



2022 United Nations Ocean Conference Side Event

*Guided Tour of ALGATEC Eco Business Park,
the largest microalgae production platform in Europe*

June 29th 2022, 8 am, Póvoa de Santa Iria

Organized by: A4F – Algafuel SA, Green Aqua Póvoa SA

Background on the event

Microalgae are among the most important marine resources used as raw material in blue bioeconomy. Microalgae represent a key sustainable alternative for a variety of purposes, such as food and food supplements, animal feed, cosmetics, biofertilizers and biostimulant for plants. Microalgae also play an important role in circular economy and decarbonisation considering their ability to use CO₂ and their innovative use in biomaterials, bioremediation or advanced biofuels.

The ALGATEC Eco Business Park, a partnership between A4F, Green Aqua and HyChem, is a 14.2 ha integrated platform with microalgae production and processing units.

This production facility was implemented in a decommissioned portion of an existing industrial chemical site located in the Tagus estuary, North of Lisbon, comprised mostly of abandoned saltpans. Through a co-location approach, synergies provided by industrial symbiosis are sought, including the use of CO₂ and liquid effluents of the chemical company, improving the environmental performance of the whole industrial site and decreasing the costs of algae production. The site was revitalised, jobs were created, most with higher education degree, providing a combination of industrial restoring and skilled job creation that had a tremendous impact on the local economy.

ALGATEC is a case study and a clear example of what is at our reach via bioeconomy to fight climate change.

Key Issues discussed

- Microalgae Contribution to sustainable development and a sustainable blue economy
- Scale-up of ocean resources based on science and innovation (largest microalgae production platform in Europe)
- Eco Business Park dedicated to support entrepreneurs and investors in the area of microalgae, in the knowledge transfer between applied research and industrial production
- Industrial transformation via circular economy, CO₂ capture and reutilization, bioremediation of nutrient-rich effluents, and renewable energy towards carbon neutrality (integration with HyChem - Chemical Industry)
- Expand and replicate the industry symbiosis model with neighbouring industrial activities

Key recommendations for action

- More science and innovation
- More investment in sustainable sources of food and energy
- Promotion of partnerships between blue bio industries and traditional industries
- Symbiotic co-location and revitalisation of decommissioned industrial grounds
- Job creation and qualification

Voluntary Commitments

Blue Economy and Industrial Symbiosis as Enablers of Ocean Health. It is A4F and Green Aqua joint commitment to expand the ALGATEC concept by increasing capacity on-site and replicate the model in different geographies with the following goals:

- Nutrient sinks - Cultivation of algae in abandoned agricultural land that became unproductive due to increase in water salinity, in abandoned earthen ponds or decommissioned industrial sites. Perform capture carbon and use, but also recover nutrients such as nitrogen, phosphorous and minerals, in the constructed algal cultivation sites. Use of the algal biomass for different purposes, from the production of sustainable biofertilisers and biostimulants to the extraction of higher added value compounds such as oils, saccharides and pigments for the oleochemical, nutrition and cosmetic industries.
- Wastewater treatment - Integrate the concept in the wastewater treatment for efficient nutrient removal (nitrogen and phosphorous), hence avoiding eutrophication of marine areas and improving the energy efficiency of existing wastewater treatment plants (lower aeration requirements). Use of the microalgal biomass for different purposes, from the production of sustainable biofertilisers and biostimulants to anaerobic digestion for energy valorisation or carbon capture through the production of bio-based and biodegradable plastics.
- Industrial effluent pre-treatment - Expand and replicate industry symbiosis models in which the algae production facilities capture the CO₂ and the most significant nutrients required for algae production from gaseous and liquid effluents of neighbouring industrial activities (for example, manufacture of chemicals, fertilisers, municipal solid waste treatment plants, etc).