



S.F. IMPIANTI
Group

the company team

Design and Construction of
renewable energy production plants



WHO WE ARE

Since 2006 in Italy there was a strong development of technologies related to energy savings, especially after the introduction of the Kyoto Protocol and activation, in 2014, of the European program "Horizon 2020".

As a result of experience gained individually in specific areas, such as cogeneration, photovoltaic technology and energy consulting, a small group of Italian engineers and entrepreneurs joined their forces to create SF IMPIANTI GROUP company, able to bring together all the individual experiences and offer a global service of high professionalism, also involving leading companies in specific sectors of the energy industry, creating the right synergies to provide to customers, of all types and size, a refined, accurate and high performance service.

To achieve that goal, we keep working, seeking the best technical solutions, to fathom the world to find those solutions or ideas, even in start-ups, which have an interesting development potential, striving to combine and integrate multiple solutions to achieve a sole result: efficient plants, easy to maintain and handle, that adapts to meet every need and is geared primarily on efficient energy use, on the use of renewable fuels and maximum reduction of emissions into the air and soil.

Currently we are located in Latvia, our headquarters, Bulgaria and Poland, where we aim to northern Europe market, the Balkans and the ex-Soviet Union republics, which, in our view, are the countries with the most growth potential and improvement, and where the market of energy and services is growing rapidly. Although operating outside the Italian territory, we brought with us the engineering skills, the experience in the field of metalworking, in the design and construction features, that have always characterized the Italian technology in the world. With humility and dedication we are ready to transfer our experience in the countries where we operate, serving the people and institutions that are looking for reliable solutions to improve energy efficiency, reduce consumption and improve everyone quality of life.

RENEWABLE ENERGY

COGENERATION PLANTS

We build and install "turnkey" plants for electricity and heat cogeneration, based on an innovative technology that uses the steam engine as a primary energy source, modified and implemented with advanced systems to obtain an electrical efficiency equal to 20%, results incomparable with standard steam engines. The system is equipped with



a boiler specifically designed and constructed to operate with renewable fuel (wood chips or timbers residuals), with humidity up to 45%, and able to generate saturated steam up to 300°C and 50 Bar, without the use of accumulation of steam.



The plant is supplied complete with control system and all components necessary to store, dry and handle the wood chips. It is provided with a power output capacity between 100 kWe and 1 MWe and beyond if required.

We are available to take care of complete management and maintenance of the system, under a full service contract signed with the customer.

URBAN WASTE MANAGEMENT PLANTS

We design and install, in partnership with global leaders in the waste management sector, systems for the collection, sorting and recycling of materials from urban waste management, integrating the system of selection with the co-generation plant that uses all organic materials after selection as fuel for the production of electrical and thermal energy for plant self consumption and, when produced in excess, to be fit in the national grid.

Our ultimate goal is the complete noble material reutilization, without residues, minimizing air emissions, pollution, odors and noise, thus obtaining a system totally ecological, virtuous and energy self sufficient. Our solutions are deeply developed to reduce the construction and maintenance costs, maintaining the best quality and reliability. Compared to other plants available worldwide, we are not less than 20% less expensive in term of realization costs and maintenance costs, not last our heating and electricity are self produced so are free and the surface needed, compared to the daily quantity managed, is smaller.

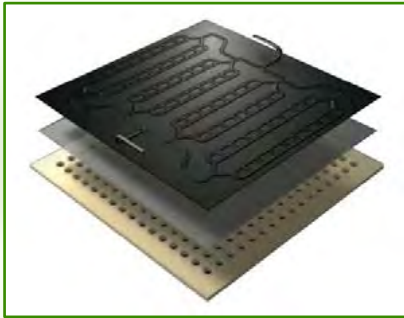
ELECTROLYTIC PLANT

This sector is continuously under development and has led to the construction of a plant for producing hydrogen by electrolysis from water. Peculiarity of this system is its low power consumption, so it can be used in conjunction with co-generators and photovoltaic plants to use electricity that cannot be readily used where transportation costs are expensive due to lack of electrical infrastructure or excessive distance. In this way, energy is stored in form of hydrogen, to be converted when necessary through a hydrogen cell, or used as fuel for hydrogen vehicles.

WHY SF GROUP IS THE RIGHT CHOICE

Our VapMachine cogenerator is the best energy performance actually on the market, with the highest electrical efficiency: 21% (impossible to reach by a standard steam engine cogenerator), lowest emission, smallest space occupancy, user friendly. The technology is controlled and developed by SF IMPIANTI GROUP and the R&D keeps going on so any tech upgrade will be immediately available. In case of special needs we are able to provide tailored solution to completely satisfy our clients.

HYBRID INTEGRATED THERMAL-PHOTOVOLTAIC PLANTS



We provide integrated hybrid systems for houses and villas, residences, hotels, clinics, SPA and gyms. This technology consists in the design of tailored photovoltaic plants equipped with thermal retrofitting which allow to exploit the heat generated by the PV module and, at the same time, to maintain the photovoltaic cells below the threshold temperature, beyond which the efficiency of the cell decreases dramatically. The installations are equipped with a well dimensioned heat pump and of accumulation batteries pack for supplying electricity even in the absence of insolation. Where possible and/or needed, we

install specific geothermal probes and heat exchangers to exploit the energy of the soil, water tanks and swimming pools. The plant is totally managed by a specific software that monitors all functions and ensures the use of the cheapest energy source available, reducing the total energy costs up to 50%, reaching 80% with specific walls insulation and certified windows.

SERVICES

To achieve the maximum results and to produce a business plan comprehensive and balanced, we redact, internally or through selected professionals, specific feasibility studies in order to identify the best technology; we perform audits and energy analyzes, passive (on buildings and structures) and active (on machinery and equipment) in order to outline the energy trend, find weaknesses and identify the best solution to achieve the best results in terms of energy consumption reduction.

In the execution phase we deal with the full realization, as general contractor, taking responsibility for the project and managing all processes, directly or assigning to other companies carefully selected by us. Each project is carried to completion and delivered at 100% production capacity, including the complete user training.

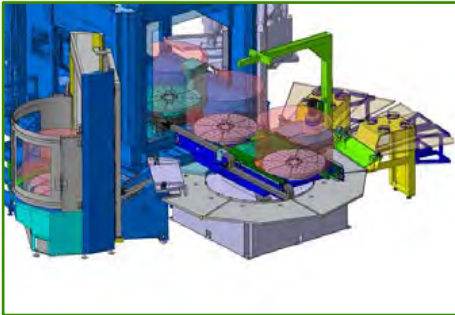
In case of complex and large systems, by specific agreement with the customer, we can take care of the ordinary and extraordinary maintenance and system conduction, spare parts supply and periodical technical updates, if requested, for the entire plant lifetime.

WHY SF GROUP IS THE RIGHT CHOICE

Integration is the challenge of this century, where so many technologies have been developed but remains hard to connect them together in a balanced and harmonious system. We never stop seeking and testing components and technologies, adding our improvements where possible or profitable. Our team mixes experience and youth, collaborating with universities in Italy and Latvia, remaining open for other foreign universities that would become part of our R&D department, always keeping in mind our philosophy: "cheap and clean energy for a better life in a better world".

MECHANICAL ENGINEERING

TECHNICAL DESIGN



Our technical team designs in 3D. The designers are highly skilled to use specific software as Catia and PTC Creo, able to realize FEM analysis, simulation, static and dynamic calculations of materials and components. This capacity allows us to design with extreme precision and definition, while minimizing the testing phase on real model and eliminating constructions failures in tailored projects or mass production components. We realize specific renders to visualize the final results and better simulate the final facility aspect.

METAL CARPENTRY

In order to better meet the market demands in our areas of interest, we are building a carpentry of adequate size to satisfy any requirement in terms of metalworking, machining, sanding and painting. The design department will work closely with designers to optimize the production process and ensure the highest quality of finished products.

The team dedicated to the carpentry is highly qualified and skilled, with strong experience, developed and consolidated in many years of activity in steel structures construction, assemblies in the field of drilling and digging plants.

- Specifically, the plants are designed to:
- drilling of wells, for the consolidation of the land, poles and / or micro-piles, bulkheads, jet grouting
- Oil well drilling,
- Seeking and drilling of kimberlite (diamonds) and gold-bearing veins.

The design office and technical staff are skilled to provide special plant or machinery upon request or customer design, providing the best advice with the purpose to reach the best result.



SERVICES

Beside the technical and drawing services related to metal works, that includes final drawings, we can provide the following services:

- Building site technical direction;
- Plant start-up and commissioning;
- Prefabrication at the client workshop or at the construction site;
- On-site metal works with mobile workshop equipped with bending rolls, bender and pantograph;
- Industrial assembly and testing;
- Old plants upgrade and revamping;
- Mechanical and plant maintenance.



All our components are guaranteed for a minimum period of two years, extendable after a maintenance contracts signature. We guarantee a continuous supply of spare parts for up to five years after discontinued machinery production.

WHY SF GROUP IS THE RIGHT CHOICE

Multiple experience and know how has been tight together in SF GROUP, creating a winning team, determinate to achieve the highest level possible. Thanks to the efforts of all partners we decided not to settle for ordinary solutions but to aim for the top. The carpentry and the design lab has been made with the best machinery and designed to satisfy any request, flexible to produce and install our plants and plants made off clients idea or need, all this in a competitive but fair and exciting team for those who work here. Our production capability ensure the immediate spare parts availability, all stacked in house. The customer care service has been structured to respond as fast as possible, even 24/7 up on specific contract, locally and remotely, ensuring the minimum time loss when some failure occurred.

ENERGY SAVING

ACTIVE SYSTEMS EFFICIENCY

Supply and installation of advanced systems to optimize consumption of inductive electric actuators matched to all types of components: pumps, motors, winches, belts and escalators, lifts, etc.

Thanks to special system able to optimize the characteristics of the electrical energy supplied to the motors, we are able to optimize the consumption, improving the mechanical efficiency and extending the lifetime of the motors, especially forged plants where there is not feasible or cost-effective to replace existing actuators with modern ones. This solution, which should be carefully considered with a specific feasibility study, allows a considerable reduction in consumption and with an interesting payback time.

URBAN SMART GRID



In accordance with our energy efficiency philosophy, for maximizing cost savings and reduce the use of fossil fuels, we provide "Smart Cities solutions" of urban areas, with integrated networks for the management of lighting, fault diagnostics, smart services management, as well as security surveillance and data connectivity available to the citizens. This kind of solution allows

the operator to optimize the yield of the systems, such as softening the lighting in areas with low presence, increasing the intensity as soon as motion and presence is detected. The data network allows not only the provision of connectivity for public use via WiFi Hot Spot, but also the creation of a dedicated high speed network to the diagnosis service and safety, able to monitoring the proper operation of lamps and streetlights, the control of SOS points for citizens, which can be positioned anywhere without heavy installation works, monitoring of risk areas with audio-video surveillance, not least secure and encrypted network, for the exclusive use of security and police agents, to stay connected to the headquarter control room and receive data on laptop or tablet.

SERVICES

For the applications listed above it is essential a preliminary analysis and a feasibility study drafting, in order to find the right technical solution. For this reason, we previously provide an active and passive energy analysis and, if required and necessary, we provide support and advising for public and private funding seeking.

After the final plant dimensioning, complete cost quotation and final project delivery, we are ready to realize the plant turn-key and providing the end user training, technical assistance and maintenance.

WHY SF GROUP IS THE RIGHT CHOICE

Progress becomes real when it is a benefit for all people. Specific solution created to improve everybody life quality and safety are a real benefit for the citizens and for the public administrations, that obtain a high level quality of service at the minimum costs. Smart grid solution can decrease direct costs reducing energy absorption or using renewable plant to self-produce energy, improving the component's lifetime and the maintenance efficiency. In numbers, a smart grid can save up to 30% of the total costs and create services (WiFi area, info points, etc) that can produce new incomes.

AT THE END

We strongly believe in professionalism, quality of service and honesty. We newer stop researching and improving our solutions, keeping in high consideration the client ideas, suggestions and needs, that allow us to have always new targets to reach.

Our office is at your disposal for any further query or information.

Thank you





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www.sfimpianti.com