



CUSTOMER: Shopping mall,
CommONEnergy
INDUSTRY: Smart Grid
COUNTRY: Italy
ABOUT: Nilar's technology has contributed to the development of the first smart shopping mall in Grosseto, Italy – and thereby created a new energy efficient architecture that favours energy conservation and renewable energy resources.



CommONEnergy



CommONEnergy has received funding from the European Community Seventh Framework Programme (FP7/2007-2013) under grant agreement n. 608678.

Re-conceptualising shopping malls in Italy

Energy conservation for a greener shopping environment

Retail outlets and shopping malls are renowned for energy overconsumption. At malls in Italy, it's not uncommon for air-conditioning to be left running 24/7: a practice that is neither sustainable nor cost-effective. The EU-funded CommONEnergy project was initiated to re-conceptualise shopping malls by creating new energy efficient structures that promote energy conservation and utilise renewable energy resources. Nilar was chosen as the ideal partner to provide an effective energy storage solution for Italy's first smart shopping mall – Grosseto.



The mall now has access to an excellent way of storing solar energy safely, and the negative impact on the grid during electric vehicle charging has been heavily reduced.



The Challenge

A new initiative is underway in Italy to improve the sustainable footprint of shopping centres. The first, in what should be a long line of Italian malls to become greener shopping environments, is in Grosseto, Italy. The initiative includes the development of a renewable energy solution and a scalable electrical vehicle charging station that can cater for 10 cars today, but potentially hundreds in the future.

Charging of electric vehicles requires a great deal of power, especially when several vehicles are being charged simultaneously. In order to minimise stress on the main power grid at the mall, the plan is to use renewable energy to charge the vehicles. As always with such applications, safety is a major concern for the mall as tens of thousands of people pass through the building during the course of a day.

The Solution

A solar panel system with a total power capacity of 350 kWp has been fitted to the roof of the shopping centre. Out of the 350 kWp, 70 kWp are dedicated to supply power to a Nilar 48 kWh energy storage solution, where the energy is stored and/or used to charge vehicles in the parking lot. The entire process is managed by Nilar's Battery Management System.

The Result

Nilar's involvement in the Grosseto project is still ongoing, but it's already evident that the provided system has resulted in an optimal use of the solar cells. The shopping mall in Grosseto now has access to an excellent way of storing solar energy safely, and the negative impact on the grid during electric vehicle charging has been heavily reduced. The benefits of Nilar's technology go far beyond the ability to charge electric vehicles efficiently. To date, the Grosseto project has seen a 75% reduction of overall energy demand, power peak shaving, and a 50% increased share of renewable energy resources – all paving the way for a sustainable and greener shopping mall with reduced energy costs.



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About Nilar

Nilar was founded in 2001 as a research project by leading battery industry experts from Europe and the US. The company has been producing safe and environmentally-conscious Nilar Hydride® batteries for energy storage at commercial properties, private households, industrial plants and for use with the smart grid, since 2015. Nilar's Hydride® energy storage solutions are robust with non-flammable electrolyte and durable with a low lifetime cost. The modular design supports scalability to handle the energy requirements of everything from small residential systems to large-scale electrical installations. With R&D departments in the US and Sweden, and a manufacturing plant in Sweden, Nilar is revolutionizing energy and power supply technology, and is taking automated battery production to the next level. [Read more at: www.nilar.com](http://www.nilar.com)