

## Unless there is a Manhattan Project for Algae of Government Working with Private Industry and Commercially-Minded Algae Researchers, Forget About Algae for Advanced Fuels

On August 2, 1939, just before the beginning of World War II, Albert Einstein wrote to then President Franklin D. Roosevelt. Einstein and several other scientists told Roosevelt of efforts in Nazi Germany to purify uranium-235, which could be used to build an atomic bomb. It was shortly thereafter that the United States Government began the serious undertaking known then only as "The Manhattan Project." Simply put, the Manhattan Project was committed to expediting research that would produce a viable atomic bomb. Mary Bellis

The National Algae Association is proposing a Manhattan Project for Algae – total and complete collaboration with the commitment to producing advanced biofuels. We've already done the research and it's time to produce. If we cannot, we can forget about algae for advanced biofuels. We can continue to be held hostage by a government that does not want to reduce our dependence on foreign oil – it's too important to the world economy and to support university research projects than to support the creation of a new industry that will create new jobs and commercially produce algae-based fuels at strategic locations throughout the US.

"The challenge is to get Washington to re-think its strategy." according to NAA Executive Director Barry Cohen. "They're working with a 45 year old Congressional Mandate, and refuse to take steps to update Congress that algae research is no longer needed! Rather than fulfil its initial mission, the Department of Energy has changed the mission rather than admit its failure."

NAA has been trying to work with the Department of Energy's Biomass Program, especially after the release of the National Algal Biofuels Technology Roadmap in 2010. Since then, NAA has been involved in commercial production, in developing the first 100-acre scale-up plans and specifications, developed the first Algae Production Certification Program to provide a standard baseline of knowledge in commercial algae production and converted it to an online format for international distribution, and has launched algae production incubator sites.

In a showing of its interest in working together, NAA invited all of the members of the newly-formed Algae Caucus to its recent Algae Production Workshop, along with representatives from the Departments of Agriculture (now responsible for growing algae as a crop), Defense and Navy (military fuel). Sadly, not one government department was represented at the Workshop. With \$2.5 billion and 60 years already spent on algae research, all with positive results, and knowing about NAA's successes, one would think they would have had a vested interest in the next step – commercial production. With algae farms and algae bio-manufacturing plants already built around the world, wouldn't you think someone would be interested in learning how algae is produced on a commercial scale?

The only thing slowing their growth is a lack of money, says Zenk. "Our limitation on the commercialization is capital. It's no longer science." Another past algae research grant recipient

stated years ago that “all algae technology hurdles have been met. It’s all engineering and scale-up going forward.”

Unless there is a “Manhattan Project for Algae” bringing together private industry, commercially-minded algae researchers using proven technologies that can scale outside the lab and the government committed to commercial production forget about algae for advanced biofuels. The algae production industry will continue growing algae for higher value co-products, but not for advance algae biofuels.