

## Maiken Foods and 350PPM Biotech collaborate to build the world's first fully sustainable land-based fish farm solely powered by green energy

- *Synergistic approach to produce both fish and fish feed from solar energy*
- *Revolutionary concept to recycle CO<sub>2</sub> and ammonia*
- *Protein feed solely generated from CO<sub>2</sub>, ammonia, and hydrogen*

**Oslo and Hamburg, November 11, 2022** - Maiken Foods AS Group (Oslo, Norway) and 350PPM Biotech (Hamburg, Germany) today signed an agreement to build the world's first onshore fish farm that will not release carbon dioxide or ammonia into the environment and will be entirely powered by solar energy. The companies will combine their respective technologies to create synergies by recycling metabolic products released by the fish to create new food. The fully sustainable aquaculture production of salmon will be set up in Sines, Portugal, next year.

Maiken Foods has developed an innovative technology for farming salmon and cod in land-based fish tanks while 350PPM Biotech has established a process to produce protein-rich biomass by gas fermentation of a microorganism that is feeding solely on carbon dioxide and is powered by hydrogen created by electrolysis of water via solar energy.

Maiken Foods' proprietary RAS Recycling Aquaculture System consists of large circular tanks, each with an integrated filter module for intensive recirculation. The tanks use seawater, which is cleansed inside the tank before it is returned to the ocean. The technology also separates carbon dioxide and ammonia released by the fish. Fish produced this year in Norway show very good quality and growth.

350PPM is cultivating its bacteria in a bioreactor fed with CO<sub>2</sub>, hydrogen created on-site, and other gases. In a continuous process, the bacterial biomass is harvested to separate the protein which in turn is used as fish feed.

By using the CO<sub>2</sub> and ammonia excreted by the fish, the companies aim to establish the world's first fully sustainable, carbon-neutral aquaculture system, entirely powered by green energy and without polluting the environment.

The combined system is modular and can be scaled up easily. Maiken Foods' tanks operate independently (IPU – Individual Production Units), allowing for a more efficient control of production and its expansion in accordance with demand growth. 350PPM's reactors will be on site and can also be built modular in volumes up to 200,000 liters. The companies will start building their first units in 2023.

"I am very proud to be a part of this venture. I have always had a dream to construct and operate an integrated feed and aquaculture farm solely powered by solar energy. This is a dream come true," says Arve Gravdal, CEO of Maiken Foods AS.

"This concept marks the birth of a food revolution," says Erwin Jurtschitsch, CEO of 350PPM Biotech. "In the future, we will produce food without using agricultural land and polluting the environment and without increasing greenhouse gases. We will demonstrate that it is

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possible to achieve this ambitious goal by creating an integrated value chain from feed to food, solely based on renewable energy.”

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### **About Maiken Foods AS**

Maiken Foods AS, founded in 2021 is an aquaculture company based on a new, proprietary technology that will be a game changer in land-based fish farming. Its RAS (Recycling Aquaculture System) consists of individual tanks tailor-made for producing industrial quantities of salmon and cod on land. Tanks can be stocked with 200 grams juvenile fish to be harvested 6-9 months later. The entire system is automated and enables the company to produce seafood on an industrial scale.

The company is based in Oslo, Norway and has a subsidiary in Sines, Portugal

For more information: <https://maikenfoods.com>

### **About 350PPM Biotech**

350PPM was established in 2020 to develop a more sustainable production of food by converting carbon dioxide into protein-rich biomass suitable as food and feed. Biomass is produced by continuous fermentation of a marine bacterium that is consuming hydrogen produced by green energy and carbon dioxide from industrial processes. The protein contains all amino acids, closely matches the composition of fish protein, and will serve as the basis of next-generation bio-based food.

350PPM proteins can be produced fast, clean, and independent of weather, climate and seasons as fermenters can run 24/7 in any part of the world where CO<sub>2</sub> is readily available. H<sub>2</sub> can be generated easily by electrolysis of water, powered by solar, wind or hydroelectric power.

350PPM's next-generation food is superior to the agricultural production of proteins as it needs much less land, has a very low water footprint and is generated without using fertilizers and pesticides. Remaining biomass can be used to generate power or as fertilizer, so no waste is piling up.

For more information: <https://350ppm-biotech.com>