

## Study of the influence of biogas cleaning on the operational features of the biogas engine

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### Abstract

WWTPs are large consumers of energy, as a result of anaerobic digestion of the sludge coming from wastewater treatment is produced biogas, which by its concentration in methane (CH<sub>4</sub>) can be used as biofuel to produce energy and in this way meet the necessity of the own plant. Currently, the use of biogas generated in the WWTP is affected by the appearance of compounds, such as siloxanes and hydrogen sulfide (H<sub>2</sub>S) mainly and to a lesser extent by the appearance of hydrocarbons of different types. Another topic of interest in the energy generation from renewable fuels is related to the exhaust gases and the effect that it can have on the environment and people. BTS-MPdry technology for biogas cleaning is a multipurpose plant. This two-stage account: one for moisture reduction via cooling-condensation and the other adsorption on activated carbon (CA). For the development of this work, different types of operation tests were carried out with a view to evaluating, on the one hand, the effectiveness of cleaning technology in terms of the elimination of different harmful components of biogas, including moisture (H<sub>2</sub>O), hydrogen sulfide (H<sub>2</sub>S) and siloxanes, on the other hand, its influence on the benefits of the cogeneration system. Based on the result in this study it's clear that an adequate biogas cleaning is needed to get a good performance of the CHP and in the quality of the exhaust gas emitted to the atmosphere..

the use and application of biogas and waste treatment, including the first biogas upgrading plant of the Spanish government

2003 -2005. He founded the company Energy & Waste. As a result of its R + D + I work and the introduction of several technologies in the market, He has won several awards, among them, at Genera Innovation Room 2012, Techno energy magazine TPN-2012, Best Business Practices 2014 by The College of Industrial Engineers of Catalonia.

### Speaker Publications:

1. J Reina (2016). Technologies and equipment for biogas drying. Futuroenviro, julio-agosto.
2. J Reina (2014). Biogas cleaning/conditioning. A requirement for optimal functioning of CHP system. Futuroenviro, julio-agosto.
3. J Reina (2014). Biolimp-Siloxa. Planta multipropósito para la limpieza del biogás. Infoenviro. julio-agosto.

[15th World Bioenergy Congress and Expo](#); Berlin, Germany- April 20-21, 2020.

### Abstract Citation:

Joaquin Reina Herdz, Study of the influence of biogas cleaning on the operational features of the biogas engine, Bioenergy 2020, 15<sup>th</sup> World Bioenergy Congress and Expo; Berlin, Germany- April 20-21, 2020

<https://bioenergy.insightconferences.com/speaker/2020/joaquin-reina-herdz-energy-waste-s-l-condorchem-group-barcelona-spain>



### Biography:

Chemical Engineer, by the University of Oriente. Cuba. Professor at the University of Holguin 1983-1996. Cuba. Ph.D Industrial Engineer by the Polytechnic University of Catalonia, 1999. Barcelona Spain.. Develops several pioneering projects in