

# Green Electricity From Traditional Windmills

*igus supports Sailwind 4, a student project, with €10,000 and free components*

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[/EINPresswire.com/](https://www.einpresswire.com/) -- In the past, traditional windmills drove mill grinders and irrigation pumps, but in the future, they will produce green energy. For this purpose, students at the HTWG Konstanz, a university of applied sciences, are installing high-tech components. igus® is supporting the Sailwind 4 project with €10,000 (\$10,550) and providing the young engineers with lubrication-free linear guides and polymer bearings, which will ensure that windmill operation requires little maintenance.

Wind turbines are being built all over the world as part of the global energy transition. However, there are places where the turbines just don't fit. At the same time, nature conservation often thwarts projects. But does that mean giving up wind power? Not if the students at the HTWG Konstanz have a say.

They hope to use small windmills to generate green electricity. Their Sailwind 4 project is focussed on recreating a Greek sail-driven windmill, one of the oldest known devices for using wind energy and today a cultural asset in the Mediterranean region from Turkey to France. Previously used primarily for grinding grain and legumes, these windmills will produce green electricity with a generator in the future. The advantage is that thousands of mills can already be



High-tech meets nostalgia: the HTWG Konstanz's Sailwind 4 project aims to use old windmills to generate sustainable electricity. igus is supporting the idea financially and with dry-running, maintenance-free components. (Source: igus GmbH)

retrofitted as miniature green power plants.

igus is the first sponsor

igus is enthusiastic about the compact wind power plant.

"We intend to make our buildings and production CO2-neutral by 2025, but we are also thinking beyond company boundaries," says Tobias Vogel, CEO Plain Bearings and Linear Technology at igus. "Therefore, we are supporting Sailwind 4 with 10,000 euros and providing the students with free components to build the new windmills,"

"igus is known for its commitment to innovative projects initiated by secondary school and university students," says Professor Dieter Schwechten, who, together with Professor Ditmar Ihlenburg, initiated Sailwind 4. "We are very pleased to have igus as our first partner and hope to gain more project supporters from the industry."

Lubrication-free igus components reduce maintenance cost and effort

If everything goes according to plan, the students will start building the first windmill in October. It will retain the typical visual characteristics of the historical model: a cylindrical tower, a tapered roof structure, and the sail rods on the rotating main shaft.

The engineers will attach high-tech sails to the ladder and connect the shafts to a power generator. A wind speed of 14m/s should allow a rotor 4m in diameter to generate 5kWp of electricity. The small wind generator could also be combined with a photovoltaic system and battery storage.

"Local, sustainable power generated with wind and sun has great advantages for many regions because the two complement each other well in terms of climate. The systems are to work with as little monitoring and maintenance as possible," says Schwechten. "We have set ourselves the mechatronic task of completely automating windmill operation, which is how large wind turbines work. After all, there are no millers to operate windmills today."

This is where the components igus provides come into play. They include [linear guides for motorized sail trimming](#), [slewing ring](#) bearing support for the rotor, and a variety of plain [bearings made](#) of high-performance plastics. All igus components are robust, fail-safe, and corrosion-free and require no lubrication or maintenance. This is a big advantage for upgrading old windmills in the Mediterranean.

#### ABOUT IGUS:

igus GmbH develops and produces motion plastics. These self-lubricating, high-performance polymers improve technology and reduce costs wherever things move. In energy supplies, highly flexible cables, plain and linear bearings, and lead screw technology made of tribo-polymers,

igus is the worldwide market leader. The family-run company based in Cologne, Germany, is represented in 31 countries and employs 4,600 people across the globe. In 2022, igus generated a turnover of €1.15 billion. Research in the industry's largest test laboratories constantly yields innovations and more user security. Two hundred thirty-four thousand articles are available from stock, and service life can be calculated online. In recent years, the company has expanded by creating internal startups, for example, ball bearings, robot drives, 3D printing, the RBTX platform for Lean Robotics, and intelligent "smart plastics" for Industry 4.0. Among the most significant environmental investments are the "chainge" program – recycling used e-chains and participating in an enterprise that produces oil from plastic waste.

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