Despite opposition, ocean iron fertilization forging ahead

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By Carli Ghelfi, Cleantech Group

More countries have lined up to voice concerns. But advocates of OIF plan to proceed anyway. (updated)

In the face of continued international opposition toward ocean iron fertilization (OIF), advocates are apparently damning the torpedoes.

Those advocates include San Francisco-based Climos, which today reaffirmed it plans to continue with its controversial stated business goals of testing and commercially developing OIF to assist in carbon sequestration.

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Delegates to both the U.N. conference on biological diversity (CBD) and the London Convention, a group which oversees dumping at sea and is part of the International Maritime Organization (IMO), have been vocal in calling for more research before companies, such as Climos and Australia's Ocean Nourishment, move forward with ocean carbon sequestration projects.

At respective meetings in recent weeks, countries pursuing a moratorium on OIF at CBD's meeting in Bonn, Germany didn't quite achieve one, despite reports, but resolved that OIF should only continue on the level of small scale, coastal operations for now.

Separately, the London Convention requested nations pay attention to a statement the IMO is to release later this year on the topic.

While these two groups represent almost three hundred countries formally expressing caution about OIF (CBC: 191, London Convention: 88) [ed.: and note the U.S. is not one of them], American startup Climos says it's undeterred.

"Our plans haven't changed at all," Climos CEO Dan Whaley told Cleantech Group today. "Our goals have always been to fund a demonstration of this technique with some of the leading oceanographers and a world-class research vessel in an open and transparent way."

While Whaley reiterated he understands the concerns of the greater international scientific community, he said Climos' plans to obtain a permit and to continue to seek funding are still on course, and he expects to execute a demonstration in the next year and a half.

"I don't want to be flip with my answer in terms of our actions," said Whaley. "We'll seek a permit under the [London Convention]. This statement does not affect us not doing that."

Discovered almost 20 years ago by scientist John Martin, ocean iron fertilization uses photo plankton as a conduit for sequestering carbon. In the process, the plankton bloom, mature and die, and then supposedly sink to the ocean, carrying

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carbon with them.

Critics worry that seeding the ocean with large volumes of iron could have unintended consequences. In a special report, the Intergovernmental Panel on Climate Change (IPCC) called OIF 'speculative and unproven, and with the risk of unknown side effects.'

According to Ken Buesseler, a senior scientist of marine chemistry and geochemistry at Woods Hole Oceanographic Institution in Massachusetts, scientists have been clear on the fact that the next experiments need to be bigger and larger, regardless if they are commercially funded.

Buesseler is the main scientist who organized meeting last November to provide an update on the science of OIF. Buesseler said he was trying to be a neutral ground to discuss the issues.

As a scientist, Buesseler is interested in how the scientific community can play its part and help reduce uncertainties of technology like OIF. "As a scientist, we can answer these questions. There's potential," he told the Cleantech Group.

"Some people seem philosophically opposed form the start," continued Buesseler. "I think it's an open question."

According to Buesseler, so far there have been 12 open ocean experiments, ranging from 1-4 weeks, with 1-2 tons of elemental iron, and over approximately 10 x 10 km in the ocean.

Buesseler said the scientific community would like to expand the experiments to 100 x 100 km, using 10-20 tons of iron so they can see the full growth cycle of plankton and find out where the carbon actually ends up (the bottom of the ocean, or at the surface).

When asked who the people are who have voiced their opposition to OIF, Buesseler said they are the ones who are fundamentally opposed to doing anything to the ocean, which is something he personally disagrees with.

"We're already changing the ocean," said Buesseler. "You can't avoid altering the ocean by continuing to drive cars and emitting CO_2. The ocean will change no matter what."

"One argument against OIF is if you take to the extreme and take every square inch of the ocean and alter it. That's unacceptable."

Conversely, Buesseler said he wouldn't argue that we shouldn't take any fish out of the ocean to explore the possibilities, but there are still people who are fundamentally opposed to this.

"There's no evidence either way, but the next large experiments won't likely [take fish out of the ocean] either."

Buesseler said he fears that if we don't explore all the possibilities for reducing emissions, we'll continue on the carbon heavy path we're already on. "We know we're already changing the ocean. That's not acceptable."

Buesseler reiterated the likely disagreement from the IMO is the immediate granting of carbon credits based on experiments. "What concerned people was that there were companies that didn't have any interest in real science. That's some of the negative view."

"You can't sell offsets until you measure the risk and the benefits."

In an interview with Cleantech Group this January, Climos' Whaley said he believes the carbon trading markets can finance fertilization projects (see Plankton to the rescue).

In the meantime though, Whaley said Climos is set on finding private funding and will continue with its plans of another round of funding in 2009.

Now-defunct Planktos was pursuing a business plan similar to Climos.

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Climos on wrong path

Submitted by Toby Reid (not verified) on June 13, 2008 - 9:14am.

While the folks at Climos seem well intentioned in trying to make this technology work, we must ask ourselves what the price of experimenting with our oceans is. Climos scientist Ken Buesseler seems to think that since we've already had an impact on the oceans, through our pollution and overfishing, we are granted the right to experiment with it as we see fit. This rationale is not only dangerously reckless but it is another example of humans' ability to look at the small picture, without seeing the effect on the bigger picture.

First of all, when phytoplankton bloom, they absorb C02 and release sulfurs, which eventually get picked up by our clouds. These sulfurs mix with the other gases in the clouds, such as nitrogen, which is where we get acid rain from. So, Iron Fertilization = Acid Rain. The effect on the small picture looks good, until you look at the bigger picture.

Secondly, iron sequestration supporters talk about it only having a 60-90 day effect, since the blooms only last that long. This is shortsighted as it doesn't incorporate the fact that there is an effect on the food chain that lasts much longer. The animals that eat phytoplankton live for much longer than 60-90 days. If the food source for these animals is increased, it favours them, and places other animals who don't eat phytoplankton at a disadvantage. Iron sequestration is altering the evolution and survival of many marine species, and altering the development of our oceans. Iron fertilization is not a short-term fix, its effects echo forever, and since we don't know what those effect on the marine ecosystem will be, iron fertilization is irresponsible.

Lastly, climate change really only gets solved when we deal with the problem at its source, as opposed to trying to treat the symptoms of the problem. Iron fertilization of our oceans is a band aid that may or may not work, and that has unknown consequences to marine ecosystems. While it is being proposed as a 'silver bullet' solution, one must be aware that if it sounds too good to be true, it probably is.

The answer to climate change is eliminating our carbon emissions from transportation, industry and our communities. We need to address the problem at its source. No other solution will be more effective than this.

reply

So to sum up your argument..

Submitted by Bob Dobbes (not verified) on June 19, 2008 - 6:28pm.

So to sum up your argument.. we don't know what might happen, so we shouldn't bother to try to find out. Did I sum that up correctly?

If you carry that through to its logical conclusion, nothing would ever be tried for the first time.

People in the rich countries may be able to afford to give up their dirty carbon spewing cars and industries, but the rest of the world won't. If it comes down to feeding your family or not polluting, people will choose pollution every time.

Your argument is short sighted and wrongheaded. Further research needs to be done, so that we can determine what the effects are on carbon levels and on the affected ecosystem.. But to do nothing and arrogantly proclaim that a possible solution should be ruled out because of your hypothetical fears is incredibly irresponsible.

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animals

Submitted by manda (not verified) on July 9, 2008 - 6:42am.

what would happen to the animals

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