# Microscopic Thermonuclear Fusion

A Path to Clean, Affordable Energy

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## Objective

Our goal is to make high energy costs and dependency on fossil fuels a thing of the past while mitigating climate change and reducing environmental pollution. Our proprietary Microscopic Thermonuclear Fusion (MTF) technology makes all of this possible. With no waste, greenhouse gasses or toxic byproducts the MTF can fulfill the world's energy and desalination needs at a significantly lower cost compared to other technologies.

Maximus Energy Corporation's (MEC) objective is to establish itself as a major provider of an environmentally friendly, low CapEx / low OpEx propulsion and energy technology and thereby earn multiple revenue streams from the global multi-trillion dollar energy and transportation markets.

## Technology

Right from the inception our focus was on inventing a low CapEx / low OpEx power generation process that would not require billions of dollars in capital and thousands of engineers to develop.

Instead of employing massive lasers to compress a fusion target or mega-magnets to confine plasma, we rely on the naturally occurring phenomenon of cavitation. Cavitation is the process of bubble formation in fluids under the influence of acoustic waves. Under the right conditions the bubbles expand and collapse violently heating up the fusion fuel trapped inside them to thermonuclear temperatures (Fig. 1).

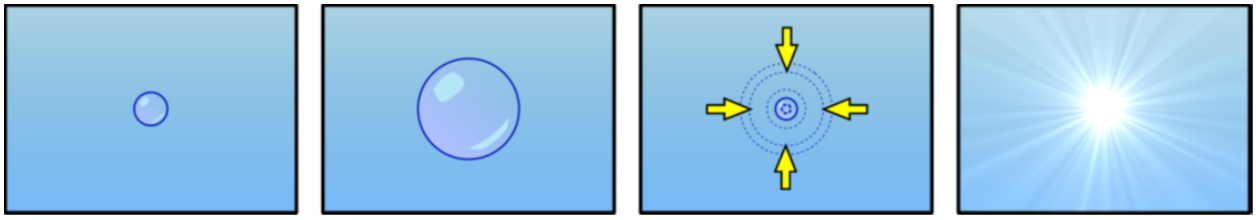

Fig. 1. Bubble growth and collapse during cavitation resulting in sonoluminescence (from Wikipedia).

The entire system must be carefully engineered to produce bubbles of a desired size and composition such that nuclear fusion occurs upon the bubbles' collapse. At this time we keep the details of our process a trade secret. It will suffice to say that our approach is different enough from published bubble fusion research to warrant a new name: we call it **Microscopic Thermonuclear Fusion** or **MTF** for short. What we are able to accomplish with the MTF is to produce a vast amount of thermonuclear reactions at a microscopic level without requiring exceedingly complex and tremendously expensive hardware to inertially or magnetically confine our plasma.

# Our Advantage

**(i) Low CapEx**: Because our design is extremely inexpensive and simple, we expect a 100 kW reactor to be comparable in size and cost to that of a car engine. This opens a wide variety of propulsion and transportation applications that so far remain out of reach of conventional fusion technology.

**(ii) Scalability.** The MTF process is easily scalable as the amount of power produced is directly proportional to the volume of the reactor.

**(iii) Low OpEx.** The MTF fuel is deuterium, which is derived primarily from water. Therefore profitable power generation can be achieved for less than $0.02/kWh (vs. $0.20 to $0.90 currently).

**(iv) Zeo Emissions.** The MTF process produces no emissions or toxic waste of any kind.

# Target Markets

**(i) Shipping Industry**: It is not a secret that one of the largest man-made sources of carbon dioxide emissions on Earth is the oceanic shipping industry. One day we plan to replace mammoth diesel engines of container ships with inexpensive and green MTF reactors that will not emit any greenhouse gases and will consume only minute quantities of deuterium fuel thus making oceanic freight green and much less expensive than it is today.

**(ii) Transportation Industry**: We dream to reduce carbon dioxide and pollutant emissions worldwide and lower ground transportation costs by providing compact and light-weight MTF reactors for semi-trucks and freight trains.

**(iii) Water Desalination**: The MTF can produce vast quantities of cheap, clean fresh water by making evaporative desalination too cheap to meter. The MTF desalination will help address critical water shortages and drought crises that plague our planet with increasing frequency each year.

**(iv) Electric Power Generation:** Last but not least, building gigawatt-size reactors will enable generation of electric power at a small fraction of the current cost and thus completely eliminate emissions from burning fossil fuels.

# Project Progress

When we started our fusion research in 2021 we put forth the following plan:

## Year 1: Demonstration of the Proof of Concept

The goal was to build a reactor to demonstrate a neutron yield coincident with cavitation (Fig. 2). We are proud to acknowledge that this goal was achieved in 2022, within 12 months from starting the project.


Fig. 2. The MTF proof-of-concept reactor.

### Year 2: Developing Better Understanding of the MTF and Demonstrating Control

In order to harness the MTF we must develop a good understanding of what makes it work. While general physics of the process is well understood, there are numerous interacting parameters that must be studied carefully in order to chart the parametric space and lay out the engineering foundations of the MTF process. This is the stage we are at currently at and we expect to arrive at the MTF engineering model by the end of 2023.

### Year 3: A Net-Energy Producing Reactor Design

Once we have the engineering model, we expect to spend the next year or two engineering and building a net-energy producing reactor capable of generating about 10 kilowatts of net thermal power output. This reactor design will be a starting point for the commercialization process during which we expect to license the technology and start designing reactors for various applications mentioned above. Because of the low cost and simplicity of our design, even a 10-kilowatt prototype will have a substantial commercial value in water desalination and other processes requiring low-grade heat.

## Enabling Technology

We owe our success to our proprietary **Automated Nuclear Lab** hardware and **PulseCounter Pro** software (Fig. 3), which together enable rapid nuclear experimentation with automated data collection

and analysis. The implementation of the Automated Nuclear Lab system enabled us to save tens of millions in capital and years of research & development effort.

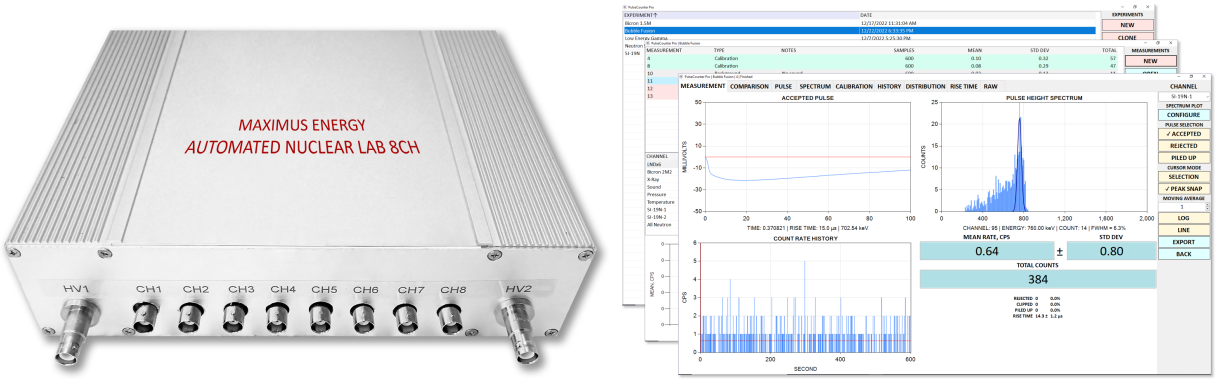


Fig. 3. The Automated Nuclear Lab hardware (left) and the PulseCounter Pro Software (right).

# Financial Model

Upon the demonstration of the working 10-kW net-power producing reactor, Maximus Energy Corporation expects to enter into royalty-based licensing agreements with the shipping and transportation industry to design and manufacture MTF reactors for their fleets. Until then, Maximus Energy Corporation will continue deriving revenues from its current commercial activity, which includes scientific equipment sales and manufacturing. Additional revenues from the sales or licensing of the Automated Nuclear Lab and PulseCounter Pro hardware / software system is also possible.

# Corporate

Maximus Energy Corporation is based in Naples, Florida (USA). The MTF technology was developed by founder, Max Fomitchev-Zamilov, Ph.D., a retired Penn State professor. Maximus Energy Corporation is privately funded and earns revenue from the sales of nuclear instrumentation that it manufactures and refurbishes.

# Return on Investment & Exit Strategy

We expect the profitability of Maximus Energy Corporation to grow as we continue to expand our equipment sales and especially as we start licensing the MTF technology. As such we expect the chief return on investment to be 3-5 years in the future in the form of a dividend. However, we do not rule out an IPO should the market and economic conditions be attractive for a listing at a major exchange.

# Legal

This Summary has been prepared solely for information purposes and shall not be construed as a prospectus or an investment solicitation.