

11. Damsselfly Bacto-filter

1. Introduction

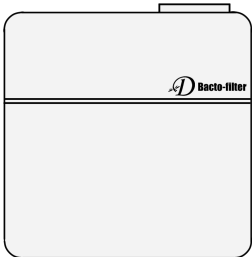
Here at "Damsselfly", we aim to cut down on greenhouse gas emissions to create a cleaner world, with our new "bacto-filter". Through the use of Thermophilic acetogenic bacteria, the Bacto filter converts CO₂ produced by factories into Acetone and IPA. Acetone and IPA created by the filter are separated and can be utilized to create plastics, biofuel stabilizers, and many more products.

Using our Bacto filter system businesses can: reduce co₂ emissions and reuse the byproducts. creating a more sustainable system.

2. Production process/Technology

i) Bacteria

Bacteria that produce acetone and IPA from CO₂ (acidogenic) are used in the bacto-filter. To protect the bacteria from the heat of the gas plume, genes from thermophilic bacteria, that reside in geysers, were spliced into the acidogenic bacteria. The thermophilic properties of the bacteria allow the bacteria to survive at temperatures upwards of 90c. The heat resistance helps in the separation of the acetone and IPA via distillation, creating high purity acetone and IPA, while not killing the bacteria.



ii) Bacto-filter

The Bacto-filter keeps the bacteria alive while facilitating distillation of the acetone and IPA. The filter is adjusted to smokestacks. The filter collects the acetone and IPA in a collection box. Pollutants like sulfur can decrease the efficiency of the Bacto filter, Thus a sulfur filter is also attached.

3. Business model

Plastics factories use acetone in the production of plastics, and the "Bacto-filter" produces acetone. By installing the "Bacto-filter" on the plastic factories' smokestacks, the factories benefit from the acetone produced. It is also beneficial for the factories with high carbon dioxide emissions. For factories with high carbon dioxide emissions, the purchase or rental of their own "Bacto-filters" would eliminate the need to pay for higher carbon dioxide emission taxes they would otherwise have to pay for under the cap-and-trade system.

We earn the profits by renting out or selling the Bacto-filter. In other words, the buyer, the plastic factories, has two options: 1-time purchase or rental service.

4. Marketing method / Strategy

i) Target

Our firm plans to manufacture "Bacto-filter" in Texas, a state with a thriving economy, factories with smoke stacks, and the largest number of plastic factory workers in the United States. We plan to expand our business to plants within Texas.

ii) Marketability

We plan on advertising directly to businesses as well as making an official company website and advertising on Social media. This is how we plan to sell to companies. On social media, we plan on advertising allowing the public to access our website where our product information is written. We also will advertise our products on YouTube, increasing our impression of the local people.

5. Financial plan

i) Start-up cost

Including the cost of research & development, employment of scientists, product materials, and factory take-over, this start-up cost will be covered by a small business bank loan.

ii) Take-over

We chose to take over a small factory for manufacturing our products since it helps to reduce the start-up costs.

We have 2 purchase options for the Bacto-filter; a rental service and a 1-time purchase. We plan to sell Bacto-filter at \$2083 per month per unit for the rental service and a selling price of \$78111 per unit. We will turn a profit in our 3rd year while rapidly increasing sales over the following years.

6. Summary

We believe that our 'bacto-filter' can change the way we control and deal with CO₂ emissions. Together we can stop global warming with: bacto-filtration.

USD(\$)	Year 1	Year 2	Year 3
Revenue	499,920.00	3,858,705.00	5,155,350.00
Subscription sales	499,920.00	1,124,820.00	1,249,800.00
Buying-up sales	0.00	2,733,885.00	3,905,550.00
Expense	2,901,298.00	3,406,551.00	4,160,239.00
Scientists wages	40,951.00	40,951.00	53,236.00
Factory labour wages	221,760.00	221,760.00	302,400.00
Office worker wages	112,320.00	112,320.00	168,480.00
Advertisement	8,193.00	9,831.00	10,097.00
Factory running	638.00	766.00	918.00
Tranportation	345,686.00	414,823.00	497,788.00
Product materials	2,171,750.00	2,606,100.00	3,127,320.00
Start-up cost	1,359,990.00	0.00	0.00
R & D	106,472.00	0.00	0.00
Scientists wages	40,951.00	0.00	0.00
Factory take-over	1,147,023.00	0.00	0.00
Capital investment	65,544.00	0.00	0.00
Profit before tax	(2,401,378.00)	452,154.00	995,111.00
Profit after tax	(1,897,088.62)	357,201.66	786,137.69
Funding required	1,000,000.00	-	-
Divident for shareholders	-	7,896.00	7,896.00
Loan requirement	1,359,990.00	-	-
Payment for loan	-	87,569.00	87,569.00
Cash balance	(897,089.00)	(635,352.00)	62,568.00

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