

Skill 62 Renewable Energy at WorldSkills Lyon 2024

Harnessing regenerative sources for energy production

FESTO



Decarbonization requires increasing the proportion of renewable energy sources in the global energy mix. Technical and vocational education plays a vital role in equipping skilled technicians to plan, install, maintain, and optimize solar and wind energy systems.

Festo is a leading supplier of industrial automation technology and technical education. Our learning solutions in renewable energy cultivate green skills in energy generation.

Festo became a Global Industry Partner of WorldSkills in 1991 and has been providing state-of-the-art learning systems for WorldSkills Competitions ever since. The Wind Turbine Learning System prepares competitors for tasks related to wind power production systems.


worldskills
Lyon2024

Festo and WorldSkills are partners since more than three decades

Trendsetting learning solutions of Festo have become a standard

Made in Germany

Research and development of Festo automation technology and technical education solutions has its origin in Germany. Being a 100% family-owned company with its headquarters near Stuttgart, Germany, Festo maintains 61 subsidiaries and is represented in 178 countries around the world. This global market know-how enables Festo to react on trends and be the first one to present high-quality, state-of-the-art learning solutions for TVET. WorldSkills relies on the proven Festo quality and selected Festo as Global Industry Partner for good reasons 30 years ago.

“Festo has been cooperating with WorldSkills for already more than 30 years to develop the skills of young people. The WorldSkills competitions underline the importance of technical vocational education and training in times of skilled workers shortage.”

Automation
Components
Systems
Solutions

The power of
innovation for
productivity and
employability

Education
Learning solutions
Courseware
Learning Systems
Digital Learning
Lifelong Learning

Our commitment to sustainability

Sustainability is firmly anchored in our corporate strategy. As a family business with a long-term perspective, we take responsibility in the areas of environmental, social and governance (ESG) towards current and future generations. With our expertise in automation and technical education, anchored in our “Blue World” approach, we increase our customers’ productivity and create opportunities for sustainable economic, environmental, and social development. That is our pledge.



Dr. Oliver Niese,
Member of the Management Board,
Festo Didactic SE



Learn more
about the
commitment
of Festo



WorldSkills Competition 2022 Special Edition

In recognition of the increasing significance of renewable energy technicians globally, the skill 62 Renewable Energy was introduced at the Special Edition in Kyoto, Japan, featuring three competitors (CN, IN, JP).



WorldSkills Lyon 2024

Due to the keen interest demonstrated in 2022, skill 62 will also be presented at the next edition of WorldSkills in Lyon, France. This time, six teams of future renewable energy technicians (BR, CN, EG, IN, JP, UK) will demonstrate their professional expertise in renewable energy systems. They will utilize state-of-the-art equipment provided by Festo Didactic for the wind power tasks.



Get an impression of the
exciting atmosphere of the
WorldSkills Competition
2022 Special Edition

Competitors shape the future energy landscape

Mastering renewable energy production systems

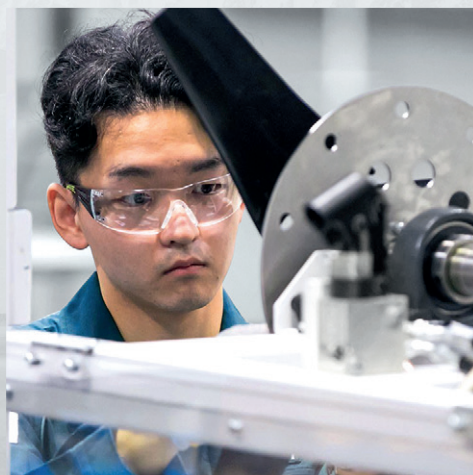
A pillar of sustainability

The future energy landscape is characterized by decarbonization, decentralization, and digitalization, fostering a sustainable and adaptive ecosystem for clean energy production and distribution.

Solar panel installations are soaring due to increasing awareness of climate change and the urgent need to transition towards renewable energy sources, coupled with declining costs and government incentives promoting clean energy adoption.

The development of wind power has also made significant strides, with numerous power utility companies and governments investing in both offshore and onshore wind farms.

Renewable energy technicians ensure that the equipment for collecting, generating, or distributing power from a wide variety of sources, including wind, water, solar, and geothermal, is properly maintained and operates efficiently.



Focus on wind power

Wind turbine technicians install, commission, maintain, inspect, troubleshoot, repair, and operate wind power installations, whether onshore or offshore, whether a single turbine or a wind farm.

Essential core competencies include general knowledge of wind energy technology, understanding of operational logic, electrical and mechanical safety procedures, proficiency in electric power and electronics, as well as mechanics and hydraulics.

During WorldSkills Special Edition 2022, the Wind Turbine Nacelle has already been successfully utilized and proven its high pedagogical value without sacrificing realism.

The Wind Turbine Nacelle facilitates the execution of practical tasks in the following areas:

Mechanical systems

Components; inspection of bearings, shafts, gears; brake systems maintenance; lubricants, filter technology, oil analysis; power drive sockets; function and maintenance of yaw systems.

Hydraulics assembly and maintenance

Hydraulic units, pumps, valves, and systems; electrohydraulic controls; proportional hydraulics controls and servo valves; hydraulic pitch and brake systems.

Electronics and electrical systems

Generators and electric motors; inverter maintenance and troubleshooting; electrical measurement techniques; sensor installations in wind turbines; wind turbine electronics; wind farm network.

Wind energy technology

Systems and components; aerodynamics.

Practical training for wind power technicians

Made for winners: the Wind Turbine Learning System

This scaled-down, fully operational nacelle prepares learners for real-life operation, maintenance, and troubleshooting tasks in a safe environment. The HMI can be used to monitor and control the various subsystems and program wind simulations for a thorough understanding of how wind conditions impact the production of electricity.

This training system is highly relevant to prepare candidates for the challenges of wind power tasks of the renewable energy competition. It is aligned with WorldSkills regulations and comes fully assembled with the shown equipment. Two students can work simultaneously on the mobile workstation.

System overview

- Mobile, steel-frame workstation
- Complete drive train that includes the main shaft, a gearbox with a transparent side cover, speed sensors, a hydraulic brake, and an asynchronous generator
- Yaw system with a 61 cm (24 in) slewing bearing, a gear motor, a drive, a position sensor, and fail-safe hydraulic brakes
- Manual hydraulic pump and an accumulator
- Electrical panel with frequency drives, breakers, and power supplies
- Siemens human-machine interface (HMI) and programmable logic controller (PLC)
- Weather sensors to monitor wind speed and direction
- Power generator
- Emergency buttons and protective guards with limit switches for safe operation



Discover the Wind Turbine Nacelle

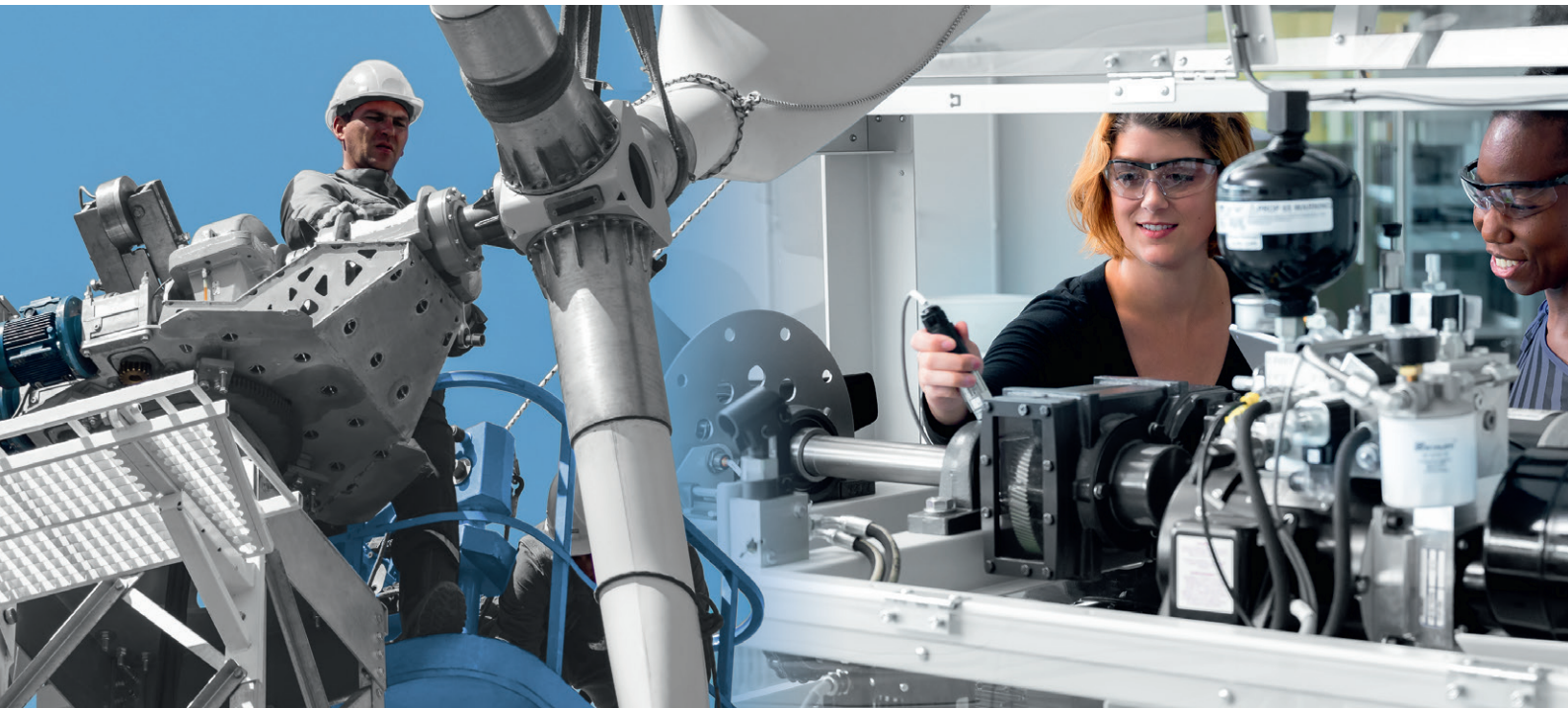


Download our offer to order this training equipment.



Technology trends translated into learning solutions

Developing the skills of young talents



Skilled workforce

Our world is characterized by rapid technological progress. Tomorrow's skilled workers are faced with the challenge of constantly keeping pace. Lifelong learning has become the new normal.

Festo focuses on the technical skills development of both apprentices and professionals. In 2021, the Festo Vocational Education and the Festo Lernzentrum Saar in Germany were awarded "Center of Vocational Excellence" by WorldSkills Germany.

"Renewable energy offers a promising career path for young people, with almost assured employment opportunities. The WorldSkills competition raises awareness of this important trade, pushing participants to the forefront of the green revolution and establishing them as pioneers in shaping a more sustainable future."



Mr Abhinav Shukla
Renewable Energy Skills Competition
Manager, WorldSkills Lyon 2024
Image source: Courtesy

For more information on the Wind Turbine Learning System, please contact the nearest Festo sales office, an authorized dealer or our headquarters.

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