



# FUS GO ACT

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Academic Travel Carbon Trading Program

**2022 - 23 Program Summary Report**



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# Project Overview

At Franklin University Switzerland, Academic Travel (“AT”) has historically been the university-funded activity that generates the greatest amount of carbon emissions by the Franklin community each year. In order to reach carbon neutrality, Franklin needs to reduce its emissions, but it cannot give up on its AT program, which is a core component of the curriculum at the university.

Franklin’s Green Office Sustainability Programs (the “GO”) designed the ACT Program to address the climate impact of AT. ACT stands for Academic Travel Carbon Trading.

The unique feature of the ACT Program is that it is a stakeholder carbon market, which targets carbon offsetting projects specific to the university. The design of the project aligns the offsetting projects funded by the program’s carbon credits closely to the interests of university stakeholders.

The team that launched the ACT Program is led by the GO director and 6 GO Scholars. In designing and implementing the ACT Program, the GO team collaborated closely with all of the students, faculty and staff at Franklin University Switzerland.

# Background

## About Academic Travel

Academic Travel is a distinctive element of the undergraduate education at Franklin.

Each semester, Franklin students embark on extended visits to study on location, as part of an AT course. During AT, travel is used as an experiential learning tool completely integrated into the course offerings. Many of the AT courses focus on one of the 17 Sustainable Development Goals as a major theme. Locations have included cities and regions in Europe, Africa and Asia. Each class is taught by a faculty member in a field related to the academic expertise of the individual professor and the students travel to a location with which the professor has a particular academic interest or personal connection.

Every undergraduate must meet an AT requirement in order to graduate by successful participating in four three-credit Academic Travel classes.

## Academic Travel's Carbon Footprint

The impact of AT on the university's carbon footprint is extensive. The most recent campus Climate Action Plan (2019) identified AT as contributing 71% to Franklin's overall eCO<sub>2</sub> emissions, based on university-funded sources. AT courses have included destinations such as Madagascar, Bhutan, Morocco and cities across Europe. Transport has included air flights, buses, taxis, trains and cruise ships. It is an integral part of Franklin's learning model, but it is also the largest contributor to Franklin's university-funded carbon footprint.

## Offsetting Academic Travel's Emissions

In the past few years, a number of professors leading AT courses have begun offsetting the emissions from their travels by purchasing carbon credits on third party platforms. Traditional carbon offset programs, though, meant sending money off-campus and supporting the development of projects in locations not connected to the university. By creating an offset program that financed projects on-campus, the ACT Program helps the university get closer to net zero and directly contributes to improving the quality of life in the location where the stakeholders live, study and work.

## Mechanics of the ACT Program

The ACT Program has three components: Calculate, Reduce and Offset.

**Calculate:** The first step starts with understanding the carbon footprint of each AT course. With the involvement of course leaders, the GO team calculates the carbon footprint of every academic travel. In order to understand how to mitigate their impact, each course needed to understand the extent of their impact. Once faculty and students understood their impact on the environment, they became more deeply committed to reducing or offsetting their impact.

**Reduce.** The second step of the program asks faculty leading AT courses to identify ways to reduce their impact. By committing to making travel choices that consciously minimized their impact, each course could move more incrementally towards net neutrality. To facilitate the reduction of each travel's carbon footprint, the Green Office offers a list of resources to guide AT leaders. In addition, the GO offers ACT Program Office Hours, where anyone can drop in to discuss ways in which AT could be organized in a more sustainable manner.

**Offset.** The third step of the program is composed of the carbon credits that offer AT courses the option to offset their emissions. The funds generated from the purchase of ACT carbon credits are applied towards a project that reduces or eliminates carbon emissions elsewhere on campus. By participating in the ACT program, your trade will help to reduce the total amount of carbon emissions generated by the FUS community each year by supporting programs that reduce emissions generated by the FUS community elsewhere.

## Fall 2022 Cycle Offset Project

Each cycle of the ACT Program identifies an offset project to finance. The offset project for the inaugural Fall 2022 cycle was the replacement of heavily polluting landscaping equipment with sustainable electric powered equipment.

The Fall 2022 Cycle offset project is emblematic of the types of projects the ACT Program is designed to fund. Lawnmowers, leaf blowers, hedge trimmers and other landscaping equipment on campus powered with fossil fuels greatly contributed to Franklin's carbon emissions. We considered the following factors:

- Gas powered equipment emits harmful air pollutants that are unhealthy for operators and those nearby to breathe.
- Electric powered equipment is more economical than equivalent fuel-powered equipment.
- The need to transport, store and use (or potentially spill) flammable fuel is eliminated with electric powered equipment.
- Gas powered landscaping equipment is noisy, often running at over 85 decibels which can damage hearing over time.

The idea for replacing gas powered lawn equipment came upon learning that according to the U.S. Environmental Protection Agency (EPA), one gas-powered mower running for one hour produces similar emissions to 11 cars driving for one hour. The EPA has found that emissions from gas-powered lawn care equipment made up a significant percentage of all air pollution emitted in the United States and that older more powerful, less efficient two-cycle engines release up to 30% of their oil and gas unburned into the air.

We also read in the NY Times (Oct. 25, 2021 “The First Thing We Do, Let’s Kill All the Leaf Blowers”) “. . . gasoline-powered leaf blower exists in a category of environmental hell all its own, spewing pollutants — carbon monoxide, smog-forming nitrous oxides, carcinogenic hydrocarbons — into the atmosphere at a literally breathtaking rate.”

In choosing the replacement of gas-powered lawn equipment as the ACT Program’s inaugural offset project, the ACT Program recognized that a shift to zero-emission landscaping equipment was a step towards reaching the university’s goal of carbon neutrality, while improving local air quality, reducing noise pollution and saving costs over time.



## Project Goals

The goals of the ACT Program are to:

- Calculate. Encourage the university to understand the extent of the carbon emissions generated by the AT program by calculating the carbon footprint of each AT course.
- Reduce. Commit the university to reducing the carbon footprint generated by the AT program.
- Offset. Offer carbon credits to offset the emissions generated by the AT program.
- Localize. Identify projects on-campus that can reduce or eliminate carbon emissions generated by the university and that can be financed by the ACT carbon credits.

## Project Implementation

The project was implemented in three phases: Pre-launch phase, Active Cycle phase and Wrap-Up phase.

Pre-launch phase.

Prior to the launch of the ACT program, the GO identified the sources of emissions on campus. The carbon emissions for each of the sources were cross checked against the most recent university Climate Action Plan. Next, the GO identified ways to reduce emissions. A variety of possible projects were considered. In order to select a project, the GO held discussion with stakeholders to understand cost, feasibility and impact. The GO held meetings with the students, faculty, the maintenance team, the director of physical plants, the finance and administration department, the marketing team and the president's office. Finally, the project mechanics were outlined, including how to campaign and communicate the program across campus, how to sign up for the program and how to report on the program.

Active Cycle phase for Fall 2022.

Once the program was launched, the GO team held meetings with the leaders of each AT course. Individual meetings were held with faculty and the GO team offered drop-in office hours. Discussion were held with the student body and presentations were delivered to the faculty assembly and the cabinet of the university. Articles were published for internal and external communications and record-keeping was kept in order to contribute to a final report of the program results.

Wrap up phase for Fall 2022.

By the end of the Fall 2022 semester, faculty had purchased enough carbon credits to finance a portion of the purchase of lawn equipment replacement. The Maintenance Department purchased carbon credits as well, which bridged the gap to meeting the full credits needed. Once the university's finance department confirmed that the Fall 2022 program goal was reached, the GO contacted vendors regarding the purchase of the equipment. The equipment was purchased by the end of March 2023. Finally, as part of the wrap up phase, the GO solicited feedback from the maintenance team and other university stakeholders.

Active Cycle phase for Spring 2023.

Instead of the ‘campaigning’ of the ACT Program that took place in Fall 2022, the Spring 2023 cycle worked to institutionalize the ACT Program. In particular, rather than just a sign-up sheet, the GO advocated for a line item be created in the travel expense reports for the AT program, which signaled to AT leaders that the ACT program was an integral part of AT programming. Faculty were sent communications encouraging participation on the ACT Program and advice was given on how to reduce the carbon footprint of each travel. The Active Cycle for the Spring 2023 phase is ongoing.

## Project Timeline

Key timeline periods for the ACT Program have taken place as follows:

- Pre-launch phase:  
August – September 2022
- Active Cycle phase for Fall 2022:  
September 2022 – December 2022
- Wrap up phase for Fall 2022:  
January 2023 – March 2023
- Active Cycle phase for Spring 2023 Cycle:  
February 2023 – ongoing

We expect to keep the ACT Program running indefinitely, so that it can continue to help the university work towards its net-zero goals.



## Financing

Each ACT Program carbon credit cost 100 CHF.

The project budget for the Fall 2022 ACT cycle was 4,245 CHF, which was the total cost to replace the fossil fuel-powered lawn equipment with professional grade electric-powered lawn equipment (including leaf blower, hedge trimmer and string trimmer).

Each carbon credit represented 2.4% of the program costs. Based on the calculation that the replacement of the lawn equipment would reduce campus carbon emissions by 130 tons CO<sub>2</sub> annually, each credit represented an offset of 3.8 tons CO<sub>2</sub>. For this project, the cost to offset 1 ton was approximately 26.50 CHF per ton.

For Fall 2022, there were a total of 17 AT courses. The average AT course had 20 students. The cost of 1 credit per student in an average size AT course was 5 CHF. The total credits necessary to finance the Fall 2022 offset project was 42.5 credits. The minimum number of credits for the Fall 2022 offset project were purchased by January 2023.

# Project results

The ACT Program has resulted in a project that is impactful, innovative and replicable, and that takes into consideration social justice considerations.

## Impactful

- Carbon offsetting. The ACT Program finances projects on campus that reduced the university's overall carbon emissions. The ACT Program calculated that our Fall 2022 AT trips were responsible for over generating over 160 tons CO<sub>2</sub>. We calculated that the gas-powered gardening equipment being replaced were responsible for generating approximately 130 tons CO<sub>2</sub> annually, which means that the replacement of the equipment would completely offset the fall travel after 18 months. By situating offset projects on campus, the ACT Program addresses one of the key challenges facing most traditional carbon markets, which is the verifiability of investments in offset projects. In a stakeholder carbon market, participants can see and experience the offsets projects funded by the carbon credits purchased.
- Future investments. The electric gardening equipment also saves the university a significant amount per year in fuel savings. These savings make available a budget that could potentially be applied to additional projects that reduce or eliminate carbon emissions on campus. Almost all of the projects that have been identified as potential offsetting projects in fact result in financial savings to the university.
- Education. Prior to the ACT Program, some travelers had little understanding of the carbon footprint produced by their AT courses. For example, there were travelers who thought that that they might be travelling very sustainably because they were travelling on water; through the ACT Program, they learned instead that traveling on a cruise can sometimes be extremely polluting.

- **Shaping Sustainable Behavior.** The ACT Program nudged faculty to travel in a more sustainable manner. Once faculty learned their overall carbon emissions, they could pledge to reduce their footprint. This could be opting to take direct flights rather than flights with stops. Another option is to take the train instead of flying or taking a bus. Moving accommodations so that students could travel by foot instead of having to drive around during their trips is also a more sustainable option. The program has also encouraged some faculty members to reevaluate travel destinations in an effort to choose locations situated closer to the university.
- **Student leadership.** The ACT Program gave students a chance to 'teach their teachers' and act as campus leaders. For both Fall 2022 and Spring 2023, the Green Office Scholars held AT Advising Office Hours, in which they invited faculty to come to discuss ways that they might travel more sustainably for their AT courses. In addition, following the Fall 2022 cycle, the Green Office analyzed each AT course and gave individual recommendations to each course on how it could have travelled more sustainably (if possible). The Green Office Sustainability Programs plans to do the same for all future AT courses.

## **Innovative**

While a number of Franklin faculty already purchased offsets in connection with their Academic Travel trips, they typically used third party platforms that financed projects in distant locations. The ACT Program gave faculty a chance to offset their AT emissions in a way that directed their carbon credits to projects that reduced or eliminated university-produced emissions on campus, which helps the university get closer to its net-zero goals. Based on our research, when we launched the program in the Fall of 2022, we did not identify any other campus carbon markets that operated in a similar manner.

## Replicable

While Franklin's ACT Program was designed primarily to offset the emissions from Franklin's AT program, it represents a type of stakeholder carbon market that can be replicable at other universities, even if they do not have an AT program or any other program with an unusually high carbon footprint. For example, other universities could offer credits to anyone who commutes by fossil fueled vehicles to their universities, or to offset business travel. Some of the important aspects are (1) all university stakeholders are closely involved in the designing and implementation of the project, (2) the offset projects financed reduce or eliminate carbon emissions on campus, and (3) the program identifies the amount of carbon generated and offset in a measurable and verifiable manner.

## Social Justice

In choosing the projects to finance, the program took into consideration not only the emissions reduced or eliminated, but also the social justice dimensions to each project. The replacement of the lawn equipment was chosen for the inaugural program cycle, in part, because the individuals who suffered most directly from pollution emitted by the gas powered lawn equipment were the maintenance team, who worked for hours inhaling daily the particulate matter from the gas-powered equipment. The maintenance team also suffered potential hearing loss from the gas-powered equipment, which ran over 85 decibels (in contrast to the electric-powered lawn equipment, which are significantly quieter). As a part of the university that is often overlooked, by prioritizing the interests of the maintenance team, the ACT Program was making a choice to fund a project that would eliminate a source of pollution that disproportionately affected a population on campus with the least institutional voice.

## Fall 2022 Academic Travel Carbon Footprint

Course Code	Course Name	Travel Destination	# of Students	Professor	Carbon Footprint per group (tons CO2)
CLCS100T	The Stories We Live By: Travel Writing	Switzerland, Germany, Italy	19	Roy	2.87
CLCS263T	Italian Myths and Countermyths of America	Sicily - Italy	20	Ferrari	8.12
POL101T	Introduction to International Relations	Vienna - Austria	22	Bucher	8.24
CLCS256T	Writing and Rewriting the Classics	Greece	23	Wiedmer	12.58
COM230T	Communications, Fashion and the Formation of Taste	Florence, Milan - Italy	20	Sugiyama	0.03
VCA120T	Photography on Location	Munich - Germany	22	Fassl	0.73
BIO210T	Alpine Ecosystems	Chamonix Mont-Blanc -France	21	Hale	0.44
HIS275T	History of Modern Ireland	Dublin - Ireland	20	Hoey	9.18
MAT115T	Measuring the Alps	Switzerland	15	Prisner	.30
POL176T	International Environmental Politics	Switzerland	22	Zanecchia	.26
SOC100T	Introduction to Sociology	Paris - France	22	Schwak	8.24
BUS145T	Borderless Management: International Firms in a Global World	Brussels - Belgium	20	Sinnaeve	7.73
BUS147T	Digital Entrepreneurship	Turin, Venice - Italy	20	Quartarone	0.06
SJS377T	Sustainable Education and ELT in Madagascar	Nosy Be - Madagascar	13	Galli D'Amico, Starcher	55.87
AHT234T	Painting in France in the 19th Century	Paris - France	21	Gee	0.06
BUS243T	Personal Finance	Germany	24	Suleiman	9.60
TVL353	Oman and UAE: Economic Transformations	Oman, UAE	21	Cordon	38.62
<b>Total</b>					<b>162.93</b>



## Lessons Learned

We were much more successful when the program was more of a “campaign” where we actively promoted the program through class talks and meetings with faculty. When we had less contact with a professor (for example, if they were an adjunct and not normally on campus), we had a lower level of engagement and buy-in into the program.

We had to be careful not to make faculty feel that we were forcing them to participate, otherwise we lost support for the program. Some faculty were worried about being “shamed” for not participating.

While we were able to identify several projects that would reduce or eliminate carbon emissions from campus, it was much more difficult to identify feasible decarbonization or carbon-capture projects. We also recognized that AT is a Scope 3 source of emissions and that our Fall 2022 project eliminated a Scope 1 source of emissions. In trying to identify which projects made the most impact in moving the university to net-zero, the GO learned the complexity of the university’s carbon footprint. Because the cost of different offset projects varied, the cost of a carbon credit per ton might vary based on project chosen. We learned that in order to keep consistent, we might need to extend the Active Cycle phase of the ACT Program from one semester to one year or longer.

We were happy to learn that the ACT Program was seen as encouraging AT to reduce emissions, rather than as an opportunity to “allow” unsustainable travel choices. We learned that the university community, as a whole, is deeply concerned about the carbon footprint generated by AT.