

## CASE STUDY: ANTARGAZ AUTOGAS

January 2016

# Out Of Sight, Peace Of Mind

SUBMERSIBLE EBSRAY® RX10 SERIES REGENERATIVE TURBINE PUMPS HELP ANTARGAZ MEET DESIGN REGULATIONS AND OVERCOME RELIABILITY AND SAFETY CONCERNS AT AUTOGAS-DISPENSING FACILITIES

By Jean-Marc Bernard



It's the job of Marine Bongat, Project Engineer for Courbevoie, France-based Antargaz, to ensure that the company's Autogas installations in France not only meet governmental regulations, but do so in a safe and reliable manner. To help Mrs. Bongat accomplish her goal, she relies on RX10 Series Regenerative Turbine Pumps from Ebsray®, which possess the operational characteristics that enable Antargaz to confidently offer the best service to its customers.

In France, it is known as “gaz de petrole liquefie,” or GPL. For English speakers, it is liquefied petroleum gas (LPG), and for those who use it to power their vehicles, it is commonly called Autogas. Autogas is now the third most popular automotive fuel in the world, albeit with only 3% of total market share, but its use has been expanding, with consumption totaling 25.8 million metric tons (57 billion pounds) in 2013, up 57% from the 16.4 million metric tons (36 billion pounds) that were consumed in 2003. There are now more than 25 million Autogas-powered vehicles traversing the world's roads, though the majority of those vehicles reside in the five countries—South Korea, Turkey, Russia, Poland and Italy—that together accounted for 50% of global Autogas consumption in 2013.

Recognizing the potential for growth in the Autogas market in Europe, Coubevoie, France-based Antargaz, which is a

subsidiary of the UGI Corporation, a global LPG-distribution company headquartered in King of Prussia, PA, USA, annually supplies more than 500,000 metric tons (1.1 billion pounds) of Autogas by both bottles and bulk to a customer base consisting of 3.2 million people in the European countries of France, Belgium, Luxembourg and The Netherlands.

## QUICK FACTS

- Company:** Antargaz
- Location:** Courbevoie, France
- Market:** Autogas
- Distributor:** Pernin Equipements, Montreuil Cedex, France
- Challenge:** Find a reliable, efficient and safe submersible pump for use in underground storage tanks at Autogas filling stations
- Solution:** Ebsray® RX10 Series Regenerative Turbine Pumps



Known in France as “gaz de petrole liquefie” or GPL, Autogas use is expanding across the world with more than 25 million Autogas-powered vehicles on the road today.

One of Antargaz’s top customers in France is Groupe Auchan SA, Croix, France, which operates 134 hypermarkets and 409 supermarkets in the country, many of which feature Auchan petrol stations.

“Auchan is a big company, it’s a national company with many shops and we provide gas for them for many locations,” explained Marine Bongat, a Project Engineer for Antargaz who works in the company’s Bulk Services division. “If they have too many problems during the year they can decide to shut down the contract with us and that would be a disaster. We really need to fulfill their needs and to be sure that everything will work and there won’t be too many problems, so it is very important that the equipment is working everyday.”

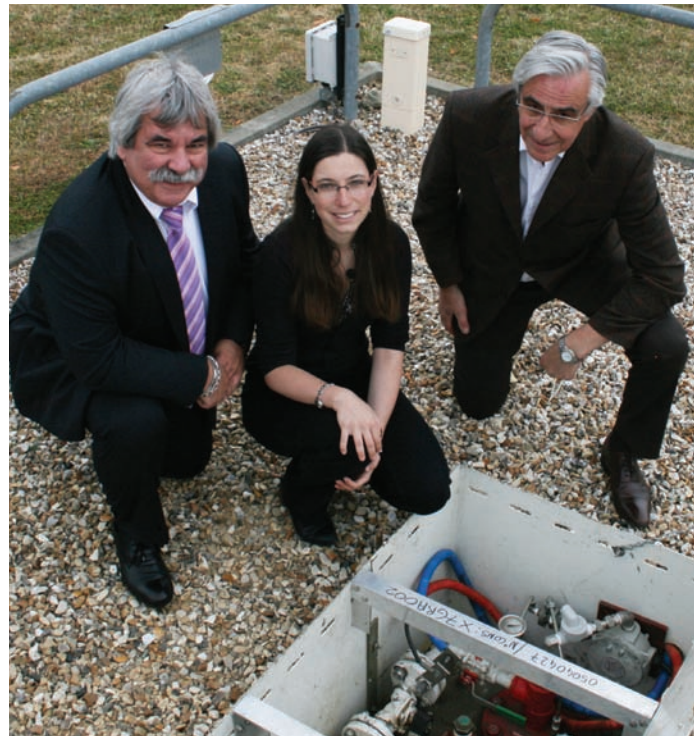
## Keeping The Fuel Flowing

Antargaz’s Autogas operations at the retail-fueling locations it serves feature an underground storage tank in which the Autogas is placed by delivery trucks before being pumped to the dispenser when the fueling system is activated by drivers. The storage tanks at these sites must meet two sets of criteria.

First, they must be, per French governmental regulation, as discreet and unobtrusive to the public as possible.

“It must be very discreet, which is our main design goal. French regulations tell us that we must have all of the equipment protected by a cover and out of touch of the public,” Mrs. Bongat said. “Some pumps have parts outside—the motor, for instance—so it’s hard to hide it and everyone

can touch it. In that case, you need a two-meter (6.5-foot) high fence around the tank, even if the tank is underground, which is a bit weird, because then you have something hidden behind a giant fence, which can be very costly. Our clients don’t like it, people wonder why the big fence is there, it can be something dangerous.”



The demands placed on Autogas-dispensing facilities in France require the use of a specific type of pump. For the solution, Antargaz has turned to Pernin Equipements, which recommended the RX10 Series Regenerative Turbine Pump From Ebsray. The partnership between the three companies has worked out very well, especially for Ebsray’s Jean-Marc Bernard, left, Antargaz’s Marine Bongat, center, and Pernin’s Christian Marzin, right.

Secondly, and most important for the fueling site's business, the fueling system must operate reliably and effectively day in and day out.

"If the pump would break, we would have to change it," said Mrs. Bongat. "First, you would have to remove all of the gas from the tank, which is a very long process that would take one day. Then you have to remove the pump in order to install a new one, which means that for one entire day the petrol station is closed and you cannot use it. That's why the pump has to work everyday and well, because it's a complicated and long process to change it."

Antargaz's position in the Autogas-supply market is unique because it is not only a supplier of the fuel, but also because it actually owns the equipment that is used in the underground storage tanks, making reliability an even more prominent concern.

"We are providing gas for our clients and we are also providing them the equipment to use the gas, and we are still the owner of the equipment, so if there is a problem we must intervene as soon as possible to avoid them having to go a day without petrol at the station," said Mrs. Bongat.

## The Perfect Partner

The demands that are placed on Autogas-dispensing facilities in France—discreet construction and safe, reliable operation chief among them—demand the use of a specific type of pump, mainly one that is submersible. For the solution, Antargaz has turned to Pernin Equipements, Montreuil, France, an equipment manufacturer and distributor dedicated to the country's LPG, diesel, heating oil and petroleum-transport markets. Pernin recommended the RX10 Series Regenerative Turbine Pump from Ebsray®, Cromer, Australia, which is a product brand of PSG®, Oakbrook Terrace, IL, USA, a Dover company.

"We have been working with Pernin Equipements since 2004 and they have been providing us with these Ebsray pumps and so far we have had no problems," said Mrs. Bongat. "The submersible pump is good for what we do, we can protect it and hide it under a cover. It is a good working relationship."

The Ebsray RX10 pumps meet the needs of Antargaz because they have been designed for low-flow, high-head duties on low-viscosity liquids such as Autogas. Specifically, the RX10 model has been precision-built for efficient high-pressure pumping of Autogas from underground or above ground storage tanks. The pumps are fully submersible inside the storage tank, which helps enable Antargaz to install the entire storage system below ground, which results in the clean look that is demanded by French fueling-site regulations.

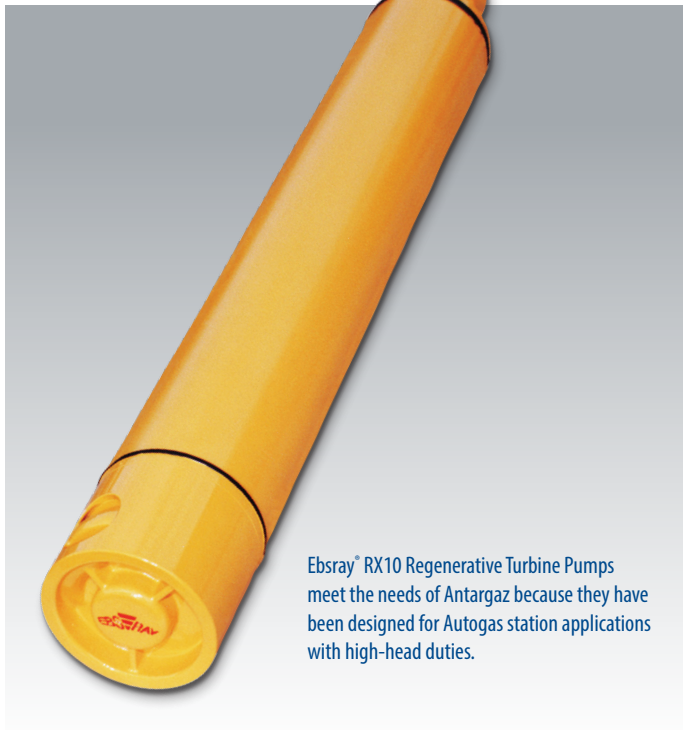


The Ebsray® Pump Controller ensures the pump performs within the specific duty parameters while monitoring temperature, pressure and motor current.

The 2-inch RX10 pumps feature a seal-less design and single-stage-turbine pumping element that delivers quiet, smooth, pulse-free operation with an ATEX-certified pumping unit (explosion-proof qualification). Standard materials of construction include ductile iron or steel casings, bronze impellers and carbon-composite bearings. The RX10 pumps can deliver flow rates to 103 L/min (27 gpm) at differential pressures up to 9 bar (130 psi) and speeds up to 3,500 rpm. Antargaz also utilizes Ebsray's RV18 Series Bypass Valves on its Autogas-dispensing systems, which help deliver full product flow while maintaining controlled, preset maximum differential pressures.

The pumps are monitored at the fueling site by a controller that is placed in a kiosk near the Autogas dispensers. The controller monitors sensors in the storage tank and along the fuel-delivery lines that track the system pressure that is being created both before and after the pump, and whether any Autogas is actually being pumped.

"If the pump is working without gas, it will be destroyed in a few seconds," said Mrs. Bongat. "Thanks to the sensors and controller, we can stop the pump automatically if there is any problem. You can study the controller to see what isn't working, which is good for maintenance and safety. You will also know if there is any leakage. The main problem with leakage is it will start a fire and explosion and hurt people. It is very important to suppress the leakage when it occurs...and the sensors will stop the pumps when there is a drop in pressure."



Ebsray® RX10 Regenerative Turbine Pumps meet the needs of Antargaz because they have been designed for Autogas station applications with high-head duties.

## About the Author:

Jean-Marc Bernard is the EMEA – Senior Market Manager LPG Europe for Ebsray® and PSG® and can be reached at +33 1 55 39 07 40 or [Jean-Marc.Bernard@psgdover.com](mailto:Jean-Marc.Bernard@psgdover.com). Ebsray is a leader in the design and manufacture of regenerative turbine and positive displacement pump technologies, including sliding vane and gear, for a wide range of industrial applications. Founded in Brookvale, Australia, Ebsray has grown into a leading supplier of specialized pumps for use in a wide array of industries, including chemical, petroleum liquids, mining, food and beverage, pulp and paper, municipal and utility services, and paint and coatings. Ebsray is a product brand of PSG®, a Dover company, Oakbrook Terrace, IL, USA. PSG is composed of several leading pump brands, including Abaque®, Almatec®, Blackmer®, Ebsray®, EnviroGear®, Griswold™, Mouvex®, Neptune™, Quattroflow™, RedScrew™ and Wilden®. For more information on Ebsray or PSG, please go to [psgdover.com](http://psgdover.com).

## Conclusion

No matter what you call it—GPL, LPG or Autogas—the use of the vehicle fuel continues to become more popular in France and Antargaz stands poised to capitalize on this growth. Helping it reach its full potential in the market are Ebsray RX10 Series Regenerative Turbine Pumps, which possess the operational characteristics—namely, submersibility—along with reliability and safety that enable Antargaz to confidently offer the best service to its customers.

“My job is to be sure that the material that we are putting at the disposal of our clients is safe and respects all legislation,” said Mrs. Bongat. “Ebsray is a reliable technology and it is very discreet because it is a real submersible pump so the installation is not too visible. Thanks to the Ebsray pump, we don’t have problems and we can ensure that the gas deliveries will take place at the petrol station and there won’t be any problems.”

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