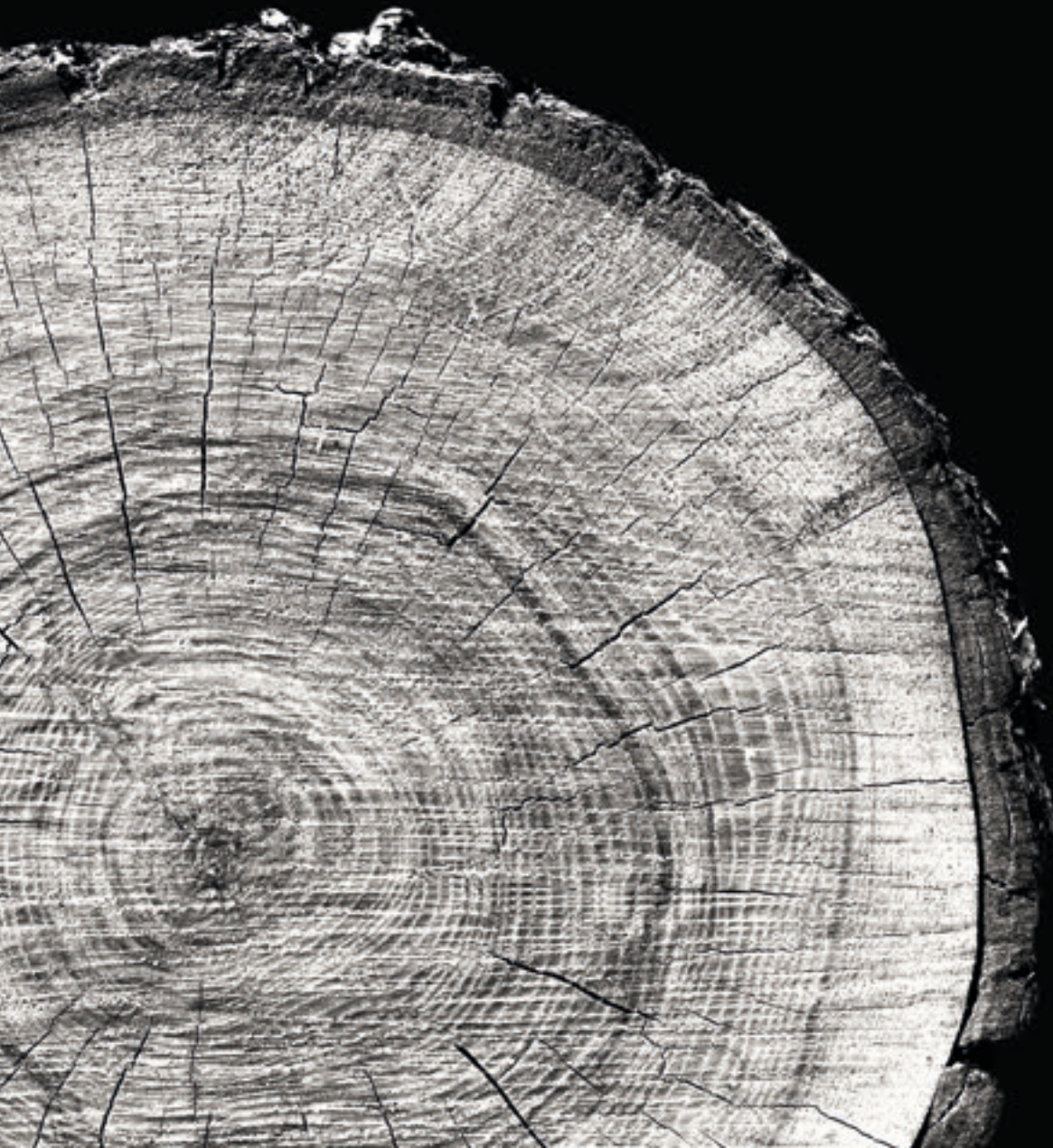




ESPE
Energy Expertise

BIOMASS COGENERATOR



Strategic energy for your growth

Experience, dependability, innovation: in a continued growth since 1974, at ESPE we specialize in the realization of highly efficient and innovative industrial electric systems, along with being among the main Energy System Integrators on a national level.

Industrial electric infrastructure, photovoltaic solutions for businesses and families, hydroelectric plants, mini-wind turbines and biomass systems: wherever energy is required, we are capable of producing and managing it with the right installation suitable for every need.

Zero CO² emissions since 2012

Thanks to photovoltaic installations providing electricity and a geothermal system providing heating and cooling, our plant functions at maximum efficiency without releasing CO₂ into the environment. A result that also your company can achieve through our energy 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.



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.

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.

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 BIOMASS

Wood as an expression of efficiency

Convinced of the enormous potentiality of the biomass sector in terms of efficiency, convenience and sustainability, we have oriented our production towards the direct development of innovative technologies for this production field. Specifically, throughout the years we have invested in the development of boilers, electric plants and cogenerators able to take advantage of wood energy in its various forms, from wood chips to pellets, searching for and finding solutions able to give new energy to materials once considered waste to be disposed.



BIOMASS



CLEAN, ABBUNDANT AND CONVENIENT RAW MATERIAL

A clear indication of what may be considered biomass is given in the 2009/28/CE European Directive which defines it as “the biodegradable fraction of products, waste and residues from biological origin from agriculture, forestry and related industries including fisheries and aquaculture, as well as the biodegradable fraction of industrial and municipal waste”. Therefore, biomass is raw material that presents unique benefits on the market: it is available in large quantities, it respects the environment, it does not require polluting production processes and supply costs are much more contained with respect to fossil fuel.

THE FUEL THAT DOES NOT INCREASE CO₂ EMISSIONS

The woody biomass energy effort is considered, by the European Union, as one of the most effective systems to win the decisive challenge set by global warming: reducing carbon dioxide emissions. The energy related use of woody biomass causes emissions of CO₂ equal to that which would have been emitted if wood had run its natural course. In practice, if wood were not used to produce energy, its decomposition would still generate the same quantity of carbon dioxide emission liberated from its combustion.



Specialists in wood chip solutions



Throughout our long experience in the field of biomasses, we specialized in the production of cogenerator systems which use wood chips as combustible material. These are chips of wood derived from sawmill waste or derived from wood production activities or woodland area maintenance. A convenient and often zero km solution, wood chips offer excellent outputs as far energy performance is concerned, combining respect for the environment, high efficiency and full investment sustainability.



Choosing our solutions is worthwhile

REDUCE ENRGY COSTS

Wood chip cost can be up to 5 times lower than normal mineral fuel.

QUALITY AND EFFICIENCY

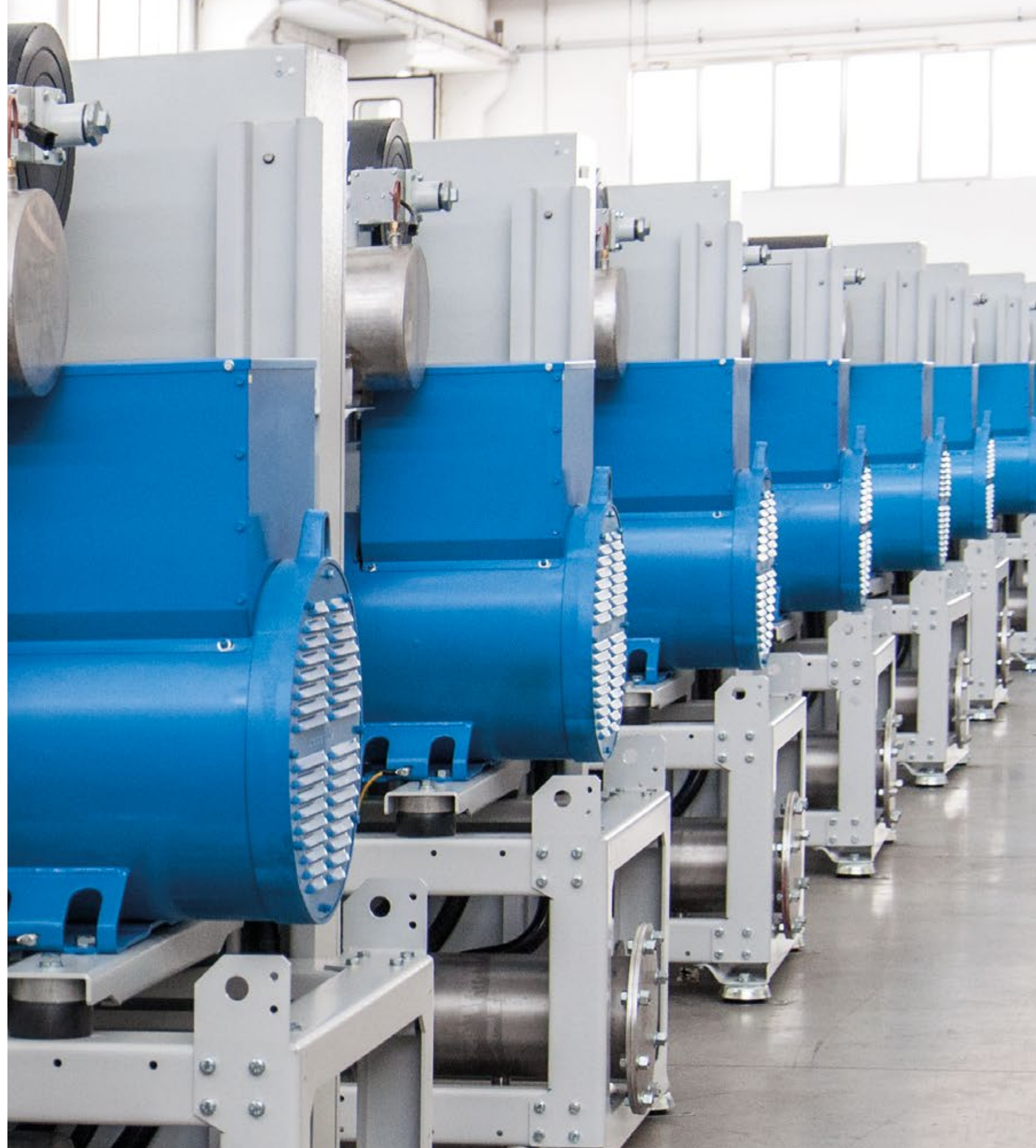
In order to realize our biomass systems, we use only top of the line materials and technologies which afford maximum performance.

WE CREATE THE PLANT YOU NEED

We study, with your input, the best biomass solution capable of satisfying your energy needs, creating the custom system you are looking for.

PROTECT EVERYBODY'S FUTURE

The use of biomass combustion allows to safeguard the environment, contributing to the preservation of life on the planet.

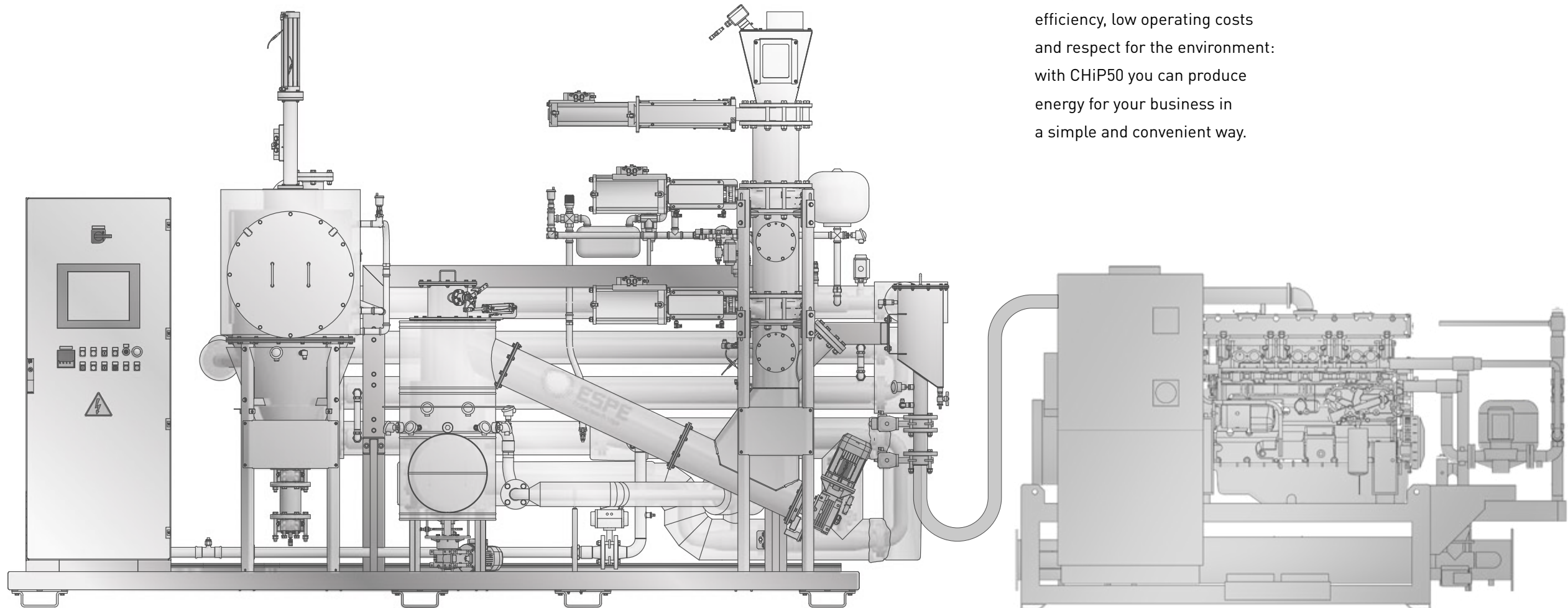


ESPE CHiP50:

the biomass cogenerator

CHiP50 is our cogenerator dedicated to small and medium size businesses that require thermal and electrical energy in one solution. We designed this system to obtain the highest possible output with a minimum quantity of fuel (wood chips), decisively reducing wastes and optimizing the investment necessary to realize it.

Specifically, CHiP50 is capable of producing 49 kWe and 110 kWt using 49kg of wood chips per hour, using just 12% of produced energy to function. High efficiency, low operating costs and respect for the environment: with CHiP50 you can produce energy for your business in a simple and convenient way.



Gasifier

Cogenerator

Case History



ECO WELLNESS HOTEL NOTRE MAISON

Client: Eco Wellness Hotel Notre Maison, Cogne, Aosta.

Intervention: Installation of 1 CHiP 50, wood biomass cogeneration plant, syngas produced by a co-current fixed bed gasifier with post reformer.

Performance: 49kgh of wood chips consumption, 49kWe of nominal electric power, 120kWt of nominal thermal power.

Needs: The accommodation facility, equipped with a wellness center, has the need to reduce the costs related to the high consumption of thermal and electrical energy, expressing the desire to use renewable sources.

Furthermore, the customer expresses the need for a simple and intuitive system in its daily management.

Solution: Among the various renewable sources, the customer immediately shows his propensity towards biomass, a well-known and appreciated sector. Once the usable area for the installation of the biomass plant has been identified, we create a positioning layout with all the necessary accessories for its operation.

In addition, we visualize the electrical and thermal connection points, the management points for wood chip loading, drying and unloading ashes, so as to facilitate daily management. Once the preassembly of the accessories and the functional tests have been performed in our workshop, we carry out the installation at the customer, training him about the operations to be performed for simple and immediate management.

In addition, the system is equipped with a remote supervision system which, by ensuring continuous monitoring, allows the timely execution of decisive interventions.



NATURAL ENERGY

Client: Natural energy, Manta, Cuneo.

Intervention: Installation of 4 CHiP 50, wood biomass cogeneration plant, syngas produced by a co-current fixed bed gasifier with post reformer.

Performance of each single CHiP 50 installed: 49kgh of wood chips consumption, 49kWe of nominal electrical power, 120kWt of nominal thermal power.

Needs: The nearby industrial plant produces wood splitters and saws for firewood and requires a solution to reduce electricity and heat consumption related to the production process and heating of the factory, offices and a small pellet production plant.

Solution: The customer, already operating in the wood supply chain, expresses an immediate interest in our wood chip technology. Once the usable area for the installation of the biomass plant has been identified, we create a positioning layout with all the necessary accessories for its operation. In addition, we visualize the electrical and thermal connection points, the management points for wood chip loading, drying and unloading ashes, so as to facilitate daily management. Once the preassembly of the accessories and the functional tests have been performed in our workshop, we carry out the installation at the customer, training him about the operations to be performed for simple and immediate management. In addition, the system is equipped with a remote supervision system which, by ensuring continuous monitoring, allows the timely execution of decisive interventions.

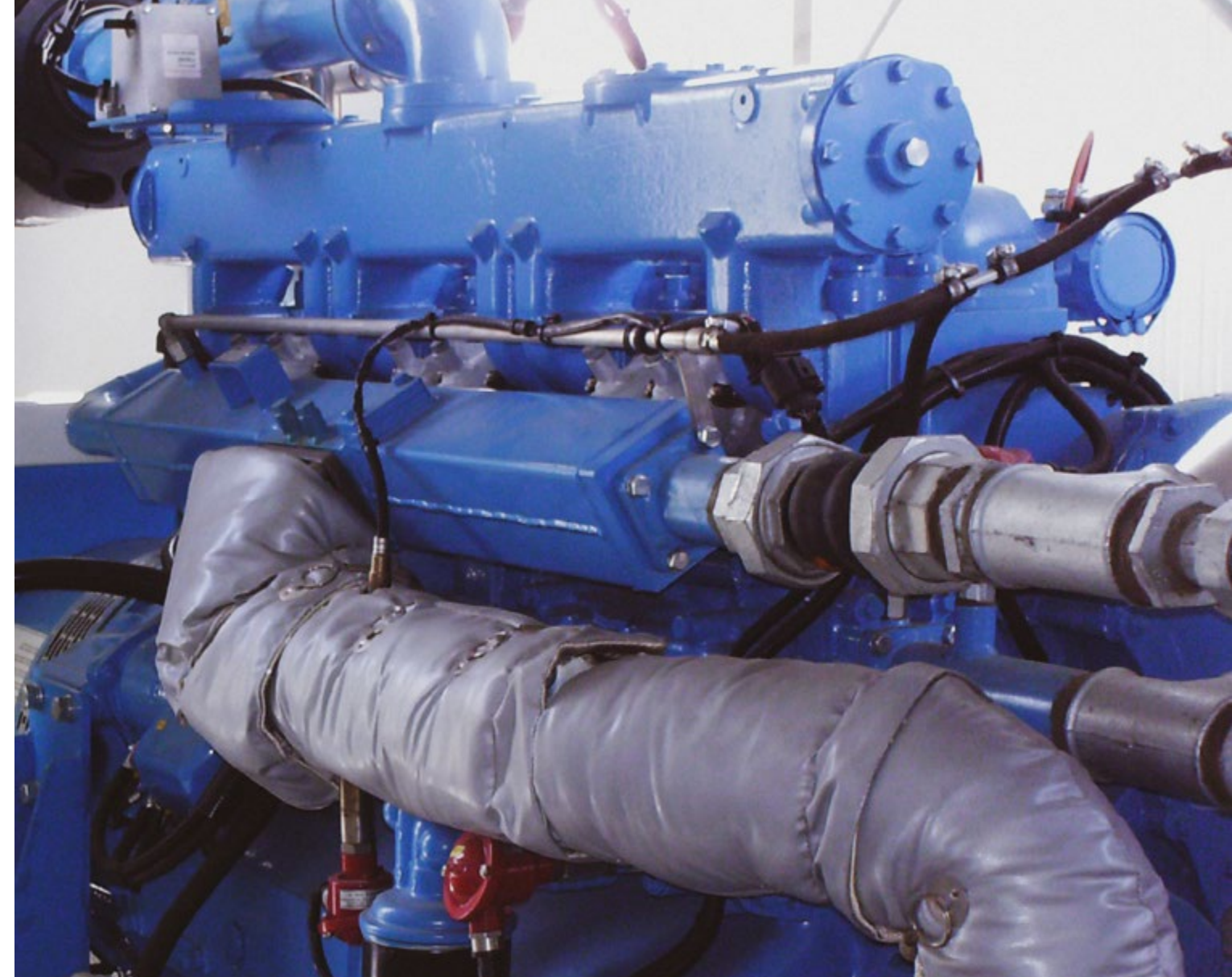


AGRARIAN COMPANY

Client: Agrarian company located in Emilia Romagna.

Intervention: Installation of 1 CHiP 50, wood biomass cogeneration plant, syngas produced by a co-current fixed bed gasifier with post reformer.

Performance: 49kgh of wood chips consumption, 49kWe of nominal electrical power, 120kWt of nominal thermal power.



Needs: The company, operating in the horticultural sector, needs a sustainable solution to reduce the costs of electricity used for greenhouses. In addition, the system must contain the costs related to electricity and thermal energy consumed by the pellet production plant inside the company.

Solution: The preliminary analysis conducted together with the customer, highlights the opportunity to select our wood chip technology. Once the usable area for the installation of the biomass system has been identified, we create a positioning layout with all the accessories necessary for its operation. In addition, we visualize the electrical and thermal connection points, the management points for wood chip loading, drying and unloading ashes, so as to facilitate daily management. Once the preassembly of the accessories and the functional tests have been performed in our workshop, we carry out the installation at the customer, training him on the operations to be performed for simple and immediate management. In addition, the system is equipped with a remote supervision system which, by ensuring continuous monitoring, allows the timely execution of decisive interventions.

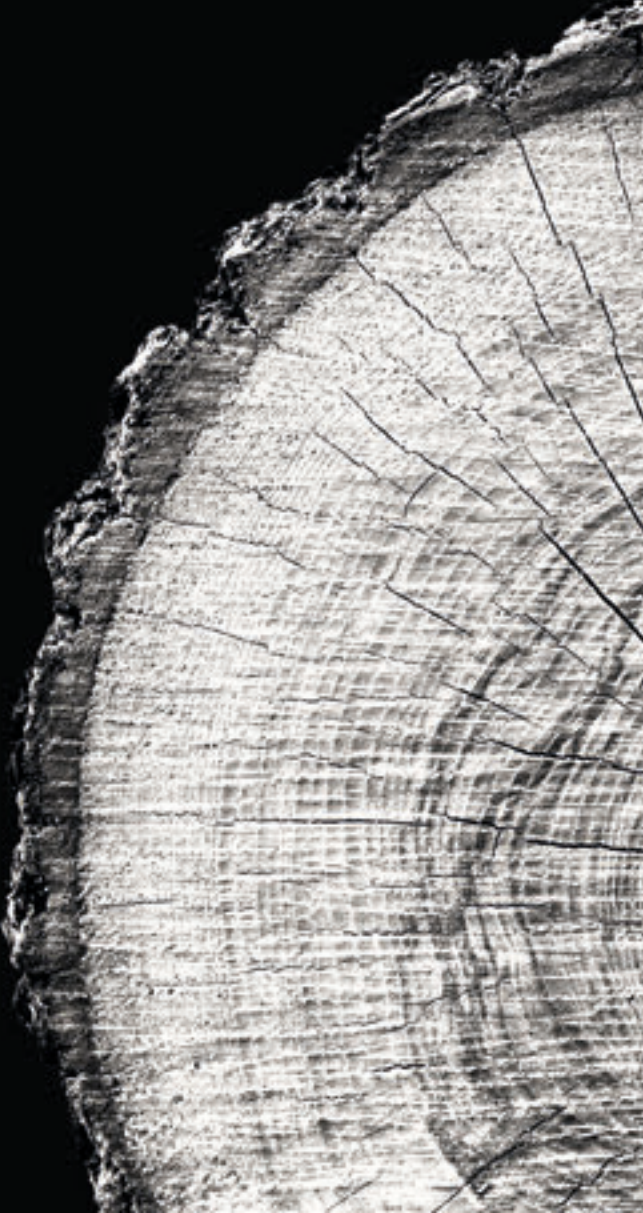


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ESPE
CE



ESPE CHIP50



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