

The German Difference: Minnesota and German Cities Partner on Smart Climate Solutions

By Tad Simons



When German immigrants began coming to Minnesota in the mid-1800s, they brought more than brats and beer with them. They also introduced a wide range of progressive ideas to the region—in agriculture, government, community, religion, and family life—and established the upper Midwest as an American outpost for northern-European cultural values.

That rich tradition of cultural exchange was on Shannon Mortenson's mind last year when she visited Saerbeck, a city of 7,500 in the state of North Rhine-Westphalia in western Germany. Saerbeck is famous for radically transforming its energy supply as part of Germany's Energiewende (energy transition), a nationwide effort to reduce reliance on fossil fuels, minimize waste, and expand the availability of sustainable, renewable energy sources.

Germany aims to generate 50 percent of its electricity from renewable sources by 2030, and 80 percent by 2050—a goal Saerbeck has already achieved. In fact, Saerbeck is so efficient and uses so many forms of renewable energy (solar, wind, bio-gas, bio-waste) that it produces more than three times as much renewable electricity as it consumes.

"We were in awe at what the Germans have been able to do, and it made us aware of all the things we could be doing in Minnesota to create more sustainable communities," Mortenson says.

Mortenson is the city administrator for Warren, a hamlet of 1,600 tucked into the northwest corner of Minnesota. She was in Germany as part of a 25-person delegation of representatives from five Minnesota cities (Warren, Elk River, Morris, Duluth, and Rochester) that are participating in an international exchange of ideas and technology. The initiative is called Climate-Smart Municipalities: Modeling Integrated Energy Communities for the 21st Century.

Green partnership

The initiative is a three-year project supported by Germany's Federal Ministry for Economic Affairs and Energy in partnership with the University of Minnesota, the Great Plains Institute, Ever-Green Energy, the Minnesota Credit Union Network, and several other agencies from both countries.



Climate-Smart participants visit Saerbeck's Bio-Energy Park. Pictured from left to right: Shannon Mortenson, city administrator, Warren, Minnesota; Klaus Froehlich, city planning department, City of Amsberg, North Rhine-Westphalia, Germany; Dr. Sabine Engel, Institute on the Environment, University of Minnesota; Brent McMillan, journeyman lineman, City of Warren; and former Minnesota state Sen. LeRoy Stumpf.

According to Dr. Sabine Engel, director of international partnerships at the university's Institute on the Environment, the project's goal is to help cities recognize and capture the economic development opportunity of renewable energy and sustainability. "What impressed the Minnesota delegation was what Germany's energy transition looks like in real life," says Engel. "It's one thing to hear about it, and quite another to actually see it take form."

The five Minnesota cities that successfully competed to participate are all different sizes, and each has its own distinct energy challenges. Each city is paired with a partner city in Germany that shares certain similarities, in the hope that approaches and strategies being developed in those locales might be useful in Minnesota.

The "German difference," says Engel, is that the country's transition to sustainability and energy independence goes well beyond transforming the power sector; rather, it's a holistic, multidimensional, integrated approach that includes looking simultaneously at transportation, agriculture, commercial architecture, residential buildings, and industrial processes as an interconnected economic system. It's government, business, and the public all working together toward a common goal.

Mortenson noticed the difference. "They have such great cooperation," she says. "If one business is creating steam, they will capture it for another business to use. They look out for each other and work together. It's inspiring."

What's potentially exciting for Minnesota is that many of the success stories in Germany come from localized, grassroots efforts in rural, agricultural areas.

"In many of these areas, farmers are the ones pushing for these initiatives," Engel says. "They see it as an economic development tool."

In Saerbeck, for instance, the mayor's goal is to create 1,200 new jobs using the city's energy prowess to attract new businesses, spur economic growth, and encourage young people to stay, work, and raise families.

Addressing unique needs

None of these goals can be accomplished, however, without a great deal of planning and cooperation. And they certainly can't happen without people in the community who are inspired by the possibilities and dedicated to the hard work of developing ideas and building consensus.



Climate-Smart participants tour Europe's largest passive house development—a student housing facility in the City of Muenster, North Rhine-Westphalia, Germany. The geothermal heat, heat pumps, and energy-efficient design of the building dramatically reduce energy needs.

Every community has its own unique set of challenges as well, so there is no “one size fits all” solution, Engel cautions. “This is about communities deciding for themselves what works for them,” she says. “Our objective is to demonstrate that size does not matter (big, small, urban, rural). What matters is getting all the stakeholders around the table and building partnerships.”

Last year's excursion to Germany was intended to introduce the Minnesota delegation to solutions that are working in cities of various sizes, and to start the conversation about how some of those ideas might be applied to cities here. Likewise, a German delegation came to Minnesota in October to continue the discussion and visit their partner cities here. Project details were finalized over the winter, and the next two years will be devoted to making them a reality.

Rochester (population 112,000) already has several energy-efficiency initiatives underway, for example, so it's studying how German cities manage land use in developing energy-efficient transportation systems.

Elk River, a community of 24,000, wants to encourage the use of more electric vehicles in the city. Leaders there are studying the successes its partner city, Iserlohn, has had converting city lights into charging stations.

Through its affiliation with the University of Minnesota, the City of Morris (population 5,400) has cooperatively developed the “Morris Model,” an ongoing effort to develop clean energy solutions for the city's residences, businesses, and municipal services. This year, for instance, Morris is directing its electric provider to replace 350 of its streetlights with more energy-efficient LEDs, and is looking at installing solar panels on three city buildings.

Cultural paradigm shift needed

Morris City Manager Blaine Hill was part of last year's Germany delegation, but his focus isn't just on technical solutions; it's also on cultural awareness and education.

“What’s really needed is a cultural paradigm shift,” says Hill. “In Germany, they are very forward-thinking about energy efficiency and independence, because they have to be. We don’t have the same impetus here because energy is relatively cheap. But if we can learn how to use energy smarter, and educate young people about the benefits of energy conservation, that different way of thinking is what will make the difference in the long term. It’s a social, cultural challenge, and the key to moving forward is getting young people involved.”

Duluth Mayor Emily Larson, has made the responsible use of energy a focal point of her administration, so she has charged the city’s energy coordinator, Alexander Jackson, with developing a comprehensive energy strategy for the city of nearly 87,000 residents.

“We want to develop a concrete energy plan that can guide investment and strategy for how we go about reducing our energy load and diversifying our energy portfolio,” Jackson explains. But he agrees with Hill that the biggest difference between Germany and Minnesota is cultural.

“If you talk about climate change in Germany, everyone accepts it and recognizes the need for developing sustainable energy. Because of that, they’re also OK with paying more for renewables,” Jackson says.



Climate-Smart participants visit the municipal utility and admire the recycled glass sculptures in the City of Iserlohn, North Rhine-Westphalia, Germany.

“For many people in the U.S., the reality of climate change is still up for debate, so it’s important to emphasize that there are a lot of reasons besides climate change to embrace sustainability,” he continues. “Whether or not you believe climate change is real, sustainability still makes sense from an economic development standpoint, from a human health standpoint, and for the long-term life of the community.”

Model for small cities

Warren, the smallest town involved, is working hard to develop environmentally conscious planning and services from the ground up. A “net zero” carbon footprint is now the goal for any new public building project in Warren, and the city wants to incorporate the European “Four Rs” model—reduce, reuse, recycle, recover— in its approach to waste management.

“Going to Germany changed our thought process on how to approach new development with efficiency in mind,” says Mortenson. “Ultimately, we hope to do some things that can be emulated in other small cities in Minnesota.”

For starters, Warren’s Climate-Smart project is to conduct a citywide inventory of its energy efficiency. They’re doing this by creating a thermal map using drones outfitted with special infrared cameras, an idea that came from Warren’s German partner city, Arnsberg. Once the map is complete, city officials will use it to improve efficiency efforts. The map will be available for citizens to view, raising overall awareness in the community.

Inspiration for others

The University of Minnesota’s Engel hopes the cohort of 10 Climate-Smart cities will inspire other cities in Minnesota to broaden their thinking about the wisdom of planning for a more energy-efficient future.

“Education is important, and so are visible projects,” says Engel. “Cities are interested in showing other cities what they have done. This isn’t just about technology; it’s about policy and tools and cooperation and people. It’s about how to get all the stakeholders in a community aware of what is possible.”

Ultimately, however, what will matter most is practical, tangible results. In the coming year, city representatives will return to Germany and meet with their counterparts from North Rhine-Westphalia to flesh out individual project details, then push forward with the planning and execution phases. In addition, three of the five cities will have a full-time intern from Germany to provide perspective and help move the projects forward.

“Two years from now, the Climate-Smart Municipalities will demonstrate that ambitious climate goals may be reached at the local and regional levels by vastly different and individualized means,” says Engel.

She also hopes the project will inspire cities in Minnesota and the rest of the country—particularly ones in rural areas facing unprecedented economic challenges—to rethink their own energy policies and embrace a more German attitude toward the economic and social wisdom of sustainability, including the need to address the most pressing issue of our time: planetary climate change.

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