

Who Says Algae Production For Fuel Is Unsustainable?

Source: National Algae Association

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National Algae Association disputes the National Research Council's recent claims about the need for more research. Their study may be based on out-dated, inaccurate and possibly incomplete information provided by the DoE's Biomass Program

It is well known in the algae production industry that algae raceway ponds have been unsustainable - starting with the DOE's Aquatic Species Program years ago. The researchers knew this before the industry emerged, but saw the opportunity to continue to conduct their research using federal funds instead of looking into other more productive enclosed growing systems. The universities counted on the federal funds as part of their budgets. If they admitted their failures, the money would have gone away.

Every open-pond has daily contamination issues and very low production levels. The emerging algae industry moved away from raceway ponds over 6 years ago to vertical enclosed growing systems which have much greater production levels, recycle majority of water used and without most of the contamination issues. Even companies that have designed, built and supplied equipment to raceway ponds over the years admit that ponds are riddled with problems; some have even filed their own patents on vertical enclosed growing systems right after building raceway ponds.

There are thousands of strains of algae, hundreds are very well suited for commercial algae production. We can study them till the end of time. We can spend billions of dollars trying to create the biggest and best strains; the Environmental Protection Agency's rules are well-established and there are plenty of well-established strains and growing situations that fall well within their regulations.

The Department of Energy's 2010 National Algal Biofuels Technology Roadmap proved that the land area needed for algae was diminimus compared to the land mass requirements to grow other feedstocks for other alternate fuel products such as corn and soy; we have proven that the land mass requirements for enclosed vertical systems is significantly less than for the raceway ponds. We have also learned there is a huge learning curve between growing algae in a lab and growing, harvesting and extracting commercially on acreage and/or inside buildings.

NAA is the first organization to lead an effort to develop plans and specifications for 100-acre commercial algae farm build-outs. We were successful not only in lowering CAPEX and OPEX by 50%-60% over the last 6 years, but by clearly identifying the variables that make each algae growing facility different, and incorporating them into our financial models. It is NAA's opinion that years of research on each of the variables - water, CO2, energy requirements, and the like, is a total waste of time and money, neither of which we have to spare, because they are site-specific.

NAA has tried to educate the Department of Energy's Biomass Program about these issues for years. It is unfortunate that the Biomass Program is led by researchers who are totally clueless about how to do anything other than fund research grants! They are trained only to do research, and they have no interest in or motivation to do anything else. They have no business, engineering, water processing or commercial construction experience and have never been bestowed with any non-research task, let alone the task of commercializing the algae production industry. The federal funds are, by congressional mandate, required to be given to institutes of higher education, tribal lands, and consortia including them. Despite bringing the fact that the funds have been needed to test existing algae technologies sitting on shelves for scalability , the leaders of the DOE BiomassProgram have not just been reluctant to redirect any funds for commercial

production, they have failed to do so.

The DOE Biomass Program told the NAA that *we* needed to hire a lobbyist to change the congressional mandate if we wanted it to change. Shouldn't that be their job? Shouldn't they be responsible for and accountable to make sure their own programs keep up with the needs? Why do we need lobbyists for more algae research? How is the research funds being spent? Salaries, benefits, travel, conferences or is it for actual equipment or research? Most importantly is what are the results?

A past grant recipient announced a few years ago that "all algae technology hurdles have been met and the only thing left is engineering and scale-up". The reward for that announcement was being awarded more funding for research. The funding will allow the recipient to continue to pay salaries, purchase equipment and travel to (and pay for) conferences where information cannot be shared because of restrictions on the grant.

NAA asked the DOE to take 10% of the funds they have spent on algae research and allocate it towards building one 100 acre commercial algae farm (non-pond). NAA was actually asked to pay just to look at a technology that the government has in its vast inventory, and then to pay them to see if our algaepreneurs would spend the time and money to see if it would work and would scale. With multiple algae researchers from the same DOE, NREL and universities going to national and international conferences for many years what have been the results of their collaborations? Over 50 years of research may be too much. With salaries, benefits and travel to these conferences, they are guaranteed their future employment until they retire. NAA asks what have been the results so far?

Has anyone asked how many of the 150 companies referenced by the NRC are in the US? We are running close to last in alternate fuel production. The governments of other countries around the world contact NAA regularly because they know that we have the business intelligence, the ability to commercialize, the dedicated algaepreneurs, engineers, equipment manufacturers and most importantly, that we do not have the support of our own government. Other governments told NAA "they do not want to hear the word algae research". They have spent millions in the past on algae research without any results. They have asked NAA to come to their country to commercialize and build out their algae industries.

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