

AGRICULTURAL WASTE FACILITY OPERATES RELIABLY 24/7 WITH COGENERATION SOLUTION



WHERE:

Valdetorres, Badajoz, Spain

SUPPLY:

- 1 x C1540N5CC lean burn gas generator set
- PowerCommand® 3300 controller

PURPOSE:

Provide cogeneration solution to support the expansion of an agricultural waste management facility



CUMMINS OFFERS SIGNIFICANT COST AND FUEL SAVINGS THROUGH COGENERATION SOLUTION

TROIL Vegas Altas S.C. is an olive oil sludge treatment plant which currently has three lean burn gas generator sets installed offering 4.3MW of power while processing annually between 50,000 to 60,000 tons of olive oil mill by-products per year. TROIL Vegas Altas S.C. is a second-grade cooperative dedicated to the transformation of olive oil mill by-products developed from the initiative of the olive oil sector of Agri-Food Cooperatives of Extremadura. The company was founded in 1999 and began harvesting in August 2002.

The site is occupying a land of 100,000 sq. meters of which 60,000 sq. meters are built for the installations required, mainly in four concrete ponds, two of which are used for the storage of by-products during olive harvest season with a capacity of over 86,000 tons of sludge. The remaining two ponds of 9,000 sq. meters are dedicated exclusively to gather all the rain water collected in the plant.

Many expansions have been made over the years and today several mills have accumulated a greater capacity of pomace from 21,000Tm to 85,500Tm while increasing their processing capability from 4Ton/hr to 16Ton/hr. The total milling capacity of the site is now 27Tm/h.

As part of these expansions, TROIL Vegas Altas S.C. partnered with Cummins Power Generation to replace an existing Cummins QSV81 lean burn gas generator that was installed in 2003 and had completed 80,000 hrs, operating reliably for 12 years. The expanded section of the site is now powered by a Cummins QSK60G lean burn gas generator set offering 1540kW of continuous power with a Cummins PowerCommand® PC3.3 controller incorporated within the generator.

The generator's increased electrical efficiency and reliability as well as the existing long-standing relationship were some of the key reasons why TROIL Vegas Altas S.C. chose Cummins Power Generation for this expansion.





RELIABLE GAS POWER

The manufacturing process of these by-products can be rather complex and for this expansion it required a reliable gas solution to make sure the new site operated reliably 24/7. The initial mass of by-products processed from oil mills derives with a humidity range of approximately 65–70%. This mass is then poured from the rafts and is stored. About 50% of the mass weight is separated as vegetal water and the rest accounts for the remaining seedless pomace with 60% humidity. Due to these parameters involved in the processing of these by-products, a combined heat and power application was chosen as the most cost effective and reliable solution to power the new site expansion.

The power generated by the existing two gas generators and the Cummins QSK60G generator installed within the plant is used to dry the pomace and evaporate most of the vegetal water. At the same time, the power from the exhaust gases is used to heat air in a gas-air exchanger reaching a temperature of around 360°C. This excess heat is utilized to dry the wet pomace produced in the mill.

Through this cogeneration application, TROIL Vegas Altas S.C. can gain significant fuel and financial savings by also exporting any excess power generated to the national grid.



This new plant was specifically designed to ensure that all residue from oil mills is properly processed to minimize any environmental impact and allow for any excess to be reused again. In addition, the site is located within an industrial urban area which meant that the site had to comply with all the noise level and engine emissions requirements, which was another key reason for the selection of the Cummins QSK60G generator.

“ Cummins has provided us with confidence to renovate and install the new generation of gensets in our facilities to run another 60.000 hours cycle. ”

Jose Calama, General Manager of TROIL Vegas Altas S.C.

Upon the completion of another successful installation, TROIL Vegas Altas S.C. will be looking to partner again with Cummins Power Generation for future project expansions.



cummins.com

Bulletin 5600648 6/20
©2020 Cummins Inc.