SLUDGE DEHYDRATION
BY RENEWABLE ENERGY

Origin of the project

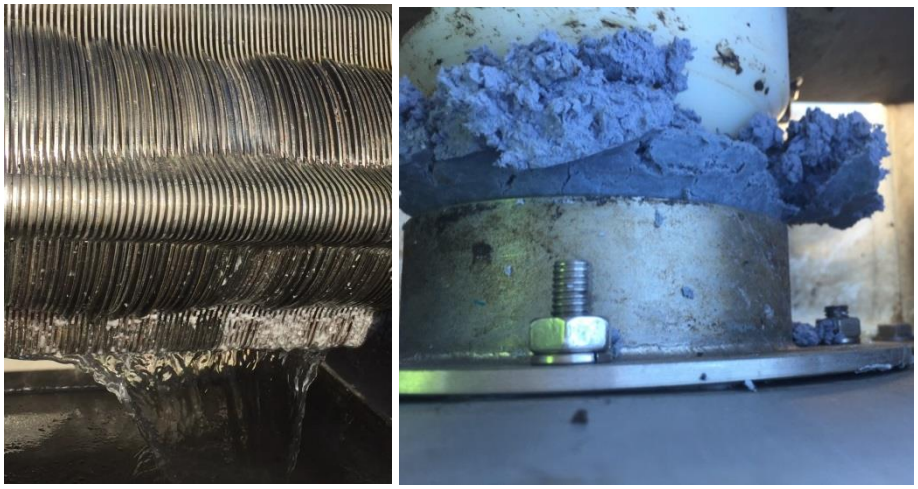
It is striking to notice how water treatment plants, symbol of the environment protection, has become over the years a sinkhole for electric, chemicals and even water consumption, paradoxically! They have become significant sources of GHG emissions. For most of cities, the power consumption of their wastewater treatment plant is often the first energy budget, far ahead of public lighting. The legislation don't stop to be harden and requires from professionals in the sector to reduce drastically their emissions (see The Climate-Energy Package of the European Union and the Rule of the three 20...)
To make his contribution, albeit small, ADEQUATEC has studied the problem of sludge dewatering. This indispensable step is to separate the sludge and treated water before it can recover this biomass. Indeed, after aeration, dehydration is the most important electricity consumption post in a wastewater treatment plant (up 30%).

Biological sludge from water purification

Solution : a sober technology

En 2005, ADEQUATEC a commencé à fabriquer et promouvoir une des technologies la plus respectueuse de l'environnement pour la déshydratation des boues biologique: la presse à vis avec tambour à disques **ADEQUAPRESS®** consommant moins de 10 kWh par tonne de matière déshydratée.

In 2005, ADEQUATEC began manufacturing and promoting one of the most environmental technologies for the dehydration of biological sludge: the screw press with disc drum ADEQUAPRESS®, consuming less than 10 kWh per tonne of dehydrated sludge.



Paper mill sludge (deinking paper)

Thanks to this technology, operators of wastewater treatment plants can save 95% of electricity, 50% chemicals and 99% of washing water. The ADEQUAPRESS is a disruptive technology in comparison with the two existing technologies. Indeed, due to the lack of serious alternative, centrifuges and belt filters are conventionally used in most treatment plants despite their many disadvantages: excessive energy, chemical reagents and water consumption and their very high operating cost.

Industrial physicochemical sludge

The energy efficiency of the ADEQUAPRESS saves over 95% of this fraction. Thus the power consumption is so low that it opens the way for the use of renewable energies (PV, biomass, wind ...) to provide the remaining 5%.

The result is a self-sufficient energy dewatering unit with a near-zero carbon emissions. By this way, it is a genuine carbon sink which is offer to wastewater treatment plants for saving nearly a third of their energy bill.

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