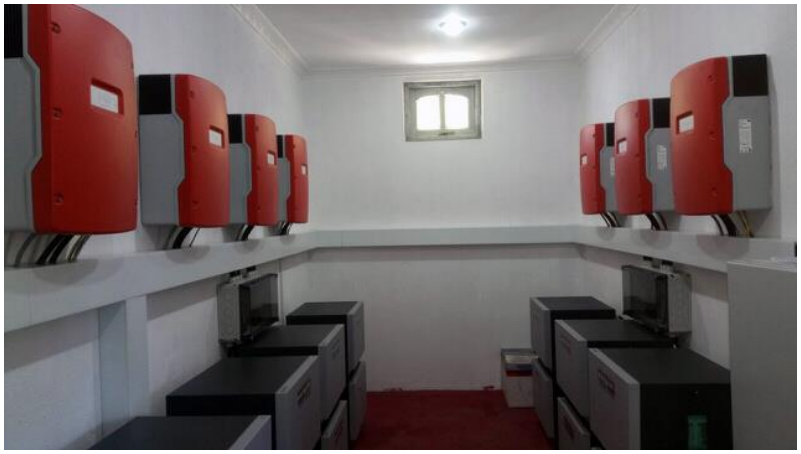
enerquinn
Energiesystemtechnik GmbH

Off-Grid systems: Solar energy replaces fossil fuels

enerquinn installs micro grid systems with lithium ion storage batteries on the Maldives

A mountain lodge, a remote part of the country or a small island in the Indian Ocean – sometimes it is difficult or even impossible to connect a place to the public electrical grid. Then, this is the time for electrical grids able to operate independently in so-called off-grid operation.

The small island of Rakeedhoo is situated about 100 km south of the Maldivian capital Malé. About 90 people live on this little island in the Indian Ocean in 46 households. There are seven public buildings and two radio masts for telecommunication. The annual energy consumption amounts to approx. 100 megawatt hours. These energy requirements used to be covered by two generators, which burned about 40,000 liters of diesel every year. To cut energy costs and reduce the environmental impact, the search for suitable alternatives began – and they struck gold with Weingarten, a town in the south of Germany. In fact, in 2015 the company enerquinn Energiesystemtechnik GmbH located in Weingarten installed a micro grid system on Rakheedoo with which the abundant amount of solar radiation can now be utilized as a natural source of energy.



Several small solar systems achieve an output of 30 kWp and the lithium ion battery storage devices have a capacity of 60 kWh. Hence, today more than 50 % of the energy needed on the island comes from self-generated solar power. The same is true for the Dhidhoo island, where a micro grid system designed and installed by enerquinn had already been put to service earlier.
Particularly important for the local customers is the fact that the company offers all-round services going beyond custom planning, design and implementation. This means for example, that specialists from Weingarten take care of the training of the respective operator or their customers.

Solar-Diesel-hybrid system based on lithium ion batteries
One prerequisite for a successful operation of the Maldivian solar-Diesel-hybrid systems is the utilization of lithium ion battery storage devices. "Quite apart from the fact that the use of lead-acid batteries was not possible due to the national environmental rules in force, lithium ion batteries offer a number of essential advantages", explains Stefan Oexle, managing director of enerquinn. "They are not only durable and highly efficient but also very easy to maintain – and hence the perfect choice for applications in the framework of technically challenging pilot projects required to operate reliably in the long run also."

About the company
enerquinn Energiesystemtechnik GmbH with its company seat in Weingarten, in the south of Germany is one of the leading experts for full-service planning and implementation of combined heat and power units as well as photovoltaic power storage solutions. The engineering company's outstanding expertise lies in the needs-based provision of heat and electrical energy. Several hundred plants have already been installed mainly in southern Germany. enerquinn's customers primarily include hotel operators, but also companies and institutions from other lines of business. enerquinn is a cooperation partner of planners and architects as well as firms specialized in the field of installation, construction and trade.