



MINI WIND



## The strategic energy for your growth

Experience. Reliability. Innovation. At Espe, we specialise in manufacturing highly efficient and innovative industrial electric systems. Since 1974, we have been growing steadily, positioning ourselves as a leading Energy System Integrator in Italy.

State-of-the-art photovoltaic solutions for families and businesses, small wind power and biomass systems, and industrial electrical infrastructures. Wherever energy is needed, we are committed to providing installations to meet diverse needs.

### Zero CO<sub>2</sub> emissions since 2012

Our photovoltaic and geothermal systems allow our plant to operate as efficiently as possible without emitting CO<sub>2</sub> into the environment. Even your company can achieve this result thanks to our energy-related solutions.



# PRODUCERS OF CUTTING-EDGE SOLUTIONS

Born as electric system installers, throughout the years we have accumulated a rich heritage of experiences, broadening our activities in the field of photovoltaic system installation and direct production of innovative technologies in the mini-wind, hydroelectric and biomass sectors.

Today, this development strategy allows us to offer our clients a greater quality and efficiency guarantee for our systems.

# Our manufacturing process

**Research and development.** Our internal engineering department collaborates with the University of Padua, the Polytechnic of Milan, the University of Naples, the University of Trent and the University of Edinburgh to design highly efficient and innovative technologies and energy solutions.

**Industrial production.** Within our plants, furnished with state-of-the-art machinery, we produce technologically advanced solutions for different applications, such as: wind turbines for mini-wind turbines, turbines for hydroelectric plants, biomass co-generators.

**Testing and control.** In order to ensure an energy experience of top performance and dependability on the long term, every one of our components undergoes a strict testing process in our inspection department. Working technologies are tested by simulating the most extreme conditions to be analyzed, evaluated and optimized.

**Delivery.** When dealing with energy related technologies, large volumes and sizes are involved. An efficient logistics is therefore an essential aspect of an effective investment. We handle this phase directly by organizing and realizing the best type of delivery in order to optimize costs and shipping time.

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## CERTIFICATION

**ISO 9001 certification.** Our high-quality production system has been granted ISO 9001:2015 certification by GCL International.

**UNI EN ISO 14001 certification.** Our productive process is designed to guarantee high sustainability standards and maximum attention to the environmental impact of each activity.

**European Directives Conformity.** Our technologies are in conformity with the European directives 2006/95/CE (LVD), 2004/108/CE (EMC) and 2006/42/CE.

**European Standards.** The solutions realized within our laboratories conform to European standards CEI EN 61400, CEI EN 62305, UNI EN 14122.



# ESPE MINI WIND POWER

## The wind of innovation



Engaged in the wind industry since 2011, in just 18 months we gave birth to the FX Series, a line of wind turbines entirely developed and produced in our workshops. In a market dominated by large wind turbines produced by multinationals that monopolized the market, we were able to compete on a global scale thanks to a strong innovative spirit.

We were among the first to invest resources and competences in mini-wind, that is the production of technologies which combine small sizes and great performances, revitalizing a sector in crisis and becoming, in just a few years, a point of reference on the international level.



## We know how to make a difference

**Sustainable investments.** Our clients are offered custom solutions that represent the best result over investment ratio.

**Production quality.** We handle the direct production of high-efficiency systems, machines and components.

**Global reliability.** Consultancy, operations and assistance: we are the global partner capable of attending the development of a plant or system from its conceptualization to its maintenance.

**Scientific research.** Our engineering department collaborates with universities and research entities to create solutions which evolve the renewable energy market.

## SYNERGY OF ITALIAN EXCELLENCE

Our mini wind dedicated technologies are the expression of a perfect bond between some national academic excellences and the competences of a high precision mechanical engineering industrial center in which we have a leading role. If we are able to offer a range of mini-wind turbines with unique performances on the market, we partly owe it to the collaboration with the University of Padua and the Federico II University of Naples, whose researchers have collaborated with our engineering department to realize products able to combine the highest performances and the smallest dimensions.

## A RELIABLE AND FLEXIBLE IN-HOUSE PRODUCTION

We design, assemble and test every single component of our wind turbines. All the solutions dedicated to small wind power come from our factory in Grantorto, near Padua. We are firmly convinced that only an in-house production may offer the technical guarantees necessary to satisfy every specific need. The ability to design components allows us to realize wind turbines able to deal with diverse environmental working conditions in the best way, taking full advantage of the potential energy performances our technologies provide.



# Diverse testing to guarantee safety and performances



Every single component undergoes strict mechanical testing in our workshop to ensure design objective conformity. Once assembled, all wind turbines are controlled according to an articulate monitoring process. After manual pre-testing and automated testing, we power the turbines and subject them to increasingly stressful tests. Finally, we proceed with another evaluation, verifying mechanical component integrity as well as active and passive safety component endurance. Every system must prove its capacity to work at its best even in adverse and discontinuous weather conditions.





# The advantages of choosing the ESPE small wind turbine

## **100% MADE IN ITALY QUALITY**

The experience and competences of a highly specialized team are integrated with the dependability of a production that is 100% Italian, which conforms to the ISO 9000 quality system.

## **HIGH PERFORMANCES IN EVERY CONDITION**

Our wind turbines offer elevated performances even in low wind speed regimes or in conditions of variable wind and turbulence.

## **MAXIMUM OPERATOR SAFETY**

The wind turbines comply with the strictest safety norms and standards, offering operators convenient escape routes and guaranteeing the use of certified devices.

## **SIMPLE AND EFFECTIVE MAINTANANCE**

Our turbines are easily accessible and allow the execution of maintenance activities in safety and ease.

**ESPE S.p.A**

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