



# We develop technologies for people and sustainable change





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## ENVIRONMENTAL, SOCIAL, AND GOVERNANCE

Global developments in recent years with pandemic, war, and supply crises underline the need for technical and scientific knowledge as well as for solutions that both benefit and respect the resources of the planet and people. Ideally without one being at the expense of the other.

DTU's research into solar and wind energy, batteries, carbon capture, green fuels, sustainable construction, etc. is important for the sustainable transition, both nationally and globally. These are technology areas in which DTU has a strong research position. Our core services—technological research, education of engineers, development of innovative

solutions, and scientific advice—constitute DTU's greatest impact on the sustainable transition. We have a strong focus on this now and in the future. We also have ambitions to be sustainable in our day-to-day activities regarding our consumption of resources, reuse, and recycling, as well as in creating socially sustainable surroundings and behaviour.

This report is DTU's first report on sustainability. The report has been inspired by the ESG (Environmental, Social, and Governance) framework and elaborates on DTU's work for a sustainable transition.



*“Sustainability is an integral part of how we educate engineers”*



# For a sustainable development

The world is facing major challenges with rapid climate change, global environmental pollution, and shrinking biodiversity. The outlook is bleak if no action is taken. But, at DTU, we are optimistic. We believe that the development can be reversed if we all assume responsibility.

DTU takes sustainability seriously. This has long been an integral part of our work because it feels completely natural. In recent years, we have become even more conscious of our own efforts and impact in the field of sustainability, and, this year, for the first time, we are publishing a report outlining our ambitions and setting goals and objectives.

## **We educate responsibly**

Sustainability is an integral part of how DTU educates engineers. We have incorporated sustainability in the curricula and competence profiles for all our study programmes. And we have introduced a charter for engineers that all our students are encouraged to adopt.

The charter encourages our students to work with sustainability from an environmental, economic, and social perspective and to collaborate across disciplines on developing solutions to the challenges the world is facing.

## **We conduct research into green solutions**

We are committed to a sustainable future through the development of value-creating technology

for people. As one of many initiatives, we have established an interdisciplinary centre for research and development in systemic and quantitative sustainability. The mission of DTU Centre for Absolute Sustainability is to provide factual advisory services about technologies that support real sustainable change.

## **We act sustainably**

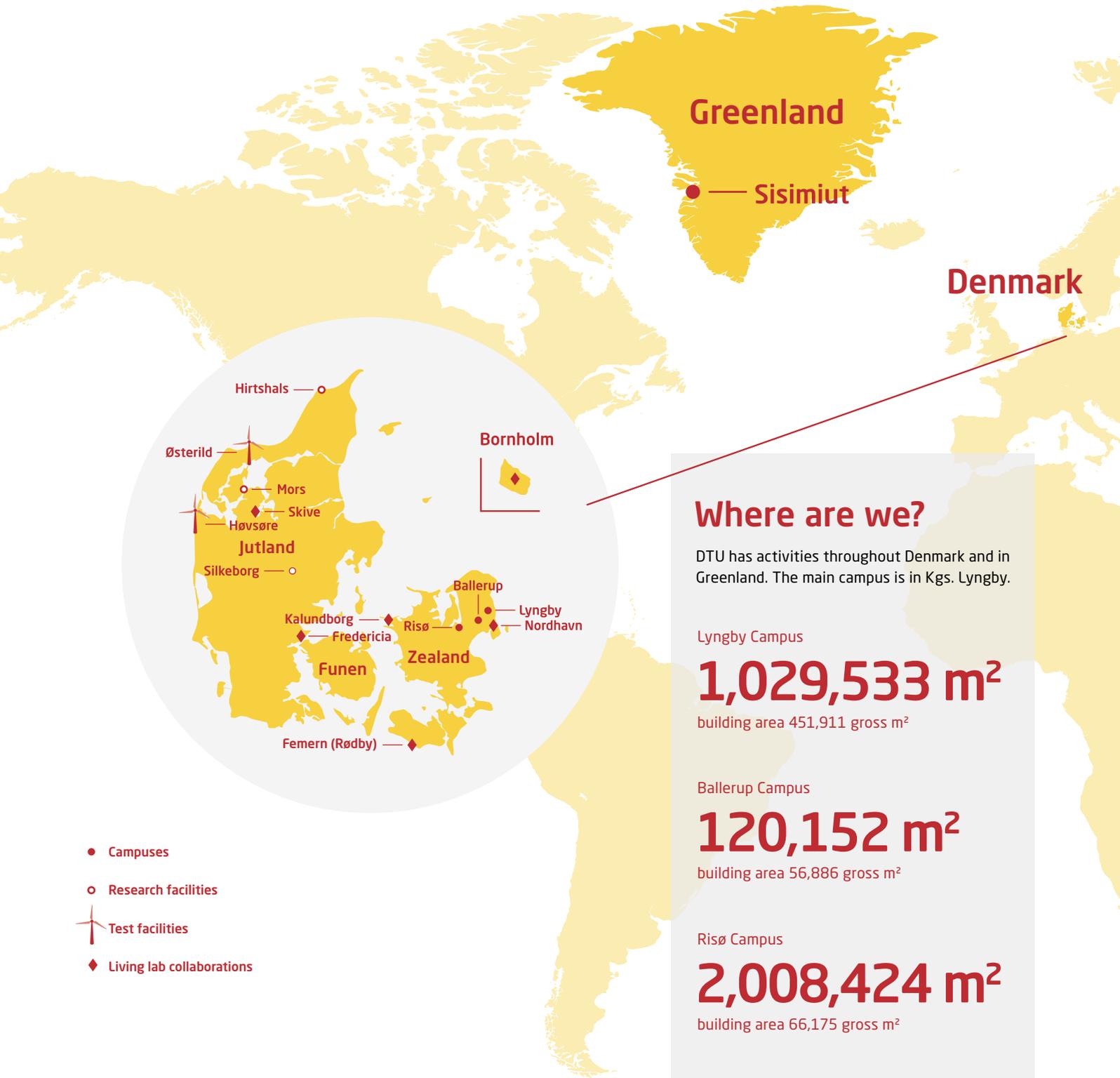
We create an inclusive and sustainable culture of trust and respect. We want to promote a sense of community and a good environment—both in how we interact with each other and in our physical surroundings. DTU's campuses are used as living labs for the development of sustainable solutions in new construction, energy supply, operations, and waste sorting.

The world is changing—and so is our approach to sustainability. It is a constantly developing management task, where dialogue is key to our joint efforts. It is about how we lead at DTU. But it is also about how we act as a university and how we balance freedom of research with ethical, secure, and responsible international collaborations. Because in a changing world—more than ever—we need to make a positive difference and create technology for people. That's what we do at DTU.



Anders O. Bjarklev, President

# DTU in figures



## Who are we?



**13,414**

students are enrolled at DTU



**32%**

of the enrolled students are women



**38%**

of FTEs are women



**2,446**

engineers graduated from DTU in 2021



**5,824**

FTEs work at DTU



**114**

different nationalities are embraced by DTU



**5,056**

students admitted to BEng, BSc, and MSc programmes in 2021

### Average age

Faculty (professors, associate professors, assistant professors)

Scientific staff

Technical/administrative staff



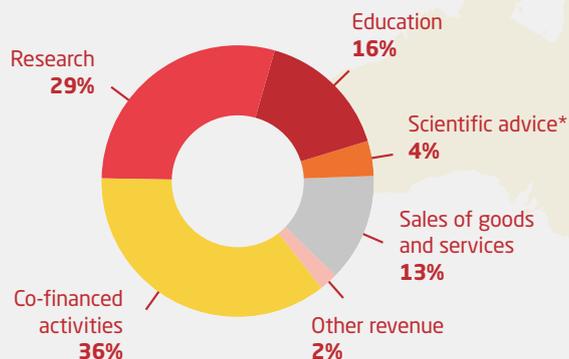
## How do we work?

### Revenue

DTU had revenue totalling



**5.8** billion DKK



\* for Danish authorities, contract sum, the Danish Finance Act

# DTU in figures ▶ DTU's impact



## Research

**5,436**

research publications  
in 2021



**1.54**

Normalized Citation  
Impact\*



**74%**

of the publications are  
co-published with  
institutions outside Denmark



**18%**

of DTU's publications are  
among the world's top  
10 per cent most cited



\* Note: Citation Impact (number of citations per publication) normalized for research topic (Web of Science categories), year of publication, and publication type. The value 1 represents the world average, and DTU is thus 54 per cent above this.

## Study programmes

**18**

BEng programmes

**431**

international  
exchange students  
at DTU in 2021

**19**

BSc programmes

**314**

DTU students  
studied abroad  
in 2021

**33**

MSc programmes

**120**

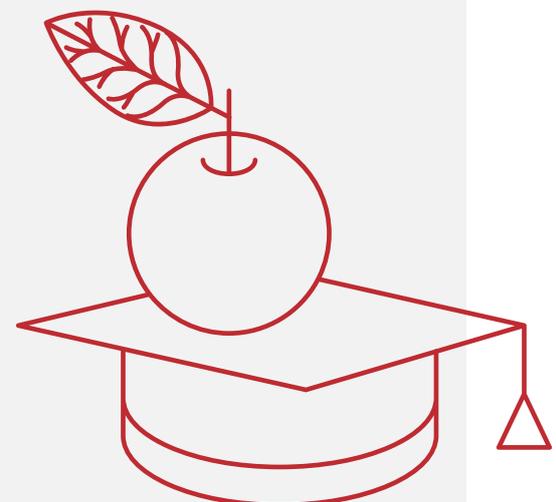
exchange agreements  
with international  
universities

**17**

PhD  
schools

**28**

joint international  
programmes



## Innovation

**74**

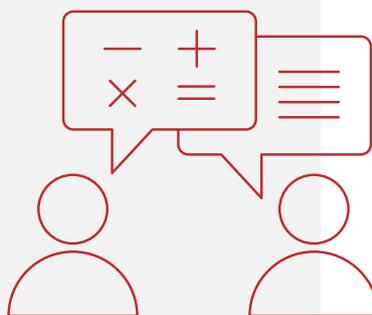


new start-ups were established based on knowledge and technology from DTU in 2021

**46**



inventions were commercialized



**1,928**

projects between DTU and the business sector

## Scientific advice

**247 mio. DKK**

From agreements on scientific advice between DTU and Danish authorities



## Rankings\*

	Nordic region**	Europe	The world
World University Research Rankings	<b>1</b>	<b>1</b>	<b>2</b>
Leiden Ranking Citation impact indicator (top 10 per cent publications) All disciplines	<b>1</b>	<b>48</b>	<b>120</b>
Leiden Ranking Collaborative Publications with Industry Indicator	<b>2</b>	<b>6</b>	<b>10</b>
QS World University Ranking	<b>4</b>	<b>35</b>	<b>99</b>

\* As of 11 May 2022

\*\* The Nordic region includes Denmark, Sweden, Norway, Finland, and Iceland



# About DTU

DTU is an elite technical university of international reach and standard. We are engaged in education, research, scientific advice, and innovation which contribute to growth and welfare.

DTU's **research** is conducted at a high international level and with major initiatives in a number of socially relevant engineering disciplines, including sustainable energy technology, life science, and digitalization.

DTU is Denmark's largest **educational institution** for engineers. We educate engineers with in-depth academic competency and great commitment, and we train our students to think entrepreneurially and across disciplines.

DTU has a strong **innovation system** for its students, employees, and partners. The research-based innovation is supported through courses, competitions, mentoring, coaching, acceleration programmes, and soft funding. DTU Skylab is DTU's innovation hub, a meeting place for researchers and students which offers the opportunity to develop and test technology for people in practice.

DTU provides **scientific advice**—often anchored in long-term strategic framework agreements with Danish ministries, and including handling and efficient management of major societal challenges such as pandemics, sustainable resource consumption, and the green transition.

Ever since Hans Christian Ørsted founded the University in 1829, DTU's mission has been to develop and create value using the natural sciences and the technical sciences to benefit society. What is regarded as beneficial to society has changed over time, but the mission remains the same.

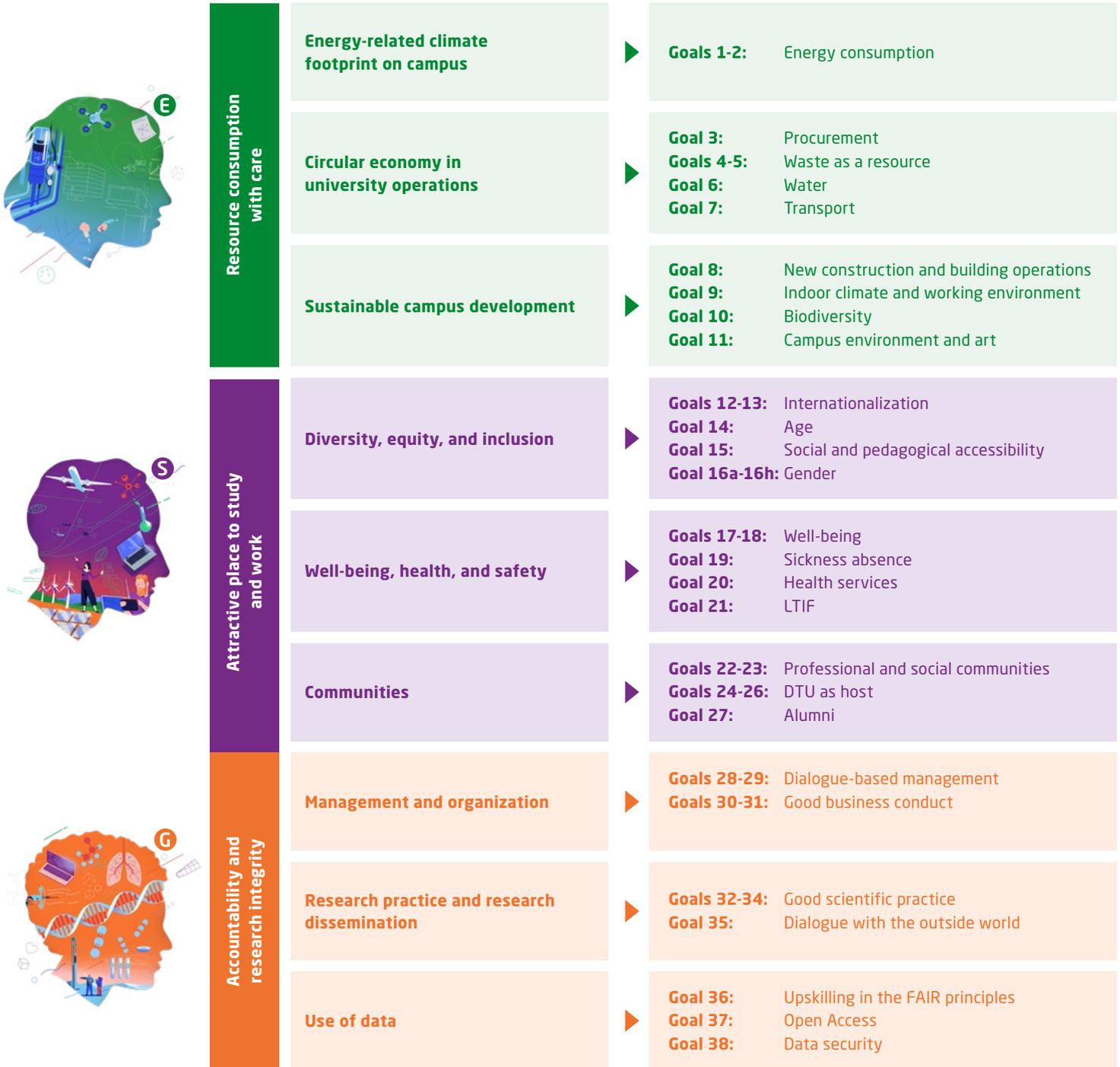
DTU's current strategy is called Technology for people 2020-25 and is based on the same mission we have always had, with three objectives setting a direction for our day-to-day work:

- We offer Europe's best engineering education—throughout life
- We develop technologies for sustainable change
- We assume leadership of the opportunities offered by digitalization.

With sustainability as an objective, we have set a new direction for our mission to benefit society.

# DTU's focus areas and goals

DTU's work for sustainable transition is here grouped under the main areas of E, S, and G, each of which has three focus areas:



**Objective 2023:** DTU is optimized for CO<sub>2</sub>e emission reduction on the energy consumption parameters that the University can impact directly.

**Objective 2025:** DTU has reduced CO<sub>2</sub>e emissions related to DTU's energy consumption.

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**Objective 2023:** DTU has developed action plans for reducing negative impacts in DTU's resource consumption.

**Objective 2025:** DTU has implemented procedures that measurably promote a circular economy in university operations.

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**Objective 2023:** DTU has strengthened sustainability on its campuses in terms of built-up environment, nature, and art.

**Objective 2025:** DTU's campuses and buildings are characterized by sustainability, quality, and profitability.

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**Objective 2023:** All heads of department and HR employees have completed competence development in bias-conscious behaviour and bias mechanisms.

**Objective 2025:** DTU aims to ensure that everyone experiences equal access to education and career opportunities.

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**Objective 2023:** All students and staff feel safe talking about how they are thriving and know where to look for help if they are not thriving well.

**Objective 2025:** DTU provides a study and working environment that is actively chosen.

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**Objective 2023:** DTU has worked proactively with communities as a driving force for strengthened learning, development, and well-being.

**Objective 2025:** DTU is a study and working environment known for strong academic, professional, and social communities.

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**Objective 2023:** Students, employees, and managers have strengthened knowledge of and confidence in DTU as a dialogue-based organization.

**Objective 2025:** DTU has strengthened its reputation as a university where people think, talk, and work together across disciplines and cultures.

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**Objective 2023:** DTU's students, employees, and managers have strengthened their knowledge of good research practice and research dissemination.

**Objective 2025:** DTU has strengthened its reputation as a university that contributes to setting high standards of good research practice and research dissemination.

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**Objective 2023:** DTU has implemented specific measures to strengthen data management.

**Objective 2025:** DTU is known for promoting open research and for working constructively with appropriate related safeguards.

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# Resource consumption with care

At DTU, we experience that both students and employees are aware of their own habits and want to act sustainably. DTU takes this seriously. We are therefore working to create a physical environment that allows students, employees, and all users of DTU's campuses to minimize their own resource consumption. We call it resource consumption with care.

Research and development of world-class technology involves resource-intensive activities, as the University depends on laboratories and research infrastructure that consume energy and raw materials. Internally as well as in collaboration with others, we strive to develop circular solutions that minimize resource consumption.

DTU owns the building stock at Lyngby Campus and Ballerup Campus. This provides a unique opportunity to adopt a long-term perspective and to work with

holistic solutions that promote both sustainability and profitability. Therefore, DTU has decided that all new construction projects and major renovations must have a high sustainability standard. This also means that DTU has decided that DTU's campuses and operations will function as living laboratories for technology development. We do this by, for example, installing photovoltaic systems that provide both energy and research opportunities, and by letting Lyngby Campus function as a test track for a self-driving minibus.

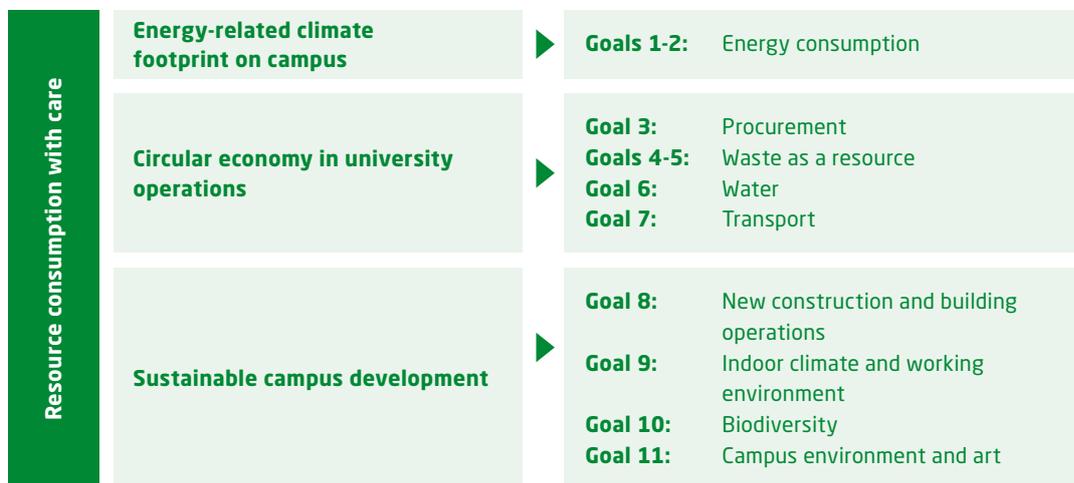
In the following, we elaborate on specific focus areas and initiatives where DTU works to reduce negative resource footprints, with special focus on operations. We do this with respect for our campus planning ambition that we, as people who study at, work at, and visit DTU, should have an experience of a campus environment that contributes to well-being.

# Focus areas, objectives, and initiatives for resource consumption with care

DTU's resource consumption with care is grouped into three focus areas.

All three areas have environmental and climate footprints, and DTU has great focus on climate and

environmental challenges being closely correlated and having to be addressed together. In the following, a description is provided of DTU's approach to working with climate footprints and the University's CO<sub>2</sub>e emissions<sup>1</sup>, after which the three focus areas are described in a broader cohesive perspective.



*From 2013 to 2020 DTU has halved its carbon emissions from heating and electricity. We have done this through energy optimization and by replacing our own gas-fired plants with district heating at Risø and Lyngby Campus.*



## Climate accounts

DTU has had climate accounts prepared for 2019. These accounts constitute an analysis of the University's CO<sub>2</sub>e emissions in accordance with the guidelines in the international standard for calculation and reporting of CO<sub>2</sub> emissions, the Greenhouse Gas Protocol (GHG), which breaks down the CO<sub>2</sub>e footprint into three categories: Scopes 1, 2 and 3. The analysis shows that DTU's total emissions in 2019 amount to 143,700 tonnes of CO<sub>2</sub>e. 85 per cent of the emissions relate to activities in scope 3, i.e. acquisitions of capital goods such as buildings and equipment, purchased goods and services, as well as business travel. This picture resembles that of other universities.

1) CO<sub>2</sub> is the chemical formula for carbon dioxide. 'e' indicates that other types of greenhouse gases (equivalents) have been included in the calculation after conversion to CO<sub>2</sub> based on their relative global warming potential (GWP).

**Scope 1** covers direct emissions from own cars and machinery and, for example, natural gas used for steam production as well as other fossil fuels used for process energy in the campus areas. Fuel consumption on board DTU's research vessels and for own vehicles will be included in future reporting.

**Scope 2** covers indirect emissions from the generation of purchased energy such as electricity and heating on the campus areas via external energy suppliers, which, since 2019, has primarily been the waste management and energy company Vestforbrænding.

**Scope 3** covers other indirect emissions related to DTU's activities and primarily comprises the goods and services that DTU purchases. Reduction of the carbon footprint in this area requires a circular approach and collaboration with suppliers of services.

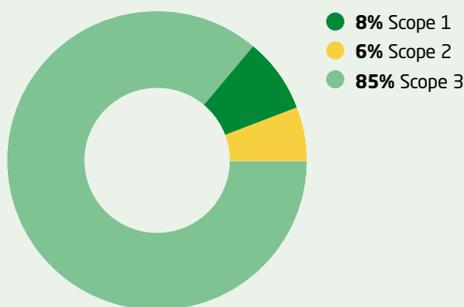
DTU has projects that can help reduce carbon impact, for example in construction, procurement procedures, transport, and recycling of materials and products on campus. DTU focuses on the areas in which the University has the greatest possibility of creating a direct positive effect.

Under the auspices of the universities' interest organization, Universities Denmark, DTU is participating in the development of a joint climate accounting standard. The purpose is to promote climate-friendly and sustainable operations at Danish universities.

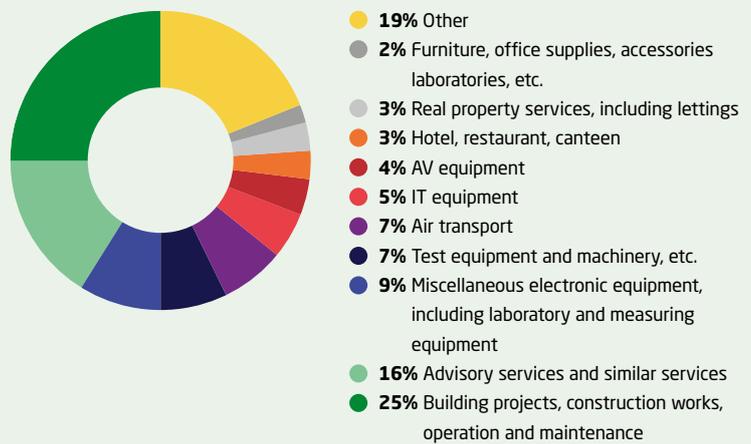
Going forward, DTU will strengthen its overall climate and environmental reporting by creating increasingly close collaboration between DTU's Office for Budget and Accounting, IT Services, and Campus Service, among other offices.

## THE UNDERLYING FIGURES

DTU's emissions as a percentage, broken down on scopes 1, 2 and 3 based on 2019 figures



DTU's CO<sub>2</sub>e emissions scope 3 in 2019



Focus area:

## Energy-related climate footprint on campus

### Ambition

DTU is actively involved in supporting the international and national ambitions included in the Paris Agreement in 2015 to reduce CO<sub>2</sub>e emissions. DTU's strengthened actions and initiatives aimed at reducing the climate footprint are not limited to the energy area, but include all CO<sub>2</sub>e-emitting activities. DTU can reduce its own CO<sub>2</sub>e emissions related to energy consumption in two ways: by influencing the energy mix and by reducing its consumption. DTU acts proactively in both areas. DTU's ambition is to reduce the energy-related CO<sub>2</sub>e footprint in relative terms.

To achieve this ambition, DTU's aim is to strengthen its climate accounts, with the development of action plans and specific reduction targets in specific areas.

### Objectives

**2023:** DTU has optimized the basis for CO<sub>2</sub>e reduction in the energy consumption parameters that the University can directly influence.

**2025:** DTU has reduced carbon emissions related to DTU's energy consumption.

### Baseline and goals

Goal no.	Goal	Baseline	2025	Comments
<b>Energy consumption</b>				
1	DTU maintains a stable total energy consumption and related CO <sub>2</sub> e emissions despite expectations of increased research activity.	2021: Energy consumption of 146,358 MWh, equal to a CO <sub>2</sub> e emission of 17,962 tonnes.  In the period 2017-2019 to 2021, there was a reduction of 22 per cent in DTU's CO <sub>2</sub> e emissions related to energy consumption.	Unchanged despite increased activity	With the expectation of increased research activity and more students—equal to an organic growth rate of 3-4 per cent p.a.—unchanged MWh consumption will require significant ongoing improvements.  The CO <sub>2</sub> e emissions from DTU's electricity consumption reflect the national energy mix. DTU has purchased certificates for its entire electricity consumption, which equals a market-based reduction in CO <sub>2</sub> e of 9,639 tonnes.
2	DTU maintains a decreasing relative energy consumption and related CO <sub>2</sub> e emissions.	2021: Energy consumption per FTE is 9.7 MWh, equal to 1.2 tonnes of CO <sub>2</sub> e emissions per FTE.  From 2017-2021, there was a 28 per cent reduction in DTU's CO <sub>2</sub> e emissions per FTE.	Lower consumption per FTE	Consistent with the above, the aim is to reduce energy consumption per FTE.



*Wind turbines of up to 330 metres are tested at the national test centre Østerild in Northern Jutland. DTU is responsible for the construction and operation of the test centre, and the close collaboration with Vestas, Siemens, and the national and local authorities makes Østerild a hotspot for tomorrow's wind technology.*

## Initiatives 2023

### Energy-related climate footprint on campus

- A Promotion of renewable energy nationally**  
DTU works actively to influence the national energy mix by purchasing power from renewable energy sources. It is being monitored whether the market can offer better agreements for procurement of green power, such as Power Purchase Agreements<sup>2</sup>, and DTU will gradually switch to other agreements if they demonstrate a significantly lower environmental impact.
- B Collaboration with utilities**  
At Lyngby Campus, DTU collaborates with the district heating company on the implementation of a heat pump in the heating system. DTU will continue and expand the collaboration with heating suppliers.
- C Disclosure of consumption:**  
DTU will work to make energy consumption data more widely available, so the respective university units can see the development in their own consumption. The data is also to be made available to researchers and students.
- D CO<sub>2</sub>e emission reduction in buildings**  
The DGNB (Deutsche Gesellschaft für Nachhaltiges Bauen) sustainability standard for buildings in operation is implemented as a systematic framework for preparing a carbon emission reduction plan for the individual buildings<sup>3</sup>. DTU is also working with technical improvements in connection with maintenance of buildings and installations and development of new technology.

2) A Power Purchase Agreement, PPA, ensures that the power comes from newly installed plants, thereby increasing the volume of renewable energy in society.  
3) The CO<sub>2</sub>e perspective is a subset of the DGNB sustainability standard. As part of the sustainable campus development, DTU works systematically to promote the overall DGNB sustainability standard. See page 25 for further details.

Focus area:

## Circular economy in university operations

### Ambition

DTU focuses actively on consuming less, reducing the need for new procurements, and making procurements that are needed as sustainable as possible. We want to recycle more and ensure more sustainable handling of hazardous substances. DTU wants to make it easy for students, employees, and guests at DTU to act sustainably.

DTU's ambition is to promote a circular economy in its operations. The actions and initiatives connected with this ambition must be measurable and visible in both the University's academic activities and operations. DTU thus works to ensure that its systems are designed to promote sustainable behaviour and create opportunities and incentives that support the most sustainable choice.

### Objectives

**2023:** DTU has developed action plans for reducing negative impacts in DTU's resource consumption.

**2025:** DTU has implemented procedures that measurably promote a circular economy in university operations.

### Baseline and goals

Goal no.	Goal	Baseline	2025	Comments
<b>Procurement</b>				
3	DTU increases the share of public procurement procedures that follow the <i>DTU Procurement Sustainability Model</i> .	2022: The <i>DTU Procurement Sustainability Model</i> is implemented in all procurement agreements and individual project purchases above DKK 100,000.	Increased share of purchases covered by the model	Approximately 80-90 per cent of DTU's purchases will be covered by the model.  The dissemination and effect of the model will be monitored.
<b>Waste as a resource</b>				
4	DTU reduces the total volume of waste	2021: 2,513 tonnes equal to 166 kg per FTE.  Between 2017-2019 and 2021, the total volume of waste was reduced by 17 per cent.	Less waste	The reduction in waste volumes is attributed to the COVID-19 pandemic, with resulting reduced campus activity.  The 2025 objective must be seen in relation to a pre-COVID-19 baseline of 3,025 tonnes (average 2017-2019), and it will require dedicated action to succeed in this.

Goal no.	Goal	Baseline	2025	Comments
<b>Waste as a resource</b>				
5	DTU is increasing the share of actually recycled waste.	<p>2021: 67 per cent recycling (delivered waste), equal to 111 kg per FTE.</p> <p>In the period 2017-19 to 2021, the share for recycling increased by 3 per cent.</p>	<p>Increased recycling</p> <p>The objective is 50 per cent. <i>actual</i> recycling.</p>	<p>The figure states waste <i>delivered for</i> recycling. From 2022, there is a legal requirement to disclose 'actual recycling', i.e. the proportion of collected waste that is actually recycled.</p> <p>Data on actual recycling is not known today, so there is no previous reference point.</p>
<b>Water</b>				
6	DTU reduces tap water consumption.	<p>2021: 133,699 m<sup>3</sup> equal to 8.8 m<sup>3</sup> per FTE.</p> <p>In the period 2017-2019 to 2021, consumption has been reduced by 22 per cent.</p>	<p>Less consumption of water</p>	<p>The reduction is attributed to the COVID-19 pandemic, which resulted in reduced activity at DTU's campuses.</p> <p>In the short term, a negative development is expected in connection with increased activity levels, but the goal is to reduce or stabilize water consumption in the long term.</p>
<b>Transport</b>				
7	DTU reduces the number of kilometres flown per FTE.	<p>2021: 1,015 km per FTE, equal to CO<sub>2</sub>e emissions of 193 tonnes per FTE</p> <p>In the period 2017-2019 to 2021, there was reduction of 89 per cent.</p>	<p>Fewer flights per FTE</p>	<p>Decreases in the number of km flown are attributed to travel restrictions in connection with the COVID-19 pandemic.</p> <p>The 2025 objective must be seen in relation to a pre-COVID-19 baseline of 9,204 km flown per FTE (average 2017-2019).</p>



## Initiatives 2023

### Circular economy in university operations

#### Procurement

DTU's procurement policy lays down internal ambitions as well as specific and basic sustainability requirements for DTU's contract suppliers. Promoting sustainability in procedures includes updating the documents used in the procurement management at DTU in the form of standard terms, requirement specifications, guidelines, evaluation tools, etc. In addition, increased visibility has been created about products that have sustainability labelling.

**A Strengthened sustainability in procurement categories**  
DTU has developed a system for DTU's category managers responsible for corporate procurement to prepare an annual business strategy for promotion of sustainability in their respective procurement categories (product industries). In 2023, sustainability activities will have been laid down for all procurement categories.

**B Focus on CO<sub>2</sub>e in procurement**  
A total carbon emission will be prepared for each procurement category. The carbon emissions and the result of the sustainability study jointly form a prioritization of the sustainability work in connection with procurement.

#### Waste and recycling

DTU works for a circular resource flow. Furthermore, the goal is to influence the market to be able to document actual recycling through requirements for suppliers when entering into contracts.

**A Increase quality and share of recycled waste**  
This is supported by actions and initiatives aimed at changing behaviour and by setting requirements for the waste recipients' documentation of actual recycling.

**B Alternative to new purchases**  
Work to create an attractive alternative to new procurement at DTU through a further development of a system for recycling materials and effects on DTU's campus areas.

**C Expanding physical waste management infrastructure**  
The initiative must create a good and up-to-date framework. Specifically, work will be done with proposals for a new recycling centre at Lyngby Campus as well as a plan for establishment of new waste yards.



DTU's 2021 campaign shows the value of waste sorting by comparing waste with art and those who sort the waste with artists. At the same time, information is provided about which 12 waste fractions DTU sorts waste into.

## Water

Water consumption at DTU is highly dependent on the research and teaching activities conducted at a given time.

## Transport

Using green modes of transport to, from, and on campus must be made attractive and easy. Travel on foot, by bicycle, and by public transport must be prioritized over travel by car. The goal is to get more people to move around campus on foot and by bicycle. At the same time, incentives must be created for opting out of unnecessary travel and to choose the most sustainable mode of transport for necessary travel.

### A Strengthened registration of water consumption

Creating a system for continuous registration of and follow-up on water consumption for buildings on the Risø, Ballerup and Lyngby campus areas. In addition, in connection with pilot certification, see *DGNB for buildings in operation*, mapping will be done of water-saving potential and a plan will be prepared for compliance for the pilot buildings. The means will be a combination of technical and behavioural measures.

### B Reduced water consumption for outdoor plantation

Efforts will be made to have plantation that does not require much watering during dry periods (i.e. native species). Where possible, rainwater will be used for irrigation of green spaces.

### A Air travel

Via data retrieval from DTU's tour operator, it is possible to see air travel data for DTU's users. DTU will actively work to raise awareness of resource consumption and help employees choose solutions that entail less resource consumption. For example in connection with the actual booking of flights, but also with increased focus on reporting to and from the university units regarding air travel.

In line with this, DTU will work to set a quantitative, ambitious target for reducing carbon emissions from air travel in 2023.

### B Reporting on commuting

Calculation of CO<sub>2</sub>e emissions related to commuting by DTU staff and students, which will be included as decision-making support in the promotion of green transport to and from DTU.

### C Green modes of transport

Reducing the number of parking spaces and stimulating more students and staff to choose cycling and public transport. This will be supported by the establishment of the Light Rail towards 2025. At the same time, the goal is to free up areas for, for example, social meeting places for a better campus life.

Focus area:

## Sustainable campus development

### Ambition

It is a priority for DTU that the University's campuses are developed and operated from a holistic and long-term perspective that promotes environmental and social sustainability while also being profitable. Attractive, accommodating, and vibrant campuses are essential to providing world-class research and education. The ambition is that DTU will continue to develop all its campuses so they benefit people and the environment, that our campuses are seen as living laboratories for technology development and sustainability, and that the campus facilities are accessible to citizens and society to the greatest possible extent.

To meet this ambition, DTU must continue to prioritize the development of the University's infrastructure with due consideration for sustainability and support a culture in which we all look after our campuses.

### Objectives

**2023:** DTU has strengthened sustainability on its campuses in relation to built-up environment, nature, and art.

**2025:** DTU's campuses and buildings are characterized by sustainability, quality, and profitability.

*A new transverse lane in the third quadrant at Lyngby Campus is an example of holistic campus development. The transverse lane encourages socialization, while also ensuring space for pedestrians, cyclists, and service vehicles.*



## Baseline and goals

Goal no.	Goal	Baseline	2025	Comments
<b>New construction and building operations</b>				
8	DTU will increase the number of its own buildings that are certified in accordance with the sustainability standards DGNB for new construction (minimum Gold) or DGNB for buildings in operation <sup>4</sup> .	2021: The construction Building 374 at DTU Skylab in Lyngby is Gold and Dimond certified. The construction of Building 357 in Lyngby is pre-certified."	More certified buildings	There is especially a development potential in relation to buildings in operation.
<b>Indoor climate and working environment</b>				
9	DTU will strengthen its actions and initiatives aimed at ensuring a high-quality indoor climate that supports a good study and working environment.	Focus on creating a good indoor climate in connection with new construction projects and renovations.  For buildings in operation, work has been done to meet local challenges on an ad hoc basis.	Better indoor climate	There is focus on developing digital tools for ongoing monitoring of the indoor climate which can create the basis for improvements.
<b>Biodiversity</b>				
10	DTU will increase biodiversity in its campus areas.	DTU's campus areas have very varied natural surroundings, and there have been ad hoc initiatives aimed at increasing biodiversity.	Increased biodiversity	Work will be done to increase biodiversity through conversion of the operation of green areas.
<b>Campus environment and art</b>				
11	DTU is developing its campus areas with a focus on aesthetics and artistic impression.	DTU has a tradition of incorporating aesthetics and art into the architecture and design of its campus areas.	Increased focus on aesthetics	The focus is on ensuring a pleasant outdoor environment, accessibility, cultural heritage, and art.

<sup>4</sup>) DGNB is a voluntary certification scheme in sustainable construction. In Denmark, the certification process is handled by Green Building Council Denmark. In the DGNB system, a building or urban district is evaluated on the basis of six principal areas: Environmental quality, economic quality, social quality, technical quality, process quality, and area quality. Depending on the level of ambition, the objective may be to be awarded either DGNB Platinum, DGNB Gold, or DGNB Silver. In addition, supplementary awards can be achieved, such as DGNB Heart—which concerns well-being, health, and indoor climate—and DGNB Diamond for recognition of architectural quality.

# Initiatives 2023

## Sustainable campus development

### New construction and building operations

DTU wants to reduce resource consumption and nuisances to the external environment, locally and globally, when we build, develop, and run our campuses. DTU will take an action-oriented approach to the task and will use holistic quality assurance of the built-up campus environment on a measurable and well-documented basis.

**A Promotion of sustainability in new construction and renovations**  
DTU's strategic campus plan will be re-certified and all new construction will be DGNB certified to Gold or higher (Lyngby Campus). The objective is DGNB Heart (well-being, health, indoor climate) or DGNB Diamond (architectural quality) where relevant. Pre-certification of Building 313 at Lyngby Campus.

**B Sustainability certification of building operations**  
In the coming years, building operations on the large campus areas will be sustainability certified according to *DGNB for buildings in operation*.

**C Capacity and competence development**  
Goal-oriented work is being done to build up capacity in Campus Service for creation of sustainable solutions, including competence development and further development of digital support systems.

### Indoor climate and working environment

DTU's employees and students must experience good working environment conditions and a good indoor climate.

**A Mapping of indoor climate**  
Mapping and analysing indoor climate data with input from DTU's physical WPA (questionnaire survey), DTU's error reporting system, and from meter data.

**B Preparation of plans for indoor climate improvements**  
Based on analyses of acoustics, air quality, lighting conditions, and thermal indoor climate in DTU's buildings, plans will be developed for improvements in areas where challenges are identified.

### Biodiversity

DTU will increase biodiversity at its campuses. Through the plantation initiatives, DTU will create greater diversity and site-specific biological diversity on campus. Cohesive green areas will provide the basis for robust natural surroundings with good chances of survival for more species.

### Campus environment and art

Attractive physical settings of high functional quality must be created for the University's users. The settings will contribute to health and well-being with focus on indoor climate, microclimate between buildings, accessibility, and diversity. In addition, works of art will contribute to a rich, diverse, and inspiring campus life.

**A Development of a strategy for increased biodiversity**  
DTU requires that 80 per cent of the vegetation must be species that belong in a Northern European geographical context, and that none of the plant species on the Danish Environmental Protection Agency's list of invasive species in Europe and Denmark are to be established on campus.

**B Capacity build-up aimed at creating a framework for more abundant nature**  
The actions and initiatives include competence development of gardeners, preparation of care plans, and procurement of equipment for operation with a view to ensuring greater biodiversity.

**A Development of a framework for the work aimed at creating a good outdoor environment**  
There will be focus on a number of areas, including noise pollution and air quality, as well as microclimatic conditions such as sun, wind, and perceived temperature.

**B Upgrading general accessibility on campus areas**  
There will be focus on entrances to buildings and terrain differences in the landscape.

**C Preparation of cultural heritage analysis for Lyngby Campus**  
The purpose is to clarify what DTU's conservation values consist of. The analysis must form part of project preparation and input for the decision-making basis for the continued campus development with respect for the cultural heritage.

**D Expanding art at DTU**  
DTU's art programme for Lyngby Campus will be concretized and expanded in four new art projects over the coming years.



# Attractive place to study and work

DTU's view is that many of the challenges facing the world require engineers with a sustainability mindset. This is a big, but necessary, responsibility that we want to inspire all students and graduate engineers to pursue. At the same time, we want the solutions to the environmental and climate challenges to go hand in hand with social sustainability.

Sustainability is an integrated part of all DTU's study programmes, and all students will complete programme components intended to boost their competence in innovation and entrepreneurship. The social dimension of sustainability includes social responsibility and room for diversity in all matters (for example culture, ethnicity, and gender).

Together with the PF student association, Polyteknisk Forening, DTU runs a number of activities aimed at supporting student well-being. We are aware that our students sometimes deal with a sense of inadequacy, anxiety, and stress, and offer assistance and counselling to those who are struggling.

A good working environment is also important to DTU. We undertake a social responsibility to meet the objective of inclusiveness in state institutions. This includes retaining employees who have reduced working capacity due to illness or accident, and by creating a framework that encourages openness in discussing our well-being.

DTU expects its employees to be creative, reflective, and critically analytical. Conversely, our employees can expect DTU to create space for creativity and encourage new ideas. They can expect DTU to be positive and open-minded about new and different ways of doing things.

DTU is an international university, and equality between gender and nationalities is a matter of course. Integration of international employees is a high priority, so that the meeting with DTU as a workplace and with Danish society is experienced smoothly and supportively.

# Focus areas, objectives and initiatives for an attractive place to study and work



DTU's activities aimed at ensuring an attractive place to study and work are grouped into three focus areas.

All three areas are of importance to how DTU develops as an educational institution and workplace, and to how students and staff experience being part of DTU. DTU's future objectives and guidelines in these areas are described in the following.



Focus area:

## Diversity, equity, and inclusion

### Ambition

DTU is a place for everyone who can and will. At DTU, we attach great importance to an appreciative and inclusive study and working environment, where everyone feels valued for their contribution to the organization. We work based on an intersectional understanding of diversity, equity, and inclusion, and we intervene with activities that support this and target individual actions and initiatives as needed. We expect all students and staff to show mutual respect in their interactions with each other.

### Objectives

**2023:** All heads of department and HR staff have completed competence development in bias-conscious behaviour and bias mechanisms.

**2025:** DTU aims to ensure that everyone experiences equal access to education and career opportunities.

### Baseline and goals

Goal no.	Goal	Baseline	2025	Comments
<b>Internationalization</b>				
12	DTU is an attractive place to study for international students.	2021: 46 per cent of DTU's MSc students are international.	Same level	DTU's students comprise a total of 114 nationalities.
13	DTU is an attractive workplace for international researchers.	2021: 31 per cent of DTU's academic staff are international.	Same level	DTU's staff comprise a total of 114 nationalities.
<b>Age</b>				
14	DTU is an increasingly attractive workplace for young researchers.	2021: Out of 705 junior scientific staff members (postdoc, researcher, assistant professor), 148 were employed in open-ended positions, equal to 21 per cent.	More young researchers	
<b>Social and pedagogical accessibility</b>				
15	DTU is an educational institution that works to ensure that we are physically, socially, and pedagogically accessible.	2021: 773 DTU students with functional impairment received support under the public scheme Special Educational Support (SPS), equal to 6 per cent of the total number of students.	Same level	A systematic statement of DTU users of Special Educational Support was commenced from 2020. There has been a slight increase towards 2021.

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Goal no.	Goal	Baseline	2025	Comments
<b>Gender</b>				
<b>16a</b>	DTU works to ensure that the gender balance among newly admitted bachelor students reflects the gender balance among students who meet the admission requirements at DTU (predominantly mathematics A, physics B, chemistry C), where typically 40-45 per cent of a cohort of students in upper secondary education programmes are women.	2021: Among those admitted to a bachelor programme at DTU in 2021, there were 28 per cent women in the BEng programme and 33 per cent women in the BSc programme.	Higher proportion of women	The ambition of 40-45 per cent must be seen in relation to the general gender balance among DTU's active students (both bachelor students and MSc students), consisting of 32 per cent women and 68 per cent men.

For the scientific job categories, the aim is a gender balance of minimum 70/30 or a proportion equal to the previous career level. For both scientific staff and technical-administrative staff, the ambition is

that the proportion of male and female applicants, respectively, should match the proportion of corresponding new recruitments.

Goal no.	Goal	Baseline	2025	Comments
<b>Gender</b>				
<b>16b</b>	Gender balance among PhDs (DTU employees).	2021: 35 per cent women 65 per cent men	Higher proportion of women	
<b>16c</b>	Gender balance among permanent scientific staff	2021: 22 per cent women 78 per cent men	Higher proportion of women	With correction for time lags, the population should ideally reflect the PhD distribution at any given time with a time lag in relation to the respective advancement positions.
<b>16d</b>	Gender balance management, scientific staff (managers with HR responsibilities).	2021: 18 per cent women 82 per cent men	Higher proportion of women	



Goal no.	Goal	Baseline	2025	Comments
<b>Gender</b>				
<b>16e</b>	Gender balance among permanent employees, technical/administrative staff.	2021: 49 per cent women 51 per cent men	Same level	
<b>16f</b>	Gender balance management, technical/administrative staff (managers with HR responsibilities).	2021: 45 per cent women 55 per cent men	Same level	
<b>16g</b>	Gender balance DTU's University Leadership and Management Forum.	2021: 19 per cent women 81 per cent men	Higher proportion of women	
<b>16h</b>	Gender balance DTU's Board of Governors.	2021: 40 per cent women 60 per cent men	Same level	

# Initiatives 2023

## Diversity, equity, and inclusion

### A **Internationalization**

Quality assuring the range of study programmes for international students based on participation in International Student Barometer 2022, conducted by the British research institute i-Graduate. International students' satisfaction with all aspects of student life at DTU is measured, and DTU is benchmarked with several hundred universities globally.

### B **Age**

Continued development of tenure track as an attractive and internationally recognizable career path, which aims to promote the academic and professional development and independence of assistant professors and researchers at an early stage in their careers. In 2023, the focus will be on strengthening that part of the tenure track which includes a mentor programme with focus on personal, academic, and professional development.

### C **Social and pedagogical accessibility**

DTU works in a goal-oriented manner with flexible curricula and a system that supports easy access to relevant help. In 2023, DTU will focus on increasing accessibility for everyone who can and will. Work will be initiated to ensure that students who need assistance (Special Pedagogical Support) experience that such a need is not an obstacle to starting in a study programme at DTU.

### D **Gender**

Based on the DTU Diversity, Equity & Inclusion plan, DTU focuses on the development of recruitment and career progression measures in accordance with work packages on career and management. In specific terms, the focus is on competence development in bias mechanisms and inclusive leadership as well as strengthening balanced and bias-conscious recruitment practices. In 2023, DTU will focus on competence development of managers with hiring responsibility and employees in the HR department with a view to achieving a better balance in recruitments and career progression, including to management levels.

*100 DTU students participated in the 2022 Copenhagen Pride parade to celebrate human rights and room for diversity. The participation was arranged by Polyteknisk Forening—DTU's PF student association PF—and is supported by DTU, because it is important to focus on removing barriers to an inclusive study and working environment.*



Focus area:

## Well-being, health, and safety

### Ambition

It is crucial that students and employees thrive at DTU. Well-being is fundamental to a meaningful study and working life because well-being correlates to our ability to learn new things, collaborate, and perform. An important aspect of well-being is that studying and working at DTU is experienced as physically and mentally healthy and safe. The focus is on working with prevention, remedial action, and promotion of holistic solutions. DTU must ensure that it is easy to find information about health, safety, and well-being.

DTU's ambition is to be an attractive place to study and work where students and employees can develop academically, professionally, and personally.

In those situations where there are challenges, the ambition is that both students and staff experience that problems with well-being are being handled by the organization, fellow students and/or colleagues.

### Objectives

**2023:** All students and staff must feel safe talking about how they are thriving and know where to look for help if they are not thriving well.

**2025:** DTU provides a study and working environment that is actively chosen.



## Baseline and goals

Goal no.	Goal	Baseline	2025	Comments
<b>Well-being</b>				
17	DTU must have a study environment that contributes positively to the students' well-being.	The Danish Student Survey: Response to the statement "I generally feel very comfortable in my study programme": 2021: 3.9 on a scale from 1 to 5.	Better study environment.	The survey is conducted by the Danish Ministry of Higher Education and Science, and is published in odd-numbered years.
18	DTU has an organizational culture that contributes to an increased dialogue on well-being.	In 2021, DTU implemented dialogue-based work with well-being (psychological WPA).  2021: 29 of DTU's 30 units have conducted well-being dialogues.	In 2025, well-being dialogues are expected to be an integral part of DTU's dialogue and collaboration culture.	Well-being dialogues are incorporated into an annual cycle, where they must be conducted every second year. Management encourages more frequent well-being dialogue when needed.
<b>Sickness absence</b>				
19	DTU's managers work proactively through dialogue to remedy work-related absence.	2021: 5.3 sick days per employee.	Fewer sick days	
<b>Health services</b>				
20	DTU offers services for students and employees that support health and well-being.	DTU offers a wide range of activities in sports, ergonomics, mindfulness, and walk & talk routes. Indicator is the number of members in activities offered by DTU Sport: 2021: 2,897 members. In the period 2017-2019 to 2021, there was reduction of 32 per cent.	Same level	Decrease in the number of members is attributed to restrictions in connection with the COVID-19 pandemic.  The 2025 objective must be seen in relation to the pre-COVID 2017-2019 baseline of 4,229 members.
<b>LTIF</b>				
21	DTU has less than 1 accident at work per million working hours (Lost Time Incident Frequency - LTIF).	2021: LTIF 1.61 In the period 2017-2019 to 2021, LTIF decreased by 30 per cent.	Fewer accidents at work	The reduction is attributed to COVID-19 lockdowns, but the 2021 figure is still significantly lower than pre-COVID-19 at 2.30.

# Initiatives 2023

## Well-being, health, and safety

### A **Student well-being:**

DTU prepares three-year study environment action plans that prioritize specific focus areas aimed at promoting student well-being. In 2022-2024, the focus is on:

- Learning environment (AV and streaming, indoor climate, study carrels, and user-friendly outdoor environments, well-functioning IT support)
- Well-being (social affiliation and inclusion, equal treatment, sense of mastery, strengthened communication, as well as fast and smooth case handling).

### B **Psychological counselling:**

Strengthened offer of group courses in DTU's psychological counselling scheme. In 2023, the psychological counselling scheme will have supplemented the individual work with more group courses, including offers targeted at PhD students. The intention is to work more proactively and to reach a larger target group.

### C **Working environment:**

In 2023, DTU will work to establish models for a systematic and structured risk-based work approach.

*DTU's annual relay race for employees and students offers not only a run on campus, but also socializing and eating together*



Focus area:

## Communities

### Ambition

Studying and working at DTU entail a personal development for the individual student and employee who acquire work-related, social, and personal competences. We develop in interaction with others, we reflect ourselves in each other, and measure ourselves against role models. Studying and working at DTU can contribute to identity creation, and the communities of which we form part can be of lifelong importance.

DTU's ambition is that students and staff experience a sense of belonging and community across DTU's disciplines, locations, and groups of students and staff.

DTU has a social responsibility for creating an inclusiveness that supports this ambition both in the form of a wide range of academic and social offers and learning environments and by mutually caring about each other.

### Objectives

**2023:** DTU has worked proactively with communities as a driving force for strengthened learning, development, and well-being.

**2025:** DTU is a study and working environment known for strong academic, professional, and social communities.

### Baseline and goals

Goal no.	Goal	Baseline	2025	Comments
<b>Academic, professional, and social communities</b>				
22	DTU students develop a solid common academic and professional engineering mindset that enables them to work with complex problems and engineering solutions in interdisciplinary environments.	2021: DTU's study programme model ensures that students meet each other across disciplines. Students are free to choose between different courses and many courses are designed to bring students together across study programs. For example the Innovation Pilot course on the BEng programme, the teaching of basic science subjects on the BSc programme, and the interdisciplinary innovation course on the MSc programme.	Strengthened community	Implementation of the revised polytechnical basis in the MSc Eng programme in the academic year 2023/24 and a recently initiated revision of the BEng programme focusing on both academic competency and student well-being support the joint identity as an engineering student at DTU.

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Goal no.	Goal	Baseline	2025	Comments
<b>Academic, professional, and social communities</b>				
23	DTU and Polyteknisk Forening (PF student association) work for an active club and association life with focus on academic and social development.	A PF report from 2021 shows that DTU has approx. 30 student/alumni-run clubs, for example rocket construction, music, photography, motorcycle club, and SDG ambassadors.  DTU makes premises available to the greatest possible extent, and academic sparring is provided, where possible.	Same level	
<b>DTU as host</b>				
24	DTU hosts events that strengthen the community at the University.	DTU hosts events such as DTU Commemoration Day, DTU Relay, DTU Family Day, and academic ceremonies.  2021: DTU Family Day could not be held due to COVID-19.	Same level	Events are evaluated with a view to meeting the ambition.
25	DTU's followers on social media experience technology for people.	Followers in 2021: LinkedIn: 140,000 Twitter 15,445 Facebook 38,500 Instagram 13,700	More followers	DTU wants to strengthen the dialogue with the outside world, including through an increased number of followers on social media.
26	DTU reaches out to the outside world with activities that support the desire to learn about technology.	DTU has many official visits, campus tours, and communication activities such as DTU Summer Science, which are offers for schoolchildren.	Same level	
<b>Alumni</b>				
27	Being part of DTU's alumni network is regarded as attractive.	Members of DTU's alumni network DTU Alumni 2021: 37,370	Same level	



*At DTU's annual Commemoration Day, we pay tribute to the academic achievements and scientific breakthroughs of the year, and to the innovative engineers of the future and the employees who help shape them. This is a festive event celebrating DTU students, staff, alumni, and partners.*

*The picture from Commemoration Day 2022 shows the prize ceremony for the student start-up of the year, Temptory Foods, which pushes the boundaries of plant-based food production.*

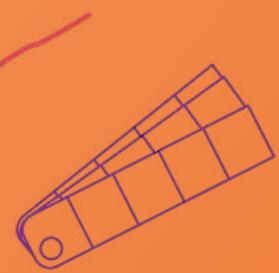
## Initiatives 2023

### Communities

**A Academic, professional, and social communities:**  
Creating a sense of belonging and communities between Danish and international students, first and foremost through orientation weeks and courses. The initiatives are followed up on an ongoing basis during the study programme with continuous offers and activities that support well-being, integration, and diversity among students. In 2023, these initiatives will be strengthened through DTU Student Culture Hub.

**B DTU as host:**  
Making DTU's campuses accessible to everyone. In 2023, work will continue with the development of a DTU app that makes it easy to use the possibilities and facilities available on DTU's campuses.





# Governance with accountability and research integrity

DTU regards good leadership at all levels as a key element in maintaining DTU's role as a leading technical university. At DTU, good leadership is situational, adaptive to individual needs, and with strong focus on nurturing the development of talent and creation of excellent results.

All employees are entitled to competent management, which is ensured through targeted training and education of all DTU's managers. There is an ongoing dialogue with the employees on goals, means, and task performance. All employees, including managers, have an annual employee development interview with their immediate manager.

As DTU regards it as conducive to the development of technology for sustainable change, the ambition is to ensure extensive academic research integrity. In Denmark, there is a consensus to safeguard academic integrity. The research is based on principles such as honesty, transparency, and

accountability in accordance with the Danish Code of Conduct for Research Integrity.

Academic freedom is about universities protecting free thought and speech. We have a management responsibility to create space for opinions to be exchanged and questioned, for academic competences to be developed, and for breakthroughs to occur. Therefore, DTU wants the University's researchers to participate in the public debate. We equip our researchers to handle the debate, even in cases where it becomes biased and personal.

More technology is not always the answer to society's challenges, and society's use of technology must be regulated so that it respects the human being. At DTU, we see technology as a driver of sustainable change, but it requires that our researchers act with responsibility and care, and that our managers and organizational structures encourages us do the right thing.

# Focus areas, objectives, and initiatives for governance with accountability and research integrity



DTU's work with accountability and research integrity is grouped into three focus areas.

All three areas are essential to DTU's development as a leading university with a strong governance and

integrity culture. And they are of great importance to the management and development of both academic activities and operations. DTU's future objectives and guidelines in these areas are described in the following.



*President Anders O. Bjarklev speaks to the students at study start 2021 during the COVID-19 pandemic. DTU was closed down for onsite teaching for long periods, and students and lecturers made an impressive effort to adapt to virtual learning.*

Focus area:

## Management and organization

### Ambition

Through good leadership, DTU wants to develop and create value using the natural sciences and technical sciences for the benefit of society. DTU has a line organizational management system based on coupled processes, a flat structure, value-based management, respect, dialogue, and involvement. DTU focuses on quality work, which is implemented on the basis of clearly defined qualitative and quantitative goals laid down in DTU's strategy and accompanying management documents. The cohesion is linked to the dialogue meetings that are the essence of DTU's management annual cycle. DTU's collegiate bodies also play an important role in ensuring the co-determination and involvement that are crucial for DTU to continue to develop its dialogue and collaboration culture. DTU's teaching, guidance, supervision, and development of its study programmes are based on student-oriented learning aimed at educating engineers with strong academic and professional competences, drive, and the ability to act independently.

DTU's ambition is to be a model example of how to manage an efficient and inclusive university.

DTU undertakes its responsibility to communicate and support this governance view through a number of management and employee development activities, where the focus is on creating a framework and providing opportunities for a good dialogue between management, staff, and students.

### Objectives

**2023:** Students, employees, and managers have good knowledge of and trust in DTU as a dialogue-based organization

**2025:** DTU has strengthened its reputation as a university where people think, talk, and work together across disciplines and cultures.

### Baseline and goals

Goal no.	Goal	Baseline	2025	Comments
<b>Management and organization</b>				
28	DTU has a culture of dialogue characterized by openness and trust, where managers act as role models.	2021: DTU's Executive Board meets individually with the Head of Departments three times a year to discuss and follow up on department specific goals, plans and achievements. (DTU's management annual cycle).	Same level	The management annual cycle is a management mechanism that DTU has introduced and developed over 20 years.
29	DTU prioritizes that the collaboration between management and the collegiate bodies is characterized by dialogue and co-creation.	2021: In general, management, staff, and students feel that there are opportunities for open discussions and actual co-determination.	Same level	

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Goal no.	Goal	Baseline	2025	Comments
<b>Good business conduct</b>				
30	DTU wants to take a proactive approach to handling offensive behaviour.	In 2021: Development of a tool that creates visibility about contact options and transparency about what happens once a matter has been reported as well as the possibility of anonymous registration.	Same level	
31	DTU ensures that the organization's whistleblower scheme is perceived as a secure and effective framework for uncovering any offences and irregularities.	2021: 2 reported cases. Both reports have been examined based on their facts and subsequently closed. None of the reports have resulted in the matter being reported to the police.	Same level	

## Initiatives 2023

### Management and organization

#### A Leadership dialogues

In 2023, DTU will focus on implementing DTU Leadership Dialogues. This means that all managers will be asked to invite their own employees to a dialogue focusing on leadership development. More than 550 dialogues will be held. The HR partners will facilitate all leadership dialogues.

#### B Evaluation of DTU as a dialogue-based organization:

DTU has developed a number of dialogue tools that supplement and support leadership dialogues, well-being dialogues, and general communication in the organization. In 2023, an overall evaluation will be made of DTU as a dialogue-based organization.

#### C Offensive behaviour:

There are multiple options available to employees and students who have experienced or witnessed offensive behavior at DTU. HR and DTU's Cooperation and Joint Consultation Committee ensure that these options, and the responsible units, are well coordinated and work in unison to monitor trends and prevent offensive behaviour.

Focus area:

## Research practice and research dissemination

### Ambition

DTU wants to create a culture among students and staff that is anchored in research integrity and academic freedom and that promotes good research and dissemination practices. This means that honesty, transparency, and accountability are a basic premise for all aspects of DTU's research activities. It also means that the requirements of international conventions and ethical legislation are implemented to ensure the integrity of the research.

DTU encourages its students and researchers to make their knowledge available to, and to qualify and participate in, the public debate, preferably with reference to DTU. On the other hand, DTU finds it natural that no reference is made to the University when the debate is based on the exchange of personal and private views.

DTU's ambition is for its students and staff to be ambassadors for research integrity and academic freedom.

DTU has a responsibility to support this ambition and culture through competence building and information about good research, administrative, and dissemination practices. Researchers must experience that it is safe to participate in the public debate with recognition of their academic competency, professionalism, and objectivity.

### Objectives

**2023:** DTU's students, staff, and managers will have strengthened their knowledge of good research practice and research dissemination.

**2025:** DTU will have strengthened its reputation as a university that contributes to high standards in good research practice and research dissemination.

### Baseline and goals

Goal no.	Goal	Baseline	2025	Comments
<b>Good scientific practice</b>				
32	DTU is increasing its focus on ensuring a strong research culture based on principles of good scientific practice.	2021: Initiatives include mandatory courses for PhD students and supervisors where the topic of good scientific practice is addressed. In addition, e-learning modules on the topic are prepared to support the courses.	Increased focus	There will be follow-up how the organization adopts the e-learning modules as a supplement to existing courses.
33	DTU will strengthen its actions and initiatives in research security, see the Committee on Guidelines for International Cooperation (URIS) under the Ministry of Higher Education and Science.	2021: DTU is aware of the area and focuses on establishing strengthened and uniform procedures in this respect.	Strengthened actions and initiatives	The URIS report was published in May 2022, and DTU participated actively in the committee work.

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Goal no.	Goal	Baseline	2025	Comments
<b>Good scientific practice (continued)</b>				
34	DTU students are subject to DTU's code of honour for examinations and other academic activity.	2021: 216 students reported for cheating.  In the period 2017-2019 to 2021, there was an increase of 65 per cent in the number of reported cases of exam cheating.	Less cheating	The general increase is attributed to increased attention to cheating due to the introduction of the code from the 2017-2018 academic year. During the COVID-19 lockdown in 2020, there was a large increase, which is mainly attributed to the conversion of written on-site exams to online home exams.
<b>Dialogue with the outside world</b>				
35	DTU contributes to the public debate with research-based knowledge.	DTU publishes the profile magazine Dynamo four times a year and supports a number of digital platforms that provide information about DTU's research results and their importance to society.	More debate	DTU will focus its communication around themes related to current agendas and create strong stories that engage and activate the recipients.

## Initiatives 2023

### Management and organization

**A Plagiarism screening:**

DTU has made the plagiarism screening tool iThenticate available to its researchers in order to prevent plagiarism in scientific work.

**B Risk assessment international collaborations:**

Establishment of a new interdisciplinary security organization that creates internal organization and processes aimed at reducing ethical, financial, and security risks in connection with international research and innovation collaborations.

**C Export control and Nagoya Protocol:**

Preparation of a comprehensive overview of compliance requirements in the field of research and innovation, with particular focus on strengthening the work with export control regulation and the Nagoya Protocol.



Focus area:  
**Use of data**

**Ambition**

DTU creates and manages large volumes of data when we research, teach, and collaborate with the surrounding society, and when we manage the large business that DTU is. DTU prioritizes responsible research data management to ensure that the conducted research is both credible and transparent. This also entails that data is findable, accessible, interoperable, and re-usable (the FAIR principles<sup>5</sup>). At the same time, it is important to protect the confidential information and data that the outside world and people share with DTU. DTU's work with data is based on the principles that data must be as open as possible and as secured as necessary within a framework of appropriate organizational and technical measures.

DTU's ambition is to conduct and promote open research while protecting our intellectual property and the rights of our employees and partners.

DTU meets this ambition through competence building and information about responsible research data management, responsible processing of personal data, and IT security procedures and requirements for students and staff.

**Objectives**

**2023:** DTU has implemented specific measures to strengthen data management.

**2025:** DTU is known for promoting open research and for working constructively with appropriate related security measures.

*5) FAIR stands for Findable, Accessible, Interoperable and Re-usable, and is a set of principles that are internationally recognized and encourage making research open, transparent, and financially sound. For other information, see the National Strategy for FAIR Data Management.*



## Baseline and goals

Goal no.	Goal	Baseline	2025	Comments
<b>Upskilling in the FAIR principles</b>				
36	DTU wants its employees to comply with the FAIR principles.	2021: Initiatives taken to ensure that all PhD students and new employees have received training in <i>Responsible Conduct of Research</i> and in <i>Research Data Management</i> .	Greater awareness	DTU is working to implement the national FAIR strategy over a three-year period.
<b>Open Access</b>				
37	DTU wants all the University's publications to be freely available in order to make research as accessible as possible in accordance with principles of transparency, quality, and re-usability.	2021: 74 per cent of DTU's publications (national average 63 per cent).	100 per cent Open Access	DTU seeks to live up to the national ambition in this area, which is 100 per cent. However, DTU makes a reservation regarding the accessibility of articles where publishing house agreements that support the national strategy cannot be negotiated.
<b>Data security</b>				
38	DTU handle personal data in a professional manner, which makes it safe to disclose data to DTU.	2021: DTU's framework for processing personal data for administrative purposes is determined locally in the individual units.	Same level	DTU's ambition is to strengthen the framework by making it uniform across the organization.

## Initiatives 2023

### Data application and security

#### A Data management

Strengthening research data support: DTU sees an increasing need to coordinate knowledge and actions regarding research data. In 2023, we will have a virtual organization in the form of DTU Research Data Support. The support will qualify DTU's central work with research data, which will be done in collaboration with participants from the research environments.

#### B IT security:

DTU has initiated a project that will further systematizes reporting on information security at DTU, including on the basis of the National Cyber Security Strategy for Denmark from 2021.



# Approach to reporting and accounting policies

This first edition of DTU's Sustainability Report covers relevant aspects of DTU's actions and initiatives regarding environmental, social, and governance with the focus being on 'order in one's own house'.

DTU's sustainability work is also dealt with in DTU's Annual Reports, which have so far also included DTU's green accounts. These statements are retrospective. With this report, DTU gathers its statements in the green, social, and governance area, and also sets goals for the University's future ambitions.

## Scope, period, and baseline

A number of the data statements in the report coincide with the contents of DTU's Annual Report and other management information. In these cases, the same method of calculation and reporting format are applied.

In terms of period, the focus is on 2021. For the forward-looking perspective, objectives for 2023 and 2025, respectively, have been used. No fixed baseline year is used. Instead, the baseline for the objectives is specified. The reason for this is that it varies whether the relevant baseline is the average of 2017-19 or 2021. Where a 2017-19 average has been used, the reason is that a pre-COVID-19 pandemic perspective is relevant.

## Process and procedure

Sustainability is an integral part of DTU's corporate and business strategy and is incorporated in DTU's handling of both core tasks and operational tasks.

DTU's corporate strategy Technology for people 2020-2025 has constituted an important benchmark for this report, as has DTU's sustainability policy.

Focus areas for the report are based on a review of policies and focus areas that DTU regards as relevant in relation to social responsibility and sustainability. In this report, the focus is on operational data in the green area, classic HR and working environment data, as well as data and measures relating to good business conduct and integrity.

## Calculation methods and data explanations

### General conditions

#### FTEs

The abbreviation FTE stands for Full Time Equivalent and covers employees under a full-time employment contract of 160.33 hours per month and students stated according to number of student FTEs and/or number of enrolled students, graduates, etc.

#### Area statements

The statement of the area at Lyngby Campus, Ballerup Campus, and Risø Campus is calculated based on where DTU pays real property tax. Land owned by DTU (Lyngby and Ballerup) or where DTU is registered as the official tenant (Risø) is thus included in the area statement for DTU's campuses. No areas for external tenants are deducted when calculating the total campus area (buildings and outdoor areas).

The area of buildings on DTU's campuses and at small locations is calculated as gross area less the indoor areas let to external parties.

### Resource consumption with care

#### Climate accounts and CO<sub>2</sub>e

Greenhouse gas emissions are measured in CO<sub>2</sub>e. CO<sub>2</sub> is the chemical formula for carbon dioxide and represents the largest share of emitted greenhouse gases. 'e' indicates that other types of greenhouse gases (equivalents) have been included in the calculation after conversion to CO<sub>2</sub> based on their relative global warming potential (GWP).

The total statement of scopes 1, 2, and 3 has been calculated based on an input-output model with financial data and Exiobase, which 'converts' DKK into CO<sub>2</sub>e. The same model is used by several public agencies as well as the other Danish universities.

DTU participates in a collaboration with a working group under Universities Denmark, where the goal is to describe a uniform model for preparation of the CO<sub>2</sub> accounts. The accounts are based on methods described in the Greenhouse Gas Protocol. As this work progresses and as more precise data can be obtained, DTU's accounts will be adapted to new methods. However, the resource consumption for obtaining greater data accuracy must continuously

be weighed against whether it provides value in relation to a possible environmental benefit.

**Scope 1** includes physical units for the production of heat for research processes, such as steam. When calculating consumption, the tenants' consumption is deducted. In future reports, data on marine diesel used on board DTU's research vessel Dana as well as propellants for vehicles on DTU's campus areas will be included.

**Scope 2** covers indirect emissions from purchased energy for electricity and heating. Data for energy consumption (physical units) from electricity and heating for Lyngby, Risø and Ballerup Campus is obtained from the utilities and quality assured by a comparison with own meter data. For the small campus areas, data comes from meter readings. Tenants' consumption is deducted in the calculation.

Emission factors for electricity and heating are typically calculated using either the 125 per cent method or the 200 per cent method, which is an expression of thermal efficiency, i.e. the proportion of the consumed fuel that is used for the generation of electricity and heat, respectively, in a combined heat and power plant. CO<sub>2</sub>e emissions at DTU are calculated based on emission factors calculated using the 125 per cent method.

DTU's scope 2 emissions from electricity consumption are calculated using the location-based method, which provides a true and fair view of DTU's actual emissions, as electricity is consumed from the common electricity grid. However, DTU buys guarantees of origin for wind energy, and the market-based calculation therefore shows emissions of 0 kg of CO<sub>2</sub>e from electricity consumption. The market-based calculation is a statement of CO<sub>2</sub>e emissions related to generation of the wind energy to which DTU has acquired the right through purchases of guarantees of origin.

**Scope 3** has been calculated based on economic data combined with Exiobase, which converts 164 categories from monetary units into CO<sub>2</sub>e. The financial figures were extracted from the accounts for 2019, and Exiobase was based on data from 2011, which is regarded as the best available data on the market. A revised version of Exiobase is being prepared (2022-23), and this version will be used when it becomes available.

### **Air travel emissions**

Flights are primarily booked through DTU's tour operator, and the tour operator provides information about carbon emission factor and kilometres travelled for the individual flights. These figures do not take into account the Radiative Forcing Factor (RF) and the reported emission factors have therefore been multiplied by 1.9 to take the RF into account. This solution is called the DEFRA methodology, and it has been developed by the UK Department for Environment, Food and Rural Affairs. Under DTU's collaboration with Universites Denmark on a joint standard for climate accounts, this method has been chosen for the calculation of air travel carbon emission factor.

### **Circular economy**

When reference is made to circular economy in this report, this refers to an approach that focuses on extending the life of the Earth's resources as opposed to a 'buy, use, discard' economy. A circular economy is based on principles that involve producing less waste through better design of products, ensuring longer service lives of products and materials through maintenance, repair, reuse, and recycling, regenerating the Earth's natural systems, and creating a framework for sharing available resources.

### **Waste figures**

Figures for waste have been calculated by obtaining annual statements from waste collectors and recipients for all DTU's campuses. Data from invoices is also used for the accounts. This involves gathering many sources, formats, and data types in one set of accounts, which increases the risk of errors and inaccuracies. Work is being done to systematize this, set requirements for data formats, increase the quality of data, and make it possible to calculate data on an ongoing basis.

All figures for waste have been calculated as 'delivered to'. This means that this is the amount DTU delivers to the waste handler and pays for. The figures thus do not say anything about the actual treatment of the waste.

## Attractive place to study and work

All key figures for study programmes have been stated as at 1 October of the given years.

### International staff and students

International students are defined as graduate students who have a qualifying degree from abroad. The reason why the report does not comprise international bachelor students is that all DTU's BEng and BSc programmes are offered in Danish, except for General Engineering.

International employees are defined as the proportion of FTEs who do not have Danish nationality.

### Age

Age and average ages have been calculated based on the number of persons employed as of December 2021 and their age at that time.

### Staff categories

Scientific staff: The following positions are included in the category: Professor, professor with special responsibilities/assignments, fellow, associate professor, assistant professor (also called Faculty positions, where there is a teaching obligation of 20-50 per cent of the working hours), research specialist, senior researcher, senior adviser, researcher, postdoc, research assistant (also called research staff), assistant researcher, visiting professor/associate professor, external lecturer, teaching assistant, assistant lecturer, external examiner, scientific staff employed in social scheme, other scientific staff, PhD (also called Other scientific staff).

Technical/administrative staff: The following positions are included in the category: Deputy heads of department, heads of administration, special consultants and senior executive officers, academics, clerical staff, technicians, trainees/apprentices, student assistants, technical/administrative staff employed in social scheme, other technical/administrative staff.

### People with functional impairment

Students with functional impairment are defined as those students who are eligible for support under the SPS (Special Educational Support) scheme, established by the Danish State and administered by the National Agency for Education and Quality.

Functional impairments may concern dyslexia, mental functional impairment/development disorder, visual impairment, hearing impairment, mobility disability, chronic or serious illness.

### Managers with HR responsibilities

In connection with statements on gender, reference is made to managers with HR responsibilities. The statement is based on data retrievals from DTU's employee database and includes all employees registered in our personnel system with management responsibility for employee development interviews, recruitments and dismissals, approval of time registrations, etc.

### Sickness absence

The statement includes the average number of sick days per employee, excluding sick child.

### Accidents at work

An accident at work is a sudden incident in connection with work that results in an employee being physically or mentally injured. Data on accidents at work is gathered in DTU's incident application (Injury).

### LTIF (Lost Time Injury Frequency Rate)

The Lost Time Injury Frequency Rate (LTIF) is calculated as the number of accidents at work with absence per 1 million working hours. The LTIF is calculated based on collection of data on accidents with absence in DTU's incident application (Injury) relative to hours worked at DTU.

## Governance with accountability and research integrity

### Whistleblower scheme

DTU's whistleblower scheme is based on EU legislation and the Danish Act on Protection of Whistleblowers and makes it possible to report, in confidentiality, matters and behaviour of a serious nature experienced in relation to DTU.

### Good scientific practice

The term is not reserved for DTU, but is widely and globally recognized in the world of research. In a Danish context, it is defined in the Danish Code of Conduct for Research Integrity, published by the Ministry of Higher Education and Science in 2015.



# Ambitions and progress

The headings of the following datasheets are identical with focus areas described under resource consumption with care, attractive place to study and work, as well as governance with accountability and research integrity, respectively, pages 12-51. The datasheets provide insight into results and development in focus areas and thus put the future-oriented 2023 and 2025 objectives into perspective. Selected results have been described, and in the target areas where the focus is on quantitative data, a time series is stated. DTU's policies and guidelines, which form the basis for the ambition and objectives in the individual focus areas, have been highlighted.



# Energy-related climate footprint

## Objectives

**2023:** DTU has optimized CO<sub>2</sub>e reduction on the energy consumption parameters that the University can influence directly.

**2025:** DTU has reduced CO<sub>2</sub>e emissions related to DTU's energy consumption.

## DTU's policies

- Sub-policy on sustainability on DTU's campuses
- Procurement policy appendix: Sustainability in procurement
- Sub-policy on policy for transport and meeting activity

## Development

**Table 1: Development in focus area expressed via energy consumption indicators**

	2017-2019 (avg.)	2020	2021	Development in % 2017-2019 to 2021
<b>Energy consumption</b>				
<i>DTU's ambition is a stable total energy consumption despite expectations of increased research activity</i>				
Electricity consumption (MWh) (absolute electricity consumption incl. electricity consumption for research processes)	64,410	63,703	67,877	
Heat consumption (absolute heat consumption incl. process heat (e.g. steam), Scopes 1 + 2) (MWh) <sup>A</sup>	72,943	68,220	78,481	
Energy consumption total (MWh)	137,353	131,923	146,358	
Development in total energy consumption 2017-2019 to 2021 (per cent)				7%
CO <sub>2</sub> e emission from total energy consumption (electricity, heating, and cooling) (tonnes) <sup>B</sup>	22,962	16,884	17,962	-22%
<i>DTU's ambition is to reduce energy consumption per FTE</i>				
Electricity consumption (MWh/FTE)	4.6	4.4	4.5	
Heat consumption (MWh/FTE)	5.2	4.7	5.2	
Energy consumption total (MWh/FTE)	9.8	9.1	9.7	
Development in energy consumption per FTE 2017-2019 to 2021 (per cent)				-1%
CO <sub>2</sub> e emission per FTE (tonnes)	1.6	1.2	1.2	-28%

A) Scope 1 primarily steam production at Lyngby Campus. DANA is not included in these figures.  
 B) CO<sub>2</sub> from electricity consumption reflects the national energy mix.

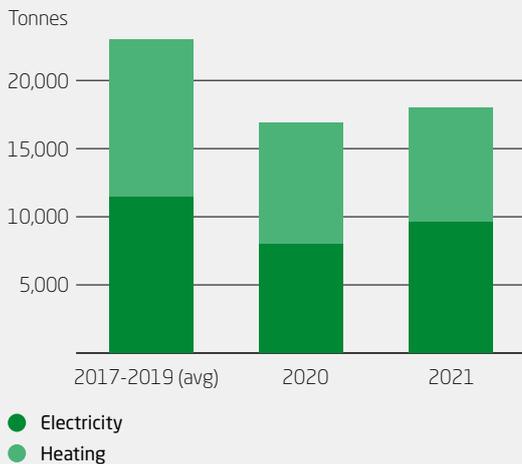
Both electricity consumption and heat consumption have increased relative to 2020 and 2017-2019. In the summer of 2020, the district heating supply to Lyngby Campus was switched to Vestforbrændingen as part of DTU's strategy to be supplied with energy with the lowest possible greenhouse gas emissions. This is the primary reason for reduced carbon emissions in 2020. 2021 was colder than the previous years, which is assessed to

be the reason for the increased heat consumption. In 2021, DTU purchased certificates for green power for its entire electricity consumption, corresponding to a market-based reduction in CO<sub>2</sub>e of 9,638 tonnes. For a number of years, efforts have been made to promote low-energy lighting with systematic replacement of light sources with LED at DTU, and approximately 60 per cent of all light sources on the three main campuses have been replaced.

**CO<sub>2</sub>e emission**

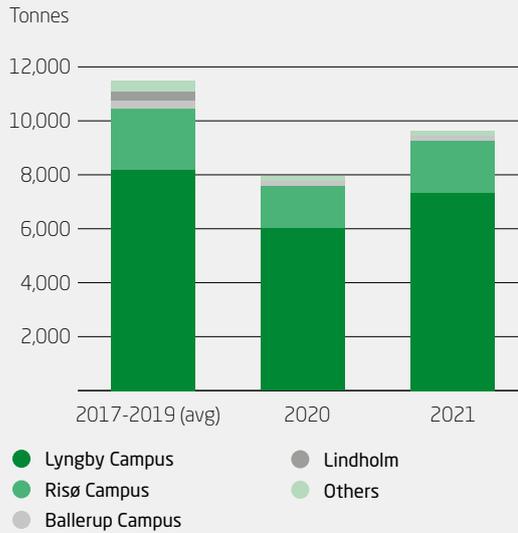
Details about the CO<sub>2</sub>e emission at DTU are given in the tables below. Emission per location primarily reflects campus size, physical location of research infrastructure, and the state of the buildings.

**Table 2: Total CO<sub>2</sub>e from electricity and heating**

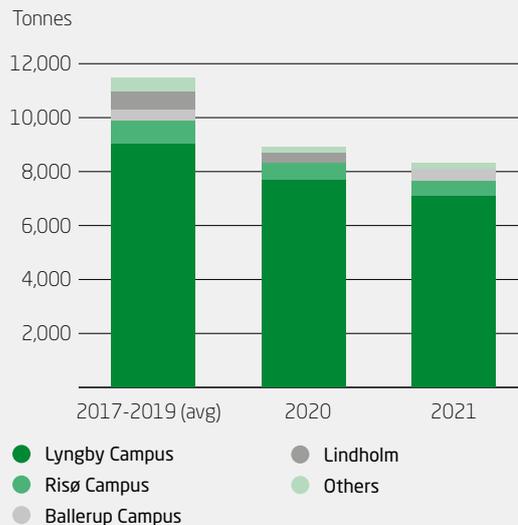


The majority of CO<sub>2</sub>e emissions from electricity relate to ventilation systems in laboratories, operation of IT and server rooms, cooling systems, and experiments conducted in the large research facilities.

**Table 3: CO<sub>2</sub>e emission from electricity per location**



**Table 4: CO<sub>2</sub>e from heating per location: (both heating and process heat, scopes 1 and 2)**



A decrease is seen in CO<sub>2</sub>e emissions from heating from 2019-2020, which is due, among other reasons, to the relocation of DTU Energy (Department of Energy Conversion and Storage) from outdated buildings on Risø Campus to a new building on Lyngby Campus and vacation of the premises on the island of Lindholm.



## Circular economy in operations

### Objectives

**2023:** DTU has developed action plans for reducing negative impacts in DTU's resource consumption.

**2025:** DTU has implemented procedures that measurably promote circular economy in university operations.

### DTU's policies

- Sub-policy on sustainability on DTU's campuses
- Procurement policy appendix: Sustainability in procurement
- Sub-policy on policy for transport and meeting activity

### Development

**Table 1: Development in the focus area expressed via indicators for waste as a resource, water, and transport**

	2017-2019 (avg.)	2020	2021	Development in % 2017-2019 to 2021
<b>Waste as a resource</b>				
<i>DTU reduces the total waste volume</i>				
Waste volume (tonnes) <sup>A</sup>	3,025	2,263	2,513	
Development in waste volume 2017-2019 to 2021 (per cent) <sup>B</sup>				-17%
Waste volume per FTE (kg)	216	157	166	
Development in waste volume per FTE 2017-2019 to 2021 (per cent)				-23%
<i>DTU increases its share of actual recycled waste</i>				
Share of waste volume delivered for recycling (per cent) <sup>C</sup>	65%	62%	67%	
Development in share of waste volume delivered for recycling 2017-2019 to 2021				3%
Waste volume delivered for recycling per FTE (kg)	141	98	111	
<b>Water</b>				
<i>DTU reduces consumption of tap water</i>				
Consumption of tap water (m <sup>3</sup> )	170,481	136,712	133,699	
Development in consumption 2017-2019 to 2021 (per cent) <sup>D</sup>				-22%
Consumption of tap water per FTE (m <sup>3</sup> )	12.2	9.5	8.8	
Development in consumption 2017-2019 to 2021 (per cent)				-27%
<b>Transport</b>				
<i>DTU reduces the number of kilometres flown per FTE</i>				
Number of km flown total (1,000 km)	53,866	13,077	5,910	
Number of km flown per FTE	9,204	2,234	1,015	
Development in number of km flown per FTE 2017-2019 to 2021 (per cent) <sup>E</sup>				-89%
CO <sub>2</sub> e emission per FTE (tonnes)	1406	352	193	

A) All waste volumes registered on all campuses.

B) Decrease in volume is attributed to the COVID-19 pandemic and derived reduced campus activity.

C) Recycling percentage for all fractions and all campuses. Stated as delivered for recycling.

D) Decrease in consumption is attributed to the COVID-19 pandemic and related reduced campus activity.

E) Decrease in number of km flown is attributed to the COVID-19 pandemic and related travel restrictions.

## Procurement

In recent years, DTU has significantly strengthened its sustainability initiatives in corporate procurement. In 2020, a policy was developed as the starting point for the promotion of sustainable procurement in standard contracts and procedures as well as the development of a process model for responsible procurement 'DTU Procurement Sustainability Model'. Up to 90 per cent of the goods and services

procured by DTU are acquired either through DTU's procurement contracts or through public procurement procedures for large-scale individual purchases (project procurement). Where there is an agreement, procurement must generally be made under the agreement regardless of the amount involved. This allows DTU to negotiate better prices and supports more sustainable procurement.





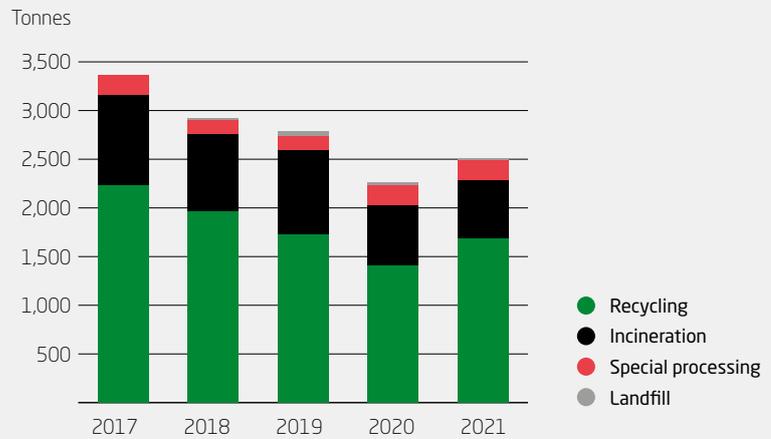
Resource consumption with care

## Waste and recycling

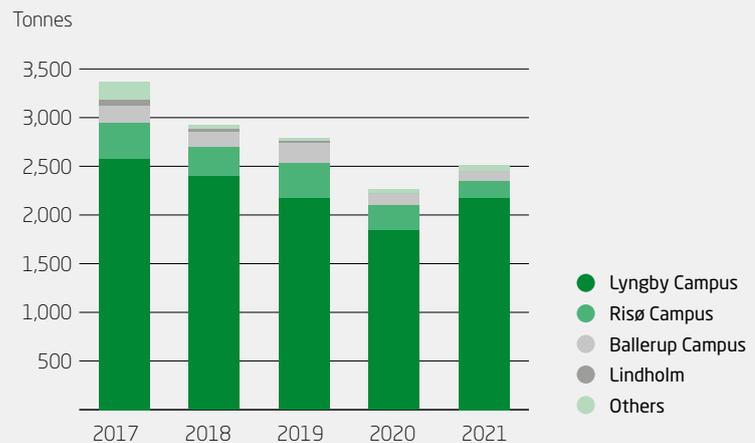
The COVID-19 lockdown had a major impact on DTU's waste volumes, which explains the reduction in 2020 in particular. However, chemical waste and clinical risk waste have increased from 2020, which is especially due to DTU's participation in COVID-19 diagnostics. The main reason for the increase in the waste volumes for other locations from 2020 is that, at DTU's location in Hirtshals, fish waste was previously used for mink feed, but is now included in the waste volumes. DTU has increased its waste schemes with more fractions for recycling and introduced uniform procedures across the whole of DTU. Inside the buildings, physical sorting solutions have been established close to the users and initiatives have been taken to support their use.

There has been an increase in education and training of employees responsible for hazardous waste management in order to improve the knowledge level and competence among staff who sort and pack the waste for transport. The goal is a better and safer working environment and minimization of environmental risks.

**Table 2: Total waste volumes, broken down by processing type**



**Table 3: Total waste, broken down by locations**



## Transport

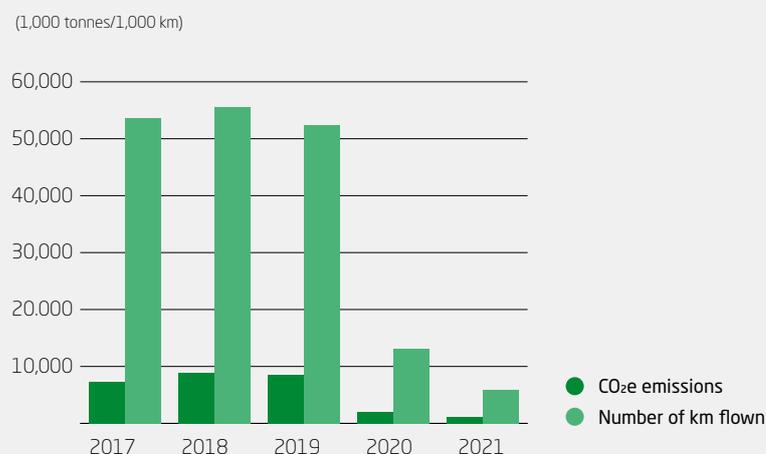
DTU focuses on making it attractive and easy to use public and green modes of transport for work-related transport to and from campus. In 2020, DTU launched a sub-policy on transport and meeting activity, which requires a conscious and continuous weighing of how the University's meeting, teaching, and transport needs best support DTU's objective to reduce its climate and environmental footprint while also complying with its goals for well-being and efficiency. As a general rule, means of public transport must be used for work-related travelling rather than means of private transport. To make travel by train an attractive alternative, longer trips can be made on first class if the travel time is used for work purposes. DTU has company agreements with electric car sharing companies, which means that cars are almost always available at Lyngby Campus and Ballerup Campus. In the period from 2019 to the end of 2022, the number of charging stations will be increase from 12 to 50 double charging stations.

In connection with the planning of flights, it should always be considered whether several activities can be gathered in the same journey to reduce carbon emissions as much as possible. Direct flights must be prioritized, as emissions are highest in connection with take-off and landing.

Table 4 shows a significant decrease in 2020 and 2021 for both the number of km flown and related CO<sub>2</sub>e emissions, which is attributed to travel restrictions in connection with the COVID-19 pandemic. On average, each employee flew 1,015 km in 2021. Flights are primarily booked through DTU's tour operator (Carlson Wagonlit), which also provides information about related carbon emission factor and km travelled for the individual flights. DTU recognizes 'Radiative Forcing Factor' and scales up for the few flights purchased outside the agreement.

Table 5 shows statements of air travel activity. The distribution of destinations supports the picture that DTU is involved in a lot of international cooperation.

**Table 4. Number of km flown and related CO<sub>2</sub>e emissions**



**Table 5. Flight destinations**





Resource consumption with care

## Sustainable campus development

### Objectives

**2023:** DTU has strengthened sustainability on its campuses expressed in terms of built-up environment, nature, and art.

**2025:** DTU's campuses and buildings are characterised by sustainability, quality, and profitability.

### DTU's policies

- Sub-policy on sustainability on DTU's campus areas
- Campus plan Lyngby
- Campus plan Risø
- Campus plan Ballerup
- DTU Art Programme 2020-2025

### Development

Below are highlighted some of the many actions and initiatives that have contributed to strengthening sustainability on DTU's campuses. Towards 2025, monitoring will be done to ensure that the development still entails relevant priorities and activities that are well received by DTU's surroundings and users.

Selected results 2020-2021:

- Plan certification of DTU Lyngby Campus Plan at Gold level in accordance with the DGNB sustainability class for urban districts. A total of 1.11 km<sup>2</sup>, and, at that time, the largest urban district with this certification in Denmark.
- New construction, Building 374 Lyngby Campus (houses DTU Skylab), DGNB Gold and, as the first building in Denmark, DGNB Diamond—the award for architectural excellence.

- New construction, pre-certification of Building 357 in Lyngby.
- New construction, Building 310 Lyngby Campus (houses DTU Energy), received the Digitalization Award because the building project utilized the digital opportunities extensively—from initial public procurement procedure through the construction process to handover.
- Launch of DTUplus Art and the Architecture Route. The app contains an interactive map of the two routes and provides an insight into works of art and architecture at DTU in text, images, and audio narratives. The app has been developed by DTU students with support from the Corrit Foundation.

*From its formation in 2013, DTU's innovation hub DTU Skylab has experienced great demand for their activities in entrepreneurship, prototyping, and project processes. In 2020, the facilities tripled in size, and the new building was recognized with DGNB awards for sustainability and architecture. It provides a physical setting that supports the vision that DTU Skylab engages students, researchers, and the business sector in an open interdisciplinary ecosystem for technology and business.*





Attractive  
place to study  
and work

## Diversity, equity, and inclusion

### Objectives

**2023:** All heads of department and HR staff have completed competence development in bias-conscious behaviour and bias mechanisms.

**2025:** DTU aims to ensure that everyone experiences equal education and career opportunities.

### DTU's policies

- DTU's personnel policy
- DTU Leadership Foundation
- Equal opportunities policy
- Diversity, equity, and inclusion at DTU, including the Gender Equality Plan
- Sub-policy on disabled students at DTU



## Development

**Table 1: Development in the focus area expressed via indicators for internationalization, age, social and pedagogical accessibility, and gender balance**

	2017-2019 (avg.)	2020	2021
<b>Internationalization</b>			
<i>DTU is an attractive place to study for international students.</i>			
Total MSc students	4,092	4,834	5,373
Share of MSc students with international background in per cent	40%	41%	46%
Number of nationalities among DTU's students	100	107	114
<i>DTU is an attractive workplace for international researchers (all types of scientific staff)</i>			
Total researchers, FTEs	3,246	3,278	3,302
Proportion of international researchers in per cent	29%	30%	31%
Number of nationalities among DTU's students	102	102	114
<b>Age</b>			
<i>DTU is an increasingly attractive workplace for young researchers</i>			
Junior scientific staff positions (postdoc, researcher, assistant professor)	-	-	705
Share of junior scientific staff positions that are open-ended	-	-	148
Share of junior scientific staff positions that are open-ended in per cent	-	-	21%
<b>Social and pedagogical accessibility</b>			
<i>DTU is an educational institution that works to ensure that we are physically, socially, and pedagogically accessible</i>			
Number of DTU students with functional impairment receiving support under the public scheme Special Educational Support (SPS)	-	560	773
Percentage of total number of students	-	-	6%
<b>Gender balance</b>			
<i>DTU works to ensure that the gender balance among newly admitted bachelor students reflects the gender balance among students who meet the admission requirements at DTU (predominantly mathematics A, physics B, chemistry C), where typically 40-45 per cent of a cohort of students in upper secondary education programmes are women.</i>			
Gender balance among newly admitted BEng students, women/men (per cent)	25% / 75%	26% / 74%	28% / 72%
Gender balance among newly admitted BSc students, women/men (per cent)	35% / 65%	35% / 65%	33% / 67%
Gender balance among DTU's total student population, women/men (per cent)	30% / 70%	32% / 68%	32% / 68%
<i>DTU strengthens the gender balance among employees. For the scientific staff job categories, the aim is a gender balance of at least 30/70 per cent or a proportion corresponding to the previous career level. For both scientific staff and technical/administrative staff, the ambition is that the proportion of male and female applicants, respectively, is in line with the proportion of corresponding new appointments.</i>			
Gender balance among PhD population (DTU employees), women/men (per cent)	-	35% / 65%	35% / 65%
Gender balance among permanent scientific staff, women/men (per cent)	-	-	22% / 78%
Gender balance among scientific staff management (managers with HR responsibilities), women/men (per cent)	-	19% / 81%	18% / 82%
Gender balance among permanent technical/administrative staff, women/men (per cent)	-	-	49% / 51%
Gender balance among technical/administrative staff management (managers with HR responsibilities), women/men (per cent)	-	43% / 57%	45% / 55%
Gender balance among DTU's University Leadership and Management Forum, women/men (per cent)	-	-	19% / 81%
Gender balance on DTU's Board of Governors, women/men (per cent)	-	40% / 60%	40% / 60%



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and work

## Internationalization

In recent years, there has been a general increase in the intake of international MSc students. In 2021, more international students have been admitted to the MSc programme than students with a Danish admission basis. DTU finds that this is a positive development that meets the challenge that Denmark will face a lack of engineering graduates in the future. The value of international engineering students and graduates for Denmark has been studied, and the conclusion is that they contribute with socio-economic value in the form of labour, tax, and VAT, etc.<sup>6</sup>

There is still a positive development in the share of international scientific staff members, which supports DTU's strategy of being a university with an international profile.

6) Graduate analysis of DTU's Bachelors of Engineering (BEng) and Masters of Science in Engineering (MSc Eng), DAMVAD Analytics 2019.

## Age

**Table 2: Age distribution and average age 2021, broken down by job category**

Job category	21-30 years	31-40 years	41-50 years	51-60 years	Over 60 years	Average age	
						2021	2020
Professor	0%	2%	30%	41%	28%	55	55
Professor with special responsibilities	0%	7%	48%	28%	17%	51	52
Associate professor	0%	28%	36%	23%	12%	48	48
Assistant professor	5%	85%	10%	0%	0%	36	36
<b>Faculty, total</b>	<b>1%</b>	<b>25%</b>	<b>32%</b>	<b>27%</b>	<b>16%</b>	<b>49</b>	<b>49</b>
Senior researcher	0%	27%	42%	20%	11%	47	47
Senior adviser	0%	7%	24%	34%	34%	56	55
Researcher	1%	83%	14%	2%	0%	37	36
Postdoc	27%	67%	5%	0%	0%	33	33
Research assistant	71%	26%	2%	0%	1%	29	29
<b>Research staff, total</b>	<b>26%</b>	<b>50%</b>	<b>15%</b>	<b>6%</b>	<b>4%</b>	<b>37</b>	<b>36</b>
Part-time scientific staff	83%	5%	3%	4%	4%	28	28
Other scientific staff	9%	14%	17%	31%	29%	51	55
<b>Scientific staff, total</b>	<b>33%</b>	<b>31%</b>	<b>17%</b>	<b>11%</b>	<b>8%</b>	<b>38</b>	<b>38</b>
<b>PhD</b>	<b>83%</b>	<b>16%</b>	<b>1%</b>	<b>0%</b>	<b>0%</b>	<b>28</b>	<b>28</b>
<b>Technical/administrative staff</b>	<b>20%</b>	<b>18%</b>	<b>24%</b>	<b>27%</b>	<b>11%</b>	<b>45</b>	<b>45</b>

## Diversity and inclusion

In recent years, diversity and inclusion have been a high priority both on DTU’s overall agenda and as an underlying premise in the work with recruitment of students and staff. In 2020, DTU initiated a DTU Gender Equality Plan, which aims to ensure cohesive and cross-organizational progress in diversity and inclusion. In addition, all departments and units have undertaken to initiate and implement locally adapted activities and initiatives that support the work with diversity and inclusion in their annual action plans.

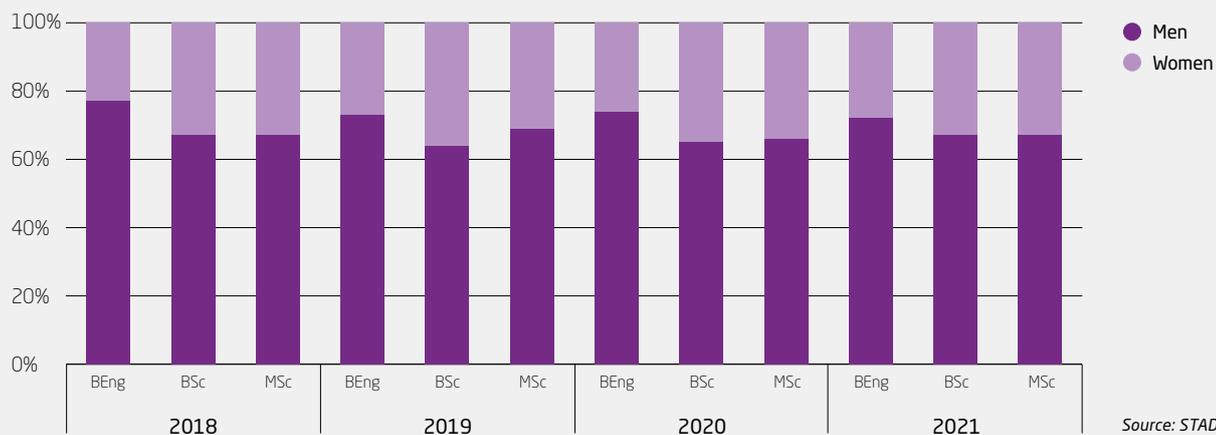
In 2020, a project was launched aimed at unconscious bias in the work and teaching and guidance situation. The project will address cultural and structural barriers that can stand in the way of everyone being able to realize their full potential at DTU regardless of their background. Finally, a Forum for Diversity and Inclusion (ForDI) has been established to ensure

dialogue and sparring between central management and representatives from staff and students at DTU.

IT and Engineering Camps have been held for young women to strengthen the recruitment work for the study programmes in IT, electrical engineering, and mechanical engineering.

Since 2018, the proportion of women admitted to BSc and MSc programmes has been around 32-35 per cent, and the intake of women in BEng programmes has increased from 23 per cent to 28 per cent. Over a 20-year period, the proportion of women has continuously increased from 20-21 per cent to 32-35 per cent. There is no significant difference in the proportion of women in the intake of Danish and international students.

**Table 3: The gender distribution in intake on BEng, BSc and MSc programmes in per cent**





## Attractive place to study and work

The average proportion of women in the intake in the BEng, BSc and MSc programmes covers large differences in the study programmes, here examples from 2021:

In the BSc programme, the proportion of women ranges from 7 per cent in the Mechanical Engineering programme to 88 per cent in the Quantitative

Biology and Disease Modelling programme. The BEng programme ranges from 6 per cent women in IT and Economics to 64 per cent women in Health Technology. There is also great variation in the study programmes under the MSc programme. From 9 per cent in Mechanical Engineering to 73 per cent in Food Technology.

**Table 4: Proportion of women in Faculty**

	2017	2018	2019 <sup>A</sup>	2020 <sup>A</sup>	2021 <sup>A</sup>
<b>Professors, total</b>	<b>188</b>	<b>195</b>	<b>276</b>	<b>285</b>	<b>298</b>
of which women	11%	13%	13%	14%	14%
<b>Associate professors, total</b>	<b>439</b>	<b>436</b>	<b>439</b>	<b>434</b>	<b>437</b>
of which women	15%	17%	17%	17%	18%
<b>Assistant professors, total</b>	<b>99</b>	<b>105</b>	<b>99</b>	<b>88</b>	<b>80</b>
of which women	36%	30%	31%	35%	34%

A) The number of professors is higher in 2019, 2020, and 2021, as all professors are included in Faculty from 2019





Attractive  
place to study  
and work

## Well-being, health, and safety

### Objectives

**2023:** All students and staff feel safe talking about how they are thriving and know where to look for help if they are not thriving well.

**2025:** DTU provides a study and working environment that is actively chosen.

### DTU's policies

- Study programme policy
- Staff policy
- Working environment policy
- Well-being dialogues at DTU

### Development

**Table 1: Development in the focus area expressed via indicators for well-being, health, and LTIF**

	2017-2019 (avg.)	2020	2021	Development in % 2017-2019 to 2021
<b>Well-being</b>				
<i>DTU creates a study environment that contributes positively to students' well-being</i>				
The study environment survey's statement "I generally feel very comfortable in my study programme" on a scale from 1 to 5.	-	4.0	3.9	
<i>DTU has an organizational culture that contributes to increased dialogue on well-being</i>				
Conducted well-being dialogues	-	-	29 of DTU's 30 units have completed the Wellbeing Dialogue.	
<b>Sickness absence</b>				
<i>DTU's managers work proactively to reduce work-related absence through dialogue</i>				
Average number of sick days per employee, excluding sick child days	6.6	5.5	5.3	
<b>Health services</b>				
<i>DTU has offers for students and staff that support health and well-being</i>				
Members of DTU's Sport and sports club offers	4,229	3,551	2,897	
Development in membership in per cent in the period 2017-2019 to 2021				-32%
<b>Accidents at work</b>				
<i>DTU has less than 1 accident at work per million working hours</i>				
Lost Time Incident Frequency (LTIF)	2.30	0.98	1.61	
Development in LTIF in the period 2017-2019 to 2021				-30%

## Well-being

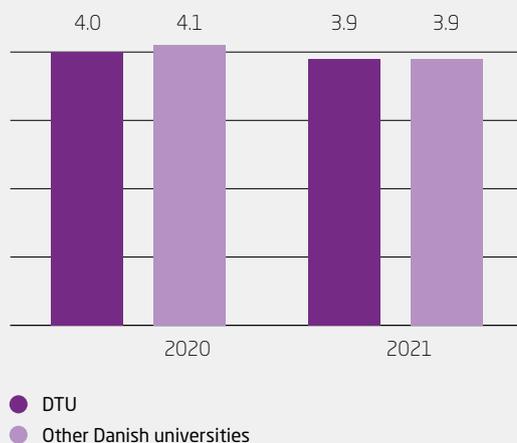
### Students

DTU’s study environment survey shows that the general satisfaction with the University’s study environment is high, and that the vast majority of students thrive at DTU. The students rate the social environment well and are particularly satisfied with the academic level and commitment they experience from their lecturers and fellow students. However, the survey also shows that many students feel great study pressure on a daily basis, and that some students feel lonely during their study period. DTU deals actively with these themes in its well-being work.

There is a predominance of both female students and international students among those who experience the challenges the most.

**Table 2: “I generally feel very comfortable in my study programme”—DTU relative to the other Danish universities**

A scale of 1 to 5, with 5 being strongly agree



### Employees

Inquiries to DTU’s psychological counselling service mainly concern collaboration problems, return to work after COVID-19 lockdown, and stress.

The psychological counselling service was established as an internal scheme in 2012. The number of inquiries has remained stable over the years at approx. 200 annually. The success criterion is that all employees know about the service and experience that it is legitimate to use it.

Young researchers express that the work culture sometimes puts them under extra pressure with opposing expectations. The trend is prevented and remedied through the offer of anonymous psychological counselling, consultations regarding absence, and a dialogue with the researcher’s own manager about flexible work organization. A number of the initiatives are targeted at the individual employee, but the work pressure experienced by researchers is also very much structural and cultural. Through our managers, DTU seeks to develop a culture in which young researchers experience more stability in their employment.

As part of the well-being work, in 2021 there was focus on discussing what a sustainable working life means to the individual employee. In 2020, DTU formulated a sub-policy on working day flexibility. The sub-policy has a clear objective that flexibility, well-being, and working community must be embraced. Among other initiatives, this has given rise to a large number of dialogues between managers and employees about wishes for flexibility and individual well-being needs.



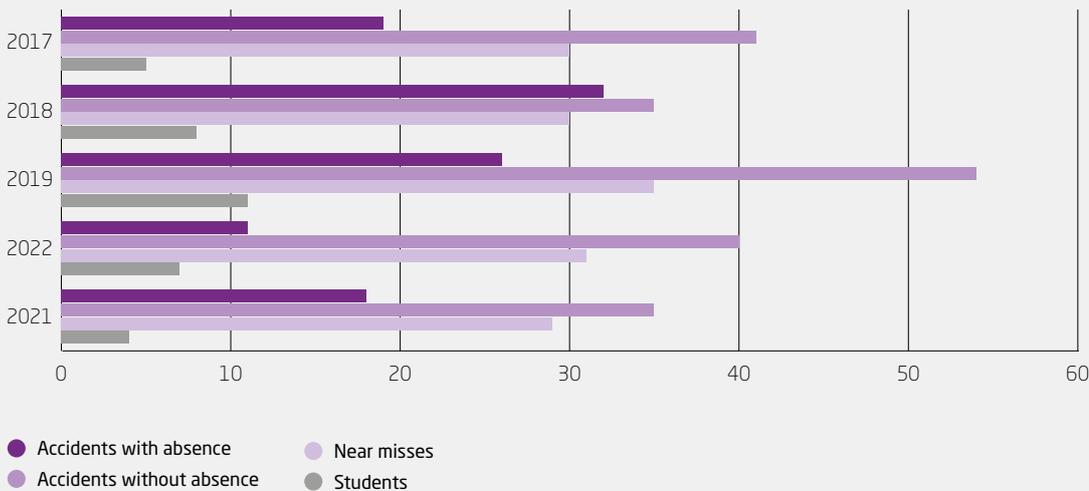
## Attractive place to study and work

### Emergency response and accidents at work

In 2021, DTU continued to handle the consequences of COVID-19, and the objective has been to maintain core deliveries to the greatest possible extent within the framework of the authorities' recommendations and guidelines. In 2021, DTU's emergency response plan was updated so that it now provides the framework for the whole organization, so that the plan complies with the principles for business continuity management, and so that roles, responsibilities,

and mandate have been specified. Over the years, DTU's corporate emergency management has developed and been adapted to the emergency response programme. In 2021, a new emergency response programme was prepared, in force for the period 2021-25, where the programme is expected to contribute to the continued development of DTU's capacity build-up to promote a safety culture.

**Table 3: Accidents at work**



The general picture shows that the total number of reported accidents and near misses is on a par with 2020. Overall, 86 accidents and near misses were reported in 2021, against 89 in 2020. Despite the low number of registered accidents, there was a continuation of the trend seen in previous years

with relatively few accidents with high absence and many accidents with low absence. Of the 18 reported accidents with a total of 117 days of absence, four accidents with falls resulted in 61 days of absence alone. The consequences of these were broken collarbones and ribs, as well as bruised ribs.

## Communities

### Objectives

**2023:** DTU has worked proactively with communities as a driving force for strengthened learning, development, and well-being.

**2025:** DTU is a study and working environment known for strong academic, professional, and social communities.

### DTU's policies

- Study programme policy
- Sub-policy on study environment
- DTU Leadership Foundation
- Staff policy

## Development

**Table 1: Development in the focus area expressed via indicators on 'DTU as host' and alumni**

	2017-2019 (avg.)	2020	2021
<b>DTU as host</b>			
<i>DTU's followers on social media experience technology for people</i>			
LinkedIn	-	120,000	140,000
Twitter	22,000	14,000	15,445
Facebook	29,833	36,000	38,500
Instagram	-	11,000	13,700
<b>Alumni</b>			
<i>It is attractive to be part of DTU's alumni network DTU Alumni</i>			
Number of members	-	35,668	37,370



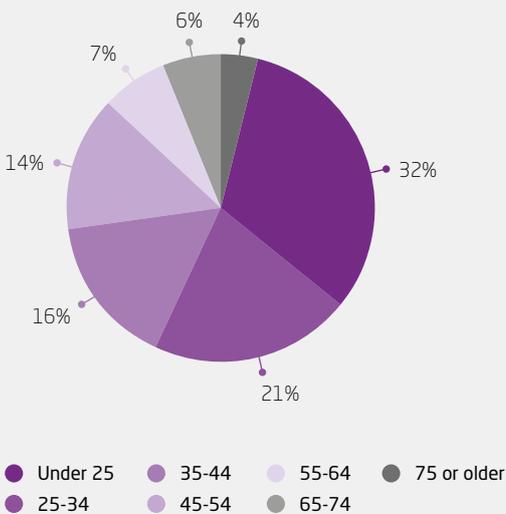
Attractive place to study and work

## Alumni

37,370 people—more than half of DTU’s living alumni—are members of the University’s alumni network, DTU Alumni. The alumni network is of strategic importance to DTU because—with their experience and commitment—the alumni contribute to the development of the study and research

environment and create connections between DTU and the outside world. For example, during 2021, approximately 300 alumni volunteered as mentors for MSc students as well as for students and employees engaged in establishing start-ups.

**Table 2: Age distribution in DTU Alumni - DTU’s alumni network**



Other selected results 2020-2021 that contribute to strengthening social and academic and professional communities regarding technology for people:

- One example of student-driven projects that strengthen both academic competency and social community is Danstar, which successfully launched the first student-built dual-fuel rocket on the European continent in Portugal in October 2021. DTU Roadrunners, which aims is to design highly fuel-efficient eco-cars, is another example. DTU Roadrunners participates in the annual Shell Eco-marathon, where the participants compete on running the longest on one litre of fuel.
- In 2020, DTU was the programme manager for the national celebration of the 200th anniversary of Hans Christian Ørsted’s discovery of electromagnetism. The project has highlighted the importance of universities and research to society. Despite COVID-19 restrictions and the changes they brought with them, 1,073,403 people attended one of the 129 related events.
- During the 2021 summer holidays, 287 children and young people aged 6-17 participated in DTU Summer Science, which gives schoolchildren and their families the opportunity to learn about natural sciences. DTU also opened its doors to ordinary citizens by offering guided tours of Lyngby Campus, including as an activity during the Danish Science Festival.

**37,370** members  
equal to 51 per cent of all living alumni

**76%**  
men

**27%**  
other nationality than Danish

**24%**  
women

**73%**  
residing in the Capital Region of Denmark

## Academic ceremonies



### **DTU** Commemoration Day 2021

2512 attended the event virtually



### **6** Graduate receptions

815 graduates participated physically and 41 via streaming



### **1** PhD graduate reception

143 PhD graduates participated physically and 21 via streaming



### **1** DTU Ørsted Lecture

139 participated physically, 88 via live streaming and 1,142 subsequent views on YouTube



### **10** Professor inaugural lectures

8 physical and 2 virtual inaugural lectures. 3 were postponed



### **DTU** Professor dinner

190 guests attended



## Management and organization

### Objectives

**2023:** Students, employees, and managers have strengthened knowledge of and trust in DTU as a dialogue-based organization.

**2025:** DTU has strengthened its reputation as a university where people think, talk, and work together across disciplines and cultures.

### DTU's policies

- DTU Leadership Foundation
- Quality assurance policy
- Work Culture
- Guidelines for abusive behaviour
- Guidelines for whistleblower scheme at DTU

### Development

Selected results from 2020-2021 that contribute to strengthening management and organization at DTU:

- With effect from 2021, DTU has replaced the University's anonymous well-being surveys and management evaluations with structured dialogue processes. The reason for this shift is a recognition that DTU is best able to respond to challenges when they are expressed out loud. The dialogue concepts have been developed in close cooperation between management and employees. DTU's HR partners follow the implementation closely.

DTU's Leadership Programme is a mandatory programme where managers meet across DTU. Just over 600 have completed the programme. In 2021, 40 managers participated in the five modules that support the implementation of DTU Leadership Role.

- DTU Management Day, a new initiative in 2021. More than 200 managers gathered and discussed the leadership role of the future. The event was positively evaluated and it was agreed with DTU's management that twice as many managers will participate in 2022.
- Prevention of offensive behaviour: In 2021, DTU established an easily accessible roadmap that visualizes 13 parties that the individual person can contact in case of experienced offensive behaviour. The roadmap shows what happens when the various parties are contacted.

## Research practice and research dissemination

### Objectives

**2023:** DTU’s students, employees, and managers have strengthened their knowledge of good research practice and research dissemination.

**2025:** DTU has strengthened its reputation as a university that contributes to setting high standards of good research practice and research dissemination.

### DTU’s policies

- Research policy
- The Danish Code of Conduct for Research Integrity–DTU
- DTU’s code of honour for students
- Quality assurance policy
- Communication policy
- Publication policy
- Animal welfare policy
- Guidelines for international collaboration
- Guidelines for dual-use
- Guidelines for use of non-human genetic resources for research (the Nagoya Protocol)

### Development

**Table 1: Number of students reported for cheating**

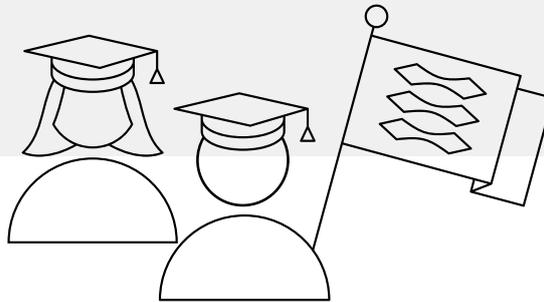
	2017-2019 (avg.)	2020	2021	Development in % 2017-2019 to 2021
<b>Good scientific practice</b>				
<i>DTU students are subject to DTU’s code of honour for examinations and other academic activity</i>				
Number of students reported for cheating	131	302	216	
Development 2017-2019 to 2021 in per cent of the number of students reported for cheating				65%

The increase in the period is probably due to the actual introduction of the code and the resulting greater focus on exam cheating. For 2020, it is assumed that the conversion of written exams to online home exams due to COVID-19 is the main reason for the increase.

Selected results 2020-2021 that contribute to strengthening good research practice and research dissemination:

- DTU has strengthened its collaboration with European alliance partners such as the Eurotech Universities Alliance and the Nordic Five Tech Alliance on issues relating to good research practice in international collaborations. Through such partnerships, DTU can ensure harmonization of its guidelines and international requirements and thus contribute to international collaboration taking place within the framework of responsible research practice.

- The Danish Environmental Protection Agency’s inspection of DTU in 2020/2021 regarding compliance with the ABS Regulation (Nagoya) was conducted without reservations.
- The Danish Business Authority’s inspection of DTU in 2021 regarding compliance with the export control rules was conducted without reservations.
- At a number of open meetings aimed at DTU’s researchers, DTU’s President has focused on the importance of participating in the public debate. DTU encourages its researchers to help qualify the public debate and contribute with research-based knowledge that is important to the development of society.



## DTU's code of honour for exams and other academic activities

"As a student at DTU, I acknowledge being subject to DTU's code of honour for examinations and other academic activity. I accept and respect that the high standards for academic credibility, accountability, and scientific integrity are equally applicable to me as a student as they are to lecturers, researchers, and other students at university level.

I therefore undertake to show responsibility and integrity in my work, and that my exam submissions will always reflect my own work, without having received oral or written assistance to which I am not entitled, including by digital means. I know that I must never copy (plagiarize) other people's ideas, thoughts, reports, or articles, but I am permitted to quote and refer to them using quotation marks and source references. I also know that I am not allowed to communicate with others during a written exam."

As a student at DTU, from day one you are covered by the same rules and academic principles as those applicable to DTU's lecturers and researchers. DTU expects you to show independence and integrity in your work.

Your exam result is a guarantee that you have acquired the qualifications and competences that a course contains and at the level that the assessment reflects. Therefore, it is important that you always present your own work at the exam.

## Data application and security

### Objectives

**2023:** DTU has implemented specific measures to strengthen data management.

**2025:** DTU is known for promoting open research and for working constructively with appropriate related security measures.

### DTU's policies

- Research policy 2022
- The Danish Code of Conduct for Research Integrity
- DTU policy on storage of primary materials and data (2016)
- Sub-policy on information security 2021
- DTU's guidelines for handling personal data 2019

### Development

**Table 1: Share of DTU publications in open access**

	2017-2019 (avg.)	2020	2021
<b>Open Access</b>			
<i>DTU wants all the University's publications to be freely accessible to make research as accessible as possible in accordance with principles of transparency, quality, and reusability.</i>			
Share of DTU publications in Open Access (in per cent)	65	73	74

Source: [www.oaindikator.dk](http://www.oaindikator.dk)

DTU was among the three universities that met this year's target figure of 72 per cent.

Selected results 2020-2021 which contribute to promoting good practices in data application and security:

- Extensive work has been done to develop material, guides, guidelines, and e-learning on the FAIR principles. In addition, courses in research data management are offered.
- DTU has been working with information security for a number of years and complies with the

principles of the ISO standard ISO27001. Based on a risk assessment, DTU determines the scope of security measures corresponding to the importance of the information in question and complies with legal requirements and agreements entered into, including licence terms. The risk assessment is revised every two years or as necessary, so that DTU's management can keep up to date on the current risk situation. This approach is reflected in DTU's Information Security Policy 2021.





