

ANNEXURE – I

Contract Agreement for the project entitled “Standardization of growth and Astaxanthin content by *Haematococcus*”

And

“Standardization of microalgae based method for the improvement of air quality”

Following objectives are set to undertake the project entitled “Standardization of growth and Astaxanthin content by *Haematococcus*”

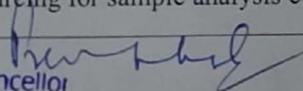
1. To determine the optimum conditions wrt temperature and light/dark period for the growth and Astaxanthin production by *Haematococcus*
2. To scale up the production of algae and Astaxanthin under optimum conditions

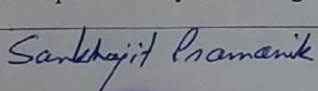

Following objectives are set to undertake the project entitled “Standardization of a microalgae based method for the improvement of air quality”

1. Standardization of algae concentration capable of improving the air quality in lab scale setup
2. To develop a prototype for improving the air quality for household use
3. To check the efficacy of the developed prototype in some of the polluted locations in the industrial township of BBN, Himachal Pradesh

The funding requirement for carrying out the above mentioned project within the period of six months will be following

S.No.	Description and number	Amount Requested
1.	Research Fellow 2 No.	3,72,000
2.	Lab Facility	2,00,000
3.	Consultancy fee	2,00,000
	<b>TOTAL</b>	<b>7,72,000</b>
	<b>Applicable discount (53%)</b>	<b>(-)4,12,000</b>
	<b>Amount to be paid</b>	<b>3,60,000</b>
	<b>GST@18%</b>	<b>64,800</b>
	<b>Total Payable amount</b>	<b>4,24,800*</b>
4	Major Consumables and Glass Ware (Media components, standard of Astaxanthin, <i>Haematococcus</i> culture, glassware and air quality analysers)	To be provided by MicroAlgae Energy Development India (P) Ltd.
5	Out sourcing for sample analysis etc.	To be provided by MicroAlgae

  
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Shoolni University of Biotechnology  
& Management Sciences  
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MICROALGAE DEVELOPMENT ENERGY INDIA PVT. LTD.  
Director

		Energy Development India (P) Ltd.
6	Cost of patent** filing to Indian Patent Office	Will be provided by Shoolini University

\*The payment shall be done on 40:40:20 bases. 40% of the amount will be paid at the start of the project followed by 40% payment at the end of three months and 20 % at the completion of the project.

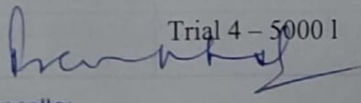
\*\*Shoolini University and MicroAlgae Energy Development India (P) Ltd. will be the lead authors in the patent application and any other issue related to sharing of IPR will be taken up separately

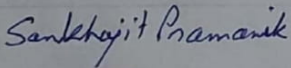
- a. Other components of the consultancy will be taken up on a case by case basis after once the culture is ready for scale up and other lab-scale testing and standardization.

**Project 1: "Standardization of growth and Astaxanthin content by *Haematococcus*"**

- i) To scale-up and establish contamination-free cultures indoor for inoculum. A minimum of 10% inoculum will be added for culturing and keep indoor at the specified temperature and light intensity with aeration. The scale-up activity will follow the below protocol.

Process	Description	Time duration	Phase
Appointment of staff,	regular activity		
Culture Maintenance		30 days	
Lab scale cultivation	shake flask cultivation		Preparatory phase
	100ml flask cultivation		
	250ml/500ml flask cultivation	50 days	
	1L flask cultivation		
	15 L bottle cultivation	50Days	
	60L Column cultivation		
	500L blue pond cultivation	50Days	
Pilot Cultivation	Trial 1 - 5000 l	Will be taken	
	Trial 2 - 5000 l	depending upon	Pilot trial Cultivation
	Trial 3 - 5000 l	the availability	
	Trial 4 - 5000 l	of funding	

  
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	Trial 5 – 5000 l		
<b>Harvesting &amp; Drying</b>			
	Can be varied depending on needs	1 – 2 day	
<b>Total</b>		<b>180 days</b>	

**Project 2: “Standardization of a microalgae based method for the improvement of air quality”**

The standardization and scale-up activities will follow the below protocol.

Process	Description	Phase
<b>Appointment of staff,</b>	regular activity	
<b>Culture Maintenance</b>		
<b>Lab scale cultivation</b>	Shake flask cultivation	Preparatory and
	Standardization of culture concentration for optimum removal of air contaminants	analysis phase
	Development of a Prototype for lab scale / indoor use to improve the air quality	
	To check the efficacy of the developed prototype for in house use	
	To check the efficacy of the developed prototype for outdoor use	
<b>Total duration of project</b>	180 days	

- b. The cultures of *Haematococcus* will be procured from UTEX culture collection of Algae and shall not be used for any other testing or experiments unless and otherwise stated explicitly in the contract and a non-disclosure agreement will be signed between the parties to ensure that all the test results and data resulting from this endeavor shall not be published in any form or shared with a third party unless under mutual agreements. The culture of *Chlorella pyrenoidosa* will be provided by Shoolini University. The project shall be considered in force from the date of receiving the algal culture from the culture collection.

Vice Chancellor  
Shoolini University of Biotechnology  
& Management Sciences  
Sohani (P.O.)

Sankhjit Pramanik

  
MICRO ALGAE DEVELOPMENT ENERGY INDIA PVT. LTD.

Director

- c. A project committee comprising members from MADE and University, will be set-up to evaluate the progress. This committee might meet once in every month to evaluate the work accomplished and plan the research requirement for the next month.
- d. Every 15 days, it is expected that the university will provide a detailed report on work progress in a specified format along with major consumables used.
- e. In each month end report might describe major consumables detailed costing.
- f. The contract will be renewed every 6 months with future timeline and deliverable in the project committee meeting after evaluating the progress.

**Shoolini University**

**M/S MADE India (P) Ltd**



By: [Signature]

By: Sankhajt Pramanik

Signature  
**Vice Chancellor**  
**Shoolini University of Biotechnology**  
**& Management Sciences**  
 Name: **SANKHAJT PRAMANIK** Khsola

Signature  
 \_\_\_\_\_  
 Name: Mr. Sankhajt Pramanik

Title Vice Chancellor

Title Director

Date June 5, 2018

Date June 5, 2018

**RESEARCH PROJECTS INCOME**

Group Summary

1-Apr-2018 to 31-Mar-2019

	Closing Balance	
	Debit	Credit
Grant Compact Muon Solenoid (CMS) Dr. Suneel Dutt		15,96,238.00
Grant Deriving-- Products Dr. Neeraj /Dr. Joydeep		3,00,000.00
Grant Efficiency ..Collector Dr. Rajesh HIMCOSTE		3,25,000.00
Grant in Aid (Ayush)		20,00,000.00
Grant in Aid Dr. Adesh K Saini Project (NMHS)		10,10,294.00
Grant in Aid NMHS Dr. Saurabh Kulshrestha GBPNIHESD		11,99,616.00
Grant In Aid NMHS Dr. Shankharoop Ghosal GBPNIHESD		21,14,000.00
Grant In Aid Scrub Typhus .... DST (Dr. Ankur)		11,23,000.00
Grant RGCB Project Dr. Reena Vohra Saini		4,50,000.00
Grant Teacher-- Excellence (TARE) Dr. Anirudha		2,75,000.00
Grant Tech. Innovation . HIMCOSTE Dr. Nitika Thakur		2,85,000.00
<b>MICRO ALGAE ---ENERGY INDIA PVT. LTD. Dr. Saurabh</b>		<b>2,88,000.00</b>
Proj. Grant Development of Lead Dr. Radheshyam Rai		39,054.00
<b>Grand Total</b>		<b>1,10,05,202.00</b>

