

Student Proposal

Preface

i. Contemporary Challenges

Rapid climate change is one of the greatest problems that our modern world faces. Despite the various causes of climate change, reports by the IPCC¹ show that greenhouse gas emissions caused by human activity are the predominant one. It is an undeniable fact that the current excessive emissions are due to ignorance of the earth's limited ability to adapt, and are worsened by the human economic market system, which is based on continual expansion of demand and use of material resources. Furthermore, we have already begun to see some of the most disastrous consequences of climate change such as a higher frequency of droughts, more severe weather events, and rising sea levels. These physical changes have social and economic consequences such as food shortages, forced migration, and potential resource conflicts, which are exacerbated in less developed nations.

As global citizens, we recognize the necessity of saving our environment from further devastation. We must thoroughly acknowledge and correctly understand the causes and ramifications of climate change. We must act now, taking personal measures to reduce the level of our greenhouse gas emissions. However, this cannot be achieved by students alone, and we call for greater engagement from governments, industries, and research institutions to combat climate change. The time has come to envisage and realize an environmentally friendly alternative future together.

ii. The Vision

We, the students of the world, have gathered at the World Student Environmental Summit in Kyoto, sharing a common concern: climate change. Our primary objective is to improve the environmental consciousness of every human being on this planet and facilitate actions by proposing the “3C” principle and sharing new ideas, actions, and technologies. This proposal is targeted at three groups of people: world leaders, students and young academics around the world, and global citizens. We are aware of the extreme importance of the decisions and actions made by world leaders. However, taking into account

¹ IPCC (Intergovernmental Panel for Climate Change) is a scientific intergovernmental body established by the WMO (World Meteorological Organization), and the UNEP (United Nations Environmental Programme). In November 2007, IPCC published the fourth assessment report, which identified human activities as the major cause of climate change.

the vast scope of the issues associated with climate change, intergovernmental cooperation must be combined with action from NGO's, students, business leaders, and global citizens. Non-governmental activities are crucial in building sustainable communities. **Moreover, we embrace the challenge of creating a sense of community and mutual commitment among students around the world.** By facilitating information sharing and collaboration, we have the opportunity to avert a global crisis.

In order to reduce our greenhouse gas emissions and realize a sustainable society, we present an alternative future that we dream of and strive to create. In this alternative future, all citizens will work together towards a higher quality of life on earth; people will not solely focus on economic growth measured by material wealth. Even though economic growth has brought material prosperity to the few, the majority undoubtedly suffers from many of its negative side effects, such as environmental deterioration. We envision a world where solutions and technologies are available to all, in order to fully mitigate climate change. Therefore, we will strongly embrace a broader concept of development in this alternative future, which will encompass a more sustainable society and a stronger awareness of the eco-system. To do this, we recognize that it is our responsibility to equitably share our resources, and to consider the common good above personal greed.

iii. Structure

This proposal can be divided into three parts: (1) Preface, (2) Mechanisms for Change, and (3) Conclusion. In “Mechanisms for Change”, we will be presenting the “3C” principle – Conserve, Create, and Collaborate – which will lead us into the alternative future we choose. Each of these principles is crucial for our alternative future.

Mechanisms for Change

Part I: Conserve

i. Introduction

Conservation of resources is fundamental for preventing environmental destruction. Contemporary lifestyle, based on a linear system of consumption, relies on massive amounts of energy and resources, expediting environmental destruction. Our vision for the future, however, calls for a resource-conserving lifestyle that minimizes waste and maximizes energy efficiency. This is a part of recognizing and respecting the earth's natural limitations. We consider our attitudes towards the environment as being a crucial factor in the major environmental problems we face. While technology will have a role in solving some of our problems, human attitudes need to fundamentally shift from a focus on consumerism to the enrichment of quality of life for everyone on earth. It is imperative that we begin to reuse the resources that we extract and turn the linear system into a circular one. In general, actions should be economically viable, easy to implement and also popular. Here we introduce and propose some of the technologies and actions implemented on campuses.

ii. Technologies for Conservation

Examples of where technology can be used to monitor variables in order to save resources or control the serious consequences of climate change are given in the appendix. There are many such technologies being developed throughout the world, and each needs to be exploited fully, so that fewer resources are required by mankind and the effects of climate change can be controlled as much as possible.

iii. Sustainable Campus Lifestyle: Action Plans for Conservation

In this proposal, we declare the establishment of the World Student Environmental Network that will enable global cooperation and communication. This Network will act as a solid foundation for students to aim towards and realize a common goal. This will be discussed further in Part III.

The Network aims to create a framework and standards for the development of sustainable campuses worldwide. A list of action plans that have been realized by universities worldwide is given in the

appendix. If all universities took such actions, large savings of greenhouse gases could be achieved throughout the world, thus helping to prevent catastrophic climate change.

Part II: Create

i. Introduction

We are fully aware that it is not the absence of technological solutions that prevents the mitigation of climate change. Indeed, many such technologies exist and are well developed; and rather, it is a lack of economic commitment and progressive mentalities that circumscribes their widespread adoption. However, the continued development of these technologies will make it easier for us to prevent climate change, whilst maintaining our quality of life.

Creation of new technologies and ideas is vital in the prevention of climate change. We encourage more people to engage in the development of clean technologies. Investment in the use of renewable energies should be encouraged and more research initiated. Careful consideration is, however, required and thorough analysis of the new technology is necessary.

Although it is possible to reduce mankind's consumption of energy considerably, low carbon sources of energy are still required to provide us with the energy we need. In this part, we will discuss the technologies that have been outlined in the Summit. To help prevent climate change, these should be adopted in suitable regions, along with other low carbon technologies.

ii. Engineering society in the future

a) Engineering society after 20 years

Our vision of society in 20 years time encompasses a significant reduction in consumption by individuals in terms of commercial goods, electricity, and hydrocarbon fuel (thereby directly leading to a lower carbon footprint globally). The energy requirement of the world will therefore not scale with population, despite an increased quality of life for all. People will be more aware of the impacts of their actions, and will therefore be making more environmentally sound decisions.

The proportion of energy supplied by fossil fuels will be dramatically curbed, and the shortfall in electricity will be provided for by an ever-increasing renewable energy supply. The technologies available at this stage include wind, solar, geothermal, hydrogen power and available second-generation biofuels. The rest of the short-term demand may be filled by nuclear power, although many countries have agreed to decommission nuclear plants as they reach the end of their life cycle, as the safer, green energies become more and more feasible. There are still problems associated with nuclear energy, and

better alternatives should be promoted.

b) Engineering society in the long term

We, the students of the world, believe that a society is possible in which consumption is greatly reduced due to increased efficiency, but most importantly due to the awareness of individuals of the impact of their actions. We believe that without this paradigm shift in public opinion and action, our ideal is not feasible. Technologies will play a very important role in giving people viable alternatives. In the long term, we believe that nuclear energy will be phased out, to make way for safer, renewable energies produced on a local scale. Technologies will be closely matched to their local climate and requirements. Advanced technologies such as second-generation biofuels, wave and tidal power, fusion, ground source heat pumps and advanced solar panels produce electrical energy which can be transported efficiently long distances by high voltage DC lines. Electricity will have replaced fossil fuels as the energy source for all forms of transport, made possible by advances in energy storage.

iii. Barriers for Change

There are worldwide issues that are preventing the implementation and the application of technologies. Economic inequality between nations is a major barrier preventing change. While some nations have large resources available to implement new technologies, some developing nations do not. Consequently, these developing nations are reliant on older and dirtier technologies.

There is insufficient sharing of knowledge and resources between nations to promote the use of climate friendly technologies. Naturally, this is an impediment to the sharing of best practices between countries and across cultures.

People's ingrained habits regarding consumerism and waste are also barriers against conservation and the implementation of new technologies. Without incentives and education in order to make informed decisions about climate friendly technologies and behaviors, this consumerism and waste will inevitably continue to grow uncontrollably.

Until these issues are addressed there will be continued problems with the implementation of our alternative future.

Part III: Collaborate

We are a network of students that will develop solutions to environmental problems to combat global climate change. We will draw on the strengths of diversity and achieve initiatives through cooperation and passion. We are part of a collaboration that embraces the opportunities created by contemporary environmental challenges. We are a network of students who want to help change the world...

i. Introduction

Global collaboration of diverse actors is essential; individual efforts themselves are necessary, but not sufficient. Therefore, we suggest that a new international governmental body be established to facilitate collaboration among nations and supervise the implementation of environmental protection measures. Moreover, this section outlines the establishment of the International Student Environmental Network that nurtures collaboration between environmentally active students. We believe this Network will provide a platform for debate, knowledge sharing and action, urging world citizens to devote more attention to the situation.

ii. International Governmental Body

We believe that the Kyoto Protocol was the first step towards tackling climate change; however, it does not go far enough and not all nations have chosen to participate. An international governing body is required to ensure sufficient international cooperation by taking initiatives and introducing a framework designed to prevent climate change. This body can also ensure that technologically and economically more advanced countries are prevented from oppressing others. We understand there will, however, be many issues relating to this body, such as how to ensure all countries participate and how to choose an appropriate leader.

As previously mentioned, the need for intergovernmental cooperation is necessary to deal with global climate change. This body recognizes the need to establish connections with national governments. Therefore, the creation of an advisors committee between the body and individual governments would provide the student network with a window to the realm of policy making and international governance.

iii. International Student Environmental Network

We hereby declare the establishment of the International Student Environmental Network, which is aimed at combating the most pressing contemporary environmental issue: climate change.

Goals: The goal of the network is to be an inspiring part of the change towards the alternative future. It is fundamental to establish a common direction and share a common passion to link environmentally conscious students around the world to facilitate totemic change. We will share best practices, coordinate responses to environmental problems and motivate a generation of activists worldwide, which will lead us to become a unique student network. By encompassing commitments from many world students we aspire to shift social values in order to enhance the coexistence of humanity and nature.

Challenge: The World Student Environmental Summit has provided us with an undeniable opportunity to begin the first stage of our network's implementation and to further develop our action plans. We will take advantage of the valuable dialogue that will take place and develop valuable working relationships with students that will help maintain communication amongst participants until next year's conference. As a diverse and passionate student body, we will respect our differences and capitalize on each other's strengths to establish effective environmental initiatives and combat climate change.

Impact: The Network will show the world that environmental issues are an indispensable responsibility for us and for future generations. The reach of the Network is broad, involving the participation of organizations and individuals including NGOs, social entrepreneurs, and students. The various parties' participation will lead to more public environmental education and the spread of sustainable campuses. Also, the network will act as an external body to political and business structures, which enables it to develop unique solutions to climate change and become a mechanism for the lobby of student interests. The network encourages resource pooling and information sharing, which will be used to set environmental standards and slow down climate change.

Structure: The Network will embrace openness, allowing any active student to participate. The basic structure will have centralized decision-making, in the form of a global committee constituting of representatives in each area of expertise. A university may form a board of advisers consisting of staff, faculty, administration and regional partners to contribute to and guide student action. The Network will be based on a web structure with multilateral communication flows, where each member feels empowered to express their opinions. Regular general assemblies, both online and in person, will be

crucial to maintain continuity of the network and build cooperative projects.

Online Community: The Internet will be the most important tool for communication and cooperation. There will be a comprehensive website that will consist of two main parts. The first is a user-friendly wiki-style online resource, where network members can constantly exchange ideas and information on environmental issues and projects. The second is a webpage for those outside the network that will act as an informative promotional tool. The website will also include information such as our network's mission, environmentally friendly advice, links to related sites, and polls. Also, this website will need an assigned supervisor to monitor and update it. In case the Internet is not available, other forms of communication will be considered.

Marketing Strategy: In order for the network to be well recognized and attract members, effective marketing strategies will be implemented. This can be done at participants' home universities through environmental campaigns that will utilize promotional tools such as university newspapers and websites, educational pamphlets, local radio, internet forums, mailing lists, existing 'Green' campaigning groups, and formal presentations.

Continuity: Continuity must exist for the effective development of the Network, which will be realized through communication, implementation of action plans, and regular Summit conferences. The Internet will be used to create a strong platform for communication, as discussed in the aforementioned instances. Students will pledge to implement environmental strategies formulated during the Summit at their home universities. Annual World Summits will be crucial for the International Student Network since it will be an official congregation of extended efforts and dedication. These factors will ensure the Network continues into the future.

Conclusion

We, as students and peers, have worked together using our diverse backgrounds to develop ideas on environmental protection and responsibility. Through our cooperation we have come up with the 3C principle, which involves conserving, creating and collaborating in an effort to combat the world's environmental issues. By making use of these principles we believe that we can effectively mitigate climate change.

The “conserve” component of the 3C principle relies on action, education and public participation in order to bring about environmental change. This involves recognizing that our current systems of energy and resource use are unsustainable, and we must respect the Earth's natural limitations. “Creation” makes up the next important part of the 3C principle. The participants have presented ways of bringing new technologies into practical use that hold promise for reducing environmental impacts of human activities. The use and development of these technologies, respecting their limitations, will be a driving force in the move to a sustainable society. Governments, assisted by researchers, have a crucial role to play in providing environmental education as well as economic incentives. This will enable people to access low-carbon technologies and empower them to reduce their consumption.

Through collaboration we intend to carry on what we have started here in Kyoto by establishing a committed network of students that will work together to share information on, bring awareness to, and act to solve environmental issues. Continued work, passion and new ideas will drive the realization of our alternative future, in which environmental responsibility is embraced.

Combining expertise and the elements of the 3C principle, students from around the world can and will combat environmental degradation and climate change. By carrying on and spreading the knowledge we have acquired at this summit we hope to bring a new awareness to students, global leaders and the world's citizens. We are sure the ideals and the passion from the World Student Environmental Summit will continue hereafter, growing in strength as students become empowered to mitigate climate change.

We declare that the next summit will be held at the University of Victoria, Canada, by the ISEN. Possible topics include the definition of “development” and the place of social issues in discussions on the environment. We hope that the next summit will be a chance for world students to discuss and share information about the global environment.

APPENDIX A

The following technologies were presented by the participants of the first subcommittee during the first World Student Environmental Summit 2008 in Kyoto.

Conserve

(1) Campus Resource Monitoring System at Oberlin College (Oberlin College)

A substantial amount of emissions attributed to buildings can be avoided by altering the energy consumption patterns of building occupants. The Campus Resource Monitoring System at Oberlin College displays electric power consumption in real time on the college's website for sixteen dormitories and ten student houses. Information students receive from the website helps them alter their consumption habits. Once a year, dormitories compete to reduce energy use. During the 2008 competition involving approximately 2,000 students, a collective 12,000 kilowatt-hours, which amounts to 1,000 US dollars or 22,000 pounds of coal was saved in just two weeks.

(2) Drought monitoring using SPI index in the Mediterranean climate regions for the agro-forestry management (University of Florence)

The Mediterranean region is one of the most fragile and vulnerable areas of the world to climate change and its sensitivity to drought and rising temperatures. With respect to drought, its influences are sometimes barely noticed, because it is difficult to identify the principle and the intensity of drought occurrence. A system can be built, using the SPI index and analysis of at least 30 years of meteorological data, to identify the number and intensity of droughts. This system can also be used to forecast extreme events and could be helpful to assist decision-making by farmers and Forest Guardians in the Mediterranean region. Moreover the response of the Mediterranean ecosystem to the increase in extreme events is analyzed by using new technologies such as biogeochemical models (Biome-BGC) and Eddy covariance techniques.

(3) Rainwater Utilization in Green Roof (Fudan University)

The Green Roof is simply a roof covered with vegetation and soil, which is useful to reduce the heat

island phenomenon, urban noise, and energy consumption. Another usage of it is expected for urban rainwater utilization. This Rainwater Recycle System will definitely benefit the irrigation of the Green Roof. If these two leading technologies can be combined and taken into consideration, a visible improvement of the urban ecology situation will be realized in the near future.

(4) Establishment of Greenhouse gas Emission Information System (GEIS) for the Industries (Yonsei University)

GEIS is an information system used to estimate the greenhouse gases associated with industrial processes. GEIS calculates 6 greenhouse gas emissions (CO₂, CH₄, N₂O, HFCs, SF₆, PFCs) from 20 industrial processes. There are two methods of calculation, the “simple method” and the “advanced method”. The simple method allows users to calculate their greenhouse gas emissions based on their energy consumption data. The advanced method is more accurate, but requires more comprehensive data about their facilities. The system serves to calculate greenhouse gas emissions methods from stationary combustion, mobile combustion, fugitive emission, electricity and steam uses and 20 industrial processes. Thereby users can better manage the composition of greenhouse gas emissions, which could limit greenhouse gas emissions in the industrial sector.

Create

(1) Ground source heat pump (Eberhard Karls University Tuebingen, British Columbia Institute of Technology)

The ground source heat pump is a system to extract heat from the shallow subsurface. If renewable energy sources are used to run the pump, the system produces no greenhouse gases. The system has a simple structure, high reliability and low operating costs.

In addition, the system is easy to handle. On the other hand, for sustainable use of this technology it is crucial to keep some important points in mind: the minimum distances between geothermal installations and the tolerable temperature change of the groundwater. Furthermore, heat pumps using chlorofluorocarbons (CFC) and related chemicals should not be used. Currently this system can be applied to heat and cool industrial, commercial and residential applications and thus has the potential to greatly reduce energy consumption and greenhouse gas emissions.

(2) Loop tube cooling system (Doshisha University)

The loop tube cooling system is a heat pump applying the thermoacoustic phenomenon where heat energy is transported by sound energy. It can be manufactured at low cost and solar heat energy and waste energy can be used. Harmful cooling mediums such as CFC's are not used, since it has a simple structure. Further improvement of efficiency is needed for practical application, but if it becomes commonplace, it will become possible to generate electricity and cooling by using solar heat energy and waste energy for factories, cars, and in areas that are currently too remote to be connected to a grid. Therefore a reduction in greenhouse gases such as carbon dioxide and CFC emission is expected.

(3) Sustainability of biofuels (Cambridge University)

Biofuels have the potential to be "carbon neutral", as their burning does not move stored carbon into the atmosphere. The extent to which this is true, depends on the methods used to derive energy from biofuels. We can perform Life Cycle Analysis to quantify carbon dioxides emission of a process from the production of raw materials to the disposal of waste and products at the 'end of life'. For example biodiesel produced from oilseed rape can be efficient, but the ploughing and application of nitrogenous fertilizer on agricultural land where oilseed rape is grown can produce vast quantities of greenhouse gases, and therefore negates to some extent the greenhouse gas savings achieved by burning biofuel, rather than fossil fuels. Another concern regarding the usage of biofuel is that food crops may have to compete with energy crops for land, therefore pushing up food prices both directly and indirectly. A biofuel that may avoid these problems is oil from microalgae.

(4) Temporary Waste Water Treatment Scheme for Potato Processing Plant (St.Petersburg State University)

Purification of waste water is important for the environment, such as water quality and soil conservation. Therefore, water quality regulations will tighten, and improvement of purification technologies is needed. The Temporary waste water treatment scheme is used to maintain a certain level of water quality while waste water treatment plants are under construction. Aeration of a small volume of water in a reservoir and use of a special microbiological preparation create good conditions for development of aerobic bacteria, which oxidize organic substances in water, and consume nitrogen and phosphorus for their own activities.

APPENDIX B

The following action plans were proposed by the participants of the second subcommittee during the first World Student Environmental Summit 2008 in Kyoto.

Conserve

(1) Doshisha University: Collaboration of Environmental Education and Social Activities

No matter what field one studies, knowledge and endeavor towards the environment is a crucial requirement for every student in modern society. The aim is to raise students' concerns and responsibilities through engagement in social activities that enhance their commitment to environmental initiatives. The project is simple but adaptable: during classes students will hold workshops and seminars with various social activists (farmers, NGO organizers, councilors, etc.) who will help them design environmental activity programs. Through the project, students will establish a cooperative relationship with local citizens and passionately support the local community.

(2) Stanford University: Combat Climate Change in Your Dorm!

Stanford University believes that the ultimate solution to climate change is an alternative lifestyle that emphasizes resource-conservation. Therefore, the University has been continuously and consistently implementing energy and water conservation projects in student dormitories for the past decade. First, we have replaced over 90 percent of its fixtures in student dormitories with energy-efficient T8 lamps with electronic ballasts, and switched to low-flow showerheads and dual-flush toilets. Second, we hold an annual energy and water conservation competition in all student dormitories, which awards the dormitories that have the lowest energy and water consumption on a per capita basis. Since 2005, Stanford has also initiated the Green Dorm Project, which features a student dormitory with zero net carbon emissions, high energy efficiency, sustainable construction materials, and a closed water cycle. This green dorm will also serve as a research laboratory on sustainability for faculty and researchers at Stanford.

(3) The University of Winnipeg: UPASS

The University of Winnipeg is working on implementing a Universal Transit Pass, or UPASS program for all students in Winnipeg. The UPASS is a reduced-cost bus pass that all students purchase when taking one or more university courses. The large number of passes purchased allows Winnipeg Transit to offer the lower cost, and ideally provide improved service. Our university has a very high rate of public transit use, and a UPASS would facilitate greater rider-ship at more affordable rates, and allow students who normally drive to choose the more environmentally friendly option. In order to implement this program, we need to work with the other two large post-secondary campuses in the city, and hold a referendum at each institution. We also need to work with Winnipeg Transit to establish an acceptable price, and negotiate with the City of Winnipeg, and the Province of Manitoba to subsidize the UPASS.

(4) State University of Veliky Novgorod: Monthly Bicycle Program

The State University of Veliky Novgorod named after Y. Mudry considers that problem of the climate change is the most important nowadays. That is why our town offered to lead monthly bicycle days in the town for students of our university and any one who wishes can take part in it. During these three days people do not take cars or public transport, and use only bicycles. Therefore, the number of cars in town are reduced, as well as and the quantities of carbonic acids and heavy metals. There is also a saving on the use of fossil fuels. This action has a great benefit for nature and is very useful since within the town's boundaries there are a lot of factories which have a harmful effect on people's health. Our town has already led the action this year for the first time from 17th till 20th of May. We do hope that it will be a good tradition for our town and be a model for other universities!

(5) University of Victoria: Business Sustainability Club

In order to facilitate business sustainability, a network of students at the University of Victoria in the Business Faculty formed a club to create environmental business initiatives and to help forge stronger links to their regional economy. The network brought leaders of business sustainability in to speak on their expertise and further educate the students and the public. The Business Sustainability Club undertook individual projects, such as a campaign to reduce the number of plastic bottles in landfills through the sale of sustainable aluminum water bottles. The club also began to gather resources and effective green business strategies in order to offer green consulting for local businesses. The club collaborated with other environmental groups on campus, such as Common Energy, to share ideas and co-host special events.

(6) Cambridge University: Significant Environmental Initiatives

Cambridge University has been at the forefront of green initiatives within the UK. The student body, through activism and pressure groups, successfully campaigned for a reduction in the university's carbon emissions of 80% by 2050. Environmental committees are being inaugurated in all colleges and departments of the university, bringing together student representatives, academic and non-academic staff seeking to reduce their respective carbon footprints. During a university-wide energy audit a league table is produced, ranking these groups to encourage friendly competition. Cambridge University is entering into partnership with Cambridge City Council in adopting a voluntary Climate Change Charter. Naturally, Cambridge University, in implementing this Summit's proposed action plan will set a positive precedent for other British universities. The representatives from Cambridge look forward to uploading their contributions onto a global platform and eagerly anticipate drawing on the wealth of ideas and recommendations from across the globe.

(7) University of Savoie: Carbon Balance

The "Carbon Balance" is a French method, developed by the French environment and energy agency.

Our objective is to encourage students to apply the "Carbon Balance" method in their universities. The goal is to count what different types of activity emit in terms of CO₂. Then, the second part of this study is to propose appropriate actions, based on our evaluation of emissions from various sources, and changes in approaches of all sorts. The final goal is to communicate this balance to everybody who is concerned by this problem: by showing them the real figure for carbon equivalent tons CO₂, you can show how much needs to be done.

It would be a good thing to apply this method to Universities. Indeed, they could be leading structures in the fight against global warming: first for the example they could give, and secondly by taking environmental initiatives.

(8) Saint-Petersberg State University: Education

On the whole, the general public is still far from understanding clearly all the dangers caused by climate changes. Therefore our first aim is to introduce these ideas into the public consciousness through the system of university education and co-operation between the university and other public

institutes, and mass media. In the university sphere it is efficient to embed ecological problems not only in university curriculum, but also student and PhD works.

We are ready to come forward as one of the focus centers in Russia for wide distribution and exchange of information concerning climate change and other environmental issues.

Besides the distribution of knowledge the living examples of friendly relations with the environment are also necessary. That's why we are going to develop our program of summer ecological student camps on the island of Valaam (one of the world-known religious and tourist centers in Russia).

(9) Yonsei University: Green Projects

Our university is helping to slow down the process of climate change by practicing a few things on campus. First, we separate trash from recycling and promote the use of reusable mugs. These initiatives have helped reduce the total waste from our university that contribute to landfills. Also, there are certain periods of time when cars are prohibited from campus. This reduces the number of single occupancy vehicles and CO2 emissions.

(10) University of Tuebingen: Safe carbon dioxide emissions by low-emission means of transportation and energy generation

Environmentally friendly transportation such as public transit and bicycles is one way to effectively reduce carbon dioxide emissions. The University of Tuebingen offers students an affordable ticket for use on trains and buses in the surrounding area. Furthermore many students also commute by bicycle, which is the most ecological means of transportation. To encourage even more students to start rethinking their mobility patterns, we started an initiative during the "Car-free University Day" which took place recently. One of the main roads that runs through our campus was shut down during lunchtime and students enjoyed sitting, eating and chatting in the space normally used by cars. In order to incorporate sustainable thinking throughout the university, an environmental management system will be set up thanks to the student initiative "Greening the University". Another student group has arranged for photovoltaic panels to be installed on the roof of the university cafeteria thanks to financing from private individuals as well as support from Germany's Renewable Energy Law.