

SYNTHESIS

The mission entrusted to ARER by Saint-Andre consisted of establishing and initiating a strategy of municipal Energy Management, focused initially on municipal buildings.

In this context, the first phase of work consisted of performing a detailed analysis of energy consumption from the electricity bills of the municipal buildings. This preliminary study gives an overall view of the energy needs and the management of the consequent energy flows. It allowed the parallel launch of two connecting threads, the drivers behind a move of continuous improvement, namely the optimization of contract management and energy audits on a sample of municipal buildings.

A proper management of energy contracts consists of choosing the most advantageous tariff in line with the observed or anticipated evolutions of the consumptions of a building. Tools developed by ARER facilitate this process. Their application enables annual savings of almost € 2,000 to be considered through the adjustment of four contracts before even having reduced consumptions. This approach is essential and must be reproduced in response to sharp declines in expected consumption.

Energy audits should allow, from a detailed analysis of the site, to draw up a costed and argued proposal of energy saving programs, and guide the client towards appropriate investments. A sample of five sites to audit were selected, the town hall, the sports complex 'Sarda Garriga', the municipal kitchen, the school and CASE (centre for social-educative activities) « Petit Bazar », the sample sites are representative of the municipal buildings and have a strong potential for energy savings energy as they account for more than 40% of the total municipal consumption.

The implementation of audits has proven to be very successful, in effect on these five sites, the potential savings represents, with 295MWh/year, 12% of the consumption of all municipal buildings, with a return on investment estimated at 3.2 years. In addition to actions on lighting, air conditioning or office automation, which represent 25% of planned savings, the principle action consists of reducing the energy expenses of the Sarda Garriga complex swimming pool which, with 440MWh/year, constitutes the highest energy-consumer of the town.

The audit of this pool showed that the rate of flow imposed by the water recirculation pumps of the larger pool is higher than the rate imposed by the health standards. The reduction of this flow by 20% by a variable speed motor connected to the pumps would reduce consumption by 50%. This operation, supported by EDF (Electricité de France) and the region, will save, at a first approximation, € 6,000 per year, with a return on investment of approximately 6 months. If this project is combined with the solar heating of the pool's water, the consumption of the pool will be halved, with a return on investment of approximately 3.3 years. These two actions would yield in 10 years approximately €87000 for the town, avoiding the consumption of 2.5 GWh electricity and the emission of 33,000 tonnes of carbon dioxide equivalents into the atmosphere.

The implementation of all or part of these recommended actions will transform the five sites into pilot sites, exemplary in terms of energy efficiency, both for Saint-Andre and for all towns of the island of La Reunion. The follow-up to these actions, combined with the update of contracts and the selection of a new sample of buildings, will allow the process of continuous improvement to continue.

It may also be interesting for the town to establish a fund specifically dedicated to these projects. This "sustainable development fund" will aim to collect the savings and reinvest them in new projects which will in turn increase the annual revenue. Once again this strategy is a 'virtuous circle' for the town.