
NXO engineering
La FRENCH TECH
GREENTECH INNOVATION
ENERGY
EXCELLENCY
INNOVATION
NXO-E, your cleantech specialized in water and industrial decarbonation
NXSTEP
A new generation of wastewater treatment plants ...
For new resources

let’s dare together….

STATEMENTS

! Current technologies are energy-intensive

! ... wich increase the price of water for subscribers.

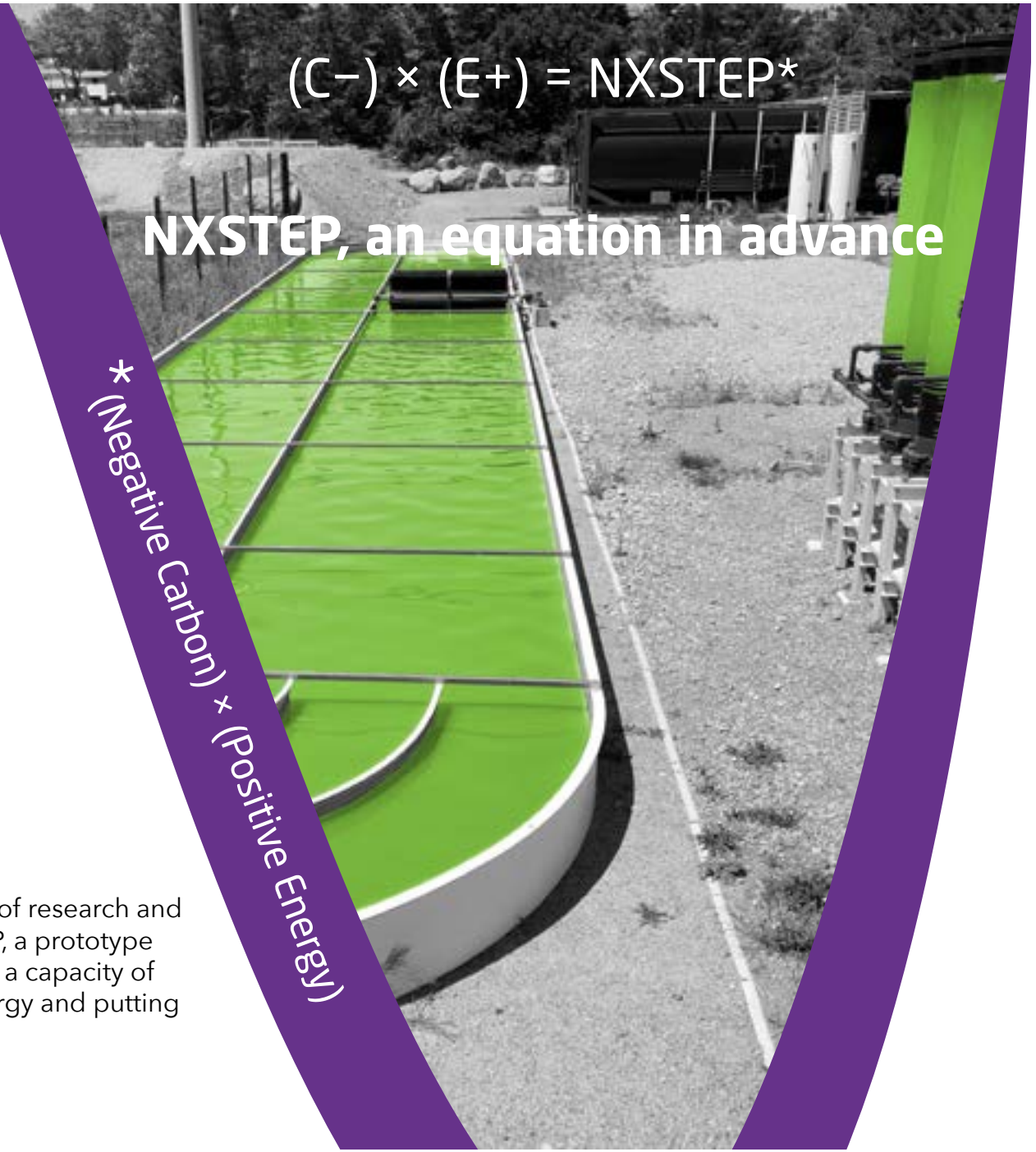
! CO_2, N_2O and CH_4 emissions during the purification process are equivalent to 1% of overall greenhouse gas emissions in France.

CONVICTIONS

! The scarcity of resources augures the necessities of Sobriety and Recycling.

! Fight against climate change is everyone's business.

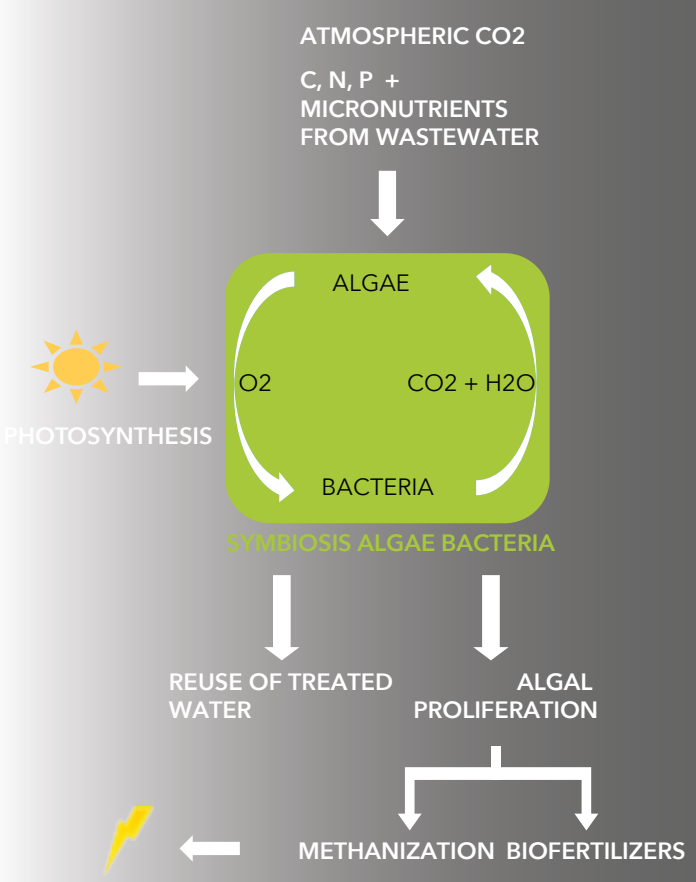
! We are not inventing anything that nature has not already created



THINK DIFFERENTLY ABOUT SANITATION

On the strength of our convictions, and after 5 years of research and development, NXO designed and produced NXSTEP, a prototype of a new generation wastewater treatment plant with a capacity of 100PE. The process is Negative Carbon, Positive Energy and putting ALGAE at the heart of treatment.

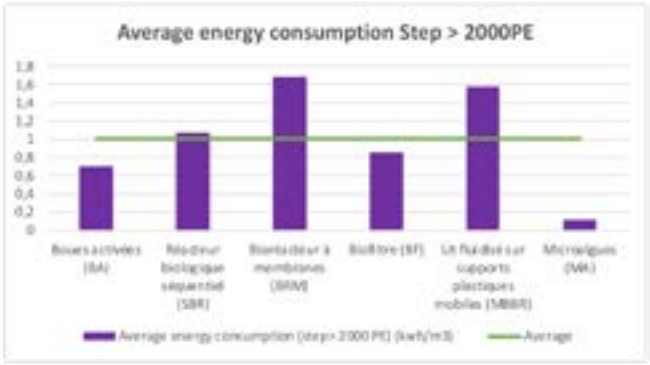
PRINCIPLE OF NXSTEP OPERATION



A TOTEM : ENERGY EFFICIENCY

The average energy consumption of French stations in 2018 (for the activated sludge sector, i.e. 35% of the French plants) was 0.8 kWh / m3 of treated water.

The NXSTEP process is satisfied with 0.12kWh / m3.



AN AMBITION : ENERGY AUTONOMY

NXSTEP works in complete autonomy thanks to the production of renewable energies (methane) from wastewater. The sludges
generates an energy surplus that can be marketed or used in cogeneration.

Références : Study IRSTEA 2018 :
« CONSOMMATIONS ÉNERGÉTIQUES DES STATIONS D'ÉPURATION FRANÇAISES » État des lieux et recommandations.

NXSTEP,
NEGATIVE CARBON FOOTPRINT

CO_2 Consumption (photosynthesis) =
26 tonnes of remedied CO_2/year/100PE

+

Energy efficiency =
255 tonnes of avoided CO_2/year/100PE

+

No release of N_20 (nitrous oxide)

=

NEGATIVE GREENHOUSE GAS IMPACT

A zero chimical and zero waste water treatment plant

NXO has developed a biocoagulant based on cactus sap allowing to bypass the metal salts.
Finally, like vegetable waste, algal digestates are valued as biofertilizers.

NXSTEP, a profound change of paradigm

It is no longer a question of simply treating wastewater but of developing its resources. These productions generate income and streamline the costs of processing secondary products resulting from conventional treatment (refusal of screening, sludge, digestates, etc.).

Optimum performance levels

Anxious to respond to future regulatory changes, NXO has opted, from the design stage, for a "SENSITIVE ZONE" treatment target.
Two years of experience feedback and several measurment campaigns (CNRS monitoring) have ensure the quality oh the treatment of NXSTEP.

VOLTA PROGRAM: INNOVATE TO ADAPT

In 2021, NXO technology was named the winner of the «I-NOV» innovation competition sponsored by ADEME and BPI as part of the investments Projects for the future.

VOLTA *(Valorization of wastewater via Light Energy and Alguae Technologies)* aims to develop the first 500 pe pre-industrial demonstrator of a positive-energy wastewater treatment plant with a negative carbon footprint and zero chemicals. ``

Start of work: First trimester 2022
Completion date: 2023

VOLTA is a semi-extensive technology, its land settlement is similar to reed bed's plants.

VOLTA wishes to adapt the process to urban contraints and therefore strictly limit land use, NXO has invested financial and intellectual resources in order to design PHOTO-BIOREACTORS (PBRs) where favorable growing conditions are constantly met. PBRs are microcosms of controlled eutrophication where we purify wastewater through the production of microalgae which will then be used for the generation of biogas.

A PROGRAM, MANY PARTNERS

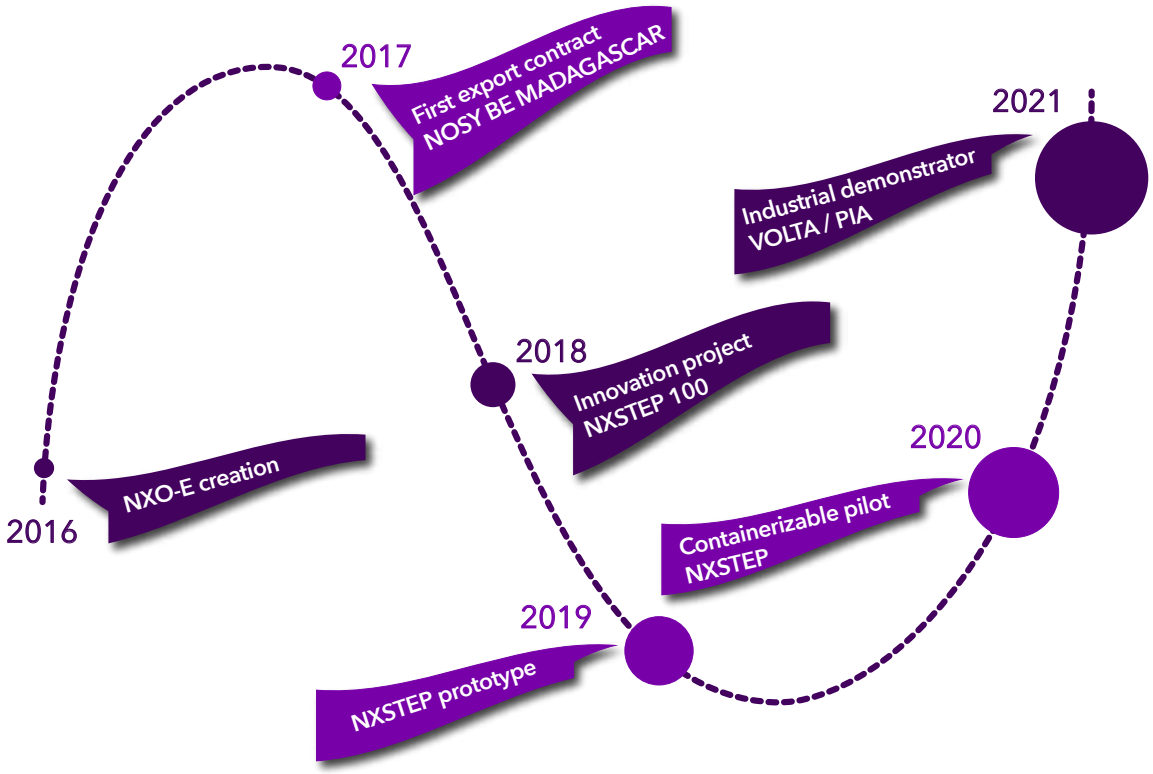
NXSTEP and VOLTA benefit from the expertise of the science community and the local authorities at the national and local levels. The originality of the approach arise a wave of interest in the scientific community inherent both in the choice of the depollution matrix (microalgae) and in the destination of the technology (WWTP).

WINNER 2021

COMPETITION INNOVATION «I-NOV»

VOLTA PROGRAM

NXO, YOUR COMMITTED PARTNER



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CESAR NARVAEZ / NXO'S PRESIDENT

« In the world to come, signage will not be enough to meet environmental challenges. NXSTEP and VOLTA aim to tackle all the themes of the transition energy and environment to offer a structuring and integrated approach to sanitation.

In the light of this new century and the related challenges, sanitation should no longer be a burden financial for the community but an opportunity of resources. Microalgae contribute to this change in status and image. By offering a virtuous and economically innovative sanitation model, this new model augurs new hopes.»

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