

**Blias Tan De-Gen, Anil Sebastian Pulickel, Ngai Jia Sheng and Aditya Sunil Nalkur were part of the team from Anglo-Chinese Junior College that won this year's National Weather Study Project Competition. Below are some of the experiences they gathered during the competition and the subsequent international showcase trip, related to climate change.**

It all began as a simple verbal agreement between friends on yet another school day. The four of us, students of Anglo-Chinese Junior College, had just discovered about the National Weather Study Project Competition organised by Senoko, Siemens and eight other government agencies, including the National Environment Agency and Ministry of the Environment and Water Resources. The premise of the competition looked interesting, the prizes were attractive, and if in the process we were actually able to provide some new insight into the phenomenon of climate change, as the competition literature stated, it would be a welcome added bonus. We had just found our perfect competition.

Nearly a year down the road, we are still amazed at how much our lives have been changed by that day on which we decided to participate in this. Our project and the work we did on it did indeed prove to be absorbing. The prizes we won were delightfully agreeable to. Most of all, though, the very term of climate change had been transformed for us. There are supposed to be experiences in life that completely revolutionise the way we perceive things, and we understand that experience now. From a phrase that is esoteric at minimum in its full range, climate change has become an intimate issue for each of us. This transformation has also had the benefit of making us sensitive to different changes and actions being made in the world to deal with this very issue, and that has been an enriching experience.

Our project, which we titled 'The Prometheus Effect' and which ultimately won the competition in the Junior College category, had to do with exploring the creation of a system that utilised road heat as a source of energy. While this system had already been tested in Netherlands, there had been no similar previous attempt to evaluate its effectiveness in a tropical region. From our research, we realised that such a system could in fact prove to be even more beneficial when implemented in a country like Singapore. We also showed how advances in the fields of nanotechnology and materials science could be harnessed to improve the system. An extensive economic and social analysis of implementing the system followed.

Arriving at these conclusions involved long processes that were replete with memorable experiences. We were happily surprised by the unstinting guidance that was offered by the experts that we consulted in various tertiary institutions in Singapore and abroad. We even managed to discuss some aspects of the project with Mr. Tharman Shanmugaratnam, Finance Minister of Singapore. Flooding a corridor in our school with water when our system sprung a leak while under construction provided its share of laughs. However, nothing could possibly beat the experience of collecting road temperature using thermocouples. The look

on the faces of people when they saw four visibly absorbed boys stand in the middle of the school roads at midday, apparently poking the road with thin metal rods, was priceless.

To make a long story short, all this effort paid off when we were announced as the winners. It was a euphoric moment for us. As we stood and thought that one long journey had come to a happy conclusion, little did we realise that another equally significant one was just beginning. Part of the prize was an international showcase trip for our project to Germany. Not only would we get an opportunity to present our findings to an international audience, we would also be able to enjoy their own views about climate change and what they were doing to mitigate its impact. And thus it was that we set off to Germany in late July 2009.



*Embarking on our unforgettable journey. Team Prometheus (left to right): Ngai Jia Sheng, Anil Sebastian Pulickel, Aditya Sunil Nalkur, Blias Tan De-Gen*

Germany is internationally acknowledged as one of the top countries fighting climate change. It is also a country that stands to be affected quite adversely by global warming. As such, we looked forward to find out what this interesting combination would have yielded in terms of actions and policy.

We were given the opportunity to visit some schools in Germany, namely the Melanchton-Gymnasium and the Sigena Gymnasium. While there, we were impressed by some of the projects that the students had done that were related to climate change. Using thermal and infra-red images of the school building to identify sources of energy leakage was one such

project. Working on such projects in their 'Green Clubs', they were enthusiastic about contributing towards a better world. It was a truly inspiring experience to exchange ideas and experiences with peers from a completely different country and culture, yet working towards the same goal as us.



*The team members with the German students at one of the schools they visited*

We also visited the Grafenrheinfeld nuclear power plant. Germany currently has a policy to gradually implement a phase-out policy for its nuclear power plants. To keep up the efforts to fight climate change, the government plans to compensate by relying more on renewable sources of energy and improving the efficiency of conventional energy generation. While there, we were amply reminded of the importance of public perception in the sustenance of energy creation forms. The nuclear power plant has its own programme to interact with the public and convince them of the safety and stability of the plant. The importance of public participation was echoed in a slightly different manner when we visited the headquarters of firms like Siemens and Adidas. As part of their commitment to fight climate change, these firms not only made changes to the way they operated but also had initiatives to reach out to the public regarding climate change.

On a different note, the visit to Adidas also offered valuable lessons about commerce (read countless hours spent browsing at the factory outlet). For all the seriousness of the issue at hand, the trip was not devoid of its share of fun and enjoyment. We were treated to breathtaking sight-seeing tours of many of Germany's historical and cultural heritage sites. In a place like Nuremberg, there probably is no better substitute for walking down the cobbled

streets when it comes to gaining a deeper understanding of the 'local' experience. Whether it was the Franconian Historic Open Air Museum or the numerous spots of interest in Bamberg, the sheer grandeur and magnificence of the places struck us immensely. It was indeed the amateur photographer's paradise come alive! And finally when we arrived at the Allianz Arena, the world-famous soccer stadium in Munich, the few Bayern Munich fans among us felt an extraordinary sense of awe, as if we were reaching the end of some destined journey. The majority, however, were just content to click pictures and move on, ready for another round of exciting shopping.



*The whole group (with winners of other divisions) with German students in front of Segina Gymnasium, a Germany high school*

We believe that the insights we gained about climate change in Germany are true anywhere in the world. As Singapore proceeds with its own efforts to address climate change, we will also encounter these issues – debates over renewable energy, public understanding and acceptance of different measures and so on. While in Germany, we had the opportunity to meet Dr. Daniel Hoffman, a leading expert on Carbon capture and Utilisation. It was unforgettable to hear him state that in today's world, the fight against climate change will be shaped not so much by environmental factors as by political and socio-economic factors. As we evolve in our strategy to combat environmental problems, we cannot be certain about the results. However, faith that each of us can play some part in it goes a long way, at least to convince ourselves. And this was the most important lesson that we learned from our experience.

By Anil Sebastian Pulickel & Ngai Jia Sheng