

Atoll Energy maximises heat recovery

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► **The factory of the energy, Provence-Alpes-Côte d'Azur, Energy efficiency**



Atoll Energy CEO Elena Barbizet has returned confident from her trip to the World Future Energy Summit in Abu Dhabi, where she showcased the company's innovations with the French Atomic Energy Commission (CEA). She stated *"the relationships we have built have empowered us and given us a lot to think about. Our first projects are scheduled for 2015"*.

The company was founded in 2010 in the town of Meyreuil, south of France. They have designed a quadri-generation solution that relies on heat recovery to maximise energy

efficiency for off-the-grid clients or with a faltering power supply.

The CEA Cadarache Research Centre was seduced by the concept and its efficiency and decided to host a pilot in its *"Cité des énergies"* (Energy city) project. The bilateral research agreement was signed in December 2013 for a two and a half year term and may well be extended. The energy system holds in two containers. The first one holds a power generator and some heat recovery devices which capture heat (crankcase, exhaust, radiant heat) that is lost in the energy generation process. The second container holds machines which use heat-energy to deliver heating, cooling and desalinated water.

Reliable, eco-friendly, the whole complex is entirely managed by a in-house optimisation and simulation software that can tailor and adjust the system according to the client's energy consumption profiles. Elena Barbizet asserts *"we are so sure about our product and are committed to guarantee results"*. Atoll Energy now employs seven people and has raised 1.3 million Euros to carry out its project. The system is currently being updated to allow for a dual fuel-thermal solar integration.

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The new solution

The QuadriTherm system is based on a double cascade principle. The heat lost during the energy generation process or other (boiler, incinerator) is used to feed absorption chillers that are cooled by generating hot water or desalinated water. This system (generation, recovery, storage and regulation) increases primary energy efficiency from 35 to 90%.

The opportunity

Atoll Energy targets actors who have a stable cooling need over the year; the tropics resorts today, the food industry tomorrow