

## PORt OF XXX CLEANING PROPOSAL

Our proposal is the implementation of a double approach technology solution, to clean the waters of the port/marina from algae [and not only], while simultaneously improving the level of oxygenation of the water of the port/marina and utilise a water condition near real time monitoring solution.

Our proposal provides the following benefits:

- Algae control
- Fight against mosquitoes, flies and insects
- Odor control
- In ports and marinas, the effect of "air scouring" keeps the reefs of boats clean, preventing the attachment of microorganisms ("slick and crunchy").
- Increasing the dissolved oxygen concentrations of the water
- Improvement of water clarity
- Reduction of eutrophication phenomena
- Biological decomposition of sludge that has settled to the bottom



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## THE PROJECT SCOPE

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The proposed project includes

- Three boyos with water analysis and algae control capabilities
- Two boats with nanobubbles generators to improve water quality
- A water condition monitoring system.

The project will run under a fully managed services SLA contract with minimum five years duration.

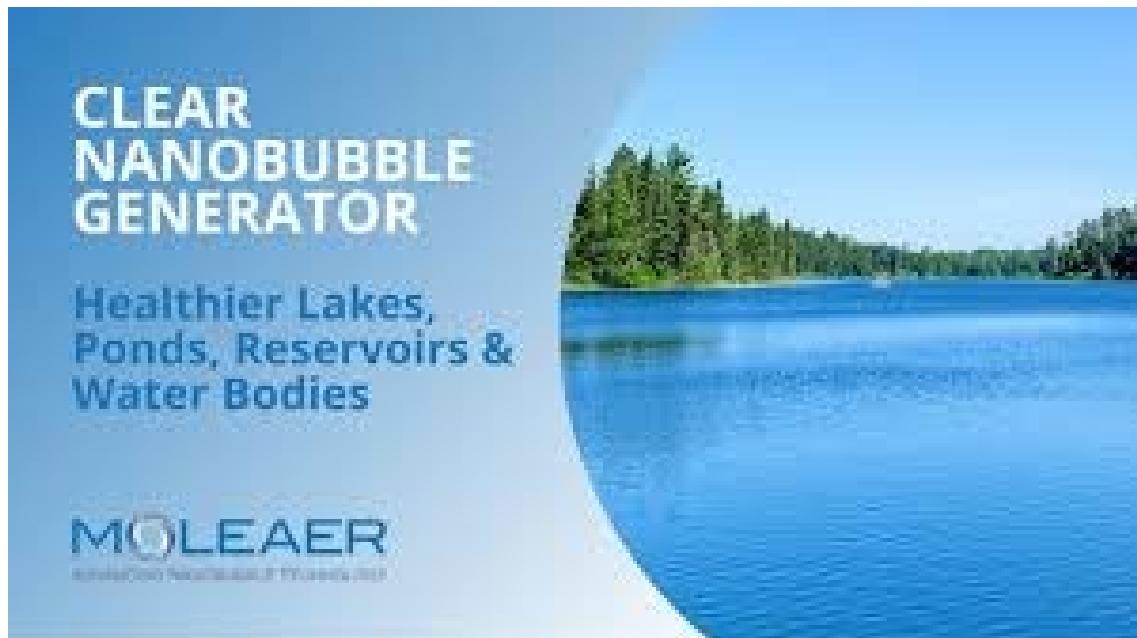
The deliverables will be cleaner water, odor control, algae control.

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## THE TECHNOLOGIES

### WATER CLEANING THOUGH NANOBUBBLES AERATION



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## FLOATING PLATFORMS

For cleaning in the large main body of a lake/marina/bay we have designed floating means that can move continuously affecting an ever-increasing volume of water. On boats powered by an electrically rechargeable outboard motor, a nanobubble generator is installed.

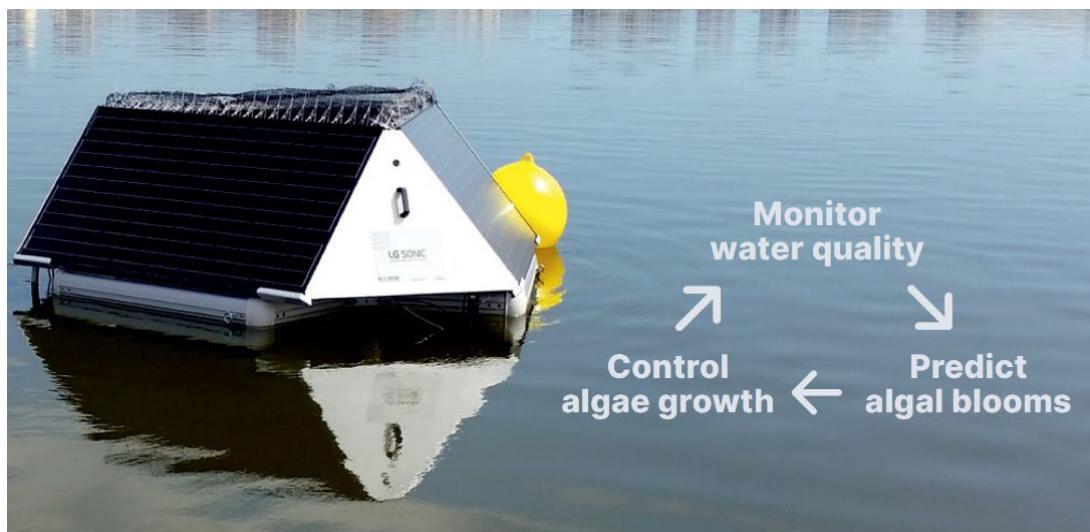
The generator is connected by two pipes. One pipe is used to draw water from the port/marina/bay and the other to return it properly oxygenated. The pumping takes place at a level close to the surface, the outflow at the deepest possible point.



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## ALGAE CONTROL WITH SUPERSONIC TECHNOLOGY



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## WATER CONDITIONS ANALYSIS AND MONITORING



**MPC-View** Water monitoring software

Home Data Settings Admin

Algae Indicator Parameters Chart

Water Quality Indicator Parameters Chart

Technical Parameters Chart

Water Quality Indicator Parameters Chart

DO (ppm) DO Sat (%) pH\_ Redox (mV) Temperature Buoy events Project events

2016-06-27 07:00  
• DO (ppm): 9.15  
• DO Sat (%): 100.34  
• pH: 8.59  
• Redox (mV): 422.56  
• Temperature: 19.96

Remove grouping Export to Excel Export to PDF

Time	DO (ppm)	DO Sat (%)	pH <sub>+</sub>	Redox (mV)	Temperature
10:30	8.95	97.99	8.58	423.17	19.86
10:00	9.01	98.69	8.59	422.42	19.88
09:30	8.96	98.10	8.58	422.45	19.88
09:00	8.98	98.42	8.59	422.05	19.91
08:30	9.09	99.55	8.60	422.09	19.92
08:00	9.07	99.37	8.59	422.46	19.93
07:30	9.08	99.54	8.59	422.59	19.95
07:00	9.15	100.34	8.59	422.56	19.96
06:30	9.13	100.19	8.59	423.15	19.99
06:00	9.17	100.73	8.60	422.85	20.03
05:30	9.25	101.66	8.60	423.07	20.04
05:00	9.30	102.23	8.59	422.92	20.06
04:30	9.37	103.05	8.61	421.69	20.10
04:00	9.24	101.66	8.60	422.20	20.10
03:30	9.44	103.94	8.62	420.89	20.13
03:00	9.51	104.65	8.61	421.36	20.10
02:30	9.49	104.57	8.61	420.92	20.16
02:00	9.54	105.15	8.61	420.65	20.21
01:30	9.78	108.01	8.63	419.16	20.29
01:00	9.83	108.67	8.63	419.01	20.35

Grid Filtered data

From To Update

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