Aalto Climate Now course 2022

Project work: Carbon Neutral Aalto 2030

BACKGROUND MATERIAL

1) Background information: Aalto University's emissions in 2019-2021

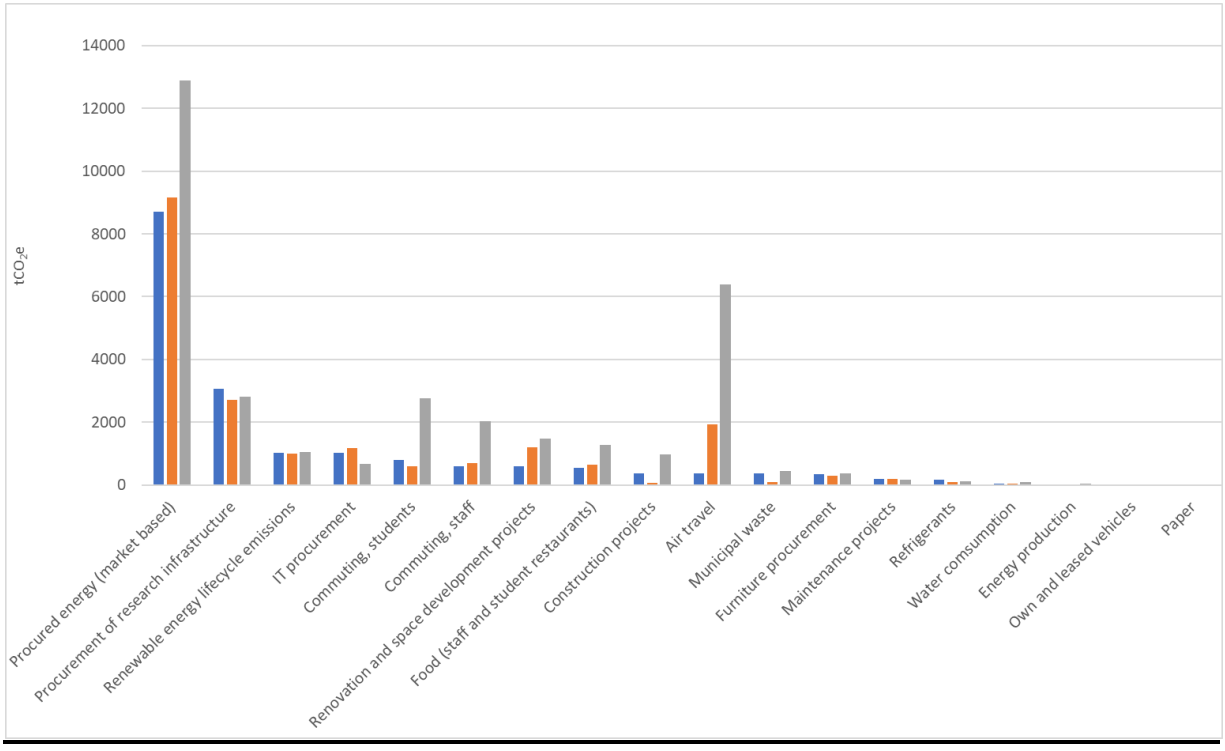
-Aalto University has committed to carbon neutrality by 2030. The target was set in 2020.

-The carbon footprint of the campus's energy consumption and the air travel have been calculated since 2012.

-A broader carbon footprint has been calculated since 2019. The categories included in the current carbon footprint and the results of the calculations in 2019-2021 have been presented in Picture 1 and Table 1 below.

-Aalto's most recent footprint from year 2021 is presented in picture 2.

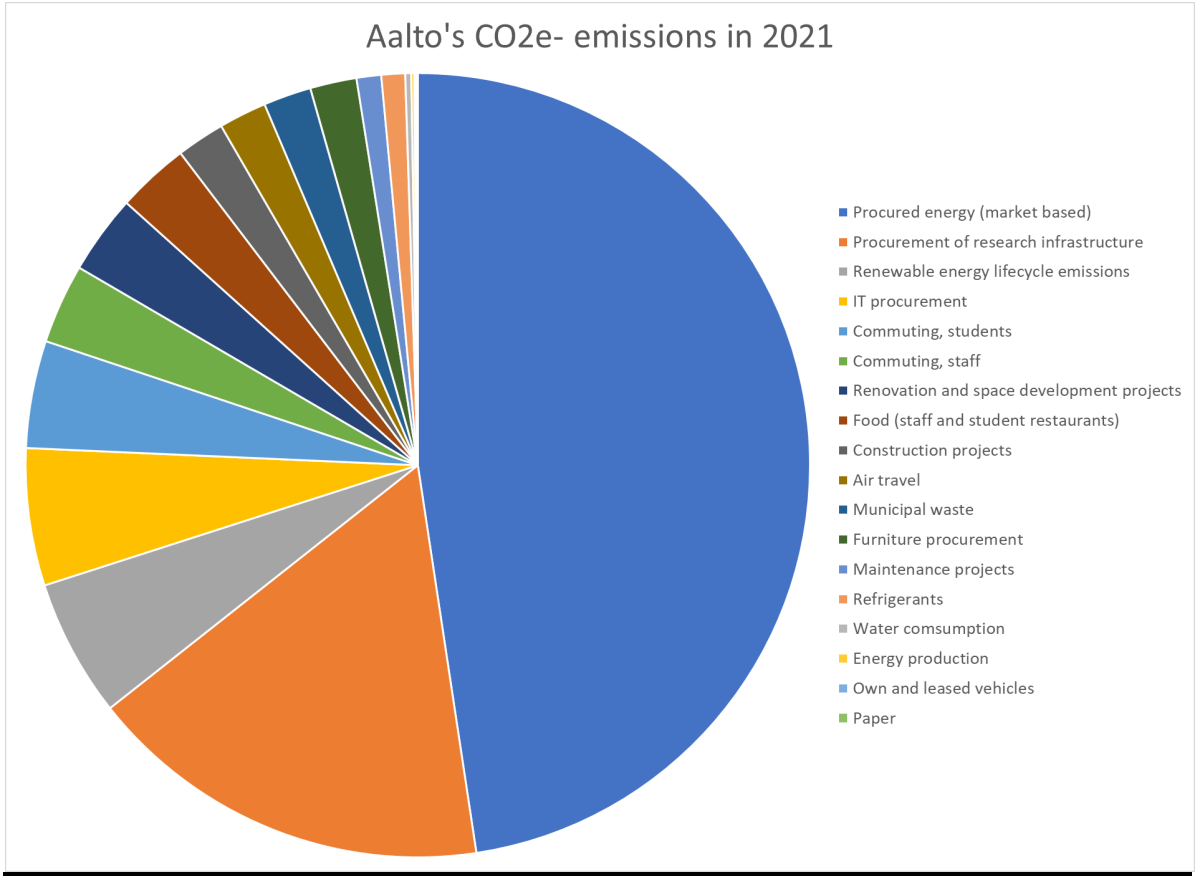
-A carbon neutrality roadmap with specified quantified, category-specific targets for own mitigation actions and milestones is currently under development. It will be published in Q1/2023.



Picture 1: The development of Aalto's emissions in 2019-2021

Table 1: Aalto's CO_2e-emissions in numbers in 2019-2021

Kategoria	tCO2e	%	Scope
Procured energy (market based)	8698	47,6 %	2
Procurement of research infrastructure	3059,9	16,8 %	3
Renewable energy lifecycle emissions	1037	5,7 %	3
IT procurement	1033,7	5,7 %	3
Commuting, students	808,6	4,4 %	3
Commuting, staff	599,5	3,3 %	3
Renovation and space development projects	596	3,3 %	3
Food (staff and student restaurants)	545	3,0 %	3
Construction projects	363	2,0 %	3
Air travel	360,1	2,0 %	3
Municipal waste	359,4	2,0 %	3
Furniture procurement	350	1,9 %	3
Maintenance projects	185	1,0 %	3
Refrigerants	178,9	1,0 %	1
Water comsumption	44,8	0,2 %	3
Energy production	23,3	0,1 %	1
Own and leased vehicles	13,8	0,1 %	1
Paper	11,7	0,1 %	3
	18267,7	**100,0 %**	



Picture 2: Aalto's footprint in 2021

2) Other background material to be developed/provided for the task:

- Link to Aalto's sustainability reports from 2014 onwards: https://www.aalto.fi/en/sustainability/sustainability-reports

- Link to Stora Enso's and Neste Oyj's 2021 sustainability reports (Stora Enso won the Best overall report- category in the Sustainability Reporting Awards Competition in 2021. Neste Oyj's sustainability report won the Climate change-category in the same competition same year.)

    - **Stora Enso**: https://www.storaenso.com/-/media/documents/download-center/documents/annual-reports/2021/storaenso_annual_report_2021.ashx
    - **Neste**: https://www.neste.com/sites/neste.com/files/attachments/corporate/investors/corporate_governance/neste_sustainability_report_2021.pdf

- The Greenhouse Gas Protocol: Corporate Standard. A Corporate Accounting and Reporting Standard. 2011. WBCSD & WRI. https://ghgprotocol.org/corporate-standard

COURSE PROJECT: SELECT ONE, OPTION 1 or OPTION 2

Option 1: Analyzing Aalto's footprint & developing own suggestion for a potential mitigation action under one category (that can be chosen freely by the group)

Part 1: Study Aalto's carbon footprint and the climate work-related parts of Aalto's latest sustainability reports (2019-2021). Study also Stora Enso's and Neste Oyj's sustainability reports from 2021, with a focus on their climate-related work.

Based on the study, respond to following questions

-Analyze how comprehensive, credible, and clear picture Aalto's sustainability reporting in 2019-2021 gives on Aalto's climate work from a student's point of view. What kind of information and in what format would you expect to see more and what development needs do you see in Aalto's current (climate) reporting?

-Compare Aalto's report (climate-related part) with Stora Enso's and Neste's reports (climate-related parts). Are there any take-aways (such as specific data needs or contents, forms of presenting information etc.) that should/could in some formats be utilized also in Aalto's reporting? Are there aspects in Stora Enso's or Neste' report that should not be brought into Aalto's sustainability reporting?

Part 2: Choose one emissions category in Aalto's footprint for further inspection.

- Analyze, what broader trends (outside Aalto's influence) take place within the chosen emission category when going towards 2030? What kind of changes these changes have in the direction of the emission (decreasing/increasing)?

- **Develop and describe a potential (own) mitigation action (or set of actions) that reduce emissions under the chosen emission category.**

- **If you chose to study the Procured Energy – category, you can also develop a project that focuses on energy saving (in MWh or kWh) even if the project does not have a direct impact on Aalto's CO_2e-emissions.**

    a. Describe the main idea and contents of the mitigation action (or set of actions)
    b. Assess in a compact manner the feasibility of the action from technical and economic points of view
    c. If possible, create at least a rough estimate on the action's CO2e-reduction potential (per year) until 2030 in tCO_2e. Explain the methodology and sources used for the calculation.

d. Describe how the action (or set of actions) are implemented
e. If community involvement is necessary for the success of the action, describe, how the community will be encouraged and incentivized to participate in the implementation.
f. Analyze, whether the suggested action can create a wider, positive CO2e- impact outside Aalto's carbon footprint (for example, does it possibly motivate the Aalto community to think of their daily choices at home in a new way)?
g. Analyze, whether there is potential to scale the chosen solution/solutions in a broader context (for example, can it be utilized in other universities or other organization in Finland or elsewhere, if the solutions turn out to work well)? If yes, how could this be done?

Option 2: Carbon footprint of an individual Aalto community member & developing a potential solution for reducing the CO_2e-emissions deriving from daily campus activity (that can be chosen freely by the group)

Part 1: Choose the point of view of some Aalto community member (student, exchange student, staff member, researcher, professor, resident, visitor)

Describe a typical week of the Aalto community member that you chose

- What activities belong to a typical week in the life of the chose community member – if you are not sure, make bold assumptions.
- Create a list of the actions that belong to the typical week of that person (also containing activities beyond formal curriculum, such as social life and housing)

Compare the list of actions of an individual Aalto community member with Aalto University's current footprint.

- What of the listed actions are already fully covered by Aalto's footprint?

- What of the listed action are only partially or not at all not covered by at all by Aalto's footprint?

    - Are there any actions that (in your opinion) should be included into Aalto's footprint? If yes, explain why.
    - Or are there activities, where Aalto could somehow assist in reducing the emissions without absorbing them to Aalto's footprint? If yes, how?

Part 2: Focus on a specific activity on the list and develop an innovative solution that reduces CO_2e-emissions deriving from the activity. The chosen activity can belong to Aalto's current footprint or be outside of it. The most important thing is that decreases the emissions taking place in the campus / working / teaching / research / student life.

1. **Create an innovation/solution that decreases the emissions raising from that action/actions of a student's life.**

    a. Describe the main idea and contents of the mitigation action (or set of actions)
    b. Assess in a compact manner the feasibility of the action from technical and economic points of view

c. If possible, create at least a rough estimate on the action's CO2e-reduction potential (per year). Explain the methodology and sources used for the calculation.
d. Describe how the action (or set of actions) are implemented
e. If community involvement is necessary for the success of the action, describe, how the community will be encouraged and incentivized to participate in the implementation.
f. Analyze, whether the suggested action can create a wider, positive CO2e- impact outside Aalto's carbon footprint (for example, does it possibly motivate the Aalto community to think of their daily choices at home in a new way)?
g. Analyze, whether there is potential to scale the chosen solution/solutions in a broader context (for example, can it be utilized in other universities or other organization in Finland or elsewhere, if the solutions turn out to work well)? If yes, how could this be done?

Hints:

- **In the list below, we have listed a range topics/themes categories for consideration to assist in scoping the idea:**
  - Making student life on campus sustainable (e.g., the student parties, get-togethers, and other events, campaigning and influencing, work of the student organizations)
  - Every-day life of a campus user and its' interactions with sustainability (e.g., mobility, food, waste management, use of IT appliances etc.)
  - Data-collection on everyday activities of campus users in some new manner
  - Communication and dialogue on campus-related sustainability issues to the community members

- **The suggested solution can come in many formats: it can be, for example (but not limited to):**
  - a mobile app
  - an innovative way to gather and utilize data from the campus users
  - a new model for collaboration or a new network
  - smart use of social media in target-setting and/or motivation and engagement
  - an innovative and scalable sustainable concept for some well-known student festival (such as 1st of May/Vappu) or other event
  - a new concept for sustainability communications