A gas-insulated line (GIL) tunnel allows a beer producer to make optimal use of the construction site for its new Munich brewery. Paulaner’s COO Stefan Lustig talks about beer, Bavarian lifestyle, and energy transmission.

The Nockherberg is a Munich institution in more ways than one. Situated on the ridge terrace of a hillside sloping down to the eastern shore of the Isar River, it has long been home to one of the city’s well-established beer halls and its outside garden overlooking the city. But the Nockherberg also hosts an annual event of great cultural significance that, in terms of Munich beer culture, is second only to the famous Oktoberfest. And finally, it is the site...
of Paulaner, the oldest brewery in Munich that still operates on the grounds where it was founded. On a quiet sunny afternoon in January, the brewery’s Chief Operating Officer Stefan Lustig joins us in a wood-paneled room with a cozy tiled stove to talk about the company’s past and future – a future for which the groundwork is currently being laid as Paulaner begins construction of a new brewery outside of the city center, with help from the municipal power utility and Siemens Energy. The inn is saturated with the smells of hops and malt wafting up from the brewery next door, but it is also steeped in history, as evidenced by the many mementos that decorate the walls. Both celebrities and ordinary patrons are remembered with framed pictures and personalized beer mugs locked away behind the bar, and fading posters advertise past festivals and beer tastings. The chronicle of Paulaner is a fascinating one, and the origins of the business still make themselves felt in many ways today, says Lustig. He joined Brau Holding International (BHI), Paulaner’s parent company, in 2010; two years later, he was appointed to Paulaner’s board of directors.

Energy Booster
With a doctorate in brewing technology from the University of Applied Sciences at Weihenstephan, he is not only a manager, but a passionate brewer and an accomplished connoisseur of the fine beers for which Bavaria is justly famous. “Beer is essentially considered a staple food here,” he says, production standards have been in place at least since 1516, when the duke of Bavaria promulgated the “purity law” stating that only water, hops, and malted barley could be used in brewing – “the earliest contribution to food safety,” as Lustig notes.

Of the many specialty beers produced by Munich’s numerous brewers, one of the best-known is Paulaner’s seasonal “Salvator” doppelbock, a malty beer rich in flavor and high in alcohol content. Every year in early March, the Starkbierfest (“strong beer fest”) marks the beginning of Lent; it is also a celebration of some political significance, as local and state leaders are invited to attend the tapping of the first barrel, which is accompanied by the Derblecken, a comedic performance sending up the assembled dignitaries. “Salvator” was first brewed by monks of the order of St. Francis of Paula (hence the name of the brewery) in 1634. According to an old tradition, the sweet doppelbock was traditionally considered to be of sufficient quality if a wooden bench on which it had been poured stuck to a man’s leather breeches as he stood up. For the Italian friars, unaccustomed to the rougher climate north of the Alps, the nutritious beer served as a “liquid bread” that gave them an energy boost for the arduous Lent period without violating rules on fasting.

An Ingenious Solution
Energy supply has also been a major factor in Paulaner’s biggest project in recent years: the construction of a new brewery from scratch in a green field on the city’s periphery. Due to the increasing popularity of its produce, the company decided to shift production from the confines of the Nockherberg to a plot in Langwied district – outside of the city center, but still within the Munich municipal area. The new site has a number of advantages, including its proximity to the autobahn, but there was also

“With the GIL tunnel, we can keep the power line in place while optimizing our use of the construction site.”

Stefan Lustig, COO, Paulaner
a real obstacle in place: a 380-kilovolt overhead power line running diagonally across the field.

“We had to find a way to keep the power line in place while optimizing our use of the construction site,” says Lustig, who was closely involved from the start in planning for the new development. “I had to dig out some of my old university textbooks on high-tension electrical engineering, but we finally found a viable solution.” That solution involved the Munich City Utilities (Stadtwerke München – SWM) and an underground dual gas-insulated line (GIL) supplied by Siemens Energy. A 450-meter tunnel now runs underneath the entire construction site of the new brewery, which is expected to be completed in 2015. This eliminates an overall single-pole length of GIL tubes: 2.4 km two 2,300 MVA transmission capacity of GIL tubes: 2,300 MVA one important factor was that this property came with a building permit for a brewery, so the whole application process was vastly accelerated. But you’ve also got to remember that building space in Munich is limited – even outside of the city center, there aren’t that many open spaces that can accommodate a brewery of this size.” And there is an important reason why Paulaner chose to remain within the administrative boundaries of the city of Munich, he adds – one that is intimately linked with the global fame of the world’s beer capital. “The Oktoberfest is a very important event for us, especially in terms of marketing. And only those breweries that are based within the city limits are allowed to serve their beer at the festival.” Siemens, working closely with the SWM municipal utility, was able to build the tunnel within the extremely tight time schedule. “The project was a learning experience for everybody,” says Lustig, “but both during the planning phase and during construction, Siemens’ performance was marked by a high degree of reliability. You could tell that the engineers had a real passion for this technology – we really appreciated their excellent work.” Looking forward, he is optimistic about the company’s prospects. The initial output capacity of the new brewery will be 3.5 million hectoliters per year, or about 25 percent more than the old Paulaner brewery could produce. The brand enjoys a great deal of popularity both in Germany and in over 70 countries, and sales are increasing especially in the USA, in Russia, and throughout Asia. “Beer embodies the Bavarian convivial lifestyle,” says Lustig. “By ensuring safe operation of the power line and allowing us to make the best possible use of the property for our new brewery, Siemens has contributed significantly to the continuation of that tradition.”

Running the Numbers: The Langwied GIL Tunnel

- Two GIL systems, each with a transmission capacity of 2,300 MVA
- Operating voltage: 380 kV
- 450-m tunnel can be upgraded to hold four systems
- Overall single-pole length of GIL tubes: 2.4 km
- Project completed in just 11 months

Paulaner Brauerei GmbH & Co. KG

A Bavarian Legend

In 1634, the friars of Saint Francis of Paola began brewing beer in Munich. Today, Paulaner is one of Germany’s top ten breweries, with its unfiltered top-fermented wheat beer a market leader. The company has more than 20 microbrewery restaurants around the world and is the top Bavarian beer exporter to key markets such as Italy, the USA, France, and China.

900 staff members are employed by the brewing company

2.8 million hectoliters of beer sold in 2013

Up to 20 varieties of beer on offer, including seasonal specialties

Paulaner is available in some 70 countries around the globe

By the 19th century, the former monastery brewery had become a successful enterprise.

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