ISCN-GULF Sustainable Campus Charter Report 2017
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Foreword
As a technical university, KTH has unique opportunities to contribute to sustainable development, both nationally and internationally. We can educate our students so that they can contribute to a sustainable societal development after graduation. We develop solutions that contribute to sustainable development and we can, also in collaboration with business, the public sector and non-profit organisations, contribute to the dissemination of knowledge and implementation of solutions for sustainability. Moreover, we can be an example and contribute by reducing our own environmental impact, e.g., through campus work. One starting point of our sustainability work are the global Sustainable Development Goals and the Paris Agreement to combat climate change.

In Vision 2027, our goal, at KTH, is to be a leading technical university in Europe for sustainable development and that KTH’s identity and brand should be associated with sustainable development. Sustainable development is a prioritised area in KTH’s new development plan. The plan covers the 2018-2023 period and has Vision 2027 as the starting point. KTH’s work with sustainable development is guided by our sustainability policy and our sustainability goals for the 2016-2020 period.

During the past year, we have received considerable evidence that KTH’S sustainability work is heading in the right direction. In 2017, the Swedish Higher Education Authority (UKÄ) conducted a thematic evaluation of the country’s higher education institutions, where KTH received the higher assessment: that we have well developed processes for working with sustainable development in education. In the report, KTH is also spotlighted in many places as an example for other universities.

Our environmental management system was recertified in spring 2018 based on the new requirements of the environmental standard ISO 14001:2015. KTH received the highest grade in leadership and involvement, which is an important condition for sustainability to permeate the entire operation. According to the Swedish Environmental Protection Agency’s ranking of Swedish agencies’ environmental management work, we belong to the leading group deemed to have “a very high degree” of systematic environmental management work.

To reach our sustainability goals we must work systematically in several areas:

* The schools need to continue the systematic work of integrating sustainable development into educational programmes.
* Integration of sustainable development in KTH’s research base needs to be strengthened, e.g. with more faculty positions related to sustainable development in different subject areas.
* Visibility of KTH’s work with sustainable development can be increased.
* KTH’s strategic campus plan needs to be communicated and implemented.
* Release of greenhouse gases from KTH’s business travels needs to be reduced and further measures implemented.
* Sustainable development needs to continue to be integrated into the university’s processes, plans and decisions.

In June 2018, we will be arranging and hosting the annual conference in “International Sustainable Campus Network”, where we have, among other things, the opportunity to present our new Campus plan with its clear sustainability focus.

Appendix 1, Report on KTH’s Sustainable Development Objectives 2017, summarises the work with sustainability goals and its progress. Shorter versions of the goals are included in the report, as are links to the complete text on KTH’s website¹. Indicators related to the objectives are listed in appendix 2. In addition to the nine goals reported here, KTH also has sustainability goals for the working environment.

Stockholm, June 2018
Göran Finnveden, Vice President for sustainable development
Kristina von Oelreich, Sustainability Manager

¹ https://intra.kth.se/en/styrning/miljo-hallbar-utveckling/overgripande-hallbarhetsmal-1-359245
1 Introduction

This report describes KTH Royal Institute of Technology’s work with environment and sustainability during 2017. The report has been compiled for the International Sustainable Campus Network (ISCN) but also for a broader group of stakeholders.

1.1 About KTH

KTH Royal Institute of Technology, founded in 1827, is the largest and oldest technical university in Sweden providing one-third of Sweden’s technical research and technical/engineering education capacity at university level. KTH education and research spans from natural sciences to all branches of engineering also including architecture, industrial economics, urban planning, work science, philosophy and the history of technology. In addition to the research conducted at KTH Schools, several national research centres are hosted by KTH.

KTH is an international university with international research and educational exchange programmes in Europe, USA, Australia and Asia. KTH actively participates in various EU research programs and collaborates with Swedish and international aid agencies. Further, KTH has well established and extensive collaboration with Swedish businesses, governments and organizations and has strategic collaboration agreements with several major companies and with Stockholm County Council and the City of Stockholm.

In 2017 KTH had 13,323 full time students at basic and advanced levels, 1,767 active doctoral students and 4,952 employees (3,563 full time equivalents). In 2017, KTH’s total revenues amounted to SEK 5,076 million. Funding consists of government grants for educational programmes and grants for research and doctoral programs as well as external funding from, amongst others, research foundations and the EU. KTH has five campuses around Stockholm, with premises and facilities totalling 289,000 square meters.

1.2 Organisation

KTH’s activities are separated into five different Schools that report directly to the President and are headed by a Dean and a Vice-Dean. Each of these schools has a number of departments, Centres of excellence and undergraduate and postgraduate study programmes.

The President leads operations and reports to the University Board which has 15 members – the chairperson, who should be one of the eight external representatives, three faculty members, the President and three students. President’s Management Council deals with strategic educational, research and quality issues and consists of the President, Deputy President, Dean of Faculty, Vice Dean of Faculty, Vice Presidents, University Director and the chairman of the Student Union (THS). The President’s Strategic Council deals with matters concerning all KTH schools and is a forum for discussion and information and consists of the President, Deputy President, Dean of Faculty, Vice Dean of Faculty, University Director, Vice Presidents, all Deans of Schools, two student representatives, communication manager and management communicator. The Faculty Council represents the entire faculty and acts as an advisory body to the President. The Council has overall responsibility for issues relating to the quality of education, research and community interaction. Vice Presidents are appointed by the President for specific areas and tasks. The University Administration handles both administration and service functions for the entire university. In addition, KTH has established five research platforms that coordinate research across schools and traditional disciplines, and these are Energy, ICT, Life Sciences, Materials and Transportation.
1.3 About this report

This report is compiled for the International Sustainable Campus Network, ISCN². It is centred on three principles which ISCN’s work is based upon and structures campus commitments about sustainability into a nested hierarchy encompassing individual buildings, campus-wide planning and target setting, and integration of research, teaching, outreach and facilities for sustainability.

This report concerns 2017. The information and data presented here originates from KTH’s strategic and guiding documents, valid or new developed documents for 2018 - 2023:

- KTH’s Annual Report 2017
- KTH’s Strategic and Action Plan 2013-2017
- KTH’s Development plan 2018–2023
- Vision 2027
- KTH Campus plan KTH Campus plan 2018 - 2023
- KTH’s environmental management system with connected measurements
- KTH’s Sustainable Development Objectives 2016-2020
- KTH-Sustainability’s project plan 2016-2018
- Other supporting documents

KTH has a broad perspective on sustainability as a starting point, including ecological, economic and social aspects which are reflected in this report. However this report mainly focuses on activities included in KTH environmental management system and therefore exclude for example work environment.

² The International Sustainable Campus Network (ISCN) provides a global forum to support leading colleges, universities, and corporate campuses in the exchange of information, ideas, and best practices for achieving sustainable campus operations and integrating sustainability in research and teaching. Read more: http://www.international-sustainable-campus-network.org/
2 Environment and Sustainability

Humanity faces major global challenges. As a technical university, KTH plays an important role to find sustainable solutions to meet these challenges. KTH contributes to sustainable development by providing educational programs, conducting research and through interactions with the surrounding community. Through its activities, KTH impacts the environment directly through the consumption of materials, energy, use of buildings and campus areas as well as travel and purchasing and procurement.

2.1 Overall Visions, Policies and Objectives

Vision 2027 - outlines KTH’s long-term strategy leading up to the university’s 200th anniversary; KTH aim to contribute to a brighter future by finding smart solutions to present and future challenges. At KTH, sustainable development is a common objective for research, education and collaboration with the overall objective that KTH will be one of Europe’s leading technical universities within this area. KTH’s campus environments should be embodiments of bold, sustainable urban design.

KTH’s Strategic Plan 2013–2017 - The Strategic Plan based upon the targets drawn by Vision 2027 that together with an action plan outlines how KTH should work to meet goals, activities and follow-up measures. The strategic plan outlines several environmental and sustainable aims for KTH connected to identity and brand, campus environments and educational programmes. All schools and the University administration have also drawn up their own strategic plans using the overall KTH plan as a basis.

KTH’s Development plan 2018–2023 - A leading KTH, A leading technical and international university creating knowledge and competence for a sustainable future https://intra.kth.se/polopoly_fs/1.782478!/KTH_Utvecklingsplan_ENG.PDF The new development plan was decided at the end of 2017 and provides guidance for the coming six years. It has four focus areas and sustainable development is one of them. Based on this development plan, all schools are currently working on their development plans.

KTH’s policy for sustainable development - represents a broad perspective of sustainable development and states that KTH shall actively and responsibly contribute to sustainable development through education, research, collaboration, and by reducing our own environmental impact and promote social responsibility. The policy is connected to both ISO 14001, Environmental management, and ISO 26000, social responsibility.

KTH’s Sustainable Development Objectives 2016-2020
KTH has overall sustainable development objectives in ten areas; Education, Research, Collaboration, Travel, Work Environment, KTH´es campuses, Purchasing and Procurement, Management of Chemicals, Donation and foundation management, Organisation and management.

KTH Campus plan, a living campus for a sustainable future - sets the long term focus for sustainable campus development over the next 15-20 years. The overall goal is to create a vibrant and sustainable campus characterized by diversity, new operations and activities and increased international exchange. The plan was developed in collaboration between KTH and the landlord Akademiska Hus in a unique and inclusive process with stakeholder participa-

3 “KTH´es campuses” objective includes the aspects, energy, new construction and renovation
tion. A new Campus Plane for the period 2018-2023 was developed during 2017 with both KTH’s sustainability goals and the global sustainable development goals as starting points.

*Other relevant policies*

KTH’s core values are related to sustainable development, for example human rights and freedom, equality and diversity among employees and students, and a free and open discussion climate. The values that guide KTH’s activities are also expressed in an ethical policy, quality policy and personnel policy.

### 2.2 KTH’s Environmental Management System

KTH is certified according to the international environmental management standard ISO14001 since August 2015 and was recertified according to ISO 14001:2015 in April 2018. KTH’s environmental management system covers KTH’s entire operations which include all schools at all five campuses and the University Administration.

The management system mainly includes, Policy for sustainable development for KTH, an environmental review of KTH’s operations, assessment of environmental impact, sustainable development objectives and associated action plans, documented procedures, tools for tracking legal and other requirements as well as internal and external audits, annual management reviews, communication and trainings for employees.

The Sustainable Development Objectives reported in this report are valid from 2016-2020

### 2.3 Laws and Regulations

KTH actively monitor and control laws and regulations. All applicable laws and regulations connected to environmental and sustainability issues are listed in a web-based tool, The Environmental Guide. Every law is accompanied by instructions on how it should be followed and each year a legal audit is undertaken to ensure that KTH complies with all applicable environmental legal and other requirements.
Sweden has legal requirements that also steer the general work; the Higher Education Act\textsuperscript{4} sets requirements for promoting sustainable development in higher education and the ordinance on environmental management in government authorities\textsuperscript{5} requests certification for authorities with significant environmental impact according to EMAS\textsuperscript{6} or ISO14001.

2.4 Organization of KTH’s environmental and sustainability work

KTH’s environmental and sustainability efforts are centrally organized at KTH Sustainability Office at the Department for Building and Environment at the university administration. KTH Sustainability Office works with overall sustainability and environmental issues. This work includes working with integration of sustainable development in the core activities education, research and collaboration as well as environmental management and campus related questions and integration of sustainability integrated into regular activities and operations.

KTH Sustainability Office consists of six employees and is led by the Sustainability Manager. The work connected to core activities is supported by the Vice President for Sustainable Development and the advisory Academic reference group for sustainable development. The Vice President for Sustainable Development act as an advisory to the President and is a member of the President’s Management Council.

The environmental management work at KTH’s schools and university administration is managed by Environmental Representatives together with their local management and often an environmental group.

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\includegraphics[width=\textwidth]{sustainability_diagram.png}
\end{center}

\textit{Sustainability organisation at KTH}

\textsuperscript{4} Swedish Code of Statutes (SFS) No. 1992:1434
\textsuperscript{5} Förordning (2009:907) om miljöledning i statliga myndigheter
\textsuperscript{6} EMAS II [Regulation (EC) No. 761/2001 of the European Parliament and of the Council of 19 March 2001 (EMAS)]
3  Report KTH’s Sustainable Development Objectives 2017

Here follows Report on KTH’s Sustainable Development Objectives 2017 connection to the principals; Sustainability Performance of Buildings on Campus, Campus-wide Master Planning and Target Setting and Integration of Facilities, Research and Education.
Appendix 1

The Royal Institute of Technology’s (KTH) overall sustainability goals 2017
Education

Overall sustainability goals, 2016-2020
- KTH shall actively strive to increase all employees’ and students’ knowledge about and interest in issues concerning sustainable development.
- Sustainable development shall be integrated into all study programmes, at all levels so after graduating, students can contribute to sustainable societal development of.

A full description of the goals can be found on the KTH website

What effect do we have? KTH graduates are driving forces in societal and technological development. Tomorrow’s engineers and architects must be able to work for sustainable solutions. Therefore, it is important for all students and doctoral students to acquire knowledge and tools to be able to consider environmental and sustainability issues that are significant for societal development and the challenges we face.

Results
The goals have been partly achieved. During 2017, UKÄ conducted a thematic evaluation of how Sweden’s universities and colleges were working with sustainable development education. KTH belonged to the one quarter that received the higher assessment; that we have well developed processes for working with sustainable development in education.

To reach the goals demands continued systematic work where all of the schools and all of the programmes work for continued integration and progression of sustainable development in the programmes.

Examples of what we have done
- All schools work from the action plans for engineers, architects and Master’s programmes that were developed in 2016.
- During 2017, nearly all doctoral programmes have developed actions plans for integration of sustainability development, up until 2020.
- In the obligatory programme analyses, sustainable development is emphasised under its own heading.
- A new civil engineering programme in Industrial technology and sustainability has been developed and started in 2018.
- The teaching and learning course Learning and sustainability development for teaching staff is given annually.
- A web-based platform for teachers, to introduce sustainable development in main courses, is now ready.
- Work has begun with the development of courses that focus on sustainable development at the third-cycle level.
- Staff courses in environment and sustainable development have been conducted.
- Seminars for teachers and students have been arranged with such themes as life cycle perspectives, sustainable business models and the corporate need of competence in sustainable development.

Figure 1. Number of environment and sustainability tagged courses (green bar) and programmes (red bar) at KTH in 2012-2017. Between 2016 and 2017, the number of courses with environmental marking increased from 389 to 435.
Research

Overall sustainability goals, 2016-2020
- KTH’s research for sustainable development shall increase.
- The integration of sustainable development into KTH’s research base shall increase.

A full description of goals can be found on the KTH website

What effect do we have? The research being conducted at KTH has a major impact on society and can therefore contribute to sustainable development (HU). KTH seeks to be at the forefront of research that addresses sustainable development and to have sustainability become increasingly integrated into existing research.

Results
The goals have been partly achieved. External research funding with HU specialisation has increased. During the year, two large KTH led research programmes, funded by Mistra, were started; one on sustainable consumption and one on materials for water and air purification. The strategic innovation programme Viable Cities, which is conducted from KTH, was also started. Furthermore, the number of authors of articles and publications within HU have increased, while the per cent of job vacancies with expressed HU specialisation have decreased somewhat. During the year, the positions’ connection to HU will be more closely analysed.

To reach the goals, there must be a strong integration of sustainable development in KTH’s research base. Sustainable development must be integrated into more subjects and into more departments. This means, among other things, that more faculty positions, more faculty appropriations and more centres will have a clear connection to sustainability.

Examples of what we have done
- Analysed how KTH’s research addresses the global sustainability goals. All goals are addressed, but especially universal sustainable energy, sustainable industry, innovations and infrastructure and combating climate change.
- Arranged network meetings and seminars for KTH’s researchers to find connections between the disciplines and develop new research areas. One research-initiated network for air purification, Clean Air Network, was started.
- Funding of interdisciplinary initiative linked to environment and sustainable development, cross MHU.
- Provided information on current research calls within HU, as a service to KTH’s researchers.

Figure 2. Normalised indicators for research in environment and sustainable development: number of authors who publish within MHU (purple line), number of articles within MHU (green line), per cent of external funding from the Swedish Environmental Protection Agency, Formas, Mistra and the Swedish Energy Agency (blue line), as well as the per cent of job vacancies with MHU in the subject description (red line).
Collaboration

Overall sustainability goals, 2016-2020

- Through collaboration with existing and new partners, stakeholders and students, KTH shall strive to contribute to sustainable societal development.
- Through communication, dialogue and collaboration with local communities, a clearer picture of KTH as a leading technical university in sustainable development will be conveyed.

A full description of the goals can be found on the KTH website.

What effect do we have? To be able to contribute to a sustainable society, it is important that KTH’s research is disseminated and turned into practice. This is why great importance is attached to collaboration with important societal bodies and to making new research findings known.

Results
The goals have been partly achieved. The number of subscribers to the newsletter on environment and HU at KTH is increasing. During 2017, KTH, in connection with HU, has been cited approximately 900 times in editorials. Examples of persons who have been visible in the media include those KTH researchers who have received notice for their work with the March for Science, those who have commented on products’ impact on climate and those with views on the air travel tax and the university’s role for sustainable development. The Vice President’s weekly blog has had over 12,000 visits over the year.

KTH’s researchers are involved in several investigations and delegations that support the government’s work. This includes such things as the Swedish Climate Policy Council and the Swedish Delegation for the 2030 Agenda. To achieve the sustainability goals, there must be increased investment in increasing the visibility of KTH’s work connected to sustainable development.

Examples of what we have done
- A strategy for communication on sustainable development at KTH has been developed and work to implement it has been conducted.
- A weekly blog by the Vice President on sustainable development and a student blog on sustainable development.
- Financial support of collaborations and student projects within KTH.
- A large number of externally and internally targeted forums have been arranged, including the KTH Sustainability Research Day.
- Collaborated on a large number of networks within HU, such as SDNS NE, the Nordic network NUAS and the international network ISCN for sustainable campuses, the Swedish Association for Sustainable Business (NMC) and for Fossil Free Sweden.
- Contributed to the UN’s 10-Year Framework of Programmes on Sustainable Consumption and Production with a focus on procurement.
- Further developed three collaboration agreements focusing on environment and HU, with SEI, IVL and Akademiska Hus.
- Internally and externally directed newsletters have been published.
KTH’s campuses

Overall sustainability goals, 2016-2020
- KTH’s shall develop and managed sustainability. Ecological and social values shall be maintained and strengthened.
- For new construction and reconstruction, the highest possible environmental performance shall be pursued.
- KTH’s energy use shall be reduced by 10% (electricity, district heating, cooling) per annual work units, full-time equivalent student and per square metre.
- To a greater extent, travel and transports to, from, within and between our campuses shall be done in a sustainable way.
- KTH shall increase knowledge of and have safe and well-functioning processing of dangerous waste.
- Opportunities for waste sorting into relevant waste categories shall exist throughout all of KTH, the amount of waste shall decrease per person and the per cent of sorted waste collection shall increase.
- KTH’s campuses shall be used for the study, research and collaboration of sustainable societal development.

A full description of the goals can be found on the KTH website

What effect do we have? KTH affects its surroundings in many different ways. One example is the use we make of our environment, the local ecosystems and our buildings. Another is our energy consumption and how we get around the campuses. KTH’s campuses shall be a living and dynamic environment based on ecological, social and economic sustainability.

Results
All sustainability goals connected to KTH’s campuses have, to the greatest extent, been achieved except for the energy goal. Continued collaboration with the property owner on energy efficiency and energy mapping. Solar panels, heat pumps and occupancy sensors have been installed. Ecological value has been created with more green spaces, beehives and the use of growing boxes.

Two new buildings were certified, one with a Sweden Green Building Gold and one with Silver. Two buildings were completed based on gold certification requirements, but cannot be certified until 2018, at the earliest.

Greater use of electric cars on campuses and development of the sorted waste system. The amount of sorted plastic and food waste has increased.

To reach the sustainability goals demands, among other things, the implementation of the Campus plan for 2018-2023, continued work on energy efficiency and support of sustainable travel, such as bicycling.

Examples of what we have done
- Development of the new Campus plan for the 2018-2023 period.
- Four beehives were acquired for KTH Campus, for a total of 6 and 150 kg of honey in 2017.
- A garden was created with displays and training in beekeeping and gardening.
- Growing boxes are available to employees at KTH campuses and KTH Flemingsberg.
- Bike days were arranged on the KTH campuses and KTH Flemingsberg.
- Grants were awarded to the student project for shared bicycles.
- Seminars were arranged for staff on food waste and biogas.
- More scientists and students were involved in projects linked to campuses.

Figure 3. KTH’s total energy use (blue line, left scale) and per annual work units (red line, right scale) for 2012-2017.
Travel

Overall sustainability goals, 2016-2020

• Carbon dioxide emissions from KTH’s travel shall decrease by 20% per annual work unit.
• KTH shall increase knowledge of and create conditions for IT solutions that make travel-free meetings possible.

A full description of the goals can be found on the KTH website

What impact do we have? Contribute daily to KTH’s operations for carbon dioxide emissions though the transports that are connected to our operations. The largest source of these emissions is our business trips and, in particular, air travel.

Results

The goals have not been achieved. The total reported CO₂ emissions from travel increased by 1.8% in 2017, compared to 2016. Emissions from air travel over 500 km is responsible for the greatest share. Carbon dioxide emission from air travel under 500 km has decreased. The reduction can be due to an increase in so-called travel-free, digital meetings.

Travel to KTH is high and is affected by such things as variations in research projects and collaborations. To reach the sustainability goal, continued systematic work is demanded, where such things as adopted measures are implemented, low carbon travel is supported, and education and technology for digital travel-free meetings are supported.

Examples of what we have done

- New guidelines for meetings and travel have been developed.
- Collaboration with procured travel agencies on guidelines and instructions for booking travel, management groups have been informed.
- To increase the share of digital meetings, video conference rooms have been prepared, web manuals developed and a pilot project conducted with software testing and training of ambassadors. A student assignment on travel-free meetings was also conducted.
- Travel statistics have been analysed for further measures on reducing travel and increasing use of digital meeting technology.
- The possibility of establishing an internal “climate fund” has been investigated.
- Covering both business trips and commuting, a major project Climate and Economic Research in Organisations (CERO) has been further pursued with a researcher.
- Continued collaboration with project REMM, Virtual Meetings in Public Agencies, according to the notification of intent.

Figure 4. KTH’s total carbon dioxide emissions from business travel in tonnes per year 2012-2017.
Procurement and purchases

Sustainability goal 2016-2020

- Sustainability requirements shall be included in all procurements, call-off procedures and purchases, whenever possible. The requirements shall be continuously evaluated and further developed.

A full description of the goals can be found on the KTH website

What effect do we have? KTH can use its purchasing power positively. By including relevant life cycle requirements in our procurements and by choosing environment-friendly goods and services, we can contribute to environment-driven technological development and sustainable production. KTH can also influence by imposing social demands to create sustainable social conditions on those who work on KTH assignments.

Results

The goal has been partly achieved. Procedures and methodologies have been developed and new environmental requirements devised. The number of procurements with environmental requirements has increased. Based on number, environmental requirements were imposed in 48% of procurements in 2017, compared to 31% in 2016.*

What is bought and the size of payments vary greatly between years. Thus, it is very difficult to compare data over time.

*The figures are based on procurements above the procurement level defined in legislation and do not include direct awards without prior contract notice or call-off procedures against framework agreements.

Examples of what we have done

- A method has been implemented to be able to systematically determine when it is relevant to include an environmental requirement in procurements and agreements.
- Training has occurred to strengthen the knowledge of those with a key function in work with environmental requirements in procurements and purchases.
- Procedures and information on the intranet have been updated.
- Work has started on developing how we can improve our ability to account for the environmental impact of products and services from a life cycle perspective.

Figure 5. Per cent of procurements with (green bar) and without environmental requirements (red bar) in the total procurement value (MSEK) per year 2012-2017.
Chemical management

Overall sustainability goals, 2016-2020

- KTH shall increase knowledge of and create conditions for well-functioning chemical management based on a safety, environmental and health viewpoint.

A full description of the goals can be found on the KTH website.

What impact do we have? KTH uses chemicals widely in its study programmes and research. Thus, it is very important that all those (students and teachers alike) handling chemicals, use and store them in a safe and correct manner, so that there is minimal negative impact on people and the environment.

Results

The goal has been partly achieved. Systematic management of chemicals is done through, such things as phasing out of CMR substances, increased knowledge of risk assessment and electronic recording and scanning of chemicals. Collaboration between the schools is underway to increase purchasing, use and disposal efficiency. Safety training on chemical management and fire risks is continuous. In one project, chemical emissions from labs were studied and resulted in improved directions.

Measures have been taken to increase transport safety of chemical and dangerous waste.

Examples of what we have done

- A project was conducted, together with Stockholm Vatten, to study chemical emissions from labs on KTH campuses. The result is the basis for improved directions for chemical management.
- Purchase of additional scanning equipment for recording/inventorying chemicals.
- Start-up of project for development of a laboratory safety and risk assessment training package for second-cycle students.
- Continued phasing out of CMR substances.
- Revised general procedures for chemicals as part of safer management and legal compliance.
- Annual reporting and inventorying of chemicals has been done, based on current legal requirements.
Investments of foundation and donation capital

Overall sustainability goals, 2016-2020
- KTH’s foundation and donation capital shall be placed so that it contributes to sustainable development.
A full description of the goals can be found on the KTH website

What effect do we have? KTH can also contribute to sustainable development through investments. Capital shall be placed where it gives a good return, while also contributing to sustainable development.

Results
The goal has been partly achieved. Follow-up of sustainability goals shows that all capital managed by KTH, except for 0.63%, has no connection to fossil fuel investments.

Examples of what we have done
- KTH’s investment guidelines have been updated to promote sustainable investments and collaboration with capital administrators has occurred to exclude companies that work with fossil fuel extraction.
- KTH has also participated in events focused on sustainable investments and placements.
To reach the goal, continued development work needs to be done on the criteria and working methods.

Organisation and management

Overall sustainability goals, 2016-2020
- Environmental and sustainability issues are to be integrated into everyday operations and be a part of all relevant processes, plans and decisions.
A full description of the goals can be found on the KTH website

What effect do we have? The environmental management system shall be integrated into everyday operations and management. To be as efficient as possible and have the greatest possible impact, it shall also be a natural part of operations.

Results
The goal has been partly achieved. In 2017, work continued with the mapping of steering documents at KTH and identifying the extent that these documents include environment and sustainable development, as well as how and when environment and sustainable development should be integrated into them.
To reach the goal, sustainability must be more clearly integrated into such things as management’s operational plans and the school’s development plans.

Examples of what we have done
- Integrated sustainability into KTH’s development plan and operational plan.
- Integrated sustainability into KTH’s risk analysis.
- Conducted global and stakeholder analyses connected to operational planning and follow-up.
- Integrated sustainability development for program analyses and the president’s dialogues.
## Appendix 2

### Indicators

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<td><strong>Funding (Mkr) to KTH from four research councils supporting research in the sustainability field; Formas, Mistra, Energimyndigheten and Naturvårdsverket (Mkr) / total amount of external funding for research and doctoral studies</strong></td>
<td>237 (14.5%)</td>
<td>221 (13.3%)</td>
<td>201 (12.2%)</td>
<td>185 (11.7%)</td>
<td>165 (10.5%)</td>
<td>145 (9.5%)</td>
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<td><strong>No. of faculty with a clear sustainability connection based on subject description (search terms: sustainable, environment, green, climate, ecology, eco, water management)</strong></td>
<td>29/839 (3.5%)</td>
<td>35/848 (4.0%)</td>
<td>37/821 (4.5%)</td>
<td>34/739 (4.6%)</td>
<td>n/a</td>
<td>34/739 (4.6%)</td>
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<tr>
<td><strong>Professor with a clear sustainability connection based on subject description</strong></td>
<td>12/345 (3.5%)</td>
<td>13/336 (3.9%)</td>
<td>14/327 (4.3%)</td>
<td>15/308 (4.9%)</td>
<td>n/a</td>
<td>16/304 (5.3%)</td>
</tr>
<tr>
<td><strong>No. of advertised faculty with a clear sustainability connection based on subject description (search terms: sustainable, environment, green, climate, ecology, eco, water management)</strong></td>
<td>1/1 (100%)</td>
<td>2/13 (15.4%)</td>
<td>3/7 (43%)</td>
<td>2/8 (25%)</td>
<td>3/28 (11%)</td>
<td>n/a</td>
</tr>
<tr>
<td><strong>Professor</strong></td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td><strong>KTH’s position in ranking - QS Environmental Sciences</strong></td>
<td>101-150</td>
<td>101-150</td>
<td>101-150</td>
<td>101-150</td>
<td>151-200</td>
<td>151-200</td>
</tr>
<tr>
<td><strong>KTH’s position in ranking - NTU (National Taiwan University Ranking)</strong></td>
<td>252 (KTH not ranked in Environment/Ecology)</td>
<td>&gt;300 (KTH not ranked in Environment/Ecology)</td>
<td>&gt;300 (KTH not ranked in Environment/Ecology)</td>
<td>288</td>
<td>299</td>
<td>288</td>
</tr>
<tr>
<td><strong>Swedish EPA ranking of Swedish authorities environmental management systems</strong></td>
<td>Place 19-23 (19/23 points)</td>
<td>Place 9-19 (19/22 points)</td>
<td>Place 5-12 (20/22 points)</td>
<td>Place 1-20 (10/10 points)</td>
<td>Place 24-135 (14/15 points)</td>
<td>Place 128-158 (13/15 points)</td>
</tr>
<tr>
<td><strong>Number of published peer review articles with bearing on sustainable development (467 search terms) /total amount of peer review articles</strong></td>
<td>not available in Jan 2018</td>
<td>451/2980 (15.1%)</td>
<td>397/2851 (13.9%)</td>
<td>397/2729 (14.5%)</td>
<td>374/2586 (14.5%)</td>
<td>273/2371 (11.5%)</td>
</tr>
<tr>
<td><strong>Field normalized citation rate for a three-year period of articles published in the first year of the time period, on articles with bearing on sustainable development</strong></td>
<td>not available in Jan 2018</td>
<td>1.53</td>
<td>1.41</td>
<td>1.34</td>
<td>1.55</td>
<td></td>
</tr>
<tr>
<td><strong>Number of individual authors to publications with bearing on sustainable development</strong></td>
<td>not available in Jan 2018</td>
<td>178</td>
<td>150</td>
<td>154</td>
<td>134</td>
<td>20 81</td>
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## Education

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<tbody>
<tr>
<td>No. of ESD labelled courses (all educational levels)</td>
<td>435</td>
<td>389</td>
<td>297</td>
<td>246</td>
<td>202</td>
<td>153</td>
</tr>
<tr>
<td>No. of students that have completed ESD labelled course.</td>
<td>6054</td>
<td>6365</td>
<td>7676</td>
<td>8467</td>
<td>8078</td>
<td></td>
</tr>
<tr>
<td>No. of Master of Science in Engineering (300 ECTS) programs with ESD in program title</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
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<tr>
<td>No. of Master of Science (120 ECTS) programs with ESD in program title</td>
<td>11</td>
<td>11</td>
<td>11</td>
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</tr>
<tr>
<td>No. of teachers receiving final grade in pedagogical course Learning for Sustainable Development (4.5 ECTS)</td>
<td>16</td>
<td>18</td>
<td>11</td>
<td>15</td>
<td>17</td>
<td>12</td>
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## Collaboration

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<tbody>
<tr>
<td>Hit rate in media for KTH within areas of ESD/total hit rate in media for KTH (ref. Meltwater News PR analysis tool. Newspaper articles, web pages, etc.)</td>
<td>N/A</td>
<td>3914/14519 (23%)</td>
<td>1951/7292 (27%)</td>
<td>2084/8235 (25%)</td>
<td>2575/8339 (31%)</td>
<td>1921/6753 (28%)</td>
</tr>
<tr>
<td>No. of press releases in Swedish with bearing on ESD/total no. of press releases in Swedish from KTH (%) (ref. Mynewsdesk, press service tool)</td>
<td>27/56 (48%)</td>
<td>33/70 (47%)</td>
<td>36/85 (42%)</td>
<td>35/99 (39%)</td>
<td>33/80 (41%)</td>
<td>34/110 (31%)</td>
</tr>
<tr>
<td>No. of press releases in English with bearing on ESD/total no. of press releases in English from KTH (ref. AlphaGalileo, press service tool)</td>
<td>10/31 (32%)</td>
<td>8/26 (31%)</td>
<td>9/26 (35%)</td>
<td>13/33 (39%)</td>
<td>13/37 (35%)</td>
<td>2/2 (100%)</td>
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# KTH's campuses

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<tbody>
<tr>
<td><strong>Buildings</strong></td>
<td>Miljöbyggnad Gold in new construction 1/1</td>
<td>Miljöbyggnad Silver in new construction 1/1</td>
<td>Miljöbyggnad Silver in new construction 1/1</td>
<td>Miljöbyggnad Gold in new construction 1/1</td>
<td>n/a</td>
<td>n/a</td>
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<tr>
<td><strong>Energy</strong></td>
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<tr>
<td>Total energy use (and per annual working force)</td>
<td>66 135 MWh (20 MWh)</td>
<td>55 555 MWh (16 MWh)</td>
<td>65 000 MWh (18 MWh)</td>
<td>68 000 MWh (19 MWh)</td>
<td>73 000 MWh (20 MWh)</td>
<td>79 000 MWh (22 MWh)</td>
</tr>
<tr>
<td><strong>Waste</strong></td>
<td></td>
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<tr>
<td>Sorted/unsorted household waste at KTH Campus</td>
<td>338 703 kg / 991 125 l bags</td>
<td>341 750 kg / 999 125 l bags</td>
<td>367 763 kg / 853 125 l bags</td>
<td>365 770 kg / 1227 125 l bags</td>
<td>352 426 kg / 1011 125 l bags</td>
<td>170 245 kg / 1035 125 l bags</td>
</tr>
<tr>
<td><strong>Honey</strong></td>
<td>Kilos of honey produced</td>
<td></td>
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# Purchasing and Procurement

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<tbody>
<tr>
<td><strong>Number of procurements with set environmental requirements</strong></td>
<td>21/44 (48%)</td>
<td>17/54 (31%)</td>
<td>14/47 (30%)</td>
<td>19/46 (41%)</td>
<td>37/88 (42%)</td>
<td>9/34 (26%)</td>
</tr>
<tr>
<td><strong>Procurements with set environmental requirements based on value</strong></td>
<td>116.4/244.7 million SEK (48%)</td>
<td>8.5/58.5 million SEK (15%)</td>
<td>40/150 million SEK (27%)</td>
<td>440/569 million SEK (77%)</td>
<td>56/94 million SEK (60%)</td>
<td>7/49 million SEK (14%)</td>
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<tr>
<td>No. of train trips total (and per annual working force)</td>
<td>5 007 (1,5)</td>
<td>4 541 (1,3)</td>
<td>4 644 (1,3)</td>
<td>5 877</td>
<td>5 216</td>
<td>5 204</td>
</tr>
<tr>
<td>No. of flights total (and per annual working force) *Total number of return trips</td>
<td>10 379* (3,1)</td>
<td>23 773 (6,6)</td>
<td>23 481 (6,4)</td>
<td>23 815</td>
<td>25 744 (7,1)</td>
<td>24 943 (7,0)</td>
</tr>
<tr>
<td>Tonnes CO₂ total (and per annual working force ) STS Svenska Trafik Styrelsen (0 – 499 km =0,170 CO₂) standard.</td>
<td>4 562 (1,36)</td>
<td>4 480 (1,25)</td>
<td>4 260 (1,17)</td>
<td>4 226 (1,15)</td>
<td>4 523 (1,25)</td>
<td>5 108 (1,44)</td>
</tr>
</tbody>
</table>