

Day Three | December 6, 2022 | Saerbeck

Saerbeck High School: Today's Students, Tomorrow's Climate-Conscious Leaders

by: Aaron Pacheco, Research Associate, RNDC

The delegation's visit to the Saerbeck High School offered insight on how the culture of sustainability has been transformative among the next generations of climate-conscious citizens. Beginning with a brief tour and introduction from the headmaster, the true highlight of the visit would be delivered by the students. First, there were introductions made by select senior students who shared their projects in photovoltaic and renewable technology. Each clearly following inspiration from the direct need of their community, their projects were made both possible and applicable by the growing opportunities in Saerbeck, a world leader in climate smart progress.

Afterwards, we were shifted into a beautiful lab with well-stocked workstations and impressive technological integration. A younger group of students stood ready to present their own small experiments and demonstrate the various effects of climate change. The first presentation began with a small chamber mixed with carbon dioxide (CO₂) to represent the introduction of the greenhouse gas into our atmosphere. A thermometer, aimed through the chamber towards a warm surface on the opposite side, measured any escaping heat. As a greenhouse gas, the CO₂ reflected the temperature back to the surface instead of letting it pass through to the thermometer. When the chamber was instead filled with a standard ambient atmosphere, the heat was able to pass through raising the reading of the thermometer, much like heat being able to escape our atmosphere into space

The second experiment demonstrated how water levels with melting ice that was floating showed no change, but when ice on top of a solid surface melts above the water level, the runoff flows into the surrounding water raising the level. This represents how Antarctic continental ice melts and

runs into the oceans all around the continent, contributing to mean sea level rise.

Lastly, three identical bottles filled with water and wrapped in three different materials measured albedo (the reflectivity of a surface) by how each absorbed light at different rates in the form of heat. White representing snow, reflected the most light, and thus, was the lowest temperature; black was the warmest by absorbing the most light; and the aluminum foil, though very reflective of light, is an excellent conductor of heat, simulating the reflective and absorbing properties of our oceans.

We were all impressed with their enthusiasm, their confidence, and their English comprehension. They stuck around for a short questions and answers section where we asked them their career aspirations. Several wanted to be teachers, a couple scientists, a few engineers, but in a most humbling display of honesty, quite a few expressed uncertainty and a willingness to see where their studies, and the world, would take them. They all deserved a last round of applause and our thanks as we said good by to return to our bus and continue on our enlightening tour of Saerbeck.





Biohof Elfrich: Where Organic and Technology Meet

by: Sabri Fair, Associate Planner, RNDC

Communities Coming Together in Saerbeck

by: Jamie McCormick Legislative Associate, NADO

On Tuesday evening, the Region Nine delegation was joined by the Mayor of Saerbeck, members of the agricultural community, local educators, business owners, and other Saerbeck community leaders for a Coming Together Dinner. This event highlighted the need for cross-cultural communication and relationship building when attempting to introduce new ideas in communities. The delegates and their German counterparts were able to share a meal and rich conversation.

At this dinner, Luisa Trapero spoke to the group about what sharing her story in Germany has meant to her. As a leader of the Latino community in St. James, MN, she has eagerly embraced the opportunities that being a part of this delegation have given her. She is excited to bring the information she learned about solar power and clean energy back to her community. She described how having this experience will allow her community to dream bigger, and give them the sense that participating in the clean energy economy is a possibility for them.

She is also proud to have been able to share about her work with Convivencia Hispania with the German communities. Region Nine considers Luisa's work to be an example of best practices in developing welcoming communities. At this dinner, Luisa shared a final thought: Embracing other cultures will not take away from your rich heritage, but will enrich your life in ways you could not have imagined possible.

As the winter sun began to set on our first day in Saerbeck, the delegation had the opportunity to visit two farms embracing technology to increase the sustainability and economic viability of Germany's food systems. The brainchild of a farm kid turned tech entrepreneur, Biohof Elfrich is a 75 acre family farm that grows 50 plus varieties of vegetables for grocery stores and restaurants across the region grossing \$850,000 in sales during the 2022 season. They are able to achieve such margins thanks to the beneficial integration of technology like irrigation systems controlled by algorithms and in field sensors, and a robot that weeds as many plots as four people, among other innovations. But of course, much of this innovation has been driven by the necessity of workforce issues, no different from Region Nine's communities. In the coming years they will continue to innovate by creating a rainwater retention pond that will be covered by solar to create energy and reduce the stress placed on local groundwater resources.

On the farm of Andreas Puckert the delegates found a familiar sight, a barn that raises 3,500 hogs per year. For delegation member Sue Harris the integration of sustainable practices and renewable energy wasn't the only thing she found worth bringing back to Minnesota. Having grown up on a family farm herself, she knows firsthand how difficult generational transitions can be. She was particularly touched by how the two of the sons have been given agency over the current operations of the farm including being able to introduce sun flowers onto a portion of their fields. That action was largely driven by the war in Ukraine which has put a strain on Europe's agricultural markets. The two sons are energized by their father's willingness to implement their ideas which he recognizes will impact their future just as much as they will impact his own.