

Information for discussion purposes only

Subject : Proposal Diaforce pilot plant for feed:

Further to our communications, please find herewith the proposal for a pilot project utilizing the SBAE Diaforce® technology to produce micro algae (Diatoms) in large volumes.

1. Purpose of the project:

To build a 5 Ha plant in the area of the customers' address which will produce micro algae - Diatoms, utilizing the SBAE Diaforce® technology. The expected outcome is a thorough demonstration and understanding of economical production of large volumes of local micro algae, utilising the algae biomass for feed applications. The overall target is to facilitate the decision to install similar yet larger production facilities in the coming years under an SBAE license agreement.

In order to reduce the level of risk for the investor, SBAE proposes to introduce a GO-NO GO moment after executing the start up and fine tuning of the Calibration set. At that moment, both the customer and SBAE will be able to measure the results of the test phase, such as the content of the Diatom algae poly culture, the actual and possible content of oil, the total real and expected productivity of the system and so on. If those results are not sufficient, the customer will be able to cancel the continuation of the project.

2. Planning:

First step : The target is to start with a calibration system of about 200m², in order to build the local robust Diatom micro algae poly culture. Once the calibration system is installed, SBAE people will during 6 months guide and support with physical presence of the needed people, aiming at optimizing the poly culture from the content as well as the productivity point of view.

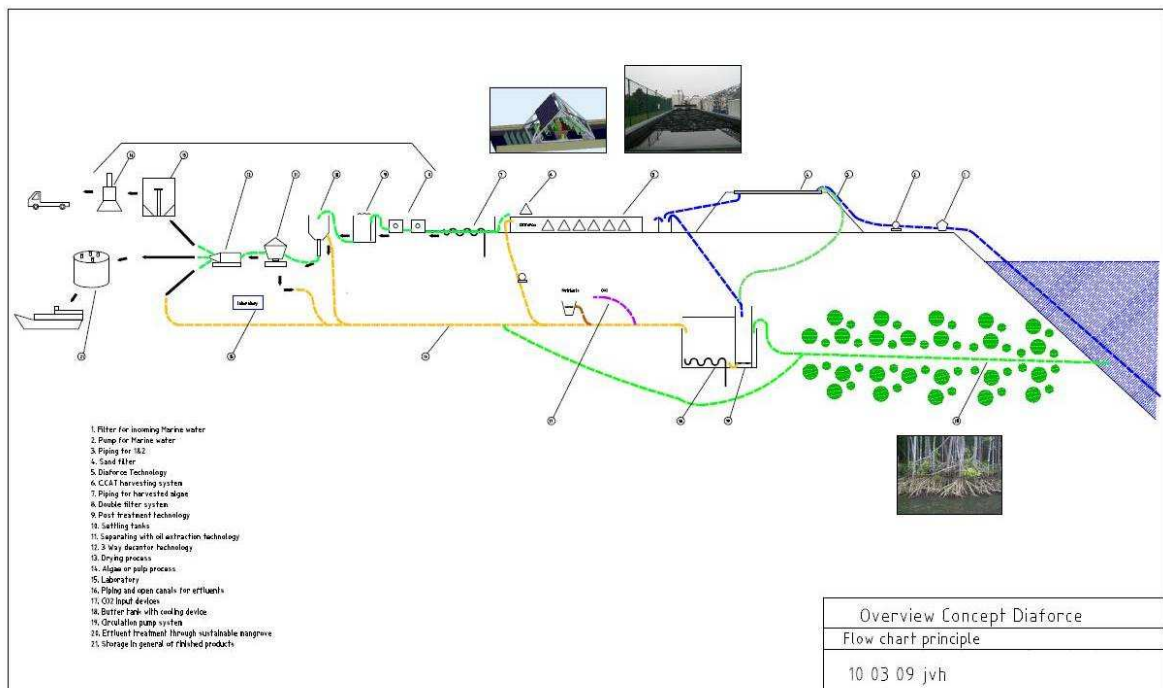
After 6 months the customer can decide to discontinue the process if the results do not show sufficient performance allowing for economical production.

Second step: The engineering and construction of the 5 Ha plant will start when the customer decides to continue the project. The schedule is according to the added timeline. Initial production of the 5 Ha plant is planned after 9 - 12 months. The production volume will from that point on increase gradually.

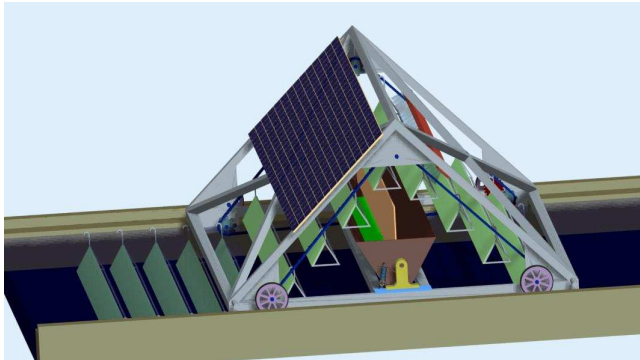
An important comment: this project is not just about a technology, but also about living micro organisms (plants - Diatoms) from which their growth and behavior is influenced by the seasons. A delay of the start up of a certain number of months might influence the yield of the Diatoms, and therefore the total length and cost of the project

3. Description of the calibration set (Step one)

The calibration set is an artificial channel of 2 m wide and 100 m long, mounted on Stainless steel legs with a height of 1m. It is locally assembled from 5 m long sections which bolt together. It is filled with algae carriers spaced at about 325mm. The water level is adjustable between 300mm and 400mm allowing adaptation to the environment.



The Calibration set comes with the automatic harvesting device C.CAT which travels the length of the system, lifting the carriers from the water, and blows or rinses the harvest into the algae collector and places the carriers precisely back into the water channel. The Calibration set is further equipped with the needed electrical cabinets, control devices, detectors, pumps and circulation tubes. It is expected that about 1% of the growth medium (water) will be collected together with the algae.



The picture is a visualization only. The C.CAT might differ from this picture, and will not have solar panels in the standard execution.

4. Second Step : Project description according to process drawing dd 01 03 2009 :

Comment: this description is based upon a site connected to an ocean. The same principles are applicable for isolated sites, connected to River beds etc., utilising brackish or fresh water. It constitutes an example of how a project could look like, depending of the local situation. SBAE does not offer nor deliver all of these items, as some will not be needed or might be locally purchased, depending on the application and the customers' preferences. Some of the operations are related to the extraction of oil which would not be used in this project.

1. Filter for incoming marine water
2. Pump for marine water
3. Piping for 1&2
4. Sand filter
5. Diaforce® technology
6. C.CAT™ harvesting system
7. Piping for harvested algae
8. Double filter system
9. Post treatment technology
10. Decanting technology

11. Separating / centrifuge with oil extraction technology
- 12.3 Way separating / decantor technology
13. Drying process
14. Algae or pulp packaging process
15. Laboratory for QC/QA
16. Piping and open canals for effluents in general
17. CO2 input devices
18. Buffer tank with cooling device
19. Circulation pump system
20. Effluent treatment through sustainable mangrove technology
21. Storage in general of finished product

5. **Cost of the project:**

The total cost of the project consist of the following elements :

Step one :

a. Payment to SBAE for limited access to technology utilizing the Calibration set, the purchase of the Calibration set inclusive the C.CAT harvesting device, biological and technical support for a period of 6 months after the start up of the Calibration set.

Cost for Step One: €2,000,000.-

b. Local costs to provide a stable base to mount the Calibration set on, hoisting equipment, and delivery of sufficient electricity. Also the costs for local operators and management is at the charge of the customer.

c. A license fee, calculated on the sales value of dry weight biomass produced, 5%.

Second Step: In case the project is extended as expected, the following costs are applicable.

d. Payment to SBAE for full access to SBAE technology, engineering, biological and technical support, training etc. (see further)

Cost for Second Step: €3,250,000.-

e. Purchasing specific equipment from SBAE, as described in Addendum 1
Estimated budget: €2,500,000.- to €3,000,000.-

f. Local costs to build the system with local suppliers, as described in Addendum 2
SBAE proposes this solution to reduce the total cost of the project as local suppliers should be cheaper.

Estimated budget: €2,000,000.- to €3,000,000.-

g. A license fee, calculated on the sales value of dry weight biomass produced, 5%.
The concept of license fee is used as incentive for both parties.

Future expansion of pilot project:

Extending such project to (much) larger surfaces is more economical per acre. For example the start up costs to be paid to SBAE for a project 100 times bigger can be divided over a larger volume, reducing the unit cost significantly. Therefore the real CAPEX (investment) will be mainly for hardware. This is, without any guarantee and depending on the local circumstances, estimated to be between €350,000 and €450,000 per Ha, exclusive downstream processing.

6. Description of SBAE deliveries and commitment, see 5.d:

THE CUSTOMER pays SBAE for the technology access, the engineering and design, for the access to the Diaforce® technology, the delivery of the design of a 5 Ha micro algae production plant utilizing Diaforce® with the relevant biological SBAE know how, the software for the biological management and Quality Control, producing the optimal local poly culture of micro algae and implementing it into the 5 Ha plant, inclusive the following deliverables from SBAE:

- a. The needed availability of biological experts, partly in Belgium, partly on site.
- b. The needed supporting lab personnel in SBAE.
- c. The needed availability of technical expertise and project management, partly in SBAE, partly on site. During phase 1, which will be the first few weeks, we will mainly be working on building and testing the calibration equipment. This is mainly an engineering phase. During the next phase the calibration equipment will be inoculated with local algae species and will be closely monitored by the biologists. The next phase will be the beginning of the harvesting from the calibration site. There will be a number of iterations of this cycle to achieve the maximal result.
- d. The general design (without execution drawings) of the 5 Ha plant, inclusive a complete and comprehensive description of all equipment and building works, allowing local tender purchasing for parts of the system which can best be produced locally (concrete and the likes).
- e. The software for the system.
- f. An administrative support for the project.
- g. The project management overall.
- h. Training during 6 months of local biologists in utilizing the SBAE technology.
- i. Expenses for travel and stay for the SBAE above
- j. During the course of the project, a regular reporting of the proceedings will take place in a structured way. The reports will also propose the choice of locally selected algae with optimal production results, and suggestions for further commercial applications of the biomass, function of the composition of the algae produced and of the preferences of the customer.

Price: €3,250,000.-

This price does not include any hardware.

7. Payment terms:

Down payment at order :	€1,000,000.-
At the start up of calibration set	€500,000.-
3 Months after start up of calibration set	€500,000.-
Total for the Calibration period :	€2,000,000.-

At the decision to continue the project :	€1,500,000.-
8 Months after start of project	€500,000.-
12 Months after start of project	€500,000.-
20 Months after start of project	€750,000.-

Total for the Second Step: €3,250,000.-

Payment terms for deliveries according to Addendum 1 :
50 % down, 40% ready for shipment, 10% upon start up but not later than
60 days after delivery if start up is delayed for reasons other than SBAE.

8. Project acceptance:

Upon ordering, SBAE and THE CUSTOMER will work together towards a project description which will be an addendum to a contract of co-operation, targeting the optimal results and outcome of the project. Both parties will strive to define as objective and measurable as possible the steps and expected outcome, with a maximum of mutual benefits in mind. In the event that during the course of the project certain items or issues would apparently be insufficiently defined, both parties will act in the same spirit as described above. Project acceptance by SBAE will be official only after the signing by both parties of this contract.

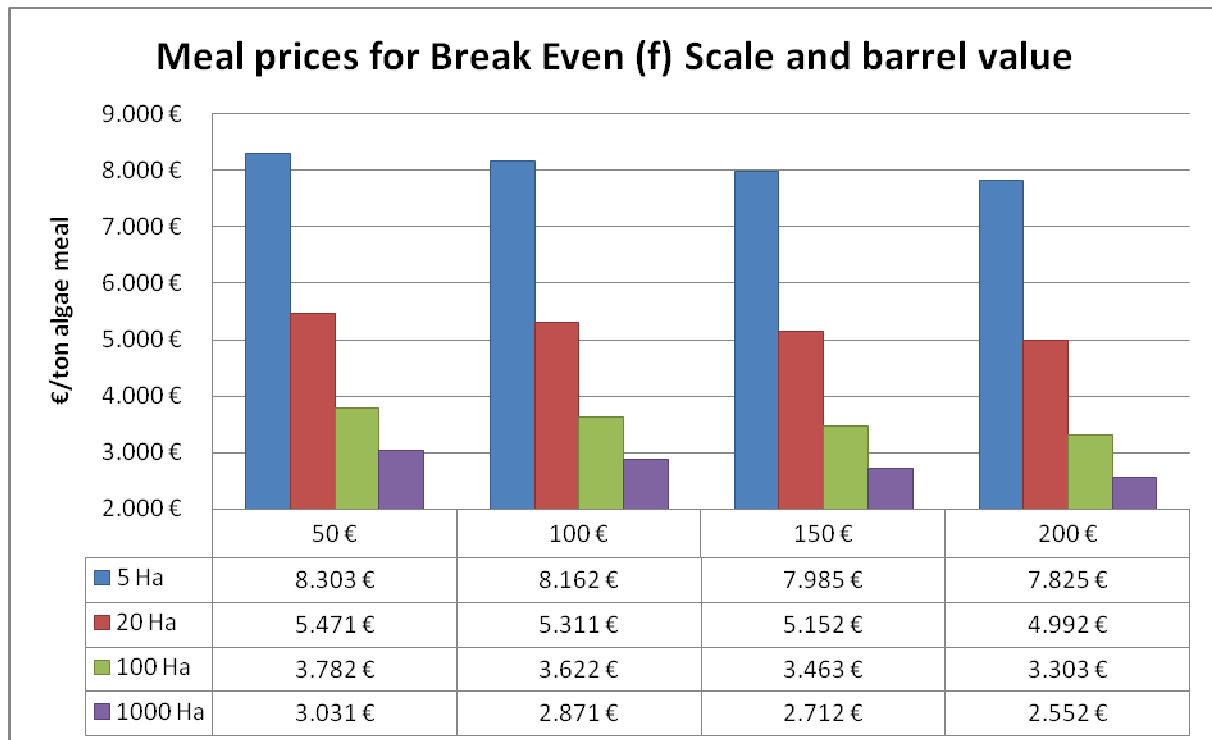
9. Validity of offer:

This offer is valid for 3 months.

For information purposes only : In case the customer would want to extract oil for fuel in a later stage.

The economics of a SBAE Diaforce project is directly related to the commercialization of the remaining algae meal after extraction of the oil. Surprisingly, little influence is noted from the value of a barrel of oil. The added Graph shows a simulation / estimation, without any guarantee nor commitment from SBAE, based upon realistic assumptions for Belgium of productivity and oil content. It becomes clear that, in order to reach a break even, the only important factor is the size of the project.

Note : The graph shows the value one should receive for the remaining meal in order to reach a break even, related to the size of the project and the barrel value.



Addendum 1.

SBAE Hardware after Calibration set (see 5e):

SBAE will deliver the following hardware in order to ensure the optimal functioning of the total project:

1. The substrata for Diaforce technology, item 5.
2. The C.CAT™ harvesting machine for item 6.
3. The algae collecting trolleys for item 6.

The budget is expected to be between €2,500,000 and €3,000,000.

Addendum 2 .

THE CUSTOMER Hardware: (see 5f)

THE CUSTOMER will ensure the delivery of the total system, except for the items mentioned in Addendum 1, yet SBAE will ensure the basic engineering and technical definition of it (such as sizes, types of machines etc.). THE CUSTOMER will purchase or produce locally all electrical cabinets according to a technical description upon which both parties will agree in relation to the needs for the software and the requested degree of automation. The concrete (or other) runways inclusive piping an pumping will be purchased or produced locally by the CUSTOMER.

The estimated budget for those deliveries is between €2,000,000 and €3,000,000. This estimation does not include the downstream processing equipment, as this will depend on the application. SBAE will offer its expertise and advice if requested.

Furthermore, THE CUSTOMER will ensure the following:

- a. The needed land and regular access to it by SBAE personnel, 7 days a week, 16 hours per day. The land shall be stable and flat. Depending on circumstances, Diaforce might be installed under a slope of 0.05-0.15%. The choice of the location can therefore influence the local building costs. For the calibration equipment the needed land shall be available with a hardened surface resisting a local pressure similar to the resistance of a concrete slab of at least 150mm thick. The surface shall be according to SBAE drawings, deliverable at the latest 4 weeks after order acceptance. The area shall be such that even with excessive rainfall, stability of the slab will be guaranteed.
- b. The needed energy supply for the calibration site, to be determined within 4 weeks after acceptance of the order. This is mainly electricity for pumps, and compressed air for harvesting.
- c. The needed rigging material with experienced operators for erecting the calibration site under guidance from SBAE personnel.
- d. The needed energy supply for the total project, to be determined after 3 months of the start of the project.
- e. A small laboratory environment close to the test site (in building or container, air conditioned and dry, warm and cold fresh water), equipped for the installation of microscopes and test material (definition by SBAE – delivery by THE CUSTOMER). This laboratory can be closed with locks.
- f. The needed permits from local and/or national authorities.
- g. Access at the site to sufficient quantity of the culture water from the region. Quantities needed may vary in function of tests executed and observed with the calibration site, but specifics to be delivered by SBAE 3 months after the start of the project. Also a certain volume of fresh water may be requested for rinsing etc.
- h. The needed operators for harvesting and similar activities at the calibration site, at times up to 7 days a week. An initial estimation indicates that probably 2 people at 50% of the time might be needed, to be defined later on according to needs.
- i. The needed operators, maintenance personnel and management for the project from the customer side.
- j. A project leader / contact person, with the ability to communicate in English, oral and written.
- k. Staff members, trained and experienced in life sciences, who will be monitoring specific parameters on site and guarding the setting as defined by SBAE, and communicate on a daily basis with SBAE personnel. This person will also have LABTECH and microscopic experience, and communicate in English. At times this person will work together with SBAE personnel on site, or alone in the absence of SBAE people. He will have access to local additional assistance when needed.
- l. THE CUSTOMER will safeguard the site and its results from visits and observations by third parties, such as competitors, press and others.
- m. THE CUSTOMER will provide swift access to internet on site for daily communication with SBAE.
- n. It is possible that the effluent needs to be treated prior to return it to the origin, and this is not part of the SBAE proposal. SBAE suggests, depending on the location, to work with some type of mangrove or wetland, which will generate additional biomass and create a new biotope. It is however the choice of the customer in which way he wants to treat the effluent should the need arise.