

Aalborg Universitet



Aalborg University Sustainability Report 2022-2023

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AALBORG
UNIVERSITY



THE GLOBAL GOALS
For Sustainable Development

Sustainability report 2022-2023

Aalborg University Sustainability Report

Aalborg University (AAU) was founded in 1974 in response to regional challenges and needs for education, growth, and employment. From its inception, external collaboration and problem-based learning (PBL) defined AAU, and these core elements remain to this day where AAU nationally is the preferred collaborative partner of businesses, taking into account university size, and the [problem-based learning model](#) is internationally recognized as The Aalborg Model.

The [2026 vision for AAU](#) is to be internationally recognized as a mission-oriented university that contributes to sustainable development. This sustainability report presents examples of how AAU, in various ways, contributes to each of the [17 Sustainable Development Goals](#).

Aalborg University Sustainability Report 2022-2023 is the result of a collaborative, inclusive process across AAU. The efforts on sustainability are showcased in cases from research, teaching, engagement and operations, and they all demonstrate broad commitment to sustainability at AAU. This report presents selected cases on sustainability activities at AAU; is not an exhaustive review of AAU's sustainability-related work.

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Times Higher Education Impact Rank overall - Aalborg University



FOREWORD

Mission-oriented approach to wicked problems

Wicked problems are by their very nature challenging and can seem impossible to solve. At Aalborg University, we believe that we can contribute to solving wicked problems through partnerships and working across traditional boundaries. We have made this ambition clear in our strategy “[Knowledge for the World 2022-2026](#)” where we put forward our vision to be internationally recognized as a mission-oriented university that contributes to sustainable development. Following this strategy, Aalborg University adopted the first two missions in 2023: well-being of children and young people, and sustainable energy supply. These two missions are a result of our strategic ambition to create knowledge for the world and will be an important part of our contribution to sustainable development going forward.

Given our mission-oriented approach, Aalborg University is driven by a larger purpose that goes beyond the impact of our own organization and aims to contribute to local, national and global sustainable development. Aalborg University aims to contribute to the UN Sustainable Development Goals (SDGs) based on a mission-oriented and action-driven approach with a wide range of societal stakeholders, such as researchers, the business community, interest groups, international partners and public sector organizations, to find the best solutions and create knowledge for the world.

Sustainability is a core part of all our activities at Aalborg University, and the SDGs provide a comprehensive framework for our sustainability efforts. To achieve the SDGs and overcome the urgent challenges we are facing, action is required from all actors in society. Aalborg University acknowledges the vital role of universities in tackling the global challenges presented in the SDGs and is actively working to solve these in ongoing collaborations and partnerships with local, regional and global stakeholders, embedding new and reinforced solutions that support sustainable development.

In 2023, AAU ranked 9th overall in the Times Higher Education Impact Rankings and 2nd for our contributions to SDG 4 Quality education, SDG 10 Reduced inequality and SDG 17 Partnerships for the goals. We are especially proud of these acknowledgements as they are a testament to our collaborative approach to creating knowledge for the world.

The 2022-2023 Sustainability Report presents examples of the work being done by staff and students from all faculties and departments to contribute to all the SDGs. These efforts support the SDGs through research, education, knowledge collaboration and operations to create impact at the local, national and international level, and make a difference to all generations.



Per Michael Johansen
Rector



Anne-Marie Kanstrup
Pro-Rector

Sustainability at AAU at a Glance



AAU is a **mission-oriented university**
With two missions adopted to support SDG 3 and SDG 7



No. 2 university in the world on SDG 4 in 2023
(out of 1304 institutions)



In 2023 AAU ranked in the **World Top 10** on sustainability in the THE Impact Rankings



AAU is the **best engineering university** in Europe



More than **51,000** green student meals in 2022-2023 at AAU



AAU developed its first **Climate Plan** in 2023



No. 2 university in the world on SDG 17 in 2023
(out of 1625 institutions)



8/10 leading scientists in Electronics and Electrical Engineering in Denmark came from AAU in 2023



No. 2 university in the world on SDG 10 in 2023
(out of 901 institutions)



51% reduction in water consumption per user in 2022 compared to 2006



50% of external members in AAU's board must be female



In 2022 AAU launched **8500 m²** Innovation HUB



90% of companies experience that collaboration with AAU leads to innovation



31% of AAU management must be female



75,000 m² of wild nature at AAU



98 cold water fountains across AAU

AAU at a Glance

Education

18.559 Students <i>(total)</i>	2.229 International students	826 PhD students
67 Bachelor programmes	94 Master programmes	

Who are we?

2.336 Research staff	1.337 Administrative staff	4 Faculties
--------------------------------	--------------------------------------	-----------------------

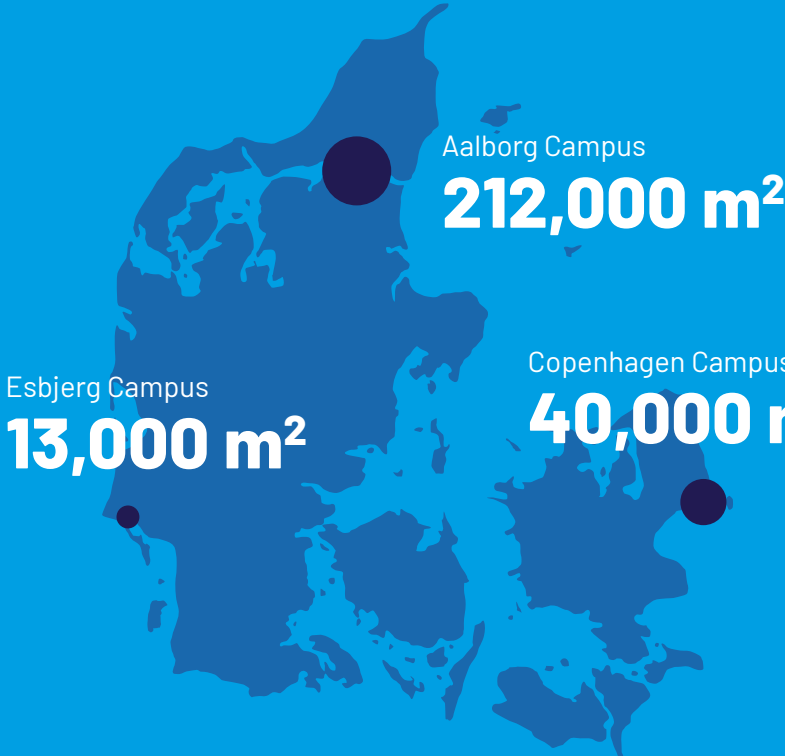
Grants



352	270	142	45
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- Danish public
- Danish private
- EU
- International

Where?



Aalborg Campus	212,000 m²
Copenhagen Campus	40,000 m²
Esbjerg Campus	13,000 m²

Sustainability at Aalborg university

At Aalborg University, we believe that knowledge can and must change the world. To that end, Aalborg University is a university with high ambitions. We seek knowledge through interaction with the world around us and are dedicated to solving real problems.

Aalborg University is a [leading university](#) in terms of supporting and promoting balanced and sustainable development, which according to the UN is [development that meets the needs of the present without compromising the ability of future generations to meet their own needs](#).

Aalborg University contributes to sustainable development through our core activities in research, learning and teaching, external leadership, and governance and operations.



Research

With Aalborg University's problem-based approach, researchers are committed to solving challenges and gaining new insights across traditional disciplines with the common goal of creating a better world. At our [four faculties](#), we address major societal challenges and aim to deliver applicable knowledge for the world through excellent research. Researchers across the university are working to help achieve sustainable development on a local, national and international level. We work to provide the necessary knowledge, technologies, innovations and pathways to enable implementation and achievement of the UN Sustainable Development Goals.

At Aalborg University, researchers work across disciplines and sectors to ensure that our research creates knowledge for the world. We engage in partnerships with businesses and public sector authorities to be able to deliver valuable knowledge as an important contribution to developing sustainable solutions to societal challenges.



Learning and teaching

The [PBL-based pedagogical model](#) of Aalborg University has become both nationally and internationally recognized by universities, researchers and students as an advanced, efficient learning model. Our goal is to drive change by educating graduates for the labour market of the future who ready on day one to solve future challenges. We work to continuously to ensure that our programme offerings meet the needs of surrounding communities and the future labour market.

All students at Aalborg University learn to collaborate, and to apply a critical, analytical, problem-oriented, and innovative approach, which will help them make their knowledge available to society. We educate graduates in a wide range of fields, and our engineering and science programmes are internationally recognized and are commonly [ranked among the very best](#).



External leadership and engagement

The journey towards a sustainable future necessitates a strong foundation of transformative knowledge, coupled with close partnerships with relevant stakeholders. Aalborg University's tradition of [strong collaborative relationships](#) with businesses, universities, civil society, and public sector authorities is thus one of the cornerstones of the university's contribution to the sustainable development of society. Collaboration with external stakeholders helps to ensure that both research and educational activities are relevant and contribute to the advancement of society.



Governance and operations

Aalborg University strives to [integrate sustainability in all activities](#), and we work strategically to reduce our negative environmental impact and create positive impacts instead. We work on energy saving targets, waste sorting, biodiversity, responsible procurement, promoting a safe, healthy working environment and strong governance structures.

Knowledge is the alpha and omega. The world needs universities that engage critically and constructively, and take responsibility for our shared future by transforming complex challenges into sustainable change.

AAU Strategy: Knowledge for the world 2022-2026



A safe and just world

In 2022, society was shocked by geopolitical events on European soil, inflation and an energy crisis that have changed the lives of many people. The implications continued into 2023 challenging collaboration and joint efforts on climate change etc. This all underscores the need for a safe and just world.

We live in a time of change, and relationships between humans, cultures, and institutions are changing. To bring about a safe and just world, co-creation in re-conceptualizing the relationship between public authorities and citizens must be ensured.

Security and safety are essential to achieve SDG 16 and require that national security sectors are effective and operate with respect for human life. To overcome the current imbalance and obtain a just world, it is important to uphold and reinforce the rule of law principles governed by strong institutions.

Safety in times of conflict requires defence mechanisms beyond those used in political arenas and on battlefields, as digitalization and technological advancements have increased the need for cyber security and for building cyber resilient infrastructures, supporting SDG 9.

Quality of life and the safety of many lives were impacted by the European energy crisis, which underlines the need for a transition to a green, resilient and flexible energy sector, supporting SDG 7.

At AAU, we strive to contribute to a safe and just world through our activities in research, education, outreach and operations. To shed light on some of our contributions, this page presents examples of initiatives aiming to support a safe and just world.

A consistent and detailed strategy for a fully decarbonized society

Members of the [Sustainable Energy Planning group](#) have presented [a strategy for achieving a fully decarbonized Danish energy system in 2045](#). The energy system analysis leads to the design of a Smart Energy System with the ability to balance all sectors of the complete energy system. In the analysis, issues such as international shipping and aviation, sustainable use of biomass, and exchange of electricity and gas with neighbouring countries are all considered. The strategy is an important step towards a green and resilient energy sector.

CRUCIAL

CRUCIAL addresses the challenge for utility infrastructures to assure stable operation that is resilient to malfunction, outages and cyberattacks. To this end, CRUCIAL will develop the next generation of monitoring and control software solutions. CRUCIAL's product is secure-by-design control and optimization software for uninterrupted operation of water and electricity infrastructures providing:

- Anomaly resilience (safety), i.e., the ability to detect human errors as well as cyberattacks and respond to them
- Confidentiality of algorithms and privacy

Punitive turn, Danish Style

In Nordic criminological and legal research literature, it is often argued that a rise of punitive populism took place in the 1990s - 'punitive turn, Nordic style'. [This project](#) examines whether and how this turn has influenced the legislative process in Danish criminal law-making and impacted substantive criminal law over the last four decades. The project aims to contribute to a knowledge-based nuancing of the criminal policy debate in Denmark and the possible consequences of the trends investigated for the quality of criminal law.

Danish universities and GTS institutes collaborate on defence technology development

Actors from across the Danish research sector are collaborating on defence technology development in the joint initiative [National Defence Technology Centre](#) (NFC) established in 2022. The aim is to contribute to a critical technological boost of the Danish Armed Forces and the Danish defence industry through interdisciplinary partnerships that combine technological innovation with civil, military, political and economic considerations to increase safety and security for Denmark and its allies. All eight Danish universities and five government-approved research and development organizations (GTS institutes) are participating.

Professor in the Department of Electronic Systems, Jens Myrup Pedersen, and Denmark's national cyber team puts focus on cyber security

AAU offers a [graduate degree specializing in cyber security](#) to qualify engineers to assist industry, companies and public institutions in handling cyberattacks, which is more important than ever. Our focus on cyber security at the Department for Electronic Systems was cemented by Professor Jens Myrup Pedersen and [Denmark's national cyber security team](#) when they won this year's European Cyber Security Championships. Denmark proved its position at the forefront when it comes to talented young people in cyberspace. This achievement not only increases visibility externally but also encourages more students to pursue this degree. It also highlights the importance of good, ambitious collaboration between universities, private companies, the Danish Defence Intelligence Service and the Danish Industry Foundation, reflecting the centrality of collaboration in cyber security in Denmark.



The launch of UPCHAIN at Gulu University (Photo: Gulu University)



Green must be the new black: Development of business models for green charcoal

In Uganda and in many other countries in Africa, Latin America and Asia, charcoal is to a large extent used for cooking. This in turn entails health risks, deforestation and rising temperatures. A sustainable alternative does exist: green charcoal.

Green charcoal is made from residual products from the agricultural sector. However, it is not widely used. For green charcoal to become a viable alternative, new business models are needed to make it worthwhile both to produce and to buy green charcoal.

Researchers in the Department of Communication and Psychology at AAU are helping to activate local as well as global knowledge and experience to shape useful business models for the transition from black to green charcoal. One of the methods is called 'co-creating transition'. The project, [UPCHAIN](#), originates in Uganda, but the potential is global. UPCHAIN is supported with 11,999,489 DKK from Danida.



Engineering students repair hospital equipment and teaches hospital staff in Africa

The organization [EWH Aalborg](#) (Engineering World Health) supports engineering students who want to do humanitarian volunteer work by participating in one of its summer programmes.

The work mainly includes repairing hospital equipment and teaching the hospital staff to use the equipment and repair it if necessary. This greatly benefits African hospitals as a lot of their current equipment is either broken or the staff is not able to operate it.

Every year one or more students participate in this summer programme thanks to donations to EWH Aalborg.



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Access2Innovation

[Access2Innovation](#) (A2I) is a spinout from AAU, and is the leading Danish network for innovative, sustainable, commercial solutions for African emerging markets. Since 2007, A2I has resulted in more than 80 partnerships between companies, NGOs, investors, knowledge institutions and authorities, offering financing and expertise in innovation and business development in Denmark and Africa.

With support from the European Regional Fund, A2I in recent years has supported AAU in engaging in 12 innovation partnerships along with Danish SMEs anchored in needs identified in East Africa. The partnerships range from optimization of batteries, improved planning tools for solar parks, AI solutions for tracking of wildlife to improved cook stoves.

In addition to this solution driven approach, A2I, AAU, the Danish Red Cross and WWF Denmark have addressed the underlying challenges in the financial ecosystem that now prove to be the major bottleneck in scaling solutions in African markets.

In 2023, the course is now set for a dedicated focus on developing sustainable solutions targeting food loss and increased productivity in selected food value chains in Africa. This will be done by bringing high-tech low-cost solutions to tackle needs for improved water, irrigation, access to energy for processing and production, optimized logistics etc. in partnerships between the private sector, civil society and researchers.

End poverty in all its forms everywhere

Green charcoal made from residual products from the agricultural sector offers a more sustainable alternative to charcoal used in cooking (Photo: Gulu University)





Insects for food and feed are a more environmentally friendly protein source (Photo: Enorm Biofactory)



Edible insects for a sustainable future

Compared to traditional protein sources, insects have several advantages and common features: They support a more sustainable production, they have more nutritional and health benefits, they pollute less and are thus more environmentally friendly, and resource utilization is higher and more efficient.

AAU organized a theme day to present new research and engage in constructive dialogue on 'Edible Insects for a Sustainable Future'. The programme included new findings and research on the use of insects for food and feed. The purpose of the day was to continue to develop this relatively new research area and industry that receives great media attention and public interest in insects as feed and food. Attendees at the theme day were stakeholders across traditional disciplines.



RN Robotics

Established in 2022, [RN Robotics](#) is a spin-out focused on developing a self-driving agricultural platform. Their aim is to reduce pesticide usage for weed control, optimize fertilizer application, and monitor plant growth. In the future, challenges such as pesticide-resistant plants and drinking water contamination could pose significant issues for agriculture. RN Robotics is working on a solution using an autonomous system of robots that combine green energy sources with mobile robots, ensuring continuous field operation. This innovation enables energy-efficient and flexible solutions for enhanced weed control, fertilizer utilization, and plant growth.



AAU leading strategic analysis of production and consumption of plant-based food

The Department of Sustainability and Planning at AAU, in conjunction with two departments at the University of Copenhagen, has analysed Danish companies in cultivation, production, sale and consumption of plant-based foods, given that increased production and consumption of plant-based food can reduce the climate impact of production and consumption of food if it reduces the production and consumption of meat and dairy products. [The project](#) analysed the companies' product areas, employment and competences, relationships with suppliers and customers as well as their views on prerequisites for future growth. Combined with an analysis of measures on the production and consumption of plant-based foods in Germany, the Netherlands and Israel, proposals were developed for several possible Danish measures. The report served as part of the knowledge base for developing the Danish action plan for plant-based food.



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Grass4Food

In the future, we should reduce the consumption of steaks, cheese and the like. Instead, we should learn from and eat what cattle do: grass. By doing so, we will reduce greenhouse gas emissions, with positive effects on climate.

In the project [Grass4Food](#), AAU researchers, in collaboration with industry, have shown that it is possible to create protein powder from grass, and that the protein can be mixed into other foods. This entails enormous economic and sustainable potential – the research opens the door to a new and large market based on green biorefining. The project has specifically developed a process that extracts as large a proportion of the protein for food as possible which may be used in new products such as long-lasting snack products, soft drinks and meat alternatives (plant mince) with grass protein.



Green student meals in AAU canteens

The canteens at AAU are operated by [Jespers Torvekøkken](#), a food service provider that is at the forefront of responsible canteen management, striving to reduce the environmental impact of the canteens. Jespers Torvekøkken is in the process of becoming B-Corp certified, which means that they document how they address sustainability in all facets of the company. For example, they work intensively on limiting food waste, and through collaboration and dialogue with AAU, Jespers Torvekøkken is working to reduce food waste through data, meal planning, and preparation.

A focal point at AAU has been the introduction of [green student meals](#), which is an important step in making AAU canteens affordable for all – the student meals are cheap, and meat is optional. This has resulted in more than 51,000 green student meals sold in 2022-2023.

More than

51,000

green student meals
in 2022-2023 at AAU



End hunger, achieve food security and improved nutrition and promote sustainable agriculture

A sample of freshly produced grass juice for testing the protein and dry matter content (Photo: William Brændstrup)





The annual study environment day 2022 focused on student well-being



Better help-seeking for children with mental health disorders

Many children and adolescents with mental health disorders are not in contact with specialized mental health services. To close the service gap, it is important to increase knowledge on barriers to access. In a [cross-sectional observational study](#), 244 parents of children and adolescents were interviewed regarding barriers to accessing mental health services and the research group found these results: The most reported barriers were lack of information about where to seek help (60.3%), the perception that professionals did not listen (59.8%), and professionals refusing to initiate interventions or provide referral to services (53.7%). Lack of knowledge, stigmatization and unavailability of services were common themes across barriers to help-seeking. Such knowledge is important for improving practice.



Desinfection robots

A study group in Sustainable Design has conducted a [project](#) on sustainable conversion of disinfection robots used to reduce routes of infection. The robots are a useful tool against pandemics such as the coronavirus. The students researched the market, conducted a Life Cycle Assessment of the robot and developed new requirement specifications.

The result of the project included a sustainability strategy for the company Sterisafe as well as a series of requirement specifications for the company's robot with a view to potentially introducing the robot – which is already in use internationally – in Danish hospitals.



Sound feedback for rehabilitation

[This research project](#) at the Department of Architecture, Design and Media Technology, explores how sound feedback technology can make rehabilitation more effective for people with neurological issues. The aim is to develop a tool that enhances patient engagement, motivation and re-learning of movements such as walking.

The hope is to improve patients' quality of life and increase their chances of returning to a fully productive life. The tool acts as a feedback system that is based on data from motion sensors attached to the patient that generate sound cues. These feedback cues help patients gain greater awareness of their movement quality than would usually be possible, accelerating their relearning process. This technology is expected to benefit individual patients, and to positively impact the healthcare system and society at large.



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Student well-being in focus at annual Study Environment Day 2022

More than 200 students registered for the [Study Environment Day in 2022](#) on Campus Aalborg. This was a record number of participants, which highlights the importance of this year's Study Environment Day theme 'Student Well-being', an issue that after two years with the coronavirus pandemic seems particularly important to the students.

The day was planned by the [Student Environment Council](#) and designed to give the students new, concrete knowledge and tools to improve their well-being at the university. In workshops, students could learn about well-being in group work, learn to become aware of their personal stress pattern and how to thrive under pressure, acquire tools to develop their mindset and motivation as well as build good study techniques. The day ended with pizza, snacks and board games where the participants highlighted the good atmosphere that energized the day.



Supporting children and young people's physical activity and well-being

Nearly one million Danes live in public housing and 18.9 percent of these are under the age of 18. The health problems in these residential areas are enormous and overlooked. Compared to other citizens, not living in public housing, twice as many have poor health, and more children and young people are overweight. Researchers in the Department of Health Science and Technology aim to change this through the research project [Assist](#). The project aims to develop inclusive sports instruction in these areas, based on theories on complex interventions and social systems.

Ensure healthy lives and promote well-being for all at all ages



Desinfection robots



4 QUALITY EDUCATION



Students working at Aalborg University City Campus (Photo: William Holler Brændstrup)



Institute for Advanced Study in Problem Based Learning

On 1 January 2022, AAU opened [IAS PBL](#) – a new interdisciplinary research and competence development unit in problem based learning (PBL).

PBL is the core of the university's pedagogic approach and provides the foundation for AAU to enable students to learn through addressing authentic problems. IAS PBL aims to strengthen and advance PBL at AAU and to ensure that the university maintains its position among the leading institutions in pedagogical practice and research on PBL.

IAS PBL includes research groups from all faculties ([SHARE](#), [KiLD](#), [Health PBL](#)) as well as the UNESCO Centre in Problem Based Learning, established in 2007 and renowned for its accomplishments in the development of Problem Based and Project Based Learning in Engineering Education.

It also includes the [AAU Learning Lab](#) which focuses on ensuring excellence in higher education teaching and learning through its activities in continuing education of AAU staff.

Finally, the [Centre for Digitally Supported Learning](#) (CDUL) is part of IAS PBL. CDUL provides teachers across the university digital perspectives on problem based learning and how PBL can be supported and developed digitally.



Aalborg University has the best tutors in Denmark

Every year, the labour union DM awards a 'tutor prize' to support good study environments and to reward the tutors who make an extra effort to help new students at the universities. The tutor prize is in recognition of the great work that tutors do to ensure the new students a good, fun and secure start to their studies. In 2022, [the tutor corps in the Communication and Digital Media programme at AAU won the prize](#). The new students nominated the tutors themselves, noting that their introduction period had been fun and in a safe environment. Moreover, the nomination stated that the tutors created a sense of community, and planned activities that embraced everyone. According to the tutor group, their main focus has been on exactly that: making as many people as possible feel comfortable during the introduction period. The prize is DKK 10,000 to be used for a social event.



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The most innovative educational concept in Europe

In [leadENG](#), students at the Faculty of Engineering and Science (ENGINEERING) are engaged in interdisciplinary project collaboration across semesters, campuses and degree programmes.

The project work is organized in groups and always takes a specific problem, often defined by an industrial partner, as a starting point. Many different kinds of problems are addressed, and the work is centred around a (physical) product.

The leadENG projects exemplify AAU's problem-based approach and complement the sustainability profile of ENGINEERING. The aim is to increase students' understanding of their own disciplinary field and how it can be used in related subject areas – all this while addressing society's grand challenges. In 2022, the leadENG student project concept was recognized by [QS Reimagine Education](#) as the most innovative educational concept in Europe.

"It is fundamentally difficult to collaborate across disciplines. But with leadENG, we have developed a fantastic platform to make this happen in practice. We have experienced that the agile and transversal collaboration on physical products is motivating for everyone involved, and that it breathes new life into the methods and theories for the students. We get much closer to how one should actually use one's professional skills after the education."

Olav Geil, Vice Dean for education, ENGINEERING, AAU



Mads Pagh Nielsen named teacher of the year by the Ministry of Higher Education and Science

Mads Pagh Nielsen in the Department of Energy at Aalborg University received the Danish Ministry of Higher Education and Science's [Teaching Award 2023](#) for his teaching on topics such as P2X technologies and energy storage.

The ministry honours seven teachers at higher education institutions each year, two of whom come from the country's universities. Aalborg University is now the recipient of the award for the second year in a row after professor and national coach of the Danish national cyber team Jens Myrup Pedersen received it last year. Mads Pagh Nielsen is honoured for his continuous efforts to sharpen his teaching by incorporating challenges, aha experiences and clues.

"I love teaching, seeing the light dawn on the students and trying out new ways to engage them in order to understand exactly what they need to learn", he says.



DITECH: Diversity and Inclusion in TECH

[DITECH](#) (Diversity and Inclusion in TECH) is a project involving four departments at the Technical Faculty for IT and Design at AAU aimed at creating greater diversity among IT students and increasing well-being among all TECH faculty students.

Diversity and inclusion are essential factors in addressing the increasing shortage of IT specialists, boosting innovation and creativity, and ensuring that IT solutions are developed by people with different mindsets.

Activities include collaboration with all stakeholders to make communication around recruitment inclusive, sharing of best practices and development of solutions creating the best framework for successful onboarding, and creating solutions to increase student well-being and move towards an inclusive and healthy student environment.

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all



Mads Pagh Nielsen, Associate Professor in the Department of Energy received the Danish Ministry of Higher Education and Science's Teaching Award 2023 (Photo: Søren Kjeldgaard, Ministry of Higher Education and Science)



AAU Rector Per Michael Johansen welcomes participants at the event 'Is the fight a pretty sight?' in celebration of International Women's Day 2023 (Photo: Lucas Olsen)



Girls’ Day in Science

For several years, AAU has hosted an annual [Girls’ Day in Science](#) with the goal of encouraging more young women to pursue a career in STEM (Science, Technology, Engineering and Mathematics). During this event, AAU invites several hundred young women from local high schools to spend a day at AAU with our female PhD students and researchers. In 2022, about 400 young women visited all three campuses for Girls’ Day in Science. The young women spent the day getting introduced to the STEM area and experienced what the Aalborg model is like. They participated in workshops on coding, microplastic, and energy consumption in buildings, to name just a few. Hopefully, their participation in Girls’ Day in Science further inspired them to choose a STEM career.



Celebration of International Women’s Day

What is the gender equality paradox? Is there equality in the labour market? And what are women worth? These were all questions that were debated when AAU celebrated International Women’s Day with the event ‘[Is the fight a pretty sight?](#)’ attended by HRH Crown Princess of Denmark. For the event, AAU brought together several inspiring personalities who all had one thing in common: fighting for a more fair and equal society. Presentations and debates focused on cultural and structural barriers that create inequality between genders.



Blind recruitment: removing bias from the hiring process

There must be more focus on gender equality when hiring new staff at AAU. AAU is therefore starting a [pilot project](#) aimed at selected positions where identifying information is removed from job applications and CVs before they reach the appointment committee. The purpose is to remove information that may affect the hiring process so that the best qualified are hired. Specifically, profile pictures and other information that is irrelevant to the position – such as gender, age, ethnicity, marital status and hobbies – are removed. The appointment committee must also weigh selection criteria, create question frameworks, conduct case-based interviews and watch a video of the most frequent pitfalls when it comes to bias in the recruitment process.



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New target figures to promote equality in senior management

Half of the external members of AAU’s University Board must be women. For the rest of management, the target is 31 percent. These are the university’s [new targets for the underrepresented gender](#) on the board and in other senior management that the board adopted in December 2022. Rector Per Michael Johansen believes that the new target figures can help push the university in the right direction in terms of creating more equal gender distribution in the university’s management positions by including all types of talented individuals. To meet the new targets, the university must employ at least three additional women in senior management compared to today. This corresponds to an improvement of six percent and a relative improvement of 20 percent.



FIERCE: Feminist Movements Revitalizing Democracy

[FIERCE](#) aims to provide theoretical and practical knowledge and tools to revitalize alliances between the feminist movement, civil society and political decision makers in a context of growing social inequalities, political disaffection and strengthening of populist, radical right, anti-gender/anti-feminist actors and discourses. It develops understanding of feminist and anti-feminist/anti-gender movements, activities and discourses, and their impact on the institutional arena and on policy outcomes focusing on the period 2010-2021. Building on co-creation methods and on a strong alliance with civil society organizations, FIERCE proposes pilot actions that can reinvigorate democratic practices, in line with feminist inclusive visions for the future of democracy. FIERCE thereby sets out a bottom-up, problem-driven and impact-oriented approach, bridging academic knowledge, policymaking and bottom-up democratic strategies.



Practices and Strategies of Gender Representation in Danish Political Parties: Dilemmas of “Everyday Democracy”

In Denmark, women’s representation at the national parliamentary level has stagnated at 37-39 percent which has remained the average since 1998. At the same time, the average percentage of women candidates is lower than the percentage of women elected. AAU researchers seek to explain this gap by addressing internal differences in practices and strategies in recruitment and nomination in the parties, without formal quota systems. [The study](#) focuses on internal, informal measures to promote gender equality in representation (or lack thereof) and asks why some parties are laggards while others have achieved high levels of women’s representation. The framing and focus of the study is on the dilemmas of ‘everyday democracy’, exploring the diversity of practices and strategies for training, visibility and empowerment of women candidates as measures of gender equality/parity.

50%

of external members in AAU’s board must be female and

31%

of AAU management must be female



Achieve gender equality and empower all women and girls



Cejna Anne-Quist-Jensen, Associate Professor and Aamer Ali, Assistant Professor with their unique membrane for recovery of water and minerals from waste streams (Photo: Department of Chemistry and Bioscience, AAU)



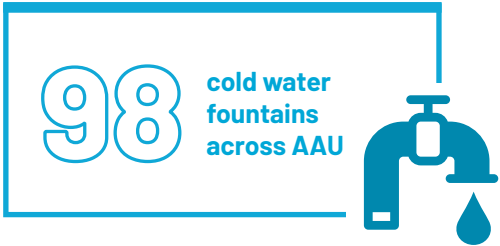
The impact of wastewater on biodiversity

AAU researchers in the Department of Chemistry and Bioscience are involved in the project ‘[Spildevandets påvirkning af biodiversitet](#)’ [The Impact of Wastewater on Biodiversity] developing novel DNA analyses for surveillance and control of microbial communities in technical systems and standardized monitoring in aquatic biodiversity. The aim is to segment microbiological composition and describe how wastewater treatment plants can be managed for resource and energy recovery and to monitor how effluent may affect biodiversity in the recipient streams. AAU frequently collaborates with industrial partners, such as utility companies, in projects where new methods are essential for commercially viable and sustainable products in high demand among municipalities and others engaged in wastewater treatment and recovery of resources as well as those subject to water quality regulations.



Nanobubbles for aeration and wastewater treatment

Nanobubbles are a new technology where air bubbles are formed from e.g. oxygen or ozone in nanometer size, i.e. very small bubbles. This technology is relevant for wastewater treatment where nanobubbles have several advantages: they provide much better utilization of the air that is supplied compared to traditional aeration; free radicals are formed when the bubbles collapse, which can break down organic molecules; and they can be transported around in a wastewater tank and guided to the place where they are to be used. [This project](#) at AAU investigates how nanobubbles can supplement or even replace traditional bottom aeration in wastewater treatment, including to what extent nanobubbles can remove unwanted micro pollution. The project is being done in collaboration with industrial partners and states around the Baltic Sea aiming to improve the aquatic ecosystem.



Membrane distillation and membrane crystallization for recovery of water and minerals from waste streams

The water supply in South Africa is scarce and combined with an insufficient supply of minerals it demands research and technology development. The ambition of [this project](#) is to produce a system for simultaneous recovery of fresh water and minerals from waste streams with the long-term objective of providing an alternative solution for water and resource supply from wastewaters. To achieve this goal, AAU, University of Witwatersrand and the companies Grundfos Holding A/S, power stations and mining companies in South Africa have joined forces to solve current and future problems of water and resource supply.



Smart Water Infrastructure (SWift)

The research in the [SWift project](#) is directed towards optimization and control aspects of large-scale infrastructures with a particular focus on water supply networks. Specifically, we will develop methods that solve the ambivalence between vulnerability and optimality, i.e., the more efficient the infrastructure, the less robust it is to faults. The empirical study and the verification of hypotheses will be done in the Water Lab. Nonetheless, we anticipate that our contribution will be suitable for the majority of large-scale infrastructures including electrical grids, wind farms and transportation networks. Our hypothesis is that enhancing the AI – using application-specific knowledge described in a mathematical model – will enable safe operation and faster optimization.

Ensure availability and sustainable management of water and sanitation for all



Rainwater usage in gardens at the main campus

On the main campus in Aalborg East, the majority of the 200,000 square meter garden and green areas are watered using rainwater. The rainwater is collected in two places on the campus – from a 25,000-litre rainwater basin and a 15,000-litre tank buried in the ground. This method enables us to save groundwater and make use of the natural minerals in the rainwater. The [gardening team](#) uses tracking and continuously works to minimize the need for watering and ensure that we use nature’s resources sustainably. For example, when cultivated nature is changed to wild nature or they choose to plant with plants and trees that are naturally native to Denmark.

50%

reduction in water consumption per user in 2022 compared to 2006

Outdoor area of the main campus in Aalborg East (Photo: Emilie Bach Pedersen)





Demonstration village Aardehuizen in the Netherlands with PV penetration both on the garage and in the fields around the houses (Photo: Gerwin Hoogsteen, University of Twente)



AAU research advances development and implementation of green energy systems

Ensuring access to affordable, reliable, sustainable, modern energy for all is the core of SDG 7. Research, education and innovation are paramount to further progress on the transition to green energy systems. At AAU, energy and electronic- and electrical engineering are essential focus areas, and we are proud to have some of the best researchers in these fields.

Brian Vad Matthiesen, Professor in Energy Planning in the Department of Sustainability and Planning is in the [top one percent most cited researchers in the World](#) in 2022 in Clarivate, Web of Science along with six other AAU researchers. He was also [the most cited expert in Danish media in 2022](#) on the global energy crisis and effects of war on European soil.

Frede Blaabjerg, Professor in the Department of Energy is the most excellent researcher worldwide in the field of Electronics and Electrical Engineering as he was [ranked No. 1 by Research.com in 2023](#) based on his work on future materials for power-2-x-technology and developing energy efficiency in systems.

In 2022, AAU launched cross-disciplinary research [ESUS](#) (Energy for Sustainable Society) across three faculties (TECH, ENG and SSH). The ambition is to create human-centred sustainable energy solutions that lead Denmark to achieve net-zero emissions. The aspiration is the creation of Research & Innovation (R&I) Communities that build on the existing, rich energy research at AAU and develop this further by collaborating across sectors and disciplines.



Smart Energy Systems – international conference

The International Conference [Smart Energy Systems 2023](#) in Copenhagen has more than 200 speakers and is being hosted by AAU and Energy Cluster Denmark. The aim of the annual conference is to create a forum for the industry, politicians and scientists where scientific findings and industry experiences can be discussed. The focus is on enhancing the knowledge of Smart Energy Systems (SES), 4th Generation District Heating, electrification, electro fuels and energy efficiency. The concept of SES is essential for 100% renewable energy systems to harvest synergies and exploit low-value heat sources. The most effective solutions are to be found in combining the electricity sector with the heating and cooling sectors and the transport sector. The combination of electricity and gas infrastructures may play an important role in future renewable energy systems.



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SUSTENANCE – Sustainable energy system for achieving novel carbon neutral energy communities

To accelerate the transition of electricity systems to a more decentralized structure, the [SUSTENANCE project](#) aims to demonstrate cost-effective, customer-centric solutions for effectively integrating different energy system carriers for the sustainable development of regional communities in meeting their energy needs from local sources of renewable energy. Specifically, the goal is to establish locally integrated “energy islands” that will aid the decarbonization of local energy systems and increase the levels of renewable energy use, enhancing the environmental, social and economic conditions of citizens.

The project involves 21 partners from three EU countries plus India and is led by AAU. The project has demonstration sites in Denmark, the Netherlands, Poland and India.



IDA climate response 2045

It is quite possible for Denmark to meet the government's climate objectives. Professors Henrik Lund, Brian Vad Mathiesen and colleagues, in the research group [Sustainable Energy Planning](#) in the Department of Sustainability and Planning, have collaborated with the Danish Society of Engineers, IDA to compose [IDA's climate response 2045](#).

The climate response is a concrete solution for how Denmark can reach its 2030 goal of 70 percent CO₂ reduction and become climate neutral by 2045. The report focuses on energy efficiency improvement in industry and buildings, planning for increased electricity consumption due to the reduction of fossil fuels, the need for increased wind power, further development of biomass, and the need for electrically fuelled public transport. The IDA vision also serves as the foundation for Heat Plan Denmark 2021 which explains the vision for the future heat supply in Denmark.

52%

reduction in energy
consumption per user in
2022 compared to 2006

**Ensure access to
affordable, reliable,
sustainable and modern
energy for all**



Positive outcome from energy optimizations

AAU is systematically working to [reduce energy consumption](#). The reduction efforts are based on:

- **Energy renovation and improved energy efficiency:** AAU continuously implements energy-saving measures on technical installations, such as replacing lighting with LED, replacing ventilation units and pumps with low-energy models and establishing building management systems and automatic control of heating and ventilation. In addition, several adjustments have been made to ensure energy-efficient heating, cooling and ventilation systems.
- **Phasing out of energy-inefficient buildings in favor of more efficient ones:** AAU has in recent years rented several newer teaching, research and laboratory buildings. These buildings have replaced older, space- and energy-inefficient buildings that have been decommissioned. This way, AAU ensures a better fit to the desired activity, and the buildings, on average, are more energy efficient.
- **Area optimization:** AAU is focusing on densifying and sharing facilities, which leads to a reduction in the building area and a reduction in energy consumption overall. The administration has introduced an activity-based working environment with shared workplaces for approximately 600 employees. Similarly, several research environments are working to share more of their buildings such that densification takes place on an ongoing basis.

AAU adopted two missions in 2023:
one mission is focused on

**Sustainable
energy supply**





Photo: William Holler Brændstrup



CO2Vision

As a member of the consortium behind the beacon for green growth in North Denmark called [CO2Vision](#), AAU collaborates with companies and educational institutions on designing the educational programmes needed to fulfil the potential for attractive jobs in a carbon capture, utilization, and storage-industry (CCUS) that generates employment, knowledge, profit and a sustainable energy supply. AAU also fosters collaboration between students from different institutions and companies in a concept called Green Innovation Lab. This aims to show the potential of working with CCUS and contribute to the education of future engineers, energy management specialists, blacksmiths etc., as these are vital for making the region a national and global frontrunner in CCUS.

[A study](#) by AAU Business School showed that the plans for CO2Vision will significantly increase the need for welders and electricians. The shortage of welders and electricians will be significant in just 5-7 years. Projections estimate the number nationwide to be 20,000 and the study estimates that the need will peak at the beginning of 2030 when most carbon capture facilities are established. Welders and electricians will be needed in a new context, so adaptability is important. However, for now, engineers are the most needed resource, according to the preliminary study results.



Inclusive employment for all

Despite praise for the Danish labour market for being very competitive, flexible, inclusive and secure, there are still groups that are left behind, for instance people with disabilities. At the [Research Centre for Disability and Employment](#) leading Danish experts on labour market and social policies study the mechanisms underlying lower employment of people with disabilities and how to bridge the gap to persons without disabilities. The research applies an integrated approach and studies labour supply (people with different types of disabilities), labour demand (employers) and labour matching (employment services). The researchers collaborate with the stakeholders (disability organizations, civil authorities, and labour market organizations) to achieve social impact and promote inclusive employment for all.



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PUBLICATIONS



Data science and machine learning guide midwives and nurses to safe childbirth in global south

Researchers from AAU Business School are engaged in a developing collaboration with the Maternity Foundation, a Danish NGO that aims to ensure safe childbirth for women and newborns globally. [AAU is investigating data extracts](#) from the foundation's app "Safe Delivery" that is used by midwives and nurses in the global south. The app improves skills, knowledge and confidence, and can be used by professionals as pre-service education or on-the-job training and guidance. AAU has developed machine learning-based extensions for the NGO's Safe Delivery App that aim to improve conditions for midwives and nurses, and improve maternal and newborn health outcomes. AAU students are involved in integrating AI techniques to make the app more efficient in providing the right content to users.



Vocational schools as bridge-builders for safe work

The aim of [this project](#) is to contribute knowledge and tools that can improve the safety of pupils and apprentices. The project is led by researchers at the Centre for Youth Research at the Department of Culture and Learning, the National Research Centre for the Working Environment, Occupational Medicine at the University Clinic, Gødstrup Regional Hospital, and international researchers. They will develop and test occupational health and safety education, focusing on safety and occupational accidents, as well as strengthen pupils and apprentices' action skills, and the bridge building between vocational schools and apprenticeships. The project deals with training courses in industry, construction and agriculture. In the long term, the plan is to disseminate knowledge from the project to all vocational school programmes.



LISES (Local Innovation in Social and Employment Services) researchers and knowledge brokers bring knowledge to practice

Twice a year, [LISES](#) researchers meet with the LISES knowledge brokers – employees who are particularly committed to knowledge mobilization in practice. They are from the six municipalities that are part of the LISES collaboration.

[The seminars](#) address particular themes where LISES researchers engage in dialogue with the knowledge brokers on specific topics within each theme.

A knowledge mobilization format has also been developed for the seminar series: Visit the experiences. Here, selected knowledge brokers from the municipalities describe to the other participants how they specifically handle knowledge mobilization in their municipal practice.

The knowledge brokers are part of LISES' work to create and anchor an organizational structure that supports reflexive practice and promotes citizen involvement in the municipal employment administrations.

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Photo: Emilie Bach Pedersen





Ribbon cutting at the grand opening of AAU INNOVATE – Science and Innovation Hub with Rector Per Michael Johansen; Simon Kollerup, Minister of Industry, Business and Financial Affairs; Mads Lebech, CEO, A.P. Møller Foundation; Rasmus Brandt, CEO, Danish Building and Property Agency; and Dan Stubbergaard, CEO, Cobe (Photo: Lars Horn, Baghuset)



Let's innovate – Grand opening of AAU INNOVATE

On October 3, 2022, AAU's rector officially opened [AAU INNOVATE – Science and Innovation Hub](#) with these words:

"At Aalborg University, we are at the forefront of collaboration with the wider world. We embrace all disciplines and constantly challenge their boundaries within the realm of science. It is the foundation upon which this house is built, and the strong base upon which we shall continue to build."

AAU INNOVATE is a new 8500 m² extension to AAU, providing space for cross-disciplinary research, innovation, entrepreneurship and collaboration with society at large. The hub offers a variety of facilities, including nine thematic labs and eight garages for startups. With AAU INNOVATE, the university is well-equipped to take the lead in collaborating with the wider world and to pave the way for entrepreneurship and cross-disciplinary research.



AAU INNOVATE creating a frame for startups

[AAU Student Entrepreneurship](#) strives to make entrepreneurship accessible to all AAU students, regardless of academic background and career aspirations. We offer curricular and extracurricular entrepreneurial activities to students supporting their professional competencies and entrepreneurial mindset.

Two startups at AAU INNOVATE exemplify our commitment to empowering students to contribute to societal challenges. [Pull & Go](#) develops wheelchair attachments that combine push and pull functions. The aim is to enhance mobility and alleviate shoulder pain for wheelchair users utilizing technology to improve accessibility and quality of life. [Fireobs](#) specializes in advanced systems for early forest fire detection reducing economic and biodiversity costs. Collaboration with the Danish Nature Agency and global stakeholders underscores the significance of Fireobs' proprietary technology.

"It gives us an incredible number of opportunities to be housed in AAU INNOVATE. We have access to knowledge sharing with other developers like ourselves. And we receive training and participate in workshops focusing on product development and business start-ups under the auspices of AAU Student Entrepreneurship. It has pushed us to where we are today. That is, where we now have a product that works and can solve a huge global problem."

– Jenisten Anthony, FireOBS

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Student invention turns noise into music

Noise in the hospital is a growing problem for both patients and staff. Sounds from alarms, telephones or talking can lead to stress, anxiety and burnout. [Two music therapy students](#), Cilla Jepsen and Mindaugas Dambrauskas, have made an invention that eliminates such sounds without isolating the user in their own bubble as happens when wearing a headset. Denoiser works by adding music in sync with the noise, thus reducing the noise. The physical device has not been developed yet, but the two students have tested the idea with sounds from the hospital and found that their invention led to users becoming more relaxed, less fatigued, and less disturbed by the noise. Denoiser will also work in other environments such as offices, dental clinics or even in the home. The two students won two awards at the Health HUB Innovation Award 2022.



Drones for Windmills – Proof of concept

The project [ADD2Wind](#) investigates the use of drones to transport items atop large windmills. This can have several positive effects. Firstly, it can improve the efficiency and safety of maintenance work on the windmills, as technicians can avoid the risks associated with climbing to the top of the windmills. Secondly, it can reduce the downtime of the windmills, as parts and tools can be delivered quickly and easily, enabling maintenance work to be completed more swiftly. This can result in increased energy production and lower costs. Additionally, the use of drones can reduce the environmental impact of maintenance work, as it can eliminate the need for heavy machinery and reduce the amount of carbon emissions associated with maintenance activities. Finally, the use of drones for this purpose can also lead to cost savings for wind farm operators, as it can eliminate the need for costly crane rentals and reduce labour costs.



Societal impact through annual conference

The annual conference – ['Environmental Assessment Day'](#) – hosted by AAU since 2009 has proven to be a significant activity for researchers to impact society towards sustainability. The conference is a co-creating space and a hub for societal stakeholders to meet, exchange and contribute to collaboration across practice and research.

In 2023, the conference attracted more than 300 actors representing different consultancy companies, authorities at different levels, researchers, and the ministry in charge of legislation.

**Build resilient
infrastructure, promote
inclusive and sustainable
industrialization and
foster innovation**



New project will deal with rising costs of maintenance critical infrastructure

A new research project [CorroSense](#) aims to tackle the rising costs associated with maintaining and repairing critical infrastructure such as the Great Belt Bridge and the Limfjord Tunnel. The new type of monitoring, Structural Health Monitoring (SMH) systems, increases the safety and lifespan of the structures while also reducing CO₂ emissions. With the new structural health monitoring, it is possible to continuously monitor the structures and obtain more reliable data on corrosion. In addition, the new types of sensors can be retrofitted, increasing the lifespan of the individual structures.

In 2022 AAU launched

8500 m²

Innovation HUB





AAU research contributes to advancing equal treatment in the health care sector (Photo: Nils Krogh)



Sustainable and responsible accommodation of refugees

A group of students in the Techno-Anthropology degree programme has [examined what happens when refugees from minority language areas come to Denmark](#). Being obliged to sign a digital integration contract in a language they do not understand and have difficulty translating can create issues that Danish society needs to be aware of. In addition, communication with Danish public institutions takes place via e-Boks also in Danish. Knowledge in this area is needed in order to create sustainable and responsible accommodation of these refugees.



Unwarranted variation in health care in focus

At [the Danish Centre for Clinical Health Service Research](#) (DACs) unwarranted variation in health care is one of the primary research areas. Health services research can be defined as research on the functioning of health services. Clinical health services research is focused on clinical activities and aimed at increasing our understanding of the interaction between the organization of health care systems, use of resources, quality of care and patient outcomes, including survival, functional level, and quality of life. The research is predominantly based on clinical epidemiological methods and involves observational as well as interventional studies. Data from existing data sources are often used, including nationwide clinical quality databases and national health registers.



Health perceptions and behaviours among socially marginalized men

The effects of social marginalization and health are well-documented, revealing a complex association between health perceptions and health behaviour. This is especially evident among socially marginalized men. These men have varying health challenges and engage in risky health behaviours, such as alcohol consumption, tobacco smoking, and lack physical activity. [The ethnographic study](#) including 200 hours of participant observation and 25 interviews with socially marginalized men aged 45–65 showed that health was perceived as relating to the ability to participate in daily life activities, such as getting around effortlessly and the ability to work. Overall, the results provide important insight into how health perceptions and health behaviours are embedded in the men's everyday lives. This knowledge may be used by health professionals in providing and developing health services.



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No. 2

university in the world
on SDG 10 in the THE
Impact Rankings 2023
(out of 901 institutions)



AAU launches diversity and inclusion training

Most people do not deliberately exclude anyone. Even so, we sometimes end up doing and saying things that seem exclusionary. The best way to become aware of one's own biases is to constantly be challenged and confronted with them. These were some of the messages when the first round of [AAU's diversity and inclusion training](#) was launched in spring 2022. The training consists of workshops in unconscious bias as well as cultural intelligence and supports the action areas that AAU has included in the university's strategic action plan for equality and diversity. Around 160 administrators and staff members have participated in the training and gained evidence-based knowledge about how diversity factors such as gender, age and cultural background can create value in management, forms of communication and collaboration.



AAU conducts an inclusion survey

In the autumn of 2022, a questionnaire was sent out to all permanent staff members with the headline 'How do you experience inclusion at AAU?'. The questionnaire is part of the [AAU inclusion survey](#) that aims to provide knowledge about how the university can become a more diverse and inclusive workplace. The survey shows that AAU is a workplace with a high degree of friendliness, respect and freedom, but where few take responsibility for including those who experience different challenges than the majority. It is especially the international, female and younger staff members who experience challenges related to inclusion, such as gaining access to informal networks, participating in decision-making processes or building a relationship with the manager. Among international staff, the language barrier is a particular challenge for inclusion.



More knowledge on bowel diseases and mental illnesses will ensure equality in treatment

[New research](#) from the [Centre of Excellence PREDICT](#) at Aalborg University in collaboration with Harvard Medical School and Mount Sinai Hospital in New York shows that up to 35 percent of the 50,000 Danes living with chronic inflammatory bowel disease, such as Crohn's disease and ulcerative colitis, suffer from anxiety or depression. Unfortunately, many patients with chronic bowel disease do not receive optimal treatment for their mental health issues. The research from the PREDICT Centre of Excellence in this area can help ensure that cooperation between gastrointestinal departments and psychiatry receives more attention so that this patient group also receives treatment for anxiety or depression.

Reduce inequality within and among countries

90% of Danish employees are satisfied and wish to stay at AAU

79% international VIP are satisfied





The city of Qassarsuk in South Greenland (Photo: Lill Rastad Bjørst)



The future of arctic coastal ecosystems - Identifying transitions in fjord systems and adjacent coastal areas (FACE-IT)

Managing the consequences of a warmer Arctic on the cryosphere, biodiversity and societies is a major challenge, requiring knowledge about how the social-ecological system operates and how it may operate in the future. In a scenario workshop in the summer 2023, researchers in FACE-IT engaged with local stakeholders to discuss potential future developments around Nuup Kangerlua (the Nuuk Fjord). [FACE-IT](#) provides the first large-scale systematic comparison of coastal areas under variable degrees of cryosphere loss. The project's activities include field campaigns and workshops in Porsangerfjorden (Porsáנגguvuotna), Finnmark, Norway; and Isfjorden, Svalbard and Disko Bay, Nuup Kangerlua, Greenland. FACE-IT is anchored in the Department of Culture and Learning and has received funding from the European Union's Horizon 2020 research and innovation programme.



Living on the edge - Risk, resources, resilience and relocations in the western Limfjord, ca. 1750-1900

The '[Living on the Edge](#)' project examines how the population along Danish coasts has lived and dealt with the ravages of storm surges from approximately 1750 to 1900. Results from case studies on Agger and Harboøre facing the North Sea are typical of regions of risk. Human settlements were marked by an accommodation to nature when it comes to construction of houses, dikes and plantations. Similarly, the occupational strategy of the coastal dwellers was marked by a pluriactive combination of part-time jobs that distributed the risk of poor fishing and farming seasons, and not least the impact of sudden natural disasters such as floods and violent storms. Our results show that, paradoxically, lower loss of life and capital is found in areas with this particular cultural heritage of living on the edge in a region of risk when compared with other coastal regions.



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Sustainable screw piles will revolutionize the building industry

Foundations based on steel screws can replace traditional foundations. This will make future building construction faster, cheaper and more sustainable. Along with the companies Andreasen & Hvidbjerg and BAYO.S, Professor Lars Bo Ibsen in the Department of the Built Environment has headed [a project](#) where steel piles several meters long that are screwed into the carrying layers underground were tested. Dugout foundations made from gravel, sand, and concrete require machines that emit large amounts of CO₂ to dig away the top layer of soil and dispose of it. The foundation must then be prepared with sand and gravel - resources that are rapidly becoming scarce - and a concrete footing is cast using cement that is also very heavy on CO₂ emissions. All of this can be avoided by using screw piles, and the building process can start the day after the foundation has been screwed into the ground.



Healthy and resilient homes

There is an increasing focus on the indoor climate of buildings, and that was exactly what students in the Master of Architecture program worked on in the project '[Healthy and resilient homes](#)'. They designed a healthy building complex in Rotterdam, a city that floods a few times a year. The building thus had to be both resistant to flooding and at the same time have a healthy indoor climate. The students thought of even the smallest details that could help solve the big challenges of flooding and indoor climate. They designed a ground floor that can dry in record time and return to normal after a flood. They had also thought through the entire interior in the process and designed it in resistant materials. The project won second prize in a Healthy Homes Design Competition in Rotterdam.

The five students from the Master of Architecture programme at the Healthy Homes Design Competition in Rotterdam: Christian David Rasmussen, Julian Graf, Mathias Kramer Vig, Mie Hersløv Jansen og Nikolai Cerqueria Donskov Iversen (Photo: Runa T. Hellwig)



Culturally Sensitive Tourism in the Arctic

The project '[Culturally Sensitive Tourism in the Arctic](#)' - ARCTISEN - develops a support system for start-ups and existing small and medium-sized enterprises offering innovative tourism products and services. Expanding tourist interest in the Arctic brings unforeseen opportunities to maintain local livelihoods and lifestyles. The project partners in Finland, Sweden, Norway, Canada and Denmark/Greenland highlight the pressing demand for new tourism products and services that draw on the rich natural and cultural resources of the region. Simultaneously, limited knowledge of indigenous and other local cultures in Northern communities calls for more open and sensitive dialogue among different tourism actors.

Make cities and human settlements inclusive, safe, resilient and sustainable



Participants and researchers at the first TECH4CE summer school in applied circular economy (Photo: Massimo Pizzoli)



CircularTEX

In the textile industry, a 75 percent reduction in new products is needed to reach climate goals. The main purpose of the [CircularTEX](#) research project is to strengthen sustainability by extending the lifespan of textiles. Textile production needs to match customer needs instead of today's over-production of poorly developed textiles, premature disposal and deadstock. A change like this will lead to significant CO₂ reduction. Therefore, CircularTEX focuses on developing and testing new textile solutions, value propositions and processes in collaboration with both private and public consumers and suppliers. Through development of five textile pilots, CircularTEX offers new, unique insights into solutions and value propositions that future textile solutions should offer as well as guidance for collaboration between textile suppliers and private and public textile customers.



Engineering programme in Sustainable Design

[The engineering programme in Sustainable Design](#) enables students to transform products and systems in order to achieve greater sustainability. Students learn to work with the different aspects of sustainability, including sustainability in relation to climate and social issues. The programme combines sustainable product design with tools from innovation theory and user-oriented design. Visualization and experimentation are important strategies for developing new innovative solutions that can overcome system dependencies and achieve sustainable system transformation in various sectors of society. Students engage in challenging design-oriented problem solving in collaboration with NGOs, companies, public institutions and professional groups. Thus, graduates of this programme contribute to transforming the SDG's into action in society both during their studies and as professionals.



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TECH Centre for Circular Economy will help achieve a sustainable future

At AAU, an interdisciplinary centre called [TECH Centre for Circular Economy](#) (TECH4CE) will strengthen the many different initiatives in sustainable and responsible consumption and production. TECH4CE will contribute to the progress already made in production businesses such as textile, plastics, electronics, and building, by analysing and developing strategies for these initiatives. Particular focus is on design of circular products and business models, logistics regarding materials and resources, traceability of products and their life cycle, standardizing and certifying recycled products and materials, and documentation of environmental effects. TECH4CE consists of representatives from all four departments under the Technical Faculty of IT and Design. In 2023, TECH4CE hosted its first summer school in applied circular economy, relevant for both PhD students, academics and professionals within the field.



Circularity of industrial thermoplastic for high quality recycling

Plastic is used all over for packaging and products, creating enormous amounts of waste with negative environmental effects. Switching from a take-make-dispose approach to plastics to a circular economy built on reusing and recycling plastic is not trivial. It requires cutting edge technology, redesign of manufacturing systems and supply chains, and consideration of the entire product lifetime. At the Faculty of Engineering and Science, we are engaged in developing technologies for mechanical recycling, methods for sourcing and handling material streams, and other solutions to these challenges in the project '[Circularity of Industrial Thermoplastic for high quality recycling](#)'. The project is based on close industrial collaboration, and the aim is to enable companies to use recycled plastics in their products to the highest possible value application preferably in their own products.



Old furniture is upcycled instead of ending up as waste

A more circular way of thinking about the materials we consume is necessary, and specific consideration is given to durability, the possibility of repair, recycling, and disposal every time furniture is purchased at AAU. Campus Service is increasingly trying to reuse or upgrade existing furniture rather than discarding it. The latest example of this is the [upgrading of leftover drop-down tables](#). They have been given a service overhaul and a new table top, and a new life as group tables in study areas. Another example is some of the many partitions found in open study areas at the university. Here, the frame is reused and more up-to-date boards with acoustic-regulating material and glass or white-board are installed. At the same time, a programme's identity is reflected in the recycling of furniture.

Ensure sustainable consumption and production patterns

Students in the Department of the Built Environment working at one of the new upcycled tables made from chalk boards (Photo: Maria Trabjerg)





In May 2023, 50 staff members and students met for an internal Kick Off of AAU's Climate Plan 2030 (Photo: Lasse Møller Badstue)



DCEA - The Danish Centre for Environmental Assessment

DCEA is an interdisciplinary research and policy engagement centre focusing on impact assessment and decision-making practices in the sustainability domain. DCEA is involved in several projects and initiatives all working to develop climate and environmental solutions for a sustainable future. One is the upcoming AAU Climate Account and Climate Plan where DCEA has a key role. This has a wide focus on both the footprint and handprint of university activities. DCEA is also leading the international Horizon Europe project, [ALIGNED](#), that creates a common assessment platform to support bio-based production. Further, DCEA is leading the project [GETTING THE DATA RIGHT](#) which is a large project aimed at providing data for decision support for effectively reducing greenhouse gas (GHG) emissions. This involves GHG emissions data on the production and consumption of all products in all countries.



Towards EU embodied carbon benchmarks

As the primary result of the project '[Towards embodied carbon benchmarks for buildings in Europe](#)', researchers from AAU in collaboration with Ramboll and KU Leuven developed a framework for benchmarking and limiting the embodied carbon of new buildings. The project began with a study identifying solutions to measure embodied carbon emissions and to define carbon budgets and targets. Secondly, the project included recommendations for a baseline of current embodied carbon levels in new buildings as well as considerations of the available carbon budget for these emissions. The ambition is that the project will lead to policy development across Europe at the political level and to the implementation of a performance system in the form of benchmarks for the reduction of embodied carbon to integrate climate change measures into policy and planning.



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PUBLICATIONS



Kick off of AAU's Climate Plan 2030

In 2021, AAU adopted [three climate targets](#) that in 2023 were complemented by the development of AAU's first climate plan. The climate plan addresses the handprint and footprint of AAU, and consists of nine action areas (three handprints and six footprints). The nine areas cover our handprint in relation to research, education and behaviour and communication, as well as our footprint connected to buildings and energy consumption, procurement, mobility, food and beverage, waste resources, and investments.

In May 2023, 50 staff members and students met for an internal [Kick Off of AAU's Climate Plan 2030](#) at AAU INNOVATE with a two-part programme: first presentations and then a workshop consisting of eight groups. The presentations provided inspiration for further dialogue in the groups – analogue as well as digital – and all participants had the opportunity to provide input on the plan in relation to the nine action areas.

Following the Kick Off, [several workshops](#) have been held covering the individual action areas in the climate plan. During the fall of 2023, all staff and students were invited to provide input and ideas for the climate plan. In the spring of 2024, the climate plan will be supported through the development of specific action plans and targets.



Tool for the sustainable transformation of the Danish construction sector

The transformation of the Danish construction sector revolves around [a tool developed by researchers from AAU](#) based on legislation, research and dialogue with industry. The tool, called [LCA-BYG](#), produces a Life Cycle Assessment (LCA) that calculates the potential environmental impacts of buildings, including production and use of materials, energy consumption throughout the buildings' life cycle, and disposal or recycling of the materials. The tool is interactive and allows construction companies to enter all relevant data. The first version was developed in 2013, and is to this day continuously adjusted by a team of AAU researchers in order to incorporate e.g. DGNB sustainable building certifications and new legislation.

Take urgent action to combat climate change and its impacts



Experimental Carbon Capture and Utilization and Energy System Integration

The global surface temperature is increasing and CO₂ in the atmosphere is the primary driving force. The warming entails potentially irreversible changes to the climate, and it is widely suggested that direct air capture technologies are necessary to avoid further damage. In addition, the urgent need for renewable carbon sources is increasing in the heavy transport sector for fuel production and in the chemical industry for the production of materials such as plastics. In [this project](#), the process integration of a high-temperature direct air capture system and a synthetic fuel process is optimized. The high-temperature regeneration of CO₂ is achieved through a calcination process which is examined experimentally in different reaction atmospheres on both microscale and in a lab-scale calciner. Likewise, the fuel synthesis is investigated to explore the impact of the calcination gas product.

CLIMATE TARGETS

- Aalborg University has reduced its greenhouse gas emission by 70 percent in 2030 (1990 baseline)
- Aalborg University is climate neutral no later than 2045
- Aalborg University will contribute to national fulfillment of the 70 percent reduction in 2030 and climate neutrality in 2045 in the cheapest and best possible way while striving to make it technologically, organisationally, and humanely possible to further enhance the ambition of these targets.



Empowerment of coastal communities to transition towards more inclusive, sustainable and resilient coastal development is the aim of the EmpowerUs project (Photo: Philipp Waldhauer)



The 21st Danish Marine Researcher Meeting

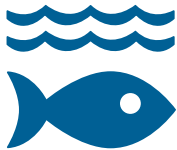
In August 2022, AAU hosted the [21st Danish Marine Researcher Meeting](#) – a three-day event focusing on issues such as sustainable fishery, microplastics, and restoration and preservation of marine environments. The meeting was held with a sense of urgency: Today, the sea is under ever-greater pressure from economic growth and development, and damage to the ocean has far-reaching effects on productivity, species diversity and resilience. The mission of the Marine Researcher Meeting, which is held every second year, is to increase awareness and contribute to establishing a healthier and better marine environment, including sustainable use of marine resources. The meeting includes participants from universities, authorities, ministers, the business community, interest groups, the fishing industry, the Danish Society for Nature Conservation, members of parliament, etc.



The Fish's Footprint

The number of fish in the oceans is not infinite, and the negative climate impact from fishery should not be neglected. This is documented by an AAU research project called [The Fish's Footprint](#). AAU researchers have examined the climate impact of the Danish fishing industry through life cycle assessments. The project applied different methodological approaches, scrutinized the importance of assumptions and data availability as well as examined the communication challenges that may arise when calculating the climate impact from fishing. The project's results mark a starting point for future endeavours to reduce Danish fishing's climate impact based on data and with a clearly defined focus. The project's insights will be relevant for the development of consumer-oriented environmental and climate labelling or campaigns.

No. 7
university in the world
on SDG 14 in the THE
Impact Rankings 2023
(out of 504 institutions)



241
PUBLICATIONS



Participation in the Fisheries Commission

In August 2022, Troels Jacob Hegland, Associate Professor in the research group Centre for Blue Governance, Department of Sustainability and Planning, was appointed to the [Fisheries Commission](#) under the Ministry of Food, Agriculture and Fisheries. Following BREXIT, which significantly changed the framework conditions for Danish fisheries, an expert commission was set up to advise on how Danish fisheries can be developed and managed to stay economically sound and contribute to the Danish economy. Crucially, the development of fisheries must respect the marine environment as well as commitments to combat climate change. The commission consists of 10 members that represent expertise on fisheries, food, entrepreneurship, economy, ecosystems, and climate. The recommendations are expected to be delivered before the end of 2023.



Centre for Blue Governance – Interaction between people and the sea

[The Centre for Blue Governance](#) (CBG) at AAU is a multidisciplinary research group focused on the interaction between people and the sea. CBG is working to empower coastal communities to transition towards sustainable, inclusive, and resilient coastal development in the research project, [EmpowerUS](#). The project is funded through the EU's Horizon Europe programme and spans six living labs across six European regional seas. Healthy oceans and seas are essential to our existence, and in the Horizon 2020 research project [ECOTIP](#) – Ecological Tipping Cascades in the Arctic Sea, CBG is focusing on understanding and predicting changes in Arctic marine biodiversity and implications for two vitally important marine ecosystem services: fisheries production, which is the economic lifeblood of many Arctic communities, and carbon sequestration, which has important feedbacks for the global climate.



DiveTracker monitors life below water

Students in the Department of Electronic Systems have developed an app for underwater communication – [DiveTracker](#) – that can be used for monitoring divers. By integrating other types of sensors, the technology can also be used to measure ocean pollution or monitor life below water. For instance, a diver or fisherman will carry the DiveTracker device while doing activities in the ocean. The technology will then measure the level of plastic pollution or oxygen and transmit the data to the device located above water, thus providing a better understanding of the ocean and marine life and the challenges they face. Similarly, fishermen can use the technology to estimate the quantity of marine life in different locations of the ocean so as to avoid areas with scarce quantities of fish. More data on marine life is crucial for ensuring the stability and longevity of the oceans.

AAU research contributes to reducing the climate impact of fishing (Photo: Niels Madsen)





The Danish Hedgehog Project aims to document the status of species and optimize conservation strategies to protect wild hedgehogs (Photo: Tine Reinholt Jensen)



Research-based protection of wild hedgehogs

An AAU researcher in the Department of Chemistry and Bioscience is documenting the status of species focusing on optimizing conservation strategies to protect wild hedgehogs as the European hedgehog is vulnerable to extinction. The [‘Danish Hedgehog Project’](#) involves more than 400 volunteers collecting dead hedgehogs from all over Denmark. The project uses the dead hedgehogs to describe the general health status of the Danish hedgehog population including examining parasite burdens, microbiomes, pesticides and other chemicals in the hedgehogs, and the impact of inbreeding on hedgehog life expectancy. The findings show that the Danish hedgehog population has low genetic diversity, indicating a high degree of inbreeding. The likelihood of inbreeding increases as the hedgehog’s habitats become fragmented by roads, buildings, fences, and railway tracks, and as population decline restricts the pool of potential mates.



AAU represented in Denmark’s first Biodiversity Council

When Denmark’s first [Biodiversity Council](#) was established in 2021 by the Ministry of Environment, AAU professor Niels Madsen was appointed as one of the council’s nine members. Niels Madsen particularly contributes with expertise on biodiversity in the coastal zone and the sea. The council advises the Danish government and Parliament on how to improve conditions for the proliferation of wild nature in Denmark where species of different kinds can thrive. In 2022, the council published its first report with the disheartening conclusion that Denmark so far has not done nearly enough to turn the loss of biodiversity, which is already well documented, into progress. The establishment of the Biodiversity Council reflects an ambition to give a historic boost to Danish nature and is part of a broad political agreement dating back to 2020.

10 new insect hotels at Aalborg main campus



162 PUBLICATIONS



Biodiversity makes AAU a living lab

In 2022, [walk and talk routes](#) were established on campus where staff and students can hold meetings outside while also enjoying the benefits of daylight, fresh air, movement, and the view of the flourishing areas. The gardening team has also created a community garden where students and staff can use a raised bed to grow their own flowers and vegetables. In addition, falcon boxes have been set up on some of the tall buildings in the area. Biodiversity is increased by letting grass and herbs grow wild, and to further support this, a brush fence was erected, and insect hotels have been set up throughout Campus East. These measures also turn the campus into a [living lab](#) where this year several project groups are investigating biodiversity as part of their semester projects.



BIOPATH - Pathways for an efficient alignment of the Financial System with the needs of Biodiversity

The [BIOPATH](#) research project aims to contribute to transformative change by turning the financial system into an important driver for halting and reversing the loss of biodiversity. The vision is that the knowledge and innovations generated in the project are widely integrated into decision making in industry and the financial system. Land use is the largest driver of terrestrial biodiversity loss. Therefore, BIOPATH focuses on land use change and management intensity related to agriculture, forestry and energy. The research project aims to map, assess, co-develop and test existing and novel approaches for the integration of biodiversity considerations into financial decision making with our financial and industrial partners, and analyse the institutional and policy implications of potential transition pathways.

75,000 m² of wild nature at AAU



BioValue

Biodiversity loss needs urgent action: turning research results on biodiversity protection into actionable measures is a priority for Europe. To this end, collaboration is essential for informing national and European policies. The project [BioValue](#) leverages transformative change in spatial policymaking, planning practices and infrastructure development to upscale opportunities for valuing biodiversity in support of EU strategic action. BioValue considers three complementary instrumental perspectives to support different sectors and actors in taking ownership of biodiversity concerns:

- Spatial planning and management instruments
- Environmental assessment instruments
- Economic and financing instruments

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss



Ladybug in the rewilding area on AAU’s main campus (Photo: Morten Johansen)



Ukrainian flag on AAU Campus Copenhagen, 2022 (Photo: William Holler Brændstrup)



Human rights salon

The Department of Law held an online [human rights salon](#) open to all interested parties. The featured speaker was an AAU professor from the Raoul Wallenberg Institute for Human Rights. The topic of the salon was Human Rights Cities – cities where local government, local parliament, civil society, the private sector, and other stakeholders are committed to making sure that the city applies international human rights standards. Human Rights Cities strengthen the local level in addressing issues across sustainability, accessibility, governance, public services etc. Thus, human rights cities contribute to achieving the SDGs.



Algorithmic Explainability for Everyday Citizens

Despite the ever-increasing impact of AI on our daily lives, everyday citizens are insufficiently able to understand and interact with algorithmically driven decision-making. In the [Algorithmic Explainability for Everyday Citizens](#) project, researchers in the Department of Computer Science seek to understand the needs of the public in assessing AI-driven decision-making. Based on the needs identified, the researchers will develop and evaluate interactive applications to inform the design and deployment of future AI-driven decision support systems.



Master of Public Governance

The continuing education [Master of Public Governance](#) is aimed at managers and leaders in the public sector to develop their personal management practice. The purpose is to qualify and develop the public manager's ability to perform professional management and develop their own management practices. The training is intended to develop the manager's knowledge, competence and skills. This means that the manager will acquire knowledge on the values and conditions of management in public organizations. The training includes knowledge of management theory and concepts and the ability to analyse and translate theories into practice; the ability to reflect on one's own management conditions and practices; and the ability to identify change needs and translate visions and strategies into action. The training emphasizes the development of personal management practice and allows for flexibility for the individual participant.



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PUBLICATIONS



Green transitioning calls for specific skills in public employees working with administration

Researchers in climate communication from Denmark and Sweden have developed [a method that strengthens public institutions in the green transition](#). The method enables institutions to utilize citizen potential to create change, such as investment in green solutions. The method requires public frontline employees to meet citizens on new terms, which requires skills to listen and new ways of interacting with citizens. For example, the citizens of a municipality wanted impartial, individual advice on converting from an oil-fired boiler to a heat pump – advice that would be too expensive for the municipality to provide. The municipality was open to the citizens' request, and a solution was found in home get-togethers where the citizens invited friends over for coffee with an energy consultant sent by the municipality to give advice. The method is available at [samskabende.com](#).



Whistleblower policy at AAU

In 2021, AAU introduced a new [whistleblower policy](#) creating a reporting scheme to protect whistleblowers and ensuring that serious mistakes or negligence are found and, to the greatest extent possible, prevented. The policy applies to both current and former staff members as well as external partners of the university.

From December 2021 to December 2022, AAU received [three reports](#) through the whistleblower scheme. This is taken as evidence that the policy is successful, and the scheme has been evaluated as being a good supplement to day-to-day communication and management at AAU. Two of the reports are still being processed while one has been resolved.



Largest legal conference in Denmark updates civil servants on new laws and practices

[The largest ever legal conference in Denmark](#) took place in 2022 where the Department of Law at AAU welcomed almost 1000 participants for a two-day conference in Aalborg.

The conference was accessible to civil servants, researchers and jurists who could choose among 33 topical presentations on 4 subjects: climate and environmental law, digitalization, social law, and administrative law. The conference focused on new research or legal areas where developments are happening quickly, thus providing participants with updated knowledge about new rules and new practices.

Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

Professor Sten Bønsing welcomes the participants to the conference (Photo: Michael Bo Rasmussen, Baghuset)





Celebration of AAU results in the THE Impact Rankings 2023 (Photo: Lasse Møller Badstue)



Aalborg University - impact through partnerships

AAU actively engages in creating strong partnerships on a local, regional, national and international scale. AAU is involved in [various partnerships](#) to promote cross-sectoral dialogue and action for developing best practices, new innovations and technologies aimed at tackling the diverse sustainability issues.

The scale of the partnerships ranges from international collaborations to collaborations between businesses of all sizes, public sector organizations and AAU researchers or students to rental of AAU research equipment and facilities.

AAU's engagement in partnerships for the goals received a [second place on SDG 17](#) in the [Times Higher Education Impact Rankings 2023](#). Here we present some of the strategic partnerships at AAU:

Energy Cluster Denmark

AAU is heavily involved in [Energy Cluster Denmark](#) (ECD), Denmark's cluster organization for the energy system. Strategic research partnerships with small and medium-sized companies, global companies and public organizations lead to beyond state-of-the-art energy solutions for the transition towards climate neutrality and a fossil-free society. AAU researchers work with ECD members in domains such as energy production, storage, efficiency and system integration. AAU is a board member in ECD.

CESAER

[CESAER](#) is a united voice of 58 science and technology universities in Europe. Participation in CESAER provides opportunities for Aalborg University to influence key bodies, participate in European funding programmes and advance understanding of science and technology in societies for a sustainable future.

AAU is represented in several task forces, for example [Task Force Sustainability](#). Its purpose is to accelerate needed change and advance contributions to knowledge societies for a sustainable future, and in doing so to externally and internally advocate, inspire and learn through best practice.

No. 2

university in the world
on SDG 17 in the THE
Impact Rankings 2023
(out of 1625 institutions)



Green Transition of Education and Educational Technology (GreenEdTech)

Climate change mitigation is the most urgent political agenda, and education is a core instrument in addressing the challenges. [GreenEdTech](#) will develop sustainable education solutions for Danish schools that integrate digital learning to educate young people to be at the forefront of mitigating climate change and obtaining new green jobs.

The consortium consists of academic environments, edtech development organizations, the Danish Agency for IT and Learning, and Danish companies delivering green solutions. AAU plays a vital role in the GreenEdTech partnership as leader of the project and is responsible for designing models for education in sustainable development.

CO2Vision

[CO2Vision](#) is the joint beacon of green growth in the entire region of North Denmark aiming at making the region a national and global frontrunner for carbon capture, utilization, and storage (CCUS). CO2Vision derives from a wide-ranging partnership, consisting of more than 50 private companies, organizations, educational and research institutions, and business developers.

AAU is part of the consortium behind the beacon, and we complement it specifically with mapping of energy infrastructure, construction of test facilities, real-time simulation of the integration of new technologies in the energy system, analyses of related labor market needs and design of educational programs for the future CCUS-industry in collaboration with companies and educational institutions.

Transatlantic Telehealth Research Network

As the prime mover in Denmark, AAU is a major presence in the [Transatlantic Telehealth Research Network](#) (TTRN) – a partnership between Denmark and the USA dedicated to developing cutting-edge research and innovation in telehealth to improve health and well-being for patients globally. The research is interdisciplinary and focuses on developing new diagnostics, preventive care and treatment technologies for patients in their own homes utilizing telehealth technologies. Problem-based, user-driven innovation is a key focus in the international and interdisciplinary TTRN.

TTRN gathers knowledge and contributes with research projects, PhD courses, white papers and position papers that have an impact globally. Currently, TTRN is concerned with how technology can help solve the major capacity problems in the healthcare system.

**Strengthen the means
of implementation and
revitalize the global
partnership for sustainable
development**

As a network university, AAU is a member of international networks and international collaborations that extend around the world. This map shows our international collaborations regarding projects and publications, 2019-2023 (Source: [AAU Research Portal](#))



About this report

This report constitutes only a small subset of the many initiatives AAU has embarked on in our efforts to contribute to achieving the UN Sustainable Development Goals. Additional information on how Aalborg University engages with the UN Sustainable Development Goals in research, teaching, collaborations and operations can be found on the [AAU website](#).

The activities presented in this report have been identified and selected through comprehensive consultations with key stakeholders from the Faculty of Medicine, the Technical Faculty of IT and Design, the Faculty of Engineering and Science, the Faculty of Social Science and Humanities, Campus Service, AAU Innovation, the Rector's Office, Study Services, and AAU Communication and Public Affairs.

Publication data used in this report for the first 16 Sustainable Development Goals was extracted from SciVal using the predefined Research Areas in SciVal for the respective SDGs. The methodology used by SciVal to define the SDG Research Areas is the Elsevier 2023 SDG mapping¹. The search was limited to publications from 2018-2023, and data was extracted on 31 October 2023.

¹ Bedard-Vallee, Alexandre; James, Chris; Roberge, Guillaume (2023), *"Elsevier 2023 Sustainable Development Goals (SDGs) Mapping"*, Elsevier Data Repository, V1, doi: 10.17632/y2zyy9vwzy.1



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