



GOAL	Applicable as of	Reference no.
Decision-maker	20191217	V-2019-0977
President	Date of decision	Responsible division
	20191217	KTH Sustainability Office

Overall objectives and measures for KTH’s implementation of the Climate Framework for Universities

Contents

1	Introduction – Background and scope	2
1.1	Background	2
1.2	Scope	2
1.3	Implementation and follow-up of overall objectives and measures	3
2	Overall objectives	3
2.1	Overall objectives for KTH’s climate efforts	3
2.2	Overall quantitative objectives for emission reductions	4
3	Overall objectives and measures within selected areas	5
3.1	Education	6
3.2	Research	8
3.3	Collaboration and utilisation	10
3.4	Business travel	12
3.5	Food and food services	14
3.6	Energy consumption	15
3.7	Property portfolio, construction and rebuilding	17
3.8	Waste management	19
3.9	Purchasing and procurement of goods and services	21
3.10	Managed capital and investments	23

1 Introduction – Background and scope

1.1 Background

The KTH Royal Institute of Technology (KTH) shall be a leading university of technology within sustainable development and shall contribute to achieving the UN's Sustainable Development Goals. This involves being a leader in climate transformation by combating climate change and shifting to a more sustainable society in agreement with national and international commitments as a minimum. This covers education, research and collaboration, as well as our own climate impact. KTH assesses that the pace of the climate efforts needs to increase. KTH has acceded to the Climate Framework, which was developed through an initiative by KTH and Chalmers University of Technology for universities in Sweden. Through the Climate Framework, KTH has undertaken the following:

- We will through education, research and external engagement help society as a whole to achieve set objectives.
- We will work to reduce our own climate impact in line with society's commitment as expressed in national and international agreements.
- We will, based on our HEI-specific conditions, set up far-reaching objectives for climate-related work and also allocate resources so that we can achieve these objectives and conduct follow ups.
- We will clearly communicate our climate-related work in order to inspire and spread knowledge to other organisations and members of society.

In this document, KTH has decided on overall objectives and measures to implement the undertakings in the Climate Framework and to work in line with the associated guide. This takes place in line with international and national agreements and commitments¹.

1.2 Scope

KTH's work to develop overall objectives and measures for the climate efforts is a part of KTH's on-going work with sustainable development. Sustainable development is one of the President's prioritised areas according to KTH's Development Plan 2018-2023.

To estimate emissions of greenhouse gases from an organisation, one usually distinguishes between "Scope 1", "Scope 2" and "Scope 3". KTH has added its own category to this, "Scope 4":

- Scope 1 comprises the direct emissions from the organisation's activities. It can involve emissions from lab activities or from the vehicles that the organisation owns.
- Scope 2 includes emissions from production of the energy (electricity, heating and cooling) that the organisation buys, such as district heating from Stockholm Exergi.
- Scope 3 includes emissions in earlier stages from production of goods and services that the organisation purchases, such as IT products, business travel and emissions linked to waste management that arises when the waste is handled in a later stage.
- "Scope 4" includes emissions from activities that do not formally have a tie to an organisation, but that many stakeholders perceive as linked to the organisation and that the organisation

¹ For a description of the documents on which the developed overall goals and measures are based, refer to Appendix 1.

may have some influence over, such as restaurants on campus which KTH does not control via agreements.

The overall objectives and measures in this document have been put in line with the above division into Scope 1-4.

The overall objectives and measures are primarily concern KTH's employees and students, but will influence KTH's property owners, cooperative partners, financiers and other external parties on a national and international level.

In this document, the term "climate neutral" is used. The term means that no impact on the climate is caused, i.e. that no net emissions of greenhouse gases are added to the atmosphere, also known as "net zero emissions".

All objectives below that apply for 2020 are existing objectives that are a part of KTH's sustainability objectives for the period 2016-2020.

1.3 Implementation and follow-up of overall objectives and measures

The overall objectives and measures will be linked to KTH's work to achieve new and existing sustainability objectives and they will be implemented and followed up within the scope of the environmental management system and the quality management system for education and research. In order to follow up the sustainability objectives and climate objectives, current indicators (see Appendix 2) need to be developed to obtain new knowledge and improved data collection. Qualitative follow-ups are also used.

In order to achieve the climate objectives, steps need to be taken. Therefore, within the scope of the ordinary operational planning, action plans shall be prepared including detailed measures based on the overall measures specified below. Besides the measures, the action plans point out responsible functions, resources, timetables and when follow-up and evaluation are to take place.

The results of the follow-up will be presented in KTH's sustainability report to the University Board and in connection with the annual reporting to the Swedish Environmental Protection Agency that takes place to the government at the same time. The results are presented in KTH's annual report and in THE's ranking against the UN global sustainable development objectives.

KTH disseminates information about its work by implementing overall objectives and measures internally within KTH and via the national and international networks that KTH participates in.

2 Overall objectives

2.1 Overall objectives for KTH's climate efforts

According to the policy for sustainable development, KTH has the goal of being a leading technical university within sustainable development. This also includes being a leader within climate transformation. Pursuant to this, KTH shall have quantitative objectives that are more ambitious than is required to achieve national and international objectives.

The overall goal for KTH's climate efforts comprises education, research and collaboration, as well as our own climate impact and applies for the entire period of 2020 to 2045.

Within our internationalisation work, we shall serve as a good example and contribute to the climate transformation through reduced impact and greater knowledge.

KTH shall be active in the social debate and contribute knowledge for a climate neutral society.

We shall participate actively in national and international forums within education, research and collaboration on climate transformation and in forums for climate transformation regarding our own activities.

Within the scope of these forums, we shall participate in the work of developing methods for measurement and follow-up.

Based on its mission, KTH shall have transparent methods to measure, follow up and communicate climate impact from its own activities.

2.2 Overall quantitative objectives for emission reductions

Below are overall objectives for the areas in which there are possibilities of quantitative emissions estimates.

- **2020:** In order to follow up the overall quantitative objectives, KTH has developed methods to estimate KTH's climatic impact. An initial investigation was conducted in 2020. A plan for follow-up and proposals on an action plan based on outcome has been prepared.

Within Scope 3, carbon dioxide emissions from air travel have decreased by 20% per full-time equivalent compared with 2015.²

- **2022:** KTH is climate neutral regarding Scope 1 (direct emissions from KTH's own operations) and is clearly reducing emissions from Scope 2 (emissions from production of purchased electricity, heating and cooling).

Within Scope 3, the climate impact from air travel has decreased by 25% per full-time equivalent compared with 2015.

- **2025:** KTH is climate neutral regarding Scope 1 and 2.

Within Scope 3, the climate impact from air travel has decreased by 40% per full-time equivalent compared with 2015 and climate impact from procured goods and services has decreased by 40% compared with 2015.

- **2030:** KTH has reduced its climate impact by 60% (Scope 1, 2 and 3) per full-time equivalent compared with 2015.
- **2040:** KTH has reduced its climate impact by 90 % (Scope 1, 2 and 3) per full-time equivalent compared with 2015.
- **2045:** KTH is climate neutral (Scope 1, 2 and 3).

After 2045, KTH has negative emissions.

² Included in the current sustainability goal for travel.

During the period, KTH actively works with various stakeholders to reduce emissions from what is called Scope 4 above.

Objectives stated above have 2015 as a base year. Different base years can be used below depending on data availability. If no base year is stated, 2019 is the base year.

3 Overall objectives and measures within selected areas

Objectives and overall measures are addressed below for the areas that have a major impact from a climate strategy perspective. It concerns KTH's activities: education, research and collaboration, and the impact from its own activities through e.g. waste management, travel and procurement.

3.1 Education

3.1.1 Objectives

2020: Sustainable development shall be integrated in all educational programmes at all levels so that, after graduation, students can contribute to a sustainable social development.³

2022: All employees at KTH have knowledge of climate challenges and actively work to reduce the climate impact based on their role and function at KTH.

At all educational programmes, there are compulsory components that mean that students after graduation have knowledge and skills so that they within their educational fields can contribute to a transformation to a climate-neutral society.

KTH has an active collaboration with the KTH Student Union (THS) and student associations to support them in their work to monitor issues that concern sustainability and climate, among others, within education.

Staff in leading teaching roles, such as the Director of First and Second Cycle Education, the Director of Third Cycle Education, programme coordinators and individuals on the education committee and the equivalent have undergone training in how sustainable development (including climate issues) can be integrated in educational programmes.

2025: Staff in all leading roles at KTH have knowledge of sustainable development (including climate issues) and have undergone training in how sustainable development can be integrated in the daily activities and their processes.

The schools' departments/divisions whose subject can contribute to a climate-neutral society and who conduct education at KTH have faculty with expertise in being able to teach about transformation to a climate-neutral society.

In the first, second and third cycle, there are educational programmes that have a focus on sustainable development and climate transformation. In all cycles (first, second and third), there are educational programmes that have a focus on these issues based on an interdisciplinary perspective that also integrates social sciences and humanities.

KTH has developed and strengthened continuing professional education within sustainable development, including climate issues.

2020-2030: KTH is a leading technical university in education for sustainable development and for a transformation to a climate-neutral society.

3.1.2 Overall measures

Within the scope of the educational programmes, the schools need to describe steps that they intend to take and how they, within the scope of the quality management system for education and within the scope of the environmental management system, intend to follow up the measures. This can take place in the schools' annual operational plan or in separate action programmes/plans.

³ Included in the current sustainability goal for education, which in this strategy will include climate issues in a clearer way. Even after 2020, it will be important to continue this work.

In addition, follow-up and activities are needed that support teaching staff and programme coordinators. These activities need to continue to be developed during the period and contain, among other things, educational resources and possibilities to individual coaching.

For several of the objectives, new courses or educational programmes need to be developed. It is essential that the activities begin on time in order to achieve the objectives.

To ensure that there is faculty with expertise, the schools need to take this into account in their recruitment and staff training plans and strive to recruit and retain staff with climate expertise.

Staff training shall be developed, among other things, for the operational support and for specific groups, such as IT and procurement.

In connection with a review of KTH's financial resource model, incentives shall be investigated to achieve KTH's climate and sustainability objectives.

Current indicators⁴ need to be further developed so that they also reflect the more specific climate objectives. For example, the number of climate certified courses/programmes and the number of degree projects with a climate focus can be indicators. Quantitative indicators also need to be supplemented with qualitative follow-ups and evaluations.

⁴ For indicators, see Appendix 2.

3.2 Research

3.2.1 Objectives

2020: KTH's research and sustainable development shall increase. The integration of sustainable development in KTH's research base shall increase.⁵

2025: KTH is a leading technical university within research for a climate-neutral society. This includes that KTH has significant and increasing external grants within research for a climate-neutral society from different financiers.

The integration of sustainable development and climate research in KTH's research base has increased. KTH's research base includes faculty appointments, faculty appropriation, centre formations, etc. The schools' departments/divisions whose subjects can contribute to a climate-neutral society have faculty with expertise to be able to conduct research and attract external grants regarding transformation to a climate-neutral society.

KTH has established an interdisciplinary centre or the equivalent for climate transformation. This works, among other things, with a system perspective where knowledge from different areas is combined. Besides research, the centre communicates climate research and has dialogue with other actors to obtain the best effect on the social transformation.

KTH's campus is used for application of research and teaching in climate issues.

2020-2030: KTH continues to be a leading technical university within research for a climate-neutral society. Results from KTH's climate research come to use in society on a national and international level and contribute to achieving Sweden's climate targets of net zero emissions and global objectives linked to the Paris Agreement.

3.2.2 Overall measures

A strategic effort with connection to sustainable development is being conducted during 2020. Continued efforts are being made centrally and at the schools during the period until 2025.

The schools need to describe measures that they intend to take and describe plans for follow-up of the measures in the scope of the quality management system for research and in the scope of the environmental management system. This can take place in the schools' annual operational plan or in separate action programmes/plans.

To ensure that there is faculty with expertise, the schools need to take this into account in their recruitment plans and strive to recruit and retain internationally prominent climate researchers.

In order to strengthen research and for the research results to have an impact, stronger collaboration is needed within KTH, with other universities and with companies, the public sector and civil society.

In connection with a review of KTH's financial resource model, incentives are investigated to achieve KTH's climate and sustainability objectives.

⁵ Included in the current sustainability goal for research, which in this strategy will include climate issues in a clearer way. Even after 2020, it will be important to continue this work.

Current indicators⁶ need to be further developed so that they also reflect the more specific climate objectives. Bibliometric indicators shall be developed so that they reflect the climate objectives. Quantitative indicators need to be supplemented with qualitative follow-ups. University ranking on the climate theme is monitored, such as THE's ranking based on the global sustainable development objectives and especially the ranking for SDG 13.

⁶ For indicators, see Appendix 2.

3.3 Collaboration and utilisation

3.3.1 Objectives

2020: In collaboration with existing and new partners, stakeholders and students, KTH shall work to contribute to a sustainable social development. Through communication, dialogue and collaboration with the surrounding society, a clearer picture is conveyed of KTH as a leading technical university within sustainable development.⁷

2022: KTH collaborates with partners who contribute to a sustainable development and reduced climate impact. KTH does not participate in collaboration with partners that work against climate transformation, such as developing extraction of new fossil fuels.

KTH develops cooperation with new and existing partners, who contribute to the reduction of climate impact. In all relevant agreements and cooperation with strategic partners and other partnerships, sustainable development and climate issues are integrated.

In governing documents that concern collaboration, innovation and communication, sustainable development and climate issues are integrated.

Innovations and research from KTH that contribute to climate transformation have gained an increased impact on society actors.

In communication, dialogue and collaboration with stakeholders and students, KTH is perceived as a leading technical university in sustainable development and for a climate transformation.

KTH clearly involved the students in KTH's work to implement objectives and measures to contribute to the climate transformation.

The visibility of KTH's work on sustainable development and climate issues has increased.

KTH's campus is used to exhibit examples of solutions for a climate-neutral society.

2025: KTH is a leading technical university for climate transformation within collaboration and innovation.

2030-2045: KTH being perceived by its stakeholders as a leading university for climate transformation has continued to be strengthened and further developed. The work is conducted continuously and new objectives are developed during the period.

3.3.2 Overall measures

In order to achieve the objectives, KTH needs to continue to conduct dialogue with and develop relationships and collaboration with new and existing stakeholders and students.

The climate work needs to be presented to students and employees at an early stage and it needs to be easy for stakeholders to understand and read the communication. Implemented activities linked to KTH's work with the climate issue need to be communicated externally and internally for relevant stakeholder groups.

⁷ Included in the current sustainability goal for collaboration, which in this strategy will include climate issues in a clearer way. Even after 2020, it will be important to continue this work.

KTH continues to initiate, support, develop and conduct collaborative projects focused on the climate. KTH continues to support commercialisation of innovation and research that contributes to climate transformation. Knowledge exchange with stakeholders takes place in meeting arenas and in networks that KTH creates, supports and participates in.

KTH's work on the climate issue is conveyed in existing communication channels. KTH is involved in investigations and delegations that support the government's climate work. Extra focus on climate is provided in KTH's support activities within innovation.

KTH develops locations on KTH's campus that present climate work and invite participation, such as through demonstration projects on campus. KTH develops methods and tools for considerations between different measures.

Current indicators for collaboration need to be further developed so that they also reflect the more specific climate objectives. Follow-up of governance documents, objectives, measurements and measures is to be done annually.

Qualitative evaluation of collaboration with strategic partners and other partnership agreements with regard to sustainable development and climate transformation shall take place annually. Qualitative and quantitative follow-up of innovation efforts with regard to sustainable development and climate transformation also needs to be done.⁸

⁸ For current and new indicators, see Appendix 2.

3.4 Business travel

3.4.1 Objectives

2020: Carbon dioxide emissions from KTH's travel shall decrease by 20% per full-time equivalent (base value 2015).⁹

2022: KTH's climate impact from business travel (carbon dioxide equivalents per full-time equivalent) has decreased by 25% compared with the 2015 levels.

2025: KTH's climate impact from business travel (carbon dioxide equivalents per full-time equivalent) has decreased by 40 % compared with the 2015 levels.

2030: KTH's climate impact from business travel (carbon dioxide equivalents per full-time equivalent) has decreased by 60 % compared with the 2015 levels.

3.4.2 Overall measures

Prioritisations need to be made regarding what air travel is needed and what can be streamlined, such as through direct flights being booked instead of flights with stopovers. It needs to be investigated what air travel can be avoided by taking the train on part or all of the trip, and what air travel can be replaced with digital meetings.

An update of existing procedures and guidelines for meetings and travel needs to take place to ensure that they lead to a reduced climate impact.

Within the scope of the procurement regulations, requirements need to be set on current and future travel agencies regarding measures that lead to a reduced climate impact.

Digitalisation as an enabler for reduced travel needs to be developed through increased investment in infrastructure for digital meetings, and greater knowledge and support for the use of digital meetings, which lead to a changed behavioural pattern.

In order to influence employees' travel patterns, various incentives need to be investigated and implemented.

An analysis of measures needs to take place to reduce the climate impact from group travel.

In order to analyse and report KTH's business travel connected to our mission, expanded statistics need to be developed that are broken down to each school and department/division to be able to assess how the climate impact can be reduced.

A dialogue needs to be conducted with financiers to see how the climate impact of research projects can decrease.

The work needs to be strengthened by communicating and making visible good examples of how the meetings can take place with a reduced climate impact. This can take place by promoting the construction of local meeting platforms.

⁹ Included in the current sustainability goal for travel.

Steps need to be taken that promote climate-neutral transports to and from campus in collaboration with property owners.

Current indicators¹⁰ need to be developed so that they also reflect the more specific climate objectives. For example, indicators for the number of implemented travel-free meetings need to be clarified and further developed.

¹⁰ For indicators, see Appendix 2.

3.5 Food and food services

3.5.1 Objectives

2022: KTH has cooperation with the procurement authority and other relevant actors to secure the knowledge required to describe from a life cycle perspective the climatic impact that arises in connection with food.

KTH systematically sets concrete climate requirements in the procurement and framework agreement for catering and climate requirements on restaurants where KTH has an agreement with the tenant.

Students and employees at KTH are well-informed about how their choice of food and drink affects the climate.

2025: KTH sets requirements in its procurements and orders regarding what each meal may maximally emit in the form of carbon dioxide equivalents per meal.

3.5.2 Overall measures

Steps are being taken to quantify the climate impact from the food purchased by KTH.

Guidelines need to be prepared to set systematic and well-founded climate requirements on catering in both procurement and in orders. The guidelines shall be implemented in agreements with restaurants that KTH has subleases with. The guidelines are based on WWF's climate requirements for One Planet Plate meals¹¹. The supplier is responsible for showing that the requirements are met. The guidelines contain requirements that no disposables and not bottled water shall be present in catering where possible.

An increased collaboration with THS is being developed and information measures and pressure on restaurants that lease premises on KTH's campus are being implemented with the aim of promoting food with a low climatic impact, reducing food waste and reducing the use of packaging and disposables.

Steps are being taken to make students and employees aware of how their food choices affects the climate and how they can promote food with a low climate impact, less food waste and less use of packaging and disposables.

Steps are being taken to promote society's awareness of food and climate by actively communicating KTH's research in the area to restaurants and cafés in KTH's campus areas and the public.

Indicators¹² for the above area are being developed to follow up and evaluate climate impact and that work takes place in agreement with the objectives.

¹¹ <https://www.wwf.se/mat-och-jordbruk/one-planet-plate/kriterier-och-berakningsverktyg/>

¹² For indicators, see Appendix 2.

3.6 Energy consumption

3.6.1 Objectives

KTH's property owner stands for KTH's energy supply. Implementation of stated objectives therefore takes place in coordination with them.

2020: KTH's energy use shall decrease by 10% (electricity, district heating, cooling) per full-time equivalent, full-time equivalent student and per square metre (base value 2015).¹³

2022: KTH's climate impact (in carbon dioxide equivalents and normal year-corrected) from energy consumption has decreased by 15% per full-time equivalent, full-time equivalent student and square metre compared with 2015.

Production of electricity on campus through solar cells has increased and measurements of produced electricity are conducted so that qualitative objectives (in MWh) can be defined and followed up.

KTH purchases district heating with negative emissions based on production of biocoal in the first stage and BECCS (bio energy with carbon capture and storage) in the future.

The efficiency of premises use has increased by 10% calculated per full-time equivalent student and full-time equivalent.

The need for supplemental heating in the form of electricity for climatisation of premises has disappeared entirely.

Implementation of "green leases", where incentives for KTH to work with energy efficiency improvements are clearly defined, has begun and is applied to half of the buildings at KTH.

2025: KTH has zero emissions of greenhouse gases from production of purchased electricity, heating and cooling.

KTH's energy consumption has decreased by 25% (electricity, district heating, cooling) per full-time equivalent, full-time equivalent student and square metre compared with 2015 levels without compromising on the indoor climate.

The efficiency of premises use has increased by 15 % calculated per full-time equivalent student.

Implementation of "green leases", where incentives for KTH to work with energy efficiency improvements are clearly defined, is applied to all of KTH's buildings.

2030: The climate impact from KTH's energy consumption is negative, with help from district heating based on BECCS (Bio-energy with carbon capture and storage) and biocoal.

3.6.2 Overall measures

In order to become climate neutral by 2025 and have negative emissions by 2030, district heating suppliers must offer this and it must be purchased through property owners. There is therefore a need for collaboration in these issues.

¹³ Included in the current sustainability goal for energy consumption.

Steps are being taken for increased installation of solar cells on suitable buildings on KTH's campus. The production of solar electricity on KTH's campus shall be able to be measured and reported in a readily available manner so that qualitative objectives (in MWh) can be defined.

Steps are being taken for initiation of annual follow-up of the efficiency of premises use and maintenance of premises. Investigation needs to be done of possibilities to streamline the premises use through changes in scheduling.

Steps are being taken for continued work for energy efficiency improvements in cooperation with KTH's property owners, such as in the form of improved control of ventilation, heat recovery from ventilation air and that the lecture rooms' ventilation systems are connected to KTH's premises booking system for more efficient energy optimisation and improved climate experience. Employee and student comfort shall be taken into account in the work.

Follow-up of the indoor climate needs to take place so that premises supplemental heating in the form of direct electricity is not needed.

Steps are being taken for the establishment of a Green Lease with KTH's property owners that among other things regulates the points above that KTH does not control itself. The agreements shall give KTH incentive to save energy.

An overall review is being done to investigate the need for and the possibilities of balancing the energy consumption on KTH's campus areas by using excess energy and potential property-related surplus production of renewable energy between properties. And investigation of the need for and the possibilities of storing energy. The actors are identified, between which the collaboration needs to take place for the measures to be able to be realised.

Current indicators¹⁴ may need to be specified so that they also reflect the more specific climate objectives. For example through specification of normal year corrected figures for energy consumption.

¹⁴ For indicators, see Appendix 2.

3.7 Property portfolio, construction and rebuilding

3.7.1 Objectives

KTH's property owners extensively stand for KTH's new construction and conversions. Implementation of stated objectives therefore takes place in coordination with them.

2022: KTH's requirement specifications for new construction and conversion, as well as purchasing of furnishings and fittings contain clear climate requirements.

New construction and conversions, as well as demolition of buildings are primarily avoided and existing structural framework is kept where possible.

In decisions on demolition, conversion and new construction, climate impact is estimated and taken into account.

In new construction and conversion, the lowest possible climate impact is strived for.

Relevant certifications are used and the highest class is strived for.

2025: Potential new construction has 40% lower climate impact than the corresponding type building in 2015.

KTH prioritises climate aspects within the framework of the procurement regulations that exist, in the selection of suppliers and in the planning of construction processes in new construction and conversions on campus.

2045: New construction and conversion are climate neutral.

3.7.2 Overall measures

In order to achieve set objectives, a greater collaboration, pressure and setting requirements on KTH's property owners are necessary regarding climate aspects in new construction and conversions. Such pressure can be applied on several levels.

Steps are being taken so that the climate impact is taken into account in early phases of the planning and building process, which KTH can promote, for example, by pushing for function-based procurement requirements to be set, where incentives are given for innovative solutions with a low climate impact from a life-cycle perspective.

Steps are being taken so that KTH can work for construction materials and fuels used in new construction and conversions to be chosen with low or net zero climate impact.

Steps are being taken so that KTH can push for efficient, flexible layouts and removable constructions that reduce the need for new materials in conversion or maintenance and re-use of materials if/when it is beneficial from a life cycle perspective.

In order to ensure that set climate requirements are complied with, KTH should systematically follow up requirements on KTH's property owners and suppliers and push for the property owners to in turn follow up the requirements on their suppliers.

For new construction and conversions, the Sweden Green Building Council Gold standard shall be a starting point and any deviations shall be motivated. The possibility to certify KTH Campus Valhallavägen according to Citylab shall be reviewed as well as the possibility to collaborate with property owners to build climate neutral buildings according to the Sweden Green Building Council's new certification system.

Steps that are related to the area "Property portfolio, new construction and conversion" are also found in the areas "Waste management", "Energy consumption" and "Purchasing and procurement of goods and services".

Current indicators¹⁵ need to be further developed so that they also reflect the more specific climate objectives.

¹⁵ For indicators, see Appendix 2.

3.8 Waste management

3.8.1 Objectives

2020: Conditions for source sorting shall exist at all of KTH's campuses, the amount of waste shall decrease per person and the proportion of source-sorted waste shall increase.¹⁶

2022: The amount of waste decreased in weight per full-time equivalent student and full-time equivalent by 20% and the proportion of source-sorted waste (including food waste) increased (base year 2020).

Internal systems and space for re-use and repair of furniture and furnishing materials for employees are established and communicated at KTH.

2025: The amount of waste decreased in weight per full-time equivalent student and full-time equivalent by 25 % and the proportion of source-sorted waste (including food waste) increased (base year 2020).

The amount of furniture and furnishing materials that go to waste management has decreased sharply (base year 2020).

Source sorting of plastic packaging has increased to reduce the amount of plastic waste that goes to incineration (base year 2020). In the purchase of plastic, plastic that goes to recycling shall always primarily be chosen.

Recycling and re-use of all major waste streams (household-like waste, furniture, IT equipment and other electronic waste and so on) is well-established and works well at every part of KTH.

2030: The amount of waste decreased in weight per full-time equivalent student and full-time equivalent by 30 % and the proportion of source-sorted waste (including food waste) increased (base year 2020).

Prerequisites for an extended sustainability of furniture, IT equipment and other electronics, and other relevant products are in KTH's procurement and purchasing processes and other relevant processes.

3.8.2 Overall measures

Steps are being taken for greater requirements being set on landlords and restaurants that are on KTH's campus to obtain an improved waste management and prevention of waste in accordance with the objectives above.

Measures need to be investigated because KTH handles and owns the household waste in its entirety. Handling of household waste is being lifted out of the current lease with all landlords.

Steps need to be taken for the introduction of measurements from a life cycle perspective of the climate impact for the waste that has arisen.

Steps are being taken to increase knowledge and expertise about purchasing, consumption, waste minimisation and waste management among KTH's employees, students and other relevant stakeholders.

¹⁶ Included in the current sustainability goal for waste (KTH's Campus).

Steps are being taken for the introduction of requirements in all leases regarding access to full-scale source sorting and measurable data.

Waste minimisation measures are being implemented, such as promotion of good planning, smart purchasing and dialogue with suppliers, as well as through increased internal recycling and re-use. The collaboration needs to take place with other universities and authorities, particularly with the Swedish Legal, Financial and Administrative Services Agency, regarding increased re-use.

Steps are being taken to highlight KTH-based innovations and project work related to waste management on KTH's campus areas.

Measures are being implemented to re-use/recycle/sell larger shares of equipment in new construction and conversions. Including figures in waste statistics for how large amounts of equipment are thrown out in connection with conversions. Requirements in conversions of deliveries of measurable data.

Current indicators¹⁷ are to be further developed so that they also reflect the more specific climate objectives. For example, by measuring the climate impact from the generated waste and by including a larger amount of waste in the statistics.

¹⁷ For indicators, see Appendix 2.

3.9 Purchasing and procurement of goods and services

3.9.1 Objectives

2020: Sustainability requirements shall be set in all procurements, suborders and purchases, where possible. The requirements shall be continuously evaluated and further developed.¹⁸

2022: Climate requirements are set in the procurements, suborders and purchases where they provide the greatest effect.¹⁹

2025: The climate impact from procured goods and services has decreased by 40% compared with 2015.

2030: The climate impact from procured goods and services has decreased by 60 % compared with 2015.

3.9.2 Overall measures

In order to point out prioritised areas, where KTH shall set climate requirements, and it provides the greatest effect from a life cycle perspective, an analysis of KTH's climate impact must be done.

Measures are being implemented that promote reduced purchases of products, such as by extending the lifespan of existing products, increasing re-use of products within and outside the organisation, as well as purchases that promote circular business models where services rather than products are purchased.

Measures are being implemented to clarify resource-efficient products in purchasing systems so that it becomes easier to choose them. Include more agreement areas that are clarified.

Guidelines are prepared to guide purchases towards products or services with minimal climate impact when options are available.

Based on the analysis of the climate impact, procurement areas are identified where the setting of requirements and follow-up have the greatest impact on the climate. Development takes place of requirement setting and follow-up of these areas.

In the role as orderer of furniture and furnishings, requirements need to be set on equipment being designed for refurbishment, re-use and recycling, that equipment shall hold environmental certification (e.g. Svanen, EU Ecolabel or ÖKO-Tex) and if possible to some extent shall be made of recycled materials.

Measures that are related to the area of "Purchasing and procurement of goods and services" are also in the areas of "Food and food and beverage service" and "Property portfolio, new construction and conversion".

Current indicators²⁰ need to be further developed so that they also reflect the more specific climate objectives.

¹⁸ Included in the current sustainability goal for purchasing and procurement of goods and services.

¹⁹ The greatest effect refers to the areas identified in an environmental analysis of purchasing.

²⁰ For indicators, see Appendix 2.

3.10 Managed capital and investments

3.10.1 Objectives

2020: KTH's foundation and donation capital shall be invested so that it contributes to sustainable development.²¹

2022: KTH has prepared guidelines and objectives for how investments can be invested so that they contribute to a sustainable development and a positive climate impact.

2025: KTH's foundation and donation capital is invested so that it contributes to sustainable development and has a positive climate impact.

3.10.2 Overall measures

Starting work in cooperation with asset managers to define what investments KTH deems to have a positive climate impact, as a basis for follow-up of the above objectives.

Steps are being taken to implement an active dialogue with KTH's asset managers regarding how they work with sustainability perspectives with the companies they invest in.

Steps are being taken so that all investments are entirely fossil-free.

Current indicators need to be further developed so that they also reflect the more specific climate objectives.²²

²¹ Included in the current sustainability goal for investments.

²² For indicators, see Appendix 2.



Appendix 1

List of documents that form the basis for KTH's objectives and work to develop measures

The overall objectives and measures developed are based on a number of national and international documents as well as KTH's own governing documents. Some of these documents include:

- The Paris Agreement, in which Sweden and other countries undertake to limit global warming to well below 2 degrees Celsius above preindustrial levels, while striving to limit the increase to 1.5 degrees.
- "Transforming our world: Agenda 2030 for sustainable development". Documents that outline the sustainable development goals (SDGs).
- Sweden's national target of zero net emissions of greenhouse gases into the atmosphere by 2045 and negative emissions thereafter. This target applies to emissions within Sweden.
- Climate framework for universities and Higher Education Institutions:
<https://www.kth.se/en/om/miljo-hallbar-utveckling/klimatramverk/klimatramverket-1.903489>
- Some of KTH's steering documents: KTH's Vision 2027, KTH's Development Plan 2018-2023, Policy for Sustainable Development at KTH and KTH's Sustainability Objectives for the Period 2016-2020.



Appendix 2

Indicators for KTH's overall objectives and measures for KTH's implementation of the Climate Framework for universities and higher education institutions

1. Education

1.1 Indicators for monitoring sustainable development goals through 2020

- Number of environmental and sustainable development (MHU-labelled) courses (first cycle, second cycle and third-cycle)
- Number of students registered with final marks on MHU-labelled courses.
- Number of degree programmes with environment or sustainability (equivalent) in the programme title
- Number of graduating teachers in the pedagogical course "Learning for sustainable development", LH215V, 4.5 credits
- Alumni satisfaction with their KTH education in terms of their ability to make ethical assessments
- Alumni satisfaction with their KTH education in terms of their ability to make sustainable development assessments
- Alumni work tasks that place demands on their ability to make ethical assessments
- Alumni work tasks that place demands on their ability to make sustainable development assessments
- Number of student theses with bearing on sustainable development / total no. of student theses

The quantitative indicators above also need to be supplemented with qualitative evaluations.

Current indicators need to be expanded so that they also reflect the more specific climate targets.

2. Research

2.1 Indicators for monitoring sustainable development goals through 2020

- Number of scientific publications in the area of sustainable development.
- Normalised degree of citation in the field of sustainable development.
- Number of authors who published works in the field of sustainable development.

- Number of faculty positions (professors) with a sustainability focus in their subject area.
- Number of published faculty positions (assistant professors, professors, and associate professors) with a sustainability focus in their subject area or subject description.
- Total external funds that come from certain Swedish financiers with a sustainable development focus.
- Rankings within the field of environment and sustainable development, such as NTU Environment/Ecology, ARWU Environmental Science & Engineering, Times Higher Education University Impact Ranking, and the Swedish Environmental Protection Agency's ranking of the environmental management work of Swedish government authorities.

Current indicators need to be expanded so that they also reflect the more specific climate targets.

3. Collaboration and utilisation

3.1 Indicators for monitoring sustainable development goals through 2020

Follow-up of quantitative indicators in relation to the number of press releases, online articles and similar linked to KTH and sustainable development as well as visibility in the media. Analysis and follow-up with regard to content in collaborative partnerships with a connection to sustainable development. Follow-up with regard to the number of adjunct professors, affiliated faculty and externally employed doctoral students with a sustainability profile. Follow-up of student projects and student collaborations. Follow-up with regard to how the outside world perceives KTH's brand in relation to sustainable development.

Current indicators need to be expanded so that they also reflect the more specific climate targets.

4. Business travel

4.1 Indicators for monitoring sustainable development goals through 2020 (KTH Campus)

- Emissions measured in CO₂ equivalents from travel (air, train, car travel) (kg CO₂-eq.)
- Emissions per FTE (kg CO₂/FTE)
- Number of flights, train journeys and taxi trips
- Number of flights and train journeys on most frequently travelled routes
- Number of travel-free meetings

Current indicators need to be expanded so that they also reflect the more specific climate targets.

5. Food and food services

5.1 Proposed indicators for follow-up of the objectives in the document "Overall objectives and measures for KTH's implementation of the Climate Framework for universities and higher education institutions"

- Total climate impact from the food purchased by KTH (CO₂-eq.).

- Number of meals purchased by KTH (breakfast, lunch, dinner or other) that exceed the WWF's climate requirements for One Planet Plate meals. Alternatively, number of meals that are not 100% plant-based.

Proposed indicators need to be developed.

6. Energy consumption

6.1 Indicators for monitoring sustainable development goals through 2020 (KTH Campus)

- Total energy consumption (kWh/year)
- Total energy consumption divided into heating, cooling and electricity (kWh/year)
- Energy consumption per FTE (kg CO₂/FTE)
- Energy consumption divided into heating, cooling and electricity per FTE (kWh/FTE)
- Energy consumption per FTE and full-time equivalent student (kWh/FTE and full-time equivalent student)
- Energy consumption divided into heating, cooling and electricity per FTE and full-time equivalent student (kWh/FTE and full-time equivalent student)
- Energy consumption per square metre (kWh/m²) (LOA)
- Energy consumption for heating, electricity and cooling per square metre (kWh/m²) (LOA)
- Total emissions from energy consumption and divided into heating, cooling and electricity measured in CO₂ equivalents (kg CO₂-eq./year)
- Emissions per FTE (kg CO₂-eq./FTE)
- Emissions per FTE and full-time equivalent student (kg CO₂-eq./FTE and full-time equivalent student)
- Emissions per square metre (kg CO₂-eq./m²)
- Share of energy (heating, electricity and cooling) from renewable energy sources and fossil fuels
- Heat recovery from PDC (kWh)

Current indicators need to be expanded so that they also reflect the more specific climate targets.

7. Property holdings, new and converted

7.1 Indicators for monitoring sustainable development goals through 2020 (KTH Campus)

Follow-up regarding established environmental requirements in construction projects and the number of environmentally certified buildings. Follow-up of completed projects linked to Campus Plan 2014 and other improvement projects on the campus areas within transport and ecology as well as completed collaborative projects with students connected to campus.

Current indicators need to be expanded so that they also reflect the more specific climate targets.

8. Waste management

8.1 Indicators for monitoring sustainable development goals through 2020 (KTH Campus)

Waste is monitored using statistics from waste contractors and property management and is reported per FTE and per full-time equivalent student.

Current indicators need to be expanded so that they also reflect the more specific climate targets.

9. Purchase and procurement of goods and services

9.1 Indicators for monitoring sustainable development goals through 2020

Follow-up of procurements with established sustainability requirements shall be done using statistics and information on the number of completed procurements and purchases and the value of these. A qualitative assessment shall also be done of the sustainability requirements established in procurements.

Current indicators need to be expanded so that they also reflect the more specific climate targets.

10. Investments

10.1 Indicators for monitoring sustainable development goals through 2020

Information from managers about investments, where the share allocated to sustainable investments is shown in accordance with the policies.

Current indicators need to be expanded so that they also reflect the more specific climate targets.