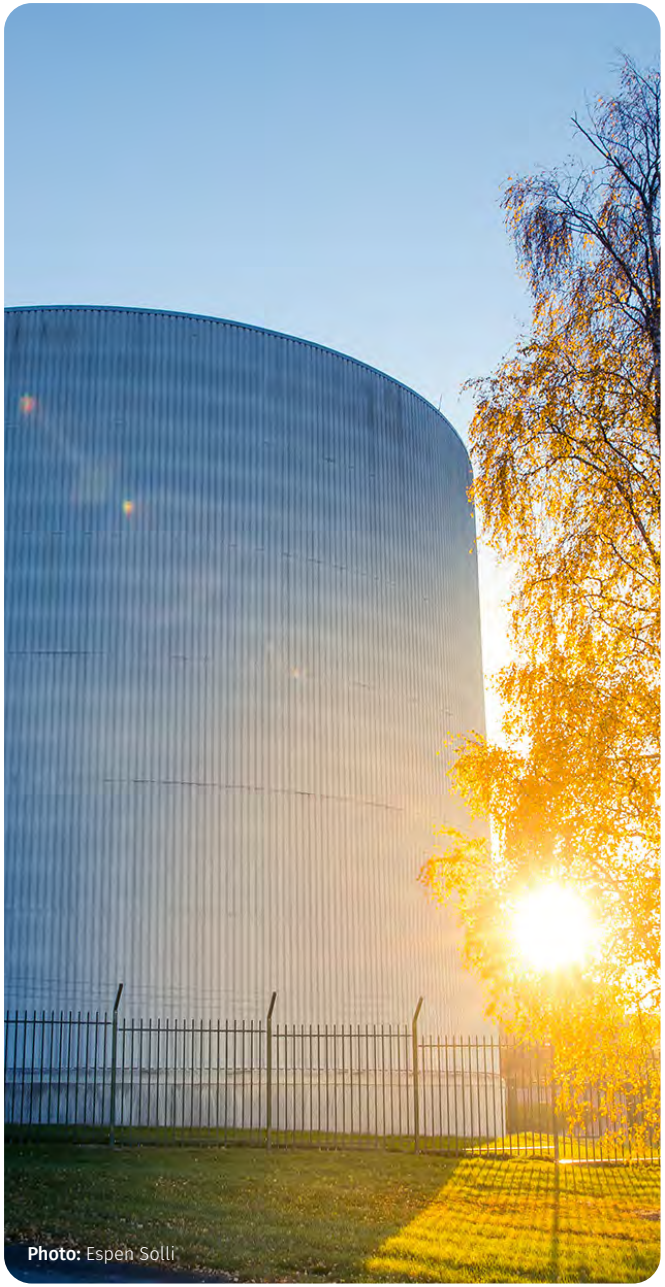


Photo: Espen Solli

Photo: Nicki Twang

Study of soil materials and waste in the circular economy

Contaminated soil, waste from the construction sector, slag and ash currently account for more than 70% of all landfill materials in Norway. In addition, large volumes of non-contaminated surplus materials such as soil, crushed stone and rock are deposited in mass landfills. This is not only a waste of valuable resources it is also a waste of valuable landfill volume and land.

Through the Centre for Rescue of Earth Materials and Waste in the Circular Economy (EarthresQue), IFE is developing technologies and systems for the sustainable management and treatment of waste and surplus materials. This requires a multidisciplinary approach, and the centre facilitates innovation through research tailored to the needs of private and public end users in the construction sector and in waste management. IFE's research in the project is conducted in collaboration with academic partners, Norwegian industry and industrial clusters. IFE also works closely with numerous local authorities in Norway.

IFE's research helps reduce pollution in waterways, safeguard access to water and sanitation for all, drive innovation in waste management, promote more sustainable use of earth materials through repurposing and recycling, and protect aquatic life by reducing pollution. Various actors are also involved through interdisciplinary collaborations across different sectors of society.

The UN's SDGs on sustainability:

Governance at IFE

Basis for IFE's Sustainability Report

IFE was established as a research foundation in 1953, with the objective to conduct, on a not-for-profit basis and for the benefit of society, research and development (R&D) within energy and other areas that are particularly relevant to the foundation's expertise. In 2024, IFE was a multi-faceted and diverse organisation which, in addition to R&D, has activity in property, nuclear operations and safety, as well as radiopharmacy and commercialisation. IFE has two research divisions: Energy at Kjeller and Nuclear Power in Halden (called Digital Systems up to 1 January 2025).

IFE has support staff who are responsible for Strategy, Sustainability and Communication. The head of the sector is a member of group management and has overall responsibility for IFE's sustainability efforts. IFE has safety support staff who set requirements for, control and advise on IFE's compliance with the Internal Control Regulations' requirements for systematic work in accordance with HSE legislation. Purchasing plays a key role in the compliance with the Transparency Act, conducting due diligence and following up on high-risk suppliers and business partners. Finance ensures that IFE has the tools and procedures needed to prevent and identify financial irregularities. HR follows up issues related to social sustainability for IFE's employees. The role of Organisational Director was created on 1 January 2024, with the intention of strengthening the efforts within social sustainability.

In 2022, IFE established a new corporate structure to facilitate the development of values and opportunities in the various business areas, create a clearer distinction between research and commercial activities, facilitate capital acquisition for commercial activities, reduce risks between the business areas and enable consolidation with other research environments.

The Norwegian Parliament (Storting) has decided that IFE's nuclear facilities and organisation are to be transferred to the Norwegian Nuclear Decommissioning Authority (NND). This will take place as a phased transfer, where the Halden Reactor and the associated organisation, along with the National Combined Disposal and Storage Facility for low and medium-level radioactive waste (KLDRA) in Himdalen will be transferred in 2025. The nuclear facilities and organisation at Kjeller will be transferred at a later date.

On 1 March 2023, the radiopharmaceutical activity was separated into a wholly owned subsidiary, Agilera Pharma AS.

IFE's sustainability report covers all operations in the foundation, including the wholly owned subsidiaries Agilera Pharma AS and IFE Invest AS.

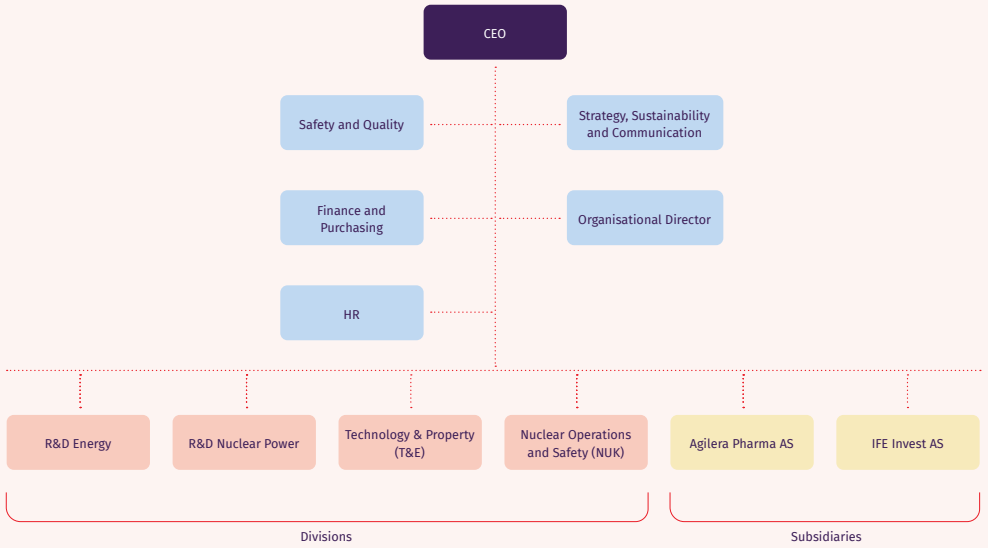


Figure: IFE's organisation chart

As IFE is a multi-faceted organisation, there are a number of Norwegian laws that cover sustainability within the scope of IFE's work, including the Atomic Energy Act, the Radiation Protection Act, the Foundation Act, the Accounting Act, the Norwegian Public Limited Liability Companies Act, the Planning and Building Act, the Working Environment Act, the Pollution Control Act, the Nature Diversity Act, the Environmental Information Act, the Public Procurement Act[1], the Transparency Act, the Equality and Anti-Discrimination Act, the Act on Ethics and Integrity in Research, the Personal Data Act, the Penal Code and the Marketing Control Act.

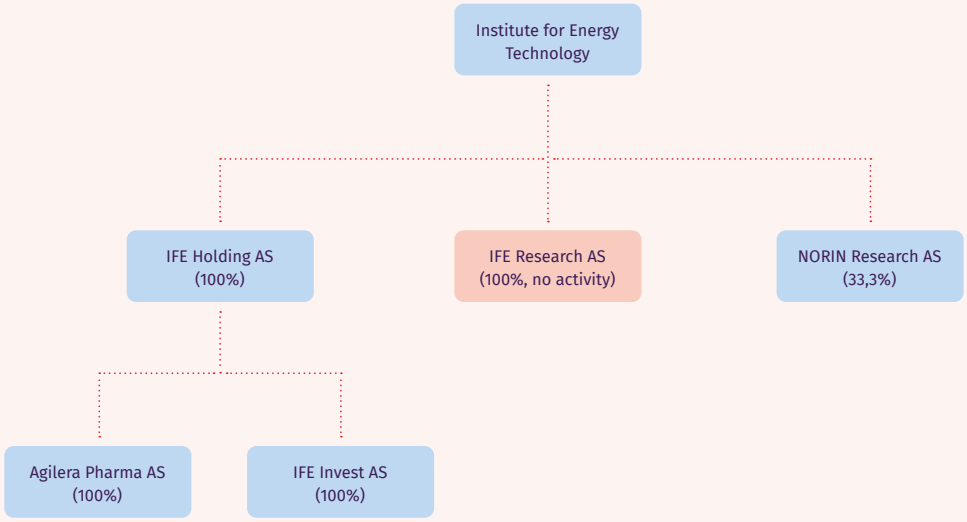


Figure: IFE's corporate structure

Stakeholder dialogue

IFE's employees, customers and collaboration partners as well as regulatory authorities all have

expectations in terms of IFE's sustainability. Sustainability is an important motivation for working at IFE, and employees naturally expect sustainability standards to be high in all areas. Our customers and collaboration partners have the same expectations. Financial institutions such as banks, insurers and investors also have expectations of IFE with regard to systematic sustainability efforts.

IFE's customers and those who commission our work have a strong and growing focus on sustainability. Many national and international industry players commission IFE to conduct research with a view to developing more sustainable technology and solutions within energy, the environment and human-centred digitalisation. Research projects funded by the Research Council of Norway or the EU are required to contribute to the green transition and digitalisation of society and to support the SDGs and the EU's strategic shift towards sustainability.

IFE's Technology and Property (T&P) division recognises that collaboration partners, tenants, local communities and financial players all have a focus on sustainability and seek solutions in relation to IT and property.

IFE's nuclear operation works closely with the government agency Norwegian Nuclear Decommissioning Authority (NND). The safe operation of nuclear facilities and management of nuclear waste are closely linked to the environmental aspect of sustainability and ensuring safe surroundings for society and employees. In 2024, IFE and the NND held several meetings on sustainability, and exchanged information, tools and templates.

1 The Public Procurement Act only applies to IFE's nuclear activities as this is financed with government funds allocated annually from the national budget.

Figure: Interested parties

Photo: Pixel & Co / Nicki Twang

Enable transport of contaminated liquid and supercritical CO2

Since 2011, IFE has led a series of projects called Kjeller Dense Phase Corrosion (KDC), which has a focus on understanding and managing corrosion in CO_2 transport systems. The projects aim to develop experimental data, knowledge and tools to establish impurity limits in CO_2 streams, which is crucial for the safe and cost-effective transport of CO_2 via pipelines and ships, as well as for the safe and cost-effective selection of materials for injection wells. Results from the projects have formed the basis for CO_2 specifications for the Longship and Northern Lights projects, among others.

Kjeller Dense Phase Corrosion Phase 4 (KDC-IV) is the fourth project in the KDC series, running from 2023 to 2028, funded by CLIMIT and 23 industrial companies: Shell, ENI, EBN, ADNOC, TotalEnergies, Harbour Energy, Fluxys, Air Liquide, Equinor, Chevron, Gasunie, Woodside, BP, ExxonMobil, Petrobras, ArcelorMittal, Saudi Aramco, Enbridge, Vallourec, Air Products, GRTGaz, Gassco and Ørsted. In addition, the software company OLI provides thermodynamic modelling based on experimental results.

CO_2 from capture facilities will be contaminated with, for example, H_2O, H_2S, SO_2, NOx (NO and NO_2) and O_2. The objectives of KDC-IV are to further increase knowledge about chemical reactions between impurities, corrosion, measurement methods and the effects of factors such as concentrations and temperature related to the impurities.

By addressing challenges related to corrosion and impurities in CO_2 transport systems, the KDC projects support the development of reliable and efficient carbon capture and storage solutions. This is essential for reducing global carbon emissions, as it enables the safe transport and storage of CO_2 from industrial sources, thereby helping to mitigate climate change.

Through collaboration with industry partners and international research institutions, IFE continues to strengthen the knowledge base needed to implement effective CO_2 management strategies. This work is an important step toward a more sustainable future with lower carbon emissions.

FNs bærekraftmål:

Agilera's customers and collaboration partners have a strong focus on sustainability. The company is a contract manufacturer of the cancer drug Xofigo® for Bayer. The Bayer Group has a particularly strong focus on sustainability and has set specific targets for reducing CO2 emissions, waste and packaging, among other things. In 2024, Agilera held several meetings and workshops with Bayer as part of the cooperation on sustainability, including the development of carbon footprint accounts for Xofigo®.

Governance, risk management and control

The Ministry of Trade, Industry and Fisheries appoints five external board members, while two are elected by the employees. IFE's corporate strategy (which includes sustainability), annual reports and sustainability reports are all subject to approval by IFE's board.

IFE's group management consists of the managers of all business areas and centralised support functions. Group management makes strategic decisions for the entire foundation, including

on sustainability. The status of IFE's overarching goals and KPIs are followed up in monthly management meetings. The different business areas prepare their own business strategies and action plans, and set annual targets and KPIs for sustainability. These are followed up in management meetings in the respective business areas and in business reviews with IFE's management. The figure below shows IFE's operational management, including committees, councils and boards, as well as its meeting structure.

IFE's Ethics Committee consists of four employees representing different parts of the operation, one of whom is elected by the trade unions. There are also two external members with expertise in research ethics and law. The Ethics Committee deals with matters reported by managers and staff, and gives advice to the CEO, managers and staff on how to deal with ethical issues. The Ethics Committee has relevant expertise in addressing issues relating to sustainability, as the committee member with legal expertise and the head of the committee both have expertise in this area.

IFE's Safety Committee is an advisory body for the CEO and the organisation whose role is to oversee IFE's nuclear safety requirements. The Safety Committee can deal with issues related to sustainability if they are relevant to safety.

Strategies

In 2024, IFE devised a new corporate strategy for 2025–2029[2], effective from 1 January 2025. This strategy includes sustainability and sets out the ambition of 'more sustainable operations at IFE', with the following goals: 1) Reduce environmental impact in operations and projects, and 2) Devise a transition plan to achieve net zero emissions by 2050. For its research activities, IFE aims to be a leading supplier of research and innovation, with the goal of contributing to more sustainable solutions to major societal challenges. IFE will support the green transition needed to meet the carbon neutrality targets of Norway, the EU and global agreements, as well as the phasing out of fossil fuels and secure access to energy for all.

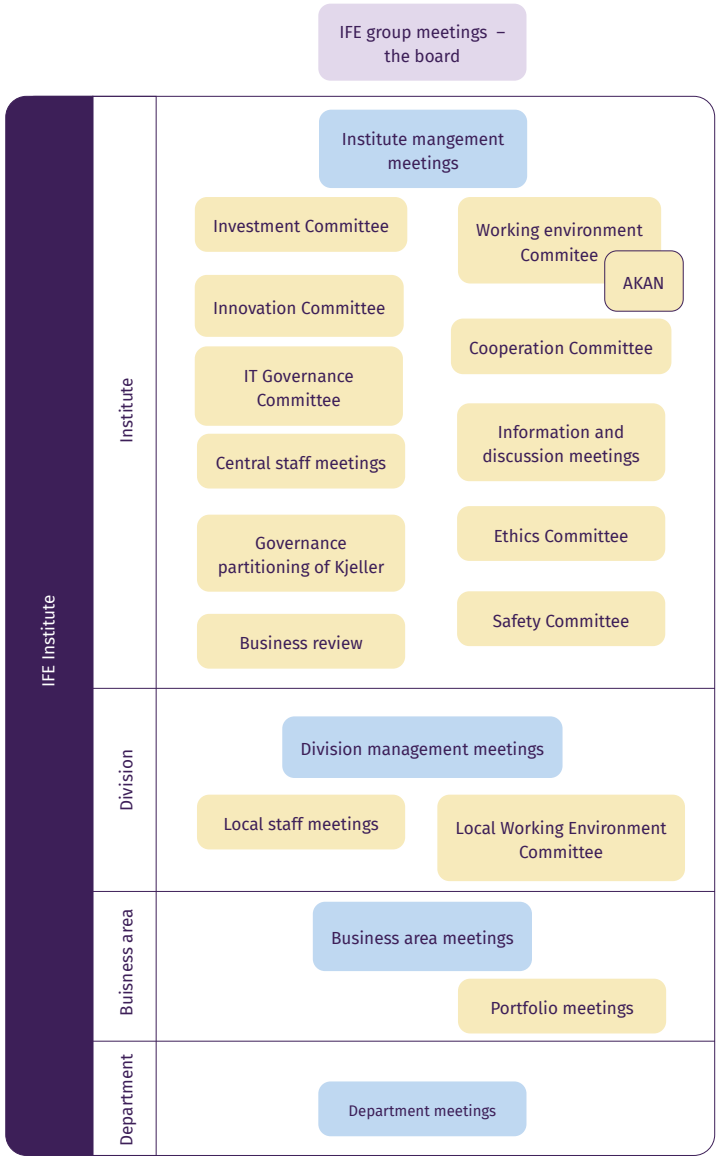


Figure: IFE's corporate governance

2 IFE's corporate strategy

This will be achieved through research on renewable energy, energy storage, energy systems, land use, environmentally friendly industrial processes, digitalisation, energy efficiency, and carbon capture and storage. Through its research on nuclear energy and safety, IFE contributes to making nuclear power plants safer worldwide and helps ensure that nuclear facilities are decommissioned in a way that protects employees, society and the environment. IFE's research is highly relevant to society, and IFE will strengthen and further develop the research environments at Kjeller and in Halden to explore solutions that promote greater environmental sustainability for those who commission our work and society in general.

IFE owns a large portfolio of properties at Kjeller and in Halden, and three central and comprehensive strategic priority areas underpin its property development: sustainability; safety and preparedness; and digitalisation.

Double materiality analysis

In 2024, IFE conducted a simplified double materiality analysis of sustainability within social, environmental and governance issues. This analysis aims to identify the positive or negative impact that IFE has on its surroundings in terms of sustainability (inside-out), as well as the sustainability factors that can have a financial impact on IFE through risks or opportunities (outside-in).

The simplified double materiality analysis does not comply with the requirements of the CSRD and ESRS. Due to limited capacity, IFE chose not to involve stakeholders, and we have not examined the value chain in detail as IFE has many suppliers with extensive value chains. The time horizon of one to more than five years has not been specified. No methods or threshold values for assessing materiality have been developed for social and governance-related sustainability. For environmental sustainability, we based our assessment on factors identified as 'critical' or 'significant' in the environmental aspect analyses. We assessed actual or potential impacts, as some of IFE's operations carry inherent risks, although numerous measures are in place to reduce the likelihood and consequences of these risks.

The analysis identified areas with the highest risks and opportunities and where IFE has a positive and negative impact on sustainability. The main points in the double materiality analysis and IFE's measures are presented in the sections below.

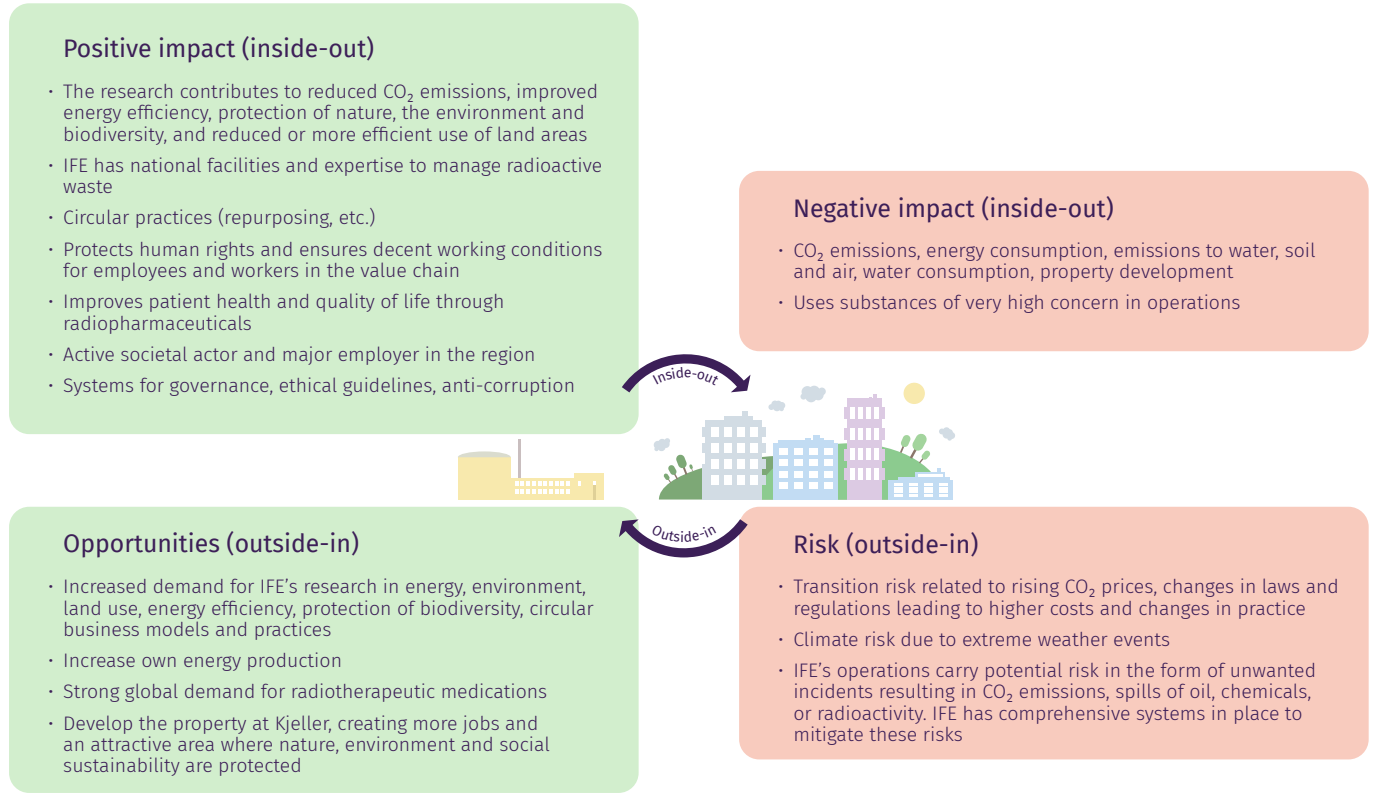


Figure: Summary of the double materiality analysis.

No. of enquiries/ reported issues	2022	2023	2024
Reports of wrongdoing	0	1	2
Corruption identified	0	0	0
Ethics Committee	2	3	3

Business practices

IFE works to promote healthy business practices and to prevent corruption and bribery. IFE's ethics policy applies to all employees, managers, contract workers and personnel involved in our research and teaching activities. The ethics policy sets out clear guidelines for good business practice and conduct, and violations are subject to sanctions. Separate guidelines exist for the use of agents and other intermediaries, which IFE uses to a very small extent. IFE also has guidelines for giving and receiving gifts. IFE's Procurement Manual places particular emphasis on employee conduct in connection with the procurement process. The systems for procurement and the approval of invoices require two signatories with authorisation according to the authorisation matrix. Large procurements and investments require the preparation of a business case and approval by executive management, as well as the Board if above a certain threshold.

In 2022, the standard contracts were revised, whereby the requirements for suppliers and business partners with regard to ethics, sustainability and business operations are now clearer, and IFE has the option to terminate contracts in the event of non-fulfilment.

IFE facilitates a corporate culture in which employees are encouraged to report wrongdoing. An internal and external reporting channel has been established where wrongdoing can be reported openly or anonymously. External parties can notify an external law firm via our website. Employees can find information on the intranet on how to report wrongdoing and the subsequent procedure, as well as information on the protection of employees who report wrongdoing. In addition to the reporting of wrongdoing, IFE has experience in incident reporting and carrying out investigations that are internally or externally led.

Photo: Benjamin A. Ward / IFE

Employees are required to undertake ethics training. The intranet provides information on the ethics policy, reporting wrongdoing and the Ethics Committee. There is also extensive training material covering ethics, research ethics, reporting wrongdoing/whistleblowing, corruption, and the safety and corporate cultures. The training material consists of videos, presentations and examples of a variety of dilemmas. The administration reports to the Board on the ethics work every six months.

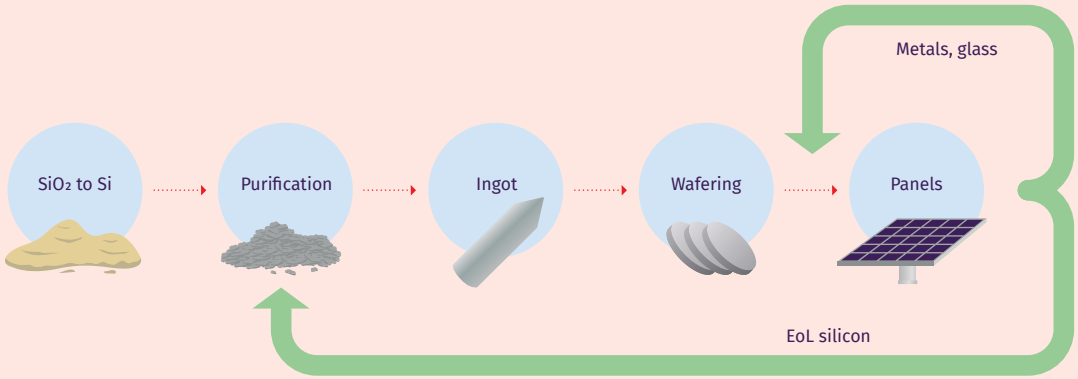
Foto: Mostphotos

Circular solar cells

Solar cell technology (PV) is widely recognised as the key to achieving fully decarbonised energy production and is an important tool in combating climate change. Maintaining solar capacity at the levels consistent with meeting the Paris Agreement climate targets will require a constant supply of materials far exceeding current production. As use of solar cells continues to grow, so too do the challenges of managing waste. The aim of the RETRIEVE project is to improve circularity in the PV sector by both reducing the amount of waste generated and supporting the EU's raw material independence through treating end-of-life solar modules as a resource.

RETRIEVE is a 3.5-year project involving 18 partners in 10 countries throughout Europe, funded through Horizon Europe. Industrial partners include SoliTek, TotalEnergies, Iberdrola, Ferimet, Celsa and Şişecam. RETRIEVE focuses on upcycling components from end-of-life (EoL) solar panels and improving material quality to meet current requirements for reintroduction into the PV value chain. The intention is to produce a PV module using recovered silicon and recycled glass.

The UN's SDGs on sustainability:



Climate and environment

In the corporate strategy for 2025–2029, IFE has an ambition of more sustainable operations. Our goals are to reduce the environmental impact of our operations and projects, and to devise a transition plan to achieve net zero emissions by 2050.

IFE's main purpose is research. Since it was founded in 1948, IFE has served as a research partner for the business sector and the public sector, both in Norway and abroad. In our projects, we develop innovative solutions that enable companies to develop or improve operations, products and services, which makes them more sustainable and safeguards their competitiveness and market positions. This creates value and jobs in Norway.

It is difficult to give a precise estimate of the sustainability effect of IFE's research. A small selection of examples of how our research improves environmental sustainability for society is presented in the sustainability report.

Research into more sustainable solutions comes with a footprint. We use gases, chemicals, oils and other input factors in research that have a negative impact on the environment. Laboratories and the business in general generate waste, energy consumption and emissions to air and water.

Appendix 1 gives an overview of the double materiality analysis for 2024, showing where IFE has positive and negative impacts, opportunities and risks, as well as ongoing and planned measures.

IFE is ISO 14001 certified and has incorporated the requirements of this certification into the corporate governance system. This is followed up by HSE advisers and through the management review. The business areas perform an annual environmental aspect analysis and are responsible for managing and reducing environmental risks in their respective areas. IFE prepares an annual environmental report for the Norwegian Radiation and Nuclear Safety Authority (DSA) for emissions and pollution licences issued by the Authority.

As IFE has nuclear activity and licences for handling radioactive substances, we also have guidelines and procedures for this, including a procedure for radioactive emissions and radioactive waste management, and guidelines for the safe use of hazardous substances. IFE has instructions for handling gases, chemicals, solvents and oils. The documents are available in the document management system and in the laboratories.

Climate change

In the double materiality analysis, use of gas in research activity, energy consumption and transportation were identified as sources of greenhouse gas emissions and as having a negative impact on sustainability. To gain a better overview of IFE's total carbon footprint, we mapped relevant Scope 3 reporting categories from the GHG Protocol[3]. The analysis shows that 10

3 The Greenhouse Gas Protocol divides greenhouse gas emissions into three 'scopes'. Scope 1 encompasses greenhouse gas emissions from equipment that the organisation owns or controls. Scope 2 covers emissions from purchased energy. Scope 3 covers indirect emissions from the organisation's value chain from upstream activities (purchase of goods, services, etc.) and downstream activities (transportation, investments, leasing of premises, etc.).

How IFE contributes to the SDGs for environment and climate

- **SDG 6 Clean water and sanitation:** IFE works to reduce water consumption from operations. We work systematically to reduce emissions of chemicals, radioactivity and other substances to water.
- **SDG 7 Affordable and clean energy:** IFE's most substantial positive contribution to sustainability and the SDGs is our energy research. IFE conducts research on the green transition and sustainable solutions within energy, energy systems and energy storage for clients in Norway and internationally.
- **SDG 9 Industry, innovation and infrastructure:** Our research contributes to more environmentally friendly and sustainable industrial processes and transport solutions.
- **SDG 11 Sustainable cities and communities:** Research in energy, the environment and digital systems contributes to sustainable solutions in areas such as energy systems, transport systems and repositories.
- **SDG 12 Responsible consumption and production:** IFE works actively to reduce our climate and environmental footprint through research, property management, nuclear activities and radiopharmaceutical production.
- **SDG 14 Life below water:** IFE has systems to monitor and reduce emissions to water in order to minimise our pollution. We conduct research projects aimed at protecting marine life when installing floating solar panel systems and offshore wind farms.
- **SDG 15 Life on land:** IFE's plans for the development of the Kjeller site include the protection of biodiversity. We conduct research projects aimed at protecting life on land when installing solar farms.

of the 15 categories are relevant to IFE. For these 10 categories, further measures are needed to improve the body of data, reporting procedures and calculations of greenhouse gas emissions. The relevant Scope 3 emission categories from the GHG Protocol are: (1) Purchased goods and services, (2) Capital goods, (3) Fuel and energy-related activities, (4) Upstream transportation and distribution, (5) Waste generated in operations, (6) Business travel, (7)) Employee commuting, (8) Upstream leased assets, (9) Downstream transportation and distribution, and (15) Investments. IFE plans to map these categories step-by-step and aims to establish complete greenhouse gas accounts for Scopes 1, 2 and 3 from the accounting year 2026.

Greenhouse gas emissions

The complex nature of IFE's activities makes it challenging to map greenhouse gas emissions at our own premises and in the value chain. The large variation from year to year in projects, laboratory operations and procurements means that emissions will be significantly higher some years than others. IFE will intensify its efforts to reduce greenhouse gas emissions from the main emission sources.

The Sustainability Report 2024 includes updated Scope 1 and 2 greenhouse gas emissions. IFE's calculations of greenhouse gas emissions are in accordance with the GHG Protocol for the following six gases: carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), sulphur hexafluoride (SF6), hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs). Several of these are used in the research and development of more sustainable solutions for customers. The use of alternative gases has been considered, but this is not always easy or possible. We are therefore trying to reduce the use of greenhouse gases and the risk of accidental emissions.

IFE's energy consumption stems from the heating of buildings, office operations, the production of radiopharmaceuticals and research activity. In research, energy is consumed in the laboratories, such as for testing battery cells. Data processing and analysis as well as storage systems also use a considerable amount of energy. In terms of energy use in buildings, some of the buildings at Kjeller date back to the 1940s, 50s and 60s and are in need of energy efficiency measures. As part of the maintenance and upgrading work, buildings will be insulated and many of the conventional fluorescent tubes will be replaced with LED tubes. In the greenhouse gas accounts for 2024, energy consumption and fuel consumption are broken down by business area and location, as in the 2023 accounts. Electricity meters and financial distribution keys are used to link energy consumption and the associated Scope 2 greenhouse gas emission to the relevant business unit.

IFE's total greenhouse gas emission in 2024 was 2.6 kilotons of carbon equivalents, of which 65% and 35% respectively are linked to Scope 1 and 2 greenhouse gas emissions. The largest sources of both Scope 1 and Scope 2 greenhouse gas emissions are IFE's operations at Kjeller. Scope 1 includes transport with own vehicles, local fuel consumption and direct greenhouse gas emissions from laboratories. Scope 2 covers energy consumption, including electricity, district heating and district cooling.

IFE's total greenhouse gas emissions show a 60% increase from 2023, mainly as a result of direct emissions from laboratory operations. The largest proportion of this stems from SF6 emissions from the 'Brønnsløyfa' laboratory. In 2024, emissions of SF6 accounted for 63% of IFE's total greenhouse gas emissions, compared with 16% in 2023. IFE has initiated an internal project to test the use of non-greenhouse gases for laboratory operations, and the current plan is to phase out the use of SF6 over a three-year period.

There was a general increase in greenhouse gas emissions from laboratory operations in 2024. Emissions of CO_2 and CH4 increased by 72% and 60%, respectively, from 2023 to 2024, totalling approximately 9 tonnes of carbon equivalents. In 2024, there were also emissions of N2O and CF4 of 0.3 and 6.6 tonnes of carbon equivalents,

Photo: Mostphotos

Photo: NND/Tom Egil Jensen

Safety in nuclear power plants

The OECD's NEA Halden Project is an international collaborative project hosted by IFE that began in 1958 and has 20 participating organisations from 12 countries: the USA, Canada, Japan, Korea, China, the United Arab Emirates, Sweden, Germany, the Netherlands, the United Kingdom, the Czech Republic and Norway.

IFE has been conducting research on nuclear safety for over 40 years. This work started following the Three Mile Island accident in the USA in 1979 because it was found that the training of reactor operators and how they handle incidents has a major impact on safety levels. After the accident, the importance of human factors was highlighted, and it became clear that operators have an important role to play in safety. HTO (Human-Technology-Organisation), focusing on human aspects of nuclear safety and control room technology, contributes to the development of solutions that enable operators to perform their tasks optimally. Under the auspices of the OECD NEA Halden Project, we commenced our research for Man-Technology-Organisation (MTO) in 1980. In 2021, the project was renamed Human-Technology-Organisation (HTO).

In 2024, the project entered a new three-year phase of research covering 25 topics aimed at improving safety in the nuclear industry through international research collaborations. The HTO research programme uses a set of modern simulator laboratories in Halden, and the research themes are Human Performance, Digital Instrumentation & Control – Safety Assurance, Control Room Design & Evaluation, Human-Automation Collaboration, Digital Systems for Operations and Maintenance, Digital Transformation of Decommissioning, and Cyber Security for Main Control Rooms.

The HTO project focuses on understanding the interplay between humans and technology within an organisational context, based on the premise that humans and organisations play a crucial role in enhancing safety in complex process plants. The HTO project is also involved in small modular reactors (SMRs) and evaluates solutions and applications of these across various industries.

The Halden Project has been delivering solutions to the nuclear power industry since the 1980s and remains a world leader in nuclear safety research. Our expertise and contributions are relevant across multiple domains, including the nuclear industry, oil and gas, air traffic control, railways, maritime operations and renewable energy.

The UN's SDGs on sustainability:

respectively. IFE's direct greenhouse gas emissions stem from operations of the Fornyhallen, FALCON, Hynor, Brønnsløyfa, Corrosion and SOL laboratories, and the scope depends on the research projects that are in progress.

Photo: Benjamin A. Ward

Energy consumption and transport

IFE's energy consumption fell by approximately 1% from 2023 to 2024, with greenhouse gas emissions from energy consumption amounting to 909 tonnes of carbon equivalents in 2024, compared to 334 in 2023. The largest energy consumption and associated emissions are from the operation of NUK Kjeller, followed by Energy, and then Agilera. This includes emissions from electricity as well as energy from district heating and district cooling. Changes in energy consumption between 2023 and 2024 differ across IFE's sites, largely driven by normal fluctuations and the varying demands of ongoing projects. Variations in greenhouse gas emissions from energy consumption between years also result from changes in the grid emission factor. The reason for this variation is that emissions from electricity consumption depend on Norway's electricity production and the energy sources used by export countries.

Greenhouse gas emissions from transportation amounted to 16 tonnes of carbon equivalents in 2024, compared to 20 in 2023. This was mainly from Agilera, which had the highest transport emissions, with 12 carbon equivalents, followed by NUK Kjeller with 2.35 and NUK Halden with a combined total of 4 carbon equivalents. Agilera distributes radioactive pharmaceuticals to hospitals all over Norway, mostly by road.

Transport accounted for 1% of IFE's estimated greenhouse gas emissions in 2024. IFE aspires to reduce transport emissions and, since 2023, has been working on building a fleet of electric vehicles (EVs). Agilera is considering the possibility of replacing diesel cars with EVs as soon as EVs are available that satisfy the safety and HSE requirements for transporting radioactive pharmaceuticals. Use of local off-road vehicles resulted in greenhouse gas emissions of 15 tonnes of carbon equivalents.

Energy efficiency measures

IFE is continuously implementing measures to improve energy efficiency in its operations. In 2024, as in previous years, an environmental aspect analysis was performed for all business areas. This analysis is a tool for mapping energy efficiency measures for IFE's buildings. Work was initiated to map energy-saving solutions related to building heating and ventilation. In 2024, a total of 386 conventional fluorescent tubes were replaced with LED tubes. Also in 2024, production of electricity from solar panels was 26 MWh. No upgrading of the solar power plant was undertaken in 2024.

Pollution

Parts of IFE's operations cause pollution and/or are at risk of generating pollution in the form of radioactive contaminants to air and water, chemicals and oils. IFE is subject to the Pollution Control Act and the requirement to hold an emissions licence. IFE has three licences covering the management of radioactive waste as well as the emission of radioactive substances and all relevant activities in the facilities at Halden, Kjeller and KLDRA in Himdalen. Following the establishment of a corporate structure in 2022, R&D and Agilera applied for separate emission licences in 2023 and 2024. At the start of 2025, they were granted a new licence for the emission of radioactive substances to air and the management and temporary storage of self-produced waste.

IFE's research activity at Energy in Kjeller includes trace element investigations and sample analyses, radioanalytical services and conditioning of sealed radioactive sources that could release radioactive substances into the environment. It is mainly Energy's use of open radioactive sources in isotope laboratories

at Kjeller that entail or can entail the release of radioactive substances to air. Release to air from facilities where there is deemed to be a risk of air-borne radioactive contamination is discharged to the roof via the laboratories' ventilation systems after being subjected to emission-reducing measures and filtration. Emission-reducing measures and filtration result in radioactive substances being captured before the point of release or considerably reduced.

Energy has no direct release of radionuclides to water but transfers liquid radioactive waste that exceeds the applicable discharge limits to Radavfall[4] or the NORM repository in Sløvåg.

Agilera's most significant sources of emissions and environmental impact are radioactive waste, production waste, packaging and transport.

The largest sources of emissions from IFE's nuclear activity are those from the daily work to maintain and prepare the facilities for decommissioning.

Measures aimed at preventing and reducing pollution

The terms of IFE's emissions licence require IFE to stay updated nationally and internationally on the best available techniques and/or technology (BAT), particularly in relation to waste management and emission limitation.

IFE has implemented various measures for reducing releases to air and water.

4 IFE's radioactive waste facility at Kjeller. Radavfall is the national repository for processing radioactive waste prior to storage and depositing.

Methods to reduce release to air

- Use of particle filters and coal filters
- Delay systems and tanks for radioactive gas
- Condensation of moisture in discharge lines from the primary circuit for tritium separation
- Automatic surveillance systems that shut down release valves if activity exceeds permitted levels

Methods to reduce release to water

- Temporary storage of wastewater to allow for radioactive decay of short-lived radionuclides
- Evaporation of small amounts of wastewater to increase concentration/solidification of the waste in preparation for encapsulation
- Filtration of wastewater using particle filters and ion-exchange technology
- Distillation
- Sludge separation
- Sedimentation in tanks
- Processes to minimise contamination of protective clothing being washed
- Cleaning processes to minimise contamination of controlled areas
- Automatic surveillance systems that shut down release valves if activity exceeds permitted levels

Site	Emission and unit of measurement	2022	2023	2024
Halden	Total release to atmosphere, µSv	0.046	0.03	0,07
	Total release to water, µSv	0.0001	0.01	0,0001
Kjeller	Total release to atmosphere, µSv	0.01	0.03	0.39
	Total release to water, µSv	0.0002	0.0001	0.0002

Pollution/emissions to air, water and soil in 2024

IFE's emissions licence sets specific limits for emissions of radioactive substances to air and water. The following table shows emissions to air and water for 2024.

In 2024, activity at Kjeller produced emissions to air (atmosphere) and water of an estimated effective dose to the public of 0.013 µSv and 0.0001 µSv, which is well below the requirements of the emissions licence. None of the radionuclide emission limits were exceeded in 2024.

In 2024, activity in Halden produced emission to air (atmosphere) and water of an estimated effective dose to the public of 0.06 µSv and 0.0001 µSv, which is well below the requirements of the emissions licence. None of the radionuclide emission limits were exceeded in 2024. Emissions to air in 2024 were slightly higher than in 2022 and 2023 due to open positions in the Reactor Hall (RH) in late November-early December for inspection. This led to elevated freeze-out samples, which is reflected in the emission figures.

Environmental monitoring programme at Kjeller

- Dosimeters outside the plant areas to measure external radiation within a 5 km radius of the site.
- Air filter stations within IFE's site in continuous operation, as well as five sampling stations that collect rainfall.
- Grass samples in the summer months.
- Agricultural products collected every autumn and analysed for radioactivity.
- Collect and analyse samples of water, sediments, aquatic plants and fish from fixed sampling sites in the Nitelva river.

Environmental monitoring programme in Halden

- Area dosimeters located outside the plant areas to measure the external radiation within a 5 km radius of the site.
- Rainfall collected at two locations near the plant and analysed regularly.
- Samples of drinking water are analysed for radioactivity.
- Grass samples at two different sites twice a year.
- Water samples in the Tista river from three different places twice a year.
- Samples of sand from four different beaches in the Iddefjorden once a year.
- Fish are analysed annually.
- Samples of the sediment in the Tista river at three different places twice a year.

Environmental monitoring Himdalen KLDRA

- Release to air and drainage water are checked monthly.
- Annual control of well water from local farms, samples from ponds and streams and sample of borehole water from a well in the area.
- Samples of blueberries from an extensive area around the plant.

Environmental monitoring

The terms of IFE's emission licences require the presence of radioactive substances in the environment surrounding the site to be monitored in order to determine whether the activity leads to or can lead to elevated radioactivity in the environment. IFE has environmental monitoring programmes in place for Halden, Kjeller and KLDRA in Himdalen.

IFE has expertise in radiation protection, radioecology and radioactive waste. Our internal radiation protection service ensures that all use of radiation sources and radioactive material is in accordance with national laws, regulations and guidelines. It also assesses and follows up recommendations from international organisations. The aim is to ensure compliance with the rules and regulations, limit and reduce any radiation doses for employees, and check that emissions during normal operations are within the specified limits.

The environmental monitoring programmes ensure that we have a full overview of IFE's footprint with respect to radioactivity. Samples from the area surrounding the facilities at Halden and Kjeller are collected regularly and analysed in order to monitor the radioactivity in the close environment, which is known as 'recipient monitoring'. See the table above for details of the monitoring.

Biodiversity and ecosystems

At Kjeller, IFE 's property covers approximately 38 acres. IFE has drawn up a detailed zoning plan as a basis for developing parts of the property at Kjeller. The plan was submitted to Lillestrøm local authority for processing at the end of 2022. In 2023, Lillestrøm local authority undertook the initial processing of the proposed plan, and following a recommendation from the administration and a unanimous political decision, the plan was put out for public consultation. Some comments were received as well as one objection, and these have now been addressed. A comment from the DSA still needs to be dealt with before Lillestrøm local authority can reconsider the plan and adopt it in 2025.

Photo: Shutterstock

Zero-emission transport with battery and hydrogen technology

The transport sector is one of the largest sources of greenhouse gas emissions globally. To achieve sustainable transport solutions and meet climate targets, it is crucial to develop zero-emission solutions based on battery and hydrogen technology. MoZEES, a national research centre for zero-emission transport, has contributed to this transition by developing new materials, components and systems for the transport sector of the future.

The centre has been a collaboration between the research institutes IFE, SINTEF, the Institute of Transport Economics (TØI) and the Norwegian Defence Research Establishment (FFI), as well as the University of Oslo, the Norwegian University of Science and Technology (NTNU) and the University of South-Eastern Norway. MoZEES has broad industrial and public support, with 7 public sector partners, 2 private interest organisations and 21 business and industry partners. The centre also works with international research environments at RWTH Aachen (Germany), Uppsala University (Sweden), the University of California Davis (USA) and the University of Genoa (Italy).

Cross-sector and cross-border collaboration is essential for developing sustainable solutions and achieving the goals of zero-emission mobility.

The research centre has developed new materials and processes for battery and hydrogen solutions. Research has also been conducted on technologies and components that can make zero-emission solutions competitive in the export market, enabling Norwegian industry to contribute to a global transition to cleaner transport. In addition, sustainable system solutions and services have been developed that not only reduce emissions but are also economically viable and adapted to future transport needs.

The UN's SDGs on sustainability:

The detailed zoning plan corresponds to the master plan that IFE has prepared for the area. In the master plan, there are three central and comprehensive strategic priority areas: sustainability; safety and preparedness; digitalisation.

The natural values of the area to be regulated were assessed in connection with the proposed zoning plan. The area is made up of cultivated land, unused agricultural areas and areas with lawn/ grass that have been landscaped as a park. The site is host to a rich diversity of flora and fauna, including a bee species with red list status. In the master plan, the goal is to preserve and further develop the area into a green campus that strengthens local biodiversity and biology with, for example, wildflower meadows, diverse plant species and plants that are particularly attractive to pollinators.

Waste

IFE's waste is complex and consists of chemicals, food waste, wood, cardboard and paper, glass, steel, iron and aluminium. Kjeller's radiopharmaceutical activity also produces waste that is classified as clinical waste.

In 2024, IFE sorted 71.9% of waste at Kjeller and 76.93% in Halden, which was lower than the 85% target. The non-compliance was due to a lack of resources to follow up the sorting of waste. The waste is handled by the waste management company Norsk Gjenvinning. IFE's complexity in terms of the number of buildings and collection points partly explains why the degree of sorting is below target. Norsk Gjenvinning is currently working with IFE to identify solutions that will increase the degree of sorting, including better labelling of waste fractions and improved arrangements for waste management. The target rate of 85% also appears to be

Volume/type/unit	Site	2022	2023	2024
Waste in total, kg	Kjeller	150 400	150 949	176 086
	Halden	58 158	49 183	49 366
Sorted waste, kg	Kjeller	113 155	109 121	125 526
	Halden	43 857	35 783	37 976w
Degree of sorting	Kjeller		72,3% (target 85%)	71,9% (target 85%)
	Halden		72,8% (target 85%)	76,9% (target 85%)
Residual waste, kg	Kjeller	37 245	41 828	50 560
	Halden	14 301	13 400	11 390
Recovery rate	Kjeller	75%	72,3%	97,43%
	Halden	76%	72,8%	96,31%
Materials	Kjeller			43,56%
	Halden			67,36%
Energy	Kjeller			53,87%
	Halden			28,95%
Deposited waste	Kjeller			2,57%
	Halden			3,69%

somewhat high. A rate of 75% is more realistic and has been proposed for 2025.

Radioactive waste

IFE operated Norway's four research reactors from 1951–2019. The reactors generated 16.5 tonnes of spent nuclear fuel, which is a small amount of nuclear waste in an international context. However, Norway's nuclear waste is unique as a number of experiments were conducted to identify efficient and safer fuel compositions. The complex and varied waste creates several challenges for the clean-up and decommissioning of the nuclear facilities.

The fuel storage facilities at Kjeller and Halden were built in the 1950s and 60s, and do not meet today's international best practice or national requirements. In recent years, IFE has initiated several measures to improve the safety of the storage facilities, and in 2023 submitted updated criticality assessments for fuel to the DSA, for which no feedback was received in 2024. Since 2018, IFE has spent 100,000 working hours, i.e. more than 50 man-years, on the safe handling and security of nuclear waste in order to improve the storage facilities. IFE is working closely with the NND, which is examining long-term storage solutions. IFE regularly updates the DSA on the status at the facilities, improvements and what needs are a high priority going forward. In June 2024, a priority list was sent to the DSA outlining what should be done at the various storage facilities to improve safety and address DSA's requirements. IFE did not receive any feedback from the DSA about this list in 2024.

Norway has small but complex amounts of nuclear waste. Building a separate treatment facility to manage 16.5 tonnes of nuclear waste is costly and challenging.

In 2021, IFE signed a contract with Studsvik Waste Management Technology AB and Studsvik Nuclear AB in Sweden for inspection and mechanical pretreatment at Studsvik's facilities. Approval by the DSA and a national agreement on the return of the fuel are required before the work can be carried out.

Norway signed a Letter of Intent with the United States in 2021 on the processing and management of IFE's highly enriched uranium at a US facility. Further technical investigations and regulatory approvals are still needed before a joint pilot project between the United States and Norway can be carried out.

In 2021, IFE signed an agreement with Springfields Fuels Limited, whereby 960 kg of unirradiated uranium fuel would be shipped to the UK instead of being treated as waste and stored and deposited in Norway. The Norwegian Ministry of Foreign Affairs has granted an export licence for unirradiated uranium to the UK. Approval from the DSA is required to move the material to the UK.

In a letter dated 21 April 2022, IFE requested the necessary permits to empty the JEEP I rod wells. Approval of IFE's applications to the DSA and the return guarantee to Norway were not clarified in 2024.

National repository for radioactive waste

IFE is the national repository for radioactive waste. Radavfall receives and handles IFE's waste as well as radioactive waste from the Norwegian Armed Forces, hospitals, industry and smoke detectors. The waste is processed in the facility at Kjeller. Low and medium-level radioactive waste is deposited at KLDRA

Photo: Espen Solli

in Himdalen. In 2024, no waste was deposited at KLDRA – all waste generated in 2024 was stored at Kjeller.

IFE maintains an overview of received and stored radioactive waste and reports annually to the DSA in accordance with the requirements for waste management in IFE's licence. The reporting covers all stored radioactive waste.

KLDRA is the only repository for low and medium-level radioactive waste in Norway. In March 2020, IFE decided to stop the deposit of waste there temporarily due to uncertainty as to whether functional requirements for the facility were being met. In 2021, an external status assessment of KLDRA, commissioned by IFE and the NND, was carried out to evaluate the repository in light of current requirements, which are far stricter now than when the facility was built. The survey identified numerous challenges in terms of the facility's construction and level of safety in relation to present-day standards, and on this basis, IFE decided to prolong the temporary halt of deposits. Meanwhile, efforts were made to update the safety reports for the facility in line with the applicable requirements for the current operational phase (300–500 years), during which the facility is continuously monitored. Based on this, IFE's plan was to restart KLDRA deposits in 2025. However, in a letter dated 20 December 2023, the DSA instructed IFE that the deposit of radioactive waste in KLDRA must be stopped until comprehensive safety reports have been prepared and approved by the DSA, both for the facility's operational phase and in an eternal perspective for the ensuing period, when the facility is permanently closed with no ongoing monitoring.

This is a very comprehensive task that requires extensive investigations, which will mean no resumption of deposits at KLDRA for an estimated eight to ten years. Until that time, all radioactive waste that IFE receives and processes will be stored at Kjeller, where capacity is already under pressure. In a situation where IFE cannot use KLDRA and does not have sufficient space for temporary storage at Kjeller, this would result in major negative consequences for radioactive waste management in Norway. Access to a repository is crucial for handling radiation sources from Norwegian industry, the medical field, the armed forces and research. Safe and correct handling of radioactive waste is also crucial for several important projects and planned projects, including the production of groundbreaking pharmaceuticals in Norway. Even ordinary smoke detectors contain radioactive parts that need to be treated, stored and deposited as radioactive waste. A halt in the receipt of low and medium-level radioactive

Shipper	Unit	2022	2023	2024
External	No. of deliveries	86	83	96
	Percentage	86%	78%	94%
IFE	No. of deliveries	14	23	6
	Percentage	14%	22%	6%

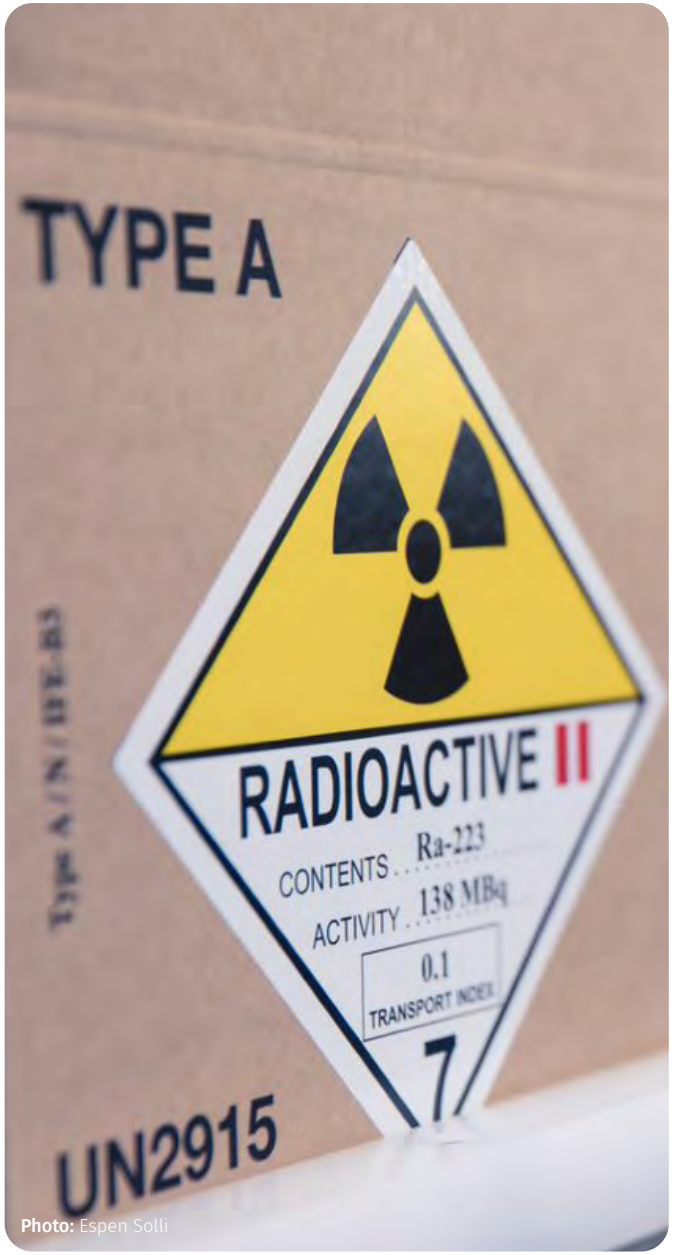


Photo: Espen Solli

waste will impact on all actors and industries that generate this type of waste and that currently depend on delivering the waste to IFE – the only approved repository in Norway. This is a national problem, and IFE raised the issue with the relevant authorities in 2024. IFE informed the affected actors that deliver radioactive waste to KLDRA and encouraged them to take steps to reduce the amount of radioactive waste.

Photo: Pixel & Co/Nicki Twang

IFE worked closely with the NND on the challenges at KLDRA. IFE has commissioned the NND to devise a periodic safety review (PSR) and assess what is needed to expand the storage options at KLDRA. The safety report for KLDRA will be updated based on the PSR. The NND has applied for an operating and ownership licence for KLDRA and will likely be granted the licence in 2025. With support from the NND, IFE has submitted a plan to the DSA for the PSR. The plan will be an important basis for the revision of the safety report for KLDRA.

The Ministry of Climate and Environment published the government's strategy for the safe, secure and responsible management of radioactive waste in Norway in the summer of 2024. This is an important strategy that serves as a guide for IFE's work on handling, storing and disposing of low- and intermediate-level radioactive waste in connection with nuclear activities and its role as the national repository for radioactive waste.

IFE will function as an efficient and safe national depository for radioactive waste. A key priority is to establish new storage options at Kjeller until a new storage facility managed by NND becomes operational. The potential to expand the storage capacity in the KLDRA storage hall will also be assessed, in collaboration with NND.

IFE will treat all suppliers equally, including in relation to the disposal and storage of nuclear waste and operation of the Radavfall facility and KLDRA. IFE cannot accept waste requiring treatment or storage without permission from the DSA, and therefore sets requirements for all waste suppliers. During the strategy period, the NND will take over KLDRA and, subsequently, other waste repositories. The waste received by IFE will be subject to waste acceptance criteria, which are based on the criteria for the disposal or interim storage of radioactive waste. This will require close coordination with the NND during the transition period, in line with the agreements between the NND and IFE. Waste suppliers will be required to have processes in place for optimising waste management and minimising the volume of radioactive waste.

Agilera's radioactive waste

Agilera produces radioactive pharmaceuticals used in cancer treatment, and the production generates radioactive waste. In 2024, Agilera continued its collaboration with Bayer to reduce waste and the climate footprint from pharmaceutical production through:

- Reducing consumption of Ac227 and reduced overproduction of Xofigo®, which will lead to a reduction in radioactive waste. A successful concept study has been carried out, and if the proposals in the study are implemented, they will have a positive impact on both of these areas.
- Reducing production of waste from new production that is subject to disposal and improved handling of historic waste to reduce the volume subject to disposal. A Letter of Intent was signed for the collaboration project with Bayer, which will have an impact on both these points.
- Reduced scrapping of raw materials
- Reduced QC testing
- Digitalisation projects that reduce paper consumption and paper waste

Agilera has also contributed to Bayer's assessment of the carbon footprint of Xofigo®. The results can potentially be used for evaluating and planning further sustainability measures going forward.

Photo: Pixel & Co

Partnering with nature and society: developing the energy system of the future

The transition to a low-emission society requires measures to decarbonise and increase renewable energy production, as well as to expand transmission grids. These measures can entail environmental interventions, land use demands and social conflicts. To ensure sustainable development of the energy system, it is important to minimise the negative consequences for nature, the environment and society.

In collaboration with Energi21, IFE, Multiconsult and NINA have carried out the project 'Partnering with Nature and Society' to strengthen the knowledge base for decisions related to renewable energy production and transmission grid expansion with minimal conflicts. The report highlights the need for more knowledge and research in the following areas:

Integrated energy systems

- Societal development and transition pathways that factor in nature and social effects
- Standardised methods for the valuation of social effects and nature, as well as methods for including non-monetary values
- Methods for assessing cumulative impacts and balancing different interests, for example through linking different models

Nature and biodiversity

- Cumulative impacts of the energy system on nature and biodiversity
- Methods and knowledge for implementing and evaluating environmental measures, including restoration
- Knowledge about effects on particularly vulnerable species and habitats
- Methods for weighting/scaling different types of values and how this can be integrated into management and planning
- Inclusion of the climate perspective in research on nature

Social dimensions

- Decision-making processes that ensure legitimacy, fairness and genuine involvement
- The impact of energy projects on people and communities over time, and the interplay between different influencing factors
- Comparison of experiences across geographic areas and energy types with a view to understanding what creates social sustainability in the energy system of the future

In summary, the project has assessed knowledge gaps and highlighted key priorities within research, development and innovation in order to ensure sustainable development of the energy system. There is an emphasis on future research and innovation promoting interdisciplinary collaboration and combining short-term and long-term efforts. Particularly in areas related to social dimensions, nature and biodiversity, both basic and applied research are essential to ensure legitimacy and credibility in the development of the energy system of the future.

FNs bærekraftmål:

Double materiality analysis - Climate and environment

E1 - Mitigate climate change						
Significant impact, risk or opportunity identified	**Area**	**Actual or potential impact**	**Own operations or value chain**	**Description**	**Ongoing measures**	**Planned measures**
Positive impact	Greenhouse gas emissions	Actual	Value chain	Almost all energy research projects have the primary goal or a secondary goal of reducing CO_2 emissions for customers. Many projects in Digital Systems have the secondary goal of improving safety and reducing the risk of emissions.	Market work. R&D strategy.	
Positive impact	Development of technology and solutions for energy efficiency	Actual	Value chain	IFE's research enables more effective use of energy and lower energy consumption.	Market work. R&D strategy.	
Positive impact	Greenhouse gas emissions	Actual	Value chain	IFE's research and expertise in nuclear power can indirectly help ensure safer nuclear power and reduce greenhouse gas emissions.	Market work. R&D strategy.	
Opportunity	Increased demand for R&D from industry and the public sector	Potential	Value chain	IFE's research in energy and digital systems is highly relevant and in demand, large potential.	Market work. R&D strategy.	
Opportunity	Own energy production	Potential	Own operations	IFE operates several solar power plants on its own property.		Increase own production by installing solar panels on the buildings during the upgrade of old buildings and new constructions.
Negative impact	Greenhouse gas emissions	Potential	Own operations	IFE's research and operations generate greenhouse gas emissions. Agilera's transport generates greenhouse gas emissions. Business travel and employees' commute to/from work generates greenhouse gas emissions.	Consider substitution, seal any leaks and reduce the use of greenhouse gases. The nuclear division factors in climate and the environment in procurements. Extensive use of digital meetings to reduce travel between Halden and Kjeller. City bikes made available to employees. Agilera is working to reduce greenhouse gas emissions from transport by replacing air travel with car travel where possible, optimising logistics planning/driving routes, and using electric vehicles where feasible in relation to safety requirements.	
Negative impact	Energy consumption, incl. cooling and heating	Actual	Own operations	IFE has numerous old buildings with a high energy consumption. IFE is in a growth phase and the energy consumption leads to some increased activity. Parts of the energy research have a high energy consumption.	Devising action plan to reduce energy consumption.	Upgrade old buildings. Retrofit insulation. Move operations to new buildings. Optimise laboratory operations.
Risk	Transition risk	Potential	Own operations	Enviromentally-friendly building requirements can lead to higher costs and investment, and more personnel to follow up and train employees.	Developing expertise in the organisation on transition risks. Raising awareness through sustainability efforts.	

Climate adaptation	Area	Actual or potential impact	Own operations or value chain	Description	Ongoing measures	Planned measures
Positive impact	Protect nature and the environment	Actual	Value chain	The use of natural resources and the interaction between humans and nature is an area of focus in several research projects.	Collaboration with environmental institutes, developing research expertise in nature and the environment.	
Opportunity	Protect nature and the environment	Actual	Value chain	Increased demand from industry and the public sector for research on natural resources and interaction between humans and nature.	Collaboration with environmental institutes, developing research expertise in nature and the environment, active market work.	
Opportunity	Climate adaptation	Potential	Own operations	Devise a transition plan for how IFE will deal with climate adaptation and reduce greenhouse gas emissions.	Drawing up greenhouse gas accounts for scopes 1 and 2.	Devise an action plan for developing greenhouse gas accounts with scope 3 as a basis for the transition plan in the coming years.
Risk	Physical climate risk as a result of more extreme weather, chronic and acute risk	Potential	Own operations	Damage to buildings and infrastructure can lead to stoppages and costs for repair, as well as higher investment for reducing the damage potential from physical climate risk.	Emergency plans and exercises.	Continuity plans.
Risk	Climate risk	Potential	Own operations	Transition risk in the form of regulatory changes, customer requirements, more stringent requirements for e.g. construction projects that entail higher costs.	Developing expertise in the organisation on transition risks. Raising awareness through sustainability efforts.	
E2 - Pollution	**Area**	**Actual or potential impact**	**Own operations or value chain**	**Description**	**Ongoing measures**	**Planned measures**
Negative impact	Emissions to water, soil and air (atmosphere)	Actual	Own operations	IFE uses chemicals, oils and gas in its operations and research. This generates waste and/or emissions.	Procedures and barriers to prevent incidents and reduce emissions. Substitution measures. Employee training.	
Negative impact	Emissions to water, soil and air (atmosphere)	Actual	Own operations	IFE uses radioactive substances in its operations and research. This generates waste and/or emissions.	Procedures and barriers to prevent incidents and reduce emissions. Environmental monitoring programme. Radiation protection courses and other employee training.	
Risk	Emissions to water, soil and air (atmosphere)	Potential	Own operations	Risk of unintentional incidents involving the release of chemicals, oil or gas that can result in financial costs for recovery and operational downtime.	Procedures and barriers to prevent incidents and reduce emissions. Substitution measures. Employee training.	
Risk	Emissions to water, soil and air (atmosphere)	Potential	Own operations	Risk of unintentional incidents involving radioactive emissions that can result in financial costs for recovery and operational downtime.	Procedures and barriers to prevent incidents and reduce emissions. Environmental monitoring programme. Radiation protection courses and other employee training.	
Risk	Substances of very high concern (SF6, radon, lead and lead compounds, storage of lead, cadium, asbestos)	Potential	Own operations	IFE uses these gases and chemicals in the research and operation of nuclear facilities. Lead is used for shielding against radiation. There is a risk of unintended incidents that may lead to financial costs for recovery and operational downtime, as well as investments to replace the use of lead.	IFE has procedures and barriers in place to prevent incidents and reduce emissions, as well as substitution measures. Regular testing of personnel. In recent years, IFE has reduced the use of substances of very high concern.	

E3 - Water and marine resources	Area	Actual or potential impact	Own operations or value chain	Description	Ongoing measures	Planned measures
Negative impact	Water consumption	Actual	Own operations	IFE uses water in research, production of pharmaceuticals and operation of nuclear facilities and properties.	IFE has installed water meters to monitor consumption.	Monitor water consumption and identify measures to reduce this. Agilera will seek opportunities to optimise the production to reduce water consumption
Negative impact	Water pollution	Actual	Own operations	Surface runoff is released to the environment.		Consider measures, including reuse of surface runoff.
Negative impact	Water pollution	Actual	Own operations	IFE has emissions to water in line with emission permits.	Nuclear Power and Agilera collect chemicals in containers. Solutions with radioactivity are either emptied into 'active wastewater' or collected in delay tanks to reduce radioactivity before release. Waste plans are being drawn up for new projects and nuclides.	Devise waste plans for new projects and nuclides before starting.
Risk	Water pollution	Potential	Own operations	Risk of potential emissions from historic waste from nuclear operations that can lead to financial costs for recovery.	IFE has a number of measures in place to monitor emissions and reduce the risk of emissions. Extensive measures have been established for the clean-up following nuclear activities, and this work is a national priority.	IFE and NND plan to move historic waste to treatment and establish new facilities for temporary storage and deposit.
E4 - Biodiversity and the ecosystem	**Area**	**Actual or potential impact**	**Own operations or value chain**	**Description**	**Ongoing measures**	**Planned measures**
Opportunity	Safeguarding biodiversity on land and in water	Potential	Value chain	Increased demand from industry and the public sector for research on land use and the safeguarding of biodiversity.	Market work. R&D strategy.	
Positive impact	Safeguarding biodiversity on land and in water	Actual	Value chain	IFE has research projects on land use aimed at safeguarding biodiversity, e.g. solar farms on land and water.	Market work. R&D strategy.	
Positive impact	Safeguarding biodiversity on land and in water	Actual	Own operations	IFE has extensive property at Kjeller with considerable biodiversity.	IFE has prepared an environmental follow-up plan for development projects as part of the new detailed zoning plan for the property at Kjeller.	
Positive impact	Land use	Actual	Value chain	IFE has research projects on reducing or better utilising land areas in connection with energy development, particularly solar power.		
Positive impact	Protecting nature	Actual	Own operations	Established procedures for conducting environmental risk assessments in connection with emission applications. In connection with the detailed zoning plan and master plan, IFE has drawn up an environmental follow-up plan for development projects.	Environmental mapping of the property at Kjeller in connection with the nuclear clean-up. Environmental programme to monitor and mitigate the risk of radioactive emissions. Flower meadows have been established at the solar farm, which is seen as a positive compared to alternative uses of the area.	

Negative impact	Protecting nature	Actual	Own operations	IFE is planning several buildings on its property at Kjeller, which will reduce the natural area.	IFE has drawn up a master plan with an environmental follow-up plan that safeguards the natural areas at the property at Kjeller.	
E5 - Resource use and the circular economy	**Area**	**Actual or potential impact**	**Own operations or value chain**	**Description**	**Ongoing measures**	**Planned measures**
Positive impact	Use of circular business models/practices			IFE reuses furniture and IT equipment.		
Positive impact	Radioactive waste	Actual	Own operations and value chain	IFE has a national treatment facility that reduces volume and ensures safe storage of radioactive waste.		
Negative impact	Radioactive waste	Actual	Own operations	Nuclear Power, Agilera and the research activity generate radioactive waste. This is handled and controlled according to comprehensive procedures and safety barriers.	Measures to reduce radioactive waste are ongoing.	
Negative impact	Waste	Actual	Own operations	Considerable waste is generated from operations, including the use of disposable paper products, batteries and plastics. HSE and radiation protection requirements necessitate the use of disposable items.		Consider measures to reduce the use of disposable items.
Negative impact	Waste	Actual	Own operations	Agilera has high material consumption, waste due to overproduction, and extensive use of disposable materials.	Measures to reduce overproduction and waste are ongoing.	Agilera is considering recycling lead and packaging, as well as recovering Ac-227 from historic waste. Agilera plans to further reduce waste from packaging and paper consumption, as well as improve recycling and optimise production.
Risk	Transition risk	Potential	Own operations	The national framework for managing radioactive waste remains unclear. The cost model and criteria for delivery, handling, storage and disposal of radioactive waste are also unclear. This may lead to increased financial costs for IFE's research activities and Agilera.	Waste management programme. Measures to reduce radioactive waste.	Additional measures to reduce radioactive waste are being considered.
Risk	Radioactive waste	Potential	Own operations	The facilities for treating and storing radioactive waste are outdated and require significant upgrades, including new buildings and infrastructure, to meet current and future needs. This entails substantial financial investment.	Work to establish new facilities for the handling and storage of radioactive waste is ongoing.	
Risk	Radioactive waste	Potential	Own operations	Accidents or malicious incidents at the radioactive waste facility could result in emissions, a lack of storage capacity could lead to a halt in the acceptance of radioactive waste. Fuel waste (from stored spent nuclear fuel) could result in radioactive emissions in the event of an incident.	Work to establish new facilities for the handling and storage of radioactive waste is ongoing. Measures to secure facilities and infrastructure are ongoing.	

Social sustainability

In 2024, IFE developed a simplified double materiality analysis (Appendix 2). The findings from the analysis are used to drive improvements and shape the new corporate strategy. One of IFE's goals in the corporate strategy for 2025–2029 is to promote social sustainability for our employees, in our local community and among our suppliers' employees. We will work to ensure that our employees feel safe and have trust in IFE and a sense of belonging at the workplace. IFE will offer good terms of employment and a good work-life balance. For workers in the value chain, social sustainability entails decent working conditions and the protection of fundamental human rights. We will ensure this through due diligence, procurement processes and supplier qualification and monitoring. IFE will play a key role in our local community as a decent and responsible employer, business partner, value creator and contributor to the community.

IFE is a major employer in Halden and Lillestrøm, and our activities and procurements generate economic ripple effects in the region. For example, we chose Norasonde as our catering supplier at Kjeller and Arbeid og vekst in Halden. These companies promote responsible consumption by focussing on local producers and resources, in addition to providing work experience for people who are out of work or at risk of losing their job or dropping out of education.

Alongside its ongoing efforts to promote social sustainability in operations and improvement initiatives, IFE undertook some additional measures in 2024, including:

- Implemented policies for people and culture, sustainability, and safety. Revised the ethics policy.
- All managers participated in management training arranged by BI Norwegian Business School, covering leadership, interpersonal relationships, motivation and the working environment.
- Managers and staff with sustainability roles attended a sustainability workshop focused on social sustainability.
- Social sustainability was the main topic at NUK Kjeller's general meeting of all employees.
- Held a clothing swap day to support environmental and social sustainability.
- Management training in recruitment, sick leave, pay scales and policy, bullying and harassment, AKAN (workplace advisory centre for issues relating to alcohol, drugs and addictive gambling) and ethics.
- Revision of the conflict management handbook, templates and guides for employee appraisals and pay discussions.
- Established career ladders for researchers and coordinators, and started developing career ladders for administrative staff.
- Clarified recruitment, onboarding and offboarding processes.

IFE's board and management have overall responsibility for safeguarding social sustainability. Managers and staff are responsible for following the guidelines, reporting relevant matters to the Ethics Committee and reporting wrongdoing.

IFE has a well-established practice for involving employees in the operation and development of activities in accordance with Norwegian law and agreements with trade unions.

How IFE contributes to the UN's SDGs for social sustainability

- **SDG 4 Quality education:** IFE's employees provide teaching within our areas of expertise at schools and universities, we offer summer jobs to students and institute scholarships, and provide supervision for Master's and PhD students.
- **SDG 5 Gender equality:** IFE endeavours to ensure gender equality and equal opportunities in career development and employee benefits.
- **SDG 8 Decent work and economic growth:** IFE works to safeguard human rights and decent working conditions in its own operations and in the supply chain, including through our work vis-à-vis the Transparency Act.
- **SDG 12 Responsible consumption and production:** IFE works actively to reduce our climate and environmental footprint.

IFE's board includes two employee representatives. The Cooperation Committee consists of the trade union leaders at Kjeller and Halden as well as IFE management. Five meetings are held each year in addition to extraordinary meetings when necessary, and these entail a mutual exchange of information in addition to formal discussions. The Working Environment Committee (AMU) consists of the chief safety representatives, as well as representatives for the trade unions, IFE management and the company health service. The business areas have a Local Working Environment Committee (LAMU) consisting of a safety representative, trade union representative and management representative. IFE has AKAN contacts at Halden and Kjeller who assist staff and managers with the prevention and management of substance abuse problems.

Photo: Bo Mathisen

Operation of a full-scale battery system for storing solar power

In 2024, IFE commissioned a new stationary battery system on its premises. Demand for stationary battery systems, known as Battery Energy Storage Systems (BESS), is growing rapidly. Research and analyses by Rystad Energy indicate that the demand for BESS will increase twice as much as the demand for batteries in the electric vehicle sector by 2030. The safety of the battery system is enhanced with gas detectors, ventilation and module-integrated water-based fire suppression. The system will be operated in conjunction with the solar power plant. In a project with Korean partners, IFE will conduct long-term performance testing of the battery system under realistic and Nordic conditions.

This project will help to achieve the SDGs on sustainability: 7) Affordable and clean energy through experience with new technology for storing renewable energy, 9) Industry, innovation and infrastructure through the development of cost-effective solutions for operating Li-ion batteries in northern climates, 11) Sustainable cities and communities through making local power grids more flexible in order to avoid costly grid expansion, and 13) Climate action through enabling the expansion of wind and solar power production.

The Korean partners consist of the Korean Electrical Safety Corporation (KESCO), Global Electricity and Jeonbuk National University. In addition to the technical and scientific experience gained from the project, IFE has also strengthened its ties with important international partners. During the project period, IFE has hosted 10–15 different Korean visitors and guest researchers, while also contributing annually to the Korean Electrical Safety Seminar in Seoul.

The researchers in the battery and solar power division have an ambition to continue to develop similar activities to prepare society and the energy system for future changes.

The UN's SDGs on sustainability:

Social sustainability is also about employees' physical and mental well-being, job satisfaction and work-life balance. IFE has a Welfare Committee that allocates annual welfare funds, and company sports teams at Halden and Kjeller that organise various activities.

Many of our new employees are from other countries and different parts of Norway. IFE arranges for employees from other countries to take Norwegian language courses. We aim to include and integrate employees in the workplace and help ensure that they have a social network outside of work. At Halden, Lego and board game evenings are held as well as other arrangements for employees and their families. At Kjeller, we established 'Young at IFE', which organises social meetings and activities for our younger employees to get to know each other better and build private and professional social networks.

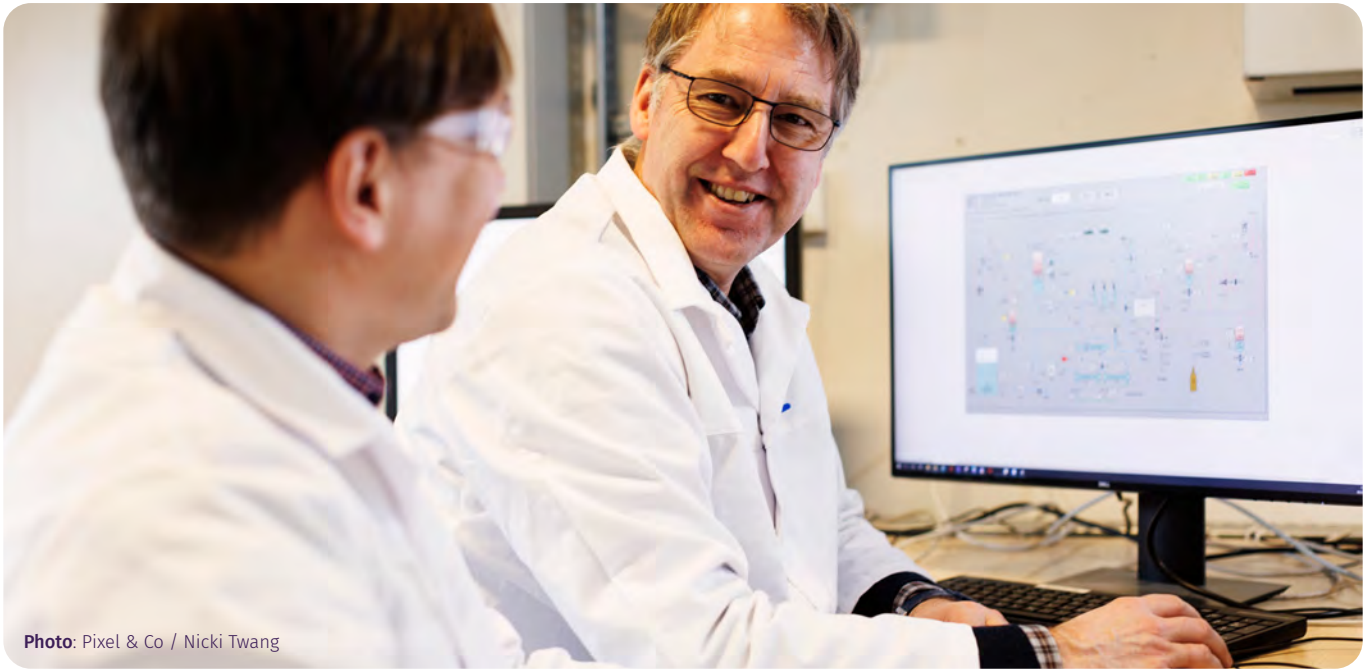


Photo: Pixel & Co / Nicki Twang

Our workforce

Total sick leave in 2024 was 4.3%, compared with 4.1% in 2023. The corresponding figures for Agilera were 7.2% and 6.9%, respectively. Individual adaptations of the workplace and duties are undertaken as part of the close follow-up of employees on sick leave to ensure a timely return to work. Eight work-related injuries were reported in 2024, six of which required first aid and four required medical treatment with sick leave. In 2024, IFE continued measures to reduce injuries, including clarification of the guidelines for using personal protective equipment on IFE's premises and when working for IFE in other locations, securing doors and gates, improved gritting and providing ice grips for shoes, introduction of 'safety moments' in management meetings and strengthening HSE training.

I IFE strives to provide a workplace that is tailored to the health, safety and environment of our employees. The foundation works with the company health service on preventive health care for its employees. In the case of maternity or adoption leave, IFE offers its employees more generous terms than those under the National Insurance Scheme. All employees retain their normal salary during the period of leave. Based on a risk assessment, pregnant employees who work with radioactive substances and ionising radiation are transferred to duties that do not involve exposure for the remainder of their pregnancy.

	2022	2023	2024
IFE			
Sick leave, percentage	3,3	4,1	4,3
H1 (incl. sub-suppliers)	3,1	2,2	2,8
H2 (incl. sub-suppliers)	3,8	4,4	2,8
Injuries, total	8	6	6
Agilera			
Sick leave, percentage		6,9	7,2
H1 (incl. sub-suppliers)		0,8	1,7
H2 (incl. sub-suppliers)		0,8	1,7
Injuries, total		1	2

Photo: Pixel & Co

		IFE 2024	Agilera Pharma 2024	IFE Invest AS 2024	Corporate group 2024
Permanent employees	Total	672	136		808
	Women	228	87		315
	Men	444	49	1	494
Temporary employees	Total	42	1		
	Women	14	1		
	Men	28			
Part-time employees	Total	32	2		
	Women	10	1		
	Men	22	1		

Gender equality and anti-discrimination

The corporate group had 808 permanent employees in 2024, made up of 315 women and 494 men. In total, there are 43 temporary employees, of whom 15 are women and 28 men. The corporate group has 39 part-time employees, of whom 11 are women and 23 men.

In 2024, the research foundation's board consisted of three women and four men. IFE's executive management consisted of three women and eight men. Agilera's board consisted of two women and two men in 2024, and its executive management consisted of five women and four men.

IFE aims for full gender equality, and has appointed a cross-party group to analyse gender equality and anti-discrimination, consisting of representatives from the HR department, the senior safety representative and employee representatives, and reports to IFE's board and Working Environment Committee. See IFE's website for its report on the status of gender equality and a description of its gender equality and anti-discrimination efforts. IFE also has a 'Gender Equality Plan' to promote gender equality in research.

The foundation's policy on human rights and culture states that employees must help to safeguard a fair and inclusive working environment that does not discriminate based on ethnicity, gender, sexual orientation, religion, political orientation or social background. Diversity at IFE is safeguarded through our recruitment process, which is needs-based and subject to objective and unbiased criteria that must not be influenced by the candidate's gender, pregnancy, maternity or adoption leave, care responsibilities, ethnicity, religion, worldview, disability, sexual orientation, gender identity or gender expression. Since 2022, a diversity statement has been included in all our job advertisements.

IFE has an international environment with employees from more than 30 different nations. In order to make our employees feel included, information on our website and in the Employee Handbook is provided in both Norwegian and English. The CEO and HR hold induction meetings with all new employees in Norwegian and English.

IFE's working environment survey also covers discrimination and unfair differential treatment in the

Photo: Pixel & Co

organisation. The results of the survey are presented to IFE's entire line management. Based on this, action plans are drawn up at department level to address any non-compliance and improvement measures. The results of these are assessed in a midway evaluation and subsequently a final evaluation.

IFE has established internal and external channels for reporting wrongdoing (also referred to as whistleblowing channels). Two reports of wrongdoing were registered and dealt with in 2024. The working environment survey has uncovered cases of bullying and harassment at IFE. IFE takes this very seriously and initiated preventive measures in 2024, including training on how managers and staff should deal with the reporting of wrongdoing, bullying and harassment.

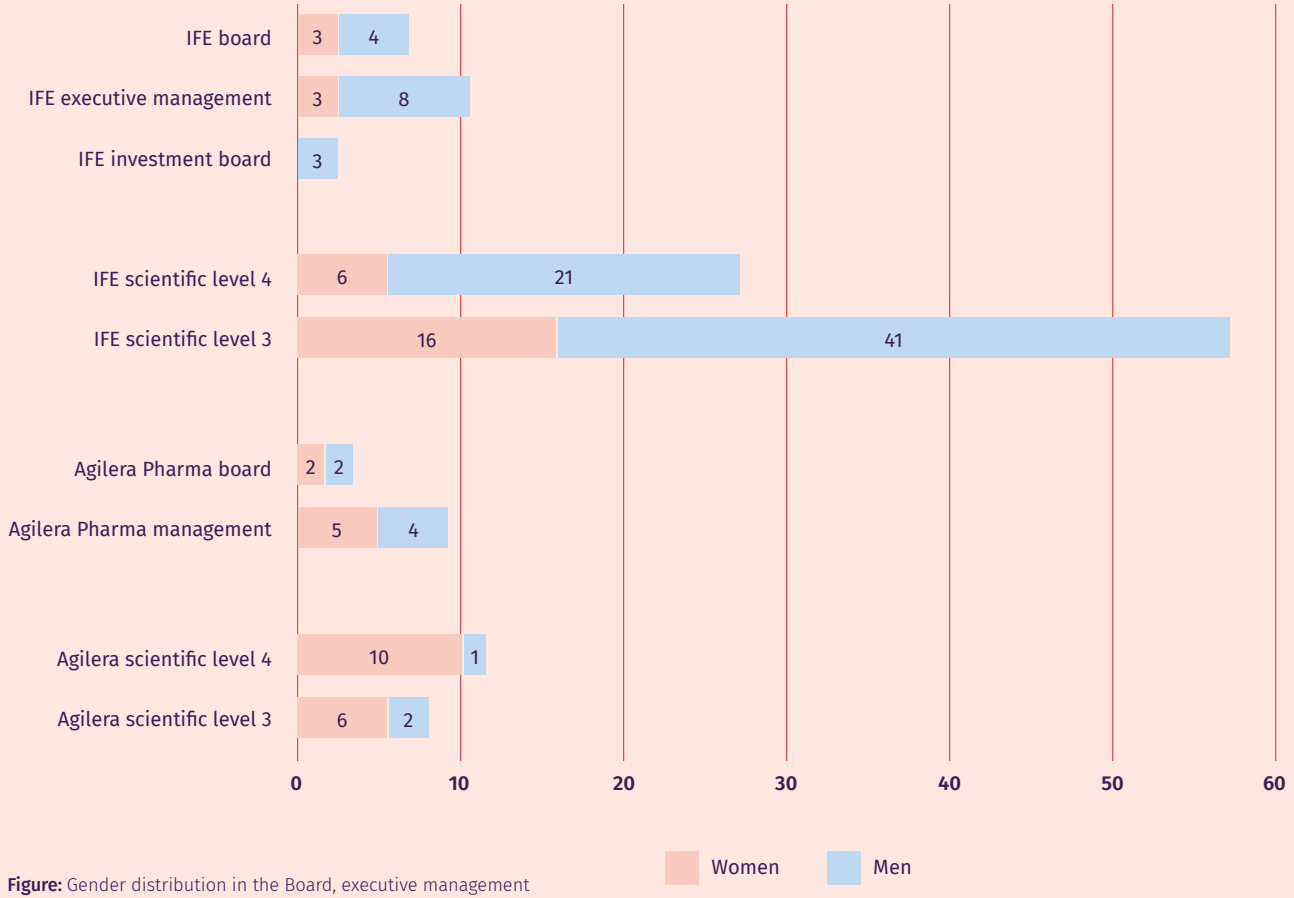


Figure: Gender distribution in the Board, executive management and at research levels 3 and 4[5] Number of women and men.

5 Research level 3: senior researcher, senior researcher I. Research level 4: head of research, research manager, research coordinator.

Double materiality analysis - Social

S1 - Our workforce						
Significant impact, risk or opportunity identified	**Area**	**Actual or potential impact**	**Own operations or value chain**	**Description**	**Ongoing measures**	**Planned measures**
Positive impact	Shared decision-making	Actual	Own operations	AMU, Cooperation Committee, trade unions, ATO, dept. meetings, general meetings, employee representatives on the board		
Positive impact	Diversity	Actual	Own operations	Diversity statement in job ads, guidelines for recruitment, employee protection	Being clarified in the policy on people and culture	
Positive impact	Pay and remuneration	Actual	Own operations	Pay appraisal meetings, promotion system in the Employee Handbook, no bonus scheme. System for equal pay to avoid social dumping and pay gaps. Good pension plan.	Training in pay apparaisal meetings and employee appraisals	
Positive impact	Social welfare	Actual	Own operations	Company health service, health survey, vaccination, insurance, pension plan, full pay on sick leave, Inclusive Workplace Agreement (IA), vulnerability meetings		
Positive impact	HSE, injuries	Actual	Own operations	Company health service, non-conformance system, safety rounds		
Positive impact	Work-life balance	Actual	Own operations	Flexitime, short-term absences, working from home, Christmas and New Year holiday, welfare leave, full pay during parental leave, opportunity to work part time, compassionate leave		
Positive impact	Human rights	Actual	Own operations	Use of external OnboardNorway when hiring foreign labour		
Positive impact	Data protection	Actual	Own operations	GDPR project, data protection officers local and central. Own GDPR page with instructions on the intranet, courses for employees in GDPR.	Introduction of digital personnel archives and image archives	
Positive impact	Events	Actual	Own operations	Non-conformance system. Emergency preparedness system, preparedness exercises. Company health service.	Updating the emergency preparedness system and planning, training of employees	
Opportunity	Training and skills development	Potential	Own operations	Employee appraisal to identify needs for training and skills development. Guidelines for education support.		
Negative impact	Persons with disabilities	Potential	Own operations	Lack of universal design in systems and buildings	Management facilitation and follow-up. Guidelines for following up sick leave certificates, better terms than the National Insurance Act for sick leave. Follow the Inclusive Workplace Agreement.	New buildings with better facilities
Negative impact	Work-life balance	Actual	Own operations	High stress levels in parts of the organisation	Follow-up of AMIS, employee appraisals	
Negative impact	Decent working conditions	Actual	Own operations	Large old building stock without ventilation. Lack of office space.		New buildings

Risk	HSE, injuries	Potential	Value chain	Risk of IFE's requirements and procedures not being followed by external parties	IFE is working on strengthening training and requirements for external parties	
Risk	Events	Potential	Own operations	Potential risk of intentional and unintentional incidents involving employees or affecting employees	IFE is working on the safety culture and raising awareness, as well as management training	
S2 - Workers in the value chain	**Area**	**Actual or potential impact**	**Own operations or value chain**	**Description**	**Ongoing measures**	**Planned measures**
Positive impact	Human rights	Actual	Value chain	IFE sets requirements for suppliers in procurements. Procedures for compliance with the Transparency Act.		
Positive impact	Decent working conditions	Actual	Value chain	IFE sets requirements for suppliers in procurements. Procedures for compliance with the Transparency Act.		
Positive impact	HSE, injuries	Actual	Value chain	IFE sets requirements for suppliers in procurements. Procedures for compliance with the Transparency Act.		
Positive impact	Pay and remuneration	Actual	Value chain	IFE sets requirements for suppliers in procurements. Procedures for compliance with the Transparency Act.		
Positive impact	Social welfare	Actual	Value chain	IFE sets requirements for suppliers in procurements. Procedures for compliance with the Transparency Act.		
Risk	Human rights and decent working conditions	Potential	Value chain	Risk that IFE's procedures for compliance with the Transparency Act are not followed. Major procurements with long value chains. Extensive use of sub-suppliers and contracted-in labour in the property division. The research activity carries out extensive international work.		Simplify procedures, more info and training
S3 - Local communities impacted	**Area**	**Actual or potential impact**	**Own operations or value chain**	**Description**	**Ongoing measures**	**Planned measures**
Positive impact	Involvement, stakeholder dialogue	Actual	Value chain	IFE has a good dialogue with different stakeholders, e.g. local authorities, neighbours, residents' associations.	Proactive and open communication	Courses in radiation protection and preparedness for Aurskog-Høland municipality
Positive impact	Local value creation	Actual	Value chain	IFE is a major employer at Romerike and Halden, ripple effects of buying from local suppliers.	IFE is working on strengthening training and requirements for suppliers	
Opportunity	Land use impact	Potential	Value chain	Opportunity for developing the properties at Kjeller and Halden to create more jobs and attractive areas where nature, the environment and social sustainability are protected	Detailed zoning plan	Masterplan for developing the property at Kjeller. Take part in dialogue on development projects in Halden.
S4 - Consumers and end users						
Positive impact	Patients' health and quality of life	Actual	Value chain	Agilera's operations give patients a high medical value and improved quality of life.		
Positive impact	Involvement, stakeholder dialogue	Actual	Value chain	TE is working actively with involvement and user participation of internal and external tenants.		

Photo: Espen Solli

Prerequisites and possibilities for nuclear power

Norway's Nuclear Energy Commission has been given an important mandate: 'Nuclear power is a complex energy source that affects a wide range of spheres in society. An up-to-date and robust knowledge base is needed on nuclear power as a potential energy source in the Norwegian power system'. The Commission will present its findings in the spring of 2026.

In Europe, it is clear that nuclear power will be a key energy source in the European power system for the next 100 years, as well as an emerging energy source in the maritime sector. The Norwegian power system is also closely interconnected with the European system, so we consider it essential for Norway to have a solid knowledge base on nuclear power.

The conclusion of the European Commission's Joint Research Centre and the life cycle analyses by the UN and UNECE is clear: nuclear power is at least as sustainable as renewable energy sources and has the lowest greenhouse gas emissions and environmental footprint of all energy options.

Through written input to the Nuclear Energy Commission, our own events and participation in various panel debates and industry meetings, IFE has highlighted the need for expertise and capacity in the following areas, both as prerequisites and as opportunities for nuclear power in Norway:

- **Regulatory framework:** The regulatory and legal framework shall define the conditions for any nuclear power operations in Norway.
- **Safety:** The safety aspect distinguishes nuclear power from other energy sources and is the main reason why the regulatory and legal framework is relatively comprehensive. There are three key aspects of safety in terms of nuclear power: i) Protection of people and the environment from the effects of radiation (safety), ii) Protection against malicious acts (security), and iii) Prevention of loss or unauthorised use of fissile material (safeguards). Security of supply and the vulnerability of the power system are also important safety concerns.
- **Technology:** Significant technological advancements are taking place in the field of nuclear reactors. A thorough assessment of the various technological aspects of nuclear power is crucial to reduce delays and budget overruns.
- **Operations:** Future power plants will likely consist of multi-unit facilities where several units in different states of operation are controlled from one or more control rooms. Depending on how the plant is connected to other operations, a safe state may only require continued safe production as opposed to a shutdown. This requires facilities for training in operations and critical scenarios.
- **Waste management:** Planning, constructing and operating waste management systems is complex and involves interfaces between nuclear technology, radiation protection, geology, land-use planning, security and public regulation. International conventions require all countries to handle their own nuclear waste.
- **Legitimacy and support**: A nuclear power plant will be a major facility in Norway and Europe and will remain in place for a long time. There is a need for knowledge on how to build and maintain legitimacy.

The UN's SDGs on sustainability:

Human rights and working conditions in the value chain – reporting according to the Transparency Act

This report covers the period from 1 January to 31 December 2024 for the IFE corporate group, which includes the IFE Foundation, Agilera Pharma AS and IFE Invest AS. The IFE Foundation is a research institute whose principal purpose is to conduct research in the field of energy and associated areas. IFE is responsible for the safe operation and preparations for the decommissioning of Norway's nuclear facilities. The group's property operation develops and manages the properties in Halden and at Kjeller.

Agilera Pharma AS develops and manufactures radiopharmaceuticals. The company also has a societal mission as the national pharmacy for radioactive pharmaceuticals and is responsible for receipt from abroad and distribution to health trusts throughout Norway. Agilera Pharma AS is subject to the Transparency Act in its own right, and the company's activities are described in a separate section.

IFE Invest AS manages and develops IFE's stake in companies that have commercialised research outcomes. IFE Invest AS has one employee and is therefore exempt from the Transparency Act's reporting requirements, but the company's activities are included in IFE's overall report.

IFE's work to respect fundamental human rights and decent working conditions

Under the Norwegian Act Relating to Enterprises' Transparency and Work on Fundamental Human Rights and Decent Working Conditions (the Transparency Act), IFE is obliged to carry out due diligence of suppliers and other partners in accordance with the UN Guiding Principles on Business and Human Rights and the OECD Guidelines for Multinational Enterprises.

Please refer to the 'Governance at IFE' section for an account of how IFE is organised, the products and services we offer, the markets we operate in, our whistleblowing channels and our complaint procedures.

IFE is subject to the Norwegian Security Act and the Norwegian Act on Nuclear Energy Activities, and this has implications for which suppliers and business partners we are at liberty to use. Supplier risk is assessed in respect of staff safety and security control. IFE's suppliers must not be located in high-risk countries or operate under working conditions, for example poor labour conditions, that could compromise their security status.

IFE's nuclear activities are funded through Norway's national budget and subject to the Norwegian Act on Public Procurement. This means that all advertised public procurement contracts (parts II and III) require suppliers and their subcontractors to complete the ESPD form to qualify for competitive tendering. A number of mandatory requirements are included, for example in relation to crime, corruption, fraud, terror, money laundering, child labour, human trafficking, tax, quality, environmental issues, working conditions and compulsory liquidation. In addition, selected

Photo: Benjamin A. Ward

Photo: Pixel & Co

suppliers must sign IFE's ABC agreement[6], where they undertake to comply with IFE's Code of Conduct for business partners.

Every year, IFE buys goods and services to a value of approximately NOK 900 million from Norwegian and international suppliers. Almost NOK 700 million of this is for Norwegian suppliers and NOK 120 million is paid to suppliers in Sweden. There is considerable variation from year to year as regards the types of goods and services that are procured. This is because IFE's principal mission is research, which is a dynamic activity, and procurements will vary with the type of research projects being carried out. Our nuclear and property activities are also subject to considerable annual variation in terms of procurement, suppliers and business partners.

The double materiality analysis conducted in 2024 identified procurement as one of IFE's main risk areas in terms of social sustainability. However, IFE can make a positive contribution by choosing suppliers and business partners whose operations are sustainable in terms of social and environmental conditions, and by setting requirements for those we engage with.

In 2022, IFE incorporated the Transparency Act into the procurement process in the form of a due diligence procedure. As IFE has over 8,000 suppliers registered in the procurement register, of which over 1,500 are active in any given year, we started by introducing procedures for approving new suppliers. In 2023, extensive work was carried out to classify all active suppliers according to whether they are high or low risk, based on their country. All new suppliers in 2024 underwent an overall risk assessment (including sustainability) before they were registered and approved.

IFE is working to reduce the overall number of suppliers, with a particular aim of reducing the number who are high risk. This is one of our most important measures to ensure compliance with the Transparency Act.

If it is difficult to remove or replace high-risk suppliers and business partners, they will undergo a due diligence assessment, the results of which are presented to IFE's management who will then decide whether the risk is manageable and acceptable. If management decides to grant approval, high-risk suppliers and business partners will be followed up every year. When negotiating and entering into contracts, all suppliers and business partners must sign IFE's ABC policy, thereby undertaking to comply with IFE's Code of Conduct for business partners. In the event of non-compliance, IFE may terminate the contract. IFE's standard contracts were revised in 2022 to reflect the new requirements and procedures.

In addition to introducing new requirements and procedures for suppliers and business partners, IFE's management decided to introduce similar procedures for collaboration partners. This goes beyond the scope of the Transparency Act, but it is crucial to ensure that our collaboration partners protect human rights and maintain decent working conditions.

Managers and staff who procure goods or services, or enter into collaborations, are responsible for complying with the new policies and procedures introduced in relation to the Transparency Act. Managers and staff can ask the Ethics Committee for advice or escalate the matter to the divisional management or IFE's executive management.

6 Agreement on Responsible Business Conduct

Integrity due diligence process for IFE's suppliers and business partners

Suppliers and business partners are subject to due diligence whenever goods and services are procured. New suppliers and business partners are screened by third parties to establish if they are high or low risk, and the outcome is documented in the register of suppliers. High-risk partners are either located in countries with a score below 70 on the Transparency International Corruption Index, and/or below 70 in the Freedom House ranking, and/or appear on the 'red flag' list. If it is decided to proceed with a high-risk partner, the person in charge of the procurement must carry out due diligence and ask the supplier to complete and return IFE's IDD[7] form. The Procurement Department is responsible for assessing whether the due diligence outcome warrants proceeding to contract stage or whether the process should be terminated. They can also choose to escalate the matter to the Ethics Committee or IFE's executive management. If they choose to proceed, high-risk partners must be followed up every year in accordance with the established procedure. This is the responsibility of the person who uses the supplier/business partner. If the risk increases, the matter must be escalated to the Procurement Department which puts in place risk-reducing measures or decides whether the relationship will need to be terminated. Routines have been established for archiving due diligence documentation.

7 Integrity Due Diligence

8 This requirement does not apply to IFE's collaboration partners in research projects funded by the Research Council of Norway or the EU, because there are routines in place for the approval of such research partners. Research partners in the Halden Project are also exempt from this requirement. However, when establishing consortiums or negotiating with research partners who want to be involved in such projects, IFE can introduce requirements and procedures to consider whether we want to engage with them.

Integrity due diligence process for IFE's collaboration partners

IFE has collaboration partners who are not classified as suppliers or business partners. These include companies, individuals, research communities or business clusters that IFE collaborates with by exchanging data, guest lecturers, students, infrastructure etc. The Transparency Act does not cover collaboration partners, but IFE has decided to introduce similar requirements and procedures for any such partners who are considered high risk[8].

High-risk partners are either located in countries that score below 70 on the Transparency International Corruption Index, and/or below 70 in the Freedom House ranking, and/or appear on the 'red flag' list. If the decision is made to proceed with a high-risk partner, the person in charge of the project must carry out due diligence and ask that IFE's IDD Form be completed and returned. The division management is responsible for assessing whether the outcome of the due diligence warrants an agreement to be made or whether the process will have to be terminated, or they can escalate the matter to the Ethics Committee or IFE's executive management. If they choose to proceed, procedures are in place for the annual follow-up of high-risk collaboration partners. The project manager is responsible for any such follow-up. If the risk increases, the matter should be escalated to the division management who will put in place risk-reducing measures or decide whether there is a need to terminate the relationship. Routines are in place for archiving due diligence documentation.

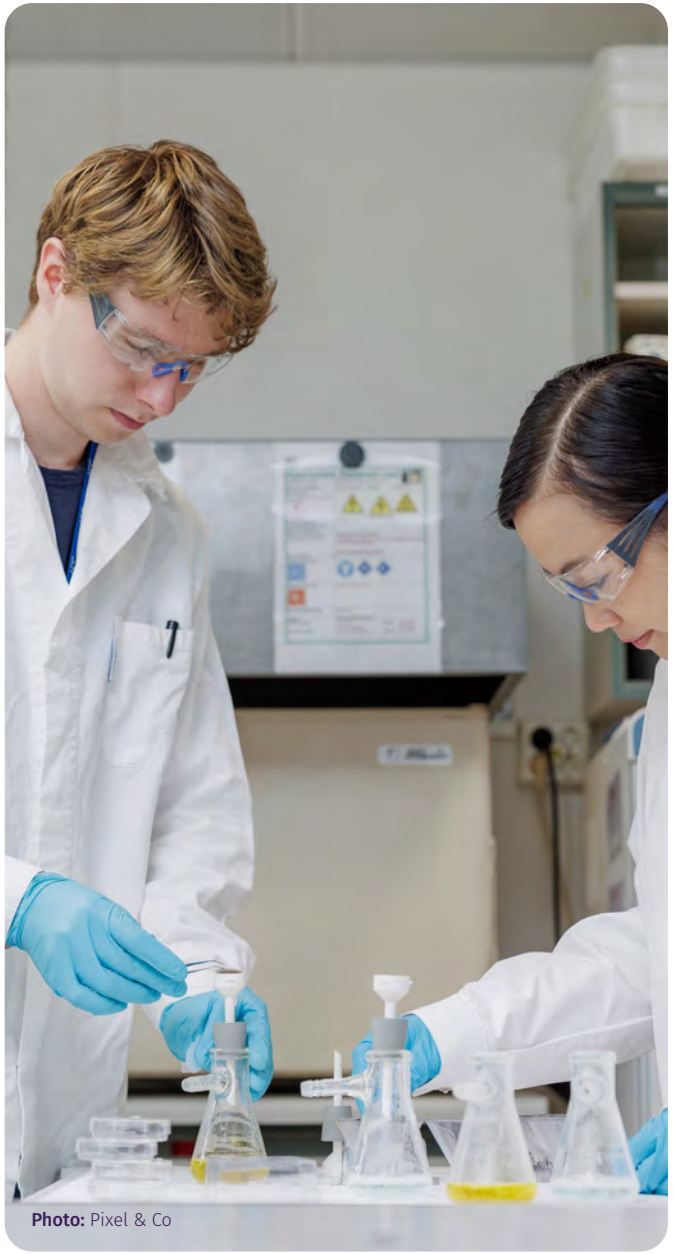


Photo: Pixel & Co

Actual adverse impacts, and significant risk of adverse impacts, as identified through IFE's due diligence process

In accordance with the Norwegian Security Act, the Nuclear Energy Activities Act and the Public Procurement Act, IFE has in recent years reinforced its approach to risk assessment and procurement, in addition to implementing the Transparency Act.

IFE has worked to reduce the number of suppliers and business partners who are considered high risk in terms of security, human rights or decent working conditions. This has been done by avoiding high-risk suppliers as far as possible and replacing existing high-risk suppliers with low-risk suppliers where possible. The number of high-risk suppliers and business partners who have been excluded through this process has not been documented.

The organisation reports that the introduction of the Transparency Act has increased awareness of risk in the supply chain, and that efforts are actively made to avoid high-risk suppliers and business partners.

In 2024, 350 new suppliers were registered, all of whom were subject to due diligence. All new suppliers must sign the ABC agreement in which they accept IFE's Code of Conduct for business partners.

Through IFE's work on the Transparency Act in 2024, the company did not uncover any negative consequences.

There have been instances where an order was placed and an invoice received without a supplier registration request being submitted. This mainly relates to webinars, conferences, trade fairs and similar with a low procurement value and risk. IFE will strengthen its staff training and information in respect of IFE's applicable procedures.

Measures initiated to stop or reduce negative consequences

IFE places a great emphasis on ethics training, which is mandatory. New employees receive information about IFE's work on sustainability and ethics, including the Transparency Act and due diligence processes. This was also a topic at the 2024 sustainability workshop for IFE's executive management and all those working with social and environmental sustainability at IFE, a total of 60 employees. The business areas and support functions have held their own workshops or training sessions on sustainability and ethics throughout the year.

The Energy and Nuclear Power research divisions, which undertake commissions for the global market, have held ethics and dilemma training for managers and staff to practise assessing and managing situations where customers request services that are not ethical.

The Technology and Property division has devised guidelines for IFE's construction projects. These guidelines include a duty to ensure compliance in line with the 'Regulations on the duty to provide information and ensure compliance and on the right of access to information', and serve as a guide for all contracts with

Photo: Pixel & Co

contractors, suppliers and consultants. The division also enters into lease agreements with tenants of IFE's buildings. These lease agreements include provisions requiring tenants to protect fundamental human rights, ensure decent pay and working conditions, prevent money laundering, corruption and trading in influence, and ensure the right of access to information. The division has also provided training in health, safety and the working environment.

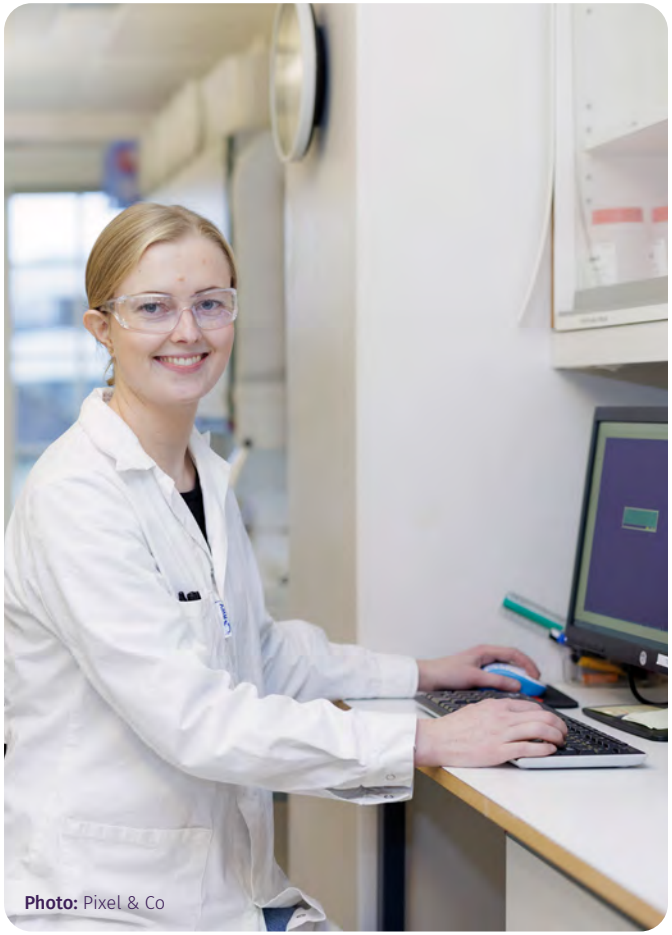


Photo: Pixel & Co

Expected results of measures

In 2024, IFE's research divisions terminated or declined projects involving certain high-risk countries. This has had direct negative financial consequences. IFE expects that its dialogue with and expectations communicated to suppliers and business partners will ensure that the pay and working conditions of contractors' and suppliers' employees are in line with the regulations on general application of collective agreements. Furthermore, IFE expects a reduction in the number of newly established suppliers as well as high-risk suppliers.

Due diligence report for Agilera Pharma AS, 2024

Agilera Pharma AS is subject to the Transparency Act and is therefore legally required to carry out due diligence aimed at promoting respect for fundamental human rights and decent working conditions in connection with the production of goods and provision of services. This obligation includes publishing a description of the due diligence assessments.

Agilera Pharma AS has a large number of suppliers and has adopted a risk-based approach to reviewing its supplier portfolio. The aim is to identify the risk of non-compliance with fundamental human rights and decent working conditions in the supply chain.

In 2024, we conducted due diligence assessments of the key suppliers for the wholesale and retail segments of radiopharmaceuticals in Norway, focusing on risk and compliance with ethical guidelines, including fundamental human rights and decent working conditions. Ninety per cent of the suppliers signed a declaration confirming compliance with the requirements, while ten per cent expressed support for the content. The largest pharmaceutical suppliers to the wholesale operations are parties to a tripartite framework agreement with the Norwegian Hospital Procurement Trust and Agilera. These suppliers have signed Appendix 5 of the framework agreement: Contractual requirements for ethical trade – contractual terms for protecting fundamental human rights in the supply chain, which meets Agilera's requirements under its ethics policy. For commercial pharmaceutical production, the client is responsible for carrying out the equivalent due diligence, as they select the suppliers and sign the contracts.

Procedures have also been established for new customers to ensure compliance with the ethical standards of IFE and Agilera Pharma AS. The same requirements apply to Agilera Pharma AS's collaborative partners.

Actual adverse impacts, and significant risk of adverse impacts, as identified through Agilera's control procedures

In 2024, Agilera did not identify any adverse impacts and/or matters covered by the Transparency Act. Targeted training in Agilera's responsibilities as an independent company, based on an established framework of policies and an effective distribution of responsibilities with major partners, will improve the company's ability to address risks within its area of business.

Military camps of the future

Energy security is critical for military operations, but today's military camps are often dependent on fossil fuels and long supply chains, making them both vulnerable and unsustainable. One of the goals of the INDY project has been to develop solutions for more energy-efficient and self-sufficient military camps, and IFE has been a key partner in this work.

Supported by the European Defence Fund (EDF), the project has brought together 20 partners and 9 subcontractors from 13 European countries to create the military camps of the future, with a lower carbon footprint and increased security of supply.

IFE has contributed its expertise in hydrogen, solar energy and Arctic conditions, and has played a key role in developing technologies that reduce fuel dependence and emissions. Through the project, various scenarios have been analysed with a view to optimising energy consumption in military camps, adapted to different climatic and operational conditions. The results show that by 2030, such camps can achieve:

- 35–55% energy autonomy
- Up to a 45% reduction in logistical demands
- Reduced ownership cost by up to 28%
- 40–80% reduction in carbon footprint

IFE has worked specifically on solutions that combine solar energy, battery storage, hydrogen and smart microgrid systems, laying the foundation for military camps with net zero emissions by 2050.

The UN's SDGs on sustainability:

Institute for Energy Technology Annual Report and Financial Statements 2024

Nature and location of operations

The Institute for Energy Technology (IFE) was established in 1948 with the objective of conducting nuclear research. Today, the foundation works on a not-for-profit basis for the public good by conducting research and development in the field of energy and other areas where the foundation's expertise is of particular relevance. The foundation is registered in the Register of Business Enterprises in Brønnøysund, with organisation number 959 432 538. IFE's premises are at Kjeller and in Halden.

The Board of Directors has seven members, five of which are appointed by the Ministry of Trade, Industry and Fisheries (NFD) and two are elected by the employees.

In 2018 and 2019, IFE decided to wind up the operation of its nuclear reactors at Halden and Kjeller. In March 2021, the Norwegian Parliament (Storting) approved the white paper on the safe decommissioning of Norwegian nuclear facilities and disposal of nuclear waste (Meld. St. 8 (2020-2021)). It decided that IFE's nuclear facilities and employees should be transferred to the Norwegian Nuclear Decommissioning Authority (NND), and that the government would cover all necessary costs related to the clean-up of nuclear waste. This overarching framework is crucial as it establishes the necessary conditions for managing the challenging task of winding up 70 years of nuclear operations in Norway, while also supporting the further development of IFE's other activities.

Based on the aforementioned white paper, IFE and the NFD signed an agreement in 2024 concerning the 'Transfer of the nuclear sector at the Institute for Energy Technology', with the aim of facilitating the decommissioning and dismantling of IFE's nuclear facilities as well as the management of radioactive waste, by transferring these responsibilities to the State, represented by the NND. According to the agreement, the transfer will only take effect once the NND has obtained the necessary licence and the facilities have been transferred in accordance with the provisions of the agreement. IFE's entire nuclear operations, including all activities, facilities and personnel, will be transferred from IFE to the NND. The transfer includes the nuclear facilities along with the associated land, buildings and employees, as well as other assets, rights and obligations that are to be transferred to the NND according to the agreement, in addition to the safety and support functions necessary for continuing IFE's nuclear operations. The agreement provides for a phased transfer of the nuclear facilities to the NND, with the aim of transferring the Halden Reactor and the Combined Storage and Disposal Facility for Radioactive Waste (KLDRA)) in 2025. Furthermore, the agreement provides that the transfer shall take place without any financial consideration, with neither party required to pay compensation or other remuneration for the obligations assumed by the other party.

While IFE's original focus was on nuclear research, the foundation's current range of activities is extensive and are primarily associated with its two societal missions:

- Foster value creation in Norway through research and innovation
- Safe management and clean-up of waste after more than 70 years of nuclear operations in Norway

Research and development (R&D) continue to be the foundation's core activity, encompassing the research divisions Energy (Kjeller) and Nuclear Power (Halden).

Value creation from R&D activities is also an important task, and in 2023, IFE's development, production and distribution of radiopharmaceuticals were demerged into the wholly owned subsidiary Agilera Pharma AS.

Maintaining the safety of the nuclear facilities, and the transfer of these to the NND, is IFE's other main task.

The IFE Group consists of the IFE Foundation and the wholly owned subsidiary IFE Holding AS. IFE Holding AS is a holding company for IFE's commercial activities, and owns 100% of the shares in the subsidiaries IFE Invest

Photo: Pixel & Co

AS and Agilera Pharma AS. The group also includes IFE Research AS, which for the time being is a dormant company. The foundation holds a 33% stake in NORIN Research AS through participation in the NORIN research alliance.

Research and development

The R&D divisions conduct applied research and aspire to be a leading contributor to international research in the fields of energy, the environment and human-centred digitalisation. Through its research activities, IFE will support Norwegian and international industry with a view to improving their competitiveness, while also contributing to the UN Sustainable Development Goals (SDGs) and the EU's priority areas related to societal challenges.

A total of approximately 340 staff are employed in the two research divisions: Energy at Kjeller and IFE Nuclear in Halden. Energy changed name from Energy and Environmental Technology (ENET) in 2024, while IFE Nuclear changed name from DS (Digital Systems) in 2025.

IFE is a research institute with a focus on technology and industrial development, and receives core funding from the Research Council of Norway. This is an important source of funding for the research activities, and it gives IFE the opportunity to develop research and expertise within the guidelines for government core funding for research institutes and research groups. As of 2024, Norway's contribution to the Halden Project, described below, will also be included in the core funding. This explains the increased allocation in 2024 compared to 2023, see Note 3. Previously, the contribution to the Halden Project was allocated directly through the national budget.

IFE is involved in national and international research projects. Most funding is derived from contract and grant-funded projects under the auspices of the Research Council of Norway, the EU's research programmes and industry-funded projects. IFE also provides services directly to industry and sells products on the international market. IFE disseminates research findings through scientific articles in international journals and other publications approved for the Norwegian Science Index, participation at science conferences and contributions to popular science outlets.

Research infrastructure is central to all research institutes, and IFE's infrastructure is among the most advanced in Norway and in Europe. IFE owns and operates nine national infrastructures for energy research, in addition to advanced laboratories in Halden, which are used by customers and members of the Halden Project.

Many of the project applications that IFE submitted to the Research Council of Norway in 2024 were successful. One of the key projects awarded to IFE in 2024 was the management of two Centres for Environment-friendly Energy Research (FME), SOLAR and BATTERY. The centres highlight IFE's role as a national focal point in Norway's research on solar power and battery technology, and these research areas are also important strategic priority areas for IFE. SOLAR, which is the third solar power research centre in a row to be led by IFE, demonstrates that the foundation continues to be at the forefront of research in this type of energy. In addition, IFE is also participating in the new FMEs: gigaCCS, SecurEL and InterPlay, with a start-up date in 2025. In recent years, IFE has had a strong focus on growth in projects funded by the EU, and in 2024, we took part in more than 40 EU projects, while serving as coordinator for 15 of these.

Nemonoor, one of two digital innovation hubs established in Norway in 2022, received government funding in 2024. IFE was also awarded three new projects (EASI-SMR, DORADO, XS Ability) under EURATOM in 2024. However, the extent of IFE's participation in these projects is limited because EURATOM projects do not receive funding under the Retur-EU scheme. The potential for a larger portfolio within this programme would have been significant with Retur-EU funding.

Photo: Pixel & Co

The foundation is proud of its role as host of Norway's largest and longest research project, the OECD NEA Halden Human, Technology and Organisation Project (HTO) (the Halden Project). The Halden Project consists of 20 international organisations from 12 countries and


Photo: NND/ Tom Egil Jensen

is important for maintaining national expertise within nuclear safety. Equinor ASA and Kongsberg Maritime AS have been taken on board as new members. The high level of activity in the project has continued in 2024. The budget for the programme period 2024–2026 amounts to NOK 166 million, of which Norway's share is NOK 63 million.

The research partners in the Halden Reactor Project, historically an important part of the Halden Project, have decided to extend the original project agreement to the end of 2025 to allow all ongoing research activities to be completed.

In connection with the transfer of IFE's nuclear activities to the Norwegian government, represented by the NND, some of IFE's premises at Kjeller will also be transferred. This means that several key laboratories and much of the national research infrastructure will have to be relocated. The relocation is currently ongoing. Under the 2022 Revised National Budget, IFE was granted a NOK 120 million government loan to build new laboratories. Work has already started on plans for a new laboratory building at Kjeller.

Nuclear Operations and Safety

Today, IFE's nuclear operations consist of the decommissioned licensed nuclear reactors at Kjeller and Halden, the associated facilities and approximately 220 employees. All activities are fully funded through government subsidies. In March 2021, the Storting decided that IFE's nuclear facilities were to be transferred to the State through the NND. The plan is for all operations, facilities and personnel to be transferred once the NND has been granted a licence.

At the Council of State meeting on 28 March 2025, the government decided to grant the NND a licence to own and operate nuclear facilities in Halden from 12.00 noon on 1 April 2025.

IFE's most important task within nuclear activity is to maintain operations and safety at the Norwegian nuclear facilities. IFE's priority is compliance with the instructions from the Norwegian Radiation and Nuclear Safety Authority (DSA) to bring the facilities in line with current requirements for modern nuclear plants. The facilities were built in the 1950s and 60s under a different legislative and regulatory regime. The exception is KLDRA, which was designed and built by the Norwegian state in the 1990s; however, even in this case, international knowledge and best practices have evolved substantially. Satisfactory solutions will therefore have to take account of the facilities' design and the limitations this entails. This is a very large and comprehensive task, which IFE is working diligently and systematically to complete.

On 2 July 2024, IFE and the NFD signed the main agreement for the transfer of nuclear facilities to the State, through the NND. The agreement regulates key aspects of the transfer, such as the government's obligations, IFE's responsibilities and obligations, and the principles for dividing IFE's property at Kjeller.

There were no serious incidents, no non-compliance with emission licences and no unnecessary exposure to radiation in 2024. The nuclear waste has been safely managed and stored, based on the current facilities and prevailing conditions. On 20 January 2025, IFE notified the DSA that the wet storage facility, Fuel Storage Point, at the Halden Reactor had serious internal structure failures. The situation is serious but poses no risk of

radiation exposure or release. From the time of the transfer of the nuclear facilities in Halden, the NND will be responsible for implementing measures arising from the DSA's supervision of the conditions at the wet storage facility.

Spent reactor fuel is currently stored at various storage facilities at Kjeller and Halden. The temporary storage of fuel requires continual operation, monitoring and maintenance. Recommendations for the safe storage of spent reactor fuel are described in international standards, and these are incorporated into the national requirements imposed by the DSA. The repositories were built in the 1950s and 60s and are no longer in a satisfactory condition, nor do they comply with current international recommendations. Establishing a repository for long-lived radioactive waste will take a long time, and this is why, in January 2018, the DSA instructed IFE to establish new temporary storage facilities. For several years, IFE has been working to improve the existing storage facilities and establish new ones. IFE and the NND are working together to establish new interim storage for spent fuel. The DSA has forbidden IFE from moving fuel before the criticality safety assessments have been approved. IFE has received approval for the criticality safety assessments for unirradiated fuel and the JEEP I rod wells at Kjeller.

The procurement process for new interim storage for spent reactor fuel started in 2023. Due to substantial changes in the original tender specifications, the procurement process was terminated and restarted in 2024. The fact that both IFE and the NND will have nuclear facilities following the transfer of the Halden facilities has been taken into account. However, it is expected that the nuclear facilities at Kjeller will also be transferred to the NND when the procurement process is completed. It has therefore been agreed that the NND will be listed as the owner of the procurement. The distribution of responsibilities in the procurement process between IFE and the NND during the transition period is regulated by agreement.

IFE was commissioned by the NFD to prepare a monthly report on progress, challenges and risks; addressing the DSA's instructions and terms, spent fuel, radioactive waste, security, updates to safety reports and the transfer of operations. The reports are reviewed in general monthly meetings.

IFE and the NND were commissioned by the NFD to report on the transfer of nuclear facilities at Halden and KLDRA to the NND. The report was submitted in December 2023. According to the plan, KLDRA will be transferred to the NND in the second half of 2025. However, the transfer of nuclear facilities at Kjeller is more complicated, as IFE's land at Kjeller, along with the associated infrastructure, is to be divided. It is assumed that, following the division, the NND will be able to carry out its responsibilities independently of IFE, while IFE will continue to develop as a technical industrial research institute on a par with other institutes. The NFD has tasked IFE and the NND with reporting on the transfer of nuclear activities at Kjeller. The report will be partly based on the main agreements between IFE and the government and is to be submitted by 1 July 2025.

Photo: Pixel & Co /Nicki Twang

In recent years, IFE has implemented significant security upgrades at the nuclear plants and protected the information assets, technically as well as organisationally. The increased national threat level in recent years has led to stricter security requirements for IFE's activities because the political security situation has become more acute and threat agents' capabilities are increasing, particularly in terms of technology advancements. There is greater uncertainty about the nature of potential incidents, and recent international events have clearly demonstrated the importance of being prepared for unexpected developments and responding quickly. Based on the changed threat landscape, IFE has updated its risk and vulnerability analyses of IFE's basic security, and these measures will continue to be strengthened based on these analyses.

KLDRA is the only repository for low and medium-level radioactive waste in Norway. IFE decided back in March 2020 to temporarily halt the depositing of waste at KLDRA due to uncertainty about whether the functional requirements for the facility were being met. In 2021, IFE and the NND commissioned an external status assessment of KLDRA to evaluate the repository in light of current requirements, which are far stricter than when

Photo: Espen Solli

the plant was built. The status assessment highlighted several challenges associated with the construction and safety arrangements at the facilities in relation to current requirements, and IFE therefore decided to continue the temporary halt in waste deposits. Meanwhile, efforts were made to update the safety reports for the plant based on today's requirements for the current operational phase (300-500 years), during which the plant will be continuously monitored. IFE's plan was therefore to re-open KLDRA for deposits in 2025.

On 20 December 2023, IFE received instructions from the DSA that no further radioactive waste can be deposited at KLDRA until comprehensive safety reports have been prepared and approved by the DSA, both for the facility's operational phase and in an eternal perspective for the ensuing period, when the facility is permanently closed with no ongoing monitoring. This is a major undertaking that requires thorough investigation. It will therefore take an estimated eight to ten years before it will be possible to resume depositing waste at KLDRA. Until such time, all radioactive waste received and managed by IFE must be stored at Kjeller, where the capacity is already strained. A halt in the receipt of deliveries of low and medium-level radioactive waste will affect all institutions and industries that generate this type of waste and which currently depend on delivering their waste to IFE, which is Norway's only approved recipient of such waste.

IFE has set up a waste management programme, with several sub-projects, to improve the storage situation.

There is a need to establish a comprehensive, overall risk profile of the current situation for the nuclear facilities and infrastructure. Factors to be considered include the halt in ordinary operations, the planned decommissioning, the outdated fuel storage facilities, and the available international solutions for the management and interim storage of spent fuel, as well as the current national and international security situation. This is an extensive process that involves updating security assessments, safety reports, criticality safety assessments, fuel management procedures related to procuring a new fuel repository, as well as security risk and vulnerability analyses. An agreed risk profile and a comprehensive understanding and acceptance of the overall risk associated with the clean-up of IFE's nuclear activities and facilities are essential to ensure that important strategic decisions can be made in a timely manner.

Technology and Property

IFE owns a large portfolio of properties at Kjeller and Halden. The main objectives for the Technology and Property division are to deliver comprehensive services to IFE's own operations and other tenants within property management, cleaning, logistics, IT, security and emergency preparedness, property development, carrying out development projects and signing and ensuring compliance with lease agreements.

The property portfolio at Kjeller needs significant investment in infrastructure and upgrading, and the transfer of nuclear facilities to the State means that IFE's research divisions will lose access to various laboratories. IFE's activities within R&D and radiopharmaceuticals are seeing significant growth, and new laboratories and production areas need to be built in the years ahead. As a key contributor to the communities at Kjeller and Halden, IFE wishes to develop the property portfolio to facilitate further growth within R&D and radiopharmacy, and to attract other businesses for collaboration.

Lillestrøm is growing fast, and Kjeller represents an attractive area for further urban development. Zoning plan proposals for IFE's properties at Kjeller were submitted to Lillestrøm local authority in December 2022 and went through the first round of political debate in the spring of 2023. It was unanimously agreed to put the plan out for public consultation in the summer/autumn of 2023. Only a single consultee comment, from the DSA, remains unresolved. This is preventing the second round of debate and approval by Lillestrøm local authority. The interventions required to satisfy the DSA's concerns were clarified in 2024, and Lillestrøm local authority has asked the DSA to confirm that their concerns have been addressed in the revised proposed plan so that the local authority can approve it.

IFE's property portfolio in Halden also has considerable potential for further development, and together with other partners, we are considering options for creating shared spaces for improved research through co-location synergies.

Society's focus on technology is increasing, and actors throughout the value chain want more self-service and more flexible, customised solutions. To ensure a better customer experience and create the research and services of tomorrow, innovation and the development of digital solutions for researchers and other parts of IFE's organisation are a part of Technology and Property's core activities.

The world is changing, and IFE therefore needs to be aware of changing threat and risk profiles. Norway's security services (the Norwegian National Security Authority and the Norwegian Police Security Service) point to a raised threat level in relation to several of IFE's activities. Security has to be addressed in all parts of the chain, without impeding operations. IFE Technology and Property can deliver security at multiple levels and will customise security according to tenants' wishes. We have the necessary expertise to protect assets, buildings, projects and personnel.

Radiopharmacy – Agilera Pharma AS

The wholly owned subsidiary Agilera Pharma AS has a complete infrastructure with development expertise, production expertise and facilities, local and global distribution networks, as well as infrastructure in the form of licences and permits, accreditation, radiation protection, waste management, physical security and emergency preparedness. The company has laboratories that are classified both in respect of purity classes in accordance with international GMP (Good Manufacturing Practice) regulations and radiation protection legislation, and has been granted a permit by the Norwegian Medicines Agency and the DSA to conduct wholesale and retail operations within radiopharmacy. Agilera has well-established collaborative relationships and close access to clinics and research institutions, as well as to companies of various sizes and in different stages of development at Oslo University Hospital and the University of Oslo.

The activity located at and carried out from IFE's premises at Kjeller is grouped into three sectors: Production, Wholesale and R&D. All three sectors are involved in radiopharmaceuticals, which are medications that contain radioactive agents and are used to treat cancer.

Photo: Espen Solli

Production involves commercial manufacture of pharmaceuticals and production for clinical trials. The manufacturing process is in line with the pharmaceutical authorities' quality requirements and GMP (Good Manufacturing Practice) regulations. Agilera is also involved in development projects with Norwegian and international clients and produces pharmaceuticals that are used in clinical trials throughout the world. Furthermore, Agilera provides quality control services, including sterile testing of radiopharmaceuticals in both the commercial and clinical phases, as well as the development of radiochemical/chromatographic methods.

Over several decades, IFE has developed unique expertise in the import, export, control and distribution of radioactive pharmaceuticals. This activity was transferred from the foundation to Agilera Pharma AS in 2023. Agilera is a national wholesaler and retailer for radiopharmaceuticals in Norway, and controls all radiopharmaceuticals and distributes them directly to the nuclear medicine departments of Norwegian hospitals. Agilera also distributes radiopharmaceuticals to clinical trials throughout the world.

IFE Invest AS

IFE has a long history of commercialising research ideas, and in 2008, IFE Venture AS, which was subsequently renamed IFE Invest AS, was established as a wholly owned subsidiary of IFE with the aim of commercialising more research at IFE. IFE Invest AS establishes and develops companies with active ownership follow-up in the form of support to management, further market development, upscaling and capital injections.

Photo: Pixel & Co

Annual financial statements

Financial result

The group's consolidated turnover in 2024 amounted to NOK 1 491 million (NOK 1 330 million in 2023), while IFE Foundation's turnover was NOK 1 217 million (NOK 1 113 million in 2023). This represents an increase in turnover of 12.1% and 9.3% for the group and foundation respectively compared to 2023.

Public funding accounts for NOK 586 million of the foundation's and group's turnover. The largest share relates to allocations from the national budget for the operation and safety of nuclear facilities, while other items relate to core funding from the Research Council of Norway and other funding received as part of the foundation's research activity, see Note 3. The group's and the foundation's remaining turnover relates to contract and grant revenues from research activities, international stakeholders in the Halden Project and the production and distribution of radiopharmaceuticals. The group's and the foundation's research activities are mainly funded through the Research Council of Norway, the EU and industrial partners.

The R&D divisions reported a total turnover of NOK 575 million in 2024 (NOK 521 million in 2023), which was made up of NOK 439 million from Energy and NOK 136 million from IFE Nuclear (called DS last year). Nuclear Operations and Safety reported a turnover of NOK 537 million (NOK 449 million in 2023), while the turnover for the Technology and Property division was NOK 63 million (NOK 37 million in 2023).

The foundation's wholly owned subsidiary Agilera Pharma AS reported a turnover of NOK 357 million (NOK 290 million in 2023), while the corresponding figure for IFE Invest AS was NOK 0.7 million (NOK 0.1 million in 2023).

In 2024, the group reported an operating loss of NOK 10.5 million, while the IFE Foundation shows an operating profit of NOK 20.7 million. The profit in the foundation can be attributed to positive results from its R&D divisions. The group's operating loss is primarily related to a loss in Agilera Pharma AS, which, in addition to negative operating results in 2024, incurred extraordinary costs related to a terminated supplier contract for setting up a new production line. The Nuclear Operations and Safety division reported a break-even result as its activities are mainly funded by the government.

The result for net financial items shows a cost of NOK 11.7 million for the group, while the foundation reported a net financial income of NOK 15.8 million. The financial income mainly relates to interest income and returns on money market investments in the foundation, whereas the financial costs are largely attributed to the write-down of share investments in the subsidiary, IFE Invest AS. In 2024, the net write-down on share investments in IFE Invest amounted to NOK 24.5 million.

After financial items and taxes, the group showed a loss for the year of NOK 24.5 million (NOK 8.5 million in 2023), while the foundation reported a profit for the year of NOK 36.6 million. IFE and its subsidiaries did not generate taxable profits in 2024 and no tax was therefore payable. The tax expense for IFE is zero, while the group shows a tax expense of NOK 2.2 million, which relates to the reversal of a previously capitalised deferred tax asset from a previous year.

Balance sheet

As of 31 December 2024, the total capital for the group amounted to NOK 1 048 million, which included equity of NOK 391 million (NOK 415 million in 2023). In the foundation, the total capital was NOK 1 019 million, of which NOK 426 million (NOK 389 million in 2023) was equity. The equity ratio was thus 37% for the group and 42% for the foundation, which is considered satisfactory.

At the end of 2024, the group/foundation had long-term debt amounting to NOK 24 million (NOK 10 million in 2023). Provisions for liabilities totalled NOK 60.1 million and were primarily related to the accrual of project and investment grants.

The foundation has reported a contingent liability of NOK 10 million, which is classified as a current liability in the balance sheet. This is associated with a potential claim from a customer and has been valued at the best estimate based on the likely outcome. The true cost may turn out to be higher or lower than the book value.

Cash flow

The cash flow statement for 2024 shows that the group's cash balance increased by NOK 97 million, while the foundation's cash balance increased by NOK 90 million.

The main reasons for the increased cash balance in both the group and the foundation are a net positive cash flow from operating activities and new long-term debt. As shown in the cash flow statement, there is a positive cash flow effect due to reduced tied-up capital in trade receivables and an increase in advances from customers. The latter can be explained by the rise in unused project funds/grants in 2024.

Net cash flow from investment activity shows a negative effect on the foundation's cash flow. This includes net investment in operating assets as well as changes in other investments. In the foundation, the increase in loans to the subsidiary Agilera Pharma also led to a reduction in the foundation's liquidity.

Total cash balances at the end of 2024 amounted to NOK 176 million for the group and NOK 145 million for the foundation. Additionally, investments in fixed-income instruments amounted to NOK 184 million. Liquidity is considered satisfactory, and the level of liquid assets is deemed prudent.

KPMG is the auditor for the group and the foundation.

Financial risk

The foundation endeavours to minimise the financial risk. In accordance with the foundation's financial management policy, the financial risk should be as low as possible for ordinary operations. The foundation must not expose itself to unnecessary financial market risks, including currency risks. The policy also stipulates that excess liquidity can be invested in low-risk fixed-income funds. The latter are exposed to value fluctuations when interest rates change.

Market risk

The group and the foundation are exposed to fluctuations in currency exchange rates, particularly EUR, which affect both project revenues and purchasing costs. The foundation has secured future income streams for its largest single project through futures contracts for the sale of EUR. As of 31 December 2024, outstanding futures transactions amounted to EUR 6.75 million. For major purchases in foreign currency, an individual assessment is made of the need for hedging through a futures contract. At year-end, outstanding futures transactions for the purchase of foreign currency amounted to SEK 8.3 million. Futures contracts are entered into for the purpose of securing future cash flows and are not recognised in the balance sheet.

The foundation's portfolio of fixed-income funds is exposed to interest rate fluctuations. At the end of 2024, the foundation had NOK 184 million placed in low-risk money market and bond funds. The investments in money market funds amounted to 45.7% of the total portfolio, while investments in bond funds constituted 54.3%. All investments are in Norwegian fixed-income securities.

Credit risk

Both the group and the foundation are exposed to credit risks, mainly associated with trade receivables and loans. The group and the foundation have made provisions for bad debts to the tune of NOK 5.1 million. There is also a potential credit risk associated with advance payments to suppliers.

Liquidity risk

The group's and foundation's liquidity are considered satisfactory. The group's cash balance minus tax withholdings amounted to NOK 146 million at 31 December 2024, while the corresponding figure for the foundation was NOK 119 million. In addition, the group and the foundation have investments in fixed-income funds of NOK 184 million. The foundation and the wholly owned subsidiary IFE Invest AS have a cash pool agreement that provides greater flexibility.

Photo: Benjamin A. Ward


Photo: Benjamin A. Ward

Continued operations

Pursuant to section 3(3)(a) of the Norwegian Accounting Act, the Board confirms that the conditions for continued operations are present and that the group's finances are in a healthy state.

Sustainability

IFE's vision is 'research for a better future', and in line with the group and the foundation's sustainability strategy, IFE shall create added value for society, our partners and customers by developing more sustainable solutions to important societal challenges, whilst also fostering value creation in Norway.

In 2024, it became clear that foundations are exempt from mandatory sustainability reporting. However, IFE has chosen to continue its work on sustainability and sustainability reporting. In 2024, a simplified double materiality analysis was performed, and sustainability has been incorporated into IFE's group strategy for the period 2025–2029. For 2024, IFE has voluntarily aligned itself with the disclosure requirements in the European Sustainability Reporting Directive (ESRS) that are relevant to IFE. IFE's sustainability report does not meet, nor is it intended to meet, all the requirements of the ESRS. In autumn 2024, the Draghi report on Europe's competitiveness was published, which among other things highlighted the increased reporting burden that the introduction of the CSRD has imposed on many European companies. In February 2025, the European Commission presented a comprehensive proposal to simplify the EU's sustainability regulations. In 2025, IFE will monitor developments and decide on its future sustainability reporting once the EU's revised requirements become clearer. IFE's board has approved the sustainability report, but it has not been verified by the auditor.

IFE's sustainability report for 2024 is available on its website, www.ife.no.

Due diligence

IFE falls under the definition of 'larger enterprises' in Norway's Transparency Act. It therefore has a statutory duty to carry out due diligence with a view to promoting respect for fundamental human rights and decent working conditions in connection with the production of goods and the provision of services. IFE has prepared a consolidated group report that includes Agilera Pharma.

The aforementioned statutory duty includes publication of a report on due diligence undertaken. This is published in the 2024 sustainability report under 'Human rights and working conditions in the value chain – reporting according to the Transparency Act', and is openly accessible on IFE's website: Sustainability and ethics - IFE.

Working environment

The working environment at IFE is considered to be good. Due to the transition to a new supplier and tool, no employee satisfaction survey was conducted in 2024. This will be resumed in 2025. The results of previous surveys are presented for IFE's entire line organisation, as well as the Working Environment Committee (AMU) and the Cooperation Committee. These results form the basis for ongoing work on discrimination, bias and a

good working environment throughout the organisation. Action plans are prepared down to departmental level to address any non-compliance or improvement measures, and HR or the company health service are linked to this work as necessary.

In 2024, IFE held seminars on bullying and harassment, as well as dilemma training related to working environment challenges, in collaboration with an external law firm. All employees can access the webinar/seminar on the intranet.

In 2025, both IFE and Agilera Pharma will change their supplier for employee surveys. The goal is to achieve more structured and closer follow-up, which will be logged and documented digitally in the tool.

IFE has established internal and external whistleblowing channels for employees to report wrongdoing. The internal channel is managed by the HR department, while the external, anonymous channel is managed by a law firm. Whistleblowing/reporting wrongdoing has been incorporated into IFE's Code of Conduct, and is included in the training in the Code of Conduct and management training.

Total sick leave in 2024 was 4.3%. Individual adaptations of the workplace and duties are undertaken as part of the close follow-up of employees on sick leave to ensure a timely return to work.

Preventive measures to reduce absenteeism are also carried out in collaboration with the company health service, where employees are offered, for example, the influenza vaccine, health check-ups and psychosocial counselling. IFE has introduced flexible arrangements for paid brief absences in connection with, for example, doctor appointments.

Two injuries subject to disclosure were reported by IFE in 2024. One of these resulted in short-term sick leave and the other involved long-term sick leave. Four injuries were also reported that required first aid.

Gender equality and anti-discrimination

IFE aims for full gender equality and has appointed a cross-party group consisting of representatives from the HR department, the senior safety representative and employee representatives to work on issues in this area in the foundation. The group is surveying and analysing the current situation and will propose necessary measures to promote gender equality and prevent discrimination. The results of their work will be anchored in group management and the foundation's Board of Directors, and published in the annual report.

The foundation is subject to the extended requirement to actively promote equality, as regulated by the Equality and Anti-Discrimination Act. This includes a duty to issue a statement on the actual status of gender equality and what is being done to comply with the requirement. The report on IFE's efforts in gender equality and anti-discrimination is published on the foundation's website, see IFE's work on gender equality and anti-discrimination, and includes an account of how IFE works to promote gender equality and anti-discrimination, the status of gender equality and goals and action plans.

Of the foundation's 653 permanent employees, 214 (33%) are women and 439 (67%) are men. There are a total of 44 part-time employees, of whom 18 (40.9%) are women and 26 (59%) are men. The foundation has 49 temporary employees, consisting of 22 (44.9%) women and 27 (55.1%) men. In 2024, the foundation's Board of Directors consisted of 3 women and 4 men, while IFE's executive management consisted of 3 women and 7 men.

IFE has an international working environment, with employees from 38 different nations. In order to make our employees feel included, information on our website and in the Employee Handbook is provided in both Norwegian and English.

The foundation's Code of Conduct states that IFE must help to safeguard a fair and inclusive working environment that does not discriminate based on ethnicity, gender, sexual orientation, religion, political orientation or social background. Diversity at IFE is safeguarded through our recruitment process, which is needs-based and subject to objective and unbiased criteria that must not be influenced by the candidate's gender, pregnancy, maternity or adoption leave, care responsibilities, ethnicity, religion, worldview, disability, sexual orientation, gender identity or gender expression.

External environment

IFE is certified under ISO 9001 and 14001:2015, and works continually to identify any major environmental issues seen in a lifelong perspective. See the section on 'Climate and environment' in the sustainability report for more information about the external environment, which describes factors impacting on the external environment and measures to prevent or reduce negative environmental impacts.

IFE has emission licences that have covered the entire operation. In connection with the corporate restructuring in 2023 and the demerging of the Radiopharmacy division into a separate limited company, individual

emission licences were applied for from the DSA for the different areas; R&D, Nuclear Operations and Safety, and Agilera Pharma AS.

IFE's research activity at Kjeller (Energy) includes the conditioning of sealed radioactive sources and

sample analyses that can release radioactive substances into the environment. Gas, chemicals and oils are also used in the research, which entails a risk of unwanted emissions. Energy has implemented measures to reduce the impact on the external environment.

Agilera Pharma's main emission sources and environmental impact are assumed to stem from radioactive waste, biological waste, packaging and transport. Agilera has implemented measures for more environmentally friendly internal transport and is considering more sustainable solutions for transporting end products from Agilera to patients. In addition to reducing waste, Agilera has implemented measures in the production facilities to reduce emissions to air.

The largest emission sources from IFE's nuclear activity are those from the daily work to maintain and prepare the facilities for decommissioning.

Nuclear waste and storage

Norway was a pioneer in the field of nuclear research, and was the sixth country in the world to build a nuclear reactor. Operations have generated approximately 17 tonnes of spent reactor fuel. Because IFE was an early pioneer in nuclear research and has researched many different types of fuels and materials over the years, the type and composition of waste is extremely heterogeneous. Waste management is therefore complex and challenging, and extensive investigations and the construction of new facilities are needed for the clean-up operation. IFE is working with the NND to ensure that the waste management process and decommissioning preparations are safe, responsible and cost-effective. IFE has a licence for ownership of the fuel and manages this according to current legislation. As the licensee, IFE is responsible for all projects and activities related to licensed facilities. The NND is the project owner and is responsible for conducting fuel studies and studies associated with the ongoing decommissioning.

Highly enriched uranium poses a security risk, and Norway is one of the few countries in the world that still possesses this type of material. In 2021, Norway and the United States signed a Letter of Intent to develop a method that ensures Norway's highly enriched uranium can no longer be used for nuclear weapons and can instead be safely stored and disposed of. This is an important agreement for Norway and an important step on the path to the safe clean-up of Norway's nuclear activities.

The Combined Storage and Disposal Facility for Radioactive Waste (KLDRA) is located in Himdalen in Aurskog-Høland municipality. The KLDRA plant is state-owned and managed by the Norwegian Directorate of Public Construction and Property (Statsbygg), and was put into operation in 1998. IFE has an operating licence for the plant through an agreement with the Ministry of Trade, Industry and Fisheries (NFD), which finances its operation. KLDRA is Norway's national facility for the storage and disposal of radioactive waste and manages waste from IFE, the Norwegian manufacturing industry, the health service and the Norwegian Armed Forces. No waste was transported to or deposited at the plant in 2024.

Photo: Benjamin A. Ward

Insurance for board members and the CEO

An insurance agreement has been signed covering board members and the CEO of IFE. The insurance coverage is limited to NOK 50 million. This insurance also covers board members of group companies in which IFE is a majority shareholder.

Photo: Benjamin A. Ward

Future development

In 2024, IFE experienced a high demand for R&D in its core market areas; energy, the environment, human-centred digitalisation and nuclear power. Research in these areas is also expected to be relevant in the years ahead in relation to, for example, the government's objectives in the Long-Term Plan for Research and Higher Education 2023-2032 and the international targets for climate and biodiversity. The Draghi report on Europe's competitiveness identifies more affordable energy access as a key factor in strengthening Europe's competitive position. This underscores the need for ongoing energy research, a field in which IFE is well placed to contribute.

Demand for IFE's research services is expected to be strong in the coming period. This applies both in Norway and within the EU. IFE has successfully secured new contracts in Norway and, with a considerable influx of new EU projects, has proved to be highly competitive on the international stage as well. The order intake for EU projects remains strong, but the growth in new EU projects is expected to slow somewhat in 2025.

A significant portion of IFE's revenue is linked to research projects funded by the Research Council of Norway and the EU. The financial framework set by the annual national budgets is therefore crucial for maintaining the level of research activity at IFE. This applies both to the amount of the core funding allocated to the industrial technology research institutes via the Research Council of Norway and to the number of calls for research proposals and financial frameworks for new research projects. It is therefore concerning that the total research budgets in the 2025 national budget have not kept pace with the increased costs for infrastructure and staffing, which IFE has also experienced.

One of the measures in the Long-Term Plan is preparation of a report on the research system for presentation to the Norwegian Parliament (Storting) in spring 2025. It will be important for IFE that the Norwegian institute model is maintained and that the financial framework is safeguarded. It is worth mentioning that the Retur-EU scheme has been absolutely crucial in securing the financial framework necessary for IFE to coordinate and participate in so many EU projects.

IFE intends to continue investing in research infrastructure that is in demand by industry. This is important for reinforcing our capacity to remain well-positioned to participate in future research projects. However, the financial framework established by the national budgets will also be critical here.

For the Nuclear Operations and Safety division, the focus will continue to be on strengthening safety and security, managing spent fuel and preparing for the transfer of facilities and personnel to the NND. Through the grants for the operation of IFE's nuclear facilities, the NFD has provided a good financial framework for ensuring safety in recent years. The government set the framework for this societal mission through the Storting's deliberations and passing of the white paper on the safe decommissioning of Norwegian nuclear facilities and disposal of nuclear waste (Meld. St. 8 (2020-2021)). The Storting's decision stated the following: 'The Storting asks that in the future clean-up of IFE's nuclear activities, the Government establishes the basic premise that the State is wholly responsible for the clean-up and liable for all necessary costs associated with this.' IFE and the NND have calculated that the annual cost of the societal mission is NOK 400 million, and this highlights the need to transfer the nuclear facilities as quickly as it is safe to do so.

IFE and the NND are planning a phased transfer of the nuclear facilities, with the transfer of the Halden Reactor and KLDRA in 2025. This must be done in a way that maintains the same level of safety as prior to the transfer. The Kjeller facility will continue to have a significantly longer planning horizon for transfer due to the need to investigate and establish new infrastructure to enable the separation of the nuclear facilities from IFE's other facilities and research infrastructure.

As part of the work on dividing the foundation's site and separating the nuclear area to be transferred to the NND, the Technology and Property division has developed a master plan that sets the framework and direction for the development of the entire IFE site at Kjeller. The master plan and the detailed zoning plan for parts of IFE's site at Kjeller provide for an increase in the number of jobs from 720 to 2200, from 4000 m2 to 40,000 m2 of laboratory space and from 18,000 m2 to 82,000 m2 of building space. This development potential is to be realised gradually, in pace with other processes in IFE.

Due to the separation of parts of the Kjeller site from the foundation, a new laboratory building is needed to house the Energy research division's laboratory facilities. The building is currently in the planning stages, but approval of a new zoning plan by the local authority is required. This process is underway and approval is expected relatively soon. Funding for the new laboratory building has been secured through a government loan facility, capped at NOK 120 million.

Additionally, the need for investment to manage and operate the foundation's properties in the coming years will relate to adaptation projects for R&D activities, along with essential building upgrades. IFE has a diverse property portfolio with potential for sustainable transformation, and investments related to this will be considered.

After IFE's nuclear operations in Halden have been transferred to the NND, the nuclear activities at Kjeller must continue alongside the research and other activities there for a long time to come. Setting aside land for the State for future decommissioning is an essential factor for living up to both of IFE's societal missions, and will require extensive work in 2025 and in the years ahead. The Technology and Property division will play a key role in the separation of Kjeller, but will also assume more responsibility for construction/ property projects within the nuclear area. It will also explore the potential for the further development of the research park within the available framework, pending completion of the separation of Kjeller.

Agilera Pharma AS forecasts major growth opportunities, which are supported by market studies showing a large global potential for radiopharmaceuticals. Agilera is well positioned to capitalise on this growth, but significant investment will be required in additional development and production areas for operations, as well as new customer projects. Demerging the Radiopharmacy division in 2023 into a separate limited company facilitated the establishment of partnerships and funding that can pave the way for more rapid expansion than if it had remained part of the IFE Foundation. The foundation has limited investment funds to participate in scaling up Agilera's operations. Agilera's strategy is to find a suitable partner to take part in the company's continued operations. This may eventually lead to IFE partially or fully reducing its ownership stake in the company.

Kjeller, 29 April 2025

Photo: Espen Solli

Income statement for the foundation and group

Amounts in NOK 1000

Foundation		INCOME STATEMENT		Group	
2024	**2023**		**Note**	**2024**	**2023**
498 878	492 668	Contract and grant revenues	2	857 004	783 593
586 653	496 745	Public funding	3	586 653	496 745
39 703	42 281	Contributions from international partners in the Halden Project		39 703	42 281
92 385	81 847	Other operating income		8 555	7 717
1 217 619	**1 113 542**	**Total operating revenues**		**1 491 915**	**1 330 337**
734 881	698021	Staff costs	4	842 519	783 616
1 615	21 231	Cost of goods sold		160 017	146 318
438 057	377 286	Other operating expenses	4,5	472 428	391 728
22 267	23 481	Depreciation of fixed assets	6	27 329	27 891
0	0	Write-down of fixed assets	6	157	0
1 196 820	**1 120 018**	**Total operating expenses**		**1 502 451**	**1 349 553**
20 799	**-6 476**	**Operating loss**		**-10 535**	**-19 216**
21 160	20 827	Financial income	7	19 245	21 781
5 301	7 042	Financial expenses	7	31 010	13 652
15 859	**13 785**	**Net financial items**		**-11 765**	**8 129**
36 658	**7 309**	**Result before tax**		**-22 300**	**-11 087**
0	0	Tax	8	2 298	-2 498
36 658	**7 309**	**Net loss for the year**	**9**	**-24 598**	**-8 589**
		Allocation of result for the year			
36 658	7 309	Other equity	9		

Balance sheet for the foundation and group

Amounts in NOK 1000

Foundation		ASSETS		Group	
2024	**2023**		**Note**	**2024**	**2023**
0	0	Deferred tax assets	8	0	2 298
0	**0**	**Total intangible assets**		**0**	**2 298**
81 851	52 725	Plant and equipment	6	110 203	79 003
190 968	143 881	Land and buildings	6	197 935	151 136
59 964	112 745	Construction in progress	6	73 404	128 922
332 783	**309 351**	**Total tangible fixed assets**		**381 542**	**359 061**
78 180	78 180	Investments in subsidiaries	10	-0	-0
47 700	4 050	Loans to group undertakings	11,12	0	0
526	526	Investments in associated companies	10	6 206	3 700
4 812	4 812	Investments in shares and units	13	19 076	46 134
156	154	Other receivables	11	156	154
131 373	**87 721**	**Total financial fixed assets**		**25 438**	**49 988**
464 156	**397 072**	**TOTAL FIXED ASSETS**		**406 980**	**411 347**
8 037	**8 140**	**Inventories**	**14**	**31 031**	**31 515**
124 765	179 285	Trade receivables		164 526	224 795
56 741	64 346	Work in progress	14	63 498	68 172
35 261	48 103	Other receivables	12	20 952	23 243
216 767	**291 733**	**Total receivables**		**248 976**	**316 210**
184 853	181 991	Fixed-income/bond funds	15	184 853	181 991
184 853	**181 991**	**Total investments**		**184 853**	**181 991**
145 857	**55 817**	**Bank deposits**		**176 699**	**79 687**
555 514	**537 681**	**TOTAL CURRENT ASSETS**		**641 558**	**609 403**
1 019 670	**934 753**	**TOTAL ASSETS**		**1 048 539**	**1 020 749**

Foundation		EQUITY AND LIABILITIES		Group	
2024	**2023**		**Note**	**2024**	**2023**
18 000	18 000	Foundation's capital	9	18 000	18 000
18 000	**18 000**	**Total paid-in capital**		**18 000**	**18 000**
408 174	371 516	Other equity	9	373 157	397 755
408 174	**371 516**	**Total retained earnings**		**373 157**	**397 755**
426 174	**389 516**	**TOTAL EQUITY**		**391 157**	**415 755**
60 193	59 280	Provisions for liabilities	17	60 193	59 280
60 193	**59 280**	**Other provisions for liabilities**		**60 193**	**59 280**
24 000	10 000	Other long-term liabilities		24 000	10 000
24 000	**10 000**	**Total other long-term liabilities**		**24 000**	**10 000**
54 812	66 228	Accounts payable		70 329	86 348
0	0	Tax payable	8	0	0
51 354	43 119	Public duties payable		68 861	61 038
271 434	190 801	Prepayments from customers		271 434	190 801
131 705	175 810	Other current liabilities	12,18	162 565	197 527
509 304	**475 957**	**Total current liabilities**		**573 189**	**535 714**
593 496	**545 238**	**TOTAL LIABILITIES**		**657 382**	**604 994**
1 019 670	**934 753**	**TOTAL EQUITY AND LIABILITIES**		**1 048 539**	**1 020 749**

Cash flow statement for the foundation and group

Amounts in NOK 1000

Foundation		CASH FLOW STATEMENT		Group	
2024	**2023**		**Note**	**2024**	**2023**
		Cash flow from operations			
36 658	7 309	Result before tax		-22 300	-11 087
22 267	23 481	Ordinary depreciation	6	27 486	27 891
43 207	-11 658	Change in inventories, trade receivables and accounts payable		44 734	-44 441
7 604	-17 018	Change in work in progress		4 674	-15 067
80 633	-22 854	Change in prepayments from customers		80 633	-22 854
-35 853	38 307	Change in other accruals		-9 358	61 816
154 516	**17 566**	**Net cash flow from operations**		**125 869**	**-3 741**
		Cash flow from investment activities			
-47 337	-141 609	Investment in tangible fixed assets	6	-55 363	-148 143
7 011	80 202	Investment grants	6	7 011	80 202
-43 650	-13 650	Change in loans to subsidiaries		0	0
5 500	-500	Change in investments in bonds and shares	15	5 495	200
0	-20 000	Intragroup transfer of operations		0	0
-78 476	**-95 557**	**Net cash flow from investment activities**		**-42 857**	**-67 742**
		Cash flow from financing activities			
14 000	8 000	Proceeds from long-term borrowings		14 000	8 000
14 000	**8 000**	**Net cash flow from financing activities**		**14 000**	**8 000**
90 040	-69 991	Net change in cash and cash equivalents		97 012	-63 482
55 817	125 808	Cash and bank deposits at 1 January		79 687	143 169
145 857	**55 817**	**Bank deposits at 31 December**	**8**	**176 699**	**79 687**

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To the Board of Directors of Institutt for Energiteknikk STI

Independent Auditor's Report

Report on the Audit of the Financial Statements

Opinion

We have audited the financial statements of Institutt for Energiteknikk STI, which comprise:

- the financial statements of the parent company Institutt for Energiteknikk STI (the Foundation), which comprise the balance sheet as at 31 December 2024, the income statement and cash flow statement for the year then ended, and notes to the financial statements, including a summary of significant accounting policies, and
- the consolidated financial statements of Institutt for Energiteknikk STI and its subsidiaries (the Group), which comprise the balance sheet as at 31 December 2024, the income statement and cash flow statement for the year then ended, and notes to the financial statements, including a summary of significant accounting policies.

In our opinion

- the financial statements comply with applicable statutory requirements,
- the financial statements give a true and fair view of the financial position of the Foundation as at 31 December 2024, and its financial performance and its cash flows for the year then ended in accordance with Norwegian Accounting Act and accounting standards and practices generally accepted in Norway, and
- the consolidated financial statements give a true and fair view of the financial position of the Group as at 31 December 2024, and its financial performance and its cash flows for the year then ended in accordance with Norwegian Accounting Act and accounting standards and practices generally accepted in Norway.

Basis for Opinion

We conducted our audit in accordance with International Standards on Auditing (ISAs). Our responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Financial Statements* section of our report. We are independent of the Foundation and the Group as required by relevant laws and regulations in Norway and the International Ethics Standards Board for Accountants' International Code of Ethics for Professional Accountants (including International Independence Standards) (IESBA Code), and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Other Information

The Board of Directors and the Managing Director (management) are responsible for the information in the Board of Directors' report and the other information accompanying the financial statements. The other information comprises information in the annual report, but does not include the financial statements and our auditor's report thereon. Our opinion on the financial statements does not cover the information in the Board of Directors' report nor the other information accompanying the financial statements.

In connection with our audit of the financial statements, our responsibility is to read the Board of Directors' report and the other information accompanying the financial statements. The purpose is to consider if there is material inconsistency between the Board of Directors' report and the other information accompanying the financial statements and the financial statements or our knowledge obtained in the audit, or whether the Board of Directors' report and the other information accompanying the financial statements otherwise appear to be materially misstated. We are required to report if there is a material misstatement in the Board of Directors' report or the other information accompanying the financial statements. We have nothing to report in this regard.

Based on our knowledge obtained in the audit, it is our opinion that the Board of Directors' report

- is consistent with the financial statements and
- contains the information required by applicable statutory requirements.

Responsibilities of Management for the Financial Statements

Management is responsible for the preparation of financial statements that give a true and fair view in accordance with the Norwegian Accounting Act and accounting standards and practices generally accepted in Norway, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Foundation's and the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern. The financial statements use the going concern basis of accounting insofar as it is not likely that the enterprise will cease operations.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with ISAs, we exercise professional judgment and maintain professional scepticism throughout the audit. We also:

- identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error. We design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Foundation's and the Group's internal control.
- evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

- conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Foundation's and the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Foundation and the Group to cease to continue as a going concern.
- evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves a true and fair view.
- obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

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

Report on Other Legal and Regulatory Requirements

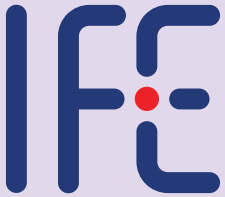
Opinion on Governance

Based on our audit of the financial statements as described above, and control procedures we have considered necessary in accordance with the International Standard on Assurance Engagements *(ISAE) 3000, Assurance Engagements Other than Audits or Reviews of Historical Financial Information*, it is our opinion that the Foundation is governed in accordance with the law, the Foundation's purpose and the articles of association.

Oslo, 24 June 2025
KPMG AS

Stein Erik Lund
State Authorised Public Accountant

Note: This translation from Norwegian has been prepared for information purposes only.



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