Waste Water to Clean Energy Opportunities
Biogas Production Potential in Wilaya of Naama

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ABSTRACT

The treatment domestic urban wastewater is growing nowadays, and becoming an important water source for agricultural irrigation. Algeria has seen huge investments in recent years in the field of water treatment plants, which are, in fact, in increasing, their number increased from 14 in 2003 to 154 in 2019. And the volume of water purified by these WWTPs increased from 27.13 million m³ in 2003 to around 252 million m³ in 2019. And they produced more than 539 tons of sludge per day. The sludge generated by the treatment of wastewater in treatment plants contains methane which is a biogas from which we can produce heat and electricity. However, very few of these stations are equipped with digesters for energy recovery (biogas) from sludge.

Wilaya of Naama has three urban wastewater treatment plants in three different cities (Ain Sefra, Mecheria and Naama) which are managed by the National Office of Sanitation (ONA). The sewage treatment plants of the cities Ain Sefra and Mecheria are of type activated sludge process at low load. And the purification plant of the city of Naama is of the aerated lagoon type. The volume of water purified by these WWTPs was 5 316 000 m³ in 2019.

This study covers the sustainable development area in which we will estimate the potential to produce biogas in the wilaya of Naama. Therefore, Numerous biogas installations have been built all over the world. Initially, the main objective was to produce biogas to generate energy, but quickly the environment aspect has appeared as an additional reason to build such facilities.

Key Words: Wastewater; Biogas; Naama; WWTP; Sludge.