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THE ENERGIEWENDE AND TOURISM

EXAMPLES FROM GERMANY

Renewable energy can be combined with recreational areas and tourism. In Germany, communities transitioning from fossil-fuel extraction to renewables are showcasing their stories. In addition, revenue from renewable projects is used to finance tourist attractions. Most importantly, Energiewende projects can themselves become tourist attractions.

Photo of the Geierlay Bridge, at the time of its construction the longest suspended footbridge in Germany – and funded in part by the wind farm visible to the right. Source: Gilbert Sopakuwa, CC BY-NC-ND 2.0

MAIN TAKEAWAYS

- Renewable energy projects can be attractions themselves.
- All renewable energy sources have become part of tourist attractions.
- Municipalities can use renewables to position themselves as destinations for sustainable tourism.
- Revenue from renewable projects can be used to fund otherwise unrelated sights.
- Regions undergoing structural change can use renewables to showcase their transition.

1 HOW RENEWABLES AFFECT TOURISM

Renewables affect all aspects of society. In rural and urban areas, they create local jobs – but also change landscapes. Communities that develop renewable energy projects are therefore looking for ways to integrate these projects into their general development. Esthetically pleasing landscapes can be used for tourism, often in combination with educational purposes. Municipalities can showcase their renewable energy projects to communicate their commitment to climate action and renewables, thereby positioning themselves as an attractive destination for sustainable tourism.

Communities offering visits to renewable energy projects also help the image of renewable technologies. Preconceived notions may clear themselves up when people experience projects first-hand. For instance, the 40 decibels from a running wind farm might seem quiet to city dwellers frequently exposed to 60 decibels (perceived to be four times louder than 40 decibels). But the solutions in rural areas differ from those in cities – and again from those in areas deindustrializing.

When it comes to public acceptance of renewables and their influence on tourism, research suggests a difference between before and after. In 2008, a survey of literature on wind farms in eight countries concluded: "whilst there is evidence of a belief from local people prior to a development that it might be injurious to tourism there is virtually no evidence of significant change after development has taken place." Peer-reviewed studies, which largely focus on wind farms, have found complex relationships. The literature shows a wide range of estimates – 1% to 26% – of Germans surveyed saying they would avoid an area with wind farms.

A German study from 2015 found a 0.3% drop in guest arrivals per two megawatts of added wind generation capacity (the average turbine installed in Germany in 2018 was roughly 50% larger). A follow-up study published in 2018 supported the aforementioned trend of people getting accustomed to wind power. Focusing on the state of Hessen, the authors found a "weak but significant negative effect" of wind turbines on tourism from 1993-2002, but "significant coefficients disappear" from 2006-2015. People might simply be getting used to wind farms.

The experience of German Tourism Association DTV confirms this finding. In 2013, DTV produced its first position paper on renewables to address concerns that renewable energy projects might have a negative influence on tourism. Since then, the concern has apparently died down. A DTV spokesperson told the AEE in 2019: "Renewables are not currently a big issue for us."

The AEE helped publish the first travel guide for renewables in Germany. One journalist wrote about the publication in an article entitled: "Renewables as Tourist Attractions? Only in Germany." But as the comments below that piece show, readers disagreed with the title: renewables, they explained, were already attracting tourists in countries like Spain and the US as well. For instance, all the way back in the late 1990s tours were given in wind-powered golf carts in a wind farm in California, and the demand was overwhelming. These tours are now given in air-conditioned luxury buses. Similar organized tours are now available in numerous German wind farms, such as at Lake Constance, but with different vehicles: bikes.

2 RENEWABLE PROJECTS AS TOURIST ATTRACTIONS

Whether it's biomass, solar, hydropower, geothermal or wind: all renewable energy sources have become tourist attractions in their own right. Two solar examples include a solar draisine and solar ferries.

In 2000, Germany's leading wind turbine manufacturer, Enercon, patented its observation platform for turbine towers. Usually built on the company's modestly sized E-66, the glass-enclosed platform rests under the nacelle atop the tower. In Westerholt, several visits are offered each Saturday and Sunday in the warm six months for €6.50 per visitor. Another such turbine is located near Aachen, where visits are free; operators see the tours a way to make wind energy more attractive and stir interest in the technologies to

The solar-powered draisine, a railcar on a disused track in Oden Forest.
Source: Überwaldbahn gGmbH

generate wind power. Other wind farms have separate observation towers, not platforms connected to a turbine tower. Such freestanding towers are usually open all year for free – such as near Ettenheim. Another one in the Black Forest near Freiburg is actually from 1889 and hence as old as the Eiffel Tower, though only a tenth as tall. It stands adjacent to four turbines atop Rosskopf Mountain. Wind turbines with lookout platforms have gone up in other countries as well, such as in Austria.

Visitors to Europa-Park, Germany's largest amusement park, enter underneath a solar covered walkway next to the park's largest roller coaster. Signs explain in English, German, and French what solar energy is. Source: dortmund achtundneunzig.

Numerous cycling paths have been created around and through wind farms. One project developer created a family-friendly energy adventure tour within the Weilrod wind farm; here, visitors walking or cycling through the wooded area can stop at five stations to learn not only about renewables, but also how charcoal is made, and about climate change. A similar concept was implemented in the 40 km long ENSO energy adventure path, which takes visitors past six historic hydropower plants. Visitors at the Waldeck pumped storage facility can also take a cabled rail-car to the top.

Towns have also set up bureaus to manage the influx of (mainly business) visitors to their projects. Freiburg's Green City team helps visitors by the busload see such highlights as the partly car-free Vauban neighborhood along with the Solar Info Center, the new Sustainability Center, and much more. The village of Feldheim near Berlin has created a visitor center to showcase its combination of wind power, solar, biomass, storage, and a local grid. In addition to hosting youth groups, Feldheim has made international

headlines and hence attracts expert groups from around the globe – as does Wildpoldsried in southern Germany. That village also combines solar, wind, and biomass.

Individual businesses are also using renewables as selling points. Hotels like Paulsen's offer tours of nearby wind, solar and biomass facilities. An internet platform directs visitors to green hotels with a focus on renewable energy.

Some existing tourist areas are adding renewables as an attraction. The Baroque Abbey of Benediktbeuern, for instance, offers regular tours of its renewable energy center. The heritage-protected Salvey Watermill has not only added solar power to its grinding and cutting mill, but also helps visitors purchase emissions certificates to offset their travel.

Sustainable biomass is also fertile ground for tourism, as in Hamburg´s Energy Hill Georgswerder. After World War II, German cities created numerous artificial hills out of rubble as they were rebuilt. Georgswerder was later also used for municipal waste. In 1979, it was closed, but the hill still emitted gas from biowaste decomposing underground. At the beginning of the 1990s, the hill got its first wind turbine. Later, a second turbine was added along with a PV array. And the gas was eventually collected as a source of energy. Since 2013, the site has been open to the public, who can walk across the now grass-covered, 40-meter-tall hill (quite high for the flat city of Hamburg) to get a unique view of the area. Atop the hill, an info center provides visitors with information about the hill's history and about recycling.

Freiburg's Eichelbuck is another energy hill. There, gas from the waste heap (now also covered with grass) is collected and mixed with biogas for power and heat generation. A giant solar array way also installed on the southern side of the hill in 2011. Once the hill had largely stopped subsiding, an event room was built

The Millau Viaduct has seven pillars, one of which is the tallest buildt structure in France. The bridge was built so car drivers could pass quickly through one of the most beautiful vallies in the country. The viaduct is considered an engineering masterpiece, not an eyesore in a pristine landscape. Photo: public domain.

on top, providing a new view of the city against the backdrop of the Black Forest. It can now be rented, such as for weddings. The facility is also open by appointment to groups wishing to learn more about the site.

The municipality of Saerbeck has a Bioenergy Park. It was created on the grounds of an ammunition depot the German Armed Forces built in 1988 – but no longer needed a year later when the Wall came down. When it opened in 2011, 20,000 people attended on the first day. The Park started off with a biomass facility connected to a district heat network. Another 3,000 visitors came when seven wind turbines were added six months later. Since then, thousands of visitors annually have continued to take part in tours. The groups are mainly experts from places as far away as Japan and the United States. The Bioenergy Park now also has a solar array with 24,000 panels. A total of 52,000 people have visited the Park.

Finally, the Linach Valley Dam is an historic hydropower facility in the Black Forest. In the 1990s, a citizens group resolved to restore the Jugendstil structure from the 1920s, partly as a tourist attraction. Today, the dam once again generates electricity, but you can also ride your mountain bike across it and visit the museum inside. It is also part of an energy education path. Since 2008, various summer theater performances and dance parties have been held on the dry side of the dam.

3 "STRUCTURAL CHANGE" TO TOURISM

Several regions in Germany are transitioning away from coal mining, often along with heavy industry. The process of avoiding becoming a "rust belt" is called *Strukturwandel* or structural change in German. Often, these communities add tourism to the sectors they wish to develop, and renewables sometimes play an important role.

A wind turbine with an observation platform.
Source: Axel Hindemith, CC 3.0

For instance, the former opencast lignite mine at Klettwitz now has a wind turbine with a platform overlooking the 166 MW Meuro and Senftenberg solar array – which was briefly the largest in the world when completed in 2011. Visitors can also see the former giant coal excavator measuring 50 meters tall by 170 meters long; one of the largest machines ever built, the abandoned beast stands rusting behind a fence. Ground water has filled a number of craters left behind by the coal mining, creating artificial lakes that are also used for tourism near Senftenberg.

A similarly restructured area – this time, on the US Air Force's former largest ammunitions depot in Europe – is the Morbach Energy Landscape, which offers visitors ways to experience wind, solar and biomass.

For a lot of lignite regions, tourism and renewables are part of the structural change just now being undertaken; the German Coal Commission has proposed that lignite mining be phased out by 2038. The Economics Ministry and think tank Agora Energiewende see tourism and renewables as part of a much larger strategy to diversify these local economies dependent for so long on coal.

4 RENEWABLES FINANCE TOURIST ATTRACTIONS

Like the aforementioned Energy Adventure Tour, a number of tourist attractions have benefitted financially from renewable projects. The Geierlay Bridge was Germany's longest hanging bridge when it was built in 2015. It would not have been possible without funding from the nearby community wind farm. The bridge stretches 360 meters across a 100 meters deep gorge. In the first three years alone, it brought 820,000 tourists to the village of Mörsdorf (population: 600). "We no longer have any empty buildings," the local mayor Marcus Kirchhoff said of the success in 2018. The village has even built a new visitors center.

Numerous other contributions are modest, such as e-bike charging stations next to a picknick table at the base of a wind turbine in Lindenhardt Forest. Other communities use revenue from their renewable projects to finance tourism in general. For instance, the small town of Großefehn hosts a music festival in a wind farm. The town of 14,000 now has some 180,000 overnight guests annually and is a good example of how wind, solar, and heat from biomass are compatible with growing tourism.

The Waldtraum Festival was a music event held twice at the Linach Valley Dam. More than 1,000 people came to see local and national DJs put down the vinyl. Photo: Moritz Glaser.

5 CONCLUSIONS

Every source of renewable energy has been connected to tourism somewhere. Some offers are free, while others charge admission. "Tourism" can be understood to cover a wide range of visitors. On the one hand, laypeople seeking recreation may simply want to cycle or hike through a beautiful landscape, perhaps learning about the climate and energy when they stop to take a break. Integrating renewable projects in such landscapes as things to be proud of is important towards having the public take ownership of and identify with the Energiewende. Because of the focus on learning, a lot of the visitors to renewable energy projects are not tourists in the recreational sense, but are pursuing professional interests. Project planners are asked to field detailed questions about financing, German regulations, and the technologies themselves.

Giant industrial facilities like the Port of Hamburg – which also has wind turbines installed in it – also attract visitors from around the world. The difference, of course, with new renewable projects in rural areas is that they are, well, new and may thus be perceived to be intrusive. The good news is that people get accustomed to changes. What's more, people often appreciate engineering marvels even when they change landscapes, such as at France's Millau Vauduct (also built in a pristine area). And renewable projects also have many plus points: they create local jobs, decrease dependencies on imports, provide clean energy, and mitigate climate change. By combining renewable energy with tourism, municipalities can not only improve their image and create local jobs but also increase awareness of and knowledge about the technologies.

Indeed, there are the numerous businesses like the indoor adventure swimming hall Miramar, which switched to geothermal heat after decades of reliance on natural gas and has stuck to it for the business case – without mentioning it further. Maybe that is where we are headed: part of "getting used to renewables" may be that one day the aforementioned projects are no longer anything special.

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