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Overview

CASE STUDY:
Livestock farm in Galicia, Spain

PRODUCT:
PowerKit 6M11 Natural Gas Engine

DUTY:
COP / Utility Paralleling

POWER OUTPUT:
100 KVA

APPLICATION:
Cogeneration systems for farming

PARTNERS:
Grupel

A Baudouin Natural Gas Engine is proudly part of an innovative new agricultural project in the Spanish region of Galicia, partnering with Portuguese genset manufacturer Grupel.

Located in Dumbría in the northwest of Spain, the livestock farm is utilizing waste gas produced by the farm's cattle herds, with organic waste processed through a 1,500,000-liter capacity bio-digester. The output is biogas, an environmentally-friendly, renewable energy source. This is being used to power the genset installed at the site, a Baudouin 6M11 PowerKit Natural Gas Engine, alongside a Grupel 274GB125 alternator and a Deif AGC 150 controller.

It's a landmark installation for Baudouin, as we continue our evolution towards greener power generation.

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A unique advantage of Baudouin's gas range is the opportunity to use waste gas created by agricultural and other industrial processes. This is what makes this new installation really stand out.

At this innovative new farm, waste will be directly powering the electricity needed for day-to-day use, operating around the clock in parallel with the electrical grid.

In addition overall efficiency is further increased by reusing thermal energy too. In the cogeneration system being utilized by the farm, both a heat exchanger for the exhaust gases and a plate heat exchanger for the engine cooling system have been installed. These exchangers will allow the waste heat to be used to heat water, which can then be used for various purposes on the farm. In fact, this heated water will be reused by the bio-digester itself to filter the biogas. It's a super-efficient eco cycle, with the Baudouin Natural Gas Engine at its heart.

This high-performance project is robust, soundproof, and customized to the specific needs of the farm and its bespoke requirements.

As well as a decrease in costs normally associated with other types of fuel, biogas also ensures greater sustainability at an environmental level, a reduced environmental footprint, and also lower NOx emissions. All this, combined with the integration of a cogeneration system, significantly increases the efficiency of the genset, since the use of heat reduces the energy losses of the installation.

But there are other, hugely important considerations too, one that made Baudouin the right choice for this project.

Agriculture is an area that has become increasingly more automated and dependent on machinery. This means any kind of power failure, however short, can jeopardize the conditions of the facility, putting the survival of the livestock at risk. A reliable power source is therefore critical.

The PowerKit Gas engines are suited for continuous use, and a perfect fit for this purpose. However, constant operation is more demanding and naturally entails higher consumption compared to standby operation (when there is a grid failure). So, a fuel solution such as biogas, naturally available from the farm, is ideal. But there are not just environmental benefits, it is also a cost-effective fuel option compared to other energy sources.

Finally, the engine performance, efficient fuel consumption and serviceability ensure a competitive total cost of ownership too.

Baudouin is proud to be assisting this innovative new agricultural project, showing just the start of the potential for the burgeoning PowerKit Gas line.